TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

December 13, 2013

CALL NO. 200
CONTRACT ID NO. 131212
ADDENDUM # 3

Subject: Marshall-Trigg Counties, 121GR13D012-NHPP 0801 (098)
Letting December 20, 2013

PLAN CHANGES

(1)Revised - Plan Sheets - Structure Plans Drawing #24686 - S002, S003, S005,S006, S006A, S010, S045, S046, S047, S049, S050, S051, S052A, S055, S056, S057, S058, S078, S079, S080, S081, S081A, S082, S083, S087, S088,S089, S090, S092, S093, S094, S095, S097, S102, S103, S104, S105, S107, S108, S109, S110, S111, S112, S114, S115, S116, S119, S126, S127, S128, S129, S130, S131, S148, S150, S156, S157, S158, S159, S160, S161, S178A, S187, S221, S223, S227, S228, S229, S230, S231, S232, S233, S235, S236, S237, S238, S258, S259, S260, S261, S262, S263, S264, S268, S269, S270, S271, S272, S273, S274
(2)Added - Plans Sheets - Structure Plans Drawing #24686 - S207C, S275A
(3)Revised - Plans Sheets - Roadway Plans - R2D, R7, R52

PROPOSAL CHANGES

(1)Revised - Special Note - Pages 146-152 of 403
(2)Revised - Bid Items - Pages 397-403 of 403

Proposal revisions are available at http://transportation.ky.gov/Construction-Procurement/.

Plan revisions are available at http://www.lynnimaging.com/kytransportation/.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

Ryan Griffith

Ryan Griffith
Acting Director
Division of Construction Procurement

RG:ks
Enclosures

3.4 LIFE

A. LIFE: The unit shall be designed to guarantee a minimum reuse of one maximum capable seismic event before requiring refurbishment.

3.5 ENVIRONMENTAL CONDITIONS

A. AMBIENT OPERATING TEMPERATURE: When installed, the unit shall be capable of operating in an ambient air temperature from 0°F to +120°F.

B. ATMOSPHERIC PRESSURE: The unit shall operate at essentially sea level pressure (760 ±50mm mercury).

C. HUMIDITY: The unit shall be designed to withstand relative humidity up to 100 percent, including condensation due to temperature change.

D. SUBMERSION: The unit shall be designed to withstand submersion and be equipped with wipers to protect seals from silt damage.

E. OTHER ATMOSPHERIC ELEMENTS: The unit shall be designed to withstand any of the probable combinations of the following atmospheric elements: rain, snow, sleet, hail, ice, fog, smoke, wind, ozone, sunshine, sand and dust, and salt atmosphere.

3.6 DELIVERY, HANDLING, AND STORAGE

A. DELIVERY: Deliver production FVD's to the job site in protective packaging for freight and handling purposes.

B. HANDLING: Handle FVD's and components carefully to prevent damage, breaking, denting or scoring. Do not deliver damaged FVD's or components; replace with new.

C. STORAGE: Store FVD's in a clean place. Protect from dirt, fumes, construction debris and physical damage.

3.7 INSTALLATION

A. INSTALLATION: FVD's shall be installed in accordance with the manufacturer's instructions as approved by the Engineer. FVD's shall not be installed until the bridge deck has been fully cast.

4.0 TESTING, MATERIALS, AND EQUIPMENT

4.1 TESTING OF VISCOUS DAMPING DEVICE UNITS

A. PRODUCTION UNIT TESTING:

1. Purpose: Production unit testing shall be conducted in order to verify the following:

   a. The general quality and manufacturing consistency of each of the production units.

   b. The general consistency of all production units in terms of their performance characteristics to meet the requirements of the contract documents.

2. Acceptance Criteria:

a. No visible leakage or signs of physical deterioration or degradation in performance shall be observed during and after the series of tests. There shall be no signs of yielding or permanent deformation, or re-torquing of parts.

b. The force-velocity results from the tests both in tension and in compression, adjusted for expected variations due to temperature and number of stroke cycles shall fall entirely within the upper and lower bound curves (Figures 1 & 2) as used for the final design of the damped structure.

3. Sequence of Testing:

a. Quality Assurance Tests: Production units shall be subjected to and pass the following sequence of quality assurance tests:

(1) Proof load test: An internal pressure shall be applied to each FVD that shall be equivalent to 150% of the maximum damper load (each production unit). This pressure shall be maintained for 180 seconds.

(2) High Level Proof Load Test: One out of every fifty production units, or a minimum of two (2) units, shall have an internal pressure of 20,000 psi applied. This pressure shall be maintained for 180 seconds.

(3) Life Cycle Test: One out of every fifty production units, or a minimum of two (2) units, shall be cycled through its full end to end displacement for a total of 60 cycles. The cyclic velocity is expected to be much slower than the design maximum velocity and shall depend on the capacity of the approved testing apparatus.

b. Performance Verification Tests:

(1) Production unit testing shall be conducted on all units in order to verify the performance consistency of each production unit. These tests shall be performed in the tension and compression directions and shall verify the force velocity characteristics of the damper. Tests are to be performed at 100% of DBE velocity as determined from dynamic analysis of the structure for 3 cycles. The test results shall fall entirely within the upper and lower bound curves (+/- 15%). The force, displacement and time measurements shall be accurately obtained and recorded. Force-velocity plots shall be constructed from this data.

(2) For time/cost savings, testing in the compression direction only may be proposed, provided the damper manufacturer can substantiate the balanced nature of fluid orificing in each direction. The use of valves and/or reservoirs or accumulators are not considered a balanced method and will require testing in both directions.

4.2 STANDARDS: Conform to the applicable provisions of the current editions of the following standards, except as indicated otherwise on the drawings or the specifications:

1. Title 24, Part 2, CCR, 1989 Amendments

2. ASTM E4 - Load Verification of Testing Machines
3. ASTM A36 - Specification for Structural Steel
4. ASTM A325 - Specification for High Strength Steel Bolts
5. ASTM A570 - Specification for Structural Sheet Steel
6. AWS D1.1 - Structural Welding Code of the American Welding Society
7. AMS-W-6858 - Welding, Resistance: Spot and Seam
8. AWS- C3.4, C3.5, C3.6 - Brazing of Steels, Copper, Copper Alloys, Nickel Alloys, Aluminum and Aluminum Alloys
9. AWS- C1.4, C1.4M - Welding, Spot, Hardenable
10. NAV SEA S9074-AQ-GIB-010/248 – Welding and Brazing Procedure and Performance Qualifications
11. AMS-STD-2175 - Classification and Inspection of Casting
12. ANSI/ISO/ASQ 9001 (ISO 9001) - Quality Management Systems-Requirements
13. SAE AS/EN 9100 Quality Management System
14. ISO 14001 – Environmental Management Systems
15. AISC “Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings”, by the American Institute of Steel Construction
16. AISC “Code of Standard Practice for Steel Buildings and Bridges”
17. SSPC “Steel Structures Painting Council”
18. MIL-HDBK-5 “Specifications for Metallic Materials"

NOTE: Proposed alternate standards shall be submitted to the architect/engineer for review and approval.

4.3 FVD MATERIALS AND PARTS

A. Except as specified herein, the materials, parts and processes used in the design and manufacture of the unit shall conform to specifications and standards selected in the order of precedence established by MIL-STD-970. All materials and processes used shall be identified in vendor drawings by specifications or standards.

B. MATERIALS: All materials used in the manufacture of the unit shall be subject to approval by the engineer of record.

1. Materials: Materials shall have allowable stress values taken from MIL-HDBK-5. Unless suitably protected against electrolytic corrosion, dissimilar materials as defined in MIL-STD-889 shall not be used in contact with each other. Dissimilar metal joints shall not be permitted without a non-metallic separator or gasket of at least .06 inch thickness. The use of aluminum, aluminum alloys, magnesium, magnesium alloys, beryllium and beryllium alloys is prohibited. The use of non-stainless steel internally exposed to internal pockets of air or gas (as could occur in an internal reservoir, and

plumbing to the reservoir) is allowable provided components are suitably protected from corrosion by means of appropriate surface treatments.

2. Fungus Resistant Materials: Only non-nutrient materials shall be used in the unit.

3. Castings: All castings shall be prohibited for pressure vessel parts or any other parts subjected to tensile or bending stresses, except for parts such as covers, handles, etc. whose failure would not affect the structural integrity or performance characteristics of the unit. Such casting may be Class 2B, subject to the approval of the engineer of record.

C. PARTS

1. FVD's shall be constructed of maintenance-free designs only. Reservoirs, external plumbing and/or fluid level indicators such as sight windows or pressure indicators that may leak are strictly prohibited.

2. Age Sensitive Parts: All non-metallic packing, seals, wipers or gaskets shall be of non-age sensitive materials.

3. Piston rods and any part that slides relative to a seal shall be manufactured from stainless steel only. Plating may be applied over the stainless steel if required by the type of fluid seal selected.

4. Operating fluid used in the dampers shall be non-toxic, non-flammable, and cosmetically inert silicone per U.S. Federal Standard VV-D-1078. Petro-chemical fluids shall not be used.

5. The components of the damper that are pressure vessels are to be of non-tie rod type construction, without externally supported heads or end caps. Welded construction or castings of any type are not permitted for pressure vessel construction.

6. Pressure vessels and seals shall be rated for 20,000 psi minimum burst pressure. A randomly selected production unit shall be tested to this pressure, with no loss of fluid or parts failure of any type permitted.

7. Parts List Approval: The vendor shall submit the equipment parts list for review and approval by the engineer of record. Approval will be based on an evaluation of the following documentation as applicable to each part.

   a. Vendor part number and nomenclature

   b. Military or other applicable specifications

   c. Source name and part number

   d. Testing and inspection requirements

5.0 FABRICATION AND QUALITY CONTROL

5.1 FABRICATION

A. PROCESSES

1. Protective Treatment: Materials subject to deterioration when exposed to environmental conditions likely to occur during service usage, shall be protected against such deterioration in a manner that will in no way prevent compliance with the requirements of this specification. The use of any protective coating that will crack, chip or scale with age or extremes of climate and environmental conditions shall not be used. Corrosion control shall be used as a guide for minimizing corrosion damage to the assembly.

2. Fusion Welding: Fusion welding shall be in accordance with approved standards. Weld design shall be based on the function and strength of the assemblies. Fillet welds on plate above 0.125 inches thickness will not be used on primary structure without specific approval by the engineer of record. Weld quality shall be specified on vendor drawings with proper acceptance standards and inspection methods.

3. Resistance Welding: Resistance welding shall be in accordance with MIL-W-6858 and MIL-W-45223, as applicable.

4. Welder Certification: Certification tests for welders shall be in accordance with AWS D1.1.

5. Brazing: The brazing of steels, copper, copper alloys and nickel alloys shall conform to MIL-B-7883.

6. Soldering: Soldering shall be in accordance with approved standards. Whenever insulation material is subject to heating during soldering, the material shall be undamaged and parts fastened thereto shall not be loosened. No mechanical assembly shall depend on soft-solder for mechanical strength.

7. Finish: The exterior finish of the unit, including the color and finish type required shall be recommended by the vendor and submitted to the engineer of record for approval.

B. WORKMANSHIP: All parts shall be free of burrs and sharp edges and any damage, defect or foreign material which might detract from the intended operation, function or appearance of the unit.

5.2 SAFETY

A. SAFETY: The design of the unit shall be such that all possible sources of danger to personnel or equipment during assembly, disassembly, testing, operation and maintenance are minimized. Where required, precautionary measures shall be prominently and clearly indicated on the equipment

5.3 MAINTAINABILITY

A. MAINTAINABILITY: The unit shall be constructed to be maintenance free. The use of reservoirs, external plumbing and/or fluid level indicators shall not be permitted. Each FVD shall be designed and constructed such that installation, removal and replacement, if necessary, shall be a simple process not requiring any special tools or methods. The use of fluid seals that require fluid weepage for lubrication are prohibited.

5.4 INTERCHANGEABILITY

A. INTERCHANGEABILITY: All parts having the same manufacturer's part number shall be functionally and physically interchangeable. The vendor shall assign new part numbers when change numbers cause any of the following conditions:

1. Performance or durability is affected to such an extent that superseded items must be discarded for reasons of safety or malfunctioning.

2. Parts, subassemblies of complete units are changed to such an extent that the superseded and superseding items are not interchangeable.

3. Superseded parts are limited to use in specific articles or models of articles and the superseding parts are not so limited to use.

When interchangeable repairable assemblies contain a non-interchangeable part, the part number re-identification of the non-interchangeable part, of the next assembly and all the progressive higher assemblies shall be changed up to and including the assembly where the interchangeability is re-established.

5.5 CHANGE CONTROL

A. CHANGE CONTROL: After initial design completion and approval or initial hardware delivery, whichever occurs first, any change or substitution of material, dimensions, processes or other characteristics must be approved by the engineer of record prior to incorporation. The vendor shall exercise the same configuration control over his suppliers.

5.6 IDENTIFICATION MARKING

A. IDENTIFICATION MARKING: Units shall be marked for identification in accordance with MIL-STD-130.

5.7 SERIAL NUMBER ASSIGNMENT

A. SERIAL NUMBER ASSIGNMENT: Sequential serial numbers shall be assigned to all units in accordance with architect/engineer of record's requirements. The individual number shall be assigned according to the vendors standard practice unless otherwise specified in the purchase order or contract.

5.8 QUALITY CONTROL PROVISIONS

A. PRODUCT QUALITY CONTROL: To ensure effective control over product quality, the vendor shall, establish and maintain a manufacturing/processing control system including written process specifications and procedures to insure that manufacturing, processing, inspection and testing are accomplished in accordance with the following:

1. Quality Management System Requirements ISO 9001 and AS/EN 9100.

The seller shall provide and maintain a system that complies with U.S. requirements of the current revision of ISO 9001and AS/EN 9100 for quality assurance in design, manufacture, test, and repair of dampers. Certification to ISO 9001 or AS/EN 9100 by an individual or firm located outside the United States of America is prohibited.

B. MANUFACTURING PROCESS CONTROL: In addition to compliance with both of the quality assurance systems listed above, the vendor must maintain a system for manufacturing process control of this project which includes as a minimum the following:

1. Raw Material Traceability.
2. Inspection instructions.
3. In process and final detail component inspection instruction with actual dimensions.

C. CALIBRATION SYSTEM REQUIREMENTS: All devices used to measure, gage, test, inspect or otherwise examine items to determine compliance with specification and/or contractual requirements shall be calibrated in compliance with the applicable section of the current revision of both ISO 9001 and AS/EN 9100 standards, to a calibrated measurement standard which has known valid relationships traceable to the U.S. National Institute of Standards and Technology (NIST).

6.0 MEASUREMENT

The final quantity of FVDs will be the actual number of individual dampers, including mounting pins, girder connection plates, anchor plates, and mounting brackets, acceptably furnished and installed during the project. The Department will not measure dampers replaced due to damage or rejection.

7.0 PAYMENT

The Department will pay for the Viscous Dampers at the contract unit price bid for each. The Department will not pay for dampers replaced due to damage or rejection. Payment is full compensation for furnishing all materials and equipment necessary to install, operate, move, repair, and maintain or replace the dampers. All prescribed work shall be done in a workmanlike and acceptable manner including all labor and incidentals necessary for completion. The Department will make payment for the completed and accepted quantities under the following:

Pay Item	Pay Unit
Seismic Dampers – End Bents	Each
Seismic Dampers – Piers 4 & 5	Each

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0010	00001		DGA BASE	21,669.00	TON		$	
0020	00003		CRUSHED STONE BASE	994.00	TON		$	
0030	00018		DRAINAGE BLANKET-TYPE II-ASPH	7,208.00	TON		$	
0040	00212		CL2 ASPH BASE 1.00D PG64-22	693.00	TON		$	
0050	00214		CL3 ASPH BASE 1.00D PG64-22	19,791.00	TON		$	
0060	00309		CL2 ASPH SURF 0.50D PG64-22	2,152.00	TON		$	
0070	00324		CL3 ASPH SURF 0.50B PG64-22	3,150.00	TON		$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0080	00071		CRUSHED AGGREGATE SIZE NO 57	979.00	TON		$	
0090	00078		CRUSHED AGGREGATE SIZE NO 2	29.00	TON		$	
0100	00100		ASPHALT SEAL AGGREGATE	72.00	TON		$	
0110	00103		ASPHALT SEAL COAT	9.00	TON		$	
0120	01000		PERFORATED PIPE-4 IN	7,479.00	LF		$	
0130	01001		PERFORATED PIPE-6 IN	2,315.00	LF		$	
0140	01010		NON-PERFORATED PIPE-4 IN	525.00	LF		$	
0150	01011		NON-PERFORATED PIPE-6 IN	192.00	LF		$	
0160	01020		PERF PIPE HEADWALL TY 1-4 IN	4.00	EACH		$	
0170	01021		PERF PIPE HEADWALL TY 1-6 IN	1.00	EACH		$	
0180	01024		PERF PIPE HEADWALL TY 2-4 IN	15.00	EACH		$	
0190	01028		PERF PIPE HEADWALL TY 3-4 IN	4.00	EACH		$	
0200	01029		PERF PIPE HEADWALL TY 3-6 IN	1.00	EACH		$	
0210	01032		PERF PIPE HEADWALL TY 4-4 IN	4.00	EACH		$	
0220	01033		PERF PIPE HEADWALL TY 4-6 IN	1.00	EACH		$	
0230	01741		CORED HOLE DRAINAGE BOX CON-6 IN	8.00	EACH		$	
0240	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	82.00	EACH		$	
0250	01984		DELINEATOR FOR BARRIER - WHITE	86.00	EACH		$	
0260	01985		DELINEATOR FOR BARRIER - YELLOW	173.00	EACH		$	
0270	02014		BARRICADE-TYPE III	4.00	EACH		$	
0280	02091		REMOVE PAVEMENT REVISED: 12-13-13	2,732.00	SQYD		$	
0290	02159		TEMP DITCH	5,885.00	LF		$	
0300	02160		CLEAN TEMP DITCH	17,655.00	LF		$	
0310	02200		ROADWAY EXCAVATION REVISED: 12-13-13	47,388.00	CUYD		$	
0320	02204		SPECIAL EXCAVATION	3,974.00	CUYD		$	
0330	02241		RESHAPING AND COMPACTING	2,586.00	LF		$	
0340	02242		WATER	2.00	MGAL		$	
0350	02381		REMOVE GUARDRAIL	7,059.00	LF		$	
0360	02432		WITNESS POST	3.00	EACH		$	
0370	02436		R/W MARKER RURAL TYPE 3	7.00	EACH		$	
0380	02483		CHANNEL LINING CLASS II	98.00	TON		$	
0390	02545		CLEARING AND GRUBBING (APPROXIMATELY 1.5 ACRES IN MARSHALL COUNTY)	1.00	LS		$	

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0400	02562		TEMPORARY SIGNS (FOR TRAFFIC MAINTENANCE)	1,167.00	SQFT		$	
0410	02570		PROJECT CPM SCHEDULE SEE DESIGN FOR SPECIAL NOTE	1.00	LS		$	
0420	02585		EDGE KEY	240.00	LF		$	
0430	02596		FABRIC-GEOTEXTILE TYPE I	12,241.00	SQYD		$	
0440	02599		FABRIC-GEOTEXTILE TYPE IV	10,052.00	SQYD		$	
0450	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	1,882.00	SQYD	$2.00	$	$3,764.00
0460	02650		MAINTAIN & CONTROL TRAFFIC (TRIGG COUNTY)	1.00	LS		$	
0470	02650		MAINTAIN & CONTROL TRAFFIC (MARSHALL COUNTY)	1.00	LS		$	
0480	02673		PRECAST VEHICLE STOP	172.00	LF		$	
0490	02696		SHOULDER RUMBLE STRIPS-SAWED	6,560.00	LF		$	
0500	02701		TEMP SILT FENCE	5,885.00	LF		$	
0510	02703		SILT TRAP TYPE A	33.00	EACH		$	
0520	02704		SILT TRAP TYPE B	33.00	EACH		$	
0530	02705		SILT TRAP TYPE C	33.00	EACH		$	
0540	02706		CLEAN SILT TRAP TYPE A	99.00	EACH		$	
0550	02707		CLEAN SILT TRAP TYPE B	99.00	EACH		$	
0560	02708		CLEAN SILT TRAP TYPE C	99.00	EACH		$	
0570	02709		CLEAN TEMP SILT FENCE	17,655.00	LF		$	
0580	02726		STAKING (TRIGG COUNTY)	1.00	LS		$	
0590	02726		STAKING (MARSHALL COUNTY)	1.00	LS		$	
0600	02731		REMOVE STRUCTURE (EGGNER FERRY BRIDGE)	1.00	LS		$	
0610	02998		MASONRY COATING	2,173.00	SQYD		$	
0620	03144		CONC MEDIAN BARRIER TYPE 9C1	3,343.00	LF		$	
0630	05950		EROSION CONTROL BLANKET	2,534.00	SQYD		$	
0640	05952		TEMP MULCH	170,660.00	SQYD		$	
0650	05953		TEMP SEEDING AND PROTECTION	16,343.00	SQYD		$	
0660	05966		TOPDRESSING FERTILIZER	18.00	TON		$	
0670	05985		SEEDING AND PROTECTION	163,432.00	SQYD		$	
0680	05989		SPECIAL SEEDING CROWN VETCH	170,661.00	SQYD		$	
0690	06510		PAVE STRIPING-TEMP PAINT-4 IN	38,850.00	LF		$	
0700	06514		PAVE STRIPING-PERM PAINT-4 IN	43,862.00	LF		$	
0710	06550		PAVE STRIPING-TEMP REM TAPE-W	8,772.00	LF		$	
0720	06551		PAVE STRIPING-TEMP REM TAPE-Y	12,208.00	LF		$	
0730	06574		PAVE MARKING-THERMO CURV ARROW	6.00	EACH		$	
0740	06575		PAVE MARKING-THERMO COMB ARROW	2.00	EACH		$	
0750	06592		PAVEMENT MARKER TYPE V-B W/R	119.00	EACH		$	
0760	06593		PAVEMENT MARKER TYPE V-B Y/R	173.00	EACH		$	
0770	08019		CYCLOPEAN STONE RIP RAP	19,269.00	TON		$	
0780	10020NS		FUEL ADJUSTMENT	72,080.00	DOLL	$1.00	$	$72,080.00
0790	10030NS		ASPHALT ADJUSTMENT	100,825.00	DOLL	$1.00	$	$100,825.00
0800	20060ES719		GUARDRAIL STEEL W BEAM-S FACE CR	5,472.00	LF		$	
0810	20062ES719		GUARDRAIL TERMINAL SECT NO.1 CR	6.00	EACH		$	
0820	20206EC		PAVE MARK HANDICAP SYMBOL	2.00	EACH		$	
0830	20285ES719		GUARDRAIL END TREATMENT TY 2A-CR	1.00	EACH		$	
0840	20382ES719		G/R CONN TO BRIDGE END TY A-CR	4.00	EACH		$	
0850	21325ND		CONSTRUCTION TRAILER	1.00	LS		$	

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0860	23131ER701		PIPELINE VIDEO INSPECTION	561.00	LF		$	
0870	23143EN		DECORATIVE HANDRAIL (STEEL POWDER COATED FINISH)	1,977.00	LF		$	
0880	23162EN		GUARDRAIL CONN TO BR END TY A-1 CR	4.00	EACH		$	
0890	23274EN11F		TURF REINFORCEMENT MAT 1	1,078.00	SQYD		$	
0900	23394EC		CRASH CUSHION TY VI CLASS C TL3-1	1.00	EACH		$	
0910	23651ES719		G/R END TREATMENT TY 1-CR	1.00	EACH		$	
0920	23912EC		WEB CAMERA CONST MONITORING SYSTEM	1.00	LS		$	
0930	23979EC		CRASH CUSHION TY VI CLASS C TL3	2.00	EACH		$	
0940	24620EC		HELPER BOAT	1.00	LS		$	
0950	24626EC		PROJECT INSPECTION BOAT	1.00	LS		$	
0960	24636EC		GUARDRAIL TERMINAL SECT NO.3 CR	2.00	EACH		$	
0970	24637EC		GUARDRAIL STEEL W BEAM-D FACE CR	2,768.00	LF		$	
0980	30000		REMOVABLE BOLLARD	3.00	EACH		$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0990	00440		ENTRANCE PIPE-15 IN	65.00	LF		$	
1000	00443		ENTRANCE PIPE-24 IN	130.00	LF		$	
1010	00521		STORM SEWER PIPE-15 IN	189.00	LF		$	
1020	00522		STORM SEWER PIPE-18 IN	289.00	LF		$	
1030	01202		PIPE CULVERT HEADWALL-15 IN	1.00	EACH		$	
1040	01204		PIPE CULVERT HEADWALL-18 IN	2.00	EACH		$	
1050	01208		PIPE CULVERT HEADWALL-24 IN	2.00	EACH		$	
1060	01432		SLOPED BOX OUTLET TYPE 1-15 IN	3.00	EACH		$	
1070	01505		DROP BOX INLET TYPE 5B	1.00	EACH		$	
1080	01538		DROP BOX INLET TYPE 7	1.00	EACH		$	
1090	01621		CONC MED BARR BOX INLET TY 9B1	2.00	EACH		$	
1100	08100		CONCRETE-CLASS A (FOR END ANCHORS)	2.82	CUYD		$	
1110	23952EC		DRAINAGE JUNCTION BOX TY B	1.00	EACH		$	

Section: 0004 - BRIDGE - WEST APPROACH

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1120	02231		STRUCTURE GRANULAR BACKFILL REVISED: 12-13-13	1,143.00	CUYD		$	
1130	02599		FABRIC-GEOTEXTILE TYPE IV	328.00	SQYD		$	
1140	02998		MASONRY COATING REVISED: 12-13-13	6,588.00	SQYD		$	
1150	08001		STRUCTURE EXCAVATION-COMMON REVISED: 12-13-13	1,887.00	CUYD		$	
1160	08033		TEST PILES (INSTALL 30 IN PIPE PILE - 1 IN)	459.00	LF		$	
1170	08033		TEST PILES (INSTALL 72 IN PIPE PILE - 2 IN)	448.00	LF		$	
1180	08033		TEST PILES (FURNISH 30 IN PIPE PILE - 1 IN)	468.00	LF		$	
1190	08033		TEST PILES (FURNISH 72 IN PIPE PILE - 2 IN)	516.00	LF		$	
1200	08100		CONCRETE-CLASS A REVISED: 11-26-13	2,078.00	CUYD		$	
1210	08101		CONCRETE-CLASS A MOD	258.00	CUYD		$	

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1220	08104		CONCRETE-CLASS AA REVISED: 11-26-13 REVISED: 12-13-13	3,968.00	CUYD		$	
1230	08150		STEEL REINFORCEMENT REVISED: 12-13-13	548,025.00	LB		$	
1240	08151		STEEL REINFORCEMENT-EPOXY COATED REVISED: 12-13-13	1,272,721.00	LB		$	
1250	08160		STRUCTURAL STEEL (APPROACH SPANS, APPROXIMATELY 9,082,604 LBS.) REVISED: 12-13-13	1.00	LS		$	
1260	08170		SHEAR CONNECTORS(APPROXIMATELY 22,604 LBS) REVISED: 11-26-13	1.00	LS		$	
1270	08267		NAVIGATION LIGHTING	1.00	LS		$	
1280	08500		APPROACH SLAB	204.00	SQYD		$	
1290	08820		DRAIN PIPE-6 IN (FIBERGLASS)	200.00	LF		$	
1300	20154ND		DRAIN ASSEMBLY	16.00	EACH		$	
1310	23233EC		DYNAMIC PILE TESTING (ON WATER - RESTRIKE)	15.00	EACH		$	
1320	23233EC		DYNAMIC PILE TESTING (ON LAND - INITIAL)	5.00	EACH		$	
1330	23233EC		DYNAMIC PILE TESTING (ON LAND - RESTRIKE)	10.00	EACH		$	
1340	23233EC		DYNAMIC PILE TESTING (ON WATER - INITIAL)	9.00	EACH		$	
1350	23538EC		PEDESTRIAN RAIL REVISED: 12-13-13	1,449.00	LF		$	
1360	23859EC		FINGER EXPANSION JOINT	74.00	LF		$	
1370	23868EC		STRUCTURE LIGHTNING PROTECTION	1.00	LS		$	
1380	24538ED		RAIL SYSTEM TYPE 11	2,880.00	LF		$	
1390	24550EC		VIBRATION MONITORING	1.00	LS		$	
1400	24606ED		HSS BARRIER RAIL - 3 RAIL	1,429.00	LF		$	
1401	24607ED		HSS BARRIER RAIL - 1 RAIL ADDED: 12-6-13 REVISED: 12-13-13	2,709.00	LF		$	
1410	24611EC		SEISMIC DAMPERS (BENT ENDS)	6.00	EACH		$	
1420	24611EC		SEISMIC DAMPERS (PIERS 4 & 5)	6.00	EACH		$	
1430	24614EC		DISK EXPANSION BEARING	12.00	EACH		$	
1440	24616EC		PATH DELINEATION LIGHTING	1.00	LS		$	
1450	24617EC		INSTALL (AT&T DUCTBANK)	1,407.00	LF		$	
1460	24618EC		PIPE PILES (INSTALL 72 IN PIPE PILE - 2 IN)	836.00	LF		$	
1470	24618EC		PIPE PILES (FURNISH 30 IN PIPE PILE - 1 IN)	3,393.00	LF		$	
1480	24618EC		PIPE PILES (INSTALL 30 IN PIPE PILE - 1 IN)	3,585.00	LF		$	
1490	24618EC		PIPE PILES (FURNISH 72 IN PIPE PILE - 2 IN)	909.00	LF		$	
1500	24619EC		SPLICE PILES (30 IN PIPE PILE - 1 IN)	13.00	EACH		$	
1510	24619EC		SPLICE PILES (72 IN PIPE PILE - 2 IN)	3.00	EACH		$	
1520	24627EC		OPEN END INSIDE FIT CUTTING SHOE (72 IN - 2 IN)	9.00	EACH		$	
1530	24627EC		OPEN END INSIDE FIT CUTTING SHOE (30 IN - 1 IN)	28.00	EACH		$	
1540	24628EC		PILE CONSTRICTOR PLATE (72 IN - 2 IN)	9.00	EACH		$	
1550	24629EC		DECORATIVE FENCE PANEL	17.00	EACH		$	

Section: 0005 - BRIDGE - EAST APPROACH

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1560	02231		STRUCTURE GRANULAR BACKFILL REVISED: 12-13-13	1,143.00	CUYD		$	
1570	02599		FABRIC-GEOTEXTILE TYPE IV	328.00	SQYD		$	
1580	02998		MASONRY COATING REVISED: 12-13-13	7,946.00	SQYD		$	
1590	08001		STRUCTURE EXCAVATION-COMMON REVISED: 12-13-13	1,718.00	CUYD		$	
1600	08033		TEST PILES (FURNISH - 30 IN PIPE - 1 IN)	441.00	LF		$	
1610	08033		TEST PILES (INSTALL - 30 IN PIPE - 1 IN)	435.00	LF		$	
1620	08033		TEST PILES (FURNISH 17 IN PIPE PILE - 2 IN)	914.00	LF		$	
1630	08033		TEST PILES (INSTALL - 72 IN - 2 IN)	706.00	LF		$	
1640	08100		CONCRETE-CLASS A REVISED: 11-26-13	2,811.00	CUYD		$	
1650	08101		CONCRETE-CLASS A MOD (PIPE PILE INFILL)	627.00	CUYD		$	
1660	08104		CONCRETE-CLASS AA REVISED: 11-26-13 REVISED: 12-13-13	4,595.00	CUYD		$	
1670	08150		STEEL REINFORCEMENT REVISED: 12-13-13	818,618.00	LB		$	
1680	08151		STEEL REINFORCEMENT-EPOXY COATED REVISED: 12-13-13	1,491,961.00	LB		$	
1690	08160		STRUCTURAL STEEL (APPROACH SPAN, APPROXIMATELY 10,091,557 LBS.) REVISED: 12-13-13	1.00	LS		$	
1700	08170		SHEAR CONNECTORS (APPROXIMATELY 33,489 LBS.) REVISED: 11-26-13	1.00	LS		$	
1710	08267		NAVIGATION LIGHTING	1.00	LS		$	
1720	08500		APPROACH SLAB	204.00	SQYD		$	
1730	08820		DRAIN PIPE-6 IN (FIBERGLASS)	270.00	LF		$	
1740	20154ND		DRAIN ASSEMBLY	22.00	EACH		$	
1750	23233EC		DYNAMIC PILE TESTING (ON WATER - INITIAL)	13.00	EACH		$	
1760	23233EC		DYNAMIC PILE TESTING (ON WATER - RESTRIKE)	23.00	EACH		$	
1770	23233EC		DYNAMIC PILE TESTING (ON LAND - RESTRIKE)	10.00	EACH		$	
1780	23233EC		DYNAMIC PILE TESTING (ON LAND - INITIAL)	5.00	EACH		$	
1790	23538EC		PEDESTRIAN RAIL REVISED: 12-13-13	1,693.00	LF		$	
1800	23859EC		FINGER EXPANSION JOINT	74.00	LF		$	
1810	23868EC		STRUCTURE LIGHTNING PROTECTION	1.00	LS		$	
1820	24538ED		RAIL SYSTEM TYPE 11 REVISED: 12-13-13	3,368.00	LF		$	
1830	24550EC		VIBRATION MONITORING	1.00	LS		$	
1840	24606ED		HSS BARRIER RAIL - 3 RAIL REVISED: 12-13-13	1,673.00	LF		$	
1841	24607ED		HSS BARRIER RAIL - 1 RAIL ADDED: 12-6-13 REVISED: 12-13-13	1,695.00	LF		$	
1850	24611EC		SEISMIC DAMPERS (END BENTS)	6.00	EACH		$	
1860	24611EC		SEISMIC DAMPERS (PIERS 4 & 5)	6.00	EACH		$	
1870	24614EC		DISK EXPANSION BEARING	12.00	EACH		$	
1880	24616EC		PATH DELINEATION LIGHTING	1.00	LS		$	
1890	24617EC		INSTALL (AT&T DUCTBANK)	1,651.00	LF		$	
1900	24618EC		PIPE PILES (FURNISH - 30 IN - 1 IN)	3,185.00	LF		$	
1910	24618EC		PIPE PILES (INSTALL - 30 IN - 1 IN)	3,385.00	LF		$	
1920	24618EC		PIPE PILES (FURNISH - 72 IN PIPE PILE - 2 IN)	1,445.00	LF		$	

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1930	24618EC		PIPE PILES (INSTALL - 72 IN PIPE PILE - 2 IN)	1,197.00	LF		$	
1940	24619EC		SPLICE PILES (30 IN PIPE - 1 IN)	13.00	EACH		$	
1950	24619EC		SPLICE PILES (72 IN PIPE PILE - 2 IN)	5.00	EACH		$	
1960	24627EC		OPEN END INSIDE FIT CUTTING SHOE (30 IN - 1 IN)	28.00	EACH		$	
1970	24627EC		OPEN END INSIDE FIT CUTTING SHOE (72 IN - 2 IN)	14.00	EACH		$	
1980	24628EC		PILE CONSTRICTOR PLATE (72 IN - 2 IN)	14.00	EACH		$	
1990	24629EC		DECORATIVE FENCE PANEL	20.00	EACH		$	

Section: 0006 - BRIDGE - MAIN SPAN

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2000	02998		MASONRY COATING REVISED: 11-26-13	5,369.00	SQYD		$	
2010	08033		TEST PILES (FURNISH 72 IN PIPE PILE - 2 IN)	760.00	LF		$	
2020	08033		TEST PILES (INSTALL 72 IN PIPE PILE - 2 IN)	468.00	LF		$	
2030	08100		CONCRETE-CLASS A	7,174.00	CUYD		$	
2040	08101		CONCRETE-CLASS A MOD (PIPE PILE INFILL)	2,066.00	CUYD		$	
2050	08104		CONCRETE-CLASS AA REVISED: 11-26-13	1,119.00	CUYD		$	
2060	08150		STEEL REINFORCEMENT	1,463,804.00	LB		$	
2070	08151		STEEL REINFORCEMENT-EPOXY COATED	458,567.00	LB		$	
2080	08160		STRUCTURAL STEEL (ARCH SPAN, APPROXIMATELY 4,741,044 LBS.) REVISED: 11-26-13	1.00	LS		$	
2090	08170		SHEAR CONNECTORS (APPROXIMATELY 32,503 LBS.) REVISED: 11-26-13	1.00	LS		$	
2100	08267		NAVIGATION LIGHTING	1.00	LS		$	
2110	08534		CONCRETE OVERLAY-LATEX	180.00	CUYD		$	
2120	08752		PAINT CLEARANCE GAUGES	1.00	LS		$	
2130	08820		DRAIN PIPE-6 IN (FIBERGLASS)	36.00	LF		$	
2140	20154ND		DRAIN ASSEMBLY	10.00	EACH		$	
2150	23233EC		DYNAMIC PILE TESTING (ON WATER - INITIAL)	8.00	EACH		$	
2160	23233EC		DYNAMIC PILE TESTING (ON WATER - RESTRIKE)	16.00	EACH		$	
2170	23538EC		PEDESTRIAN RAIL REVISED: 11-26-13	550.00	LF		$	
2180	23868EC		STRUCTURE LIGHTNING PROTECTION	1.00	LS		$	
2190	24112EC		STEEL REINFORCEMENT STAINLESS STEEL REVISED: 11-26-13 REVISED: 12-6-13	283,401.00	LB		$	
2200	24538ED		RAIL SYSTEM TYPE 11	1,108.00	LF		$	
2210	24550EC		VIBRATION MONITORING	1.00	LS		$	
2220	24606ED		HSS BARRIER RAIL - 3 RAIL	550.00	LF		$	
2221	24607ED		HSS BARRIER RAIL - 1 RAIL ADDED: 12-6-13	550.00	LF		$	
2230	24608EC		BRIDGE STRAND HANGER-FABRICATE & INSTALL (APPROXIMATE LENGTH - 5,440 LF)	1.00	LS		$	
2240	24610EC		MODULAR EXPANSION JOINT REVISED: 11-26-13	148.00	LF		$	

131212

PROPOSAL BID ITEMS

Report Date 2/13/13

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2250	24612EC		SEISMIC ISOLATION BEARING - TYPE A	4.00	EACH		$	
2260	24613EC		SEISMIC ISOLATION BEARING - TYPE B	2.00	EACH		$	
2270	24615EC		ARCH FEATURE LIGHTING	1.00	LS		$	
2280	24616EC		PATH DELINEATION LIGHTING	1.00	LS		$	
2290	24617EC		INSTALL (AT&T DUCTBANK)	556.00	LF		$	
2300	24618EC		PIPE PILES (INSTALL 72 IN PIPE PILE -2 IN) REVISED: 12-6-13	2,368.00	LF		$	
2310	24618EC		PIPE PILES (FURNISH 72 IN PIPE PILES - 2 IN)	4,080.00	LF		$	
2320	24619EC		SPLICE PILES (72 IN PIPE - 2 IN) REVISED: 12-6-13	2.00	EACH		$	
2330	24627EC		OPEN END INSIDE FIT CUTTING SHOE (72 IN - 2 IN)	28.00	EACH		$	
2340	24628EC		PILE CONSTRICTOR PLATE (72 IN - 2 IN)	28.00	EACH		$	
2350	24629EC		DECORATIVE FENCE PANEL	7.00	EACH		$	

Section: 0007 - MOBILIZATION & DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2360	02568		MOBILIZATION	1.00	LS		$	
2370	02569		DEMOBILIZATION	1.00	LS		$	

ESTIMATE OF QUANTITIES

		BID ITEM CODE	02231	02599	02998	08001	08033	08033	08033	08033	23233EC	23233EC	23233EC	23233EC	24550EC	24618EC	24618EC	24619EC	24627EC	24618EC	24618EC	24619EC	24627EC	24628EC	08100	08101	08104	08534	08150	08151	24112EC	08160	08160	08170	08500	08752	08820	20154ND	24608EC	23538EC	24629EC	24538ED	24606ED	24607ED	23859EC	24610EC	24611EC	24611EC	24612EC	24613EC	24614EC	23868EC	24615EC	24616EC	08267	24617EC
		BID ITEM	STRUCTURE GRANULAR BACKFILL	FABRIC GEOTEXTILE TYPE IV	MASONRY COATING	STRUCTURE EXCAVATION - COMPLETE	TEST PILES - FURNISH - 30 IN PIPE - 1 IN	TEST PILES - INSTALL - 30 IN PIPE - 1 IN	TEST PILES - FURNISH - 72 IN PIPE - 2 IN	TEST PILES - INSTALL - 72 IN PIPE - 2 IN	DYNAMIC PILE TESTING - ON WATER - INITIAL	DYNAMIC PILE TESTING - ON WATER - RESTRIKE	DYNAMIC PILE TESTING - ON LAND - INITIAL	DYNAMIC PILE TESTING - ON LAND - RESTRIKE	VIBRATION MONITORING	PIPE PILES - FURNISH - 30 IN - 1 IN	PIPE PILES - INSTALL - 30 IN - 1 IN	SPLICE PILES - 30 IN PIPE - 1 IN	OPEN END INSIDE FIT CUTTING SHOE - 30 IN - 1 IN	PIPE PILES - FURNISH - 72 IN - 2 IN	PIPE PILES - INSTALL - 72 IN - 2 IN	SPLICE PILES - 72 IN PIPE - 2 IN	OPEN END INSIDE FIT CUTTING SHOE - 72 IN - 2 IN	PILE CONSTRICTOR PLATE - 72 IN - 2 IN	CONCRETE - CLASS A (1)	CONCRETE - CLASS A MOD - (PIPE PILE INFILL)	CONCRETE - CLASS AA	CONCRETE OVERLAY - LATEX	STEEL REINFORCEMENT	STEEL REINFORCEMENT - EPOXY COATED	STEEL REINFORCEMENT - STAINLESS STEEL	STRUCTURAL STEEL (2) - ARCH SPAN	STRUCTURAL STEEL (3) - APPROACH SPANS	SHEAR CONNECTORS (4)	APPROACH SLAB	PAINT CLEARANCE GAUGES	DRAIN PIPE - 6 IN (FIBERGLASS)	DRAIN ASSEMBLY	BRIDGE STRAND HANGER - FABRICATE & INSTALL (5)	PEDESTRIAN RAILING	DECORATIVE FENCE PANEL	RAIL SYSTEM TYPE 11	HSS BARRIER RAIL - 3 RAIL	HSS BARRIER RAIL - 1 RAIL (6)	FINGER EXPANSION JOINT	MODULAR EXPANSION JOINT	SEISMIC DAMPERS - END BENTS	SEISMIC DAMPERS - PIERS 4 & 5	SEISMIC ISOLATION BEARING - TYPE A	SEISMIC ISOLATION BEARING - TYPE B	DISK EXPANSION BEARING	STRUCTURE LIGHTNING PROTECTION	ARCH FEATURE LIGHTING	PATH DELINEATION LIGHTING	NAVIGATION LIGHTING	INSTALL - AT&T DUCTBANK
		UNIT	CY	SY	SY	CY	LF	LF	LF	LF	EA	EA	EA	EA	LS	LF	LF	EA	EA	LF	LF	EA	EA	EA	CY	CY	CY	CY	LB	LB	LB	LS	LS	LS	SY	LS	LF	EA	LS	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LS	LS	LS	LS	LF
WEST APPROACH BRIDGE																																																										
SUBSTR.	END BENT 1	1143	328	290	1887	468	459					5	10		3393	3585	13	28						464		210		75341	55273																	6				6							
	PIER 1			541				172	149	3	5								303	278	1	3	3	521	87			124446																													
	PIER 2			651				172	148	3	5								303	276	1	3	3	524	88			168962																													
	PIER 3			741				172	151	3	5								303	282	1	3	3	569	83			179276																													
	PIER 4																																																6				6							
SUPERSTRUCTURE				4365										1.0												3758		1217448			1.0	1.0	204		200	16		1449	17	2880	1429	1451	74									1.0		1.0	1.0	1407
WEST APPR. SUBTOT.			1143	328	6588	1887	468	459	516	448	9	15	5	10	1.0	3393	3585	13	28	909	836	3	9	9	2078	258	3968		548025	1272721			1.0	1.0	204		200	16		1449	17	2880	1429	2709	74			6	6			12	1.0		1.0	1.0	1407
MAIN SPAN BRIDGE																																																										
SUBSTR.	PIER 4			1979				380	241	4	8								2040	1226	1	14	14	3587	981			731902	142355																													
	PIER 5			1979				380	227	4	8								2040	1142	1	14	14	3587	1085			731902	142355																													
SUPERSTRUCTURE				1411										1.0												1119	180		173857	283401	1.0		1.0		1.0	36	10	1.0	550	7	1108	550	550		148			4	2		1.0	1.0	1.0	1.0	556
MAIN SPAN SUBTOT.					5369				760	468	8	16			1.0					4080	2368	2	28	28	7174	2066	1119	180	1463804	458567	283401	1.0		1.0		1.0	36	10	1.0	550	7	1108	550	550		148			4	2		1.0	1.0	1.0	1.0	556
EAST APPROACH BRIDGE																																																										
SUBSTR.	PIER 5																																																6				6							
	PIER 6			856				398	270	4	8								536	385	2	5	5	845	337			332821																													
	PIER 7			665				172	150	3	5								303	280	1	3	3	531	84			170767																													
	PIER 8			572				172	142	3	5								303	264	1	3	3	549	106			126800																													
	PIER 9			434				172	144	3	5								303	268	1	3	3	422	100			112889																													
	END BENT 2	1143	328	307	1718	441	435					5	10		3185	3385	13	28						464		210		75341	55613																	6				6							
SUPERSTRUCTURE				5112										1.0												4385			1436348			1.0	1.0	204		270	22		1693	20	3368	1673	1695	74								1.0		1.0	1.0	1651
EAST APPR. SUBTOT.			1143	328	7946	1718	441	435	914	706	13	23	5	10	1.0	3185	3385	13	28	1445	1197	5	14	14	2811	627	4595		818618	1491961			1.0	1.0	204		270	22		1693	20	3368	1673	1695	74			6	6			12	1.0		1.0	1.0	1651

KY LAKE BRIDGE

UNIT	CY	SY	SY	CY	LF	LF	LF	LF	EA	EA	EA	EA	LS	LF	LF	EA	EA	LF	LF	EA	EA	EA	CY	CY	CY	CY	LB	LB	LB	LS	LS	LS	SY	LS	LF	EA	LS	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LS	LS	LS	LS	LF
BRIDGE TOTALS	2286	656	19903	3605	909	894	2190	1622	30	54	10	20	3.0	6578	6970	26	56	6434	4401	10	51	51	12063	2951	9682	180	2830447	3223249	283401	1.0	2.0	3.0	408	1.0	506	48	1.0	4061 (7)	44	7356	4017 (7)	5449 (6)(7)	148	148	12	12	4	2	24	3.0	1.0	3.0	3.0	3614

THE ESTIMATED QUANTITIES FOR DYNAMIC PILE TESTING ITEMS IN THE TABLE ABOVE INCLUDE THE CONTINGENCY QUANTITIES BELOW DUE TO THE POTENTIAL FOR ADDITIONAL TESTING BEYONG THE SPECIFIED MINIMUM. REFER TO THE "SPECIAL NOTE FOR DYNAMIC PILE TESTING" FOR ADDITIONAL INFORMATION REGARDING DYNAMIC TESTING REQUIREMENTS.

DYNAMIC PILE TESTING - ON WATER - INITIAL	6 EACH
DYNAMIC PILE TESTING - ON WATER - RESTRIKE	18 EACH
DYNAMIC PILE TESTING - ON LAND - INITIAL	4 EACH
DYNAMIC PILE TESTING - ON LAND - RESTRIKE	8 EACH

THE SPLICE QUANTITIES ARE DUE TO THE POTENTIAL FOR PILES BEING DRIVEN BELOW THE LOWEST ANTICIPATED PILE TIP ELEVATION. SEE "SPECIAL NOTE FOR PIPE PILES - INSTALL" FOR ADDITIONAL INFORMATION.

THE ESTIMATED QUANTITIES FOR PIPE PILE INSTALL ITEMS IN THE TABLE ABOVE INCLUDE THE CONTINGENCY QUANTITIES BELOW DUE TO THE POTENTIAL FOR PILE TIPS BELOW THE LOWEST ANTICIPATED PILE TIP ELEVATION. SEE "SPECIAL NOTE FOR PIPE PILES - INSTALL" FOR ADDITIONAL INFORMATION.

PIPE PILES INSTALL - 72 IN PIPE - 2 IN	200 LF
PIPE PILES INSTALL - 30 IN PIPE - 1 IN	520 LF

(1) CUBIC YARDS CONSIDERED "MASS CONCRETE" - WEST APPROACH BRIDGE = 1614 CY
CUBIC YARDS CONSIDERED "MASS CONCRETE" - MAIN SPAN BRIDGE = 7174 CY
CUBIC YARDS CONSIDERED "MASS CONCRETE" - EAST APPROACH BRIDGE = 2347 CY
CUBIC YARDS CONSIDERED "MASS CONCRETE" - KY LAKE BRIDGE - COMBINED APPROACHES = 11135 CY

(2) ESTIMATED WEIGHT OF STRUCTURAL STEEL - MAIN SPAN ARCH BRIDGE = 4741044 LBS

(3) ESTIMATED WEIGHT OF STRUCTURAL STEEL - WEST APPROACH BRIDGE = 9082604 LBS
ESTIMATED WEIGHT OF STRUCTURAL STEEL - EAST APPROACH BRIDGE = 10091557 LBS
ESTIMATED WEIGHT OF STRUCTURAL STEEL - KY LAKE BRIDGE - COMBINED APPROACHES = 19174161 LBS

(4) ESTIMATED WEIGHT OF SHEAR CONNECTORS - WEST APPROACH BRIDGE = 22604 LBS
ESTIMATED WEIGHT OF SHEAR CONNECTORS - MAIN ARCH SPAN BRIDGE = 32503 LBS
ESTIMATED WEIGHT OF SHEAR CONNECTORS - EAST APPROACH BRIDGE = 33489 LBS
ESTIMATED WEIGHT OF SHEAR CONNECTORS - KY LAKE BRIDGE - COMBINED APPROACHES = 88596 LBS

(5) ESTIMATED LENGTH OF BRIDGE HANGER STRAND = 5440 LF

(6) INCLUDES 1258 LF HSS BARRIER RAIL - 1 RAIL TO BE INSTALLED ON LAGOON BRIDGE = 1258 LF

(7) RAILING TOTALS INCLUDE 10% ADDITIONAL MATERIALS FOR FUTURE MAINTENANCE USE. THE CONTRACTOR SHALL SUPPLY 10% ADDITIONAL MATERIAL FOR FUTURE MAINTENANCE PURPOSES. THE CONTRACTOR SHALL DELIVER THIS MATERIAL FOR FUTURE MAINTENANCE TO A LOCATION IN THE DISTRICT AND STOCKPILE IT AS DIRECTED BY THE ENGINEER. THE POSTS, TUBES AND RAILING PANELS WILL NOT BE PAID SEPARATELY. INCLUDE THE COST OF FABRICATING, SUPPLYING, DELIVERING AND STOCKPILING THESE ADDITIONAL MATERIALS IN THE BID TOTAL PRICE OF THE RESPECTIVE INSTALLED PAY ITEMS FOR

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: GDS	CDW
DETAILED BY: JNA	ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

ESTIMATE OF QUANTITIES

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S002
DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 GTY.DGN
USER: cwethington
DATE PLOTTED: November 21, 2013
E-SHEET NAME: S24686 002
MicroStation v8.11.9.459

ESTIMATE OF QUANTITIES

BID ITEM CODE		02231	02599	02998	08001	08033	08033	08033	08033	23233EC	23233EC	23233EC	23233EC	24550EC	24618EC	24618EC	24618EC	24619EC	24627EC	24618EC	24618EC	24619EC	24627EC	24628EC	08100	08101	08104	08534	08150	08151	24112EC	08160	08160	08170	08500	08752	08820	20154ND	24608EC	23538EC	24629EC	24538ED	24606ED	24607ED	23859EC	24610EC	24611EC	24611EC	24612EC	24613EC	24614EC	23868EC	24615EC	24616EC	24616EC	08267	24617EC
BID ITEM		STRUCTURE GRANULAR BACKFILL	FABRIC GEOTEXTILE TYPE IV	MASONRY COATING	STRUCTURE EXCAVATION - COMPLETE	TEST PILES - FURNISH - 30 IN PIPE - 1 IN	TEST PILES - INSTALL - 30 IN PIPE - 1 IN	TEST PILES - FURNISH - 72 IN PIPE - 2 IN	TEST PILES - INSTALL - 72 IN PIPE - 2 IN	DYNAMIC PILE TESTING - ON WATER - INITIAL	DYNAMIC PILE TESTING - ON WATER - RESTRIKE	DYNAMIC PILE TESTING - ON LAND - INITIAL	DYNAMIC PILE TESTING - ON LAND - RESTRIKE	VIBRATION MONITORING	PIPE PILES - FURNISH - 30 IN - 1 IN	PIPE PILES - INSTALL - 30 IN - 1 IN	SPLICE PILES - 30 IN PIPE - 1 IN	OPEN END INSIDE FIT CUTTING SHOE - 30 IN - 1 IN	PIPE PILES - FURNISH - 72 IN - 2 IN	PIPE PILES - INSTALL - 72 IN - 2 IN	SPLICE PILES - 72 IN PIPE - 2 IN	OPEN END INSIDE FIT CUTTING SHOE - 72 IN - 2 IN	PILE CONSTRICTOR PLATE - 72 IN - 2 IN	CONCRETE - CLASS A (1)	CONCRETE - CLASS A MOD - (PIPE PILE INFILL)	CONCRETE - CLASS AA	CONCRETE OVERLAY - LATEX	STEEL REINFORCEMENT	STEEL REINFORCEMENT - EPOXY COATED	STEEL REINFORCEMENT - STAINLESS STEEL	STRUCTURAL STEEL - ARCH SPAN (2)	STRUCTURAL STEEL - APPROACH SPANS (3)	SHEAR CONNECTORS (4)	APPROACH SLAB	PAINT CLEARANCE GAUGES	DRAIN PIPE - 6 IN (FIBERGLASS)	DRAIN ASSEMBLY	BRIDGE STRAND HANGER - FABRICATE & INSTALL (5)	PEDESTRIAN RAILING	DECORATIVE FENCE PANEL	RAIL SYSTEM TYPE 11	HSS BARRIER RAIL - 3 RAIL	HSS BARRIER RAIL - 1 RAIL	FINGER EXPANSION JOINT	MODULAR EXPANSION JOINT	SEISMIC DAMPERS - END BENTS	SEISMIC DAMPERS - PIERS 4 & 5	SEISMIC ISOLATION BEARING - TYPE A	SEISMIC ISOLATION BEARING - TYPE B	DISK EXPANSION BEARING	STRUCTURE LIGHTNING PROTECTION	ARCH FEATURE LIGHTING	PATH DELINEATION LIGHTING	NAVIGATION LIGHTING	INSTALL - AT&T DUCTBANK
UNIT		CY	SY	SY	CY	LF	LF	LF	LF	EA	EA	EA	EA	LS	LF	LF	EA	EA	LF	LF	EA	EA	EA	CY	CY	CY	CY	LB	LB	LB	LS	LS	LS	SY	LS	LF	EA	LS	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LS	LS	LS	LS	LF
WEST APPROACH BRIDGE																																																									
SUBSTR.	END BENT 1	1143	328	290	1887	468	459					5	10		3393	3585	13	28						464		210		75341	55273																	6				6							
	PIER 1			541				172	149	3	5								303	278	1	3	3	521	87			124446																														
	PIER 2			651				172	148	3	5								303	276	1	3	3	524	88			168962																														
	PIER 3			741				172	151	3	5								303	282	1	3	3	569	83			179276																														
	PIER 4																																																								
SUPERSTRUCTURE				4365										1.0												3758			1217448			1.0	1.0	204		200	16		1449	17	2880	1429	1451	74						1.0		1.0	1.0	1407
WEST APPR. SUBTOT.		1143	328	6588	1887	468	459	516	448	9	15	5	10	1.0	3393	3585	13	28	909	836	3	9	9	2078	258	3968		548025	1272721			1.0	1.0	204		200	16		1449	17	2880	1429	2709 (6)	74		6	6			12	1.0		1.0	1.0	1407
MAIN SPAN BRIDGE																																																								
SUBSTR.	PIER 4			1979				380	241	4	8								2040	1226	1	14	14	3587	981			731902	142355																														
	PIER 5			1979				380	227	4	8								2040	1142	1	14	14	3587	1085			731902	142355																														
SUPERSTRUCTURE				1411										1.0												1119	180		173857	283401	1.0		1.0		1.0	36	10	1.0	550	7	1108	550	550		148			4	2		1.0	1.0	1.0	1.0	556
MAIN SPAN SUBTOT.				5369				760	468	8	16			1.0					4080	2368	2	28	28	7174	2066	1119	180	1463804	458567	283401	1.0		1.0		1.0	36	10	1.0	550	7	1108	550	550		148			4	2		1.0	1.0	1.0	1.0	556
EAST APPROACH BRIDGE																																																								
SUBSTR.	PIER 5																																																							
	PIER 6			856				398	270	4	8								536	385	2	5	5	845	337			332821																														
	PIER 7			665				172	150	3	5								303	280	1	3	3	531	84			170767																														
	PIER 8			572				172	142	3	5								303	264	1	3	3	549	106			126800																														
	PIER 9			434				172	144	3	5								303	268	1	3	3	422	100			112889																														
	END BENT 2	1143	328	307	1718	441	435					5	10		3185	3385	13	28						464		210		75341	55613																	6				6							
SUPERSTRUCTURE				5112										1.0												4385			1436348			1.0	1.0	204		270	22		1693	20	3368	1673	1695	74						1.0		1.0	1.0	1651
EAST APPR. SUBTOT.		1143	328	7946	1718	441	435	914	706	13	23	5	10	1.0	3185	3385	13	28	1445	1197	5	14	14	2811	627	4595		818618	1491961			1.0	1.0	204		270	22		1693	20	3368	1673	1695	74		6	6			12	1.0		1.0	1.0	1651

KY LAKE BRIDGE

UNIT	CY	SY	SY	CY	LF	LF	LF	LF	EA	EA	EA	EA	LS	LF	LF	EA	EA	LF	LF	EA	EA	EA	CY	CY	CY	CY	LB	LB	LB	LS	LS	LS	SY	LS	LF	EA	LS	LF	EA	LF	LF	LF	LF	LF	EA	EA	EA	EA	EA	LS	LS	LS	LS	LF
BRIDGE TOTALS	2286	656	19903	3605	909	894	2190	1622	30	54	10	20	3.0	6578	6970	26	56	6434	4401	10	51	51	12063	2951	9682	180	2830447	3223249	283401	1.0	2.0	3.0	408	1.0	506	48	1.0	4061 (7)	44	7356	4017 (7)	5449 (6)(7)	148	148	12	12	4	2	24	3.0	1.0	3.0	3.0	3614

THE ESTIMATED QUANTITIES FOR DYNAMIC PILE TESTING ITEMS IN THE TABLE ABOVE INCLUDE THE CONTINGENCY QUANTITIES BELOW DUE TO THE POTENTIAL FOR ADDITIONAL TESTING BEYONG THE SPECIFIED MINIMUM. REFER TO THE "SPECIAL NOTE FOR DYNAMIC PILE TESTING" FOR ADDITIONAL INFORMATION REGARDING DYNAMIC TESTING REQUIREMENTS.

DYNAMIC PILE TESTING - ON WATER - INITIAL	6 EACH
DYNAMIC PILE TESTING - ON WATER - RESTRIKE	18 EACH
DYNAMIC PILE TESTING - ON LAND - INITIAL	4 EACH
DYNAMIC PILE TESTING - ON LAND - RESTRIKE	8 EACH

THE SPLICE QUANTITIES ARE DUE TO THE POTENTIAL FOR PILES BEING DRIVEN BELOW THE LOWEST ANTICIPATED PILE TIP ELEVATION. SEE "SPECIAL NOTE FOR PIPE PILES - INSTALL" FOR ADDITIONAL INFORMATION.

THE ESTIMATED QUANTITIES FOR PIPE PILE INSTALL ITEMS IN THE TABLE ABOVE INCLUDE THE CONTINGENCY QUANTITIES BELOW DUE TO THE POTENTIAL FOR PILE TIPS BELOW THE LOWEST ANTICIPATED PILE TIP ELEVATION. SEE "SPECIAL NOTE FOR PIPE PILES - INSTALL" FOR ADDITIONAL INFORMATION.

PIPE PILES INSTALL - 72 IN PIPE - 2 IN	200 LF
PIPE PILES INSTALL - 30 IN PIPE - 1 IN	520 LF

(1) CUBIC YARDS CONSIDERED "MASS CONCRETE" - WEST APPROACH BRIDGE = 1614 CY
CUBIC YARDS CONSIDERED "MASS CONCRETE" - MAIN SPAN BRIDGE = 7174 CY
CUBIC YARDS CONSIDERED "MASS CONCRETE" - EAST APPROACH BRIDGE = 2347 CY
CUBIC YARDS CONSIDERED "MASS CONCRETE" - KY LAKE BRIDGE - COMBINED APPROACHES = 11135 CY

(2) ESTIMATED WEIGHT OF STRUCTURAL STEEL - MAIN SPAN ARCH BRIDGE = 4741044 LBS

(3) ESTIMATED WEIGHT OF STRUCTURAL STEEL - WEST APPROACH BRIDGE = 9082604 LBS
ESTIMATED WEIGHT OF STRUCTURAL STEEL - EAST APPROACH BRIDGE = 10091557 LBS
ESTIMATED WEIGHT OF STRUCTURAL STEEL - KY LAKE BRIDGE - COMBINED APPROACHES = 19174161 LBS

(4) ESTIMATED WEIGHT OF SHEAR CONNECTORS - WEST APPROACH BRIDGE = 22604 LBS
ESTIMATED WEIGHT OF SHEAR CONNECTORS - MAIN ARCH SPAN BRIDGE = 32503 LBS
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ESTIMATED WEIGHT OF SHEAR CONNECTORS - KY LAKE BRIDGE - COMBINED APPROACHES = 88596 LBS

(5) ESTIMATED LENGTH OF BRIDGE HANGER STRAND = 5440 LF

(6) INCLUDES 1258 LF HSS BARRIER RAIL - 1 RAIL TO BE INSTALLED ON LAGOON BRIDGE = 1258 LF

(7) ADDITIONAL MATERIALS FOR FUTURE MAINTENANCE PURPOSES: FOR THE MATERIALS LISTED, THE CONTRACTOR SHALL SUPPLY 10% ADDITIONAL MATERIAL FOR FUTURE MAINTENANCE PURPOSES. THE CONTRACTOR SHALL DELIVER THIS MATERIAL FOR FUTURE MAINTENANCE TO A LOCATION IN THE DISTRICT AND STOCKPILE IT AS DIRECTED BY THE ENGINEER. THE POSTS, TUBES AND RAILING PANELS WILL NOT BE PAID SEPARATELY. INCLUDE THE COST OF FABRICATING, SUPPLYING, DELIVERING AND STOCKPILING THESE ADDITIONAL MATERIALS IN THE BID TOTAL PRICE OF THE RESPECTIVE INSTALLED PAY ITEMS FOR

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: GDS | CDW
DETAILED BY: JNA | ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

ESTIMATE OF QUANTITIES

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S002
DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 QTY.DGN
USER: cwethington
DATE PLOTTED: November 21, 2013
E-SHEET NAME: S24686 002
MicroStation v8.11.9.459

	SHEET NO.	DESCRIPTION
GENERAL	S001	TITLE SHEET
	S002	ESTIMATE OF QUANTITIES
	S003	INDEX OF DRAWINGS
	S004	GENERAL NOTES - 1
	S005	GENERAL NOTES - 2
	S006	GENERAL NOTES - 3
	S006A	GENERAL NOTES - 4
	S007	WIND LOAD CASES - 1
	S008	WIND LOAD CASES - 2
	S009	WIND LOAD CASES - 3
	S010	ABBREVIATIONS
	S011	BAR TYPES
	S012	KEY PLAN
	S013	LAYOUT SHEET
	S014	LAYOUT SHEET
	S015	LAYOUT SHEET
	S016	APPROACH SPAN TYPICAL SECTION
	S017	MAIN SPAN TYPICAL SECTION
	S018	HISTORICAL WATER SURFACE ELEV.
FOUNDATIONS	S019	SUBSURFACE DATA
	S020	SUBSURFACE DATA
	S021	SUBSURFACE DATA
	S022	SUBSURFACE DATA
	S023	SUBSURFACE DATA
	S024	SUBSURFACE DATA
	S025	SUBSURFACE DATA
	S026	SUBSURFACE DATA
	S027	SUBSURFACE DATA
	S028	SUBSURFACE DATA
	S029	SUBSURFACE DATA
	S030	SUBSURFACE DATA
	S031	SUBSURFACE DATA
	S032	SUBSURFACE DATA
	S033	SUBSURFACE DATA
	S034	SUBSURFACE DATA
	S035	SUBSURFACE DATA
	S036	FOUNDATION LAYOUT
	S037	FOUNDATION LAYOUT
	S038	FOUNDATION LAYOUT
	S039	WEST APPROACH END BENT 1 - PILE RECORD
	S039A	WEST APPROACH PIERS - PILE RECORD
	S040	PIER 4 & 5 PILE RECORD
	S041	EAST APPROACH PIERS PILE RECORD
	S041A	EAST APPROACH END BENT 2 - PILE RECORD
	S042	SHEET NOT USED
	S043	END BENT PIPE PILE DETAILS
	S044	PIER PIPE PILE DETAILS
SUBSTRUCTURE		WEST APPROACH SPANS
	S045	END BENT 1
	S046	END BENT 1 DETAILS
	S047	END BENT 1 DETAILS
	S048	END BENT 1 DETAILS
	S049	END BENT 1 DETAILS
	S050	END BENT 1 DETAILS
	S051	END BENT 1 - BILL OF REINFORCEMENT
	S052	PIER 1 PILE CAP DETAILS
	S052A	PIER 2 & 3 PILE CAP DETAILS
	S053	PIER 1
	S054	PIER 1 - DETAILS
	S055	PIER 2
	S056	PIER 3
	S057	PIER 2 & 3 DETAILS
	S058	PIER 1, 2 & 3 - BILL OF REINFORCEMENT
		MAIN SPAN
	S059	PIER 4 PLAN & ELEVATION
	S060	PIER 5 PLAN & ELEVATION
	S061	PIER 4 OR 5 FOOTING LAYOUT
	S062	PIER 4/5 FTG. REINF. DTLS. 1
	S063	PIER 4/5 FTG. REINF. DTLS. 2
SUBSTRUCTURE	S064	PIER 4/5 FTG. REINF. DTLS. 3
	S065	PIER 4/5 FTG. REINF. DTLS. 4
	S066	PIER 4/5 FTG. REINF. DTLS. 5
	S067	PIER 4/5 FTG. REINF. DTLS. 6
	S068	PIER 4/5 COLUMN DETAILS 1
	S069	PIER 4/5 COLUMN DETAILS 2
	S070	PIER 4/5 CAP/STRUT DTLS. 1
	S071	PIER 4/5 CAP/STRUT DTLS. 2
	S072	PIER 4/5 CTR. BRG. PED. DTLS.
	S073	PIER 4/5 MISC. DTLS.
	S074	PIER 4/5 REINF. STEEL SCHED.
	S075	PIER 4/5 REINF. STEEL SCHED.
	S076	PIER 4/5 REINF. STEEL SCHED.
	S077	PIER 4/5 REINF. STEEL SCHED.
	S078	VERT. CLEARANCE GAUGE DETAILS
		EAST APPROACH SPANS
	S079	PIER 6 PILE CAP DETAILS
	S080	PIER 7 PILE CAP DETAILS
	S080A	PIER 8 & 9 PILE CAP DETAILS
	S081	PIER 6
	S081A	PIER 6 DETAILS
	S082	PIER 7
	S083	PIER 7 DETAILS
	S084	PIER 8
	S085	PIER 9
	S086	PIER 8 & 9 DETAILS
	S087	PIER 6 THRU 9 BILL OF REINFORCEMENT
	S088	END BENT 2
	S089	END BENT 2 - DETAILS
	S090	END BENT 2 - DETAILS
	S091	END BENT 2 - DETAILS
	S092	END BENT 2 - DETAILS
	S093	END BENT 2 - DETAILS
	S094	END BENT 2 - BILL OF REINFORCEMENT
SUPERSTRUCTURE		WEST APPROACH SPANS
	S095	WEST APPROACH FRAMING PLAN
	S096	WEST APPROACH GIRDER ELEVATION
	S097	STRUCTURAL STEEL DETAILS
	S098	WEST APPROACH CAMBER
	S099	FIELD SPLICE DETAILS
	S100	FIELD SPLICE DETAILS
	S101	FIELD SPLICE DETAILS
	S102	STRUCTURAL STEEL DETAILS
	S103	STRUCTURAL STEEL DETAILS
	S104	STRUCTURAL STEEL DETAILS
	S105	BEARING DETAILS
	S106	BEARING DETAILS
	S107	BEARING DETAILS
	S108	SLAB TYPICAL SECTION
	S109	PLAN OF SLAB
	S110	PLAN OF SLAB
	S111	PLAN OF SLAB
	S112	PLAN OF SLAB
	S113	END BENT 1 DIAPHRAGM
	S114	PIER 4 DIAPHRAGM
	S115	RAIL POST SPACING - SPAN 1 & 2
	S116	RAIL POST SPACING - SPAN 3 & 4
	S117	DECK DRAIN DETAILS
	S118	APPROACH SLAB
	S119	SUPERSTRUCTURE BILL OF REINFORCEMENT
	S120	CONSTRUCTION ELEVATIONS
	S121	CONSTRUCTION ELEVATIONS
	S122	CONSTRUCTION ELEVATIONS
	S123	CONSTRUCTION ELEVATIONS
	S124	CONSTRUCTION ELEVATIONS
	S125	CONSTRUCTION ELEVATIONS
	S126	FINGER DAM DETAILS
	S127	FINGER DAM DETAILS
	S128	SIDEWALK EXPANSION JOINT
	S129	SLIDING PLATE DETAILS
SUPERSTRUCTURE	S130	FINGER DAM DETAILS
	S131	FINGER DAM DETAILS
	S132	SHEET NOT USED
		MAIN SPAN
	S133	ARCH - KEY PLAN
	S134	MAIN SPAN ARCH GEOMETRY - 1
	S135	MAIN SPAN ARCH GEOMETRY - 2
	S136	MAIN SPAN ARCH GEOMETRY - 3
	S137	MAIN SPAN ARCH GEOMETRY - 4
	S138	RIB BRACING LAYOUT PLAN
	S139	ARCH CAMBER DIAGRAM - 1
	S140	ARCH CAMBER DIAGRAM - 2
	S141	MEMBER FORCES
	S142	ARCH RIB MEMBER FORCES
	S143	TIE GIRDER MEMBER FORCES
	S144	HANGER MEMBER FORCES
	S145	BRACING MEMBER FORCES
	S146	FLOORBEAM MEMBER FORCES
	S147	STRINGER MEMBER FORCES
	S148	KNUCKLE JOINT ELEVATION
	S149	KNUCKLE DETAILS - 1
	S150	KNUCKLE DETAILS - 2
	S151	KNUCKLE DETAILS - 3
	S152	END FLOORBEAM CONNECTION - 1
	S153	END FLOORBEAM CONNECTION - 2
	S154	END FLOORBEAM CONNECTION - 3
	S155	KNUCKLE JOINT ACCESS DOOR
	S156	ARCH RIB RS1-RS2 (RS11-RS12)
	S157	ARCH RIB RS2-RS3 (RS10-RS11)
	S158	ARCH RIB RS3-RS4 (RS9-RS10)
	S159	ARCH RIB RS4-RS5 (RS8-RS9)
	S160	ARCH RIB RS5-RS6 (RS7-RS8)
	S161	ARCH RIB RS6-RS7
	S162	ARCH RIB SPLICES RS1 & RS12
	S163	ARCH RIB SPLICES RS2 & RS11
	S164	RIB BRACING ISOMETRIC DETAIL
	S165	DETAIL RB1 (RB9)
	S166	DETAIL RB2 (RB8)
	S167	DETAIL RB3 (RB7)
	S168	DETAIL RB4 (RB6)
	S169	DETAIL RB5
	S170	RIB BRACING SWEEP
	S171	TIE GIRDER TS1-TS2 (TS7-TS8)
	S172	TIE GIRDER TS2-TS3 (TS6-TS7)
	S173	TIE GIRDER TS3-TS4 (TS5-TS6)
	S174	TIE GIRDER TS4-TS5
	S175	TIE SPLICE TS1 & TS8
	S176	TIE SPLICE TS2 & TS7
	S177	TIE SPLICE TS3 - TS6
	S178	TIE GIRDER ACCESS DOOR
	S178A	INSPECTION ACCESS DETAILS
	S179	HANGER DETAILS
	S180	HANGER DETAILS
	S181	RIB HANGER DETAILS - 1
	S182	RIB HANGER DETAILS - 2
	S183	TIE HANGER CONN. - 1
	S184	TIE HANGER CONN. - 2
	S184A	TIE HANGER CONN. - 3
	S184B	TIE HANGER CONN. - 4
	S185	HANGER DIAPHRAGMS
	S186	FRAMING PLAN - ARCH SPAN
	S187	END FLOORBEAM
	S188	INTERIOR FLOORBEAM
	S189	FLOORBEAM CAMBER
	S190	FB1 (FB11) TO TIE GIRDER CONN.
	S191	FB2-FB5 (FB7-FB10) TO TIE CONN
	S191A	FB6 TO TIE GIRDER CONN.
	S192	STRINGER ELEVATION
	S193	STRINGER DEFLECTIONS
	S194	STRINGER DETAILS
	S195	LATERAL BRACING DETAILS
SUPERSTRUCTURE	S196	DIAPHRAGM DETAILS
	S197	UTILITY PLAN - ARCH SPAN
	S198	UTILITY STRINGER ELEVATION
	S199	DRAINAGE PLAN AND DETAILS
	S200	FRICTION ISO. BRG. KEY PLAN
	S201	TYPE A FRICTION ISOLATION BRG.
	S202	TYPE B FRICTION ISOLATION BRG.
	S203	LCE ISOLATION BEARING KEY PLAN
	S204	TYPE A LCE ISOLATION BRG
	S205	TYPE B LCE ISOLATION BRG
	S206	MODULAR EXPANSION JOINT
	S207	MODULAR EXP. JOINT DETAILS - 1
	S207A	MODULAR EXP. JOINT DETAILS - 2
	S207B	MODULAR EXP. JOINT DETAILS - 3
	S207C	MODULAR EXP. JOINT DETAILS - 3A
	S208	MODULAR EXP. JOINT DETAILS - 4
	208A	MODULAR EXP. JOINT DETAILS - 5
	208B	MODULAR EXP. JOINT DETAILS - 6
	S209	MODULAR EXP. JOINT DETAILS - 7
	S209A	MODULAR EXP. JOINT DETAILS - 8
	S210	SLAB TYPICAL SECTION
	S211	PLAN OF SLAB
	S212	PLAN OF SLAB
	S213	SLAB DETAILS
	S214	POURING SEQUENCE
	S215	TRAFFIC RAIL DETAILS
	S216	COMBINATION RAIL DETAILS
	S217	SLAB BILL OF REINFORCEMENT
	S218	CONSTRUCTION ELEVATIONS - 1
	S219	CONSTRUCTION ELEVATIONS - 2
	S220	CONSTRUCTION ELEVATIONS - 3
		EAST APPROACH SPANS
	S221	EAST APPROACH FRAMING PLAN
	S222	EAST APPROACH GIRDER ELEVATION
	S223	STRUCTURAL STEEL DETAILS
	S224	EAST APPROACH CAMBER
	S225	FIELD SPLICE DETAILS
	S226	FIELD SPLICE DETAILS
	S227	SLAB TYPICAL SECTION
	S228	PLAN OF SLAB
	S229	PLAN OF SLAB
	S230	PLAN OF SLAB
	S231	PLAN OF SLAB
	S232	PLAN OF SLAB
	S233	PIER 5 DIAPHRAGM
	S234	END BENT 2 DIAPHRAGM
	S235	RAIL POST SPACING - SPAN 6 & 7
	S236	RAIL POST SPACING - SPAN 8
	S237	RAIL POST SPACING - SPAN 9 & 10
	S238	SUPERSTRUCTURE - BILL OF REINFORCEMENT
	S239	CONSTRUCTION ELEVATIONS
	S240	CONSTRUCTION ELEVATIONS
	S241	CONSTRUCTION ELEVATIONS
	S242	CONSTRUCTION ELEVATIONS
	S243	CONSTRUCTION ELEVATIONS
	S244	CONSTRUCTION ELEVATIONS
	S245	CONSTRUCTION ELEVATIONS
	S246	CONSTRUCTION ELEVATIONS
MISCELLANEOUS & COMMON SHEETS	S247	RAIL DETAILS
	S248	PEDESTRIAN RAILING
	S249	PEDESTRIAN RAILING DETAILS
	S250	DECORATIVE FENCE PANEL DTS.
	S251	LAGOON BRIDGE PLAN OF SLAB
	S252	LAGOON BRIDGE TRAFFIC RAILS
	S253	LAGOON BRIDGE A.S. RAIL DETAIL
	S254	LAGOON BRIDGE A.S. SLAB DETAIL
	S255	SEISMIC DAMPER DETAILS
	S256	GIRDER INSPECTION RAIL
	S256A	PIER CAP INSPECTION RAIL
	S257	AT&T DUCTBANK LAYOUT
	S258	GRATED UTLITY PLATFORM DETAIL
	S259	REMOVAL OF BRIDGE STRUCTURE
	S260	LIGHTING NOTES
	S261	LIGHTING NOTES
	S262	LIGHTING GENERAL SUMMARY
	S263	WIRING DIAGRAM
	S264	NAVIGATION LIGHTING LAYOUT
	S265	NAVIGATION LIGHT DETAILS
	S266	NAVIGATION LIGHT DETAILS
	S267	NAVIGATION LIGHT DETAILS 2
	S268	PATHWAY DELINEATION LIGHTING LAYOUT
	S269	ARCH LIGHTING LAYOUT
	S270	CONTROLLER DETAILS
	S271	LIGHTING DETAILS
	S272	LIGHTING DETAILS
	S273	LIGHTING DETAILS
	S274	SOLAR POWERED BATTERY BACKUP DETAILS
	S275	LIGHTING SCHEMATIC LAYOUT
	S275A	LED LIGHT FIX. ATTACH. DTLS.
	S276	LIGHTNING PROTECTION PLAN
	S277	LIGHTNING PROTECTION PLAN
	S278	LIGHTNING PROTECTION DETAILS

MicroStation v8.11.9.459
E-SHEET NAME: S24686 003
USER: cwethington
DATE PLOTTED: November 21, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 INDOLDGN

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US68
CROSSING: KENTUCKY LAKE

INDEX OF DRAWINGS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
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SHEET NO. S003
DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686_INDOI.DGN
USER: cwethington
DATE PLOTTED: November 21, 2013
E-SHEET NAME: S24686 003
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	SHEET NO.	DESCRIPTION
GENERAL	S001	TITLE SHEET
	S002	ESTIMATE OF QUANTITIES
	S003	INDEX OF DRAWINGS
	S004	GENERAL NOTES - 1
	S005	GENERAL NOTES - 2
	S006	GENERAL NOTES - 3
	S006A	GENERAL NOTES - 4
	S007	WIND LOAD CASES - 1
	S008	WIND LOAD CASES - 2
	S009	WIND LOAD CASES - 3
	S010	ABBREVIATIONS
	S011	BAR TYPES
	S012	KEY PLAN
	S013	LAYOUT SHEET
	S014	LAYOUT SHEET
	S015	LAYOUT SHEET
	S016	APPROACH SPAN TYPICAL SECTION
	S017	MAIN SPAN TYPICAL SECTION
	S018	HISTORICAL WATER SURFACE ELEV.
FOUNDATIONS	S019	SUBSURFACE DATA
	S020	SUBSURFACE DATA
	S021	SUBSURFACE DATA
	S022	SUBSURFACE DATA
	S023	SUBSURFACE DATA
	S024	SUBSURFACE DATA
	S025	SUBSURFACE DATA
	S026	SUBSURFACE DATA
	S027	SUBSURFACE DATA
	S028	SUBSURFACE DATA
	S029	SUBSURFACE DATA
	S030	SUBSURFACE DATA
	S031	SUBSURFACE DATA
	S032	SUBSURFACE DATA
	S033	SUBSURFACE DATA
	S034	SUBSURFACE DATA
	S035	SUBSURFACE DATA
	S036	FOUNDATION LAYOUT
	S037	FOUNDATION LAYOUT
	S038	FOUNDATION LAYOUT
	S039	WEST APPROACH END BENT 1 - PILE RECORD
	S039A	WEST APPROACH PIERS - PILE RECORD
	S040	PIER 4 & 5 PILE RECORD
	S041	EAST APPROACH PIERS PILE RECORD
	S041A	EAST APPROACH END BENT 2 - PILE RECORD
	S042	SHEET NOT USED
	S043	END BENT PIPE PILE DETAILS
	S044	PIER PIPE PILE DETAILS
SUBSTRUCTURE		WEST APPROACH SPANS
	S045	END BENT 1
	S046	END BENT 1 DETAILS
	S047	END BENT 1 DETAILS
	S048	END BENT 1 DETAILS
	S049	END BENT 1 DETAILS
	S050	END BENT 1 DETAILS
	S051	END BENT 1 - BILL OF REINFORCEMENT
	S052	PIER 1 PILE CAP DETAILS
	S052A	PIER 2 & 3 PILE CAP DETAILS
	S053	PIER 1
	S054	PIER 1 - DETAILS
	S055	PIER 2
	S056	PIER 3
	S057	PIER 2 & 3 DETAILS
	S058	PIER 1, 2 & 3 - BILL OF REINFORCEMENT
		MAIN SPAN
	S059	PIER 4 PLAN & ELEVATION
	S060	PIER 5 PLAN & ELEVATION
	S061	PIER 4 OR 5 FOOTING LAYOUT
	S062	PIER 4/5 FTG. REINF. DTLS. 1
	S063	PIER 4/5 FTG. REINF. DTLS. 2

	SHEET NO.	DESCRIPTION
SUBSTRUCTURE	S064	PIER 4/5 FTG. REINF. DTLS. 3
	S065	PIER 4/5 FTG. REINF. DTLS. 4
	S066	PIER 4/5 FTG. REINF. DTLS. 5
	S067	PIER 4/5 FTG. REINF. DTLS. 6
	S068	PIER 4/5 COLUMN DETAILS 1
	S069	PIER 4/5 COLUMN DETAILS 2
	S070	PIER 4/5 CAP/STRUT DTLS. 1
	S071	PIER 4/5 CAP/STRUT DTLS. 2
	S072	PIER 4/5 CTR. BRG. PED. DTLS.
	S073	PIER 4/5 MISC. DTLS.
	S074	PIER 4/5 REINF. STEEL SCHED.
	S075	PIER 4/5 REINF. STEEL SCHED.
	S076	PIER 4/5 REINF. STEEL SCHED.
	S077	PIER 4/5 REINF. STEEL SCHED.
	S078	VERT. CLEARANCE GAUGE DETAILS
		EAST APPROACH SPANS
	S079	PIER 6 PILE CAP DETAILS
	S080	PIER 7 PILE CAP DETAILS
	S080A	PIER 8 & 9 PILE CAP DETAILS
	S081	PIER 6
	S081A	PIER 6 DETAILS
	S082	PIER 7
	S083	PIER 7 DETAILS
	S084	PIER 8
	S085	PIER 9
	S086	PIER 8 & 9 DETAILS
	S087	PIER 6 THRU 9 BILL OF REINFORCEMENT
	S088	END BENT 2
	S089	END BENT 2 - DETAILS
	S090	END BENT 2 - DETAILS
	S091	END BENT 2 - DETAILS
	S092	END BENT 2 - DETAILS
	S093	END BENT 2 - DETAILS
	S094	END BENT 2 - BILL OF REINFORCEMENT
SUPERSTRUCTURE		WEST APPROACH SPANS
	S095	WEST APPROACH FRAMING PLAN
	S096	WEST APPROACH GIRDER ELEVATION
	S097	STRUCTURAL STEEL DETAILS
	S098	WEST APPROACH CAMBER
	S099	FIELD SPLICE DETAILS
	S100	FIELD SPLICE DETAILS
	S101	FIELD SPLICE DETAILS
	S102	STRUCTURAL STEEL DETAILS
	S103	STRUCTURAL STEEL DETAILS
	S104	STRUCTURAL STEEL DETAILS
	S105	BEARING DETAILS
	S106	BEARING DETAILS
	S107	BEARING DETAILS
	S108	SLAB TYPICAL SECTION
	S109	PLAN OF SLAB
	S110	PLAN OF SLAB
	S111	PLAN OF SLAB
	S112	PLAN OF SLAB
	S113	END BENT 1 DIAPHRAGM
	S114	PIER 4 DIAPHRAGM
	S115	RAIL POST SPACING - SPAN 1 & 2
	S116	RAIL POST SPACING - SPAN 3 & 4
	S117	DECK DRAIN DETAILS
	S118	APPROACH SLAB
	S119	SUPERSTRUCTURE BILL OF REINFORCEMENT
	S120	CONSTRUCTION ELEVATIONS
	S121	CONSTRUCTION ELEVATIONS
	S122	CONSTRUCTION ELEVATIONS
	S123	CONSTRUCTION ELEVATIONS
	S124	CONSTRUCTION ELEVATIONS
	S125	CONSTRUCTION ELEVATIONS
	S126	FINGER DAM DETAILS
	S127	FINGER DAM DETAILS
	S128	SIDEWALK EXPANSION JOINT
	S129	SLIDING PLATE DETAILS

	SHEET NO.	DESCRIPTION
SUPERSTRUCTURE	S130	FINGER DAM DETAILS
	S131	FINGER DAM DETAILS
	S132	SHEET NOT USED
		MAIN SPAN
	S133	ARCH - KEY PLAN
	S134	MAIN SPAN ARCH GEOMETRY - 1
	S135	MAIN SPAN ARCH GEOMETRY - 2
	S136	MAIN SPAN ARCH GEOMETRY - 3
	S137	MAIN SPAN ARCH GEOMETRY - 4
	S138	RIB BRACING LAYOUT PLAN
	S139	ARCH CAMBER DIAGRAM - 1
	S140	ARCH CAMBER DIAGRAM - 2
	S141	MEMBER FORCES
	S142	ARCH RIB MEMBER FORCES
	S143	TIE GIRDER MEMBER FORCES
	S144	HANGER MEMBER FORCES
	S145	BRACING MEMBER FORCES
	S146	FLOORBEAM MEMBER FORCES
	S147	STRINGER MEMBER FORCES
	S148	KNUCKLE JOINT ELEVATION
	S149	KNUCKLE DETAILS - 1
	S150	KNUCKLE DETAILS - 2
	S151	KNUCKLE DETAILS - 3
	S152	END FLOORBEAM CONNECTION - 1
	S153	END FLOORBEAM CONNECTION - 2
	S154	END FLOORBEAM CONNECTION - 3
	S155	KNUCKLE JOINT ACCESS DOOR
	S156	ARCH RIB RS1-RS2 (RS11-RS12)
	S157	ARCH RIB RS2-RS3 (RS10-RS11)
	S158	ARCH RIB RS3-RS4 (RS9-RS10)
	S159	ARCH RIB RS4-RS5 (RS8-RS9)
	S160	ARCH RIB RS5-RS6 (RS7-RS8)
	S161	ARCH RIB RS6-RS7
	S162	ARCH RIB SPLICES RS1 & RS12
	S163	ARCH RIB SPLICES RS2 & RS11
	S164	RIB BRACING ISOMETRIC DETAIL
	S165	DETAIL RB1 (RB9)
	S166	DETAIL RB2 (RB8)
	S167	DETAIL RB3 (RB7)
	S168	DETAIL RB4 (RB6)
	S169	DETAIL RB5
	S170	RIB BRACING SWEEP
	S171	TIE GIRDER TS1-TS2 (TS7-TS8)
	S172	TIE GIRDER TS2-TS3 (TS6-TS7)
	S173	TIE GIRDER TS3-TS4 (TS5-TS6)
	S174	TIE GIRDER TS4-TS5
	S175	TIE SPLICE TS1 & TS8
	S176	TIE SPLICE TS2 & TS7
	S177	TIE SPLICE TS3 - TS6
	S178	TIE GIRDER ACCESS DOOR
	S178A	INSPECTION ACCESS DETAILS
	S179	HANGER DETAILS
	S180	HANGER DETAILS
	S181	RIB HANGER DETAILS - 1
	S182	RIB HANGER DETAILS - 2
	S183	TIE HANGER CONN. - 1
	S184	TIE HANGER CONN. - 2
	S184A	TIE HANGER CONN. - 3
	S184B	TIE HANGER CONN. - 4
	S185	HANGER DIAPHRAGMS
	S186	FRAMING PLAN - ARCH SPAN
	S187	END FLOORBEAM
	S188	INTERIOR FLOORBEAM
	S189	FLOORBEAM CAMBER
	S190	FB1 (FB11) TO TIE GIRDER CONN.
	S191	FB2-FB5 (FB7-FB10) TO TIE CONN
	S191A	FB6 TO TIE GIRDER CONN.
	S192	STRINGER ELEVATION
	S193	STRINGER DEFLECTIONS
	S194	STRINGER DETAILS
	S195	LATERAL BRACING DETAILS

	SHEET NO.	DESCRIPTION
SUPERSTRUCTURE	S196	DIAPHRAGM DETAILS
	S197	UTILITY PLAN - ARCH SPAN
	S198	UTILITY STRINGER ELEVATION
	S199	DRAINAGE PLAN AND DETAILS
	S200	FRICTION ISO. BRG. KEY PLAN
	S201	TYPE A FRICTION ISOLATION BRG.
	S202	TYPE B FRICTION ISOLATION BRG.
	S203	LCE ISOLATION BEARING KEY PLAN
	S204	TYPE A LCE ISOLATION BRG
	S205	TYPE B LCE ISOLATION BRG
	S206	MODULAR EXPANSION JOINT
	S207	MODULAR EXP. JOINT DETAILS - 1
	S207A	MODULAR EXP. JOINT DETAILS - 2
	S207B	MODULAR EXP. JOINT DETAILS - 3
	S207C	MODULAR EXP. JOINT DETAILS - 3A
	S208	MODULAR EXP. JOINT DETAILS - 4
	208A	MODULAR EXP. JOINT DETAILS - 5
	208B	MODULAR EXP. JOINT DETAILS - 6
	S209	MODULAR EXP. JOINT DETAILS - 7
	S209A	MODULAR EXP. JOINT DETAILS - 8
	S210	SLAB TYPICAL SECTION
	S211	PLAN OF SLAB
	S212	PLAN OF SLAB
	S213	SLAB DETAILS
	S214	POURING SEQUENCE
	S215	TRAFFIC RAIL DETAILS
	S216	COMBINATION RAIL DETAILS
	S217	SLAB BILL OF REINFORCEMENT
	S218	CONSTRUCTION ELEVATIONS - 1
	S219	CONSTRUCTION ELEVATIONS - 2
	S220	CONSTRUCTION ELEVATIONS - 3
		EAST APPROACH SPANS
	S221	EAST APPROACH FRAMING PLAN
	S222	EAST APPROACH GIRDER ELEVATION
	S223	STRUCTURAL STEEL DETAILS
	S224	EAST APPROACH CAMBER
	S225	FIELD SPLICE DETAILS
	S226	FIELD SPLICE DETAILS
	S227	SLAB TYPICAL SECTION
	S228	PLAN OF SLAB
	S229	PLAN OF SLAB
	S230	PLAN OF SLAB
	S231	PLAN OF SLAB
	S232	PLAN OF SLAB
	S233	PIER 5 DIAPHRAGM
	S234	END BENT 2 DIAPHRAGM
	S235	RAIL POST SPACING - SPAN 6 & 7
	S236	RAIL POST SPACING - SPAN 8
	S237	RAIL POST SPACING - SPAN 9 & 10
	S238	SUPERSTRUCTURE - BILL OF REINFORCEMENT
	S239	CONSTRUCTION ELEVATIONS
	S240	CONSTRUCTION ELEVATIONS
	S241	CONSTRUCTION ELEVATIONS
	S242	CONSTRUCTION ELEVATIONS
	S243	CONSTRUCTION ELEVATIONS
	S244	CONSTRUCTION ELEVATIONS
	S245	CONSTRUCTION ELEVATIONS
	S246	CONSTRUCTION ELEVATIONS

	SHEET NO.	DESCRIPTION
MISCELLANEOUS & COMMON SHEETS	S247	RAIL DETAILS
	S248	PEDESTRIAN RAILING
	S249	PEDESTRIAN RAILING DETAILS
	S250	DECORATIVE FENCE PANEL DTS.
	S251	LAGOON BRIDGE PLAN OF SLAB
	S252	LAGOON BRIDGE TRAFFIC RAILS
	S253	LAGOON BRIDGE A.S. RAIL DETAIL
	S254	LAGOON BRIDGE A.S. SLAB DETAIL
	S255	SEISMIC DAMPER DETAILS
	S256	GIRDER INSPECTION RAIL
	S256A	PIER CAP INSPECTION RAIL
	S257	AT&T DUCTBANK LAYOUT
	S258	GRATED UTLITY PLATFORM DETAIL
	S259	REMOVAL OF BRIDGE STRUCTURE
	S260	LIGHTING NOTES
	S261	LIGHTING NOTES
	S262	LIGHTING GENERAL SUMMARY
	S263	WIRING DIAGRAM
	S264	NAVIGATION LIGHTING LAYOUT
	S265	NAVIGATION LIGHT DETAILS
	S266	NAVIGATION LIGHT DETAILS
	S267	NAVIGATION LIGHT DETAILS 2
	S268	PATHWAY DELINEATION LIGHTING LAYOUT
	S269	ARCH LIGHTING LAYOUT
	S270	CONTROLLER DETAILS
	S271	LIGHTING DETAILS
	S272	LIGHTING DETAILS
	S273	LIGHTING DETAILS
	S274	SOLAR POWERED BATTERY BACKUP DETAILS
	S275	LIGHTING SCHEMATIC LAYOUT
	S275A	LED LIGHT FIX. ATTACH. DTLS.
	S276	LIGHTNING PROTECTION PLAN
	S277	LIGHTNING PROTECTION PLAN
	S278	LIGHTNING PROTECTION DETAILS

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ROUTE: US68 | CROSSING: KENTUCKY LAKE

INDEX OF DRAWINGS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
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SHEET NO. S003
DRAWING NO. 24686

MATERIALS SPECIFICATIONS

ASTM OR AASHTO SPECIFICATIONS AS DESIGNATED BELOW SHALL GOVERN THE MATERIALS FURNISHED.

MATERIAL	ASTM	AASHTO
STRUCTURAL STEEL		M-270 GRADE 50
		M-270 GRADE 50W
		M-270 GRADE 70W HPS
PINTLES AND STUD SHEAR CONNECTORS, UNS G 1015	A108	M-169
HIGH STRENGTH BOLTS, NUTS AND WASHERS	A325 (TYPE 1)	M-164 (TYPE 1)
SHEET LEAD	B29-79	
DRAIN CASTINGS	A48/A48M-03 (2008)	
DOWNSPOUTS	D2996	
MECHANICAL GALVANIZING		M-298, CLASS 55
HOT DIP GALVANIZING		M-111-09
ZINC COATED STRUCTURAL STRAND	A586	
PIPE, STEEL, BLACK AND HOT-DIPPED ZINC COATED WELDED AND SEAMLESS	A53, TYPE S	
STAINLESS STEEL	A955 & A276	
HANGER SOCKETS	ASTM A148 GRADE 105/85	
PINS	A668 CLASS F	

FIBERGLASS DRAIN PIPE

FIBERGLASS PIPE AND FITTINGS SHALL BE AS SPECIFIED ON "DRAINAGE PLAN AND DETAILS" SHEETS. PIPE, FITTINGS, AND ADHESIVE SHALL BE MADE USING THE SAME TYPE OF EPOXY RESIN. ALL CONNECTIONS OF FIBERGLASS PIPES AND FITTINGS SHALL BE MADE WITH ADHESIVE BONDED SOCKET JOINTS. ALL STANDARD WALL EPOXY FIBERGLASS PIPE AND FITTINGS SHALL BE HANDLED AND INSTALLED IN ACCORDANCE WITH THE GUIDELINES AND PROCEDURES RECOMMENDED BY THE MANUFACTURER OR SUPPLIER OF THE MATERIAL. THE FIBERGLASS PIPE AND FITTINGS SHALL BE PAINTED TO MATCH THE COLOR OF THE SUPERSTRUCTURE ELEMENTS, OR AS AN ALTERNATE, MAY BE MANUFACTURED WITH AN EPOXY RESIN THAT RESULTS AN ACCEPTABLE COLOR MATCH.

FOUNDATIONS

FOUNDATION DATA

SEE FOUNDATION LAYOUT SHEET.

PILING

PILING SHALL BE FURNISHED IN ACCORDANCE WITH THE "SPECIAL NOTE FOR STEEL PIPE PILES-FURNISH" AND THE PLAN DETAILS.

PILING SHALL BE DRIVEN TO THE PILE DRIVING CRITERIA GIVEN IN THE "SPECIAL NOTE FOR STEEL PIPE PILES-INSTALL" AND SHOWN ON PILE RECORD SHEET S039, S040 & S041 AND PROVIDED BY THE ENGINEER SUBSEQUENT TO DYNAMIC PILE TESTING.

TEST PILES SHALL BE DRIVEN AT LOCATIONS SHOWN ON THE PLANS TO DETERMINE THE PILE DRIVING CRITERIA. UNLESS NOTED OTHERWISE, ALL TEST PILES SHALL BE ACCURATELY LOCATED SO THAT THEY MAY BE USED IN THE FINISHED STRUCTURE.

REINFORCED CONCRETE

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED 3/4" UNLESS OTHERWISE SHOWN.

REINFORCEMENT DIMENSIONS & DESIGNATIONS

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BARS UNLESS OTHERWISE INDICATED. SPACING OF BARS IS FROM CENTER TO CENTER OF BARS. CLEAR DISTANCE TO FACE OF CONCRETE IS 2 INCHES UNLESS OTHERWISE NOTED.

ANY BAR MARK DESIGNATIONS IN THE PLANS WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SECTION 811.10 OF THE STANDARD SPECIFICATIONS.

ANY BAR MARK DESIGNATIONS WITH THE SUFFIX "SS" SHALL BE STAINLESS STEEL IN ACCORDANCE WITH "SPECIAL NOTE FOR STAINLESS STEEL REINFORCEMENT."

BAR MARKS DESIGNATED WITH THE SUFFIX "T" SHALL BE THREADED ON ONE END TO MATE WITH BAR TERMINATOR BEING USED.

ANY BAR BEND TYPES DESIGNATED WITH THE SUFFIX "S" IN A BILL OF REINFORCEMENT SHALL BE CONSIDERED A STIRRUP FOR PURPOSES OF BEND DIAMETERS.

COLUMN VERTICAL REINFORCEMENT SPLICING

SPLICING OR COUPLING OF LONGITUDINAL COLUMN REINFORCEMENT, IF REQUIRED, SHALL BE ENTIRELY OUTSIDE THE PLASTIC HINGE ZONES AS SHOWN ON THE PLANS.

COLUMN SPIRALS (PIERS 2, 3, 6, & 7)

SPIRAL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A706.

SPLICES IN SPIRAL REINFORCEMENT WITHIN PLASTIC HINGE ZONES AT THE TOP AND BOTTOM OF PIER COLUMNS SHALL BE MADE BY FULL-WELDED SPLICES SHOWN ON THE PLANS. WELDING OF SPIRALS IS NOT PERMITTED IN THE PLASTIC HINGE ZONE AFTER THE COLUMN CAGE IS ASSEMBLED. SPIRALS SHALL BE FIELD OR SHOP WELDED INDEPENDENTLY AND THEN ASSEMBLED AROUND THE COLUMN LONGITUDINAL STEEL AFTER WELDING.

SPLICES FOR SPIRALS OUTSIDE PLASTIC HINGE ZONES SHALL BE MADE WITH FULL-WELDED SPLICES OR WITH LAP SPLICES AS SHOWN ON THE PLANS.

NO ADDITIONAL PAYMENT WILL BE MADE FOR SPLICES, AND THE COST WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE DEVELOPED LENGTH OF SPIRAL SHOWN ON THE PLANS.

COLUMN TIES (PIERS 4 & 5)

COLUMN TIE REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A706.

COLUMN TIES SHALL BE BUTT-WELDED HOOPS. ULTIMATE BUTT-WELDED SPLICES SHALL USE COMPLETE JOINT PENETRATION BUTT WELDS CONFORMING TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE - REINFORCING STEEL (ANSI/AWS D1.4, LATEST EDITION).

CONCRETE CLASS

CLASS "AA" CONCRETE IS TO BE USED THROUGHOUT THE SLAB, FOR BARRIERS, END BENT AND PIER DIAPHRAGMS AND IN THE PORTIONS OF THE SUBSTRUCTURE ABOVE THE TOP OF THE CAPS EXCEPT AS NOTED.

CLASS "A" CONCRETE IS TO BE USED IN THE PEDESTALS AND IN THE SUBSTRUCTURE BELOW TOP OF THE CAPS.

CLASS "A", MODIFIED CONCRETE IS TO BE USED FOR INFILL OF PIPE PILES.

ANCHOR BOLTS

CONTRARY TO THE STANDARD SPECIFICATIONS, ANCHOR RODS SHALL BE CAST IN THE PIER CAP CONCRETE. FITUP WILL BE ACCOMMODATED BY FIELD WELDING THE BEVELED SOLE PLATES TO THE GIRDER BOTTOM FLANGE AS SHOWN ON THE PLANS.

DECKS & SLABS

POURING SEQUENCE

THE CAMBER IS DETERMINED BY THE POURING SEQUENCE OF THE SLAB SHOWN ON THE PLANS. THE POURING SEQUENCE OF THE SLAB MAY NOT BE CHANGED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

OVERLAY (ARCH SPAN)

THE OVERLAY SHALL MEET THE REQUIREMENTS FOR LATEX CONCRETE OVERLAYS FOR NEW STRUCTURES IN ACCORDANCE WITH 606.03.17 (B).

BONDING NEW CONCRETE TO PREVIOUSLY PLACED CONCRETE

WHERE A TRANSVERSE CONSTRUCTION JOINT IN THE DECK IS CALLED FOR IN THE PLANS, NEW CONCRETE SHALL BE BONDED TO PREVIOUSLY PLACED (CURED) CONCRETE WITH A TWO-COMPONENT EPOXY RESIN SYSTEM CONFORMING TO SECTIONS 511 AND 826 OF THE SPECIFICATIONS (SEE "SPECIAL NOTE FOR STRUCTURAL ADHESIVES WITH EXTENDED CONTACT TIME.") THE COST OF THIS WORK, INCLUDING ALL LABOR, TOOLS AND MATERIALS IS TO BE INCIDENTAL TO THE UNIT PRICE BID FOR CLASS "AA" CONCRETE OR CLASS "A" CONCRETE AS APPROPRIATE.

STAY-IN-PLACE METAL FORMS

STAY-IN-PLACE METAL FORMS MAY BE USED IN THE DECK SLAB. THE FORM VALLEYS SHALL BE FILLED WITH EXPANDED POLYSTYRENE.

APPROACH SLAB

THE UNIT PRICE BID PER SQUARE YARD OF APPROACH SLAB SHALL INCLUDE THE COST OF CLASS "AA" CONCRETE, EPOXY COATED REINFORCEMENT, DENSE GRADE AGGREGATE AND ALL REQUIREMENTS AS OUTLINED IN "SPECIAL NOTE FOR JOINT SEALING COMPOUNDS FOR BRIDGE DECKS AND APPROACH SLABS" NECESSARY TO CONSTRUCT THE APPROACH SLAB.

STRUCTURAL STEEL (ALL SPANS)

PAYMENT FOR STRUCTURAL STEEL

THE LUMP SUM BID FOR STRUCTURAL STEEL SHALL BE FULL PAYMENT FOR ALL STRUCTURAL STEEL, BOLTS, WASHERS, WELDING AND WELDING MATERIALS, DECK DRAINS, INSPECTION RAILS AND ALL LABOR AND MATERIALS NECESSARY TO ERECT THE STEEL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE APPROXIMATE WEIGHT OF STRUCTURAL STEEL SHOWN IN THE ESTIMATE OF QUANTITIES DOES NOT INCLUDE OVERRUN OR WELD MATERIAL.

WELDING SPECIFICATIONS

ALL WELDING AND WELDING MATERIALS EXCEPT FOR REINFORCEMENT, SHALL CONFORM TO JOINT SPECIFICATION ANSI/AASHTO/AWS D1.5, 2010 BRIDGE WELDING CODE. MODIFICATION AND ADDITIONS AS STATED ON THE PLANS SHALL SUPERSEDE THE JOINT SPECIFICATIONS.

WELDING PROCEDURE

QUALIFICATION TESTS OF ALL WELDING PROCEDURES SHALL BE COMPLETED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO THE FINAL APPROVAL OF THE SHOP DRAWINGS AND WELDING PROCEDURE AND THE START OF THE FABRICATION.

WELDED STUD SHEAR CONNECTORS

PROVIDE THE NECESSARY LENGTH TO PENETRATE AT LEAST 2 INCHES ABOVE BOTTOM OF SLAB. STUD LENGTHS SHALL NOT BE LESS THAN 4 INCHES. PROVIDE A MINIMUM COVER OF 2 INCHES FROM THE TOP OF THE STRUCTURAL DECK TO THE TOP OF THE SHEAR CONNECTOR.

THE "LUMP SUM BID" FOR SHEAR CONNECTORS SHALL BE FULL PAYMENT FOR ALL SHEAR CONNECTORS, WELDING AND WELDING MATERIAL, AND MATERIALS NECESSARY TO FIELD WELD SHEAR CONNECTORS TO GIRDERS AND PILES IN PLACE ACCORDING TO THE PLANS AND SPECIFICATIONS.

IF THE CONTRACTOR WISHES TO USE OTHER THAN THE STUD SHEAR CONNECTORS SHOWN ON THE PLANS, THE PROPOSED ARRANGEMENT SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP PLANS.

STUDS SHALL BE WELDED IN ACCORDANCE WITH AWS SPECIFICATIONS.

FIELD WELDING

EXCEPT AS SHOWN ON THE PLANS, NO WELDING OF ANY NATURE SHALL BE PERFORMED ON THE LOAD CARRYING MEMBERS OF THE BRIDGE WITHOUT THE WRITTEN CONSENT OF THE DIRECTOR, DIVISION OF BRIDGE DESIGN, AND THEN ONLY IN THE MANNER AND AT THE LOCATIONS DESIGNATED IN THE AUTHORIZATION.

HIGH STRENGTH BOLT CONNECTIONS

UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL BOLTED CONNECTIONS SHALL BE ASTM A325 1 INCH DIAMETER HIGH STRENGTH BOLTS, A563 NUTS, AND F436 FLAT WASHERS. OPEN HOLES SHALL BE 1/16 INCH GREATER THAN THE BOLT DIAMETER, UNLESS OTHERWISE NOTED. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE IN ALL BOLTED CONNECTIONS.

TYPE 1 MECHANICALLY GALVANIZED BOLTS SHALL BE USED AS DESCRIBED IN AASHTO M 164. ALL HIGH STRENGTH BOLTED CONNECTIONS ARE TO BE INSTALLED USING "DIRECT TENSION INDICATORS" (DTI'S) IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND ASTM F959. ALL DTI'S SHALL BE MECHANICALLY ZINC COATED. INSTALLATION DETAILS OF THE DTI'S SHALL BE SHOWN ON THE SHOP PLANS.

CLEANING AND PAINTING

SECTION 607.03.23 OF THE SPECIFICATIONS APPLIES TO THIS PROJECT; ACCORDINGLY, ALL STEEL SURFACES TO BE PAINTED, INCLUDING EXPOSED SURFACES OF CONNECTION PLATES, NUTS, BOLTS AND WASHERS, SHALL BE BLAST CLEANED TO A NEAR-WHITE CONDITION IN ACCORDANCE WITH SSPC-SP10 IMMEDIATELY PRIOR TO BEING PAINTED WITH THE FIRST COAT OF PAINT (PRIME COAT). THE PRIME COAT SHALL BE ORGANIC ZINC PRIMER.

APPLY THE PRIME COAT IN THE SHOP TO ALL STRUCTURAL STEEL PRIOR TO SHIPPING THE STEEL FROM THE PLANT. THE PRIME COAT ON FAYING SURFACES MUST MEET CLASS B REQUIREMENTS FOR SLIP CRITICAL CONNECTIONS.

IN ADDITION TO SHOP PRIMER, SHOP APPLICATION IS PERMITTED FOR THE INTERIOR SURFACES OF THE TIE GIRDER ONLY. THE INTERIOR SURFACES OF THE TIE GIRDER IN ITS ENTIRETY INCLUDING ALL INTERNAL CONNECTIONS AND DIAPHRAGMS SHALL BE PAINTED WITH A LIGHT PRIMER COLOR PLUS A FINISH COAT, FINAL COLOR TO BE FEDERAL STANDARD 595 COLOR NUMBER 27722 OR LIGHTER AND SHALL BE APPROVED BY THE ENGINEER.

THE COLOR OF THE FINAL TOP COAT IS FEDERAL NUMBER 37722.

	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: RMS	TJT
DETAILED BY: CEW	CDW

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

GENERAL NOTES - 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01-180.70	Baker — MICHAEL BAKER JR., INC. 9750 ORMSBY STATION ROAD SUITE 210 LOUISVILLE, KY 40223	S005
		DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 GN02.DGN
USER: CWethington
DATE PLOTTED: December 12, 2013
E-SHEET NAME: 524686 005
MicroStation v8.11.9.459

MATERIALS SPECIFICATIONS

ASTM OR AASHTO SPECIFICATIONS AS DESIGNATED BELOW SHALL GOVERN THE MATERIALS FURNISHED.

MATERIAL	ASTM	AASHTO
STRUCTURAL STEEL		M-270 GRADE 50
		M-270 GRADE 50W
		M-270 GRADE 70W HPS
PINTLES AND STUD SHEAR CONNECTORS, UNS G 1015	A108	M-169
HIGH STRENGTH BOLTS, NUTS AND WASHERS	A325 (TYPE 1)	M-164 (TYPE 1)
SHEET LEAD	B29-79	
DRAIN CASTINGS	A48/A48M-03 (2008)	
DOWNSPOUTS	D2996	
MECHANICAL GALVANIZING		M-298, CLASS 55
HOT DIP GALVANIZING		M-111-09
ZINC COATED STRUCTURAL STRAND	A586	
PIPE, STEEL, BLACK AND HOT-DIPPED ZINC COATED WELDED AND SEAMLESS	A53, TYPE S	
STAINLESS STEEL	A955 & A276	
HANGER SOCKETS	ASTM A148 GRADE 105/85	
PINS	A668 CLASS F	

FIBERGLASS DRAIN PIPE

FIBERGLASS PIPE AND FITTINGS SHALL BE AS SPECIFIED ON "DRAINAGE PLAN AND DETAILS" SHEETS. PIPE, FITTINGS, AND ADHESIVE SHALL BE MADE USING THE SAME TYPE OF EPOXY RESIN. ALL CONNECTIONS OF FIBERGLASS PIPES AND FITTINGS SHALL BE MADE WITH ADHESIVE BONDED SOCKET JOINTS. ALL STANDARD WALL EPOXY FIBERGLASS PIPE AND FITTINGS SHALL BE HANDLED AND INSTALLED IN ACCORDANCE WITH THE GUIDELINES AND PROCEDURES RECOMMENDED BY THE MANUFACTURER OR SUPPLIER OF THE MATERIAL. THE FIBERGLASS PIPE AND FITTINGS SHALL BE PAINTED TO MATCH THE COLOR OF THE SUPERSTRUCTURE ELEMENTS, OR AS AN ALTERNATE, MAY BE MANUFACTURED WITH AN EPOXY RESIN THAT RESULTS AN ACCEPTABLE COLOR MATCH.

FOUNDATIONS

FOUNDATION DATA

SEE FOUNDATION LAYOUT SHEET.

PILING

PILING SHALL BE FURNISHED IN ACCORDANCE WITH THE "SPECIAL NOTE FOR STEEL PIPE PILES-FURNISH" AND THE PLAN DETAILS.

PILING SHALL BE DRIVEN TO THE PILE DRIVING CRITERIA GIVEN IN THE "SPECIAL NOTE FOR STEEL PIPE PILES-INSTALL" AND SHOWN ON PILE RECORD SHEET S039, S040 & S041 AND PROVIDED BY THE ENGINEER SUBSEQUENT TO DYNAMIC PILE TESTING.

TEST PILES SHALL BE DRIVEN AT LOCATIONS SHOWN ON THE PLANS TO DETERMINE THE PILE DRIVING CRITERIA. UNLESS NOTED OTHERWISE, ALL TEST PILES SHALL BE ACCURATELY LOCATED SO THAT THEY MAY BE USED IN THE FINISHED STRUCTURE.

REINFORCED CONCRETE

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED 3/4" UNLESS OTHERWISE SHOWN.

REINFORCEMENT DIMENSIONS & DESIGNATIONS

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE TO CENTER OF BARS UNLESS OTHERWISE INDICATED. SPACING OF BARS IS FROM CENTER TO CENTER OF BARS. CLEAR DISTANCE TO FACE OF CONCRETE IS 2 INCHES UNLESS OTHERWISE NOTED.

ANY BAR MARK DESIGNATIONS IN THE PLANS WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SECTION 811.10 OF THE STANDARD SPECIFICATIONS.

ANY BAR MARK DESIGNATIONS WITH THE SUFFIX "SS" SHALL BE STAINLESS STEEL IN ACCORDANCE WITH "SPECIAL NOTE FOR STAINLESS STEEL REINFORCEMENT."

BAR MARKS DESIGNATED WITH THE SUFFIX "T" SHALL BE THREADED ON ONE END TO MATE WITH BAR TERMINATOR BEING USED.

ANY BAR BEND TYPES DESIGNATED WITH THE SUFFIX "S" IN A BILL OF REINFORCEMENT SHALL BE CONSIDERED A STIRRUP FOR PURPOSES OF BEND DIAMETERS.

COLUMN VERTICAL REINFORCEMENT SPLICING

SPLICING OR COUPLING OF LONGITUDINAL COLUMN REINFORCEMENT, IF REQUIRED, SHALL BE ENTIRELY OUTSIDE THE PLASTIC HINGE ZONES AS SHOWN ON THE PLANS.

COLUMN SPIRALS (PIERS 2, 3, 6, & 7)

SPIRAL REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A706.

SPLICES IN SPIRAL REINFORCEMENT WITHIN PLASTIC HINGE ZONES AT THE TOP AND BOTTOM OF PIER COLUMNS SHALL BE MADE BY FULL-WELDED SPLICES SHOWN ON THE PLANS. WELDING OF SPIRALS IS NOT PERMITTED IN THE PLASTIC HINGE ZONE AFTER THE COLUMN CAGE IS ASSEMBLED. SPIRALS SHALL BE FIELD OR SHOP WELDED INDEPENDENTLY AND THEN ASSEMBLED AROUND THE COLUMN LONGITUDINAL STEEL AFTER WELDING.

SPLICES FOR SPIRALS OUTSIDE PLASTIC HINGE ZONES SHALL BE MADE WITH FULL-WELDED SPLICES OR WITH LAP SPLICES AS SHOWN ON THE PLANS.

NO ADDITIONAL PAYMENT WILL BE MADE FOR SPLICES, AND THE COST WILL BE CONSIDERED INCIDENTAL TO THE COST OF THE DEVELOPED LENGTH OF SPIRAL SHOWN ON THE PLANS.

COLUMN TIES (PIERS 4 & 5)

COLUMN TIE REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A706.

COLUMN TIES SHALL BE BUTT-WELDED HOOPS. ULTIMATE BUTT-WELDED SPLICES SHALL USE COMPLETE JOINT PENETRATION BUTT WELDS CONFORMING TO THE REQUIREMENTS OF STRUCTURAL WELDING CODE - REINFORCING STEEL (ANSI/AWS D1.4, LATEST EDITION).

CONCRETE CLASS

CLASS "AA" CONCRETE IS TO BE USED THROUGHOUT THE SLAB, FOR BARRIERS, END BENT AND PIER DIAPHRAGMS AND IN THE PORTIONS OF THE SUBSTRUCTURE ABOVE THE TOP OF THE CAPS EXCEPT AS NOTED.

CLASS "A" CONCRETE IS TO BE USED IN THE PEDESTALS AND IN THE SUBSTRUCTURE BELOW TOP OF THE CAPS.

CLASS "A", MODIFIED CONCRETE IS TO BE USED FOR INFILL OF PIPE PILES.

ANCHOR BOLTS

CONTRARY TO THE STANDARD SPECIFICATIONS, ANCHOR RODS SHALL BE CAST IN THE PIER CAP CONCRETE. FITUP WILL BE ACCOMMODATED BY FIELD WELDING THE BEVELED SOLE PLATES TO THE GIRDER BOTTOM FLANGE AS SHOWN ON THE PLANS.

DECKS & SLABS

POURING SEQUENCE

THE CAMBER IS DETERMINED BY THE POURING SEQUENCE OF THE SLAB SHOWN ON THE PLANS. THE POURING SEQUENCE OF THE SLAB MAY NOT BE CHANGED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

OVERLAY (ARCH SPAN)

THE OVERLAY SHALL MEET THE REQUIREMENTS FOR LATEX CONCRETE OVERLAYS FOR NEW STRUCTURES IN ACCORDANCE WITH 606.03.17 (B).

BONDING NEW CONCRETE TO PREVIOUSLY PLACED CONCRETE

WHERE A TRANSVERSE CONSTRUCTION JOINT IN THE DECK IS CALLED FOR IN THE PLANS, NEW CONCRETE SHALL BE BONDED TO PREVIOUSLY PLACED (CURED) CONCRETE WITH A TWO-COMPONENT EPOXY RESIN SYSTEM CONFORMING TO SECTIONS 511 AND 826 OF THE SPECIFICATIONS (SEE "SPECIAL NOTE FOR STRUCTURAL ADHESIVES WITH EXTENDED CONTACT TIME.") THE COST OF THIS WORK, INCLUDING ALL LABOR, TOOLS AND MATERIALS IS TO BE INCIDENTAL TO THE UNIT PRICE BID FOR CLASS "AA" CONCRETE OR CLASS "A" CONCRETE AS APPROPRIATE.

STAY-IN-PLACE METAL FORMS

STAY-IN-PLACE METAL FORMS MAY BE USED IN THE DECK SLAB. THE FORM VALLEYS SHALL BE FILLED WITH EXPANDED POLYSTYRENE.

APPROACH SLAB

THE UNIT PRICE BID PER SQUARE YARD OF APPROACH SLAB SHALL INCLUDE THE COST OF CLASS "AA" CONCRETE, EPOXY COATED REINFORCEMENT, DENSE GRADE AGGREGATE AND ALL REQUIREMENTS AS OUTLINED IN "SPECIAL NOTE FOR JOINT SEALING COMPOUNDS FOR BRIDGE DECKS AND APPROACH SLABS" NECESSARY TO CONSTRUCT THE APPROACH SLAB.

STRUCTURAL STEEL (ALL SPANS)

PAYMENT FOR STRUCTURAL STEEL

THE LUMP SUM BID FOR STRUCTURAL STEEL SHALL BE FULL PAYMENT FOR ALL STRUCTURAL STEEL, BOLTS, WASHERS, WELDING AND WELDING MATERIALS, DECK DRAINS, INSPECTION RAILS AND ALL LABOR AND MATERIALS NECESSARY TO ERECT THE STEEL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE APPROXIMATE WEIGHT OF STRUCTURAL STEEL SHOWN IN THE ESTIMATE OF QUANTITIES DOES NOT INCLUDE OVERRUN OR WELD MATERIAL.

WELDING SPECIFICATIONS

ALL WELDING AND WELDING MATERIALS EXCEPT FOR REINFORCEMENT, SHALL CONFORM TO JOINT SPECIFICATION ANSI/AASHTO/AWS D1.5, 2010 BRIDGE WELDING CODE. MODIFICATION AND ADDITIONS AS STATED ON THE PLANS SHALL SUPERSEDE THE JOINT SPECIFICATIONS.

WELDING PROCEDURE

QUALIFICATION TESTS OF ALL WELDING PROCEDURES SHALL BE COMPLETED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO THE FINAL APPROVAL OF THE SHOP DRAWINGS AND WELDING PROCEDURE AND THE START OF THE FABRICATION.

WELDED STUD SHEAR CONNECTORS

PROVIDE THE NECESSARY LENGTH TO PENETRATE AT LEAST 2 INCHES ABOVE BOTTOM OF SLAB. STUD LENGTHS SHALL NOT BE LESS THAN 4 INCHES. PROVIDE A MINIMUM COVER OF 2 INCHES FROM THE TOP OF THE STRUCTURAL DECK TO THE TOP OF THE SHEAR CONNECTOR.

THE "LUMP SUM BID" FOR SHEAR CONNECTORS SHALL BE FULL PAYMENT FOR ALL SHEAR CONNECTORS, WELDING AND WELDING MATERIAL, AND MATERIALS NECESSARY TO FIELD WELD SHEAR CONNECTORS TO GIRDERS AND PILES IN PLACE ACCORDING TO THE PLANS AND SPECIFICATIONS.

IF THE CONTRACTOR WISHES TO USE OTHER THAN THE STUD SHEAR CONNECTORS SHOWN ON THE PLANS, THE PROPOSED ARRANGEMENT SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP PLANS.

STUDS SHALL BE WELDED IN ACCORDANCE WITH AWS SPECIFICATIONS.

FIELD WELDING

EXCEPT AS SHOWN ON THE PLANS, NO WELDING OF ANY NATURE SHALL BE PERFORMED ON THE LOAD CARRYING MEMBERS OF THE BRIDGE WITHOUT THE WRITTEN CONSENT OF THE DIRECTOR, DIVISION OF BRIDGE DESIGN, AND THEN ONLY IN THE MANNER AND AT THE LOCATIONS DESIGNATED IN THE AUTHORIZATION.

HIGH STRENGTH BOLT CONNECTIONS

UNLESS OTHERWISE SPECIFIED ON THE PLANS, ALL BOLTED CONNECTIONS SHALL BE ASTM A325 1 INCH DIAMETER HIGH STRENGTH BOLTS, A563 NUTS, AND F436 FLAT WASHERS. OPEN HOLES SHALL BE 1/16 INCH GREATER THAN THE BOLT DIAMETER, UNLESS OTHERWISE NOTED. BOLT THREADS SHALL BE EXCLUDED FROM THE SHEAR PLANE IN ALL BOLTED CONNECTIONS.

TYPE 1 MECHANICALLY GALVANIZED BOLTS SHALL BE USED AS DESCRIBED IN AASHTO M 164. ALL HIGH STRENGTH BOLTED CONNECTIONS ARE TO BE INSTALLED USING "DIRECT TENSION INDICATORS" (DTI'S) IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND ASTM F959. ALL DTI'S SHALL BE MECHANICALLY ZINC COATED. INSTALLATION DETAILS OF THE DTI'S SHALL BE SHOWN ON THE SHOP PLANS.

CLEANING AND PAINTING

SECTION 607.03.23 OF THE SPECIFICATIONS APPLIES TO THIS PROJECT; ACCORDINGLY, ALL STEEL SURFACES TO BE PAINTED, INCLUDING EXPOSED SURFACES OF CONNECTION PLATES, NUTS, BOLTS AND WASHERS, SHALL BE BLAST CLEANED TO A NEAR-WHITE CONDITION IN ACCORDANCE WITH SSPC-SP10 IMMEDIATELY PRIOR TO BEING PAINTED WITH THE FIRST COAT OF PAINT (PRIME COAT). THE PRIME COAT SHALL BE ORGANIC ZINC PRIMER.

APPLY THE PRIME COAT IN THE SHOP TO ALL STRUCTURAL STEEL PRIOR TO SHIPPING THE STEEL FROM THE PLANT. THE PRIME COAT ON FAYING SURFACES MUST MEET CLASS B REQUIREMENTS FOR SLIP CRITICAL CONNECTIONS.

IN ADDITION TO SHOP PRIMER, SHOP APPLICATION IS PERMITTED FOR THE INTERIOR SURFACES OF THE TIE GIRDER ONLY. THE INTERIOR SURFACES OF THE TIE GIRDER IN ITS ENTIRETY INCLUDING ALL INTERNAL CONNECTIONS AND DIAPHRAGMS SHALL BE PAINTED WITH A LIGHT PRIMER COLOR PLUS A FINISH COAT, FINAL COLOR TO BE FEDERAL STANDARD 595 COLOR NUMBER 27722 OR LIGHTER AND SHALL BE APPROVED BY THE ENGINEER.

THE COLOR OF THE FINAL TOP COAT IS FEDERAL NUMBER 37722.

	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: RMS	TJT
DETAILED BY: CEW	CDW

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

GENERAL NOTES - 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01-180.70	Baker — MICHAEL BAKER JR., INC. 9750 ORMSBY STATION ROAD SUITE 210 LOUISVILLE, KY 40223	S005
		DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 GN02.DGN
USER: CWethington
DATE PLOTTED: December 12, 2013
E-SHEET NAME: 524686 005
MicroStation v8.11.9.459

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 GN03.DGN
USER: cwethington
DATE PLOTTED: December 12, 2013
E-SHEET NAME: S24686 006
MicroStation v8.11.9.459

MATERIAL REQUIREMENTS

M270 GRADE 50W STEEL IS TO BE USED FOR ALL STRUCTURAL STEEL (UNLESS NOTED OTHERWISE).

ALL FLANGE AND WEB MATERIAL, INCLUDING SPLICE PLATES, IN LONGITUDINAL PLATE GIRDERS DESIGNATED (CVN) SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TOUGHNESS TEST APPLICABLE TO ZONE 2 IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE NOTED:

M270 GRADE 50W - (UP TO 2" THICKNESS)	25 FT.-LBS. AT 40° F.
M270 GRADE 50W - (OVER 2" TO 4" THICKNESS)	30 FT.-LBS. AT 40° F.

SAMPLING AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO T243, CURRENT EDITION, UTILIZING (H) FREQUENCY TESTING. WHEN PLATE THICKNESS EXCEEDS 1", FREQUENCY OF TESTING SHALL BE (P).

CAMBER

WEB PLATES SHALL BE CUT TO PROVIDE FOR THE CAMBER OF THE GIRDER. PROVIDE FOR POSSIBLE WARPAGE DUE TO EXTRA HEAT IN TOP FLANGE BY VIRTUE OF SHEAR CONNECTORS. GIRDERS WHICH DO NOT CONFORM TO PLAN CAMBER AND GRADE IN THE ERECTED POSITION, EITHER AN ADJUSTMENT IN DEPTH OF CONCRETE HAUNCH OVER THE SUPPORTING GIRDERS OR A REWORKING OF THE BEAM CAMBER TO MEET PLAN CAMBER AND SLAB THICKNESS WILL BE REQUIRED. IF EITHER TYPE OF ADJUSTMENT IS REQUIRED, IT WILL BE AT NO ADDITIONAL COST TO THE STATE. HOWEVER, IN NO CASE SHALL THE SHEAR CONNECTORS BE ALLOWED TO PENETRATE THE SLAB LESS THAN 2 INCHES.

CAMBERS GIVEN DO NOT INCLUDE DEFLECTION DUE TO ERECTION STRESSES.
GIRDERS SHALL BE CAMBERED TO FULL DEAD LOAD WITHOUT THE FUTURE WEARING SURFACE.

FABRICATION

THE CONSTRUCTION SHALL BE SUCH THAT AFTER THE DEAD LOAD DEFLECTION, THE FINISHED ROADWAY SURFACES WILL CONFORM TO THE FINAL GRADE.

ALL STEEL SHALL BE SO POSITIONED TO PLACE THE DIRECTION OF FINISHED ROLLING PARALLEL TO THE DIRECTION OF PRIMARY STRESS. SHOP OR FIELD SPLICES SHALL NOT BE PERMITTED IN ANY MEMBER OR PART OF A MEMBER WITHOUT THE PERMISSION OF THE BRIDGE DESIGNER.

INSPECTION ACCESS

INSPECTION ACCESS COMPONENTS MAY BE ASSEMBLED IN THE SHOP WHERE APPLICABLE. THE CONTRACTOR SHALL MAINTAIN INSPECTION ACCESS COMPONENTS DURING CONSTRUCTION AND SHALL REPAIR OR REPLACE ANY DAMAGE TO INSPECTION ACCESS COMPONENTS THAT OCCURS DURING TRANSPORTATION OR CONSTRUCTION.

STAINLESS STEEL

ALL CONTACT SURFACES BETWEEN STAINLESS STEEL AND STRUCTURAL STEEL SHALL BE ISOLATED WITH 1/8" NEOPRENE PAD OR SIMILAR.

STRUCTURAL STEEL (ARCH SPANS)

ARCH MATERIAL REQUIREMENTS

UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHALL CONFORM TO M270 GRADE 50W M270. GRADE 70W HPS STEEL IS TO BE USED FOR ARCH RIB, TIE GIRDERS, FLOORBEAMS AND HANGER CONNECTIONS.

ALL STEEL MEMBERS IN THE ARCH SPAN, INCLUDING SPLICE AND CONNECTION PLATES DESIGNATED (CVN) SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TOUGHNESS TEST APPLICABLE TO ZONE 2 IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE NOTED:

M270 GRADE 50W - (UP TO 2" THICKNESS)	25 FT.-LBS. AT 40° F.
M270 GRADE 50W - (OVER 2" TO 4" THICKNESS)	30 FT.-LBS. AT 40° F.
M270 GRADE 70W HPS - (UP TO 4" THICKNESS)	35 FT.-LBS. AT -10° F.

SAMPLING AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO T243, CURRENT EDITION, UTILIZING (H) FREQUENCY TESTING. WHEN PLATE THICKNESS EXCEEDS 1", FREQUENCY OF TESTING SHALL BE (P).

ARCH TIE GIRDER MEMBERS, KNUCKLE, FLOORBEAMS, TIE GIRDER SPLICE PLATES, ALL FILL PLATES USED IN CONJUNCTION WITH SPLICE PLATES, FLOOR BEAM CONNECTION PLATES AND HANGER CONNECTIONS SPECIFIED BY THE (FCM) DESIGNATION SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR FRACTURE CRITICAL MEMBERS IN TABLE 10 (AASHTO M270-12) FOR ZONE 2.

ARCH ERECTION AND CAMBER

CAMBERS GIVEN DO NOT INCLUDE DEFLECTION DUE TO ERECTION STRESSES.

SPAN 5 ARCH SHALL BE CAMBERED TO FULL DEAD LOAD INCLUDING THE INITIAL 1 1/2" OVERLAY AND WITHOUT THE FUTURE WEARING SURFACE.

DEAD LOAD DEFLECTIONS WERE CALCULATED WITH THE FOLLOWING CONSTRUCTION SEQUENCE, AT AN ASSUMED ERECTION TEMPERATURE OF 60 DEGREES FARENHEIGHT AND AS OUTLINED IN THE "SPECIAL NOTE FOR STEEL ERECTION - ARCH SPAN."

ERECT THE ARCH RIB, TIE, BRACING AND FLOOR SYSTEM ON BLOCKING IN THE "NO LOAD CONDITION" WITH FOUR SUPPORT POINTS ONLY.

PRIOR TO DECK CONSTRUCITON, THE DISTANCE BETWEEN CTO AND CT12 WILL BE APPROXIMATELY (549'-11") @ 60° F +/- 1/8".

BEARINGS ARE TO BE INSTALLED PRIOR TO DECK CONSTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR TRANSVERSE AND LONGITUDINAL STABILITY OF THE SUPERSTRUCTURE UP UNTIL THE POINT THAT THE THREE BEARINGS AT PIER 4 AND THE TYPE B BEARING AT PIER 5 ARE ALL WELDED TOP AND BOTTOM.

FIELD WELD THE TOP AND BOTTOM OF THE TWO TYPE A BEARINGS AT PIER 4 SUCH THAT WORK POINT CTO LINES UP WITH THE CL OF THE MASONRY PLATES AT PIER 4.

RAISE THE END FLOOR BEAM AT PIER 4 BY JACKING UP TO INSTALL THE TYPE B CENTER BEARING (SEE SHEETS S202 AND S205) AND FIELD WELD THE TOP AND BOTTOM OF THE BEARING SUCH THAT WORK POINT CTO LINES UP WITH THE CL OF THE MASONRY PLATE.

DEPENDING ON THE BEARING TYPE SELECTED, THE FOLLOWING SEQUENCE SHALL BE FOLLOWED AT PIER 5:

SEISMIC ISOLATION BEARINGS - FRICTION

RAISE THE END FLOOR BEAM AT PIER 5 BY JACKING UP TO INSTALL THE TYPE B CENTER BEARING (SEE SHEET S202. ALIGN THE BOTTOM SUB-BASE PLATE WITH THE CL OF THE MASONRY PLATE AND FIELD WELD AS INDICATED. ALIGN THE TOP OF THE BEARING LONGITUDINALLY WITH WORK POINT CT12 AND FIELD WELD TO THE SOLE PLATE AS INDICATED.

ALIGN TYPE A BEARINGS WITH THE CL OF THE MASONRY PLATE AT PIER 5 AND FIELD WELD AS INDICATED. DO NOT WELD THE TOP OF THE TWO TYPE A BEARINGS. LUBRICATE THE BEARINGS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TO BE FREE TO SLIDE IN THE LONGITUDINAL DIRECTION.

DEPENDING ON THE ERECTION TEMPERATURE, THERE WILL BE A DELTA DISTANCE BETWEEN THE BEARING CENTERED ON THE MASONRY PLATE AND THE LONGITUDINAL ALIGNMENT OF WP CT12 BEFORE THE CONCRETE DECK IS POURED. THE ENVISIONED RANGE OF DELTA DISTANCES ARE AS FOLLOWS:

3.6" (TO THE WEST) IF ERECTION TEMPERATURE IS 0° F
1" (TO THE WEST) IF ERECTION TEMPERATURE IS 60° F
1.6" (TO THE EAST) IF ERECTION TEMPERATURE IS 120° F.

WITH THE BRIDGE SUPPORTED ON SIX SUPPORT BEARINGS, PLACE THE 8 INCH CONCRETE DECK WITH THE SEQUENCE OF STRINGER TIGHTENING AND CLOSURE POURS AS SHOWN ON SHEET S214.

INSTALL BARRIERS AND RAILINGS.

INSTALL MODULAR EXPANSION JOINTS AT PIERS 4 AND 5, ADJUST OPENING ACCORDING TO THE MANUFACTURERS RECOMMENDATION FOR THE ACTUAL ERECTION TEMPERATURE. POUR CLOSURE POURS AT JOINT BLOCKOUTS AT PIERS 4 AND 5.

PLACE LATEX MODIFIED CONCRETE OVERLAY OVER TRAVELWAY.

ADJUST THE OFFSET BETWEEN THE CL OF THE BEARING AND WP CT12 IN ACCORDANCE WITH THE FOLLOWING TO WITHIN A TOLERANCE OF +/- 0.50".

2.60" (TO THE WEST) IF TEMPERATURE IS 0° F
0.43" (TO THE WEST) IF TEMPERATURE IS 50° F
0.00" IF TEMPERATURE IS 60° F
0.43" (TO THE EAST) IF TEMPERATURE IS 70° F
2.60" (TO THE EAST) IF TEMPERATURE IS 120° F.

FIELD WELD THE TOP OF THE TWO TYPE-A BEARINGS TO THE SOLE PLATES. TO MEET THE TOLERANCE THE CONTRACTOR MAY WAIT UNTIL AMBIENT TEMPERATURES ARE WITHIN THE RANGE OF 50°F TO 70°F BEFORE MAKING THE FINAL FIELD WELD OR PERFORM A JACKING OPERATION TO BRING THE DELTA DISTANCE WITHIN TOLERANCE. SUBMIT FOR REVIEW ALL ADJUSTMENT PROCEDURES TO THE ENGINEER.

SEISMIC ISOLATION BEARINGS - LEAD CORE ELASTOMERIC

RAISE THE END FLOOR BEAM AT PIER 5 BY JACKING UP TO INSTALL THE TYPE B CENTER BEARING (SEE SHEET S205). ALIGN THE TOP OF THE BEARING LONGITUDINALLY WITH WORK POINT CT12 AND FIELD WELD TO THE SOLE PLATE. ALIGN THE BOTTOM SUB-BASE PLATE WITH THE CL OF THE MASONRY PLATE BY JACKING AND FIELD WELD AS INDICATED.

ALIGN THE TOP OF THE TWO TYPE A BEARINGS LONGITUDINALLY WITH WORK POINT CT12 AND FIELD WELD TO THE SOLE PLATE. ALIGN THE BOTTOM SUB-BASE PLATE WITH THE CL OF THE MASONRY PLATE BY JACKING AND FIELD WELD AS INDICATED.

THE ENVISIONED RANGE OF JACKING DISTANCES ARE AS FOLLOWS:

3.6" (TO THE WEST) IF ERECTION TEMPERATURE IS 0° F
1" (TO THE WEST) IF THE ERECTION TEMPERATURE IS 60° F
1.6" (TO THE EAST) IF ERECTION TEMPERATURE IS 120° F.

WITH THE BRIDGE SUPPORTED ON SIX SUPPORT BEARINGS, PLACE THE 8 INCH CONCRETE DECK WITH THE SEQUENCE OF STRINGER TIGHTENING AND CLOSURE POURS AS SHOWN ON SHEET S214.

INSTALL BARRIERS AND RAILINGS.

INSTALL MODULAR EXPANSION JOINTS AT PIERS 4 AND 5, ADJUST OPENING ACCORDING TO THE MANUFACTURERS RECOMMENDATION FOR THE ACTUAL ERECTION TEMPERATURE. POUR CLOSURE POURS AT JOINT BLOCKOUTS AT PIERS 4 AND 5.

PLACE LATEX MODIFIED CONCRETE OVERLAY OVER TRAVELWAY.

AT THE END OF CONSTRUCTION ALL LEAD CORE ELASTOMERIC BEARINGS SHALL BE PLUMB WITHIN +/- 1/8" AT 60° F (SEE "SPECIAL NOTE FOR SEISMIC ISOLATION BEARINGS - LEAD CORE ELASTOMERIC.")

THE CONTRACTOR SHALL VERIFY CABLE TENSIONS AND LENGTHS AT THE FOLLOWING STAGES OF ERECTION:
- AFTER STEEL ERECTION
- AFTER THE PLACEMENT OF THE 8 INCH CONCRETE DECK
- AFTER COMPLETION OF THE BRIDGE

ALL CABLE TENSIONS SHALL CONFORM TO THOSE LISTED IN THE TABLE ON SHEET S144 WITHIN +/- 5% OF THE FINAL CABLE TENSION.

ARCH FABRICATION

THE CONSTRUCTION SHALL BE SUCH THAT AFTER THE DEAD LOAD DEFLECTION, THE FINISHED ROADWAY SURFACES WILL CONFORM TO THE FINAL GRADE. ARCHES SHALL BE CAMBERED TO THE FULL DEAD LOAD CONDITION INCLUDING THE 1.5" OVERLAY AND NOT INCLUDING THE FUTURE WEARING SURFACE. ARCH MEMBERS SHALL BE CAMBERED TO THE CORRECT CAMBERED LENGTH. THE CAMBERED LENGTH SHOWN IN THE PLANS IS FROM WORKING POINT TO WORKING POINT.

BEARINGS & EXPANSION JOINTS

DISC EXPANSION BEARINGS (APPROACH SPANS)

DISC EXPANSION BEARINGS SHALL CONFORM TO THE "SPECIAL NOTE FOR DISC BEARINGS" AND SHALL CONFORM TO THE DETAILS AND DIMENSIONS SHOWN ON THE PLANS.

SEISMIC ISOLATION BEARINGS (ARCH SPAN)

THE SEISMIC ISOLATION BEARINGS SHALL BE EITHER FRICTION STYLE OR LEAD CORE ELASTOMERIC STYLE BEARINGS.

THE SEISMIC ISOLATION BEARINGS SHALL BE DESIGNED AND TESTED IN ACCORDANCE WITH THE RESPECTIVE "SPECIAL NOTE FOR SEISMIC ISOLATION BEARINGS - FRICTION OR "FOR SEISMIC ISOLATION BEARINGS - LEAD CORE ELASTOMERIC." THE CONTRACTOR MAY PROPOSE AN ALTERNATE SUPPLIER. HOWEVER, ALTERNATE ISOLATION BEARING TYPES OTHER THAN WHAT IS SPECIFIED IN THE SPECIAL NOTES WILL NOT BE ALLOWED. BEARING ASSEMBLY SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO BEGINNING MANUFACTURING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 30 DAYS PRIOR TO PROTOTYPE TESTING OF THE BEARINGS, FABRICATION OF THE REMAINING BEARINGS SHALL NOT BE CONTINUED UNTIL PROTOTYPE TEST RESULTS ARE APPROVED BY THE ENGINEER.

THE COST OF ALL CONCRETE SURFACE PREPARATION, SHEAR LUGS, BEARING ASSEMBLIES AND STEEL PLATES BELOW THE SOLE PLATE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR SEISMIC ISOLATION BEARING -TYPE A OR -TYPE B.

GROUT POCKETS FOR SPAN 5 BEARINGS (ARCH SPAN)

THOROUGHLY CLEAN THE CONNECTING SURFACE OF LAITANCE AND LOOSE AND FOREIGN MATERIAL PRIOR TO APPLYING THE EPOXY BONDING COMPOUND INSIDE OF THE GROUT POCKET TO THE SATISFACTION OF THE ENGINEER PRIOR TO GROUTING. COAT CONTACT SURFACES WITH CONCRETE BONDING COMPOUNDS TO CONNECT FRESH CONCRETE WITH HARDENED CONCRETE IN GROUT POCKET. PROTECT THE GROUT POCKET AGAINST WATER ENTRY DURING FREEZING PERIODS.

SET SIX MASONRY PLATES BY TEMPLATE TO THE INDICATED ELEVATION AND ALIGNMENT. PLACE GROUT IN POCKET UNDER PRESSURE UNTIL THE VOIDS ARE COMPLETELY FILLED AND GROUT EXITS THE VENT HOLES ON THE TOP OF THE MASONRY PLATE AND OVERFLOWS THE PERIMETER OF THE MASONRY PLATE. STRIKE OFF EXCESS GROUT AND PROVIDE A CLEAN BEARING SURFACE FOR THE INSTALLATION OF THE BEARING COMPONENTS. COMPLETELY REMOVE ALL OVERFLOW GROUT LOCATED ABOVE THE TOP-OF-BEARING ELEVATION. PROPERLY COLLECT AND DISPOSE OF ALL OVERFLOW GROUT IN AN ENVIRONMENTALLY SAFE MANNER. DISPOSAL OF OVERFLOW GROUT IS INCIDENTAL TO THE INSTALLATION OF THE BEARINGS.

ELASTOMERIC BEARING PADS (APPROACH SPANS)

ELASTOMERIC BEARING PADS SHALL CONFORM TO THE DESIGN AND DIMENSIONS SHOWN ON THESE DRAWINGS AND SHALL CONFORM TO AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, 2010 SECTION 18.2. COST OF BEARING PADS SHALL BE INCLUDED IN THE BID ITEM STRUCTURAL STEEL.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: RMS	TJT
DETAILED BY: CEW	CDW

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

GENERAL NOTES - 3

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR, INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S006
DRAWING NO. 24686

MicroStation v8.11.9.459
E-SHEET NAME: S24686 006
USER: cwethington
DATE PLOTTED: December 12, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 GN03.DGN

MATERIAL REQUIREMENTS

M270 GRADE 50W STEEL IS TO BE USED FOR ALL STRUCTURAL STEEL (UNLESS NOTED OTHERWISE).

ALL FLANGE AND WEB MATERIAL, INCLUDING SPLICE PLATES, IN LONGITUDINAL PLATE GIRDERS DESIGNATED (CVN) SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TOUGHNESS TEST APPLICABLE TO ZONE 2 IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE NOTED:

M270 GRADE 50W - (UP TO 2" THICKNESS)	25 FT.-LBS. AT 40° F.
M270 GRADE 50W - (OVER 2" TO 4" THICKNESS)	30 FT.-LBS. AT 40° F.

SAMPLING AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO T243, CURRENT EDITION, UTILIZING (H) FREQUENCY TESTING. WHEN PLATE THICKNESS EXCEEDS 1", FREQUENCY OF TESTING SHALL BE (P).

CAMBER

WEB PLATES SHALL BE CUT TO PROVIDE FOR THE CAMBER OF THE GIRDER. PROVIDE FOR POSSIBLE WARPAGE DUE TO EXTRA HEAT IN TOP FLANGE BY VIRTUE OF SHEAR CONNECTORS. GIRDERS WHICH DO NOT CONFORM TO PLAN CAMBER AND GRADE IN THE ERECTED POSITION, EITHER AN ADJUSTMENT IN DEPTH OF CONCRETE HAUNCH OVER THE SUPPORTING GIRDERS OR A REWORKING OF THE BEAM CAMBER TO MEET PLAN CAMBER AND SLAB THICKNESS WILL BE REQUIRED. IF EITHER TYPE OF ADJUSTMENT IS REQUIRED, IT WILL BE AT NO ADDITIONAL COST TO THE STATE. HOWEVER, IN NO CASE SHALL THE SHEAR CONNECTORS BE ALLOWED TO PENETRATE THE SLAB LESS THAN 2 INCHES.

CAMBERS GIVEN DO NOT INCLUDE DEFLECTION DUE TO ERECTION STRESSES. GIRDERS SHALL BE CAMBERED TO FULL DEAD LOAD WITHOUT THE FUTURE WEARING SURFACE.

FABRICATION

THE CONSTRUCTION SHALL BE SUCH THAT AFTER THE DEAD LOAD DEFLECTION, THE FINISHED ROADWAY SURFACES WILL CONFORM TO THE FINAL GRADE.

ALL STEEL SHALL BE SO POSITIONED TO PLACE THE DIRECTION OF FINISHED ROLLING PARALLEL TO THE DIRECTION OF PRIMARY STRESS. SHOP OR FIELD SPLICES SHALL NOT BE PERMITTED IN ANY MEMBER OR PART OF A MEMBER WITHOUT THE PERMISSION OF THE BRIDGE DESIGNER.

INSPECTION ACCESS

INSPECTION ACCESS COMPONENTS MAY BE ASSEMBLED IN THE SHOP WHERE APPLICABLE. THE CONTRACTOR SHALL MAINTAIN INSPECTION ACCESS COMPONENTS DURING CONSTRUCTION AND SHALL REPAIR OR REPLACE ANY DAMAGE TO INSPECTION ACCESS COMPONENTS THAT OCCURS DURING TRANSPORTATION OR CONSTRUCTION.

STAINLESS STEEL

ALL CONTACT SURFACES BETWEEN STAINLESS STEEL AND STRUCTURAL STEEL SHALL BE ISOLATED WITH 1/8" NEOPRENE PAD OR SIMILAR.

STRUCTURAL STEEL (ARCH SPANS)

ARCH MATERIAL REQUIREMENTS

UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHALL CONFORM TO M270 GRADE 50W M270. GRADE 70W HPS STEEL IS TO BE USED FOR ARCH RIB, TIE GIRDERS, FLOORBEAMS AND HANGER CONNECTIONS.

ALL STEEL MEMBERS IN THE ARCH SPAN, INCLUDING SPLICE AND CONNECTION PLATES DESIGNATED (CVN) SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TOUGHNESS TEST APPLICABLE TO ZONE 2 IN ACCORDANCE WITH THE FOLLOWING, UNLESS OTHERWISE NOTED:

M270 GRADE 50W - (UP TO 2" THICKNESS)	25 FT.-LBS. AT 40° F.
M270 GRADE 50W - (OVER 2" TO 4" THICKNESS)	30 FT.-LBS. AT 40° F.
M270 GRADE 70W HPS - (UP TO 4" THICKNESS)	35 FT.-LBS. AT -10° F.

SAMPLING AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH AASHTO T243, CURRENT EDITION, UTILIZING (H) FREQUENCY TESTING. WHEN PLATE THICKNESS EXCEEDS 1", FREQUENCY OF TESTING SHALL BE (P).

ARCH TIE GIRDER MEMBERS, KNUCKLE, FLOORBEAMS, TIE GIRDER SPLICE PLATES, ALL FILL PLATES USED IN CONJUNCTION WITH SPLICE PLATES, FLOOR BEAM CONNECTION PLATES AND HANGER CONNECTIONS SPECIFIED BY THE (FCM) DESIGNATION SHALL MEET THE SUPPLEMENTAL REQUIREMENTS FOR FRACTURE CRITICAL MEMBERS IN TABLE 10 (AASHTO M270-12) FOR ZONE 2.

ARCH ERECTION AND CAMBER

CAMBERS GIVEN DO NOT INCLUDE DEFLECTION DUE TO ERECTION STRESSES.

SPAN 5 ARCH SHALL BE CAMBERED TO FULL DEAD LOAD INCLUDING THE INITIAL 1 1/2" OVERLAY AND WITHOUT THE FUTURE WEARING SURFACE.

DEAD LOAD DEFLECTIONS WERE CALCULATED WITH THE FOLLOWING CONSTRUCTION SEQUENCE, AT AN ASSUMED ERECTION TEMPERATURE OF 60 DEGREES FARENHEIGHT AND AS OUTLINED IN THE "SPECIAL NOTE FOR STEEL ERECTION - ARCH SPAN."

ERECT THE ARCH RIB, TIE, BRACING AND FLOOR SYSTEM ON BLOCKING IN THE "NO LOAD CONDITION" WITH FOUR SUPPORT POINTS ONLY.

PRIOR TO DECK CONSTRUCITON, THE DISTANCE BETWEEN CTO AND CT12 WILL BE APPROXIMATELY (549'-11") @ 60° F +/- 1/8".

BEARINGS ARE TO BE INSTALLED PRIOR TO DECK CONSTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR TRANSVERSE AND LONGITUDINAL STABILITY OF THE SUPERSTRUCTURE UP UNTIL THE POINT THAT THE THREE BEARINGS AT PIER 4 AND THE TYPE B BEARING AT PIER 5 ARE ALL WELDED TOP AND BOTTOM.

FIELD WELD THE TOP AND BOTTOM OF THE TWO TYPE A BEARINGS AT PIER 4 SUCH THAT WORK POINT CTO LINES UP WITH THE CL OF THE MASONRY PLATES AT PIER 4.

RAISE THE END FLOOR BEAM AT PIER 4 BY JACKING UP TO INSTALL THE TYPE B CENTER BEARING (SEE SHEETS S202 AND S205) AND FIELD WELD THE TOP AND BOTTOM OF THE BEARING SUCH THAT WORK POINT CTO LINES UP WITH THE CL OF THE MASONRY PLATE.

DEPENDING ON THE BEARING TYPE SELECTED, THE FOLLOWING SEQUENCE SHALL BE FOLLOWED AT PIER 5:

SEISMIC ISOLATION BEARINGS - FRICTION

RAISE THE END FLOOR BEAM AT PIER 5 BY JACKING UP TO INSTALL THE TYPE B CENTER BEARING (SEE SHEET S202. ALIGN THE BOTTOM SUB-BASE PLATE WITH THE CL OF THE MASONRY PLATE AND FIELD WELD AS INDICATED. ALIGN THE TOP OF THE BEARING LONGITUDINALLY WITH WORK POINT CT12 AND FIELD WELD TO THE SOLE PLATE AS INDICATED.

ALIGN TYPE A BEARINGS WITH THE CL OF THE MASONRY PLATE AT PIER 5 AND FIELD WELD AS INDICATED. DO NOT WELD THE TOP OF THE TWO TYPE A BEARINGS. LUBRICATE THE BEARINGS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TO BE FREE TO SLIDE IN THE LONGITUDINAL DIRECTION.

DEPENDING ON THE ERECTION TEMPERATURE, THERE WILL BE A DELTA DISTANCE BETWEEN THE BEARING CENTERED ON THE MASONRY PLATE AND THE LONGITUDINAL ALIGNMENT OF WP CT12 BEFORE THE CONCRETE DECK IS POURED. THE ENVISIONED RANGE OF DELTA DISTANCES ARE AS FOLLOWS:

3.6" (TO THE WEST) IF ERECTION TEMPERATURE IS 0° F
1" (TO THE WEST) IF ERECTION TEMPERATURE IS 60° F
1.6" (TO THE EAST) IF ERECTION TEMPERATURE IS 120° F.

WITH THE BRIDGE SUPPORTED ON SIX SUPPORT BEARINGS, PLACE THE 8 INCH CONCRETE DECK WITH THE SEQUENCE OF STRINGER TIGHTENING AND CLOSURE POURS AS SHOWN ON SHEET S214.

INSTALL BARRIERS AND RAILINGS.

INSTALL MODULAR EXPANSION JOINTS AT PIERS 4 AND 5, ADJUST OPENING ACCORDING TO THE MANUFACTURERS RECOMMENDATION FOR THE ACTUAL ERECTION TEMPERATURE. POUR CLOSURE POURS AT JOINT BLOCKOUTS AT PIERS 4 AND 5.

PLACE LATEX MODIFIED CONCRETE OVERLAY OVER TRAVELWAY.

ADJUST THE OFFSET BETWEEN THE CL OF THE BEARING AND WP CT12 IN ACCORDANCE WITH THE FOLLOWING TO WITHIN A TOLERANCE OF +/- 0.50".

2.60" (TO THE WEST) IF TEMPERATURE IS 0° F
0.43" (TO THE WEST) IF TEMPERATURE IS 50° F
0.00" IF TEMPERATURE IS 60° F
0.43" (TO THE EAST) IF TEMPERATURE IS 70° F
2.60" (TO THE EAST) IF TEMPERATURE IS 120° F.

FIELD WELD THE TOP OF THE TWO TYPE-A BEARINGS TO THE SOLE PLATES. TO MEET THE TOLERANCE THE CONTRACTOR MAY WAIT UNTIL AMBIENT TEMPERATURES ARE WITHIN THE RANGE OF 50F TO 70°F BEFORE MAKING THE FINAL FIELD WELD OR PERFORM A JACKING OPERATION TO BRING THE DELTA DISTANCE WITHIN TOLERANCE. SUBMIT FOR REVIEW ALL ADJUSTMENT PROCEDURES TO THE ENGINEER.

SEISMIC ISOLATION BEARINGS - LEAD CORE ELASTOMERIC

RAISE THE END FLOOR BEAM AT PIER 5 BY JACKING UP TO INSTALL THE TYPE B CENTER BEARING (SEE SHEET S205). ALIGN THE TOP OF THE BEARING LONGITUDINALLY WITH WORK POINT CT12 AND FIELD WELD TO THE SOLE PLATE. ALIGN THE BOTTOM SUB-BASE PLATE WITH THE CL OF THE MASONRY PLATE BY JACKING AND FIELD WELD AS INDICATED.

ALIGN THE TOP OF THE TWO TYPE A BEARINGS LONGITUDINALLY WITH WORK POINT CT12 AND FIELD WELD TO THE SOLE PLATE. ALIGN THE BOTTOM SUB-BASE PLATE WITH THE CL OF THE MASONRY PLATE BY JACKING AND FIELD WELD AS INDICATED.

THE ENVISIONED RANGE OF JACKING DISTANCES ARE AS FOLLOWS:

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WITH THE BRIDGE SUPPORTED ON SIX SUPPORT BEARINGS, PLACE THE 8 INCH CONCRETE DECK WITH THE SEQUENCE OF STRINGER TIGHTENING AND CLOSURE POURS AS SHOWN ON SHEET S214.

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INSTALL MODULAR EXPANSION JOINTS AT PIERS 4 AND 5, ADJUST OPENING ACCORDING TO THE MANUFACTURERS RECOMMENDATION FOR THE ACTUAL ERECTION TEMPERATURE. POUR CLOSURE POURS AT JOINT BLOCKOUTS AT PIERS 4 AND 5.

PLACE LATEX MODIFIED CONCRETE OVERLAY OVER TRAVELWAY.

AT THE END OF CONSTRUCTION ALL LEAD CORE ELASTOMERIC BEARINGS SHALL BE PLUMB WITHIN +/- 1/8" AT 60° F (SEE "SPECIAL NOTE FOR SEISMIC ISOLATION BEARINGS - LEAD CORE ELASTOMERIC.")

THE CONTRACTOR SHALL VERIFY CABLE TENSIONS AND LENGTHS AT THE FOLLOWING STAGES OF ERECTION:

- AFTER STEEL ERECTION
- AFTER THE PLACEMENT OF THE 8 INCH CONCRETE DECK
- AFTER COMPLETION OF THE BRIDGE

ALL CABLE TENSIONS SHALL CONFORM TO THOSE LISTED IN THE TABLE ON SHEET S144 WITHIN +/- 5% OF THE FINAL CABLE TENSION.

ARCH FABRICATION

THE CONSTRUCTION SHALL BE SUCH THAT AFTER THE DEAD LOAD DEFLECTION, THE FINISHED ROADWAY SURFACES WILL CONFORM TO THE FINAL GRADE. ARCHES SHALL BE CAMBERED TO THE FULL DEAD LOAD CONDITION INCLUDING THE 1.5" OVERLAY AND NOT INCLUDING THE FUTURE WEARING SURFACE. ARCH MEMBERS SHALL BE CAMBERED TO THE CORRECT CAMBERED LENGTH. THE CAMBERED LENGTH SHOWN IN THE PLANS IS FROM WORKING POINT TO WORKING POINT.

BEARINGS & EXPANSION JOINTS

DISC EXPANSION BEARINGS (APPROACH SPANS)

DISC EXPANSION BEARINGS SHALL CONFORM TO THE "SPECIAL NOTE FOR DISC BEARINGS" AND SHALL CONFORM TO THE DETAILS AND DIMENSIONS SHOWN ON THE PLANS.

SEISMIC ISOLATION BEARINGS (ARCH SPAN)

THE SEISMIC ISOLATION BEARINGS SHALL BE EITHER FRICTION STYLE OR LEAD CORE ELASTOMERIC STYLE BEARINGS.

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THE COST OF ALL CONCRETE SURFACE PREPARATION, SHEAR LUGS, BEARING ASSEMBLIES AND STEEL PLATES BELOW THE SOLE PLATE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR SEISMIC ISOLATION BEARING -TYPE A OR -TYPE B.

GROUT POCKETS FOR SPAN 5 BEARINGS (ARCH SPAN)

THOROUGHLY CLEAN THE CONNECTING SURFACE OF LAITANCE AND LOOSE AND FOREIGN MATERIAL PRIOR TO APPLYING THE EPOXY BONDING COMPOUND INSIDE OF THE GROUT POCKET TO THE SATISFACTION OF THE ENGINEER PRIOR TO GROUTING. COAT CONTACT SURFACES WITH CONCRETE BONDING COMPOUNDS TO CONNECT FRESH CONCRETE WITH HARDENED CONCRETE IN GROUT POCKET. PROTECT THE GROUT POCKET AGAINST WATER ENTRY DURING FREEZING PERIODS.

SET SIX MASONRY PLATES BY TEMPLATE TO THE INDICATED ELEVATION AND ALIGNMENT. PLACE GROUT IN POCKET UNDER PRESSURE UNTIL THE VOIDS ARE COMPLETELY FILLED AND GROUT EXITS THE VENT HOLES ON THE TOP OF THE MASONRY PLATE AND OVERFLOWS THE PERIMETER OF THE MASONRY PLATE. STRIKE OFF EXCESS GROUT AND PROVIDE A CLEAN BEARING SURFACE FOR THE INSTALLATION OF THE BEARING COMPONENTS. COMPLETELY REMOVE ALL OVERFLOW GROUT LOCATED ABOVE THE TOP-OF-BEARING ELEVATION. PROPERLY COLLECT AND DISPOSE OF ALL OVERFLOW GROUT IN AN ENVIRONMENTALLY SAFE MANNER. DISPOSAL OF OVERFLOW GROUT IS INCIDENTAL TO THE INSTALLATION OF THE BEARINGS.

ELASTOMERIC BEARING PADS (APPROACH SPANS)

ELASTOMERIC BEARING PADS SHALL CONFORM TO THE DESIGN AND DIMENSIONS SHOWN ON THESE DRAWINGS AND SHALL CONFORM TO AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, THIRD EDITION, 2010 SECTION 18.2. COST OF BEARING PADS SHALL BE INCLUDED IN THE BID ITEM STRUCTURAL STEEL.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: RMS	TJT
DETAILED BY: CEW	CDW

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

GENERAL NOTES - 3

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S006
DRAWING NO. 24686

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL/ TRIGG	1-180.70	R2D

GENERAL SUMMARY

ITEM	DESCRIPTION	UNIT	US 68/KY 80 MARSHALL COUNTY	US 68/KY 80 TRIGG COUNTY													TOTAL PROJECT
71	CRUSHED AGGREGATE SIZE NO 57	TON	444	535													979
78	CRUSHED AGGREGATE SIZE NO 2 (8)	TON	15	14													29
100	ASPHALT SEAL AGGREGATE	TON	50	22													72
103	ASPHALT SEAL COAT	TON	6	3													9
1000	PERFORATED PIPE-4 IN (8) (13)	LF	3,920	3,559													7,479
1001	PERFORATED PIPE-6 IN (8)	LF	935	1,380													2,315
1010	NON-PERFORATED PIPE-4 IN (8) (13)	LF	277	248													525
1011	NON-PERFORATED PIPE-6 IN (8)	LF	40	152													192
1020	4 INCH PERFORATED PIPE HEADWALL TYPE 1 (8) (13)	EACH	4														4
1021	6 INCH PERFORATED PIPE HEADWALL TYPE 1 (8)	EACH	1														1
1024	4 INCH PERFORATED PIPE HEADWALL TYPE 2 (8)	EACH	8	7													15
1028	4 INCH PERFORATED PIPE HEADWALL TYPE 3 (8)	EACH	1	3													4
1029	6 INCH PERFORATED PIPE HEADWALL TYPE 3 (8)	EACH		1													1
1032	4 INCH PERFORATED PIPE HEADWALL TYPE 4 (8)	EACH	2	2													4
1033	6 INCH PERFORATED PIPE HEADWALL TYPE 4 (8)	EACH		1													1
1741	CORED HOLE DRAINAGE BOX CON-6 IN (8)	EACH	4	4													8
1982	DELINEATOR FOR GUARDRAIL M/W	EACH	53	29													82
1984	DELINEATOR FOR BARRIER - MONO DIRECTIONAL WHITE	EACH	50	36													86
1985	DELINEATOR FOR BARRIER - MONO DIRECTIONAL YELLOW	EACH	97	76													173
2014	BARRICADE-TYPE III	EACH	2	2													4
2091	REMOVE PAVEMENT (4)	SQ YD	1,950	782													2,732
2159	TEMP DITCH	LF	3,255	2,630													5,885
2160	CLEAN TEMP DITCH	LF	9,765	7,890													17,655
2200	ROADWAY EXCAVATION (A)	CY	35,073	16,289												(15)	47,388
2204	SPECIAL EXCAVATION	CY	2,220	1,754													3,974
2241	RESHAPING AND COMPACTING	LF	1,638	948													2,586
2242	WATER (5)	MGAL	1	1													2
20060 ES 719	GUARDRAIL-STEEL W BEAM-S FACE CR	LF	3,763	1,709													5,472
24637 EC	GUARDRAIL-STEEL W BEAM-D FACE CR	LF	694	2,074													2,768
20062 ES 719	GUARDRAIL TERMINAL SECTION NO 1 CR	EACH	3	3													6
20382 ES 719	GUARDRAIL CONNECTOR TO BRIDGE END TY A CR	EACH	3	1													4
24636 EC	GUARDRAIL TERMINAL SECTION NO 3 CR	EACH	1	1													2
23651 ES 719	GUARDRAIL END TREATMENT TYPE 1 CR	EACH		1													1
20285 ES 719	GUARDRAIL END TREATMENT TYPE 2A CR	EACH	1														1
2381	REMOVE GUARDRAIL (6)	LF	3,553	3,506													7,059
23162 EN	GUARDRAIL CONNECTOR TO BRIDGE END TY A-1 CR	EACH	3	1													4
2432	WITNESS POST	EACH	3														3
2436	R/W MARKER RURAL TYPE 3	EACH	7														7
2483	CHANNEL LINING CLASS II	TON	33	65													98
2545	CLEARING AND GRUBBING (1)	LS	1														1
2562	SIGNS (2)	SQ FT	606	561													1,167
2568	MOBILIZATION	LS	1														1
2569	DEMOBILIZATION	LS	1														1
2570	PROJECT CPM SCHEDULE	LS	1														1
2585	EDGE KEY	LF	180	60													240
2596	FABRIC-GEOTEXTILE TYPE I (7)	SQ YD	6,721	5,520													12,241
2599	FABRIC-GEOTEXTILE TYPE IV	SQ YD	4,551	5,501													10,052
2600	FABRIC GEOTEXTILE TY IV FOR PIPE	SQ YD	1,514	368													1,882
2650	MAINTAIN AND CONTROL TRAFFIC (11)	LS	1														1
2650	MAINTAIN AND CONTROL TRAFFIC (12)	LS		1													1
2673	PRECAST VEHICLE STOP	LF	172														172
2696	SHOULDER RUMBLE STRIPS-SAWED	LF	4,564	1,996													6,560
2701	TEMP SILT FENCE	LF	3,255	2,630													5,885
2703	SILT TRAP TYPE A	EACH	19	14													33
2704	SILT TRAP TYPE B	EACH	19	14													33

(15) EXCAVATION QUANTITIES PROVIDED IN NOTE (A) INCLUDE SPECIAL EXCAVATION. TOTAL PROJECT QUANTITY FOR ROADWAY EXCAVATION IS REDUCED BY SPECIAL EXCAVATION QUANTITY (3,974 CY).

NOTES:

ROADWAY EMBANKMENT (3)

MARSHALL COUNTY	TRIGG COUNTY
15,448 CY	5,847 CY

(A) ROADWAY EXCAVATION INCLUDES:

MARSHALL COUNTY	TRIGG COUNTY	
23,989	13,754	CY EXCAVATION (10)
9,362	2,535	CY EMBANKMENT BENCHING (3)
1,722		CY TRANSVERSE BENCHING
35,073	16,289	CY TOTAL

ESTIMATES OF EARTHWORK QUANTITIES ARE FOR DESIGN ONLY. THE CONTRACTOR IS ADVISED THAT THE EARTHWORK CALCULATIONS ARE FOR INFORMATION ONLY. ASSUMPTIONS FOR SHRINKAGE AND SWELL FACTORS ARE THE CONTRACTOR'S RESPONSIBILITY.

(1) APPROXIMATELY 1.5 ACRES IN MARSHALL COUNTY

(2) FOR MAINTENANCE OF TRAFFIC.

(3) EMBANKMENT AND EMBANKMENT BENCHING INTO AND/OR PLACED IN SPECIALIZED MATERIAL TO BE REPLACED BY EQUIVALENT OR AS SPECIFIED BY ENGINEER

(4) 1,793 LF OF SAWCUTTING EXISTING PAVEMENT

(5) ESTIMATED AT 2.125 M. GALLON PER MILE

(6) EXISTING GUARDRAIL SHALL BE REMOVED, DISASSEMBLED AND HAULED TO MARSHALL/TRIGG COUNTY MAINTENANCE YARDS AS DIRECTED BY ENGINEER

(7) STA. 969+73 TO STA. 989+46 AND STA. 1023+81 TO STA. 1035+29 PLACE CYCLOPEAN STONE RIP RAP/FABRIC ON MULTI-USE PATH SLOPES UP TO ELEVATION 375 (SEE TYPICAL SECTIONS FOR DETAIL)

(8) QUANTITIES BROUGHT FORWARD FROM PAVEMENT EDGE DRAIN SUMMARY

(9) FOR REMOVAL, RELOCATION AND/OR STOCKPILING OF EXISTING STONE RIPRAP SLOPE PROTECTION

(10) ROADWAY EXCAVATION QUANTITY INCLUDES SPECIAL EXCAVATION QUANTITY

(11) MARSHALL COUNTY MAINTAIN AND CONTROL TRAFFIC INCLUDES CONSTRUCTION OF CROSSOVERS: 342 CY EXCAVATION, 356 CY EMBANKMENT, AND 372 SY PAVEMENT REMOVAL

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(14) ALL GUARDRAIL, END TREATMENTS, AND ASSOCIATED HARDWARE SHALL BE CORTEN STEEL. THE CONTRACTOR MAY PAINT TERMINAL SECTIONS AND END TREATMENTS TO MATCH CORTEN COLOR TO THE SATISFACTION OF THE ENGINEER. ALL PAINTING SHALL BE INCIDENTAL TO INSTALLATION. THE CONTRACTOR SHALL USE AN APPROVED GUARDRAIL PAINT OR BRIDGE PAINT THAT IS READILY AVAILABLE. THE PAINT SHALL BE A MOISTURE CURE URETHANE COATING SYSTEM WITH MICACEOUS IRON OXIDE PIGMENTATION. GUARDRAIL POST SHALL BE SQUARE TIMBER POSTS IN ACCORDANCE WITH SECTION 814.04.

GENERAL SUMMARY SHEET

FILE NAME: \\PEWINFS2\JOBS\KDOT\LAKE_BRIDGES\ADDENDUMS\ADDENDUM #3\R0020DSU.DGN
USER: andrew-b
DATE PLOTTED: December 12, 2013
E-SHEET NAME: R0020DSU
MicroStation v8.11.9.357

GENERAL SUMMARY

REVISED 12-10-2013

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL/ TRIGG	1-180.70	R2D

ITEM	DESCRIPTION	UNIT	US 68/KY 80 MARSHALL COUNTY	US 68/KY 80 TRIGG COUNTY	TOTAL PROJECT
71	CRUSHED AGGREGATE SIZE NO 57	TON	444	535	979
78	CRUSHED AGGREGATE SIZE NO 2 (8)	TON	15	14	29
100	ASPHALT SEAL AGGREGATE	TON	50	22	72
103	ASPHALT SEAL COAT	TON	6	3	9
1000	PERFORATED PIPE-4 IN (8) (13)	LF	3,920	3,559	7,479
1001	PERFORATED PIPE-6 IN (8)	LF	935	1,380	2,315
1010	NON-PERFORATED PIPE-4 IN (8) (13)	LF	277	248	525
1011	NON-PERFORATED PIPE-6 IN (8)	LF	40	152	192
1020	4 INCH PERFORATED PIPE HEADWALL TYPE 1 (8) (13)	EACH	4		4
1021	6 INCH PERFORATED PIPE HEADWALL TYPE 1 (8)	EACH	1		1
1024	4 INCH PERFORATED PIPE HEADWALL TYPE 2 (8)	EACH	8	7	15
1028	4 INCH PERFORATED PIPE HEADWALL TYPE 3 (8)	EACH	1	3	4
1029	6 INCH PERFORATED PIPE HEADWALL TYPE 3 (8)	EACH		1	1
1032	4 INCH PERFORATED PIPE HEADWALL TYPE 4 (8)	EACH	2	2	4
1033	6 INCH PERFORATED PIPE HEADWALL TYPE 4 (8)	EACH		1	1
1741	CORED HOLE DRAINAGE BOX CON-6 IN (8)	EACH	4	4	8
1982	DELINEATOR FOR GUARDRAIL M/W	EACH	53	29	82
1984	DELINEATOR FOR BARRIER - MONO DIRECTIONAL WHITE	EACH	50	36	86
1985	DELINEATOR FOR BARRIER - MONO DIRECTIONAL YELLOW	EACH	97	76	173
2014	BARRICADE-TYPE III	EACH	2	2	4
2091	REMOVE PAVEMENT (4)	SQ YD	1,950	782	2,732
2159	TEMP DITCH	LF	3,255	2,630	5,885
2160	CLEAN TEMP DITCH	LF	9,765	7,890	17,655
2200	ROADWAY EXCAVATION (A)	CY	35,073	16,289	(15) 47,388
2204	SPECIAL EXCAVATION	CY	2,220	1,754	3,974
2241	RESHAPING AND COMPACTING	LF	1,638	948	2,586
2242	WATER (5)	MGAL	1	1	2
20060 ES 719	GUARDRAIL-STEEL W BEAM-S FACE CR	LF	3,763	1,709	5,472
24637 EC	GUARDRAIL-STEEL W BEAM-D FACE CR	LF	694	2,074	2,768
20062 ES 719	GUARDRAIL TERMINAL SECTION NO 1 CR	EACH	3	3	6
20382 ES 719	GUARDRAIL CONNECTOR TO BRIDGE END TY A CR	EACH	3	1	4
24636 EC	GUARDRAIL TERMINAL SECTION NO 3 CR	EACH	1	1	2
23651 ES 719	GUARDRAIL END TREATMENT TYPE 1 CR	EACH		1	1
20285 ES 719	GUARDRAIL END TREATMENT TYPE 2A CR	EACH	1		1
2381	REMOVE GUARDRAIL (6)	LF	3,553	3,506	7,059
23162 EN	GUARDRAIL CONNECTOR TO BRIDGE END TY A-1 CR	EACH	3	1	4
2432	WITNESS POST	EACH	3		3
2436	R/W MARKER RURAL TYPE 3	EACH	7		7
2483	CHANNEL LINING CLASS II	TON	33	65	98
2545	CLEARING AND GRUBBING (1)	LS	1		1
2562	SIGNS (2)	SQ FT	606	561	1,167
2568	MOBILIZATION	LS	1		1
2569	DEMOBILIZATION	LS	1		1
2570	PROJECT CPM SCHEDULE	LS	1		1
2585	EDGE KEY	LF	180	60	240
2596	FABRIC-GEOTEXTILE TYPE I (7)	SQ YD	6,721	5,520	12,241
2599	FABRIC-GEOTEXTILE TYPE IV	SQ YD	4,551	5,501	10,052
2600	FABRIC GEOTEXTILE TY IV FOR PIPE	SQ YD	1,514	368	1,882
2650	MAINTAIN AND CONTROL TRAFFIC (11)	LS	1		1
2650	MAINTAIN AND CONTROL TRAFFIC (12)	LS		1	1
2673	PRECAST VEHICLE STOP	LF	172		172
2696	SHOULDER RUMBLE STRIPS-SAWED	LF	4,564	1,996	6,560
2701	TEMP SILT FENCE	LF	3,255	2,630	5,885
2703	SILT TRAP TYPE A	EACH	19	14	33
2704	SILT TRAP TYPE B	EACH	19	14	33

NOTES:

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(A) ROADWAY EXCAVATION INCLUDES:

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CHANGED QUANTITY FOR ITEM 2091 FROM 2,027 TO 1,950 AND FROM 2,809 TO 2,732.
CHANGED QUANTITY FOR ITEM 2200 FROM 51,362 TO 47,388.
ADDED NOTE 15.

(15) EXCAVATION QUANTITIES PROVIDED IN NOTE (A) INCLUDE SPECIAL EXCAVATION. TOTAL PROJECT QUANTITY FOR ROADWAY EXCAVATION IS REDUCED BY SPECIAL EXCAVATION QUANTITY (3,974 CY).

GENERAL SUMMARY SHEET

FILE NAME: \\PEWINFS2\JOBS\KDOT\LAKE_BRIDGES\ADDENDUMS\ADDENDUM #3\R0020DSU.DGN
USER: andrew-b
DATE PLOTTED: December 12, 2013
E-SHEET NAME: R0020DSU
MicroStation v8.11.9.357

FINGER EXPANSION JOINTS END BENTS

A CANTILEVER TYPE EXPANSION JOINT WITH COLLECTION TROUGH AND DRAINAGE SYSTEM IS DETAILED AS THE EXPANSION DEVICE AT END BENTS 1 AND 2. JOINTS SHALL CONFORM TO "SPECIAL NOTE FOR FINGER EXPANSION JOINT" AND THE DETAILS AND DIMENSIONS SHOWN IN THE PLAN.

MODULAR EXPANSION JOINTS (ARCH SPAN)

THE EXPANSION JOINTS AT PIERS 4 AND 5 SHALL BE A MODULAR BRIDGE JOINT SYSTEM AND CONFORM TO THE "SPECIAL NOTE FOR MODULAR EXPANSION JOINT" AND MEET THE REQUIREMENTS IN THE NOTES ON SHEET NO. S206.

SEISMIC DAMPERS (APPROACH SPANS)

SEISMIC DAMPERS SHALL CONFORM TO THE "SPECIAL NOTE FOR VISCOUS DAMPERS" AND THE DETAILS AND DIMENSIONS SHOWN ON THE PLANS.

GENERAL

DIMENSIONS

DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60 DEGREES FAHRENHEIT. LAYOUT DIMENSIONS ARE HORIZONTAL MEASUREMENTS UNLESS OTHERWISE NOTED.

COMPLETION OF STRUCTURE

THE CONTRACTOR IS REQUIRED TO COMPLETE THE STRUCTURE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. MATERIAL OR LABOR NOT OTHERWISE SPECIFIED ARE TO BE INCLUDED IN THE BID ITEM MOST APPROPRIATE TO THE WORK INVOLVED. THIS MAY INCLUDE SHORING, EXCAVATIONS, BACKFILLING, REMOVAL OF ALL OR PARTS OF EXISTING STRUCTURES, PHASE CONSTRUCTION, INCIDENTAL MATERIALS, LABOR OR ANYTHING ELSE REQUIRED TO COMPLETE THE STRUCTURE.

ON SITE INSPECTION

EACH CONTRACTOR SUBMITTING A BID FOR THIS WORK SHALL MAKE A THOROUGH INSPECTION OF THE PROJECT SITE PRIOR TO SUBMITTING A BID AND SHALL BE THOROUGHLY FAMILIARIZED WITH EXISTING CONDITIONS SO THAT WORK CAN BE EXPEDITIOUSLY PERFORMED AFTER A CONTRACT IS AWARDED. SUBMISSION OF A BID WILL BE CONSIDERED EVIDENCE OF THIS INSPECTION HAVING BEEN MADE. THE PROJECT GEOTECHNICAL REPORT WILL BE POSTED UNDER "PROJECT RELATED INFORMATION" ON THE DIVISION OF CONSTRUCTION PROCUREMENT WEBSITE. THE GEOTECHNICAL REPORT IS FOR BIDDERS' INFORMATION AND IS NOT A CONTRACT DOCUMENT. ANY CLAIMS RESULTING FROM SITE CONDITIONS WILL NOT BE HONORED BY THE DEPARTMENT OF HIGHWAYS.

VALUE ENGINEERING CHANGE PROPOSAL

CHANGES TO THE SPAN ARRANGEMENT SHOWN IN THE PLANS WILL NOT BE CONSIDERED BY THE DEPARTMENT DUE TO GEOTECHNICAL AND VESSEL IMPACT CONCERNS.

CONSTRUCTION IDENTIFICATION

THE NAMES OF THE PRIME CONTRACTOR AND THE SUB-CONTRACTOR SHALL BE IMPRINTED IN THE CONCRETE WITH ONE INCH LETTERS AT THE LOCATION DESIGNATED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH ALL PLANS, EQUIPMENT AND LABOR NECESSARY TO DO THE WORK FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

DISCLAIMER

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SHOP DRAWING PROCEDURE

FOR SHOP DRAWING SUBMITTAL PROCEDURE SEE THE "SPECIAL NOTE FOR SHOP DRAWINGS & WELDING PROCEDURES." WHEN ANY CHANGES IN THE DESIGN PLANS ARE PROPOSED BY THE FABRICATOR OR SUPPLIER, THE SHOP DRAWINGS REFLECTING THOSE CHANGES SHALL BE SUBMITTED THROUGH THE CONTRACTOR. ADDITIONAL TIME TO REVIEW REQUESTED CHANGES TO ANY RELEVANT DRAWINGS AND CONSTRUCTION PROCEDURES WILL NOT BE CONSIDERED CAUSE FOR DELAY CLAIMS.

NAVIGATIONAL/ENVIRONMENTAL RESTRICTIONS

NAVIGATION CLEARANCES

ALL WORK SHALL BE CONDUCTED WITHOUT UNREASONABLE INTERFERENCE TO THE FREE NAVIGATION OF THE WATERWAY AND WITHOUT IMPAIRMENT TO THE PRESENT NAVIGATIONAL DEPTHS OR VERTICAL CLEARANCES.

EITHER SPAN B OR SPAN C OF THE EXISTING EGGNERS FERRY BRIDGE MUST BE MAINTAINED WITH FULL EXISTING CLEARANCES FOR WATERWAY NAVIGATION THROUGHOUT THE DURATION OF CONTRACT. SCHEDULE THE WORK TO MINIMIZE THE PERIOD DURING WHICH COMMERCIAL NAVIGATION IS REQUIRED TO USE SPAN C. SCHEDULE PIER 4 TO BE THE LAST PIER CONSTRUCTED, AND TO COMPLETE REMAINING SUPERTRUCTURE FOR BRIDGE OPEN TO TRAFFIC WITHOUT DELAY.

COAST GUARD REQUIREMENTS

THE REQUIREMENTS OF THE COAST GUARD PERMIT, A COPY OF WHICH IS CONTAINED IN THE PROPOSAL, ARE TO BE CONSIDERED AS REQUIREMENTS OF THIS CONTRACT.

SEE "SPECIAL NOTE FOR HELPER BOAT."

CPM SCHEDULE:

THE CONTRACTOR SHALL SUBMIT A BASELINE SCHEDULE AS OUTLINED IN "SPECIAL NOTE FOR CPM SCHEDULE." ANY SCHEDULE OR ACTUAL SEQUENCE OF WORK THAT DOES NOT COMPLY WITH THE REQUIREMENT TO CONSTRUCT PIER 4 LAST WILL BE GROUNDS FOR THE ENGINEER TO REJECT THE SCHEDULE OR STOP WORK.

CONCRETE PLACEMENT

CONCRETE FOR PIERS AND/OR DECKING SHALL BE PLACED SUCH THAT SPILLS INTO THE WATERS OF KENTUCKY LAKE DO NOT OCCUR. IN THE UNFORESEEN EVENT THAT SPILLAGE DOES OCCUR, THE FRANKFORT USFWS OFFICE WILL BE NOTIFIED AND THE RESIDENT ENGINEER SHALL HALT THE ACTIVITY IMMEDIATELY AND NOT RESUME UNTIL APPROPRIATE REMEDIAL ACTIONS HAVE BEEN IMPLEMENTED.

DURING FOOTER/PIER CONSTRUCTION, THE CONTRACTOR SHALL FILTER WATER REMOVED FROM INSIDE EXCAVATIONS USING AN APPROVED SEDIMENT FILTRATION METHOD PRIOR TO RELEASE INTO THE WATER.

TEMPORARY WORKS

TEMPORARY SUPPORTS

TEMPORARY SUPPORTS SHALL NOT BE PERMITTED UNDER THE GIRDERS WHEN PLACING THE CONCRETE DECK SLAB OR TAKING "TOP OF GIRDER" ELEVATIONS.

LIGHTING & ELECTRICAL

PERMANENT NAVIGATION LIGHTING

SEE PLANS

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AESTHETIC LIGHTING AND PATH DELINEATION LIGHTING

SEE PLANS

STRUCTURE LIGHTNING PROTECTION

THE STRUCTURE LIGHTNING PROTECTION SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE "SPECIAL NOTE FOR STRUCTURE LIGHTNING PROTECTION." CONTRACTOR DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO ORDERING MATERIALS OR BEGINNING INSTALLATION. THE COST OF ALL MATERIALS AND LABOR SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR STRUCTURE LIGHTNING PROTECTION.

MicroStation v8.11.9.459 E-SHEET NAME: S24686 006A USER: CWethington DATE PLOTTED: December 12, 2013 FILE NAME: C:\PW181-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 GN04.DGN

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: RMS	TJT
DETAILED BY: CEW	CDW

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

GENERAL NOTES – 4

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR. INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S006A
DRAWING NO. 24686

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FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 GN04.DGN
USER: CWethington
DATE PLOTTED: December 12, 2013
E-SHEET NAME: S24686 006A
MicroStation v8.11.9.459

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: RMS	TJT
DETAILED BY: CEW	CDW

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

GENERAL NOTES – 4

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR. INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S006A
DRAWING NO. 24686

THE FOLLOWING ABBREVIATIONS MAY HAVE BEEN USED IN THE PREPARATION OF THESE PLANS:

AKA	ALSO KNOWN AS
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
B.F.	BACK FACE
B.O.F.	BOTTOM OF FOOTING
BOR	BEGINNING OF RESTRIKE
BOT / BOTT.	BOTTOM
BR	BRAKING
BRG.	BEARING
BTW. / BTWN.	BETWEEN
C.F.S.	CUBIC FEET PER SECOND
C.L.	CENTERLINE
C.Y.	CUBIC YARDS
CDL	COMPOSITE DEAD LOAD
CJP	COMPLETE JOINT PENETRATION
CLR.	CLEAR
CO.	COUNTY
COMB.	COMBINATION
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CTR.	CENTER
CVN	CHARPY - V - NOTCH
D_B	BAR DIAMETER
DC	DEAD LOAD OF STRUCTURAL
DEFL.	DEFLECTION
DEG.	DEGREE
DIA.	DIAMETER
DIAPH.	DIAPHRAGM
DIM.	DIMENSION
DP.	DEEP
DTLS	DETAILS
DW	DEAD LOAD OF WEARING SURFACES AND UTILITIES
DWG.	DRAWING
E / EXP.	EXPANSION
E.	EAST
E.F.	EACH FACE
EA.	EACH
EB	EAST BOUND
EB. / E.B.	END BENT
EE	EXTREME EVENT
EFB	END FLOORBEAM
ELEV. / EL	ELEVATION
EMBED.	EMBEDMENT
EOD	END OF DRIVING
EQ.	EQUAL OR EARTHQUAKE
EST.	ESTIMATED
EXIST./EX.	EXISTING
EXT.	EXTERIOR
F	FIXED
F.F.	FRONT FACE
F.S.	FRONT SIDE
FA.	FACE
FB	FLOORBEAM
FCM	FRACTURE CRTICAL MATERIAL
FF	FRONT FACE
FIX.	FIXED
FLG	FLANGE
FT	FEET
FTG	FOOTING
FWS	FUTURE WEARING SURFACE
GALV.	GALVANIZED
GDR.	GIRDER
GR / GR.	GRADE
H.	HEAVY
H.S.	HIGH STRENGTH
HORIZ.	HORIZONTAL
HPS	HIGH PERFORMANCE STEEL
HSB	HIGH STRENGTH BOLT
HVY	HEAVY
I	IMPACT
I.D.	INNER DIAMETER
INT.	INTEGRAL
INT.	INTERIOR
ISO.	ISOLATION
JACK.	JACKING
JT.	JOINT
KIPS	KILOPOUNDS
KSI	KIPS PER SQUARE INCH
L	ANGLE
L.F.	LINEAR FEET
L.S.	LUMP SUM
LBS.	POUNDS
LG.	LONG
LL	LIVE LOAD
LLB	LOWER LATERAL BRACING
LMC	LATEX MODIFIED CONCRETE
LONG / LONGIT.	LONGITUDINAL
LT.	LEFT
MAX.	MAXIMUM
MEAS.	MEASURED
MECH.	MECHANICAL NOMINAL PIPE SIZE
MID.	MIDDLE
MIN.	MINIMUM
MPH	MILES PER HOUR
MTG	MOUNTING
N	NORTH
N.S.	NEAR SIDE
N.T.S.	NOT TO SCALE
NAV.	NAVIGATIONAL
NE	NORTHEAST
NEG.	NEGATIVE
NF	NORTH FACE
NO.	NUMBER
NPS	NOMINAL PIPE SIZE
NW	NORTHWEST
O.D.	OUTER DIAMETER
OPP.	OPPOSITE
P.C.	POINT OF CURVATURE
P.G.	PROFILE GRADE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENT
PC	PIECES
PERM.	PERMISSIBLE
PERP.	PERPENDICULAR
PG	PAGE
PGL	PROFILE GRADE LINE
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLCS.	PLACES
PMCJ	PERMISSIBLE CONSTRUCTION JOINT
PP	PIPE PILE
PRE - FAB	PRE FABRICATION
PVC	POLYVINYL CHLORIDE
R / F	REAR FACE
R.	RADIUS
R.C.J	ROUGHENED CONSTRUCTION JOINT
REIN.	REINFORCEMENT
REQ'D	REQUIRED
ROT.	ROTATION
RT.	RIGHT
S.A.S.	SPACED AS SHOWN
S.Y.	SQUARE YARDS
S/W	SPACE WITH
SE	SOUTHEAST
SER.	SERIES
SERV.	SERVICE
SH	SHRINKAGE
SHLDR.	SHOULDER
SHT.	SHEET
SPA.	SPACES
SPECS.	SPECIFICATIONS
SQ.	SQUARE
SS / S.S.	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
STIFF.	STIFFENER
STR.	STRENGTH
STR.	STRAIGHT
SW	SOUTHWEST
T&B	TOP AND BOTTOM
T.O.F.	TOP OF FOOTING
TRANS.	TRANSVERSE
TU	TEMPERATURE
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UHMW	ULTRA HIGH MOLECTULAR WEIGHT POLYETHYLENE
V.C.	VERTICAL CURVE
V.P.I.	VERTICAL POINT OF INTERSECTION
VERT.	VERTICAL
W.	WEST
W.	WEST
W.S.P.	WELDED STEEL PLATE
W/	WITH
WB	WEST BOUND
WP / W.P.	WORK POINT
WS	WIND ON STRUCTURE
YD.	YARDS

ESTIMATE OF STRUCTURAL STEEL

FOR INFORMATION ONLY

ITEM	UNIT	FCM-50W	FCM-70W HPS	NON-FCM-50W	NON-FCM-70W HPS
APPROACH GIRDERS	LB			19,174,167	
KNUCKLE	LB		148,680	43,404	12,180
ARCH RIB AND CONNECTIONS	LB				1,139,527
ARCH RIB BRACING AND CONNECTIONS	LB			327,352	
TIE GIRDER AND CONNECTIONS	LB		1,287,903	59,621	61,557
HANGER ANCHORAGE	LB	20,451	77,402	5,771	
FLOORBEAMS AND CONNECTIONS	LB	16,989	672,269	5,615	
STRINGERS AND CONNECTIONS	LB			689,227	
LOWER LATERAL BRACING AND CONNECTIONS	LB			145,079	
UTILITY HANGERS AND CONNECTIONS	LB			9,113	
INSPECTION AND NAVIGATIONAL LIGHTING ACCESS	LB			18,904	

ESTIMATE OF MECHANICAL REINFORCEMENT COUPLERS

FOR INFORMATION ONLY

ITEM	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7	PIER 8	PIER 9
MECHANICAL REINFORCEMENT COUPLERS #7				26	26				
MECHANICAL REINFORCEMENT COUPLERS #11			96	324	324				
MECHANICAL REINFORCEMENT COUPLERS #14				272	272	186			
MECHANICAL REINFORCEMENT COUPLERS #18	32	32	32	184	184	100	32	32	32

MECHANICAL COUPLERS WILL NOT BE PAID SEPARATELY AND ARE INCIDENTAL TO THE PRICE OF THE STEEL REINFORCEMENT

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013 | CHECKED BY

DESIGNED BY: ACK | RMS

DETAILED BY: CEW | ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

ABBREVIATIONS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR, INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S010

DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686_IND02.DGN
USER: CWethington
DATE PLOTTED: November 21, 2013
E-SHEET NAME: S24686_010
MicroStation v8.11.9.459

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AKA	ALSO KNOWN AS
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
B.F.	BACK FACE
B.O.F.	BOTTOM OF FOOTING
BOR	BEGINNING OF RESTRIKE
BOT / BOTT.	BOTTOM
BR	BRAKING
BRG.	BEARING
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C.F.S.	CUBIC FEET PER SECOND
C.L.	CENTERLINE
C.Y.	CUBIC YARDS
CDL	COMPOSITE DEAD LOAD
CJP	COMPLETE JOINT PENETRATION
CLR.	CLEAR
CO.	COUNTY
COMB.	COMBINATION
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CONST.	CONSTRUCTION
CONT.	CONTINUOUS
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⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: ACK	RMS
DETAILED BY: CEW	ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE **US68** | CROSSING **KENTUCKY LAKE**

ABBREVIATIONS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR, INC.
9750 ORMSBY STATION ROAD
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SHEET NO. S010
DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686_IND02.DGN
USER: CWethington
DATE PLOTTED: November 21, 2013
E-SHEET NAME: S24686_010
MicroStation v8.11.9.459

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL / TRIGG	1-180.70	R7

CONSTRUCT SURFACING (GRADE & DRAIN BY OTHERS)

CONSTRUCT BRIDGE

KENTUCKY LAKE
W.S.E. 354 (WINTER POOL),
W.S.E. 359 (SUMMER POOL)

P.I. STA. 978+60.46
Δ = 5°51'47" LT
T = 716.92'
L = 1432.59'
R = 14000.00'
E = 18.34'
e = NC

TENNESSEE VALLEY AUTHORITY

980+00

985+00

990+00

EXISTING PERMANENT EASEMENT

EXIST. R/W

EXIST. R/W

STA. 978+00 TO STA. 988+60.25
CONST. 1060 LF STD. CONC.
MEDIAN BARRIER 9C

PT 985+76.13

TENNESSEE VALLEY AUTHORITY

STA 988+85.25
BEGIN BRIDGE

PERM. ESMT.

MATCHLINE STA. 978+00

PROP. DISTURB LIMITS

TOP EX. RIP RAP

TY A-1

N 80°16'02" E

BRIDGE

TS 1

DF GR TY A

TS 1

MULTI-USE PATH

EXIST. R/W

(REMOVE)
EX. 24" PIPE

2' F.B. DT.

CONST. ENTRANCE
APPROX. LOCATION

CROSS HOLE
CASINGS (DO NOT DISTURB)

50+00

PI 5+11.37

200' R

SPEC. "V" DT.

MULTI-USE PATH "D"

PI 53+83.27

200' R

55+00

MATCHLINE STA. 993+00

SIGN

MULTI-USE PATH

US 68/KY 80

IPC 207

IPC 208

IPC 209

EL JB

TOP EX. RIP RAP

MULTI-USE PATH "A"

TOP EX. RIP RAP

EXIST. R/W

CYCLOPEAN STONE RIP RAP LIMITS
ELEV. TO 375'

PROP. DISTURB LIMITS

25+00

30+00

CYCLOPEAN STONE RIP RAP LIMITS
ELEV. TO 375'

POE 31+36.00

PI 978+60.46

RT. STA. 978+00 TO RT. STA. 978+15
REMOVE 15 LF EX. GUARDRAIL

RT. STA. 979+15 TO RT. STA. 989+70
REMOVE 1,055 LF EX. GUARDRAIL

RT. STA. 985+54 TO RT. STA. 989+70
REMOVE 416 LF EX. GUARDRAIL

STEEL "W" BEAM GUARDRAIL CONSTRUCTION								
LT. OR RT.	STATION TO STATION	SINGLE FACE (FT)	DOUBLE FACE (FT)	TERM SEC.	END TREATMENT		BRIDGE END CONN.	
				No. 1	TY 2A	TY 1	TY A	TY A1
				(EA)	(EA)	(EA)	(EA)	(EA)
LT	978+00 TO 988+40.25	1.049						1
RT	978+00 TO 987+80	980						
RT	987+80 TO 988+60.25		80	2			1	

KENTUCKY LAKE
W.S.E. 354 (WINTER POOL),
W.S.E. 359 (SUMMER POOL)

STA. 978+00 TO STA. 989+46
CONSTRUCT 8108 TONS OF
CYCLOPEAN STONE RIP RAP WITH
4693 SY OF GEOTEXTILE FABRIC
TYPE I

STA. 978+00 TO STA. 988+85.25 RESHAPE
AND COMPACT 1,085 LF OF SUBGRADE

NOTE:
EX. RIP RAP CAN BE LEFT IN PLACE
IN LIEU OF PROPOSED CYCLOPEAN
STONE RIP RAP WITHIN THESE LIMITS
IF THE EXISTING RIP RAP IS NOT
DISTURBED DURING CONSTRUCTION
AND IF APPROVED BY THE ENGINEER.

DITCH CONSTRUCTION CHART								
LT	RT	MED	STA. TO STA.	TYPE	QUANTITY	DEPTH FT	THICKNESS FT	DITCH
	X		986+00 to 987+00	ERO BLANKET	133 SY	1.00		V

SLOPE PROTECTION

REMOVE EXISTING PAVEMENT

TENNESSEE VALLEY AUTHORITY

0' 50' 100' 200'

US 68/KY 80
STA. 978+00 TO STA. 993+00
PLAN SHEET

FILE NAME: \\PEWINFS2\JOBS\KDOT\LAKE_BRIDGES\ADDENDUMS\ADDENDUM #3\ROOTOOPL.DGN
USER: andrew-b
DATE PLOTTED: December 10, 2013
E-SHEET NAME: ROOTOOPL
MicroStation v8.11.9.357

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL / TRIGG	1-180.70	R7

1 REVISED 12-10-2013

FILE NAME: \\PEWINFS2\JOBS\KDOT\LAKE_BRIDGES\ADDENDUMS\ADDENDUM #3\ROOTOOPL.DGN
USER: andrew-b
DATE PLOTTED: December 10, 2013
E-SHEET NAME: ROOTOOPL
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CONSTRUCT SURFACING (GRADE & DRAIN BY OTHERS)

CONSTRUCT BRIDGE

KENTUCKY LAKE
W.S.E. 354 (WINTER POOL),
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P.I. STA. 978+60.46
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L = 1432.59'
R = 14000.00'
E = 18.34'
e = NC

TENNESSEE VALLEY AUTHORITY

980+00 985+00 990+00

EXISTING PERMANENT EASEMENT

EXIST. R/W

STA. 978+00 TO STA. 988+60.25
CONST. 1060 LF STD. CONC.
MEDIAN BARRIER 9C

PT 985+76.13

STA 988+85.25
BEGIN BRIDGE

PERM. ESMT.

MATCHLINE STA. 978+00

PROP. DISTURB LIMITS

TOP EX. RIP RAP

TY A-1

N 80°16'02" E

BRIDGE

TS I DF GR TY A

TS I

MULTI-USE PATH

EXIST. R/W

(REMOVE)
EX. 24" PIPE

2' F.B. DT.

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APPROX. LOCATION

CROSS HOLE
CASINGS (DO NOT DISTURB)

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200' R

SPEC. "V" DT.

MULTI-USE PATH "D"

PI 53+83.27

SIGN

MULTI-USE PATH

US 68/KY 80

IPC 207 IPC 208 IPC 209

EL JB

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CYCLOPEAN STONE RIP RAP LIMITS
ELEV. TO 375'

PROP. DISTURB LIMITS

25+00 30+00

PI 978+60.46

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REMOVE 416 LF EX. GUARDRAIL

STEEL "W" BEAM GUARDRAIL CONSTRUCTION

LT. OR RT.	STATION TO STATION	SINGLE FACE (FT)	DOUBLE FACE (FT)	TERM SEC. No. 1 (EA)	END TREATMENT TY 2A (EA)	END TREATMENT TY 1 (EA)	BRIDGE END CONN. TY A (EA)	BRIDGE END CONN. TY A1 (EA)
LT	978+00 TO 988+40.25	1.049						1
RT	978+00 TO 987+80	980						
RT	987+80 TO 988+60.25		80	2			1	

KENTUCKY LAKE
W.S.E. 354 (WINTER POOL),
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IF THE EXISTING RIP RAP IS NOT
DISTURBED DURING CONSTRUCTION
AND IF APPROVED BY THE ENGINEER.

PAVEMENT REMOVAL AREA UPDATED

EXIST. R/W EXIST. R/W

DITCH CONSTRUCTION CHART

LT	RT	MED	STA. TO STA.	TYPE	QUANTITY	DEPTH FT	THICKNESS FT	DITCH
	X		986+00 to 987+00	ERO BLANKET	133 SY	1.00		V

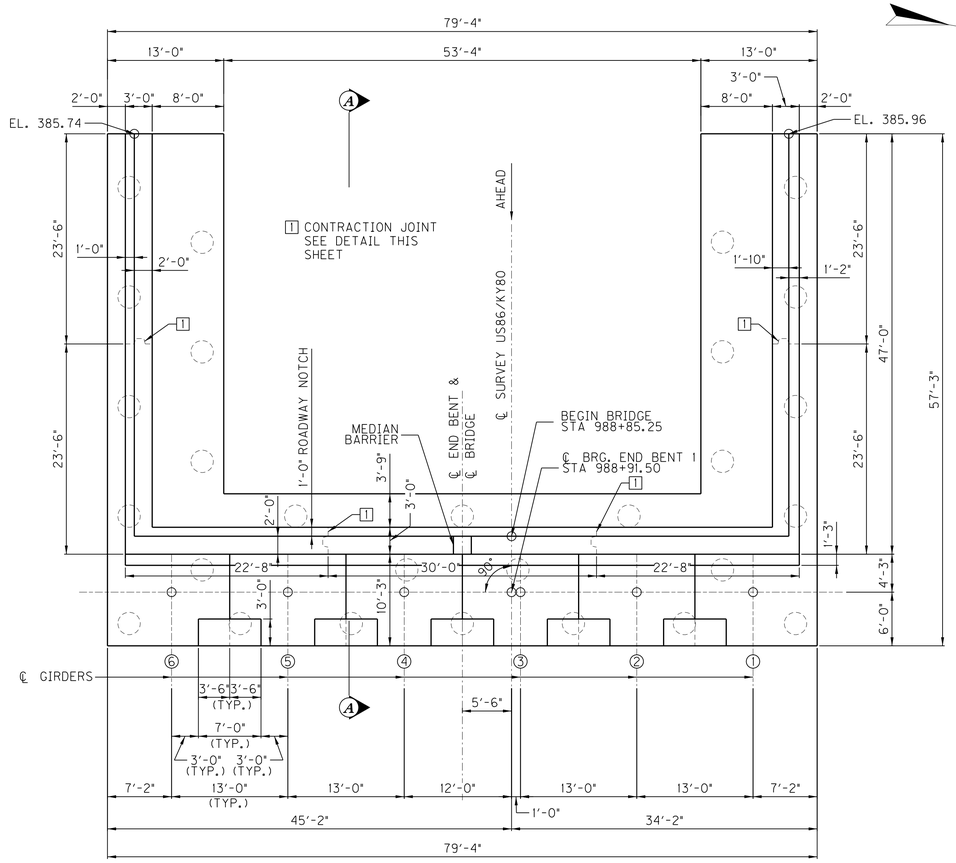
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0' 50' 100' 200'

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STA. 978+00 TO STA. 993+00
PLAN SHEET

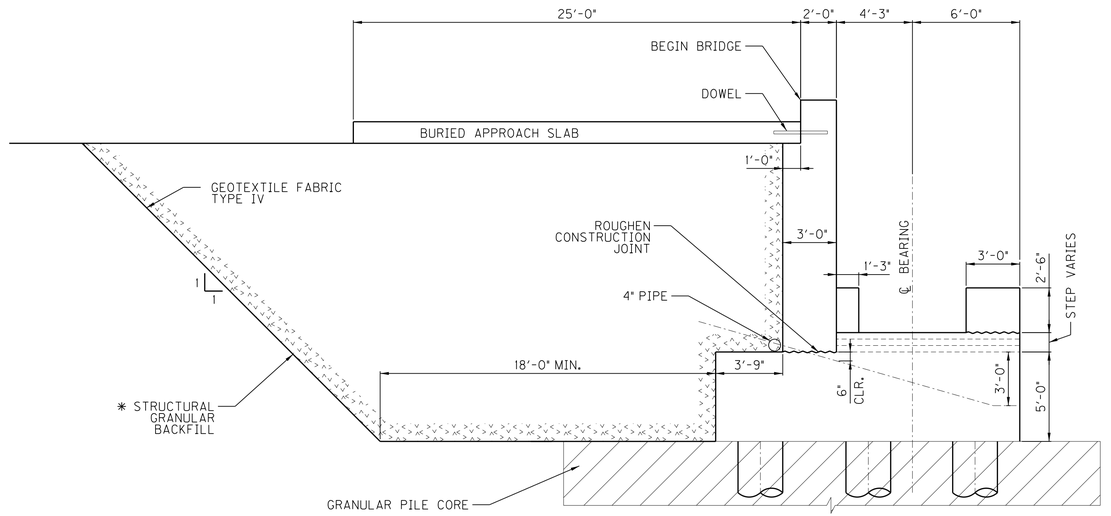


PLAN

ONLY FRONT ROW OF PILES SHOWN FOR CLARITY

ELEVATION

(LOOKING BACK STATION)

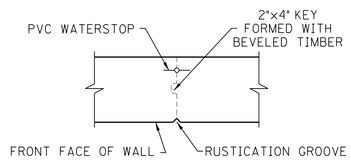


SECTION A–A

(THROUGH BACKWALL)

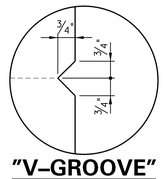
* 3'-0" WIDE DRAINAGE BLANKET SHALL BE PROVIDED ALONG THE FULL LENGTH OF THE WINGS FROM THE TOP OF THE FOOTING TO 2'-6" BELOW TOP OF WING WALL.

THE 18'-0" MIN. DIMENSION FOR STRUCTURAL GRANULAR BACKFILL IS NOT TYPICAL AND IS REQUIRED FOR THE DESIGNED EARTHQUAKE RESISTING SYSTEM AND SHALL NOT BE REDUCED.



CONTRACTION JOINT

(SPACED AT 30' INTERVALS)



"V-GROOVE" RUSTICATION

(N.T.S.)

ALL PREFORMED EXPANSION JOINT MATERIAL, CAULKING, WATERPROOFING MATERIALS, PIPE SLEEVE, PVC WATERSTOP, AND EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE JOINTS ARE INCIDENTAL TO CLASS "A" CONC.

NOTES:
SLOPE ABUTMENTS BETWEEN BEAM SEATS TO DRAIN.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 1

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

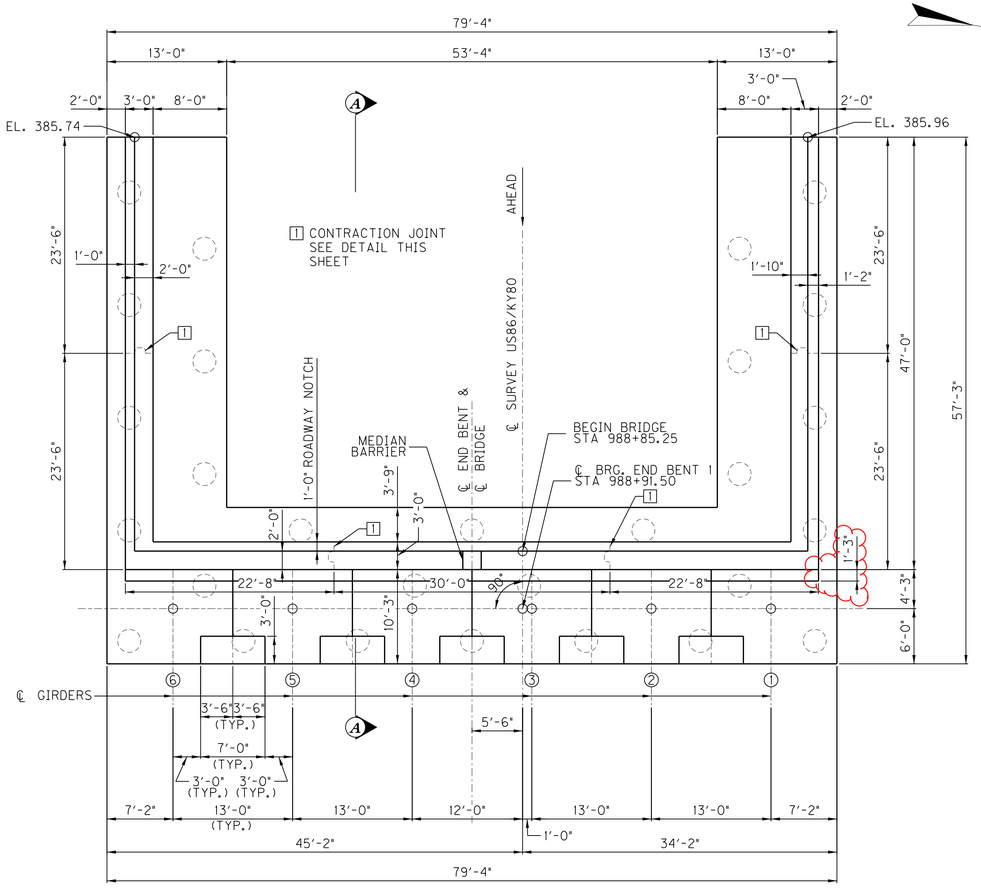
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

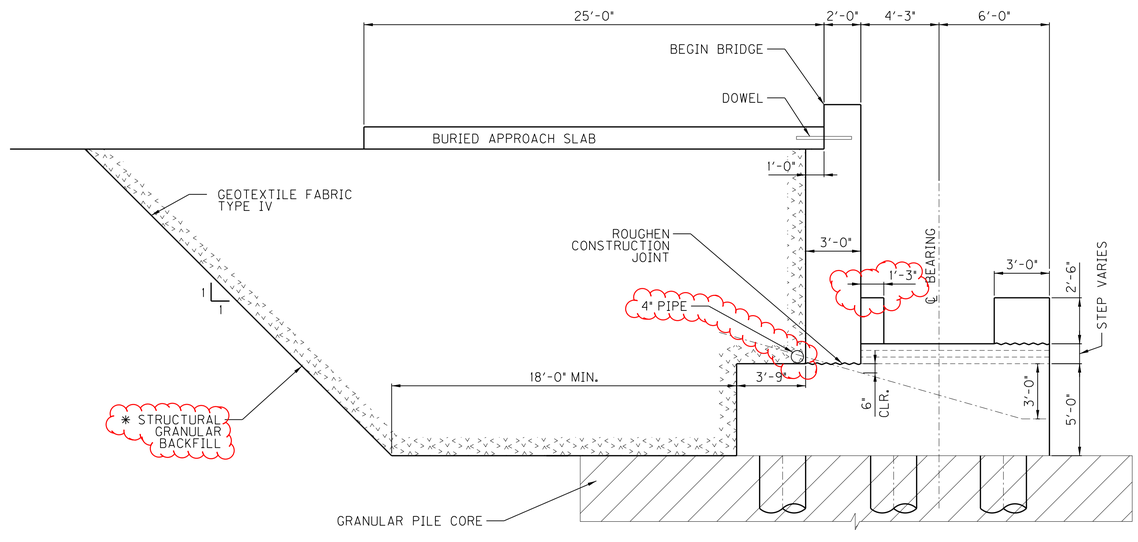
SHEET NO. S045

DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 1:57:35 PM
E-SHEET NAME:
MicroStation v8.11.7.443



PLAN

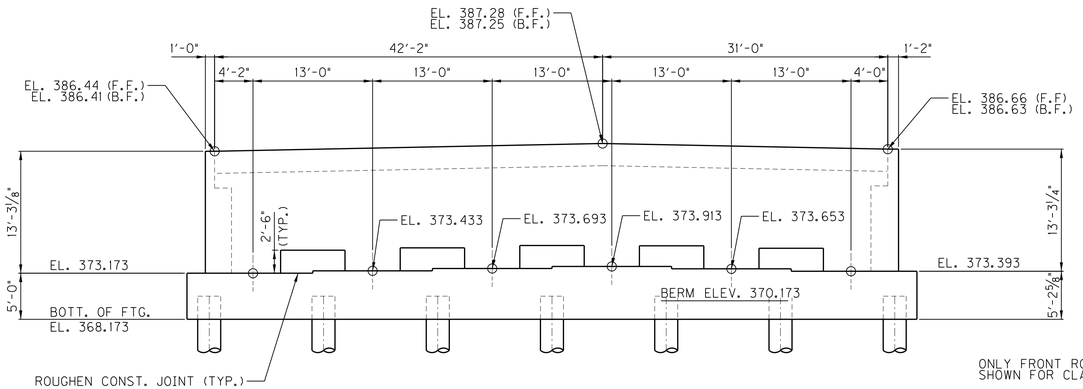


SECTION A–A

(THROUGH BACKWALL)

* 3'-0" WIDE DRAINAGE BLANKET SHALL BE PROVIDED ALONG THE FULL LENGTH OF THE WINGS FROM THE TOP OF THE FOOTING TO 2'-6" BELOW TOP OF WING WALL.

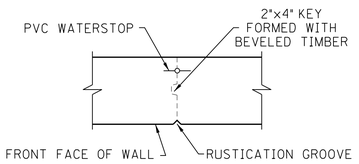
THE 18'-0" MIN. DIMENSION FOR STRUCTURAL GRANULAR BACKFILL IS NOT TYPICAL AND IS REQUIRED FOR THE DESIGNED EARTHQUAKE RESISTING SYSTEM AND SHALL NOT BE REDUCED.



ELEVATION

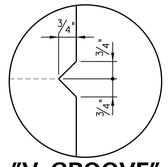
(LOOKING BACK STATION)

ONLY FRONT ROW OF PILES SHOWN FOR CLARITY



CONTRACTION JOINT

(SPACED AT 30' INTERVALS)



"V-GROOVE" RUSTICATION

(N.T.S.)

ALL PREFORMED EXPANSION JOINT MATERIAL, CAULKING, WATERPROOFING MATERIALS, PIPE SLEEVE, PVC WATERSTOP, AND EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE JOINTS ARE INCIDENTAL TO CLASS "A" CONC.

NOTES:
SLOPE ABUTMENTS BETWEEN BEAM SEATS TO DRAIN.

⚠ ADDED & CHANGED NOTES & DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

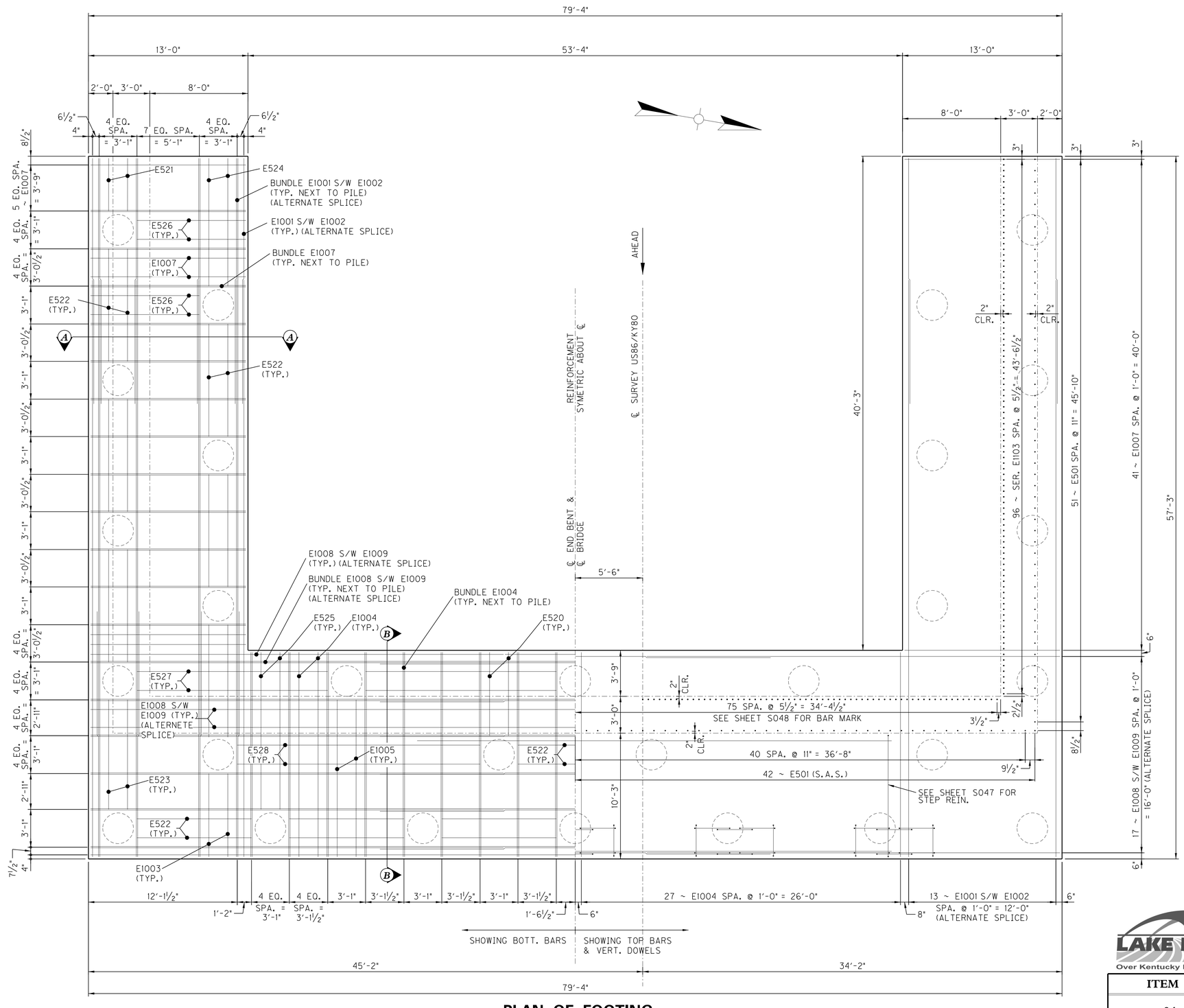
ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 1

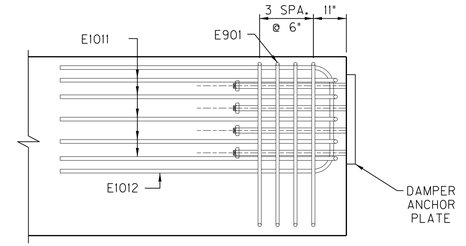
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	*PALMER ENGINEERING CO.*	S045
		DRAWING NO. 24686

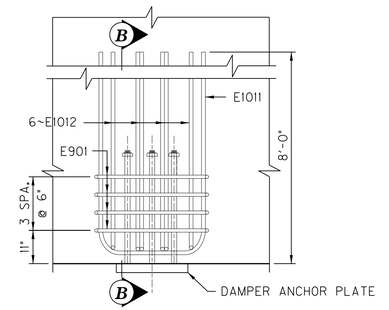
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DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443



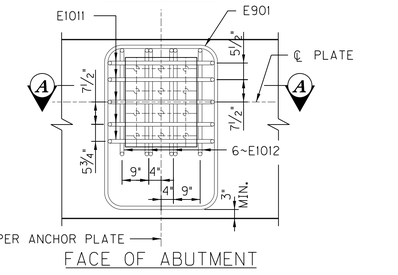
PLAN OF FOOTING



SECTION "B"



SECTION "A"



DAMPER PLATE REINFORCEMENT

SHOWING ADDITIONAL REINFORCEMENT REQUIRED AT EACH DAMPER PLATE LOCATION.

FOR ANCHOR PLATE DETAILS SEE SHT. S255.

FOOTING STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION AND PLACEMENT OF DAMPER REINFORCEMENT AND ANCHOR BOLTS.

MIN. LAP SPLICES

#10 - 10'-1"

SEE SHEET S050 FOR FOOTING SECTIONS "A" & "B"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 1 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

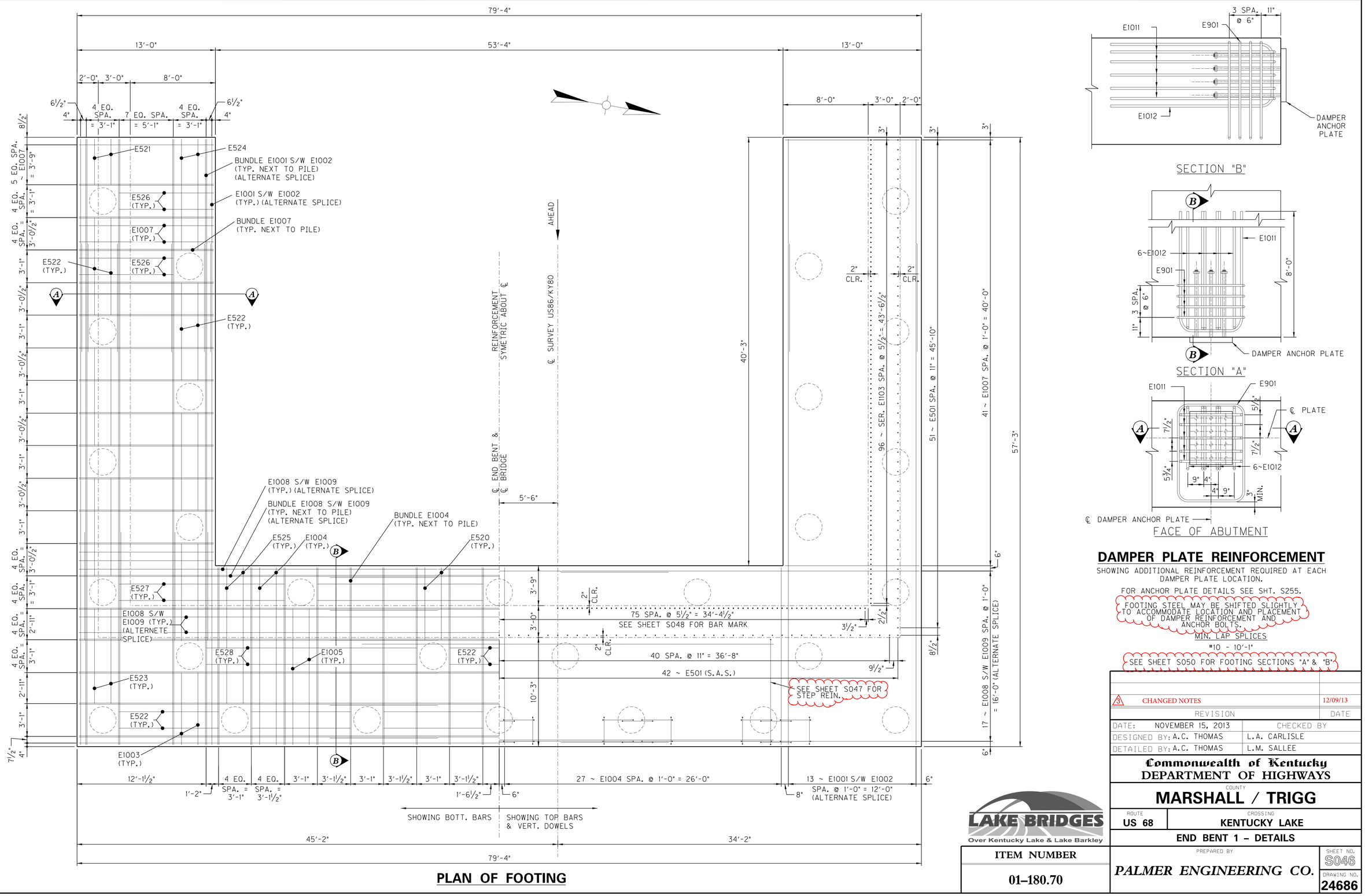
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S046

DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443
12/11/2013 1:59:19 PM
12/11/2013 1:59:19 PM



PLAN OF FOOTING

SECTION "B"

SECTION "A"

FACE OF ABUTMENT

DAMPER PLATE REINFORCEMENT

SHOWING ADDITIONAL REINFORCEMENT REQUIRED AT EACH DAMPER PLATE LOCATION.

FOR ANCHOR PLATE DETAILS SEE SHT. S255.

FOOTING STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION AND PLACEMENT OF DAMPER REINFORCEMENT AND ANCHOR BOLTS.

MIN. LAP SPLICES

#10 ~ 10'-1"

SEE SHEET S050 FOR FOOTING SECTIONS "A" & "B"

REVISION	DATE
3 CHANGED NOTES	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

END BENT 1 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

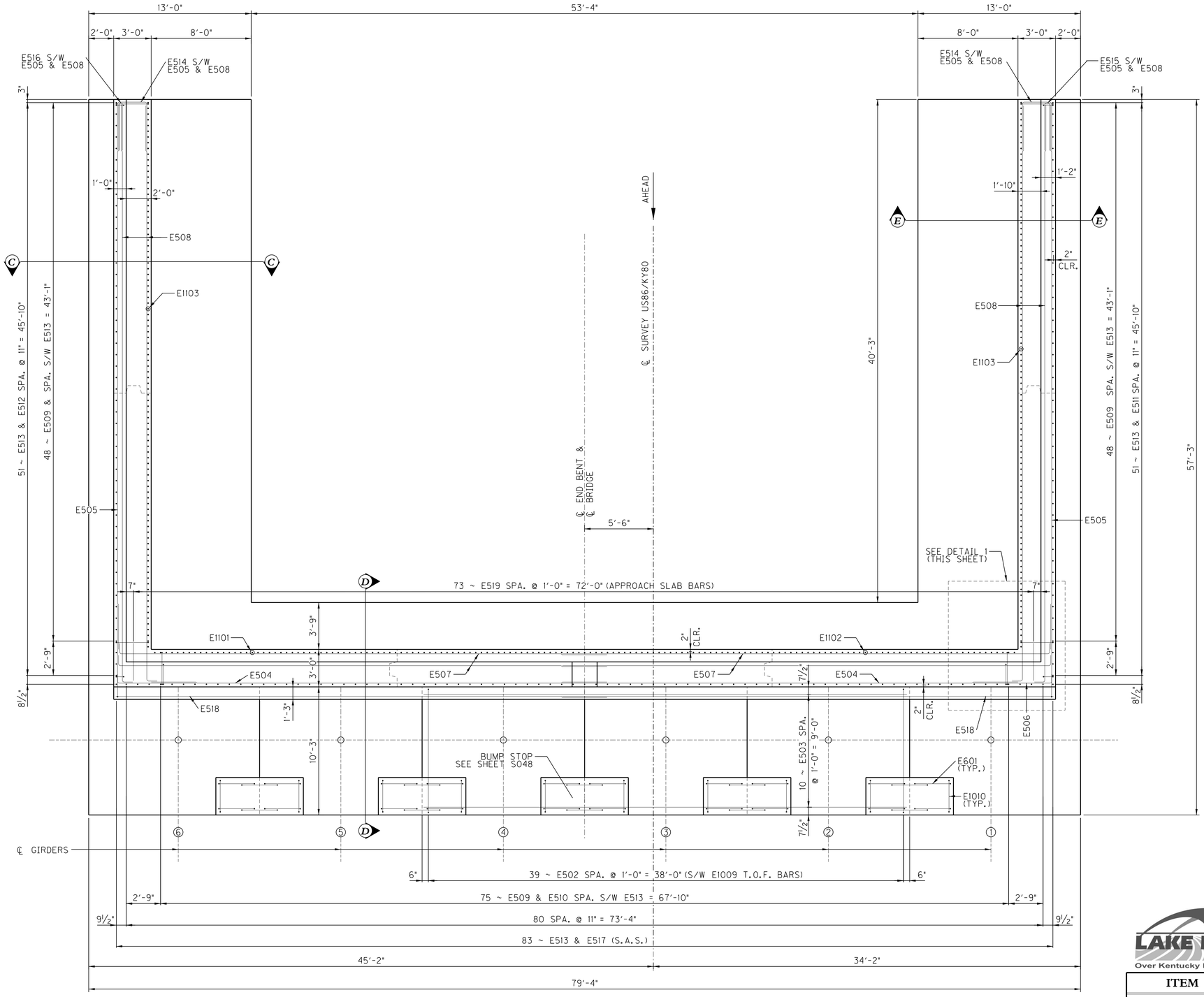
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

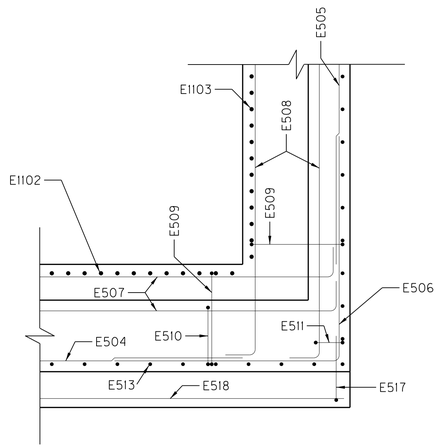
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DATE PLOTTED: July 27, 2011
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MicroStation v8.11.7.443



PLAN



DETAIL 1

MIN. LAP SPLICES
#5 - 3'-7"

SEE SHEET S050 FOR SECTION DETAILS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

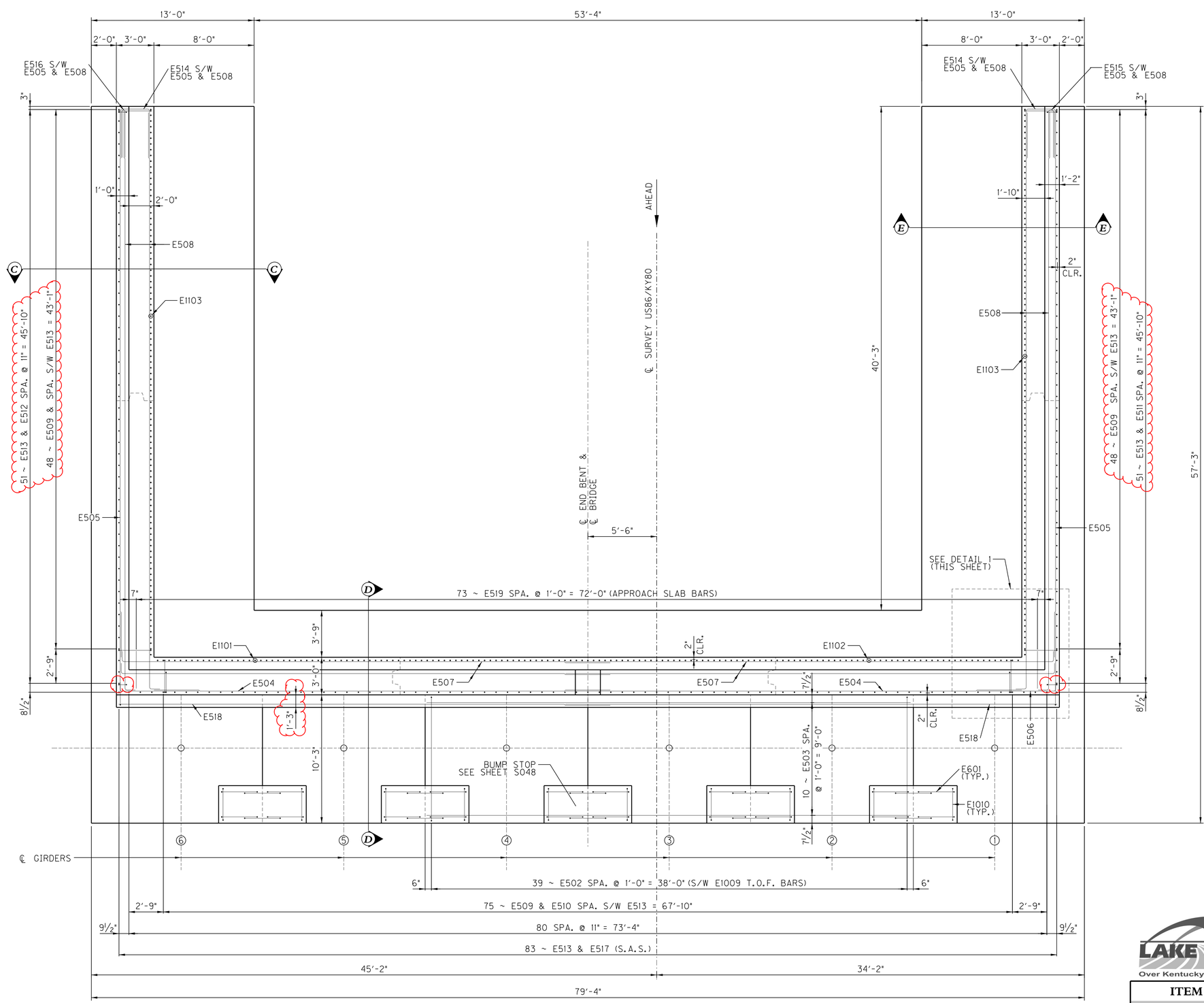
ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 1 – DETAILS

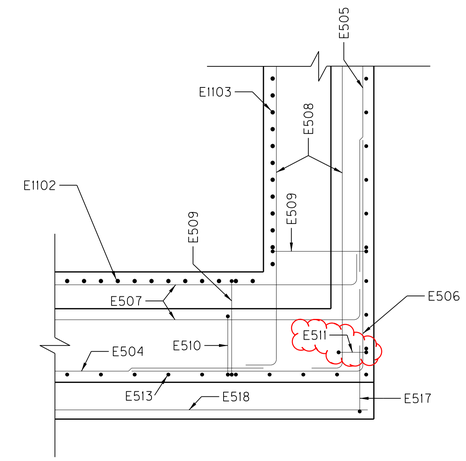
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	*PALMER ENGINEERING CO.*	S047
		DRAWING NO. 24686

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MicroStation v8.11.7.443



PLAN



DETAIL 1

MIN. LAP SPLICES
#5 - 3'-7"

SEE SHEET S050 FOR SECTION DETAILS.

3	CHANGED DIMENSIONS & BARS	12/09/13
	REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

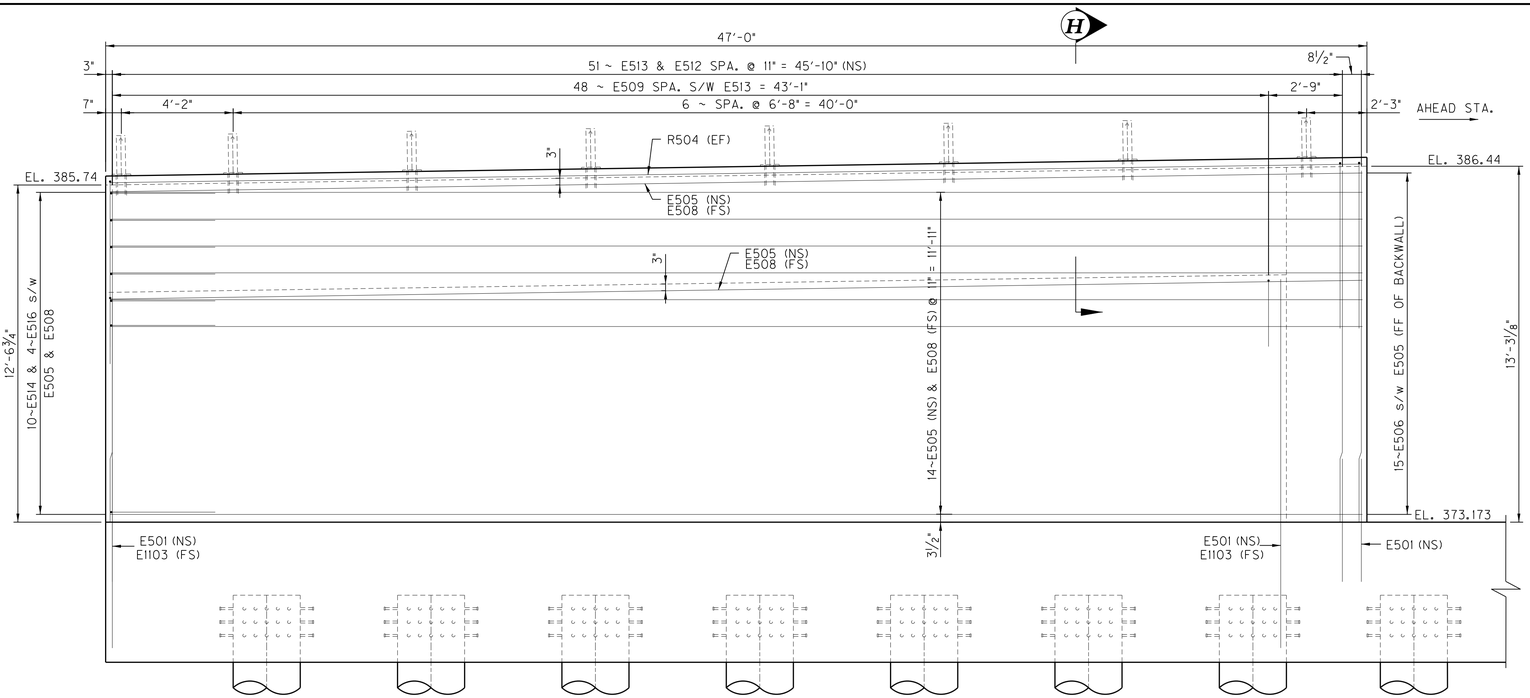
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US 68	KENTUCKY LAKE

END BENT 1 – DETAILS

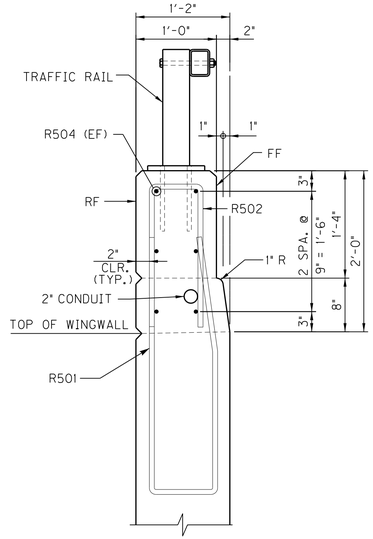
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	*PALMER ENGINEERING CO.*	S047
		DRAWING NO. 24686

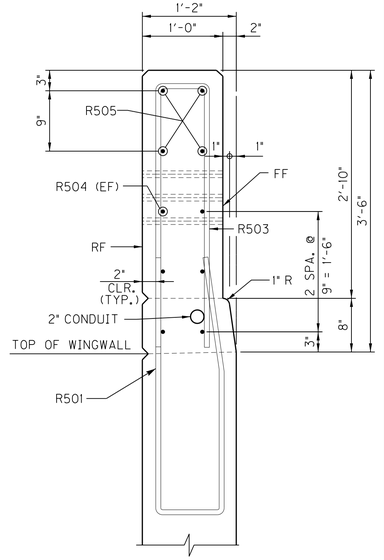
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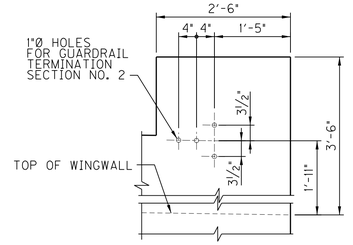
ELEVATION – SOUTH WING



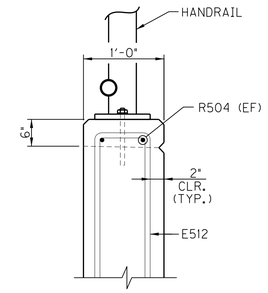
SECTION "F"



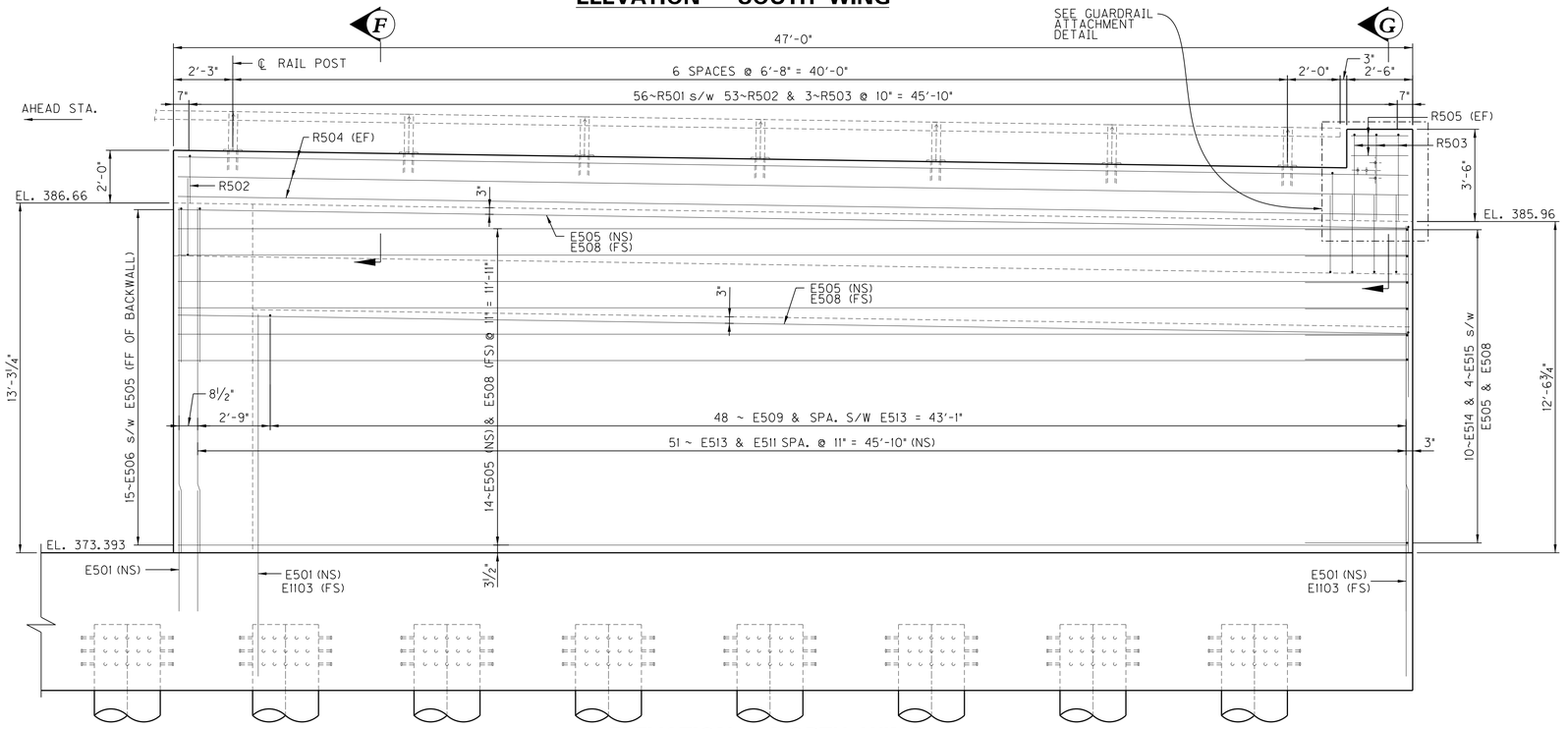
SECTION "G"



GUARDRAIL ATTACHMENT



SECTION "H"



ELEVATION – NORTH WING

NOTES:

1. SEE SHEET S247 FOR TRAFFIC AND COMBINATION RAIL EXPANSION JT. DETAILS.
2. SEE SHEET S249 FOR PEDESTRIAN RAIL EXPANSION JOINT DETAILS.

REVISION	DATE
DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 1 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

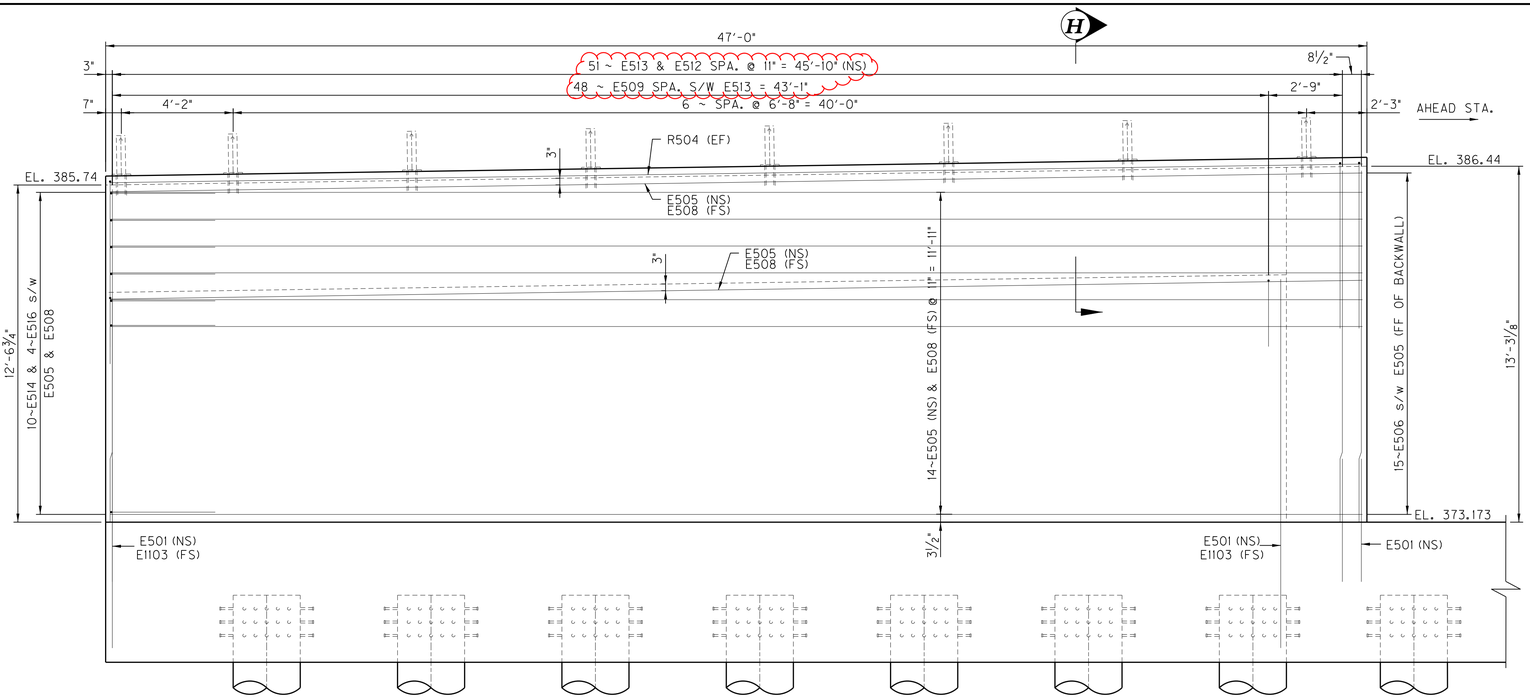
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

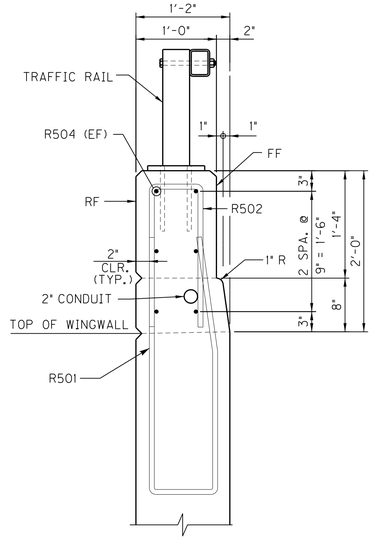
SHEET NO. S049

DRAWING NO. 24686

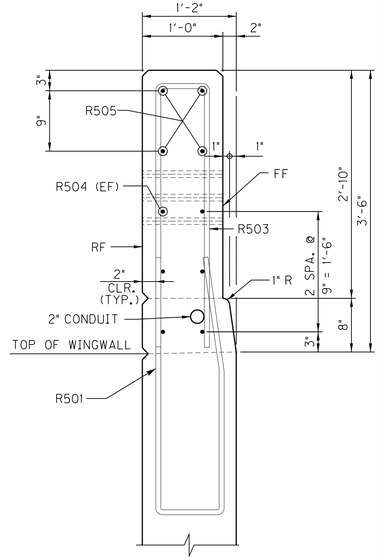
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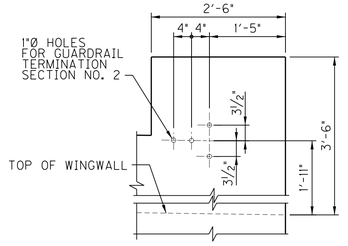
ELEVATION – SOUTH WING



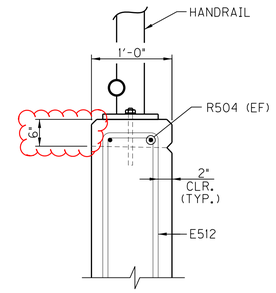
SECTION "F"



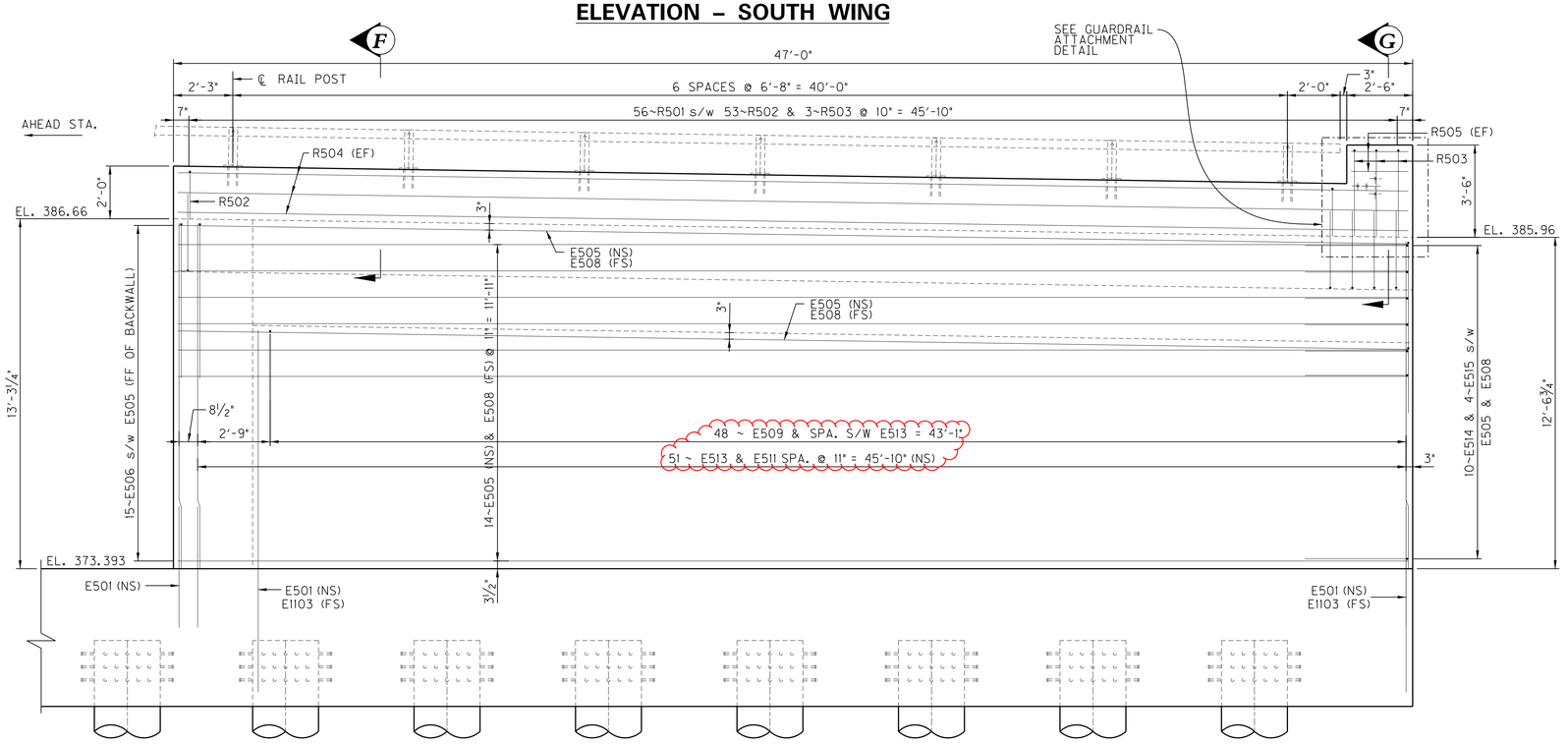
SECTION "G"



GUARDRAIL ATTACHMENT



SECTION "H"



ELEVATION – NORTH WING

NOTES:

1. SEE SHEET S247 FOR TRAFFIC AND COMBINATION RAIL EXPANSION JT. DETAILS.
2. SEE SHEET S249 FOR PEDESTRIAN RAIL EXPANSION JOINT DETAILS.

3 CHANGED DIMENSION	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 1 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

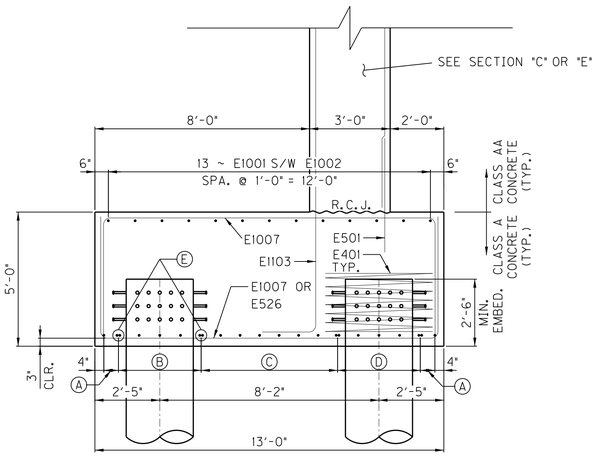
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01–180.70

PREPARED BY
PALMER ENGINEERING CO.

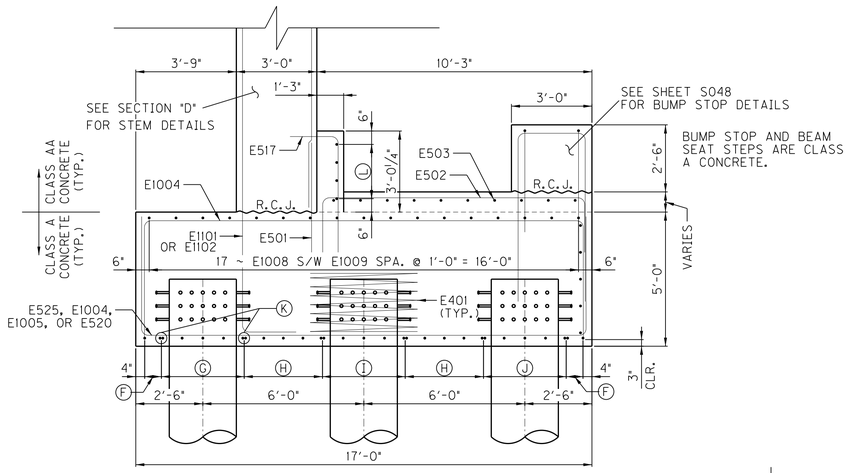
SHEET NO. S049

DRAWING NO. 24686

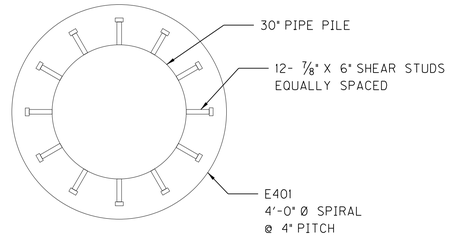
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MicroStation v8.11.7.443



SECTION "A"

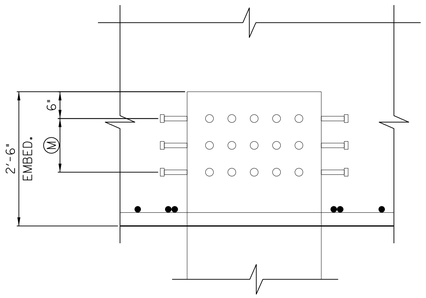


SECTION "B"

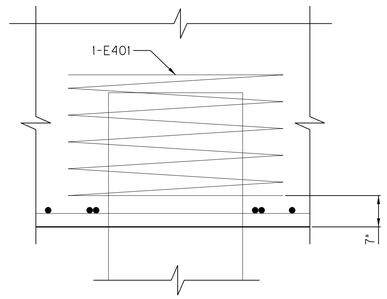


PIPE PILE TYPICAL SECTION

- (A) E1001 S/W E1002 SPA. @ 6½"
- (B) E524, E522, OR E1003 4 EQ. SPA. = 3'-1"
- (C) E1001 S/W E1002 7 EQ. SPA. = 5'-1"
- (D) E521, E522, OR E523 4 EQ. SPA = 3'-1"
- (E) E1001 S/W E1002 BUNDLED BARS (TYP. BOTH SIDES OF EA. PILE)
- (F) E1008 S/W E1009 SPA. @ 7½"
- (G) E527 4 EQ. SPA. = 3'-1"
- (H) E1008 S/W E1009 4 EQ. SPA. = 2'-11"
- (I) E526, E528, OR E522 4 EQ. SPA. = 3'-1"
- (J) E522 4 EQ. SPA. = 3'-1"
- (K) E1008 S/W E1009 BUNDLED BARS (TYP. BOTH SIDES OF EA. PLIE)
- (L) E518 S/W E518 @ 3 EQ. SPA. = 2'-0 1/4"
- (M) 3 ROWS OF 12 - 7/8" X 6" SHEAR STUDS SPA. @ 6" = 1'-0"

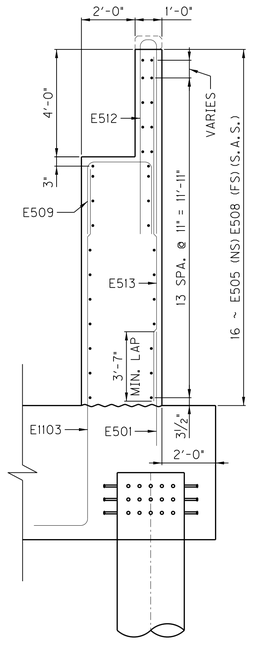


PIPE PILE STUD DETAIL

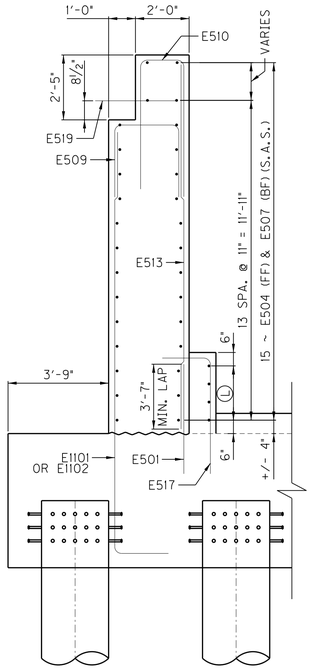


PIPE PILE SPIRAL DETAIL

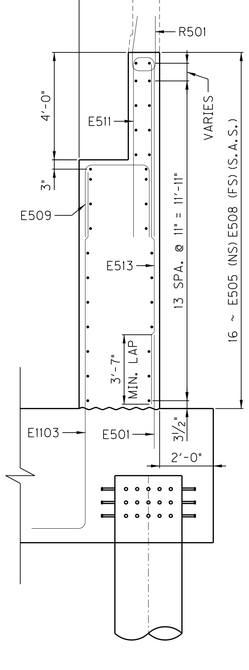
(TYPICAL EACH PILE)



SECTION "C"



SECTION "D"



SECTION "E"

MIN. LAP SPLICES
- #5 = 3'-7"
- #10 = 10'-1"

MIN. EMBEDMENT DEPTH
- #5 = 1'-6"
- #6 = 1'-6"
- #10 = 4'-1"

NOTE:
1. CLEAR COVER DISTANCE TO FACE OF CONCRETE IS 2" UNLESS OTHERWISE SHOWN
2. INSTALL SHEAR STUDS AFTER FINAL PILE CUTOFF ELEVATON IS MADE.
3. INCLUDE COST TO FURNISH AND INSTALL SHEAR STUDS TO THE PIPE PILE IN THE BID ITEM SHEAR CONNECTORS.
4. SHEAR STUDS AND SPIRALS ARE TO BE USED AT EACH PILE. NOT SHOWN FOR CLARITY.
5. CONCRETE IN PIPE PILES TO BE PLACED MONOLITHIC WITH THE FOOTING.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 1 – DETAILS

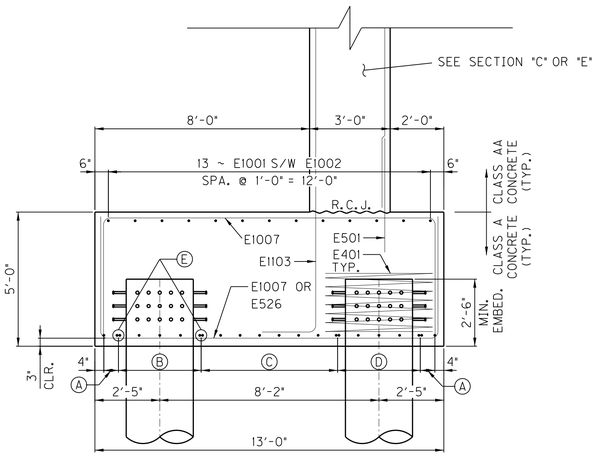
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

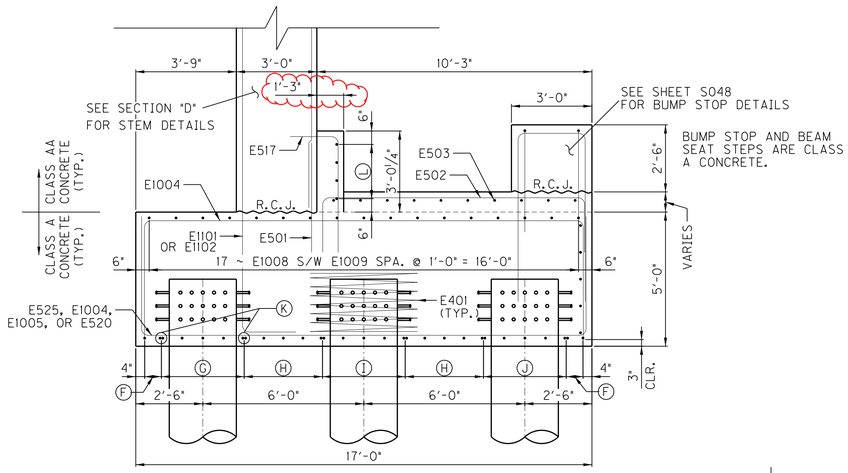
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S050
DRAWING NO. 24686

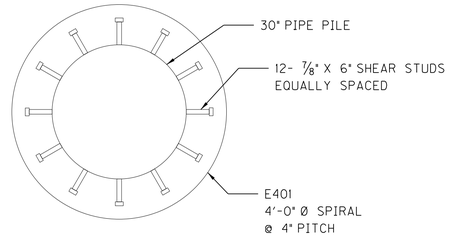
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DATE PLOTTED: July 27, 2011
12/11/2013 2:30:58 PM
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SECTION "A"

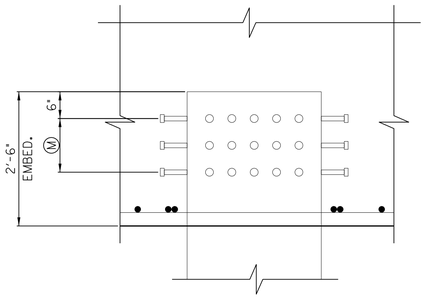


SECTION "B"

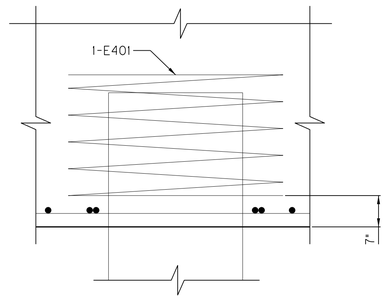


PIPE PILE TYPICAL SECTION

- (A) E1001 S/W E1002 SPA. @ 6½"
- (B) E524, E522, OR E1003 4 EQ. SPA. = 3'-1"
- (C) E1001 S/W E1002 7 EQ. SPA. = 5'-1"
- (D) E521, E522, OR E523 4 EQ. SPA = 3'-1"
- (E) E1001 S/W E1002 BUNDLED BARS (TYP. BOTH SIDES OF EA. PILE)
- (F) E1008 S/W E1009 SPA. @ 7½"
- (G) E527 4 EQ. SPA. = 3'-1"
- (H) E1008 S/W E1009 4 EQ. SPA. = 2'-11"
- (I) E526, E528, OR E522 4 EQ. SPA. = 3'-1"
- (J) E522 4 EQ. SPA. = 3'-1"
- (K) E1008 S/W E1009 BUNDLED BARS (TYP. BOTH SIDES OF EA. PLIE)
- (L) E518 S/W E518 @ 3 EQ. SPA. = 2'-0 1/4"
- (M) 3 ROWS OF 12 - 7/8" X 6" SHEAR STUDS SPA. @ 6" = 1'-0"

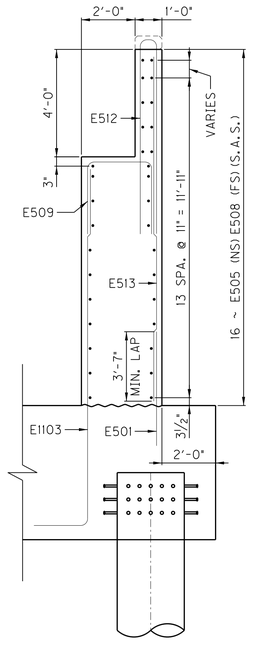


PIPE PILE STUD DETAIL

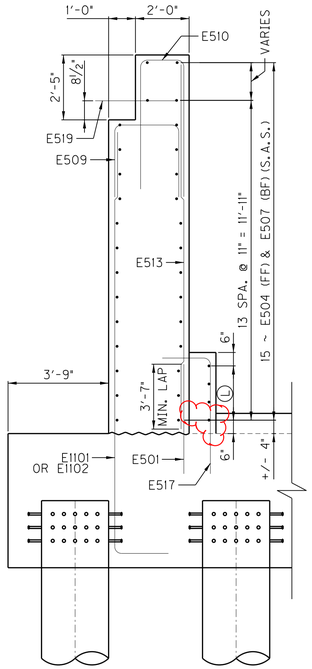


PIPE PILE SPIRAL DETAIL

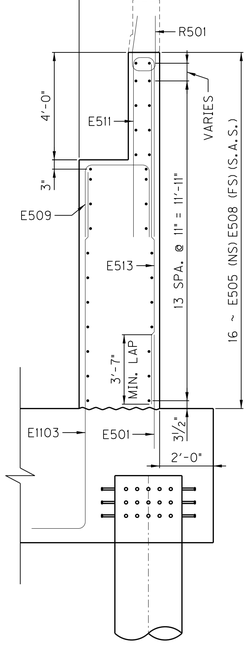
(TYPICAL EACH PILE)



SECTION "C"



SECTION "D"



SECTION "E"

MIN. LAP SPLICES
- #5 = 3'-7"
- #10 = 10'-1"

MIN. EMBEDMENT DEPTH
- #5 = 1'-6"
- #6 = 1'-6"
- #10 = 4'-1"

NOTE:
1. CLEAR COVER DISTANCE TO FACE OF CONCRETE IS 2" UNLESS OTHERWISE SHOWN
2. INSTALL SHEAR STUDS AFTER FINAL PILE CUTOFF ELEVATON IS MADE.
3. INCLUDE COST TO FURNISH AND INSTALL SHEAR STUDS TO THE PIPE PILE IN THE BID ITEM SHEAR CONNECTORS.
4. SHEAR STUDS AND SPIRALS ARE TO BE USED AT EACH PILE. NOT SHOWN FOR CLARITY.
5. CONCRETE IN PIPE PILES TO BE PLACED MONOLITHIC WITH THE FOOTING.

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C.THOMAS	L.A. CARLISLE
DETAILED BY: A.C.THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 1 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY: PALMER ENGINEERING CO.

SHEET NO. S050

DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/6/2013 1:53:15 PM
E-SHEET NAME:
MicroStation v8.11.7.443

BILL OF REINFORCEMENT – END BENT 1

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
E401	18	28	# 4	126'-0"	FOOTING	2'-4"	0'-4"	4'-0"	
E501(E)	STR.	185	# 5	8'-0"	FOOTING DOWEL				
E502(E)	2	39	# 5	13'-11"	BEAM SEAT	2'-0"	9'-11"		
E503(E)	STR.	10	# 5	38'-8"	BEAM SEAT				
E504(E)	STR.	30	# 5	36'-6"	BACK WALL				
E505(E)	STR.	32	# 5	44'-0"	WING				
E506(E)	5	30	# 5	13'-0"	BACK WALL	6'-6"	6'-6"		
E507(E)	2	30	# 5	41'-2"	BACK WALL	39'-6"	0'-10"		
E508(E)	5	32	# 5	47'-5"	WING	46'-7"	0'-10"		
E509(E)	2	171	# 5	9'-10"	BACK WALL & WING	3'-7"	2'-8"		
E510(E)	2	75	# 5	13'-8"	BACK WALL	6'-0"	1'-8"		
E511(E)	2	51	# 5	12'-10"	WING	6'-0"	0'-10"		
E512(E)	2	51	# 5	14'-0"	WING	6'-8"	0'-8"		
E513(E)	STR.	185	# 5	12'-5"	BACK WALL & WING				
E514(E)	2	20	# 5	9'-8"	WING	3'-7"	2'-6"		
E515(E)	2	5	# 5	7'-11"	WING	3'-7"	0'-8 1/2"		
E516(E)	2	5	# 5	7'-9"	WING	3'-7"	0'-6 1/2"		
E517(E)	5	83	# 5	6'-4"	BUMP STOP	4'-6"	1'-10"		
E518(E)	STR.	8	# 5	39'-6"	BUMP STOP				
E519(E)	STR.	73	# 5	3'-0"	APPROACH SLAB				
E520	5	6	# 5	11'-4"	FOOTING	6'-9"	4'-5"		
E521	5	6	# 5	8'-8"	FOOTING	4'-5"	4'-3"		
E522	STR.	57	# 5	9'-2"	FOOTING				
E523	STR.	9	# 5	8'-11"	FOOTING				
E524	STR.	6	# 5	10'-5"	FOOTING				
E525	5	12	# 5	17'-2"	FOOTING	12'-9"	4'-5"		
E526	5	42	# 5	13'-3"	FOOTING	8'-10"	4'-5"		
E527	STR.	12	# 5	15'-6"	FOOTING				
E528	STR.	6	# 5	19'-9"	FOOTING				
E601(E)	2	75	# 6	10'-6"	BUMP STOP	3'-10"	2'-10"		
E901	14	24	# 9	15'-2"	DAMPER	4'-6"	3'-1"		
E1001	5	58	# 10	24'-5"	FOOTING	20'-0"	4'-5"		
E1002	5	58	# 10	51'-5"	FOOTING	47'-0"	4'-5"		
E1003	5	12	# 10	11'-2"	FOOTING	6'-9"	4'-5"		
E1004	2	114	# 10	25'-6"	FOOTING	4'-5"	16'-8"		
E1005	5	6	# 10	17'-2"	FOOTING	12'-9"	4'-5"		
E1006					NOT USED				
E1007	2	176	# 10	21'-8"	FOOTING	4'-5"	12'-8"		
E1008	5	37	# 10	38'-1"	FOOTING	33'-8"	4'-5"		
E1009	5	37	# 10	59'-10"	FOOTING	55'-5"	4'-5"		
E1010(E)	2	80	# 10	15'-6"	BUMP STOP	6'-5"	2'-8"		
E1011	2	36	# 10	18'-11"	DAMPER	8'-0"	2'-11"		
E1012	2	30	# 10	18'-10"	DAMPER	8'-0"	2'-10"		
E1101(E)	5	1 SET 87 BARS	# 11	1740'-0"	FOOTING DOWEL	17'-8" TO 18'-4"	2'-0"		
E1102(E)	5	1 SET 64 BARS	# 11	1288'-0"	FOOTING DOWEL	17'-10" TO 18'-5"	2'-0"		
E1103(E)	5	2 SETS 96 BARS	# 11	1456'-0"	FOOTING DOWEL	12'-9" TO 13'-7"	2'-0"		
R501(E)	17	56	# 5	7'-8"	RAIL	3'-5"	2'-0"	0'-10"	
R502(E)	2	53	# 5	4'-4"	RAIL	1'-10"	0'-8"		
R503(E)	2	3	# 5	7'-4"	RAIL	3'-4"	0'-8"		
R504(E)	STR.	8	# 5	4'-8"	RAIL				
R505(E)	STR.	4	# 5	2'-2"	RAIL				

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

AT SPIRAL DISCONTINUITIES THE SPIRAL SHALL TERMINATE WITH ONE AND A HALF EXTRA TURNS.

NOTE :
REINFORCING BARS DESIGNATED WITH SUFFIX (E) IN PLANS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

REINFORCING BARS DESIGNATED WITH THE SUFFIX (S) IN PLANS ARE STIRRUP BARS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 1 – BILL OF REINFORCEMENT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S051

DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
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12/11/2013
E-SHEET NAME:
MicroStation v8.11.7.443

BILL OF REINFORCEMENT – END BENT 1

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
E401	18	28	# 4	126'-0"	FOOTING	2'-4"	0'-4"	4'-0"	
E501(E)	STR.	185	# 5	8'-0"	FOOTING DOWEL				
E502(E)	2	39	# 5	13'-11"	BEAM SEAT	2'-0"	9'-11"		
E503(E)	STR.	10	# 5	38'-8"	BEAM SEAT				
E504(E)	STR.	30	# 5	36'-6"	BACK WALL				
E505(E)	STR.	32	# 5	44'-0"	WING				
E506(E)	5	30	# 5	13'-0"	BACK WALL	6'-6"	6'-6"		
E507(E)	2	30	# 5	41'-2"	BACK WALL	39'-6"	0'-10"		
E508(E)	5	32	# 5	47'-5"	WING	46'-7"	0'-10"		
E509(E)	2	171	# 5	9'-10"	BACK WALL & WING	3'-7"	2'-8"		
E510(E)	2	75	# 5	13'-8"	BACK WALL	6'-0"	1'-8"		
E511(E)	2	51	# 5	12'-10"	WING	6'-0"	0'-10"		
E512(E)	2	51	# 5	14'-0"	WING	6'-8"	0'-8"		
E513(E)	STR.	185	# 5	12'-5"	BACK WALL & WING				
E514(E)	2	20	# 5	9'-8"	WING	3'-7"	2'-6"		
E515(E)	2	5	# 5	7'-11"	WING	3'-7"	0'-8 1/2"		
E516(E)	2	5	# 5	7'-9"	WING	3'-7"	0'-6 1/2"		
E517(E)	5	83	# 5	6'-4"	BUMP STOP	4'-6"	1'-10"		
E518(E)	STR.	8	# 5	39'-6"	BUMP STOP				
E519(E)	STR.	73	# 5	3'-0"	APPROACH SLAB				
E520	5	6	# 5	11'-4"	FOOTING	6'-9"	4'-5"		
E521	5	6	# 5	8'-8"	FOOTING	4'-5"	4'-3"		
E522	STR.	57	# 5	9'-2"	FOOTING				
E523	STR.	9	# 5	8'-11"	FOOTING				
E524	STR.	6	# 5	10'-5"	FOOTING				
E525	5	12	# 5	17'-2"	FOOTING	12'-9"	4'-5"		
E526	5	42	# 5	13'-3"	FOOTING	8'-10"	4'-5"		
E527	STR.	12	# 5	15'-6"	FOOTING				
E528	STR.	6	# 5	19'-9"	FOOTING				
E601(E)	2	75	# 6	10'-6"	BUMP STOP	3'-10"	2'-10"		
E901	14	24	# 9	15'-2"	DAMPER	4'-6"	3'-1"		
E1001	5	58	# 10	24'-5"	FOOTING	20'-0"	4'-5"		
E1002	5	58	# 10	51'-5"	FOOTING	47'-0"	4'-5"		
E1003	5	12	# 10	11'-2"	FOOTING	6'-9"	4'-5"		
E1004	2	114	# 10	25'-6"	FOOTING	4'-5"	16'-8"		
E1005	5	6	# 10	17'-2"	FOOTING	12'-9"	4'-5"		
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E1007	2	176	# 10	21'-8"	FOOTING	4'-5"	12'-8"		
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R504(E)	STR.	8	# 5	4'-8"	RAIL				
R505(E)	STR.	4	# 5	2'-2"	RAIL				

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

AT SPIRAL DISCONTINUITIES THE SPIRAL SHALL TERMINATE WITH ONE AND A HALF EXTRA TURNS.

NOTE :
REINFORCING BARS DESIGNATED WITH SUFFIX (E) IN PLANS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

REINFORCING BARS DESIGNATED WITH THE SUFFIX (S) IN PLANS ARE STIRRUP BARS.

REVISION	DATE
3. ADDED BARS & CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 1 – BILL OF REINFORCEMENT

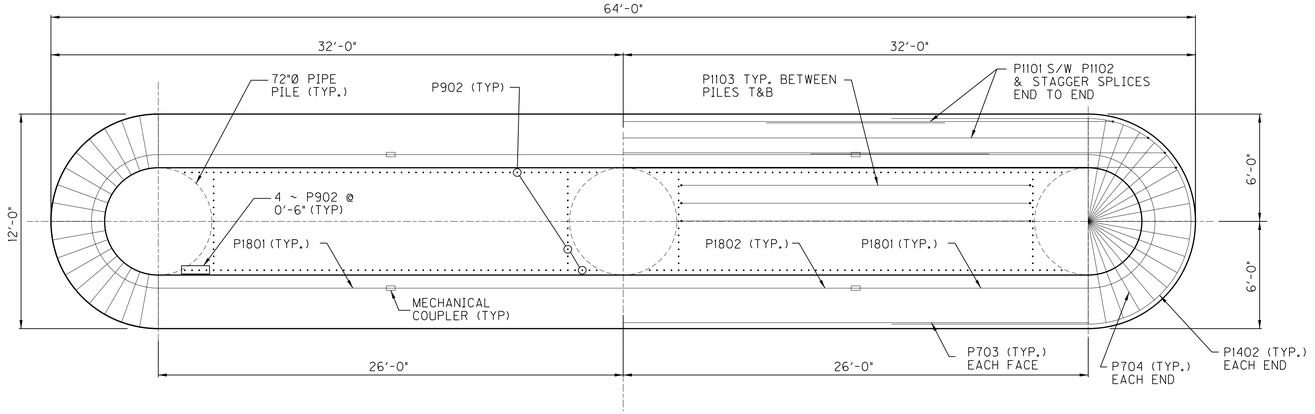
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

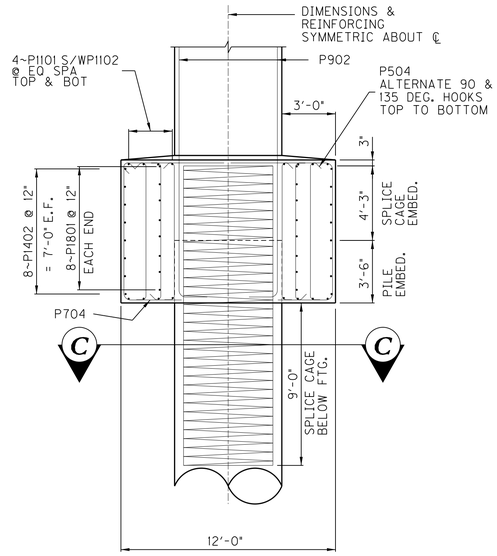
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S051
DRAWING NO. 24686

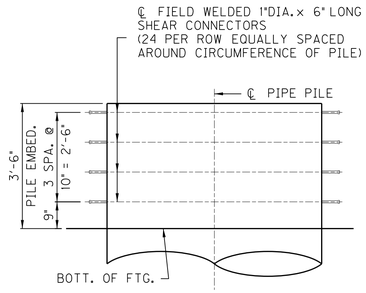
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DATE PLOTTED: July 27, 2011
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12/4/2013
E-SHEET NAME:
MicroStation v8.11.7.443



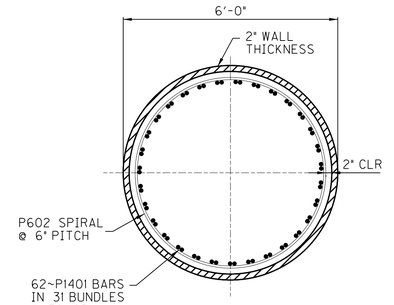
PLAN OF PILE CAP



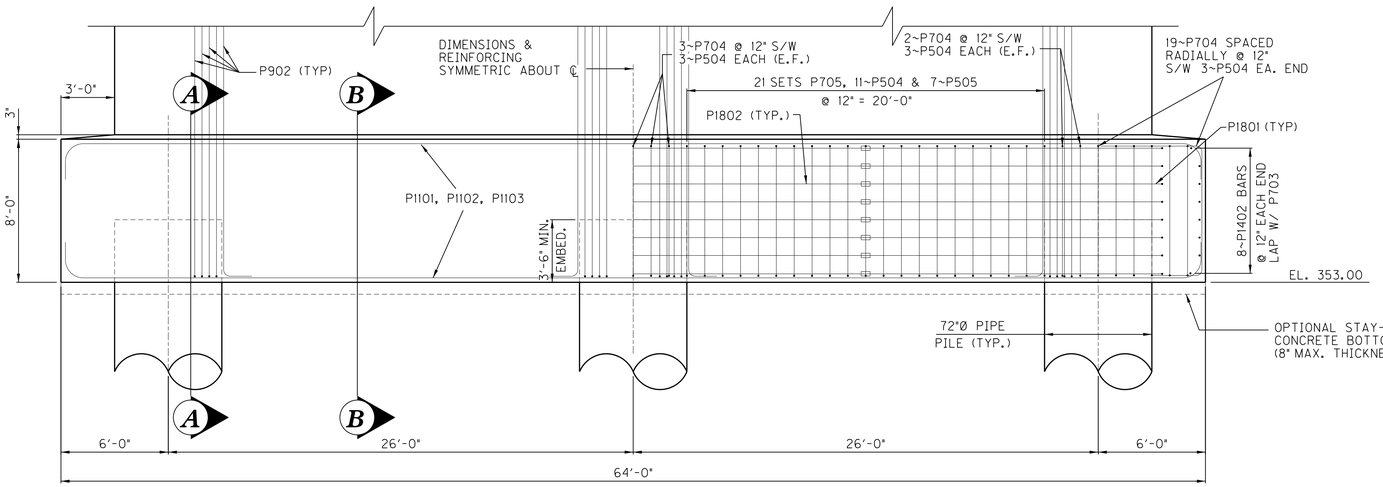
SECTION A–A



PILE CONNECTION DETAIL

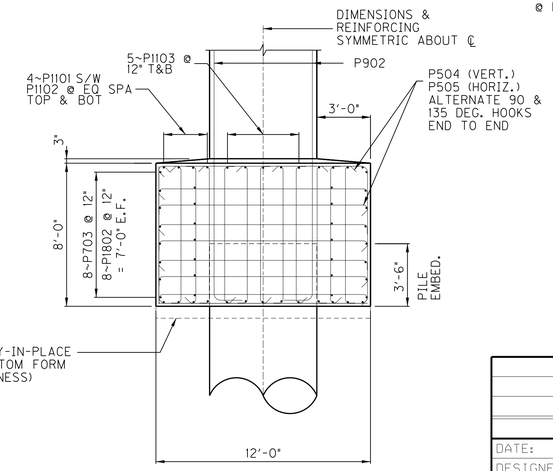


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SECTION B–B

FOR ADDITIONAL PIER 2 & 3 DETAILS SEE SHEETS S055, S056, & S057

NOTE: DISTANCE TO FACE OF CONCRETE IS 3" UNLESS OTHERWISE SHOWN.

MINIMUM LAP SPLICE IS:
#5 BAR = 2'-6
#6 BAR = 3'-0"
#11 BAR = 10'-0"
#14 BAR = USE MECHANICAL COUPLER
#18 BAR = USE MECHANICAL COUPLER

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIERS 2 & 3 PILE CAP DETAILS

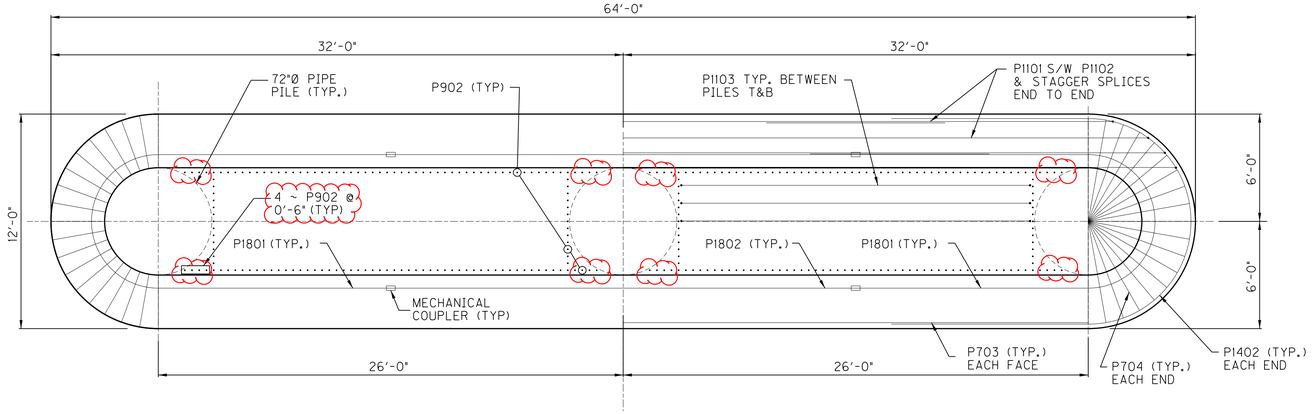
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

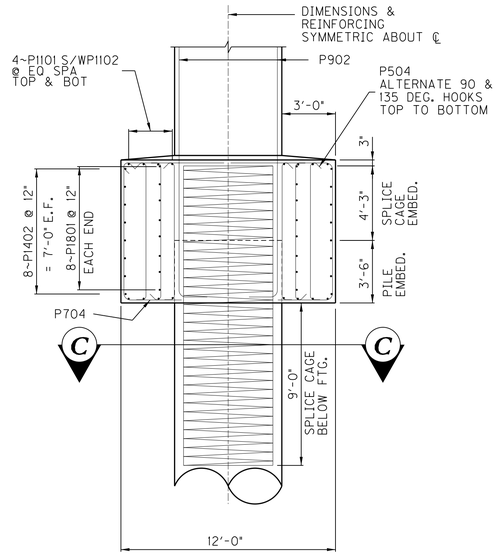
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S052A
DRAWING NO. 24686

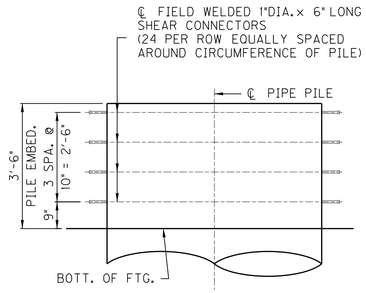
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USER: tim-e
DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443
12/11/2013 2:25:59 PM



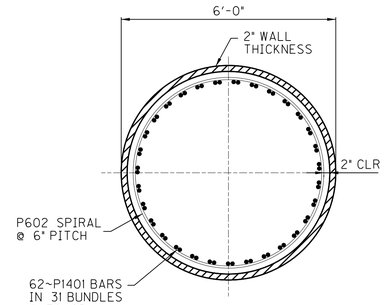
PLAN OF PILE CAP



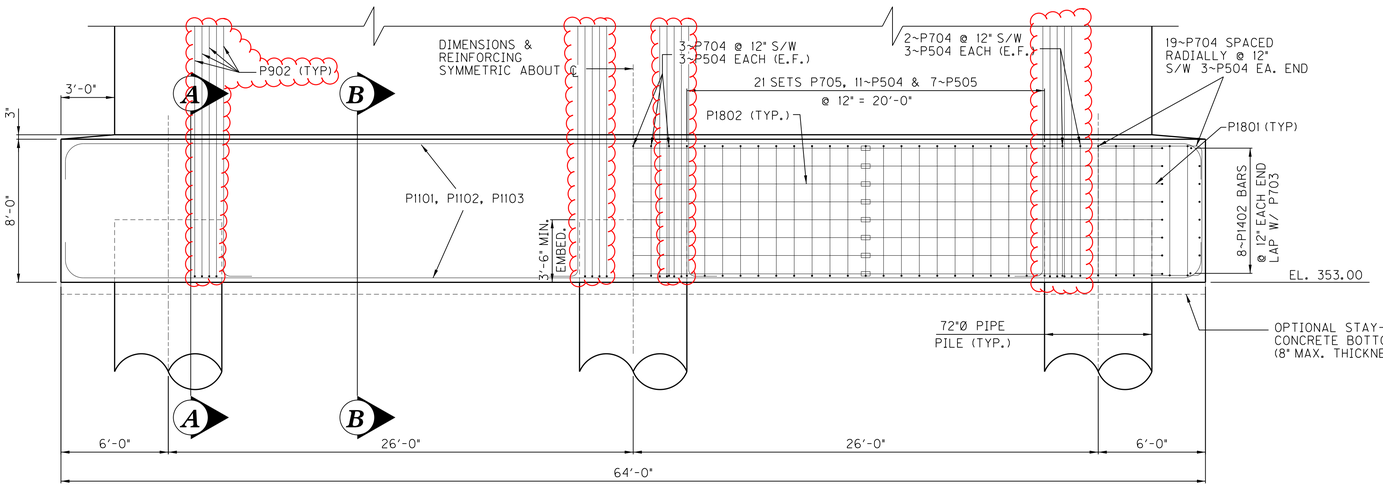
SECTION A–A



PILE CONNECTION DETAIL

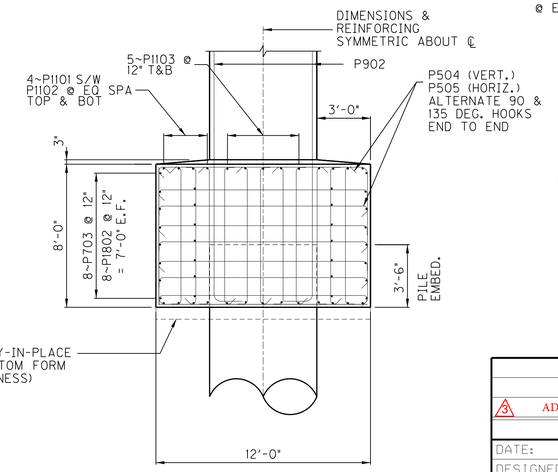


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SECTION B–B

FOR ADDITIONAL PIER 2 & 3 DETAILS SEE SHEETS S055, S056, & S057

NOTE: DISTANCE TO FACE OF CONCRETE IS 3" UNLESS OTHERWISE SHOWN.

MINIMUM LAP SPLICE IS:
#5 BAR = 2'-6
#6 BAR = 3'-0
#11 BAR = 10'-0
#14 BAR = USE MECHANICAL COUPLER
#18 BAR = USE MECHANICAL COUPLER

REVISION	DATE
3 ADDED P902 BARS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY	
DESIGNED BY: B.N. ROBSON	D.E. RUST	
DETAILED BY: J.A. ROSE	D.E. RUST	

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIERS 2 & 3 PILE CAP DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

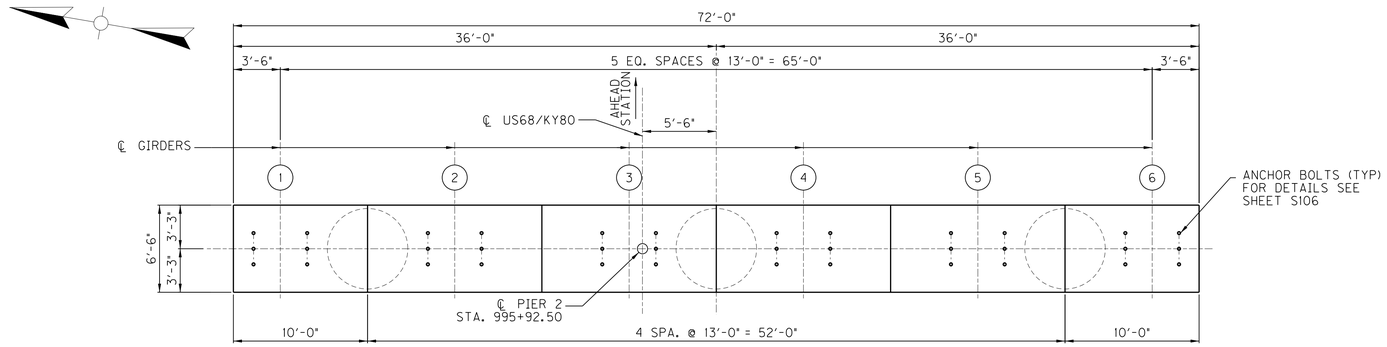
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

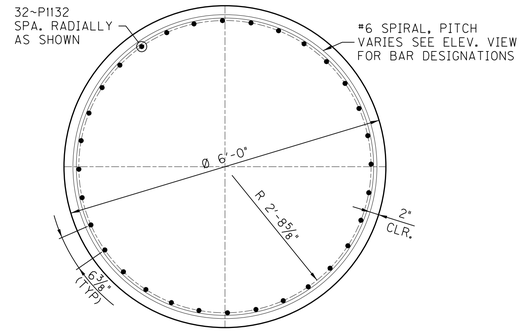
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DRAWING NO.: **24686**

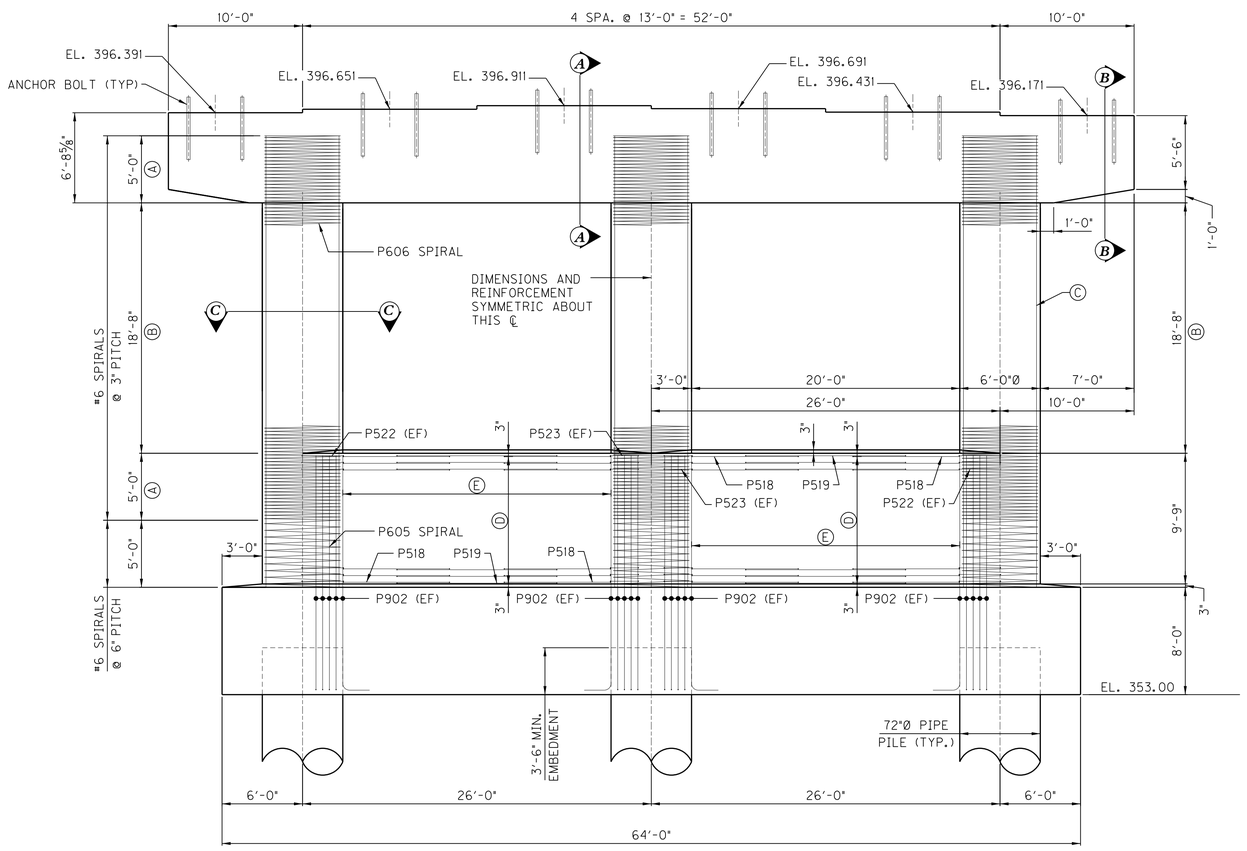
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MicroStation v8.11.7.443



PLAN OF CAP

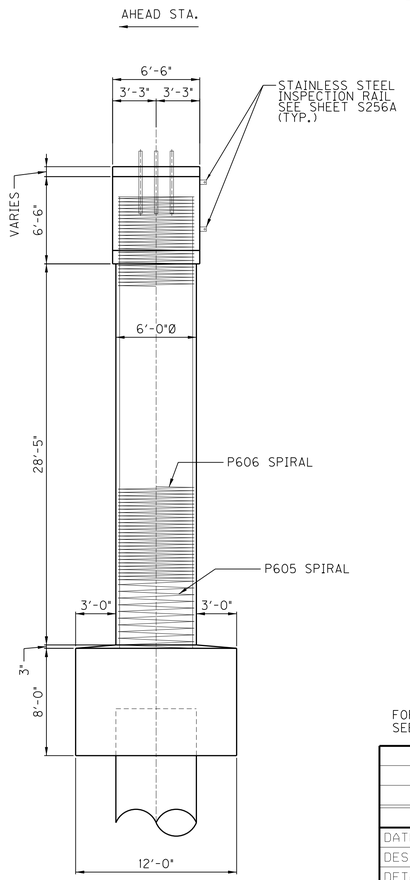


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SIDE ELEVATION

(LOOKING SOUTH)

Ⓐ MIN. P606 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ P1132 (TYP. VERT COL. R/F)

Ⓓ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520, 2~P522, AND 2~P523.

Ⓔ 50~P902 @ EQ. SPA. = 19'-9 5/8" (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058

FOR ADDITIONAL PIER 2 DETAILS SEE SHEET S052A & S057.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: K.S. MCLEMORE	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

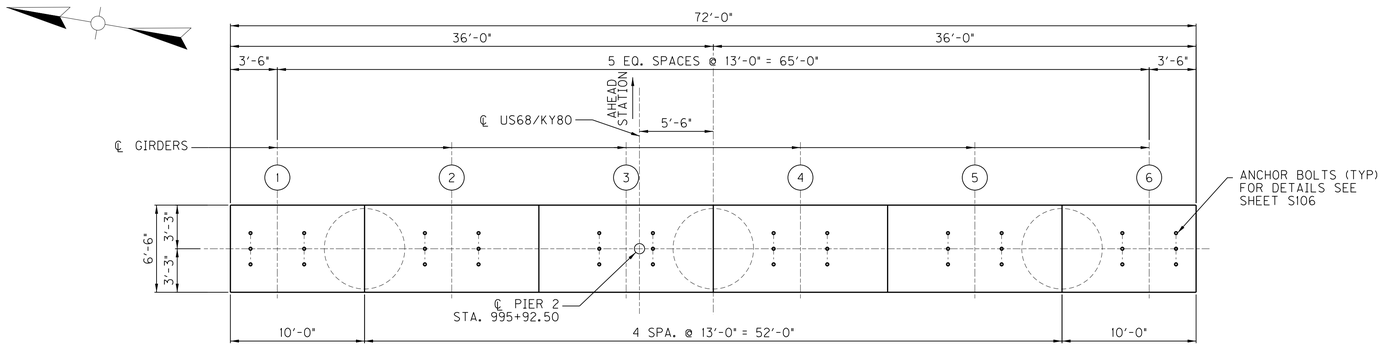
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

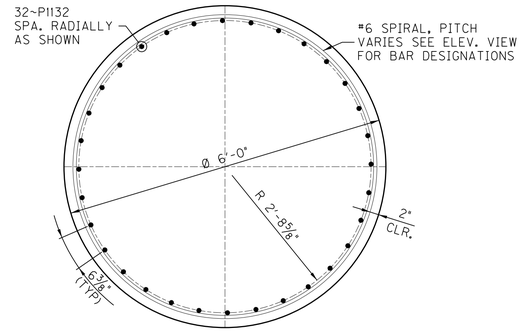
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DRAWING NO. 24686

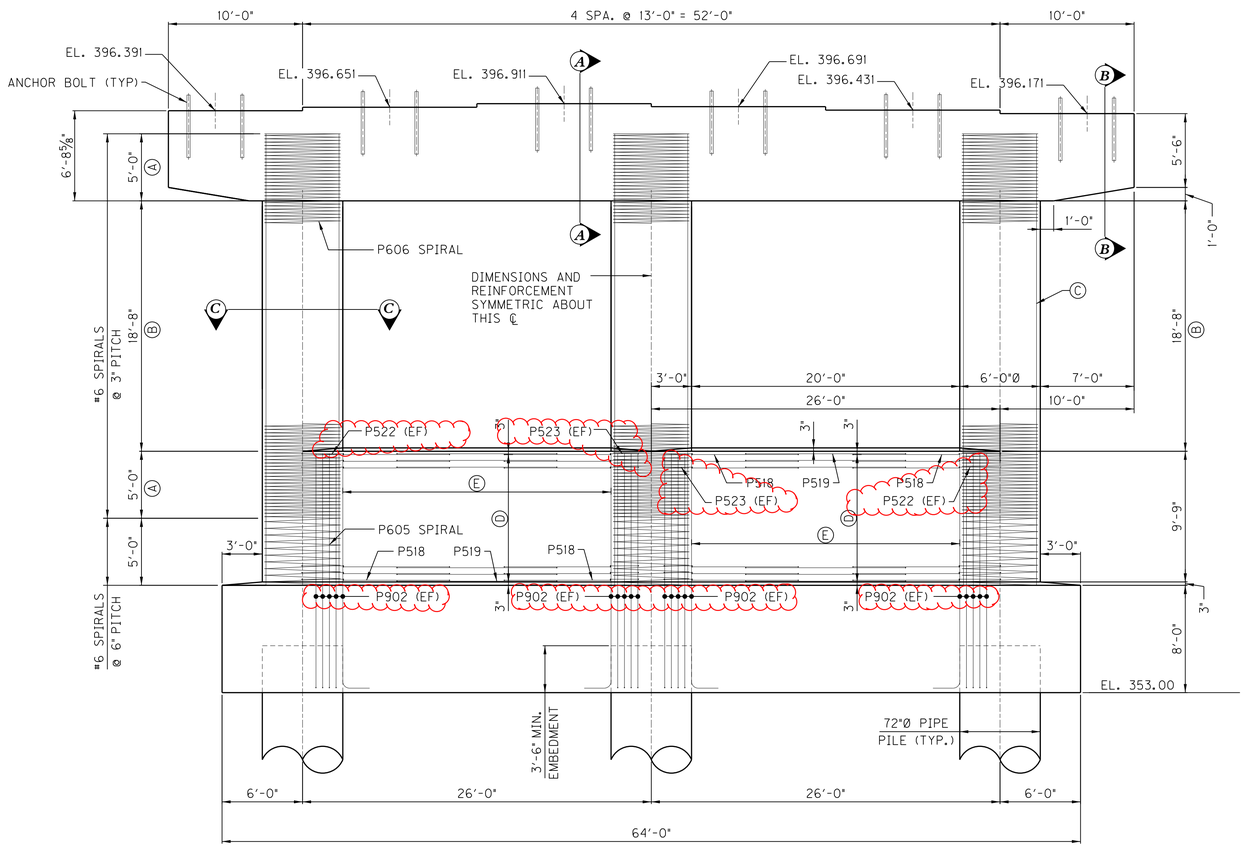
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MicroStation v8.11.7.443



PLAN OF CAP

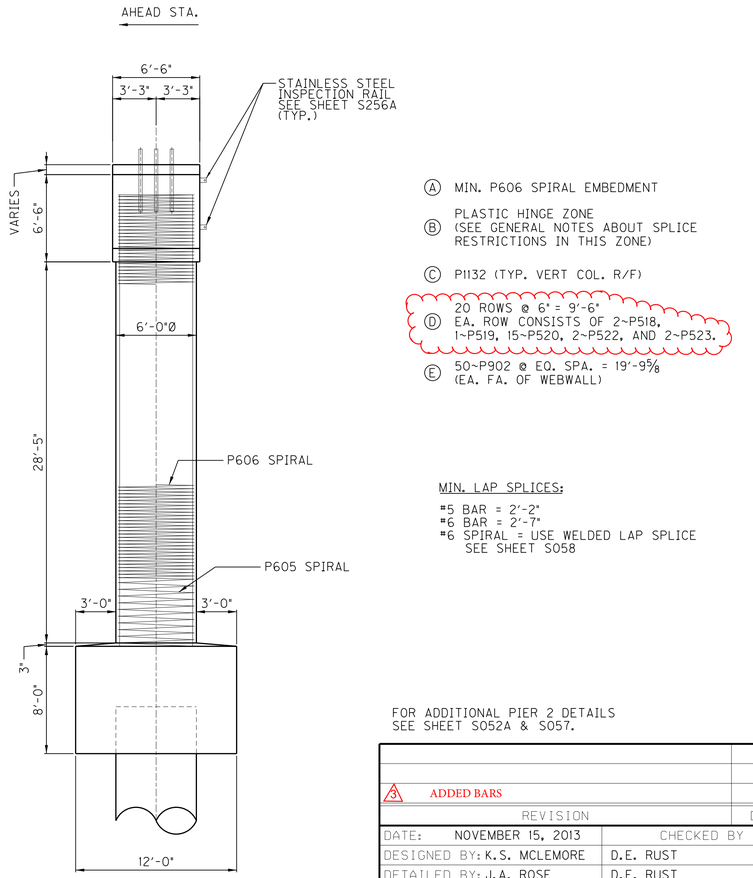


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SIDE ELEVATION

(LOOKING SOUTH)

Ⓐ MIN. P606 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ P1132 (TYP. VERT COL. R/F)

Ⓓ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520, 2~P522, AND 2~P523.

Ⓔ 50~P902 @ EQ. SPA. = 19'-9 5/8" (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058

FOR ADDITIONAL PIER 2 DETAILS SEE SHEET S052A & S057.

3. ADDED BARS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: K.S. MCLEMORE	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

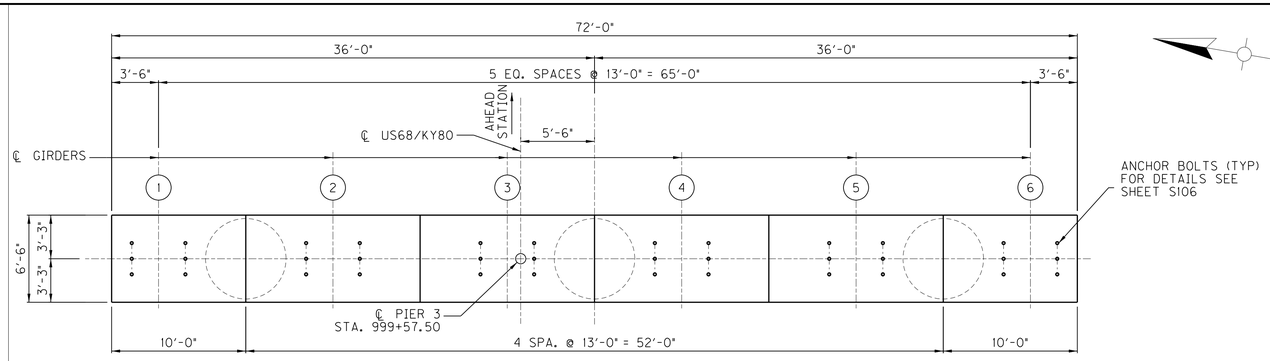
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

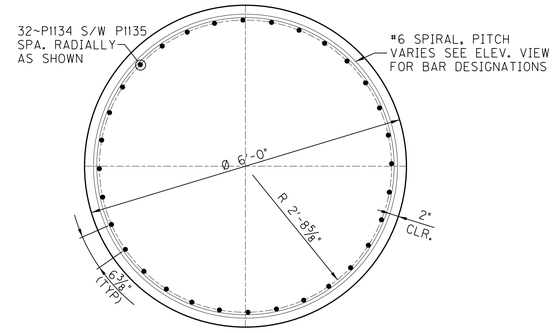
SHEET NO. S055

DRAWING NO. 24686

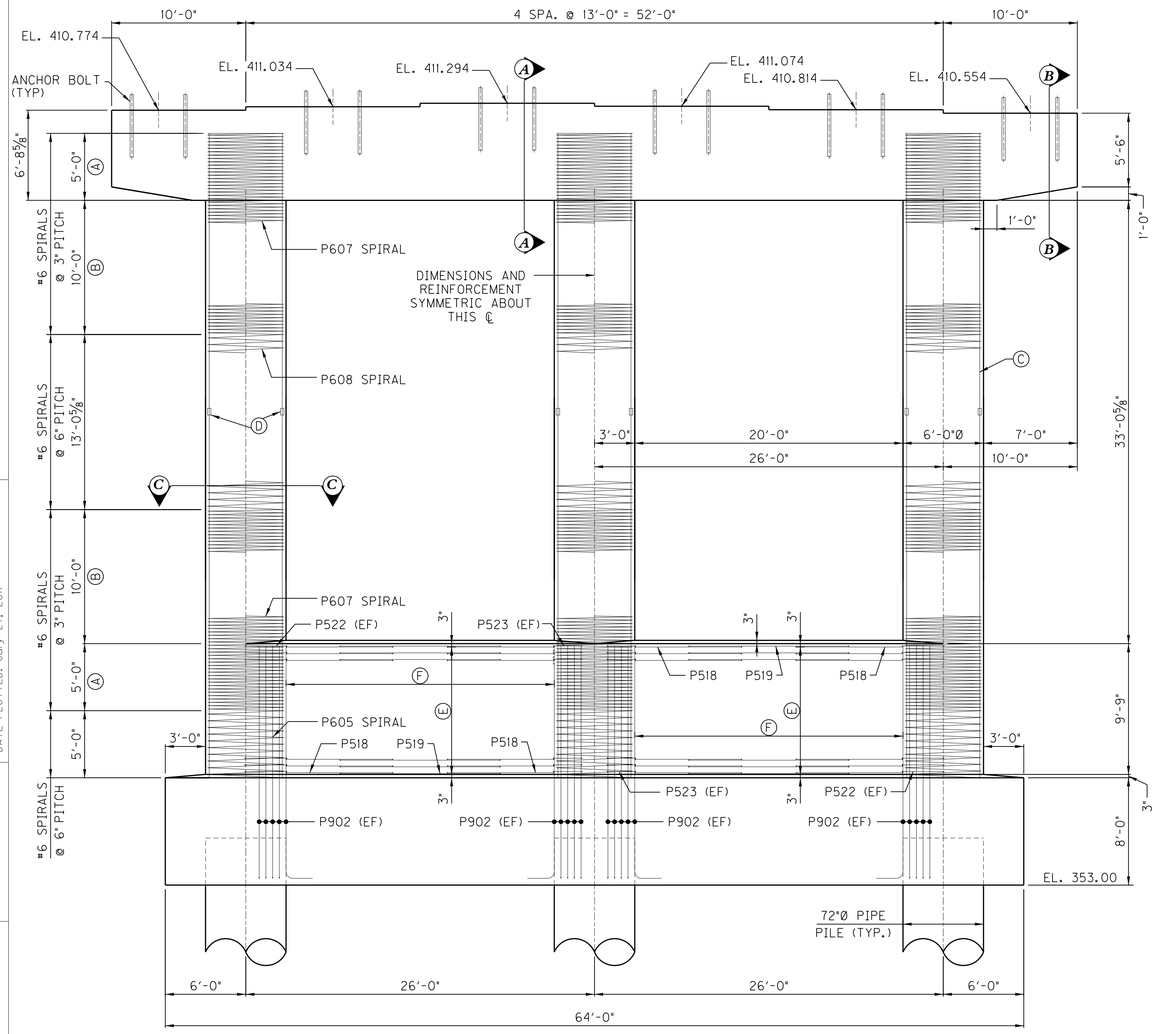
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MicroStation v8.11.7.443



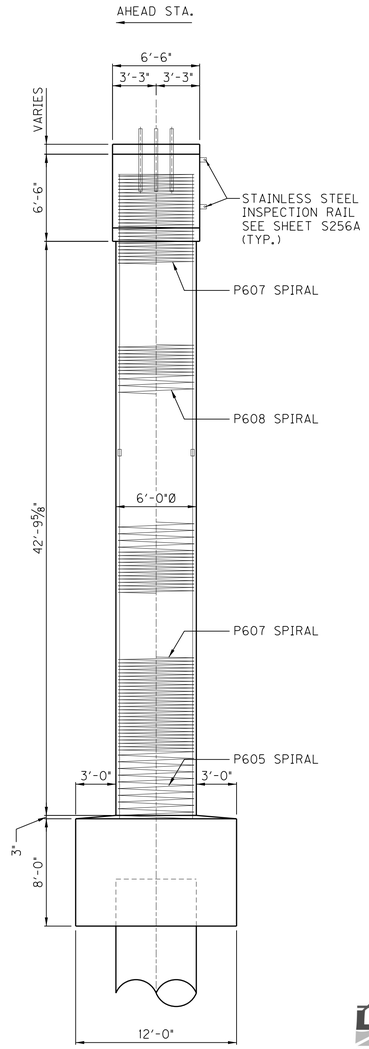
PLAN OF CAP



SECTION C–C



ELEVATION
(LOOKING AHEAD STATION)



SIDE ELEVATION
(LOOKING SOUTH)

Ⓐ MIN. P607 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE
(SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ P1134 S/W P1135
(TYP. VERT COL. R/F)

Ⓓ MECHANICAL COUPLERS TO BE USED FOR COLUMN SPLICES.

Ⓔ 20 ROWS @ 6" = 9'-6"
EA. ROW CONSISTS OF 2~P518,
1~P519, 15~P520, 2~P522, AND 2~P523.

Ⓕ 50~P902 @ EQ. SPA. = 19'-9⅝
(EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE
SEE SHEET S058
#11 BAR = USE MECHANICAL COUPLER

FOR ADDITIONAL PIER 3 DETAILS
SEE SHEET S052A & S057.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: K.S. MCLEMORE	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

PIER 3

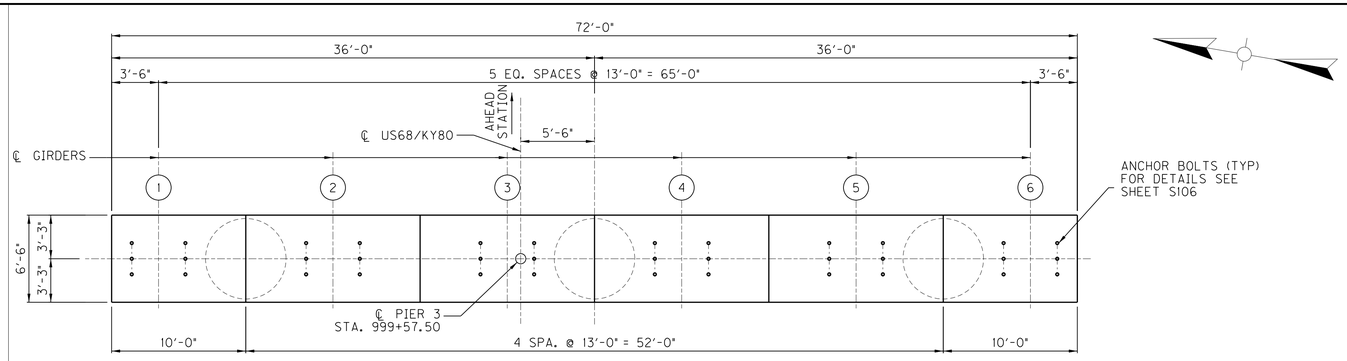
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

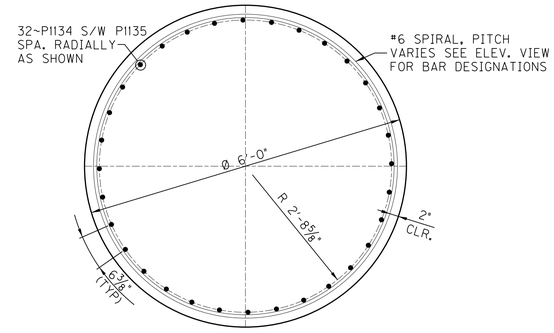
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S056
DRAWING NO. 24686

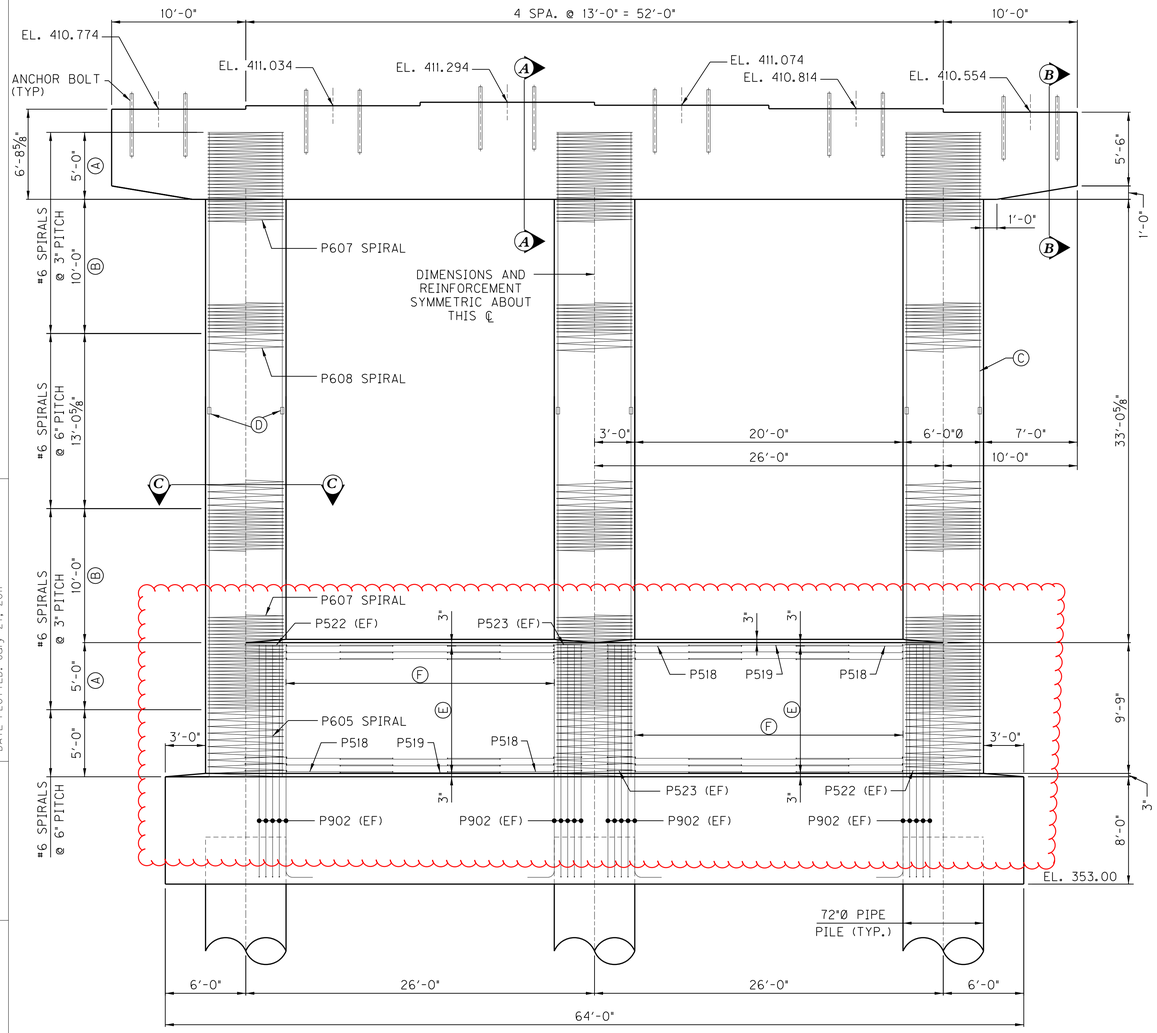
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E-SHEET NAME:
MicroStation v8.11.7.443



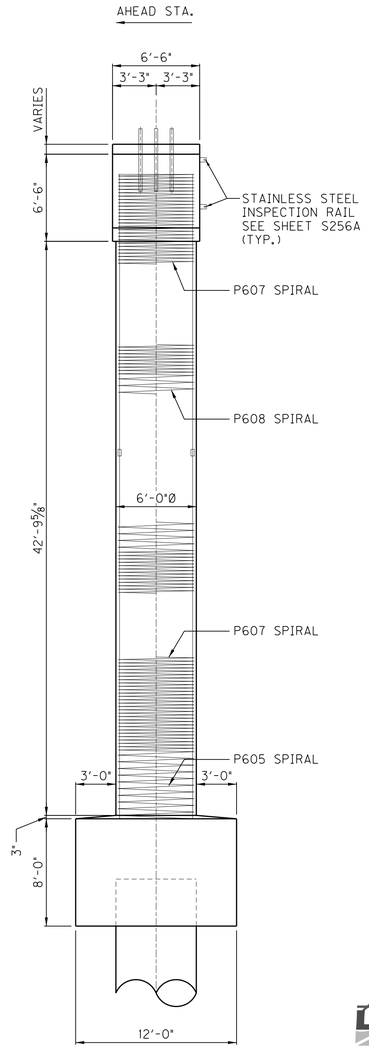
PLAN OF CAP



SECTION C–C



ELEVATION
(LOOKING AHEAD STATION)



SIDE ELEVATION
(LOOKING SOUTH)

Ⓐ MIN. P607 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ P1134 S/W P1135 (TYP. VERT COL. R/F)

Ⓓ MECHANICAL COUPLERS TO BE USED FOR COLUMN SPLICES.

Ⓔ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520, 2~P522, AND 2~P523.

Ⓕ 50~P902 @ EQ. SPA. = 19'-9⅞" (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058
#11 BAR = USE MECHANICAL COUPLER

FOR ADDITIONAL PIER 3 DETAILS SEE SHEET S052A & S057.

3 ADDED/CHANGED NOTES & BARS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY: K.S. MCLEMORE — D.E. RUST
DETAILED BY: J.A. ROSE — D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** — CROSSING: **KENTUCKY LAKE**

PIER 3

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

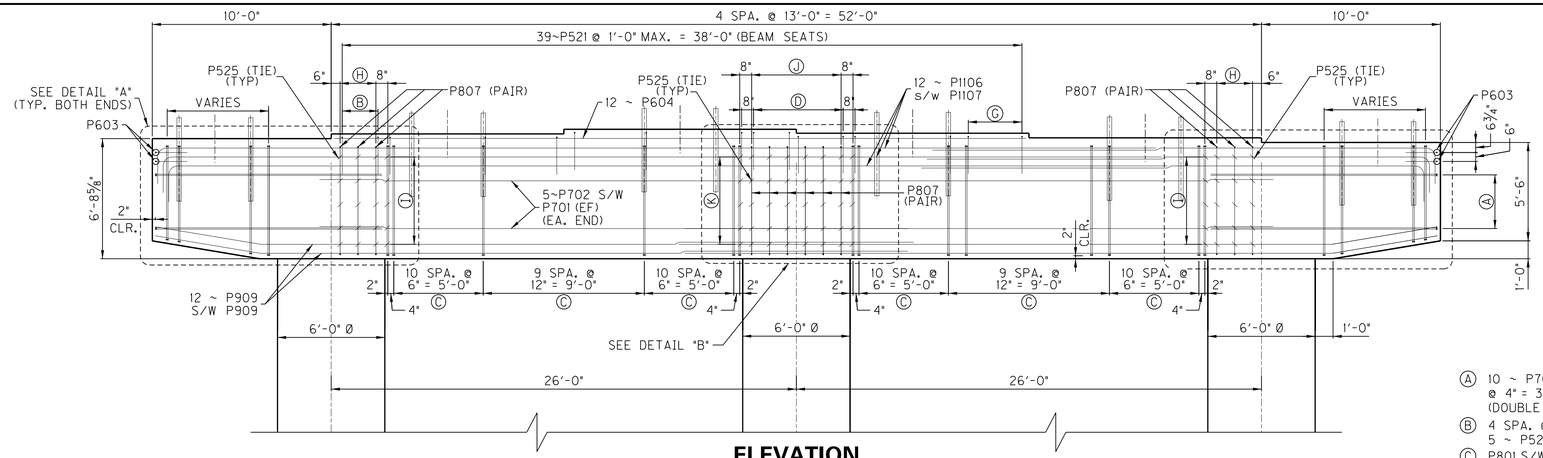
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

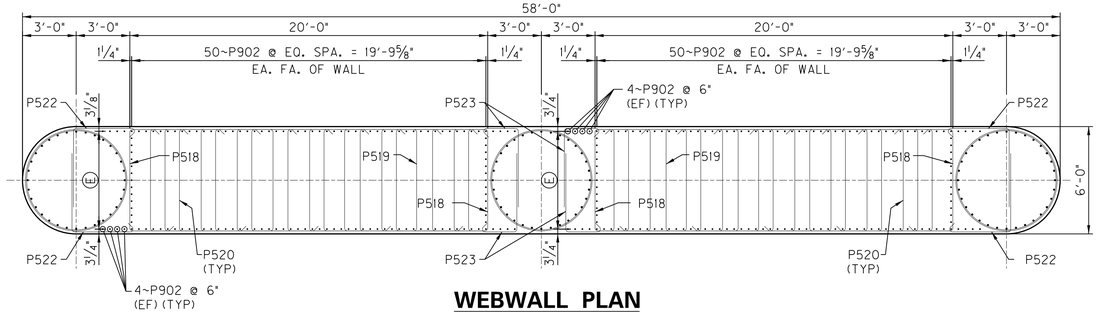
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DRAWING NO. 24686

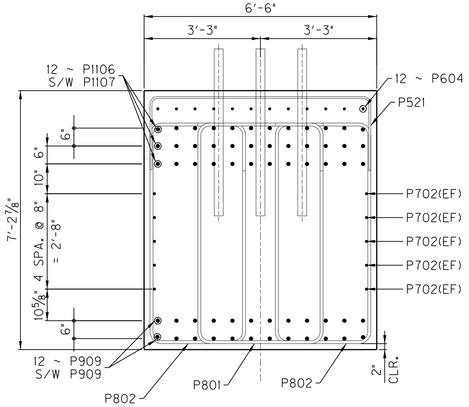
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MicroStation v8.11.7.443



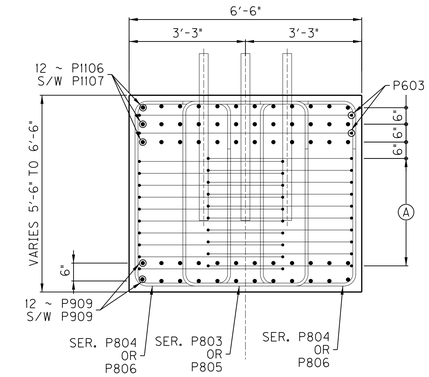
ELEVATION
(LOOKING AHEAD STATION)



WEBWALL PLAN



SECTION A–A



SECTION B–B

Ⓐ 10 ~ P701 S/W P701 @ 4" = 3'-0" (DOUBLE STIRRUPS)

Ⓑ 4 SPA. @ 6" = 2'-0", 5 ~ P521

Ⓒ P801 S/W 2 ~ P802 (TRIPLE STIRRUPS)

Ⓓ 10 SPA. @ 6" = 5'-0", 11 ~ P521

Ⓔ 13~P902 @ EQ. SPA. = 5'-5⅝"

Ⓕ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520 (TIES WITH ALTERNATE ORIENTATION AS SHOWN IN PLAN), 2~P522, AND P~523.

Ⓖ 3 SPA. @ 12" = 3'-0", 4 ~ P521

Ⓗ 3 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 2'-0"

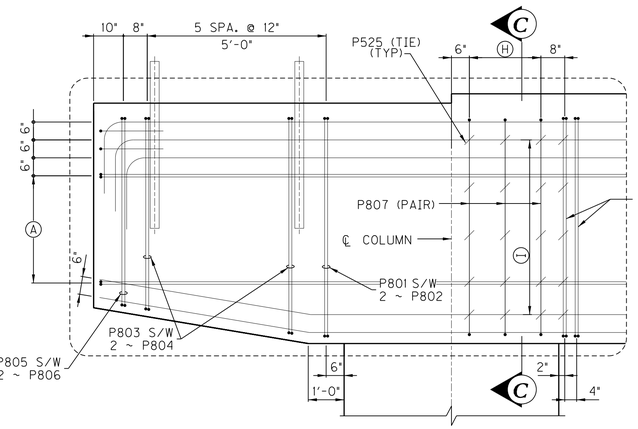
Ⓘ 20~P525 TIED TO P702, P801, P807, AND SIDE FACE REINFORCEMENT AS SHOWN

Ⓙ 6 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 5'-0"

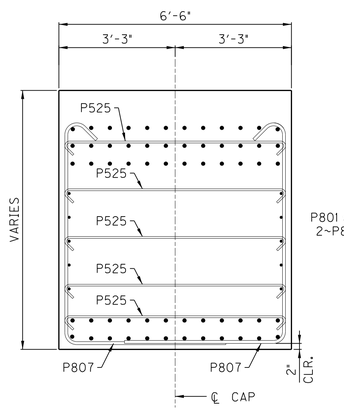
Ⓚ 40~P525 TIED TO P702, P801, P807, AND SIDE FACE REINFORCEMENT AS SHOWN

NOTE: CAP STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION & PLACEMENT OF CAST IN PLACE ANCHOR BOLTS.

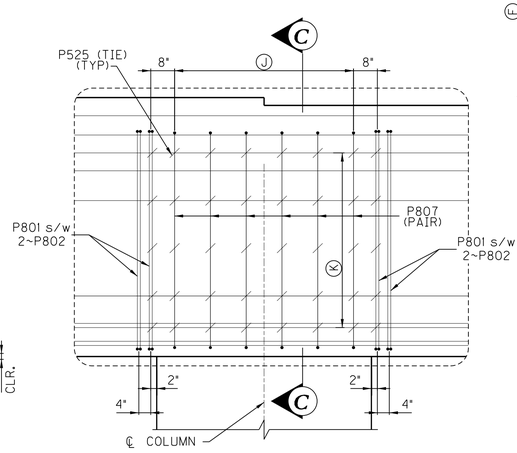
NOTE: STAINLESS STEEL INSPECTION RAIL NOT SHOWN FOR CLARITY. SEE SHEET S256A FOR DETAILS.



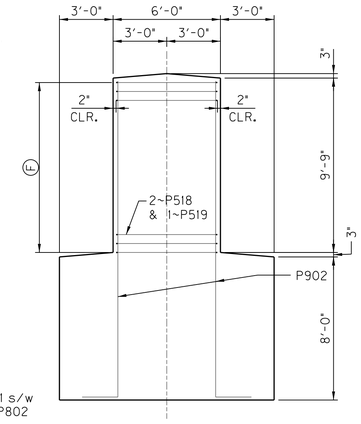
DETAIL "A"



SECTION "C"



DETAIL "B"



SECTION THRU WEBWALL

MIN. LAP SPLICES:
#7 BAR = 3'-6"
#11 BAR = 12'-6"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 2 & 3 DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

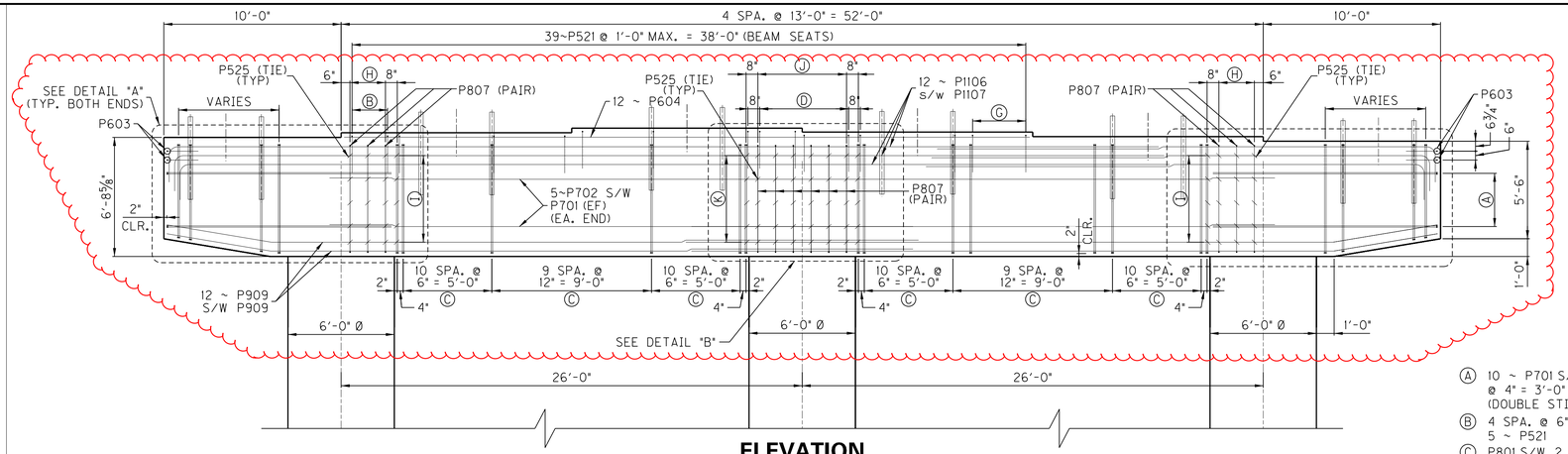
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

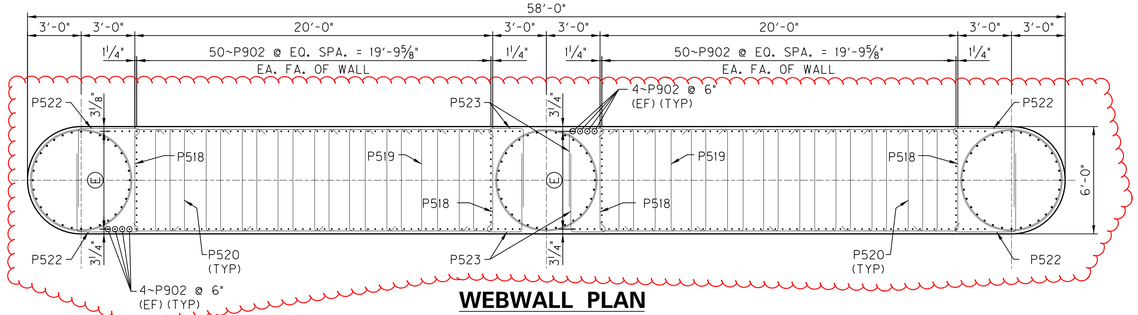
SHEET NO. S057

DRAWING NO. 24686

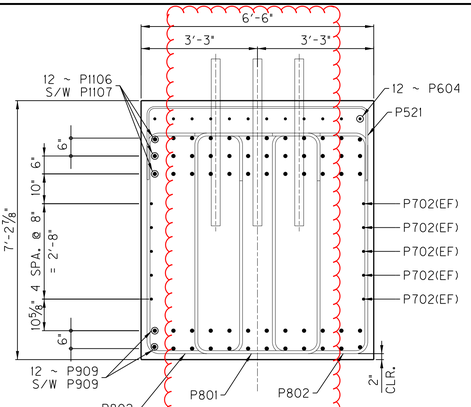
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DATE PLOTTED: July 27, 2011
12/11/2013 2:33:59 PM
E-SHEET NAME:
MicroStation v8.11.7.443



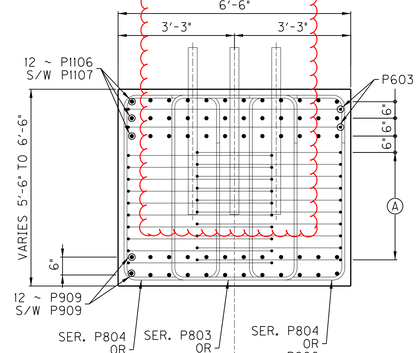
ELEVATION
(LOOKING AHEAD STATION)



WEBWALL PLAN



SECTION A–A



SECTION B–B

Ⓐ 10 ~ P701 S/W P701 @ 4" = 3'-0" (DOUBLE STIRRUPS)

Ⓑ 4 SPA. @ 6" = 2'-0", 5 ~ P521

Ⓒ P801 S/W 2 ~ P802 (TRIPLE STIRRUPS)

Ⓓ 10 SPA. @ 6" = 5'-0", 11 ~ P521

Ⓔ 13~P902 @ EQ. SPA. = 5'-5⅝"

Ⓕ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520 (TIES WITH ALTERNATE ORIENTATION AS SHOWN IN PLAN), 2~P522, AND P~523.

Ⓖ 3 SPA. @ 12" = 3'-0", 4 ~ P521

Ⓗ 3 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 2'-0"

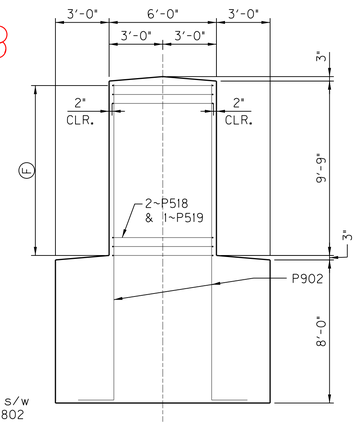
Ⓘ 20~P525 TIED TO P702, P801, P807, AND SIDE FACE REINFORCEMENT AS SHOWN

Ⓙ 6 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 5'-0"

Ⓚ 40~P525 TIED TO P702, P801, P807, AND SIDE FACE REINFORCEMENT AS SHOWN

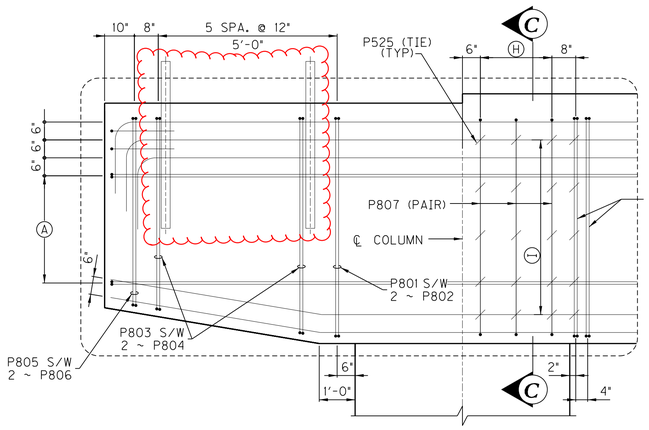
NOTE: CAP STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION & PLACEMENT OF CAST IN PLACE ANCHOR BOLTS.

NOTE: STAINLESS STEEL INSPECTION RAIL NOT SHOWN FOR CLARITY. SEE SHEET S256A FOR DETAILS.

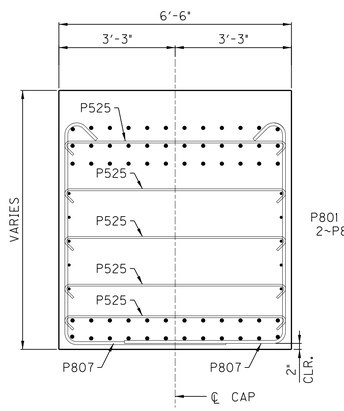


SECTION THRU WEBWALL

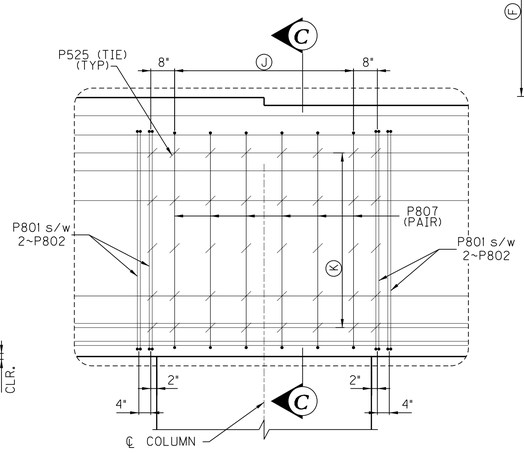
MIN. LAP SPLICES:
#7 BAR = 3'-6"
#11 BAR = 12'-6"



DETAIL "A"



SECTION "C"



DETAIL "B"

Ⓐ	ADDED/CHANGED NOTES & BARS — 12/09/13
	REVISION — DATE
DATE:	NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY:	B.T. DRECKMAN — D.E. RUST
DETAILED BY:	J.A. ROSE — D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 — CROSSING: KENTUCKY LAKE

PIER 2 & 3 DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY: PALMER ENGINEERING CO.

SHEET NO.: S057

DRAWING NO.: 24686

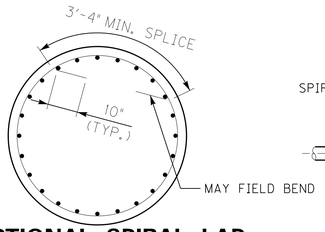
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USER: tlm-e
DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443
12/6/2013 9:41:21 AM

BILL OF REINFORCEMENT – PIERS

MARK	TYPE	NUMBER			SIZE	LENGTH	LOCATION	A	B	C	D
		PIER 1	PIER 2	PIER 3							
P401	34	310	0	0	# 4	6'-8"	WALL PIER	6"	5'-8"	6"	
P501	NOT	USED									
P502	NOT	USED									
P503	NOT	USED									
P504	34	630	630	630	# 5	8'-7"	PILE CAP	6"	7'-7 1/4"	6"	
P505	34	294	294	294	# 5	12'-7"	PILE CAP	6"	11'-7 1/4"	6"	
P506	10	62	0	0	# 5	14'-4"	WALL PIER	2'-9"	8'-9 3/4"	5'-8"	
P507	33	62	0	0	# 5	52'-5"	WALL PIER	20'-0"	5'-8"	6 1/4"	
P508	2	62	0	0	# 5	38'-2"	WALL PIER	16'-3"	5'-8"		
P509	NOT	USED									
P510	2	22	0	0	# 5	17'-2"	WALL PIER	5'-6"	6'-2"		
P511	33	22	0	0	# 5	53'-5"	WALL PIER	20'-0"	6'-2"	6 1/4"	
P512	2	22	0	0	# 5	38'-8"	WALL PIER	16'-3"	6'-2"		
P513	NOT	USED									
P514	2	19	0	0	# 5	18'-6"	WALL PIER CAP	6'-2"	6'-2"		
P515	2	13	0	0	# 5	19'-6"	WALL PIER CAP	6'-7 3/4"	6'-2"		
P516	2	13	0	0	# 5	20'-0"	WALL PIER CAP	6'-11"	6'-2"		
P517	2	13	0	0	# 5	19'-7"	WALL PIER CAP	6'-8 3/4"	6'-2"		
P518	33	0	80	80	# 5	28'-4"	WEBWALL	8'-0"	5'-8"	6"	
P519	33	0	40	40	# 5	36'-4"	WEBWALL	12'-0"	5'-8"	6"	
P520	34	0	600	600	# 5	6'-8"	WEBWALL	6"	5'-8"	6"	
P521	2	0	39	39	# 5	10'-6"	PIER CAP	2'-2"	6'-2"		
P522	34	0	80	80	# 5	7'-6"	WEBWALL	6"	3'-6"	3'-6"	
P523	34	0	80	80	# 5	6'-6"	WEBWALL	6"	2'-6"	3'-6"	
P524	NOT	USED									
P525	34	0	80	80	# 5	7'-2"	T-JOINT BARS	6"	6'-2"	6"	
P601	8	24	0	0	# 6	16'-0"	WALL PIER CAP	10'-0"	6'-0"	1'-0"	5'-10"
P602	18	3	3	3	# 6	614'-0"	SPLICE CAGE	16'-9"	6"	5'-4"	
P603	2	4	4	4	# 6	9'-3"	PIER CAP	1'-9 1/2"	6'-0"		
P604	STR.	12	12	12	# 6	38'-8"	PIER CAP				
P605	18	0	3	3	# 6	232'-3"	COLUMNS	5'-0"	0'-6"	5'-8"	
P606	18	0	3	0	# 6	2098'-3"	COLUMNS	28'-8"	0'-3"	5'-8"	
P607	18	0	0	6	# 6	1123'-3"	COLUMNS	15'-0"	0'-3"	5'-8"	
P608	18	0	0	3	# 6	518'-4"	COLUMNS	13'-0 3/8"	0'-6"	5'-8"	
P609	18	0	0	0	# 6	572'-0"	COLUMNS	14'-6 3/8"	0'-6"	5'-8"	
P610	18	0	0	0	# 6	2253'-8"	COLUMNS	30'-10 1/2"	0'-3"	5'-8"	
P701	2	40	40	40	# 7	29'-4"	PIER CAP	12'-8"	4'-0"		
P702	STR.	0	10	10	# 7	53'-4"	PIER CAP				
P703	STR.	16	16	16	# 7	52'-0"	PILE CAP				
P704	22	56	56	56	# 7	16'-0"	PILE CAP	7'-6"	2'-9"	5'-9"	
P705	33	42	42	42	# 7	39'-6"	PILE CAP	11'-6"	7'-6"	9"	
P706	6	0	0	0	# 7	26'-6"	PILE CAP SLOPES	6'-0"	10'-3"	10 1/4"	10'-3 5/8"
P707	STR.	0	0	0	# 7	11'-3"	PILE CAP SLOPES				
P708	STR.	0	0	0	# 7	37'-0"	PILE CAP				
P801(S)	14	2	66	66	# 8	20'-6"	PIER CAP	6'-2"	3'-6"		
P802(S)	14	4	132	132	# 8	18'-10"	PIER CAP	6'-2"	2'-8"		
SERIES P803(S)	14	2 SETS	2 SETS	2 SETS	# 8	98'-4"	PIER CAP	5'-5" TO 6'-1"	3'-6"		
SERIES P804(S)	14	4 SETS	4 SETS	4 SETS	# 8	90'-0"	PIER CAP	5'-5" TO 6'-1"	2'-8"		
P805(S)	14	2	2	2	# 8	18'-6"	PIER CAP	5'-2"	3'-6"		
P806(S)	14	4	4	4	# 8	16'-10"	PIER CAP	5'-2"	2'-8"		
P807(S)	34	0	24	24	# 8	11'-6"	T-JOINT BARS	10"	6'-2"	4'-6"	
P901	5	248	0	0	# 9	29'-11"	WALL PIER	28'-4"	1'-7"		
P902	5	0	284	284	# 9	19'-0"	WEBWALL	17'-5"	1'-7"		
P903	NOT	USED									
P904	NOT	USED									
P905	NOT	USED									
P906	NOT	USED									
P907	5	0	0	0	# 9	32'-1"	WALL PIER	30'-6"	1'-7"		
P908	5	0	0	0	# 9	21'-10"	WALL PIER	20'-3"	1'-7"		
P909	8	0	48	48	# 9	42'-5"	PIER CAP	36'-6"	5'-11"	1'-0"	5'-10"

BILL OF REINFORCEMENT – PIERS

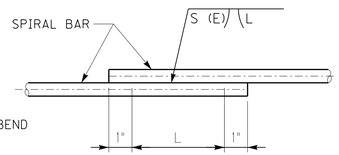
MARK	TYPE	NUMBER			SIZE	LENGTH	LOCATION	A	B	C	D
		PIER 1	PIER 2	PIER 3							
P1101	5	16	16	16	# 11	54'-0"	PILE CAP	2'-0"	52'-0"		
P1102	5	16	16	16	# 11	23'-0"	PILE CAP	2'-0"	21'-0"		
P1103	2	20	20	20	# 11	23'-6"	PILE CAP	2'-0"	19'-6"		
P1104	NOT	USED									
P1105	5	48	0	0	# 11	18'-7"	WALL PIER CAP	16'-7"	2'-0"		
P1106	5	12	36	36	# 11	60'-0"	PIER CAP	55'-10"	4'-2"		
P1107	5	12	36	36	# 11	33'-8"	PIER CAP	29'-6"	4'-2"		
P1108	NOT	USED									
P1109	5	0	0	0	# 11	39'-0"	PILE CAP	2'-0"	37'-0"		
P1110	5	0	0	0	# 11	38'-0"	PILE CAP	2'-0"	36'-0"		
P1111	NOT	USED									
P1112	NOT	USED									
P1113	2	0	0	0	# 11	41'-0"	PILE CAP	2'-0"	37'-0"		
P1114	2	0	0	0	# 11	32'-9"	PILE CAP	2'-0"	28'-9"		
P1115	2	0	0	0	# 11	30'-6"	PILE CAP	2'-0"	26'-6"		
P1116	2	0	0	0	# 11	27'-7"	PILE CAP	2'-0"	23'-7"		
P1117	2	0	0	0	# 11	27'-1"	PILE CAP	2'-0"	23'-1"		
P1118	2	0	0	0	# 11	26'-6"	PILE CAP	2'-0"	22'-6"		
P1119	2	0	0	0	# 11	25'-10"	PILE CAP	2'-0"	21'-10"		
P1120	2	0	0	0	# 11	25'-1"	PILE CAP	2'-0"	21'-1"		
P1121	2	0	0	0	# 11	24'-4"	PILE CAP	2'-0"	20'-4"		
P1122	2	0	0	0	# 11	23'-5"	PILE CAP	2'-0"	19'-5"		
P1123	2	0	0	0	# 11	22'-5"	PILE CAP	2'-0"	18'-5"		
P1124	2	0	0	0	# 11	21'-4"	PILE CAP	2'-0"	17'-4"		
P1125	2	0	0	0	# 11	20'-2"	PILE CAP	2'-0"	16'-2"		
P1126	2	0	0	0	# 11	18'-9"	PILE CAP	2'-0"	14'-9"		
P1127	2	0	0	0	# 11	17'-3"	PILE CAP	2'-0"	13'-3"		
P1128	2	0	0	0	# 11	15'-2"	PILE CAP	2'-0"	11'-2"		
P1129	2	0	0	0	# 11	12'-9"	PILE CAP	2'-0"	8'-9"		
P1130	2	0	0	0	# 11	14'-3"	PILE CAP	2'-0"	10'-3"		
P1131	2	0	0	0	# 11	13'-0"	PILE CAP	2'-0"	9'-0"		
P1132	STR.	0	96	0	# 11	33'-8"	COLUMNS				
P1133	NOT	USED									
P1134	STR.	0	0	96	# 11	27'-3"	COLUMNS				
P1135	STR.	0	0	96	# 11	20'-9"	COLUMNS				
P1136	STR.	0	0	0	# 11	35'-10"	COLUMNS				
P1401	STR	186	186	186	# 14	16'-9"	SPLICE CAGE				
P1402	10	16	16	16	# 14	39'-10"	PILE CAP	11'-0"	17'-10"	11'-6"	
P1403	STR.	0	0	0	# 14	27'-3"	COLUMNS				
P1404	STR.	0	0	0	# 14	22'-3"	COLUMNS				
P1801	10	16	16	16	# 18	38'-0"	PILE CAP	13'-0"	12'-0"	7'-10"	
P1802	STR	16	16	16	# 18	26'-0"	PILE CAP				
P1803	10	0	0	0	# 18	26'-10"	PILE CAP	7'-6"	11'-9 3/8"	7'-6"	
P1804	10	0	0	0	# 18	42'-4"	PILE CAP	15'-3"	11'-9 3/8"	7'-6"	
P1805	10	0	0	0	# 18	29'-2"	PILE CAP	7'-6"	14'-1 1/8"	9'-0"	



OPTIONAL SPIRAL LAP

SPLICE DETAIL

(MAY BE USED OUTSIDE PLASTIC HINGE REGIONS)



SPIRAL WELDED LAP

SPLICE DETAIL

(TO BE USED IN PLASTIC HINGE REGIONS)

WELD DIMENSIONS (IN.)			
SPIRAL BAR SIZE	S	E	L
#5	5/16"	3/16"	6
#6	3/8	3/16	6

COLUMN SPIRALS

THE LENGTH SHOWN IN THE BILL OF REINFORCEMENT FOR SPIRALS IS THE DIMENSION REQUIRED TO FIT THE COLUMN LENGTHS CONSIDERING PLASTIC HINGE ZONES AND EMBEDMENT INTO THE FOOTING AND CAP. THE NUMBER OF TURNS SHOWN IS THE LENGTH DIVIDED BY THE PITCH, PLUS 3 TURNS (TOTAL NUMBER OF CLOSED COILS) EXPRESSED TO THE NEAREST WHOLE NUMBER. ONE AND ONE-HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. 4 CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.8 LBS. PER LINER FOOT OF SPACER, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COIL. WEIGHT OF SPACERS AND SPIRAL REINFORCEMENT IS INCLUDED IN THE ESTIMATE OF QUANTITIES FOR EACH PIER.

NOTES:

1. FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.
2. FOR REINFORCEMENT DESIGNATIONS, SEE GENERAL NOTES SHEETS S004-S006.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	K.S. MCLEMORE
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIERS 1, 2, & 3 – BILL OF REINFORCEMENT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S058

DRAWING NO. 24686

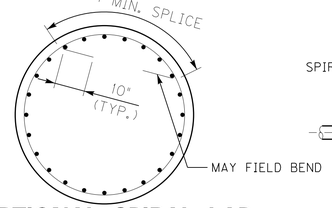
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:32:05 PM
E-SHEET NAME:
MicroStation v8.11.7.443

BILL OF REINFORCEMENT – PIERS

MARK	TYPE	NUMBER PIER 1	NUMBER PIER 2	NUMBER PIER 3	SIZE	LENGTH	LOCATION	A	B	C	D
P401	34	310	0	0	# 4	6'-8"	WALL PIER	6"	5'-8"	6"	
P501	NOT	USED									
P502	NOT	USED									
P503	NOT	USED									
P504	34	630	630	630	# 5	8'-7"	PILE CAP	6"	7'-7 1/4"	6"	
P505	34	294	294	294	# 5	12'-7"	PILE CAP	6"	11'-7 1/4"	6"	
P506	10	62	0	0	# 5	14'-4"	WALL PIER	2'-9"	8'-9 3/4"	5'-8"	
P507	33	62	0	0	# 5	52'-5"	WALL PIER	20'-0"	5'-8"	6 1/4"	
P508	2	62	0	0	# 5	38'-2"	WALL PIER	16'-3"	5'-8"		
P509	NOT	USED									
P510	2	22	0	0	# 5	17'-2"	WALL PIER	5'-6"	6'-2"		
P511	33	22	0	0	# 5	53'-5"	WALL PIER	20'-0"	6'-2"	6 1/4"	
P512	2	22	0	0	# 5	38'-8"	WALL PIER	16'-3"	6'-2"		
P513	NOT	USED									
P514	2	19	0	0	# 5	18'-6"	WALL PIER CAP	6'-2"	6'-2"		
P515	2	13	0	0	# 5	19'-6"	WALL PIER CAP	6'-7 3/4"	6'-2"		
P516	2	13	0	0	# 5	20'-0"	WALL PIER CAP	6'-11"	6'-2"		
P517	2	13	0	0	# 5	19'-7"	WALL PIER CAP	6'-8 3/4"	6'-2"		
P518	33	0	80	80	# 5	28'-4"	WEBWALL	8'-0"	5'-8"	6"	
P519	33	0	40	40	# 5	36'-4"	WEBWALL	12'-0"	5'-8"	6"	
P520	34	0	600	600	# 5	6'-8"	WEBWALL	6"	5'-8"	6"	
P521	2	0	39	39	# 5	10'-6"	PIER CAP	2'-2"	6'-2"		
P522	34	0	80	80	# 5	7'-6"	WEBWALL	6"	3'-6"	3'-6"	
P523	34	0	80	80	# 5	6'-6"	WEBWALL	6"	2'-6"	3'-6"	
P524	NOT	USED									
P525	34	0	80	80	# 5	7'-2"	T-JOINT BARS	6"	6'-2"	6"	
P601	8	24	0	0	# 6	16'-0"	WALL PIER CAP	10'-0"	6'-0"	1'-0"	5'-10"
P602	18	3	3	3	# 6	614'-0"	SPLICE CAGE	16'-9"	6"	5'-4"	
P603	2	4	4	4	# 6	9'-3"	PIER CAP	1'-9 1/2"	6'-0"		
P604	STR.	12	12	12	# 6	38'-8"	PIER CAP				
P605	18	0	3	3	# 6	232'-3"	COLUMNS	5'-0"	0'-6"	5'-8"	
P606	18	0	3	0	# 6	2098'-3"	COLUMNS	28'-8"	0'-3"	5'-8"	
P607	18	0	0	6	# 6	1123'-3"	COLUMNS	15'-0"	0'-3"	5'-8"	
P608	18	0	0	3	# 6	518'-4"	COLUMNS	13'-0 3/8"	0'-6"	5'-8"	
P609	18	0	0	0	# 6	572'-0"	COLUMNS	14'-6 3/8"	0'-6"	5'-8"	
P610	18	0	0	0	# 6	2253'-8"	COLUMNS	30'-10 1/2"	0'-3"	5'-8"	
P701	2	40	40	40	# 7	29'-4"	PIER CAP	12'-8"	4'-0"		
P702	STR.	0	10	10	# 7	53'-4"	PIER CAP				
P703	STR.	16	16	16	# 7	52'-0"	PILE CAP				
P704	22	56	56	56	# 7	16'-0"	PILE CAP	7'-6"	2'-9"	5'-9"	
P705	33	42	42	42	# 7	39'-6"	PILE CAP	11'-6"	7'-6"	9"	
P706	6	0	0	0	# 7	26'-6"	PILE CAP SLOPES	6'-0"	10'-3"	10 1/4"	10'-3 5/8"
P707	STR.	0	0	0	# 7	11'-3"	PILE CAP SLOPES				
P708	STR.	0	0	0	# 7	37'-0"	PILE CAP				
P801(S)	14	2	66	66	# 8	20'-6"	PIER CAP	6'-2"	3'-6"		
P802(S)	14	4	132	132	# 8	18'-10"	PIER CAP	6'-2"	2'-8"		
SERIES P803(S)	14	2 SETS	2 SETS	2 SETS	# 8	98'-4"	PIER CAP	5'-5" TO 6'-1"	3'-6"		
SERIES P804(S)	14	4 SETS	4 SETS	4 SETS	# 8	90'-0"	PIER CAP	5'-5" TO 6'-1"	2'-8"		
P805(S)	14	2	2	2	# 8	18'-6"	PIER CAP	5'-2"	3'-6"		
P806(S)	14	4	4	4	# 8	16'-10"	PIER CAP	5'-2"	2'-8"		
P807(S)	34	0	24	24	# 8	11'-6"	T-JOINT BARS	10"	6'-2"	4'-6"	
P901	5	248	0	0	# 9	29'-11"	WALL PIER	28'-4"	1'-7"		
P902	5	0	284	284	# 9	19'-0"	WEBWALL	17'-5"	1'-7"		
P903	NOT	USED									
P904	NOT	USED									
P905	NOT	USED									
P906	NOT	USED									
P907	5	0	0	0	# 9	32'-1"	WALL PIER	30'-6"	1'-7"		
P908	5	0	0	0	# 9	21'-10"	WALL PIER	20'-3"	1'-7"		
P909	8	0	48	48	# 9	42'-5"	PIER CAP	36'-6"	5'-11"	1'-0"	5'-10"

BILL OF REINFORCEMENT – PIERS

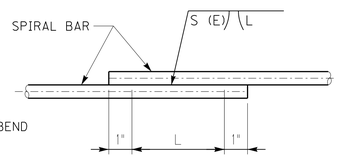
MARK	TYPE	NUMBER PIER 1	NUMBER PIER 2	NUMBER PIER 3	SIZE	LENGTH	LOCATION	A	B	C	D
P1101	5	16	16	16	# 11	54'-0"	PILE CAP	2'-0"	52'-0"		
P1102	5	16	16	16	# 11	23'-0"	PILE CAP	2'-0"	21'-0"		
P1103	2	20	20	20	# 11	23'-6"	PILE CAP	2'-0"	19'-6"		
P1104	NOT	USED									
P1105	5	48	0	0	# 11	18'-7"	WALL PIER CAP	16'-7"	2'-0"		
P1106	5	12	36	36	# 11	60'-0"	PIER CAP	55'-10"	4'-2"		
P1107	5	12	36	36	# 11	33'-8"	PIER CAP	29'-6"	4'-2"		
P1108	NOT	USED									
P1109	5	0	0	0	# 11	39'-0"	PILE CAP	2'-0"	37'-0"		
P1110	5	0	0	0	# 11	38'-0"	PILE CAP	2'-0"	36'-0"		
P1111	NOT	USED									
P1112	NOT	USED									
P1113	2	0	0	0	# 11	41'-0"	PILE CAP	2'-0"	37'-0"		
P1114	2	0	0	0	# 11	32'-9"	PILE CAP	2'-0"	28'-9"		
P1115	2	0	0	0	# 11	30'-6"	PILE CAP	2'-0"	26'-6"		
P1116	2	0	0	0	# 11	27'-7"	PILE CAP	2'-0"	23'-7"		
P1117	2	0	0	0	# 11	27'-1"	PILE CAP	2'-0"	23'-1"		
P1118	2	0	0	0	# 11	26'-6"	PILE CAP	2'-0"	22'-6"		
P1119	2	0	0	0	# 11	25'-10"	PILE CAP	2'-0"	21'-10"		
P1120	2	0	0	0	# 11	25'-1"	PILE CAP	2'-0"	21'-1"		
P1121	2	0	0	0	# 11	24'-4"	PILE CAP	2'-0"	20'-4"		
P1122	2	0	0	0	# 11	23'-5"	PILE CAP	2'-0"	19'-5"		
P1123	2	0	0	0	# 11	22'-5"	PILE CAP	2'-0"	18'-5"		
P1124	2	0	0	0	# 11	21'-4"	PILE CAP	2'-0"	17'-4"		
P1125	2	0	0	0	# 11	20'-2"	PILE CAP	2'-0"	16'-2"		
P1126	2	0	0	0	# 11	18'-9"	PILE CAP	2'-0"	14'-9"		
P1127	2	0	0	0	# 11	17'-3"	PILE CAP	2'-0"	13'-3"		
P1128	2	0	0	0	# 11	15'-2"	PILE CAP	2'-0"	11'-2"		
P1129	2	0	0	0	# 11	12'-9"	PILE CAP	2'-0"	8'-9"		
P1130	2	0	0	0	# 11	14'-3"	PILE CAP	2'-0"	10'-3"		
P1131	2	0	0	0	# 11	13'-0"	PILE CAP	2'-0"	9'-0"		
P1132	STR.	0	96	0	# 11	33'-8"	COLUMNS				
P1133	NOT	USED									
P1134	STR.	0	0	96	# 11	27'-3"	COLUMNS				
P1135	STR.	0	0	96	# 11	20'-9"	COLUMNS				
P1136	STR.	0	0	0	# 11	35'-10"	COLUMNS				
P1401	STR	186	186	186	# 14	16'-9"	SPLICE CAGE				
P1402	10	16	16	16	# 14	39'-10"	PILE CAP	11'-0"	17'-10"	11'-6"	
P1403	STR.	0	0	0	# 14	27'-3"	COLUMNS				
P1404	STR.	0	0	0	# 14	22'-3"	COLUMNS				
P1801	10	16	16	16	# 18	38'-0"	PILE CAP	13'-0"	12'-0"	7'-10"	
P1802	STR	16	16	16	# 18	26'-0"	PILE CAP				
P1803	10	0	0	0	# 18	26'-10"	PILE CAP	7'-6"	11'-9 3/8"	7'-6"	
P1804	10	0	0	0	# 18	42'-4"	PILE CAP	15'-3"	11'-9 3/8"	7'-6"	
P1805	10	0	0	0	# 18	29'-2"	PILE CAP	7'-6"	14'-1 1/8"	9'-0"	



OPTIONAL SPIRAL LAP

SPLICE DETAIL

(MAY BE USED OUTSIDE PLASTIC HINGE REGIONS)



SPIRAL WELDED LAP

SPLICE DETAIL

(TO BE USED IN PLASTIC HINGE REGIONS)

WELD DIMENSIONS (IN.)			
SPIRAL BAR SIZE	S	E	L
#5	5/16"	3/16"	6
#6	3/8	3/16	6

COLUMN SPIRALS

THE LENGTH SHOWN IN THE BILL OF REINFORCEMENT FOR SPIRALS IS THE DIMENSION REQUIRED TO FIT THE COLUMN LENGTHS CONSIDERING PLASTIC HINGE ZONES AND EMBEDMENT INTO THE FOOTING AND CAP. THE NUMBER OF TURNS SHOWN IS THE LENGTH DIVIDED BY THE PITCH, PLUS 3 TURNS (TOTAL NUMBER OF CLOSED COILS) EXPRESSED TO THE NEAREST WHOLE NUMBER. ONE AND ONE-HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. 4 CHANNEL, TEE OR ANGLE SPACERS, WEIGHING APPROXIMATELY 0.8 LBS. PER LINER FOOT OF SPACER, SHALL BE PROVIDED FOR EACH SPIRAL UNIT. THEY SHALL BE EQUALLY SPACED ALONG THE PERIPHERY OF THE COIL. WEIGHT OF SPACERS AND SPIRAL REINFORCEMENT IS INCLUDED IN THE ESTIMATE OF QUANTITIES FOR EACH PIER.

NOTES:

1. FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.
2. FOR REINFORCEMENT DESIGNATIONS, SEE GENERAL NOTES SHEETS S004-S006.

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

REVISION	DATE
3 ADDED/CHANGED NOTES & DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: D.E. RUST | K.S. MCLEMORE
DETAILED BY: J.A. ROSE | D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIERS 1, 2, & 3 – BILL OF REINFORCEMENT

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S058
DRAWING NO. 24686

MicroStation v8.11.7.443
E-SHEET NAME:
USER: tim-e
DATE PLOTTED: July 27, 2011
12/6/2013 10:13:46 AM
FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCTV\FINAL DESIGN\KY LAKE\DGN\FINAL_PLANS\KYTC_STRUCT_20_IFBASE.DGN
...\24686_S058_PIER 1-2-3_BILL.dgn

MAINTENANCE OF TRAFFIC NOTES

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL/ TRIGG	1-180.70	R52

GENERAL NOTES:

ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE CURRENT STANDARD DRAWINGS AND THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NORMAL CONSIDERATION SHOULD BE GIVEN TO PROPERTY OWNERS FOR THEIR ACCESS.

REPAIR AND/OR UPGRADE PAVEMENT ALONG AND ACROSS EXISTING ROADS WHERE CONSTRUCTION TRAFFIC CROSSES. ACCESS TO ALL PUBLIC ROADS TO BE MAINTAINED EXCEPT AS INDICATED IN THE MAINTENANCE OF TRAFFIC NOTES.

CONSTRUCT EROSION CONTROLS AT POINTS WHERE RUNOFF LEAVES THE PROJECT SITE DURING EACH CONSTRUCTION PHASE. WHERE APPROPRIATE USE TEMPORARY DIVERSION DITCHES TO DIRECT RUNOFF TO EROSION CONTROLS.

IF THE CONTRACTOR DECIDES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION SCHEDULE OUTLINED IN THESE PLANS OR PROPOSAL, AN ALTERNATE PLAN SHALL BE SUBMITTED IN WRITING TO THE ENGINEER. THE ALTERNATE PLAN MAY BE USED ONLY IF APPROVED IN WRITING BY THE KENTUCKY DIVISIONS OF DESIGN, TRAFFIC, AND CONSTRUCTION.

ONCE CONSTRUCTION ADJACENT TO A TRAVELED WAY HAS BEGUN, THAT CONSTRUCTION SHALL BE EXPEDITED UNTIL COMPLETED.

PAVEMENT EDGE DROP-OFFS:
A PAVEMENT EDGE THAT TRAFFIC IS EXPECTED TO CROSS IN A LANE CHANGE SITUATION SHALL NOT HAVE AN ELEVATION DIFFERENCE GREATER THAN 1 1/2 INCHES. THIS MAY BE INCREASED TO 2 INCHES FOR LOW SPEED SITUATIONS. WARNING SIGNS SHALL BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA WHEN DROP-OFFS ARE GREATER THAN 1/2 INCH. MODIFICATIONS WILL BE AS DIRECTED BY THE ENGINEER.

PAVEMENT EDGES THAT TRAFFIC IS NOT EXPECTED TO CROSS SHALL BE TREATED AS FOLLOWS: OR, AS DIRECTED BY THE ENGINEER:

LESS THAN 1/2 INCH - NO PROTECTION REQUIRED.

1/2 TO 2 INCHES - WARNING SIGNS SHALL BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA.

2 TO 4 INCHES - PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES SHALL BE PLACED EVERY 50 FEET FOR SPEEDS LESS THAN 50 MILES PER HOUR AND EVERY 100 FEET FOR SPEEDS OF 50 MILES PER HOUR AND GREATER. CONES MAY BE USED IN PLACE OF PLASTIC DRUMS, VERTICAL PANELS, AND BARRICADES DURING DAYLIGHT HOURS. SPACING FOR TAPERS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4 INCHES AND GREATER - POSITIVE SEPARATION NEEDED OR WEDGE WITH 3:1 OR FLATTER SLOPE. IF THERE IS 5 FEET OR MORE DISTANCE BETWEEN THE EDGE OF PAVEMENT AND DROP-OFF, PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES MAY BE USED. IF CONCRETE BARRIERS ARE USED, SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHALL BE USED FOR OVERNIGHT INSTALLATIONS.

FOR TEMPORARY CONDITIONS, DROP-OFFS 4 INCHES AND GREATER MAY BE PROTECTED WITH PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES FOR SHORT DISTANCES WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.

PAYMENT WILL BE ALLOWED FOR CSB/DGA MATERIAL USED FOR WEDGING.

REMOVAL OF PAVEMENT MARKERS:
PAVEMENT MARKINGS SHALL BE REMOVED BY EITHER AN ABRASIVE OR BURNING PROCESS TO THE SATISFACTION OF THE ENGINEER. IF THE ABRASIVE METHOD IS USED, THE AREA AFFECTED IS TO BE COATED WITH BLACK (OR MORE PRECISELY, A COLOR SIMILAR TO THAT OF THE ADJACENT PAVEMENT SURFACE) TRAFFIC PAINT. PAINTING OF EXISTING MARKINGS WITH BITUMINOUS OR OTHER MATERIALS TO OBLITERATE THE MARKINGS SHALL NOT BE ALLOWED.

SPECIAL NOTES:
EXCEPT FOR THE ROADWAY AND TRAFFIC CONTROL BID ITEMS LISTED, ALL ITEMS OF WORK NECESSARY TO MAINTAIN AND CONTROL TRAFFIC WILL BE PAID FOR AT THE LUMP SUM BID PRICE FOR "MAINTAIN AND CONTROL TRAFFIC", AS SET FORTH IN THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, UNLESS OTHERWISE PROVIDED FOR IN THESE NOTES.

THE CONTRACTOR MUST NOTIFY THE DISTRICT PUBLIC INFORMATION OFFICE (PIO), KEITH TODD, AT (270) 898-2431 (OFFICE) AT LEAST FOURTEEN (14) DAYS PRIOR TO BEGINNING OF EACH CONSTRUCTION PHASE AND FIVE (5) DAYS PRIOR TO CONSTRUCTION THAT WILL AFFECT TRAFFIC PATTERNS.

CONTRACTOR MUST SUBMIT CONSTRUCTION ACCESS PLAN TO DEPARTMENT PRIOR TO CONSTRUCTION FOR APPROVAL. PLAN SHALL INCLUDE ENTRANCE AND EXIT LOCATIONS. ALL FEATURES OF PLAN WILL BE PAID FOR AT THE LUMP SUM BID PRICE FOR "MAINTAIN AND CONTROL TRAFFIC".

TRAFFIC CONTROL:
DURING CONSTRUCTION, SIGNS AND OR PORTABLE VARIABLE MESSAGE SIGNS WILL BE INSTALLED AT LOCATIONS SPECIFIED BY THE ENGINEER. SEE THE MAINTENANCE OF TRAFFIC CONSTRUCTION PHASING PLAN FOR TRAFFIC CONTROL DETAILS DURING EACH PHASE OF CONSTRUCTION. MAINTAIN ONE LANE IN EACH DIRECTION ON US 68 / KY 80. MAINTAIN 11 FOOT LANES IN EACH DIRECTION ON US 68 / KY 80. DURING CONSTRUCTION THE EXISTING POSTED 55 MPH SPEED LIMIT SHALL BE REDUCED TO 45 MPH ON US 68 / KY 80 IN PHASE I AND 35 MPH IN REMAINING PHASES.

MULTI-USE PATH CONSTRUCTION:
CONSTRUCTION OF THE MULTI-USE PATHS ALONG THE WEST AND EAST CAUSEWAYS IS SHOWN IN ALL PHASES OF CONSTRUCTION. THIS CONSTRUCTION OCCURS AT AN ELEVATION THAT REQUIRES KY LAKE WATER ELEVATION LESS THAN SUMMER POOL ELEVATION. CONTRACTOR SHALL PROVIDE A CALENDAR SCHEDULE FOR CONSTRUCTION OF THE MULTI-USE PATHS ALONG THE EAST AND WEST CAUSEWAYS TO ENGINEER TO ASSURE CONSTRUCTION SCHEDULE IS UPHELD.

CONSTRUCTION PHASING:

CONSTRUCTION PHASING AND THE SEQUENCE OF CONSTRUCTION WILL BE MAINTAINED AS SHOWN IN THE PLANS, CROSS SECTIONS, AND SPECIFICATIONS UNLESS OTHERWISE APPROVED BY THE ENGINEER. SEE CONSTRUCTION PHASING SHEETS FOR DETAILS.

PHASE 1:
PHASE 1 CONSTRUCTION CONSISTS OF CONSTRUCTING THE KENTUCKY LAKE BRIDGE, US 68 / KY 80 APPROACHES, AND MULTI-USE PATHS THAT DO NOT CONFLICT WITH EXISTING ROUTES OR TRAFFIC OPERATIONS. CONSTRUCTION FOR PHASE 1 WILL BE TO FINAL ASPHALT SURFACE FOR MULTI-USE PATHS AND TO TOP BASE COURSE ELSEWHERE.

PHASE 1 TRAFFIC CONTROL:
INSTALL MAINTENANCE OF TRAFFIC CONSTRUCTION SIGNS FOR PHASE 1 TRAFFIC. ALL TRAFFIC SHALL BE MAINTAINED ON EXISTING US 68 / KY 80 MAINTAINING ONE 11 FOOT LANE IN EACH DIRECTION.

PHASE 1 CONSTRUCTION:

1. CONSTRUCT SURFACING ONLY (GRADE & DRAIN ALREADY COMPLETED BY OTHERS) AND MEDIAN BARRIER FROM AND STA. 975+32 TO STA. 988+85.
2. CONSTRUCT KENTUCKY LAKE BRIDGE FROM STA. 988+85.25 TO 1025+08.75.
3. CONSTRUCT SURFACING ONLY (GRADE & DRAIN ALREADY COMPLETED BY OTHERS) FROM STA. 1025+08.75 TO 1034+50.
4. CONSTRUCT GRADE, DRAIN, AND SURFACING FROM STA. 1034+50 TO 1048+48. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
5. CONSTRUCT MEDIAN BARRIER FROM STA. 1025+33 TO STA. 1035+00.
6. CONSTRUCT ALL MULTI-USE PATHS AS SHOWN ON PHASE 1 MOT PLANS.
7. CONSTRUCT MEDIAN BARRIER FROM STA 975+32 TO STA 988+60

PHASE 2:
PHASE 2 CONSTRUCTION CONSISTS OF CONSTRUCTING US 68 / KY 80 WB APPROACH LANES, SHOULDERS, AND MEDIAN AREAS, TEMPORARY CROSSOVERS #1 AND #2, AND ANY PARKING AND MULTI-USE PATHS THAT DO NOT CONFLICT WITH EXISTING ROUTES OR TRAFFIC OPERATIONS. CONSTRUCTION FOR PHASE 2 WILL BE TO FINAL ASPHALT SURFACE FOR ALL MULTI-USE PATHS AND PARKING LOTS AND TO TOP BASE COURSE ELSEWHERE.

PHASE 2A TRAFFIC CONTROL:
PRIOR TO PHASE 2A CONSTRUCTION, SHIFT EB US 68/KY 80 TRAFFIC TO EXISTING EB RIGHT LANE AND SHIFT WB US 68/KY 80 TRAFFIC TO EXISTING WB RIGHT LANE AT CROSSOVERS #1 AND #2 PROVIDING A MINIMUM SEPERATION OF 6 FEET FROM EDGE OF LANE TO CONSTRUCTION AREA. MAINTAIN ONE WB US 68/KY80 LANE FROM FROM CROSSOVER #1 TO EGGNERS FERRY BRIDGE. PROVIDE TRAFFIC CONTROL AND LANE TRANSITION ACCORDING TO STANDARD DRAWING TTC 115-02.

PHASE 2A CONSTRUCTION CAN BEGIN DURING PHASE 1 CONSTRUCTION.

PHASE 2A CONSTRUCTION:
1. CONSTRUCT TEMPORARY CROSSOVERS #1 AND #2 AS SHOWN IN PHASE 2 MOT PLANS.

PHASE 2B TRAFFIC CONTROL:
PRIOR TO PHASE 2B CONSTRUCTION, SHIFT WB US 68 / KY 80 TRAFFIC TO CROSSOVERS #1 AND #2 AND EXISTING US 68 / KY 80 LANE AND SHOULDER, PROVIDING FOR A MINIMUM SEPARATION OF 6' FROM EDGE OF LANE TO CONSTRUCTION AREAS. EB US 68 / KY 80 TRAFFIC SHALL REMAIN ON EXISTING US 68 / KY 80 LANE AND SHOULDER. ALL TRAFFIC SHALL BE MAINTAINED WITH ONE 11 FOOT LANE IN EACH DIRECTION. INSTALL MAINTENANCE OF TRAFFIC CONSTRUCTION SIGNS FOR PHASE 2 TRAFFIC AS SHOWN IN THE MOT SIGNING PLANS. PROVIDE SEPARATION VIA BARRELS OR TEMPORARY BARRIERS FOR ALL EB AND WB US 68 / KY 80 TRAFFIC.

INSTALL TEMPORARY STRIPING AND TEMPORARY BARRELS FOR PHASE 2 TRAFFIC. SEE PHASE 2 MOT PLAN SHEETS FOR DETAILS.

PHASE 2B CONSTRUCTION:

1. CONSTRUCT JUNCTION BOX, DROP BOX INLET, AND STORM SEWER PIPE STA. 963+00 TO STA. 964+91.
2. CONSTRUCT GRADE, DRAIN, AND SURFACING FROM STA. 959+63 TO STA. 965+50. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
3. CONSTRUCT SURFACING ONLY (GRADE & DRAIN ALREADY COMPLETED BY OTHERS) FROM STA. 965+50 TO 968+98. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
4. CONSTRUCT MEDIAN BARRIER FROM STA. 964+00 TO STA. 968+98 AND CRASH CUSHION.
5. CONSTRUCT ALL MULTI-USE PATHS AND PARKING LOTS AS SHOWN ON PHASE 2 MOT PLANS.
6. CONSTRUCT GRADE, DRAIN, AND SURFACING WB LANES AND SHOULDER FROM STA. 1040+50 TO END. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
7. CONSTRUCT GRADE, DRAIN, AND SURFACING OF MEDIAN FROM STA. 1041+20 TO END. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
8. CONSTRUCT MEDIAN BARRIER FROM STA. 1035+00 TO 1041+00 AND CRASH CUSHION.
9. CONSTRUCT CONCRETE MEDIAN BARRIER BOX INLET AT STA. 967+50 AND STORM SEWER PIPE. CONSTRUCT CONCRETE MEDIAN BARRIER BOX INLET, SEWER PIPE, AND HEADWALL AT STA. 967+00.

PHASE 3:
PHASE 3 CONSTRUCTION CONSISTS OF CONSTRUCTING US 68 / KY 80 EB APPROACH LANES, SHOULDERS, AND MEDIAN AREAS, TEMPORARY CROSSOVERS #3 AND #4, AND PARKING AND MULTI-USE PATHS THAT SHOWN IN MOT PLANS. CONSTRUCTION FOR PHASE 3 WILL BE TO FINAL ASPHALT SURFACE FOR ALL MULTI-USE PATHS AND PARKING LOTS AND TO TOP BASE COURSE ELSEWHERE.

PHASE 3A TRAFFIC CONTROL:
PRIOR TO PHASE 3A CONSTRUCTION, SHIFT EB US 68 / KY 80 TRAFFIC TO EXISTING EB RIGHT LANE AND SHIFT WB US 68 / KY 80 TRAFFIC TO WB RIGHT LANE AT CROSSOVER #3 AND #4 PROVIDING FOR A MINIMUM SEPARATION OF 6 FEET FROM EDGE OF LANE TO CONSTRUCTION AREA. THE WB US 68/KY80 TRAFFIC WILL TRAVEL ACROSS THE KENTUCKY LAKE BRIDGE AND THE EB US 68/KY80 TRAFFIC WILL TRAVEL ACROSS THE EXISTING EGGNER FERRY BRIDGE. PROVIDE TRAFFIC CONTROL AND LANE TRANSITION ACCORDING TO STANDARD DRAWING TTC 155-02

PHASE 3A CONSTRUCTION:
1. CONSTRUCT TEMPORARY CROSSOVERS #3 AND #4 AS SHOWN IN PHASE 3 MOT PLANS.

PHASE 3B TRAFFIC CONTROL:
PRIOR TO PHASE 3B CONSTRUCTION, MAINTAIN WB US 68 / KY 80 TRAFFIC FROM PHASE 3A. SHIFT EB US 68 / KY 80 TRAFFIC TO CROSSOVERS #3 AND #4 AND WB LEFT LANES, PROVIDING FOR A MINIMUM SEPARATION OF 6' FROM EDGE OF LANE TO CONSTRUCTION AREAS. ALL TRAFFIC SHALL BE MAINTAINED WITH ONE 11 FOOT LANE IN EACH DIRECTION. INSTALL MAINTENANCE OF TRAFFIC CONSTRUCTION SIGNS FOR PHASE 3 TRAFFIC. PROVIDE SEPARATION VIA BARRELS OR TEMPORARY BARRIERS FOR ALL EB AND WB US 68 / KY 80 TRAFFIC.

INSTALL TEMPORARY STRIPING AND TEMPORARY BARRELS FOR PHASE 3 TRAFFIC. SEE PHASE 3 MOT PLAN SHEETS FOR DETAILS.

PHASE 3B CONSTRUCTION:
2. CONSTRUCT GRADE, DRAIN, AND SURFACING OF EB APPROACH LANES AND SHOULDERS FROM STA. 959+63 TO STA. 965+50.
3. CONSTRUCT SURFACING ONLY (GRADE & DRAIN COMPLETED BY OTHERS) OF EB APPROACH LANES AND SHOULDERS FROM STA. 965+50 TO STA. 966+91.
4. CONSTRUCT GRADE, DRAIN, AND SURFACING OF MEDIAN FROM STA. 959+63 TO STA. 966+73.
5. CONSTRUCT ALL MULTI-USE PATHS AND PARKING AS SHOWN ON PHASE 3 MOT PLANS AND ENTRANCE AT STA. 967+50. SEE PHASE 3 MOT PLANS AND MAINLINE CROSS SECTIONS FOR CONSTRUCTION LIMITS AND DETAILS.
6. CONSTRUCT GRADE, DRAIN, AND SURFACING EB APPROACH LANES AND SHOULDERS FROM STA. 1036+00 TO END.
7. CONSTRUCT GRADE, DRAIN, AND SURFACING OF MEDIAN RIGHT OF CENTER LINE FROM STA. 1041+20 TO END. SEE MOT PLANS FOR CONSTRUCTION LIMITS.

PHASE 4:
PHASE 4 CONSTRUCTION CONSISTS OF PLACING ASPHALT SURFACE ON ALL US 68 / KY 80 TRAVEL LANES AND SHOULDERS AND PERMANENT STRIPING AND SIGNS FOR ALL TRAVEL LANES AND PARKING LOTS.

PHASE 4 TRAFFIC CONTROL:
PHASE 3 MAINTENANCE OF TRAFFIC SIGNS CONTINUE IN PHASE 4 AS NEEDED.

PHASE 4 CONSTRUCTION:
1. REMOVE TEMPORARY CROSSOVERS AND RETURN DISTURBED LIMITS TO ORIGINAL CONDITION.
2. CONSTRUCT FINAL SURFACE USING LANE SHIFTS.
3. CONSTRUCT FINAL STRIPING USING LANE SHIFTS ACCORDING TO STRIPING PLAN SHEETS.

PHASE 5:
PHASE 5 CONSTRUCTION CONSISTS OF DEMOLITION AND SALVAGE OF THE EXISTING EGGNER FERRY BRIDGE.

PHASE 5 CONSTRUCTION CAN BEGIN DURING PHASE 3 CONSTRUCTION IF IN ACCORDANCE TO WITH SPECIAL NOTE FOR REMOVAL OF EXISTING BRIDGE PROVIDED IN THE PROPOSAL.

PHASE 5 CONSTRUCTION:
1. REMOVE EXISTING EGGNER FERRY BRIDGE ACCORDING TO THE SPECIAL NOTES PROVIDED IN PROPOSAL.

FOR MAINTENANCE OF TRAFFIC ONLY

NTS

US 68 / KY 80
MAINTENANCE OF TRAFFIC NOTES

MicroStation v8.11.9.357 E-SHEET NAME: USER: andrew-b DATE PLOTTED: December 11, 2013 FILE NAME: \\PEWINFS2\JOBS\KDOT\LAKE_BRIDGES\ADDENDUMS\ADDENDUM #3\R052OMT.DGN

MAINTENANCE OF TRAFFIC NOTES

COUNTY OF	ITEM NO.	SHEET NO.
MARSHALL/ TRIGG	1-180.70	R52

1 REVISED 12-09-2013

GENERAL NOTES:

ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE CURRENT STANDARD DRAWINGS AND THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NORMAL CONSIDERATION SHOULD BE GIVEN TO PROPERTY OWNERS FOR THEIR ACCESS.

REPAIR AND/OR UPGRADE PAVEMENT ALONG AND ACROSS EXISTING ROADS WHERE CONSTRUCTION TRAFFIC CROSSES. ACCESS TO ALL PUBLIC ROADS TO BE MAINTAINED EXCEPT AS INDICATED IN THE MAINTENANCE OF TRAFFIC NOTES.

CONSTRUCT EROSION CONTROLS AT POINTS WHERE RUNOFF LEAVES THE PROJECT SITE DURING EACH CONSTRUCTION PHASE. WHERE APPROPRIATE USE TEMPORARY DIVERSION DITCHES TO DIRECT RUNOFF TO EROSION CONTROLS.

IF THE CONTRACTOR DECIDES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION SCHEDULE OUTLINED IN THESE PLANS OR PROPOSAL, AN ALTERNATE PLAN SHALL BE SUBMITTED IN WRITING TO THE ENGINEER. THE ALTERNATE PLAN MAY BE USED ONLY IF APPROVED IN WRITING BY THE KENTUCKY DIVISIONS OF DESIGN, TRAFFIC, AND CONSTRUCTION.

ONCE CONSTRUCTION ADJACENT TO A TRAVELED WAY HAS BEGUN, THAT CONSTRUCTION SHALL BE EXPEDITED UNTIL COMPLETED.

PAVEMENT EDGE DROP-OFFS:
A PAVEMENT EDGE THAT TRAFFIC IS EXPECTED TO CROSS IN A LANE CHANGE SITUATION SHALL NOT HAVE AN ELEVATION DIFFERENCE GREATER THAN 1 1/2 INCHES. THIS MAY BE INCREASED TO 2 INCHES FOR LOW SPEED SITUATIONS. WARNING SIGNS SHALL BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA WHEN DROP-OFFS ARE GREATER THAN 1/2 INCH. MODIFICATIONS WILL BE AS DIRECTED BY THE ENGINEER.

PAVEMENT EDGES THAT TRAFFIC IS NOT EXPECTED TO CROSS SHALL BE TREATED AS FOLLOWS: OR, AS DIRECTED BY THE ENGINEER:

LESS THAN 1/2 INCH - NO PROTECTION REQUIRED.

1/2 TO 2 INCHES - WARNING SIGNS SHALL BE PLACED IN ADVANCE AND THROUGHOUT THE DROP-OFF AREA.

2 TO 4 INCHES - PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES SHALL BE PLACED EVERY 50 FEET FOR SPEEDS LESS THAN 50 MILES PER HOUR AND EVERY 100 FEET FOR SPEEDS OF 50 MILES PER HOUR AND GREATER. CONES MAY BE USED IN PLACE OF PLASTIC DRUMS, VERTICAL PANELS, AND BARRICADES DURING DAYLIGHT HOURS. SPACING FOR TAPERS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4 INCHES AND GREATER - POSITIVE SEPARATION NEEDED OR WEDGE WITH 3:1 OR FLATTER SLOPE. IF THERE IS 5 FEET OR MORE DISTANCE BETWEEN THE EDGE OF PAVEMENT AND DROP-OFF, PLASTIC DRUMS, VERTICAL PANELS OR BARRICADES MAY BE USED. IF CONCRETE BARRIERS ARE USED, SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHALL BE USED FOR OVERNIGHT INSTALLATIONS.

FOR TEMPORARY CONDITIONS, DROP-OFFS 4 INCHES AND GREATER MAY BE PROTECTED WITH PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES FOR SHORT DISTANCES WHILE WORK IS BEING DONE IN THE DROP-OFF AREA.

PAYMENT WILL BE ALLOWED FOR CSB/DGA MATERIAL USED FOR WEDGING.

REMOVAL OF PAVEMENT MARKERS:
PAVEMENT MARKINGS SHALL BE REMOVED BY EITHER AN ABRASIVE OR BURNING PROCESS TO THE SATISFACTION OF THE ENGINEER. IF THE ABRASIVE METHOD IS USED, THE AREA AFFECTED IS TO BE COATED WITH BLACK (OR MORE PRECISELY, A COLOR SIMILAR TO THAT OF THE ADJACENT PAVEMENT SURFACE) TRAFFIC PAINT. PAINTING OF EXISTING MARKINGS WITH BITUMINOUS OR OTHER MATERIALS TO OBLITERATE THE MARKINGS SHALL NOT BE ALLOWED.

SPECIAL NOTES:
EXCEPT FOR THE ROADWAY AND TRAFFIC CONTROL BID ITEMS LISTED, ALL ITEMS OF WORK NECESSARY TO MAINTAIN AND CONTROL TRAFFIC WILL BE PAID FOR AT THE LUMP SUM BID PRICE FOR "MAINTAIN AND CONTROL TRAFFIC", AS SET FORTH IN THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, UNLESS OTHERWISE PROVIDED FOR IN THESE NOTES.

THE CONTRACTOR MUST NOTIFY THE DISTRICT PUBLIC INFORMATION OFFICE (PIO), KEITH TODD, AT (270) 898-2431 (OFFICE) AT LEAST FOURTEEN (14) DAYS PRIOR TO BEGINNING OF EACH CONSTRUCTION PHASE AND FIVE (5) DAYS PRIOR TO CONSTRUCTION THAT WILL AFFECT TRAFFIC PATTERNS.

CONTRACTOR MUST SUBMIT CONSTRUCTION ACCESS PLAN TO DEPARTMENT PRIOR TO CONSTRUCTION FOR APPROVAL. PLAN SHALL INCLUDE ENTRANCE AND EXIT LOCATIONS. ALL FEATURES OF PLAN WILL BE PAID FOR AT THE LUMP SUM BID PRICE FOR "MAINTAIN AND CONTROL TRAFFIC".

TRAFFIC CONTROL:
DURING CONSTRUCTION, SIGNS AND OR PORTABLE VARIABLE MESSAGE SIGNS WILL BE INSTALLED AT LOCATIONS SPECIFIED BY THE ENGINEER. SEE THE MAINTENANCE OF TRAFFIC CONSTRUCTION PHASING PLAN FOR TRAFFIC CONTROL DETAILS DURING EACH PHASE OF CONSTRUCTION. MAINTAIN ONE LANE IN EACH DIRECTION ON US 68 / KY 80. MAINTAIN 11 FOOT LANES IN EACH DIRECTION ON US 68 / KY 80. DURING CONSTRUCTION THE EXISTING POSTED 55 MPH SPEED LIMIT SHALL BE REDUCED TO 45 MPH ON US 68 / KY 80 IN PHASE I AND 35 MPH IN REMAINING PHASES.

MULTI-USE PATH CONSTRUCTION:
CONSTRUCTION OF THE MULTI-USE PATHS ALONG THE WEST AND EAST CAUSEWAYS IS SHOWN IN ALL PHASES OF CONSTRUCTION. THIS CONSTRUCTION OCCURS AT AN ELEVATION THAT REQUIRES KY LAKE WATER ELEVATION LESS THAN SUMMER POOL ELEVATION. CONTRACTOR SHALL PROVIDE A CALENDAR SCHEDULE FOR CONSTRUCTION OF THE MULTI-USE PATHS ALONG THE EAST AND WEST CAUSEWAYS TO ENGINEER TO ASSURE CONSTRUCTION SCHEDULE IS UPHELD.

CONSTRUCTION PHASING:

CONSTRUCTION PHASING AND THE SEQUENCE OF CONSTRUCTION WILL BE MAINTAINED AS SHOWN IN THE PLANS, CROSS SECTIONS, AND SPECIFICATIONS UNLESS OTHERWISE APPROVED BY THE ENGINEER. SEE CONSTRUCTION PHASING SHEETS FOR DETAILS.

PHASE 1:
PHASE 1 CONSTRUCTION CONSISTS OF CONSTRUCTING THE KENTUCKY LAKE BRIDGE, US 68 / KY 80 APPROACHES, AND MULTI-USE PATHS THAT DO NOT CONFLICT WITH EXISTING ROUTES OR TRAFFIC OPERATIONS. CONSTRUCTION FOR PHASE 1 WILL BE TO FINAL ASPHALT SURFACE FOR MULTI-USE PATHS AND TO TOP BASE COURSE ELSEWHERE.

PHASE 1 TRAFFIC CONTROL:
INSTALL MAINTENANCE OF TRAFFIC CONSTRUCTION SIGNS FOR PHASE 1 TRAFFIC. ALL TRAFFIC SHALL BE MAINTAINED ON EXISTING US 68 / KY 80 MAINTAINING ONE 11 FOOT LANE IN EACH DIRECTION.

PHASE 1 CONSTRUCTION:

1. CONSTRUCT SURFACING ONLY (GRADE & DRAIN ALREADY COMPLETED BY OTHERS) AND MEDIAN BARRIER FROM AND STA. 975+32 TO STA. 988+85.
2. CONSTRUCT KENTUCKY LAKE BRIDGE FROM STA. 988+85.25 TO 1025+08.75.
3. CONSTRUCT SURFACING ONLY (GRADE & DRAIN ALREADY COMPLETED BY OTHERS) FROM STA. 1025+08.75 TO 1034+50.
4. CONSTRUCT GRADE, DRAIN, AND SURFACING FROM STA. 1034+50 TO 1048+48. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
5. CONSTRUCT MEDIAN BARRIER FROM STA. 1025+33 TO STA. 1035+00.
6. CONSTRUCT ALL MULTI-USE PATHS AS SHOWN ON PHASE 1 MOT PLANS.
7. CONSTRUCT MEDIAN BARRIER FROM STA 975+32 TO STA 988+60

PHASE 2:
PHASE 2 CONSTRUCTION CONSISTS OF CONSTRUCTING US 68 / KY 80 WB APPROACH LANES, SHOULDERS, AND MEDIAN AREAS, TEMPORARY CROSSOVERS #1 AND #2, AND ANY PARKING AND MULTI-USE PATHS THAT DO NOT CONFLICT WITH EXISTING ROUTES OR TRAFFIC OPERATIONS. CONSTRUCTION FOR PHASE 2 WILL BE TO FINAL ASPHALT SURFACE FOR ALL MULTI-USE PATHS AND PARKING LOTS AND TO TOP BASE COURSE ELSEWHERE.

PHASE 2A TRAFFIC CONTROL:
PRIOR TO PHASE 2A CONSTRUCTION, SHIFT EB US 68/KY 80 TRAFFIC TO EXISTING EB RIGHT LANE AND SHIFT WB US 68/KY 80 TRAFFIC TO EXISTING WB RIGHT LANE AT CROSSOVERS #1 AND #2 PROVIDING A MINIMUM SEPERATION OF 6 FEET FROM EDGE OF LANE TO CONSTRUCTION AREA. MAINTAIN ONE WB US 68/KY80 LANE FROM FROM CROSSOVER #1 TO EGGNERS FERRY BRIDGE. PROVIDE TRAFFIC CONTROL AND LANE TRANSITION ACCORDING TO STANDARD DRAWING TTC 115-02.

PHASE 2A CONSTRUCTION CAN BEGIN DURING PHASE 1 CONSTRUCTION.

PHASE 2A CONSTRUCTION:
1. CONSTRUCT TEMPORARY CROSSOVERS #1 AND #2 AS SHOWN IN PHASE 2 MOT PLANS.

PHASE 2B TRAFFIC CONTROL:
PRIOR TO PHASE 2B CONSTRUCTION, SHIFT WB US 68 / KY 80 TRAFFIC TO CROSSOVERS #1 AND #2 AND EXISTING US 68 / KY 80 LANE AND SHOULDER, PROVIDING FOR A MINIMUM SEPARATION OF 6' FROM EDGE OF LANE TO CONSTRUCTION AREAS. EB US 68 / KY 80 TRAFFIC SHALL REMAIN ON EXISTING US 68 / KY 80 LANE AND SHOULDER. ALL TRAFFIC SHALL BE MAINTAINED WITH ONE 11 FOOT LANE IN EACH DIRECTION. INSTALL MAINTENANCE OF TRAFFIC CONSTRUCTION SIGNS FOR PHASE 2 TRAFFIC AS SHOWN IN THE MOT SIGNING PLANS. PROVIDE SEPARATION VIA BARRELS OR TEMPORARY BARRIERS FOR ALL EB AND WB US 68 / KY 80 TRAFFIC.

INSTALL TEMPORARY STRIPING AND TEMPORARY BARRELS FOR PHASE 2 TRAFFIC. SEE PHASE 2 MOT PLAN SHEETS FOR DETAILS.

PHASE 2B CONSTRUCTION:

1. CONSTRUCT JUNCTION BOX, DROP BOX INLET, AND STORM SEWER PIPE STA. 963+00 TO STA. 964+91.
2. CONSTRUCT GRADE, DRAIN, AND SURFACING FROM STA. 959+63 TO STA. 965+50. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
3. CONSTRUCT SURFACING ONLY (GRADE & DRAIN ALREADY COMPLETED BY OTHERS) FROM STA. 965+50 TO 968+98. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
4. CONSTRUCT MEDIAN BARRIER FROM STA. 964+00 TO STA. 968+98 AND CRASH CUSHION.
5. CONSTRUCT ALL MULTI-USE PATHS AND PARKING LOTS AS SHOWN ON PHASE 2 MOT PLANS.
6. CONSTRUCT GRADE, DRAIN, AND SURFACING WB LANES AND SHOULDER FROM STA. 1040+50 TO END. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
7. CONSTRUCT GRADE, DRAIN, AND SURFACING OF MEDIAN FROM STA. 1041+20 TO END. SEE MOT PLANS FOR CONSTRUCTION LIMITS.
8. CONSTRUCT MEDIAN BARRIER FROM STA. 1035+00 TO 1041+00 AND CRASH CUSHION.
9. CONSTRUCT CONCRETE MEDIAN BARRIER BOX INLET AT STA. 967+50 AND STORM SEWER PIPE. CONSTRUCT CONCRETE MEDIAN BARRIER BOX INLET, SEWER PIPE, AND HEADWALL AT STA. 967+00.

PHASE 3:
PHASE 3 CONSTRUCTION CONSISTS OF CONSTRUCTING US 68 / KY 80 EB APPROACH LANES, SHOULDERS, AND MEDIAN AREAS, TEMPORARY CROSSOVERS #3 AND #4, AND PARKING AND MULTI-USE PATHS THAT SHOWN IN MOT PLANS. CONSTRUCTION FOR PHASE 3 WILL BE TO FINAL ASPHALT SURFACE FOR ALL MULTI-USE PATHS AND PARKING LOTS AND TO TOP BASE COURSE ELSEWHERE.

PHASE 3A TRAFFIC CONTROL:
PRIOR TO PHASE 3A CONSTRUCTION, SHIFT EB US 68 / KY 80 TRAFFIC TO EXISTING EB RIGHT LANE AND SHIFT WB US 68 / KY 80 TRAFFIC TO WB RIGHT LANE AT CROSSOVER #3 AND #4 PROVIDING FOR A MINIMUM SEPARATION OF 6 FEET FROM EDGE OF LANE TO CONSTRUCTION AREA. THE WB US 68/KY80 TRAFFIC WILL TRAVEL ACROSS THE KENTUCKY LAKE BRIDGE AND THE EB US 68/KY80 TRAFFIC WILL TRAVEL ACROSS THE EXISTING EGGNER FERRY BRIDGE. PROVIDE TRAFFIC CONTROL AND LANE TRANSITION ACCORDING TO STANDARD DRAWING TTC 155-02

PHASE 3A CONSTRUCTION:
1. CONSTRUCT TEMPORARY CROSSOVERS #3 AND #4 AS SHOWN IN PHASE 3 MOT PLANS.

PHASE 3B TRAFFIC CONTROL:
PRIOR TO PHASE 3B CONSTRUCTION, MAINTAIN WB US 68 / KY 80 TRAFFIC FROM PHASE 3A. SHIFT EB US 68 / KY 80 TRAFFIC TO CROSSOVERS #3 AND #4 AND WB LEFT LANES, PROVIDING FOR A MINIMUM SEPARATION OF 6' FROM EDGE OF LANE TO CONSTRUCTION AREAS. ALL TRAFFIC SHALL BE MAINTAINED WITH ONE 11 FOOT LANE IN EACH DIRECTION. INSTALL MAINTENANCE OF TRAFFIC CONSTRUCTION SIGNS FOR PHASE 3 TRAFFIC. PROVIDE SEPARATION VIA BARRELS OR TEMPORARY BARRIERS FOR ALL EB AND WB US 68 / KY 80 TRAFFIC.

INSTALL TEMPORARY STRIPING AND TEMPORARY BARRELS FOR PHASE 3 TRAFFIC. SEE PHASE 3 MOT PLAN SHEETS FOR DETAILS.

PHASE 3B CONSTRUCTION:
2. CONSTRUCT GRADE, DRAIN, AND SURFACING OF EB APPROACH LANES AND SHOULDERS FROM STA. 959+63 TO STA. 965+50.
3. CONSTRUCT SURFACING ONLY (GRADE & DRAIN COMPLETED BY OTHERS) OF EB APPROACH LANES AND SHOULDERS FROM STA. 965+50 TO STA. 966+91.
4. CONSTRUCT GRADE, DRAIN, AND SURFACING OF MEDIAN FROM STA. 959+63 TO STA. 966+73.
5. CONSTRUCT ALL MULTI-USE PATHS AND PARKING AS SHOWN ON PHASE 3 MOT PLANS AND ENTRANCE AT STA. 967+50. SEE PHASE 3 MOT PLANS AND MAINLINE CROSS SECTIONS FOR CONSTRUCTION LIMITS AND DETAILS.
6. CONSTRUCT GRADE, DRAIN, AND SURFACING EB APPROACH LANES AND SHOULDERS FROM STA. 1036+00 TO END.
7. CONSTRUCT GRADE, DRAIN, AND SURFACING OF MEDIAN RIGHT OF CENTER LINE FROM STA. 1041+20 TO END. SEE MOT PLANS FOR CONSTRUCTION LIMITS.

PHASE 4:
PHASE 4 CONSTRUCTION CONSISTS OF PLACING ASPHALT SURFACE ON ALL US 68 / KY 80 TRAVEL LANES AND SHOULDERS AND PERMANENT STRIPING AND SIGNS FOR ALL TRAVEL LANES AND PARKING LOTS.

PHASE 4 TRAFFIC CONTROL:
PHASE 3 MAINTENANCE OF TRAFFIC SIGNS CONTINUE IN PHASE 4 AS NEEDED.

PHASE 4 CONSTRUCTION:
1. REMOVE TEMPORARY CROSSOVERS AND RETURN DISTURBED LIMITS TO ORIGINAL CONDITION.
2. CONSTRUCT FINAL SURFACE USING LANE SHIFTS.
3. CONSTRUCT FINAL STRIPING USING LANE SHIFTS ACCORDING TO STRIPING PLAN SHEETS.

PHASE 5:
PHASE 5 CONSTRUCTION CONSISTS OF DEMOLITION AND SALVAGE OF THE EXISTING EGGNER FERRY BRIDGE.

PHASE 5 CONSTRUCTION CAN BEGIN DURING PHASE 3 CONSTRUCTION IF IN ACCORDANCE TO WITH SPECIAL NOTE FOR REMOVAL OF EXISTING BRIDGE PROVIDED IN THE PROPOSAL.

PHASE 5 CONSTRUCTION:
1. REMOVE EXISTING EGGNER FERRY BRIDGE ACCORDING TO THE SPECIAL NOTES PROVIDED IN PROPOSAL.

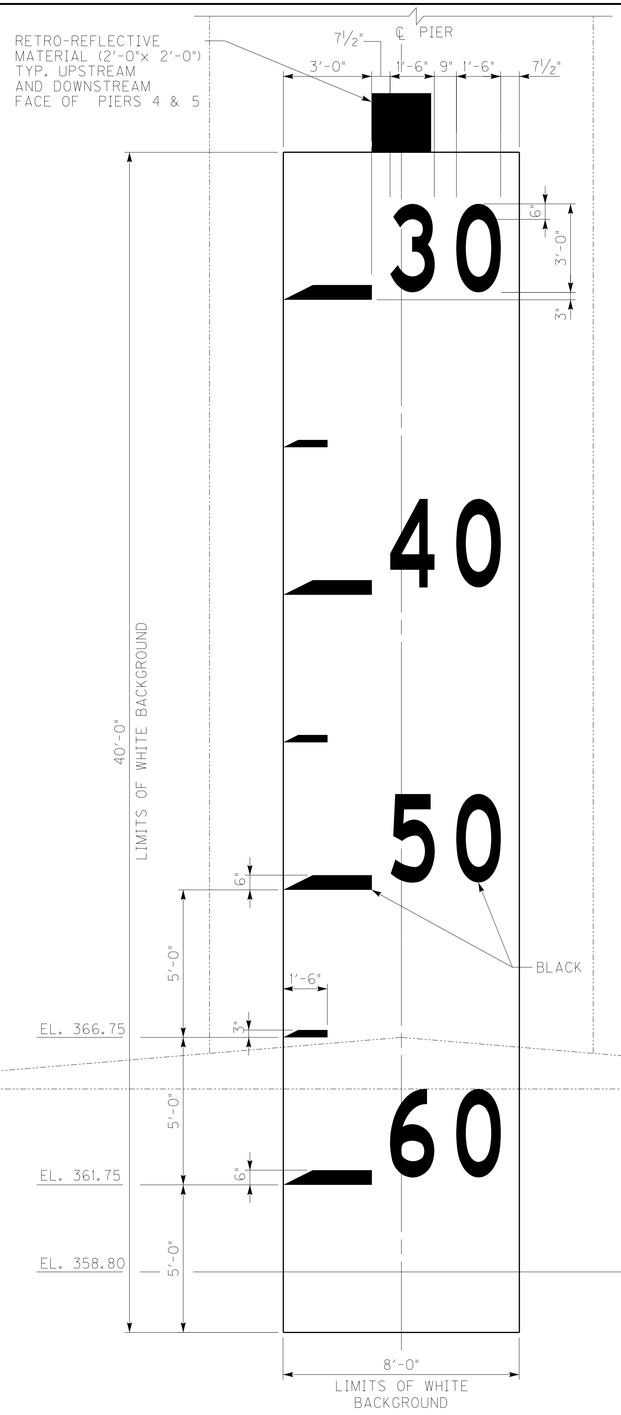
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FOR MAINTENANCE OF TRAFFIC ONLY

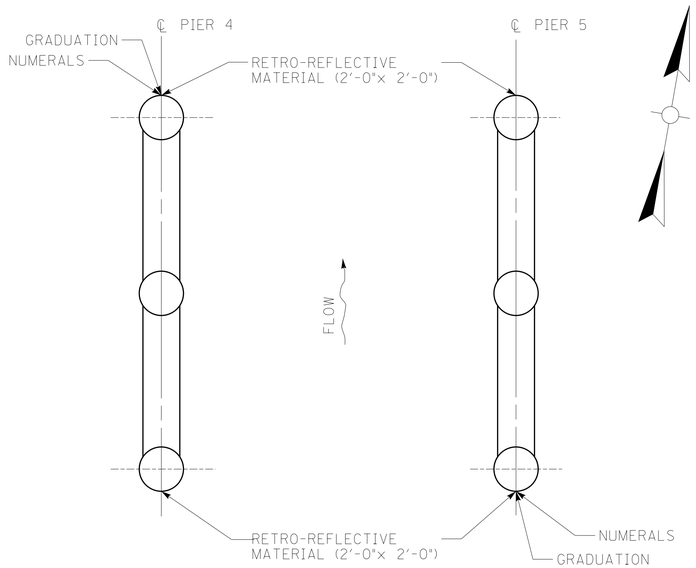
NTS

US 68 / KY 80
MAINTENANCE OF TRAFFIC NOTES

FILE NAME: \\PEWINFS2\JOBS\KDOT\LAKE_BRIDGES\ADDENDUMS\ADDENDUM #3\R052OMT.DGN
USER: andrew-b
DATE PLOTTED: December 11, 2013
E-SHEET NAME:
MicroStation v8.11.9.357



VERTICAL CLEARANCE GAUGE DETAILS



GAUGE LOCATION

CLEARANCE GAUGES

A CLEARANCE GAUGE CONSISTING OF PAINTED MARKS AND NUMERALS AS SHOWN ON THE PLANS SHALL BE PAINTED ON THE UPSTREAM SIDE OF THE RIGHT DESCENDING CHANNEL PIER 5 AND THE DOWNSTREAM SIDE OF THE LEFT DESCENDING CHANNEL PIER 4. IN ADDITION, RETRO-REFLECTIVE MATERIAL (2'-0"x 2'-0") SHALL BE APPLIED TO BOTH THE UPSTREAM AND DOWNSTREAM FACES OF PIERS 4 AND 5 AS SHOWN ON THE PLANS. THE MARKS AND NUMERALS ARE TO BE ACCURATELY LOCATED AS SHOWN ON THE PLANS. THE AREA TO BE PAINTED SHALL BE THOROUGHLY CLEANED BEFORE PAINTING. THE PAINTED AREAS SHALL RECEIVE TWO (2) COATS OF WHITE PAINT, AS HEREINAFTER PROVIDED, AFTER WHICH GAUGE NUMBERS AND MARKINGS SHALL BE PAINTED THEREON IN TWO (2) COATS OF BLACK. EACH COAT SHALL BE APPLIED WITH A MINIMUM OF TWENTY-FOUR (24) HOURS DRYING TIME PER COAT.

ALL MATERIALS USED SHALL BE EITHER A VINYL RESIN TYPE OR CHLORINATED NATURAL RUBBER-BASE TYPE PAINT AND SHALL BE GUARANTEED BY THE MANUFACTURER TO BE SUITABLE FOR USE ON MASONRY UNDER SEVER EXPOSURE AND SUBMERGED IN WATER CONDITIONS. ALL MATERIALS THE CONTRACTOR PROPOSES TO USE SHALL MEET THE APPROVAL OF THE ENGINEER. THE FIRST COATS OF WHITE AND GAUGE MARKINGS (BLACK) SHALL HAVE A FLAT FINISH, AND THE SECOND COATS SHALL HAVE A GLOSSY FINISH. UNLESS OTHERWISE PERMITTED BY THE ENGINEER. CONCRETE FORMS SHALL HAVE BEEN REMOVED AT LEAST (60) DAYS PRIOR TO THE APPLICATION OF ANY PAINT OR UNDERCOAT TO THE CONCRETE SURFACE TO BE PAINTED. SURFACES TO BE PAINTED SHALL BE PREPARED BY REMOVING ALL DIRT, OIL, OR OTHER FOREIGN SUBSTANCES. PRIOR TO APPLICATION OF THE FIRST COAT, SUCH SURFACES SHALL BE ETCHED WITH APPROXIMATELY TEN PERCENT SOLUTION OF MURIATIC ACID IN WATER, FLUSHED DOWN WITH CLEAR WATER AND ALLOWED TO DRY. THE SURFACES TO BE PAINTED SHALL BE THOROUGHLY DRY BEFORE APPLICATION. THE PAINT APPLICATION SHALL BE GENEROUS, BUT SHOULD NOT EXCEED TWO MILS PER COAT. THE FIRST COAT SHALL BE WORKED WELL INTO THE PORES OF THE CONCRETE. PAINT SHALL NOT BE APPLIED WHEN THE TEMPERATURE IS BELOW 45 DEGREES FAHRENHEIT AND PREFERABLY SHALL BE APPLIED WHEN THE WEATHER HAS REACHED THE MAXIMUM TEMPERATURE OF THE DAY. PAINTING SHALL NOT START UNLESS IT CAN BE REASONABLY EXPECTED THAT THE CLEARANCE GAUGE CAN BE COMPLETED WITH ALL PAINT COATS PLUS AT LEAST (7) DAYS TIME BEFORE ANY PORTION OF THE GAUGE MAY BECOME SUBMERGED. THE WORK DESCRIBED HEREIN SHALL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID FOR "PAINTING CLEARANCE GAUGES", WHICH PAYMENT AND PRICE SHALL BE FULL COMPENSATION FOR ALL WORK, LABOR MATERIALS, EQUIPMENT AND ALL INCIDENTALS NECESSARY TO COMPLETE THE WORK.

CLEARANCE GAUGE MARKING NOTES

1. THE NUMERALS SHALL CONFORM WITH THOSE PUBLISHED IN THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS" PUBLISHED BY FHWA, SERIES E, 36" TALL.
2. LENGTH OF FOOT MARK SHALL BE NO LESS THAN 36" LONG AND THE SAME THICKNESS AS THE NUMERALS.
3. INTERMEDIATE FOOT MARKS SHALL BE ½ THE LENGTH AND THICKNESS AS THE PRIMARY FOOT MARKS.
4. THE WHITE BACKGROUND SHALL BE A MINIMUM OF 8' WIDE AND 40' HIGH.
5. THE GAUGE SHALL READ FROM TOP TO BOTTOM AND MEASURE THE DISTANCE FROM LOW STEEL TO THE BOTTOM OF THE FOOT MARKS.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: DMB	GDS
DETAILED BY: CDR	DMB

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

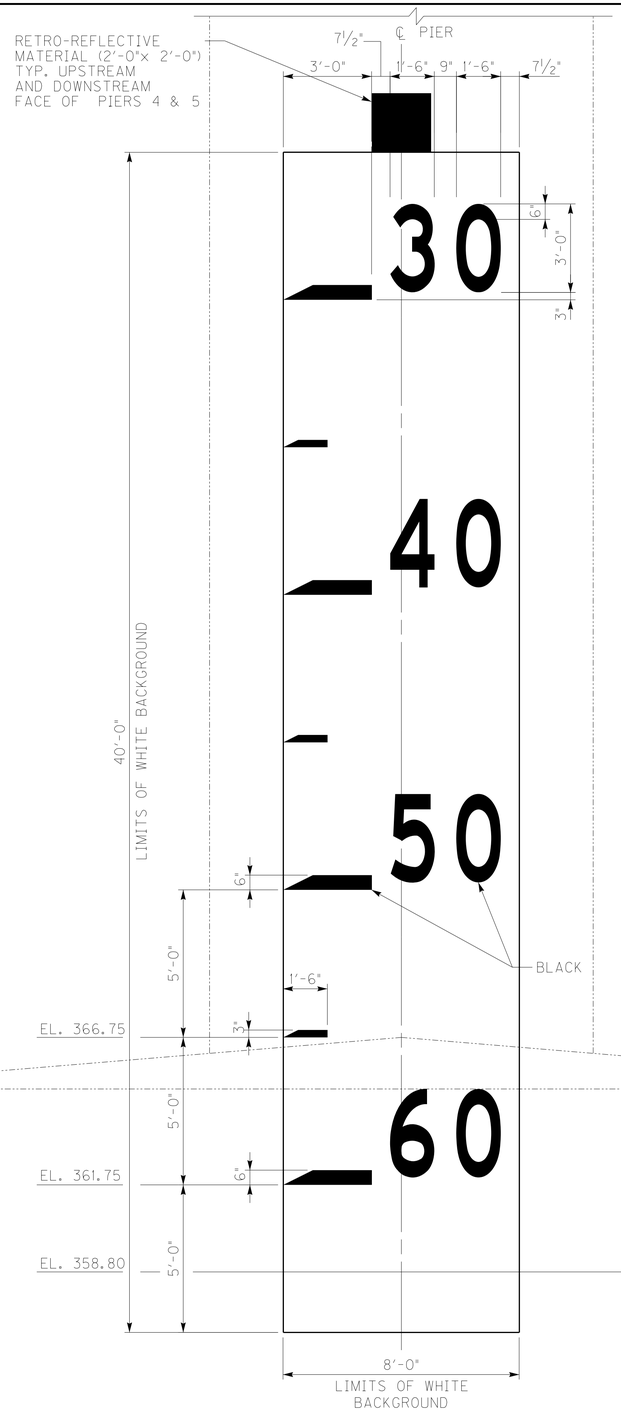
VERT. CLEARANCE GAUGE DETAILS

ITEM NUMBER: 01-180.70

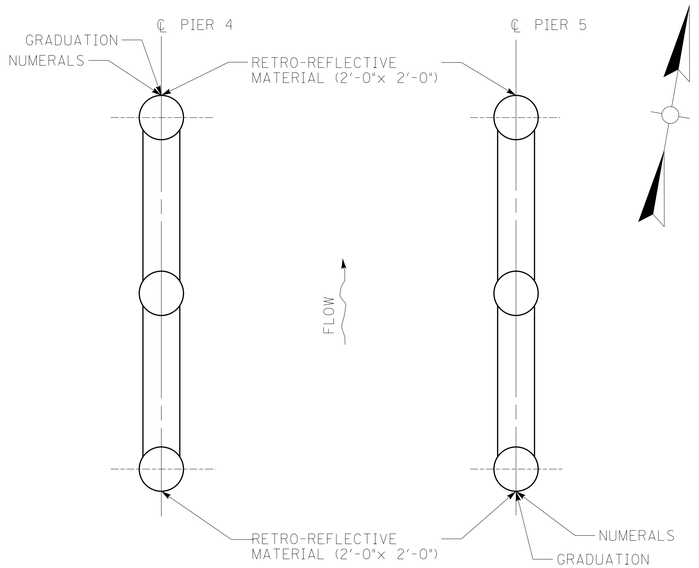
PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S078
DRAWING NO. 24686

MicroStation v8.11.9.459
E-SHEET NAME: 524686 078
USER: CWethington
DATE PLOTTED: November 21, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 CG.DGN



VERTICAL CLEARANCE GAUGE DETAILS



GAUGE LOCATION

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⚠ ADDENDUM 3	12/11/13

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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

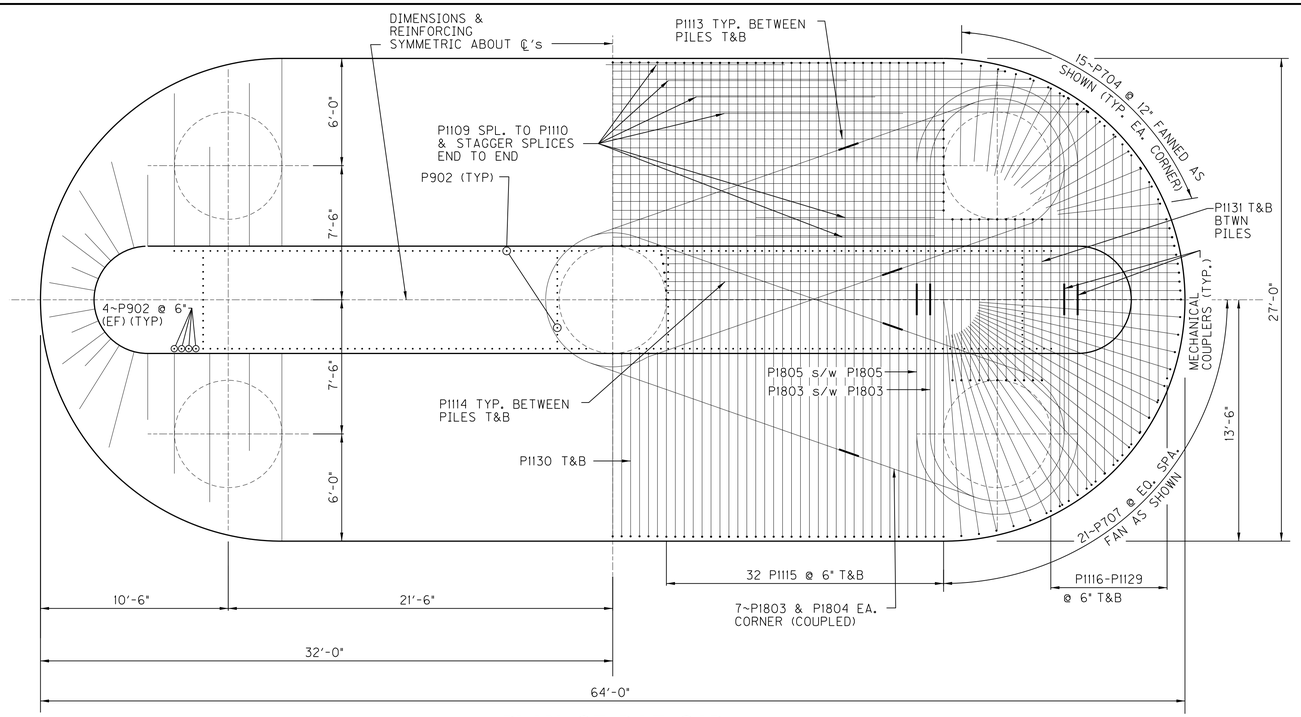
VERT. CLEARANCE GAUGE DETAILS

ITEM NUMBER: 01-180.70

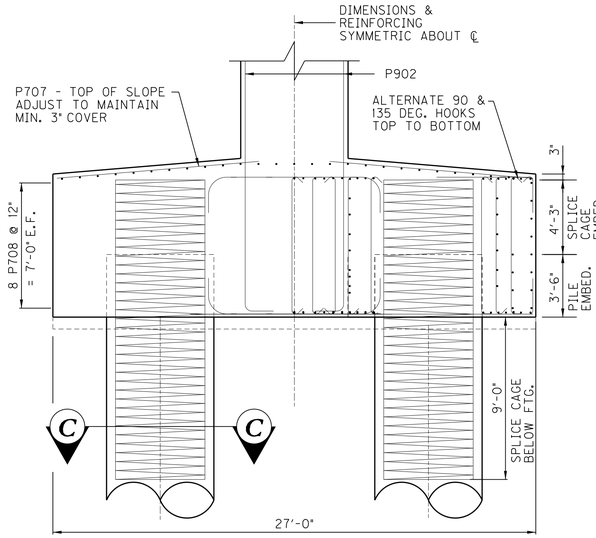
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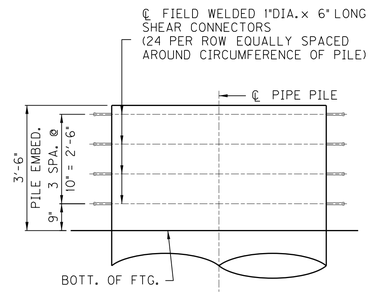
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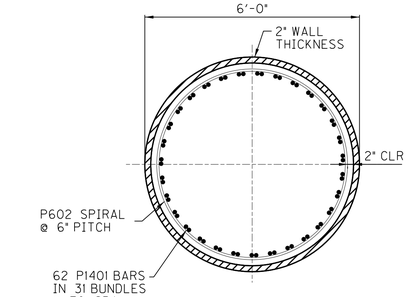
PLAN OF PILE CAP



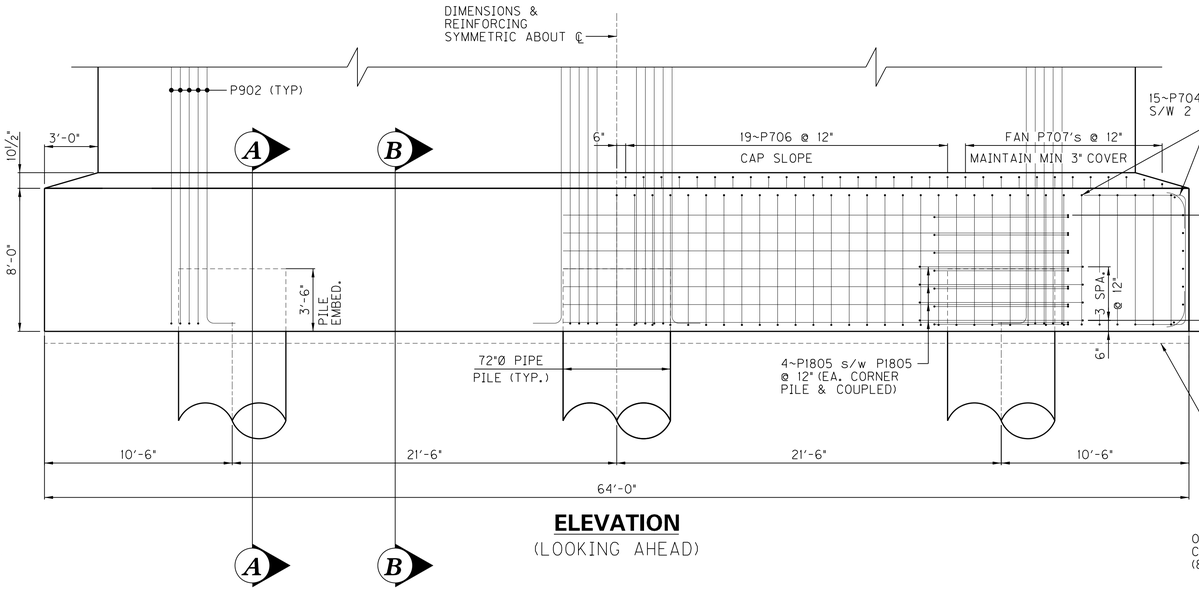
SECTION A–A



PILE CONNECTION DETAIL

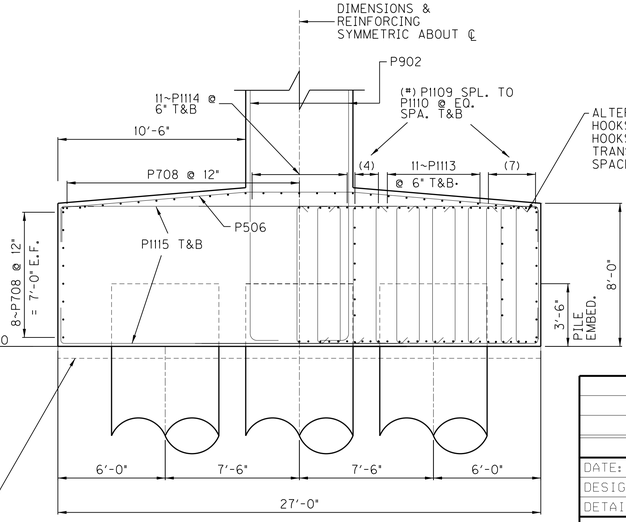


SECTION C–C



ELEVATION

(LOOKING AHEAD)



SECTION B–B

OPTIONAL STAY-IN-PLACE CONCRETE BOTTOM FORM (8" MAX. THICKNESS)

FOR ADDITIONAL PIER 6 DETAILS SEE SHEETS S081 AND S081A

NOTE: DISTANCE TO FACE OF CONCRETE IS 3" UNLESS OTHERWISE SHOWN.

REINFORCEMENT SPLICES:
- #5 BAR = 2'-6
- #6 BAR = 3'-0"
- #11 BAR = 10'-0"
- #14 BAR = USE MECHANICAL COUPLER
- #18 BAR = USE MECHANICAL COUPLER

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 6 PILE CAP DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

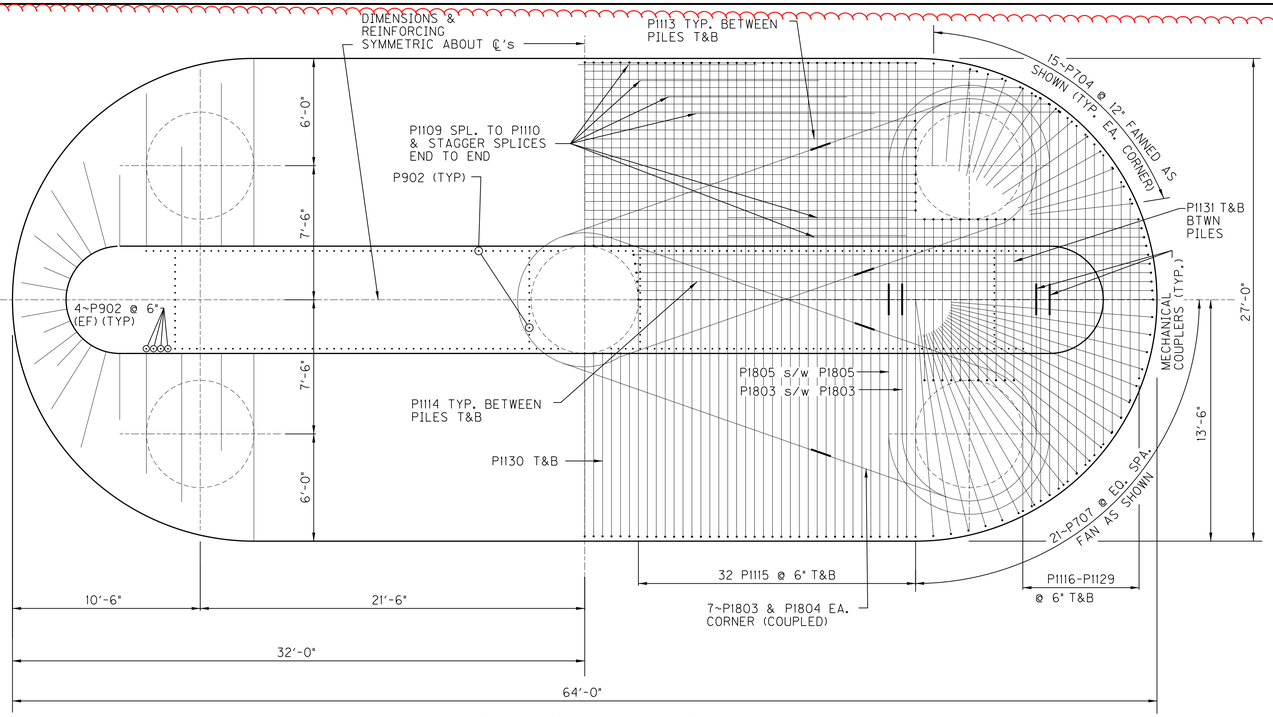
ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

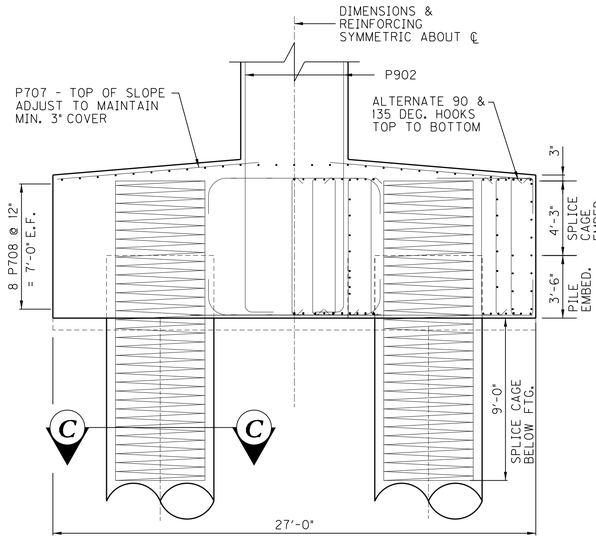
SHEET NO. S079

DRAWING NO. 24686

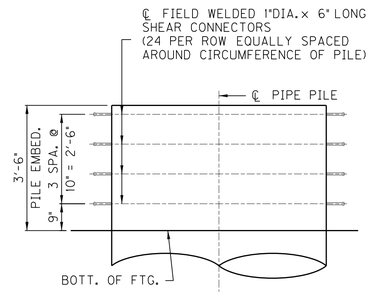
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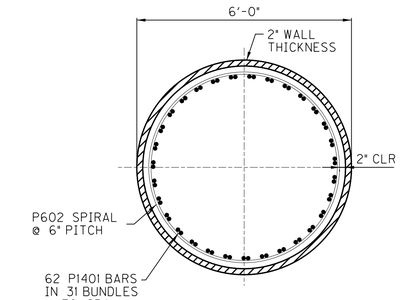
PLAN OF PILE CAP



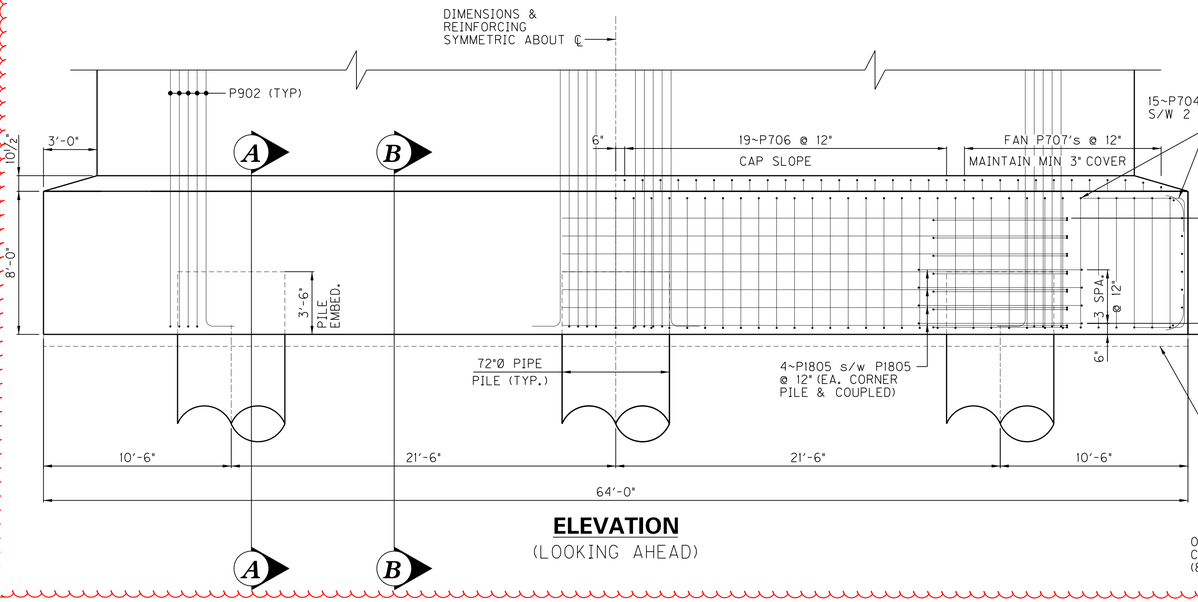
SECTION A–A



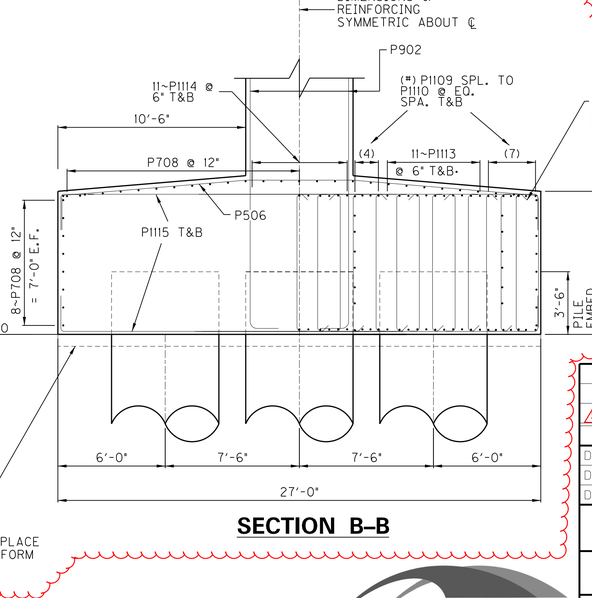
PILE CONNECTION DETAIL



SECTION C–C



ELEVATION
(LOOKING AHEAD)



SECTION B–B

OPTIONAL STAY-IN-PLACE CONCRETE BOTTOM FORM (8" MAX. THICKNESS)

FOR ADDITIONAL PIER 6 DETAILS SEE SHEETS S081 AND S081A

NOTE: DISTANCE TO FACE OF CONCRETE IS 3" UNLESS OTHERWISE SHOWN.

REINFORCEMENT SPLICES:
#5 BAR = 2'-6
#6 BAR = 3'-0"
#11 BAR = 10'-0"
#14 BAR = USE MECHANICAL COUPLER
#18 BAR = USE MECHANICAL COUPLER

3 ADDED NOTES & BARS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 6 PILE CAP DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

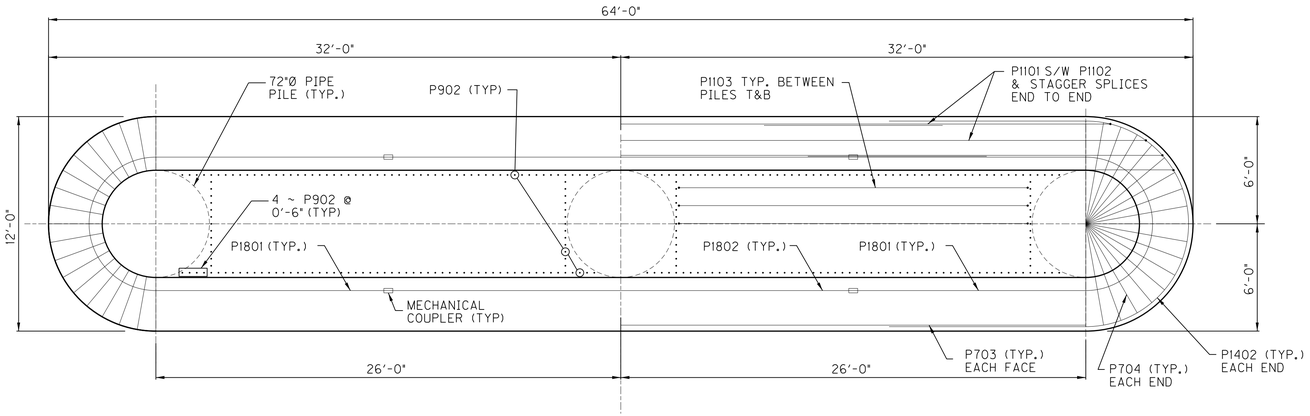
ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

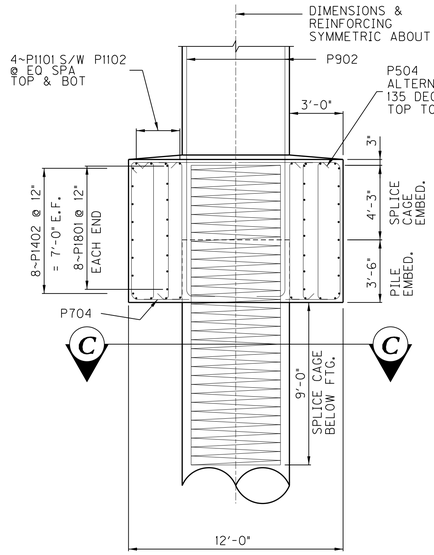
SHEET NO.: S079

DRAWING NO.: 24686

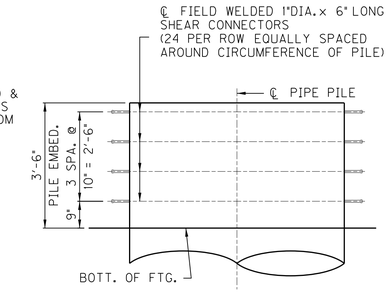
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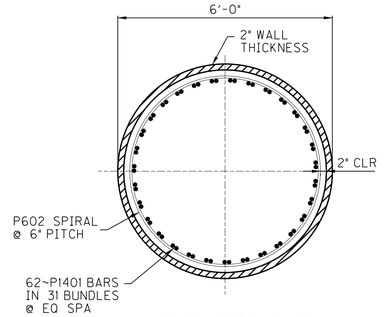
PLAN OF PILE CAP



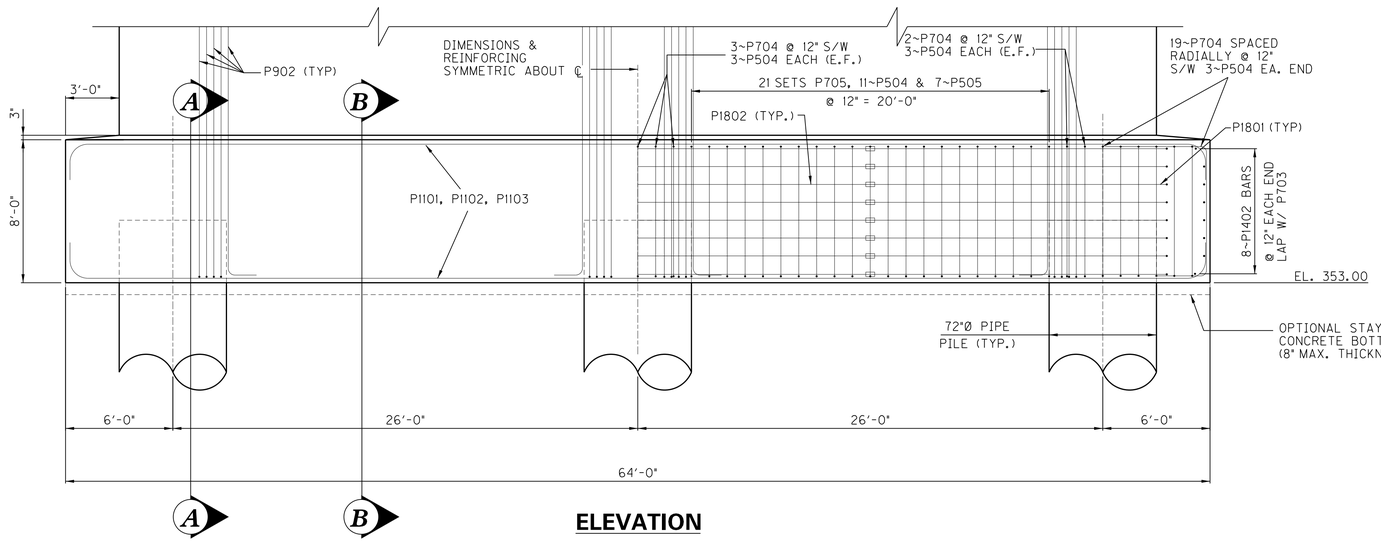
SECTION A–A



PILE CONNECTION DETAIL

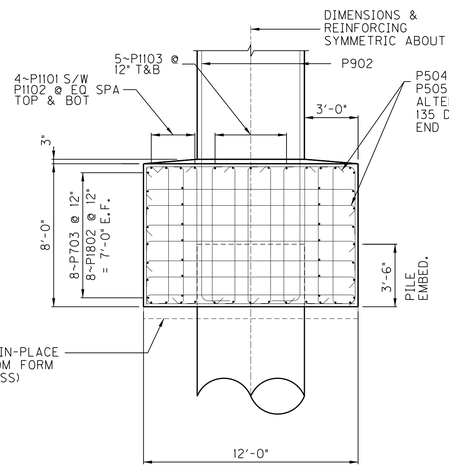


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SECTION B–B

FOR ADDITIONAL PIER 7 DETAILS SEE SHEETS S082 AND S083

NOTE: DISTANCE TO FACE OF CONCRETE IS 3" UNLESS OTHERWISE SHOWN.

MINIMUM LAP SPLICE IS:
#5 BAR = 2'-6
#6 BAR = 3'-0"
#11 BAR = 10'-0"
#14 BAR = USE MECHANICAL COUPLER
#18 BAR = USE MECHANICAL COUPLER

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

PIER 7 PILE CAP DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

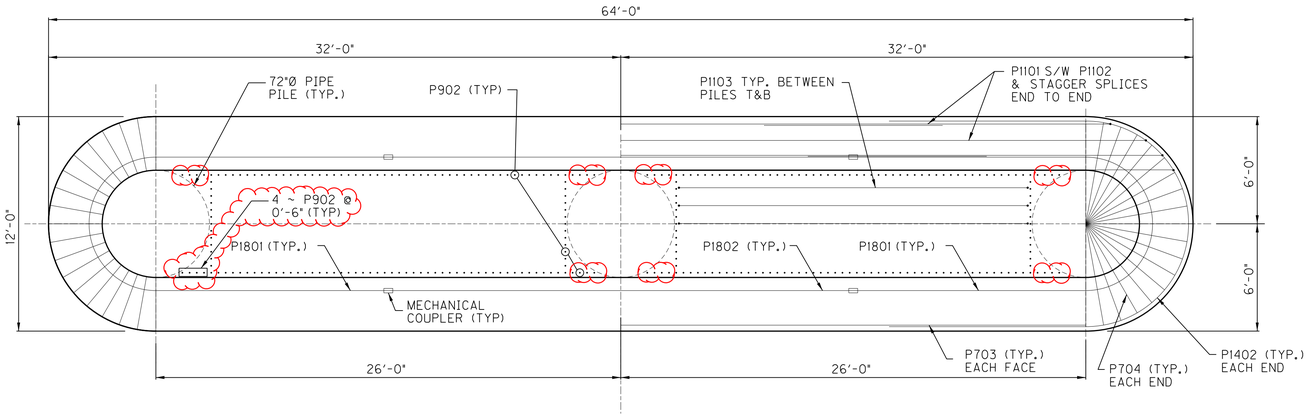
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

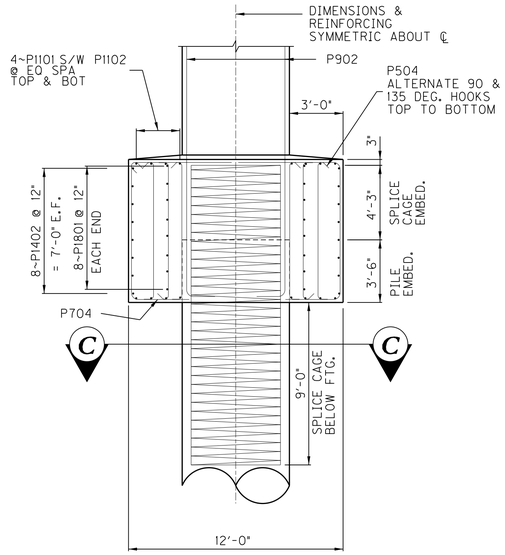
SHEET NO. S080

DRAWING NO. 24686

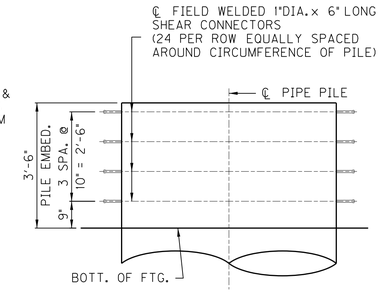
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DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443



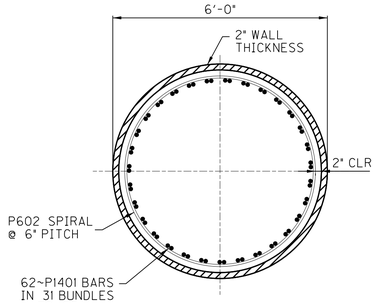
PLAN OF PILE CAP



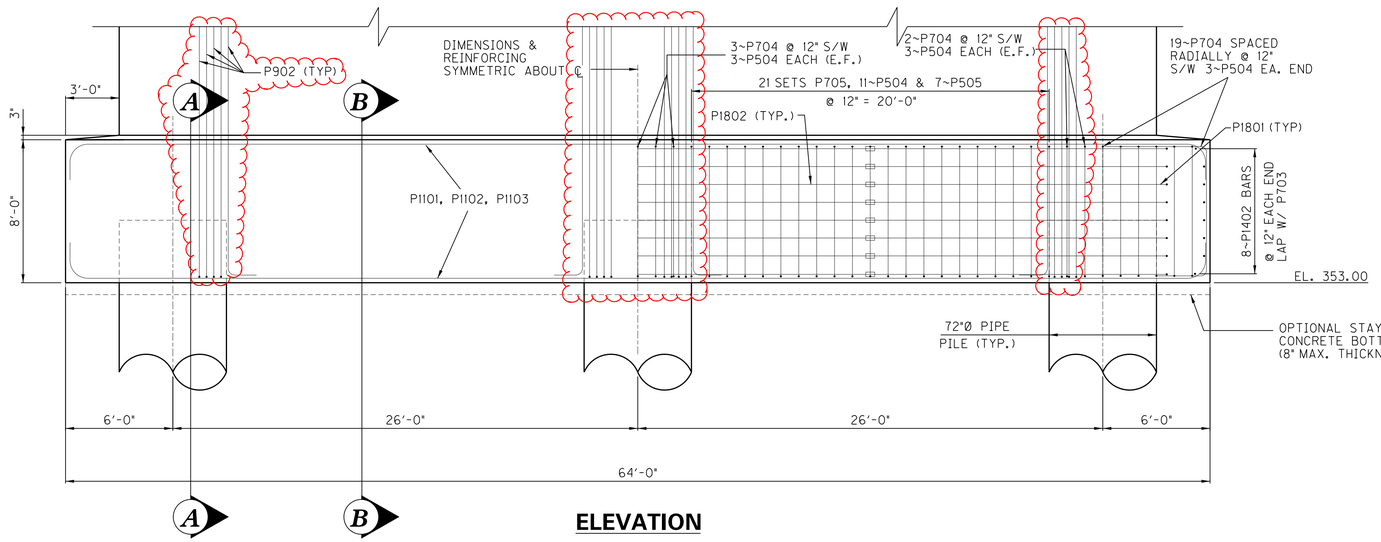
SECTION A–A



PILE CONNECTION DETAIL

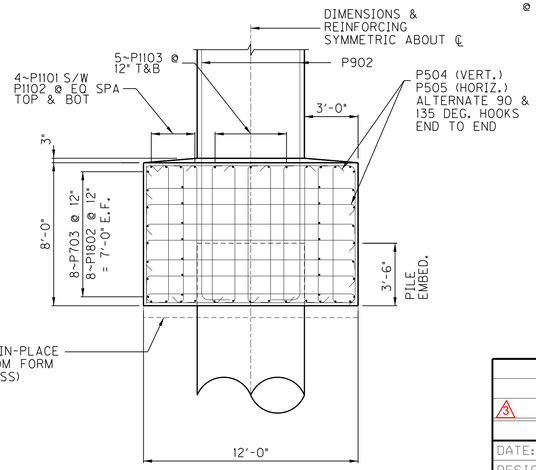


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SECTION B–B

FOR ADDITIONAL PIER 7 DETAILS SEE SHEETS S082 AND S083

NOTE: DISTANCE TO FACE OF CONCRETE IS 3" UNLESS OTHERWISE SHOWN.

MINIMUM LAP SPLICE IS:
#5 BAR = 2'-6
#6 BAR = 3'-0"
#11 BAR = 10'-0"
#14 BAR = USE MECHANICAL COUPLER
#18 BAR = USE MECHANICAL COUPLER

REVISION	DATE
3 ADDED P902 BARS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

PIER 7 PILE CAP DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

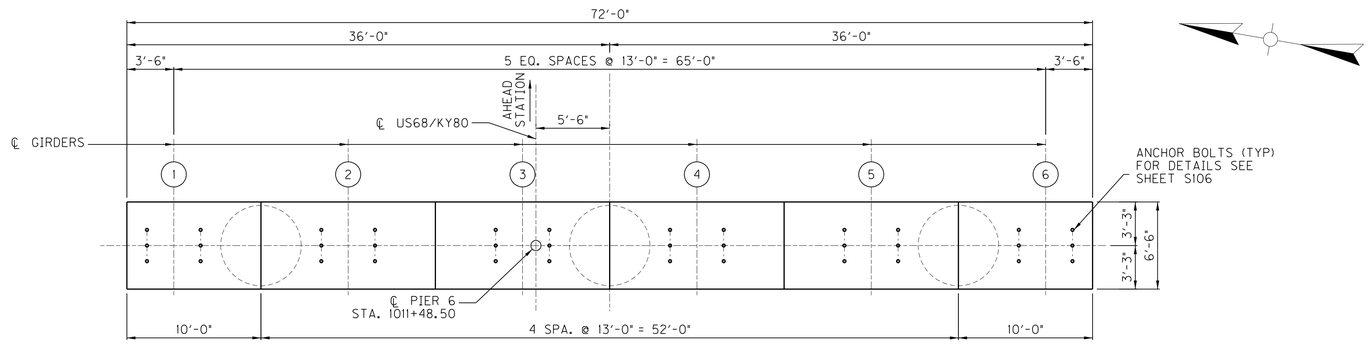
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

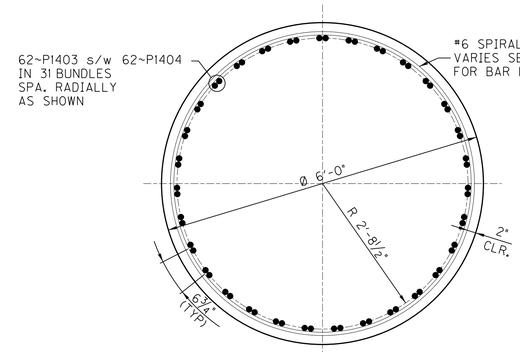
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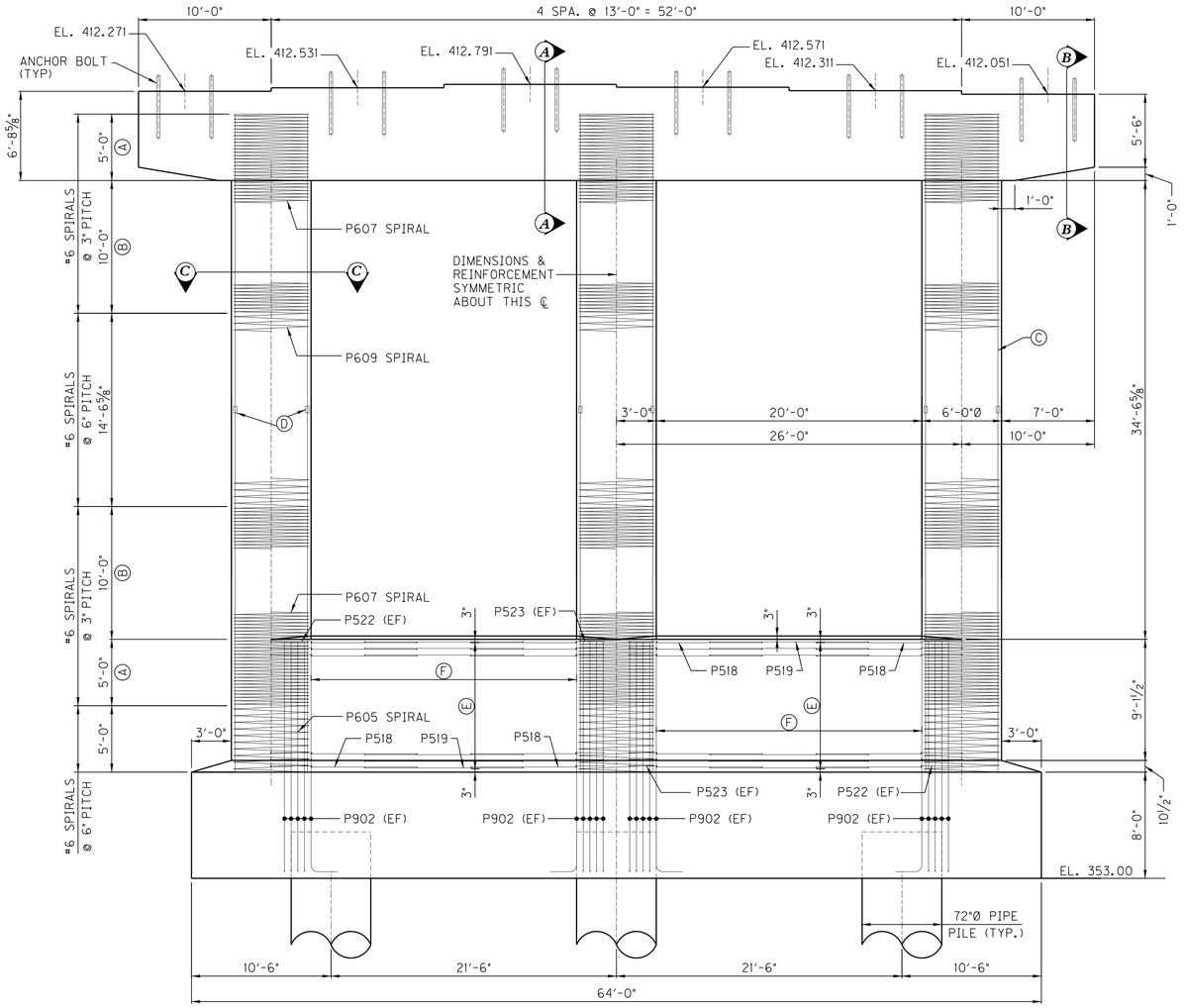
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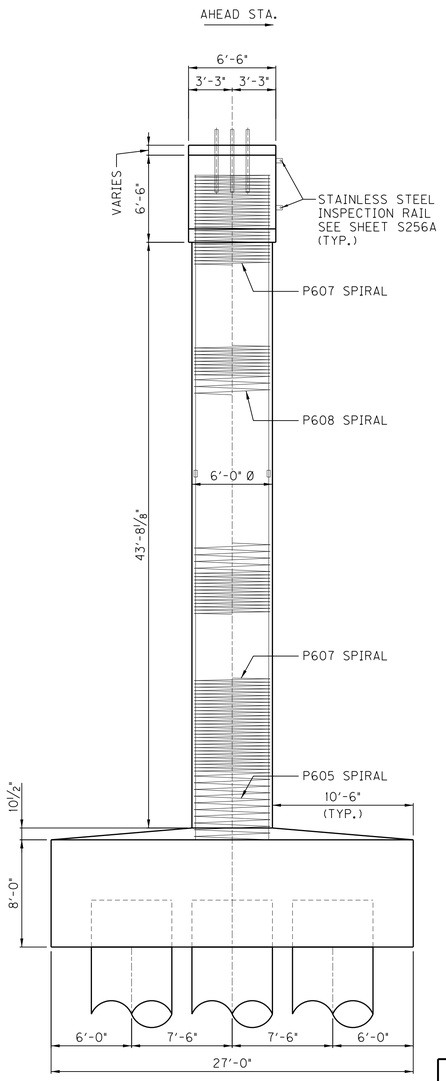
PLAN OF CAP



SECTION C–C



ELEVATION
(LOOKING AHEAD STATION)



SIDE ELEVATION
(LOOKING NORTH)

Ⓐ MIN. P607 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ BUNDLE 2~P1403 S/W 2~P1404 (TYP. VERT COL. R/F)

Ⓓ MECHANICAL COUPLERS TO BE USED FOR COLUMN SPLICES. LOCATIONS OF ADJACENT COUPLERS IN EACH BUNDLE SHALL BE STAGGERED 5'-0" MIN.

Ⓔ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P20, 2~P522, AND 2~P523.

Ⓕ 50~P902 @ EQ. SPA. = 19'-9⅝" (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058
#14 BAR = USE MECHANICAL COUPLER

FOR ADDITIONAL PIER 6 DETAILS SEE SHEET S079 & S081A

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: K.S. MCLEMORE	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 6

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

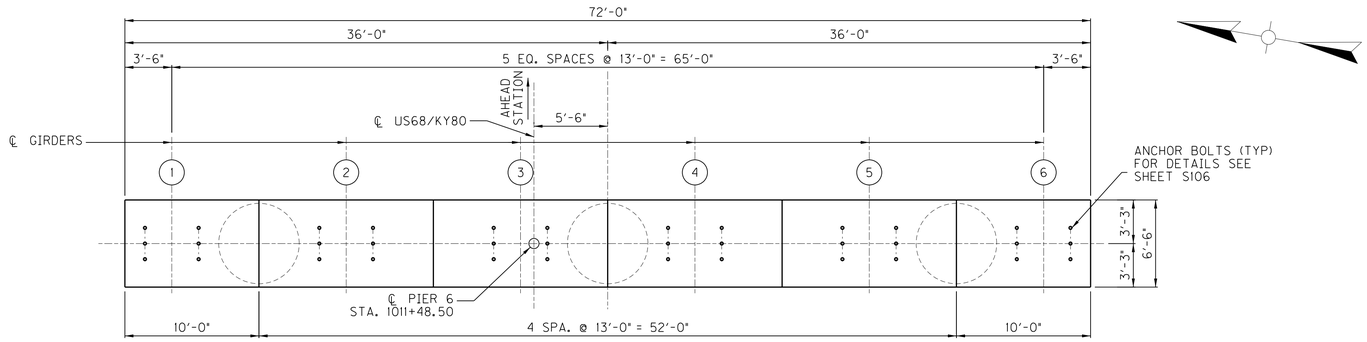
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01–180.70

PREPARED BY
PALMER ENGINEERING CO.

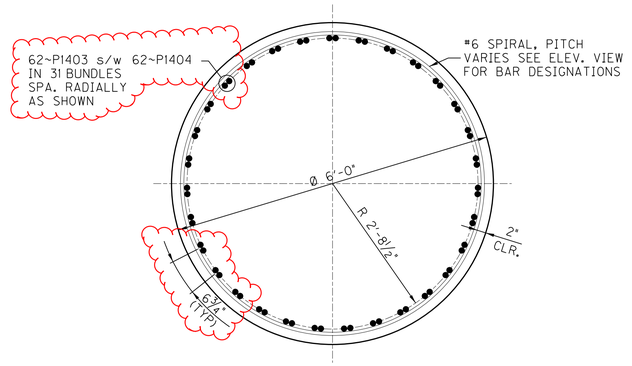
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DRAWING NO. 24686

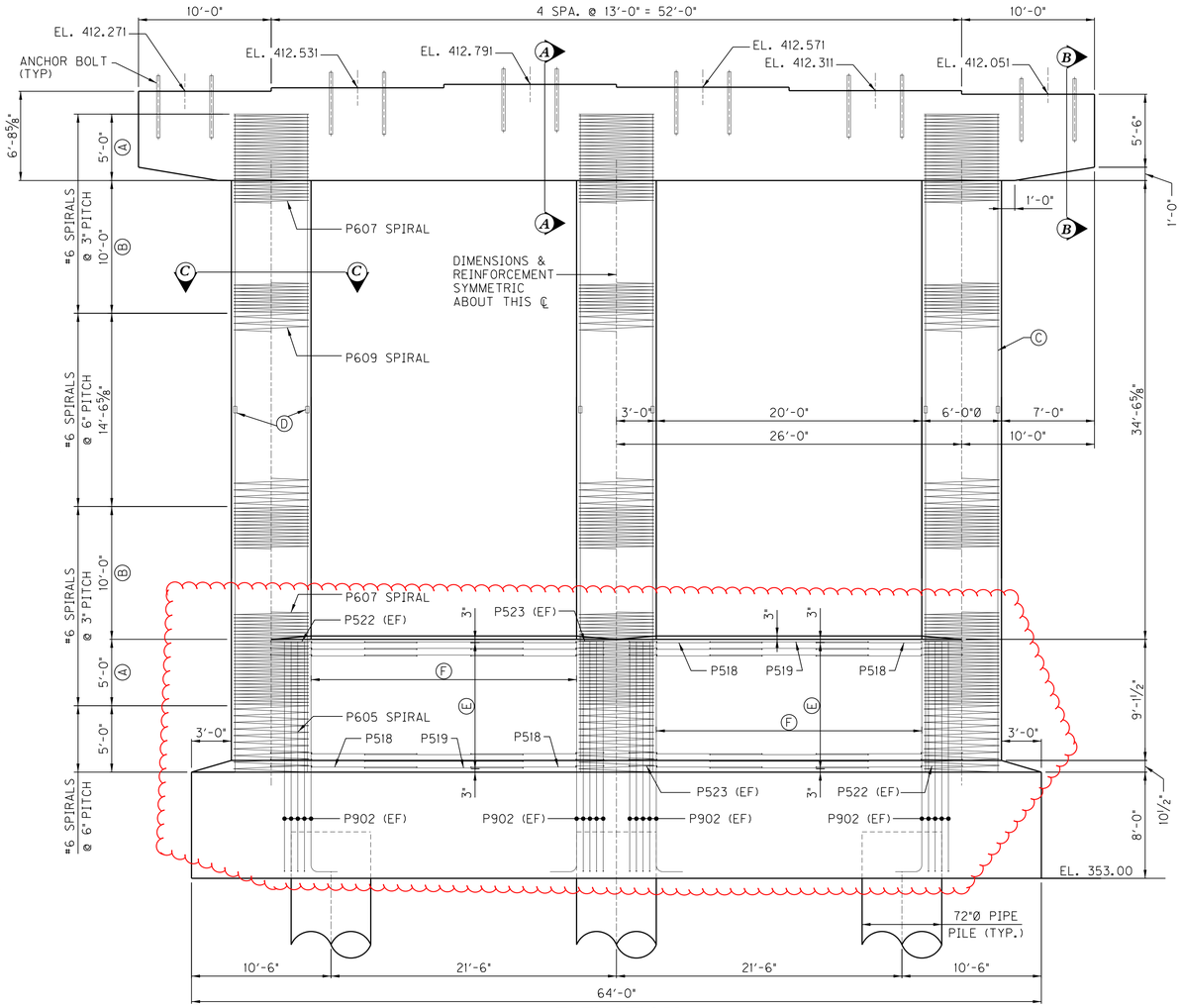
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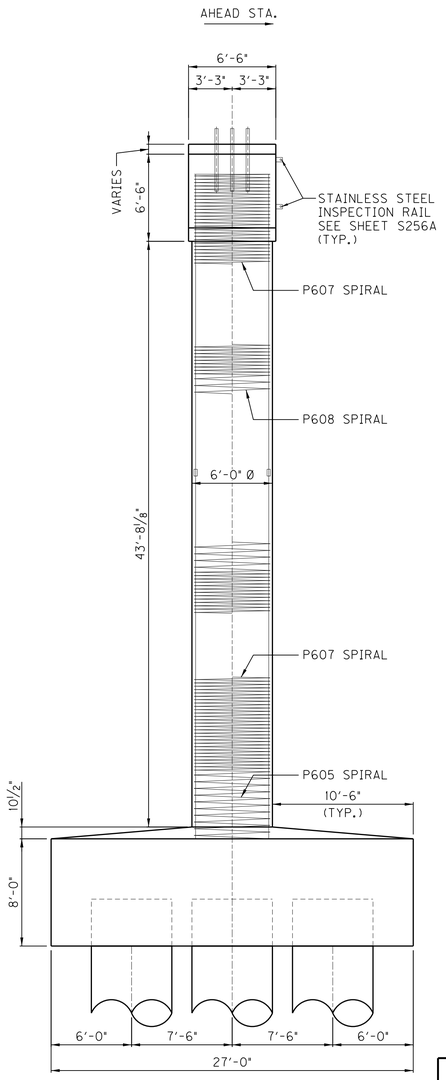
PLAN OF CAP



SECTION C–C



ELEVATION
(LOOKING AHEAD STATION)



SIDE ELEVATION
(LOOKING NORTH)

Ⓐ MIN. P607 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ BUNDLE 2~P1403 S/W 2~P1404 (TYP. VERT COL. R/F)

Ⓓ MECHANICAL COUPLERS TO BE USED FOR COLUMN SPLICES. LOCATIONS OF ADJACENT COUPLERS IN EACH BUNDLE SHALL BE STAGGERED 5'-0" MIN.

Ⓔ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P20, 2~P522, AND 2~P523.

Ⓕ 50~P902 @ EQ. SPA. = 19'-9⅜ (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058
#11 BAR = USE MECHANICAL COUPLER

FOR ADDITIONAL PIER 6 DETAILS SEE SHEET S079 & S081A

3 ADDED/CHANGED NOTES & BARS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: K.S. MCLEMORE	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 6

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

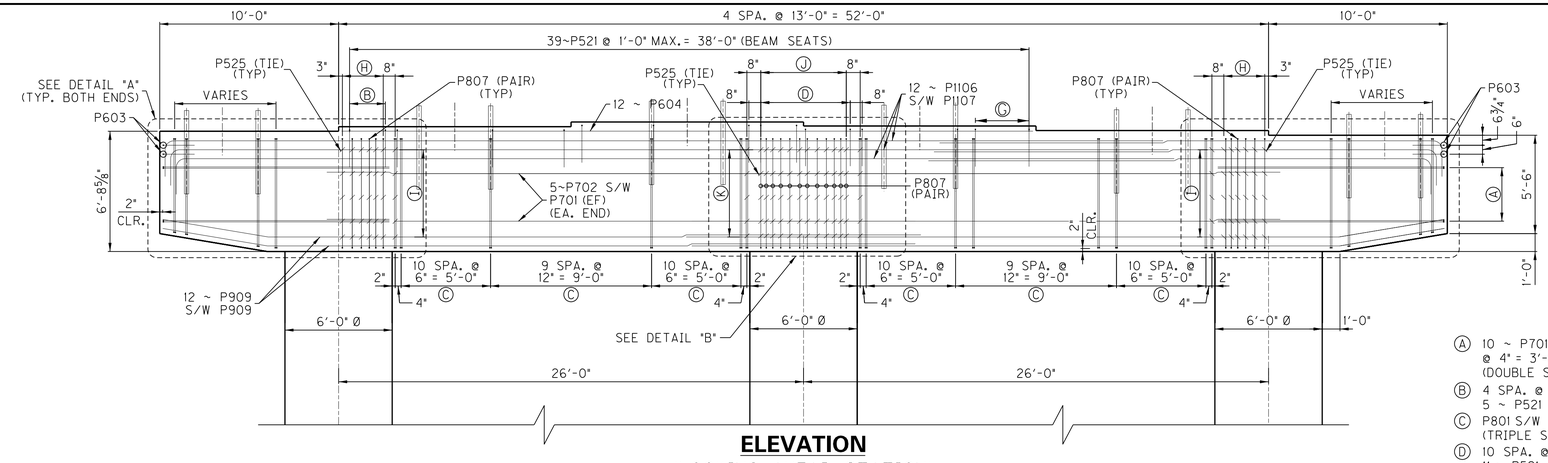
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

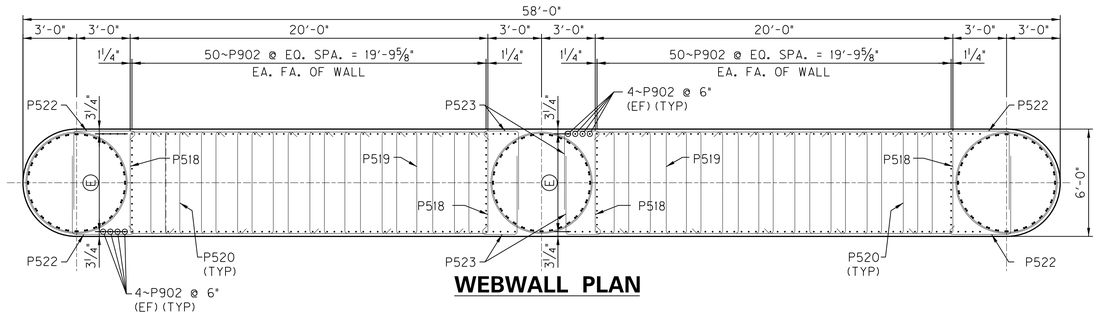
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ELEVATION
(LOOKING AHEAD STATION)

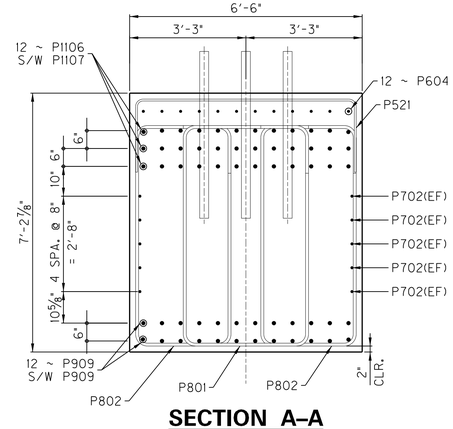


WEBWALL PLAN

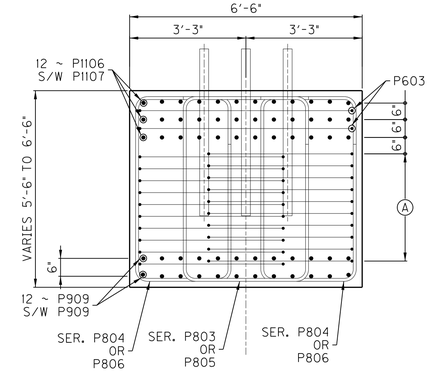
- (A) 10 ~ P701 S/W P701 @ 4" = 3'-0" (DOUBLE STIRRUPS)
- (B) 4 SPA. @ 6" = 2'-0", 5 ~ P521
- (C) P801 S/W 2 ~ P802 (TRIPLE STIRRUPS)
- (D) 10 SPA. @ 6" = 5'-0", 11 ~ P521
- (E) 13~P902 @ EQ. SPA. = 5'-5⅝"
- (F) 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520 (TIES WITH ALTERNATE ORIENTATION AS SHOWN IN PLAN), 2~P522 AND 2~P523.
- (G) 3 SPA. @ 12" = 3'-0", 4~P521
- (H) 6 PAIRS OF P807 SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT
- (J) 35~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN
- (J) 12 PAIRS OF P807 SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 5'-0"
- (K) 70~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN

NOTE: CAP STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION & PLACEMENT OF CAST IN PLACE ANCHOR BOLTS.

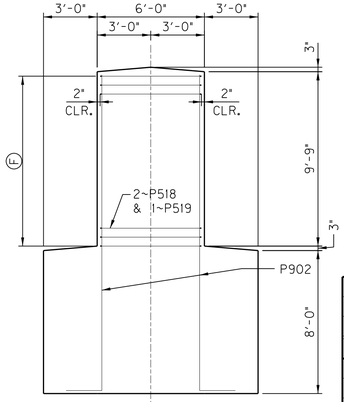
NOTE: STAINLESS STEEL INSPECTION RAIL NOT SHOWN FOR CLARITY. SEE SHEET S256A FOR DETAILS.



SECTION A–A

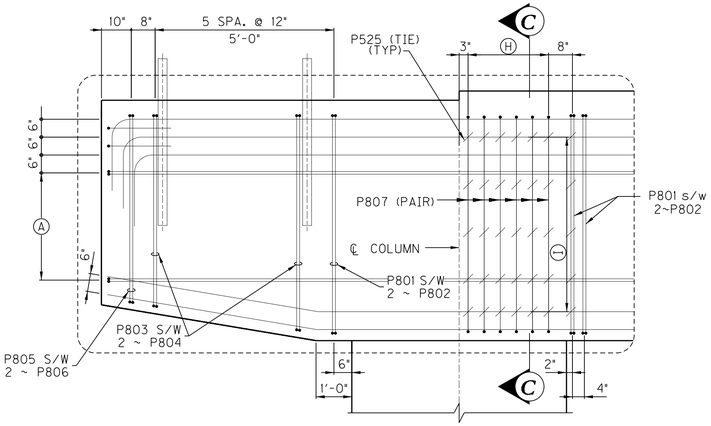


SECTION B–B

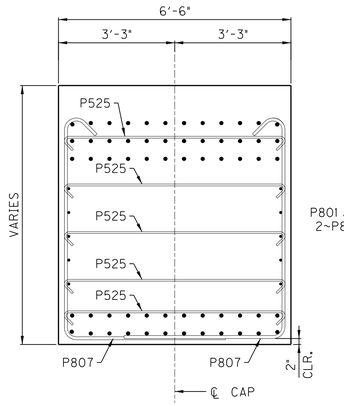


SECTION THRU WEBWALL

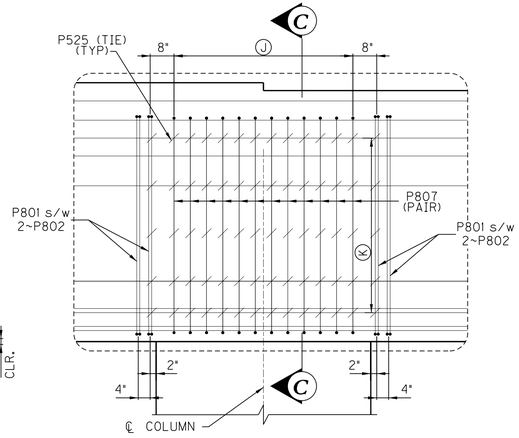
MIN. LAP SPLICES
#7 BAR = 3'-6"
#11 BAR = 12'-6"



DETAIL "A"



SECTION "C"



DETAIL "B"

REVISION	DATE
DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 6 DETAILS

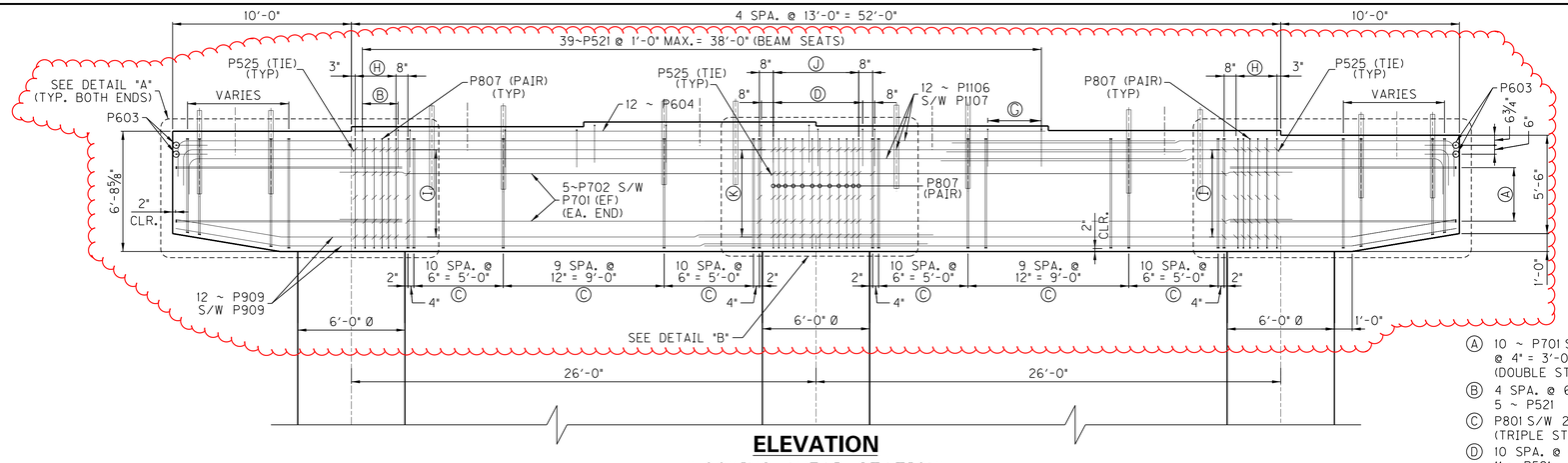
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

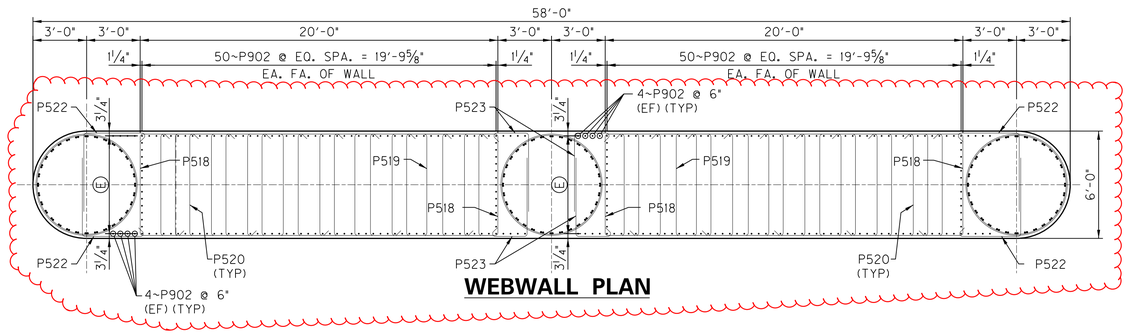
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S081A
DRAWING NO. 24686

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MicroStation v8.11.7.443



ELEVATION
(LOOKING AHEAD STATION)

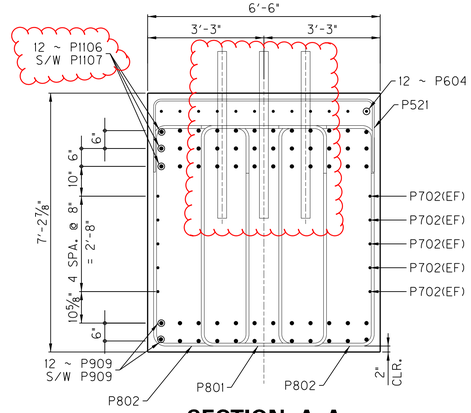


WEBWALL PLAN

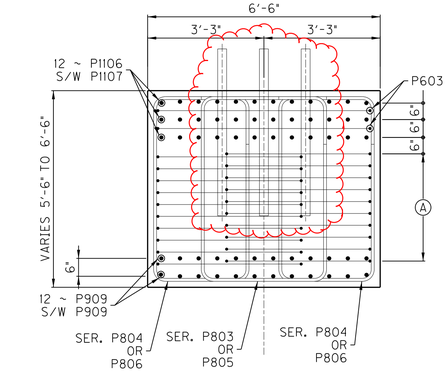
NOTE: CAP STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION & PLACEMENT OF CAST IN PLACE ANCHOR BOLTS.

NOTE: STAINLESS STEEL INSPECTION RAIL NOT SHOWN FOR CLARITY. SEE SHEET S256A FOR DETAILS.

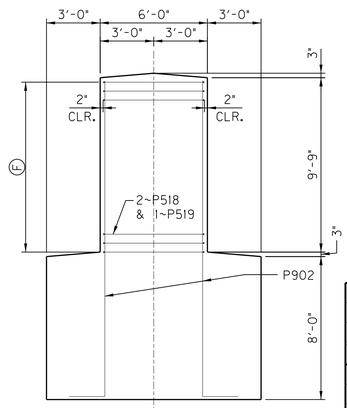
- (A) 10 ~ P701 S/W P701 @ 4" = 3'-0" (DOUBLE STIRRUPS)
- (B) 4 SPA. @ 6" = 2'-0", 5 ~ P521
- (C) P801 S/W 2 ~ P802 (TRIPLE STIRRUPS)
- (D) 10 SPA. @ 6" = 5'-0", 11 ~ P521
- (E) 13~P902 @ EQ. SPA. = 5'-5⅝"
- (F) 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520 (TIES WITH ALTERNATE ORIENTATION AS SHOWN IN PLAN), 2~P522 AND 2~P523.
- (G) 3 SPA. @ 12" = 3'-0", 4~P521
- (H) 6 PAIRS OF P807 SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT
- (I) 35~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN
- (J) 12 PAIRS OF P807 SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 5'-0"
- (K) 70~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN



SECTION A–A

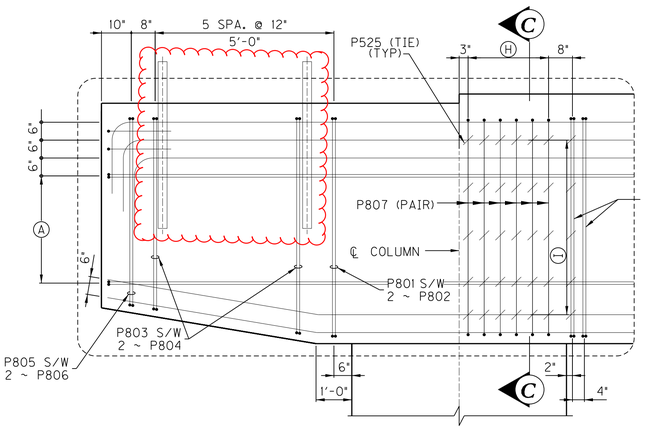


SECTION B–B

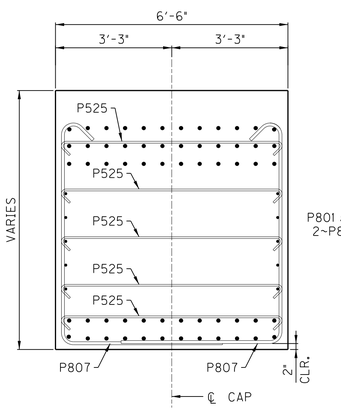


SECTION THRU WEBWALL

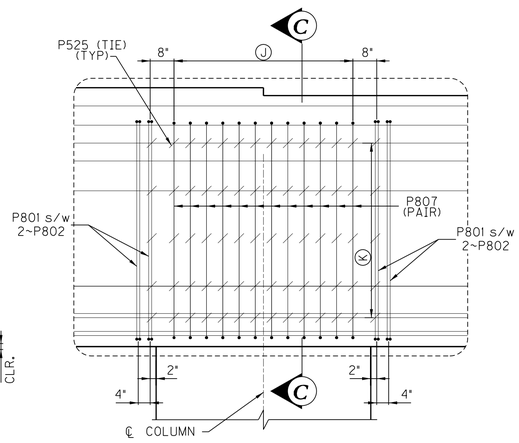
MIN. LAP SPLICES
#7 BAR = 3'-6"
#11 BAR = 12'-6"



DETAIL "A"



SECTION "C"



DETAIL "B"

3	ADDED/CHANGED NOTES & BARS — 12/09/13
	REVISION — DATE

DATE: NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY: B.T. DRECKMAN — D.E. RUST
DETAILED BY: J.A. ROSE — D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 — CROSSING: KENTUCKY LAKE

PIER 6 DETAILS

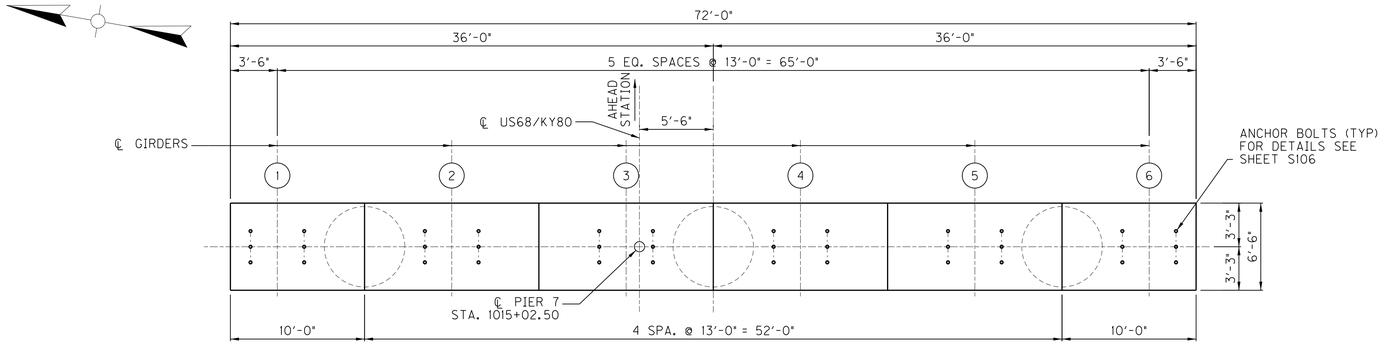
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

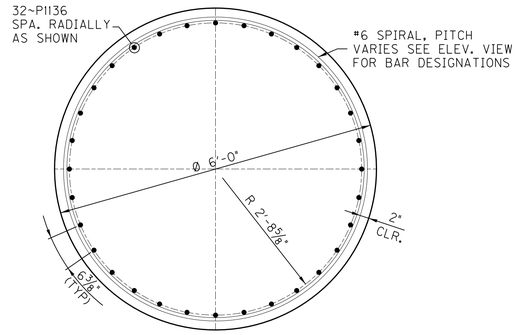
PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S081A
DRAWING NO.: 24686

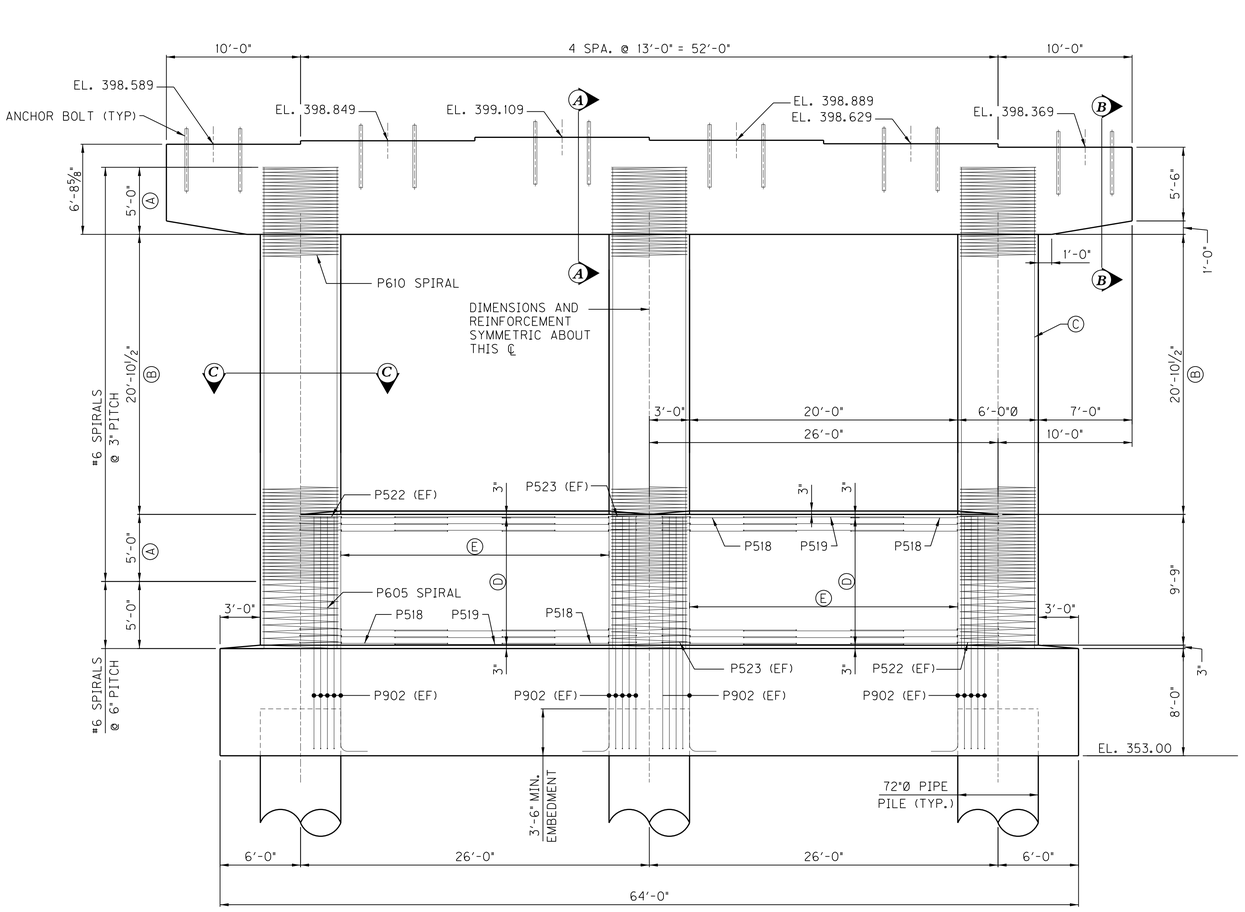
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MicroStation v8.11.7.443



PLAN OF CAP

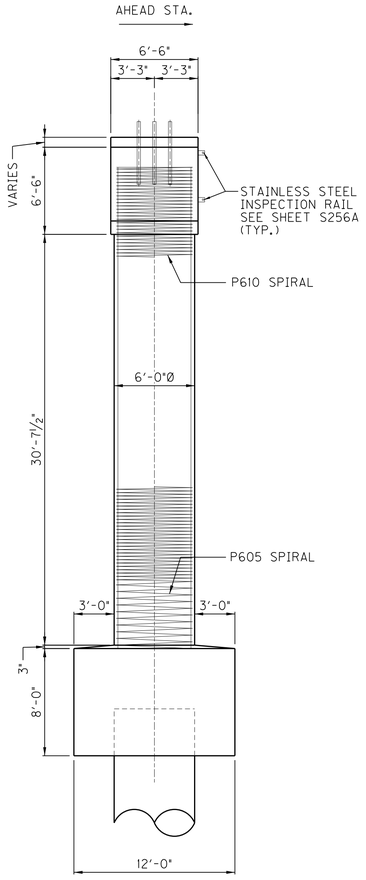


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SIDE ELEVATION

(LOOKING NORTH)

Ⓐ MIN. P610 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ P1136 (TYP. VERT COL. R/F)

Ⓓ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P20, 2~P522, AND 2~P523.

Ⓔ 50~P902 @ EQ. SPA. = 19'-9 5/8 (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
#6 BAR = 2'-7"
#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058

FOR ADDITIONAL PIER 7 DETAILS SEE SHEET S080 & S083

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: K.S. MCLEMORE	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 7

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

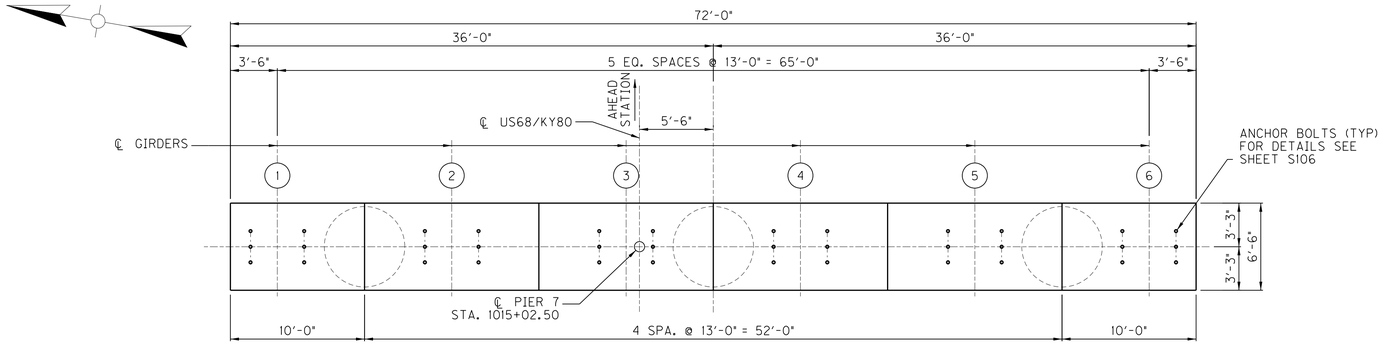
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

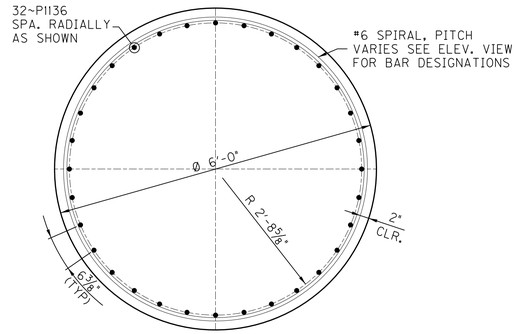
SHEET NO. S082

DRAWING NO. 24686

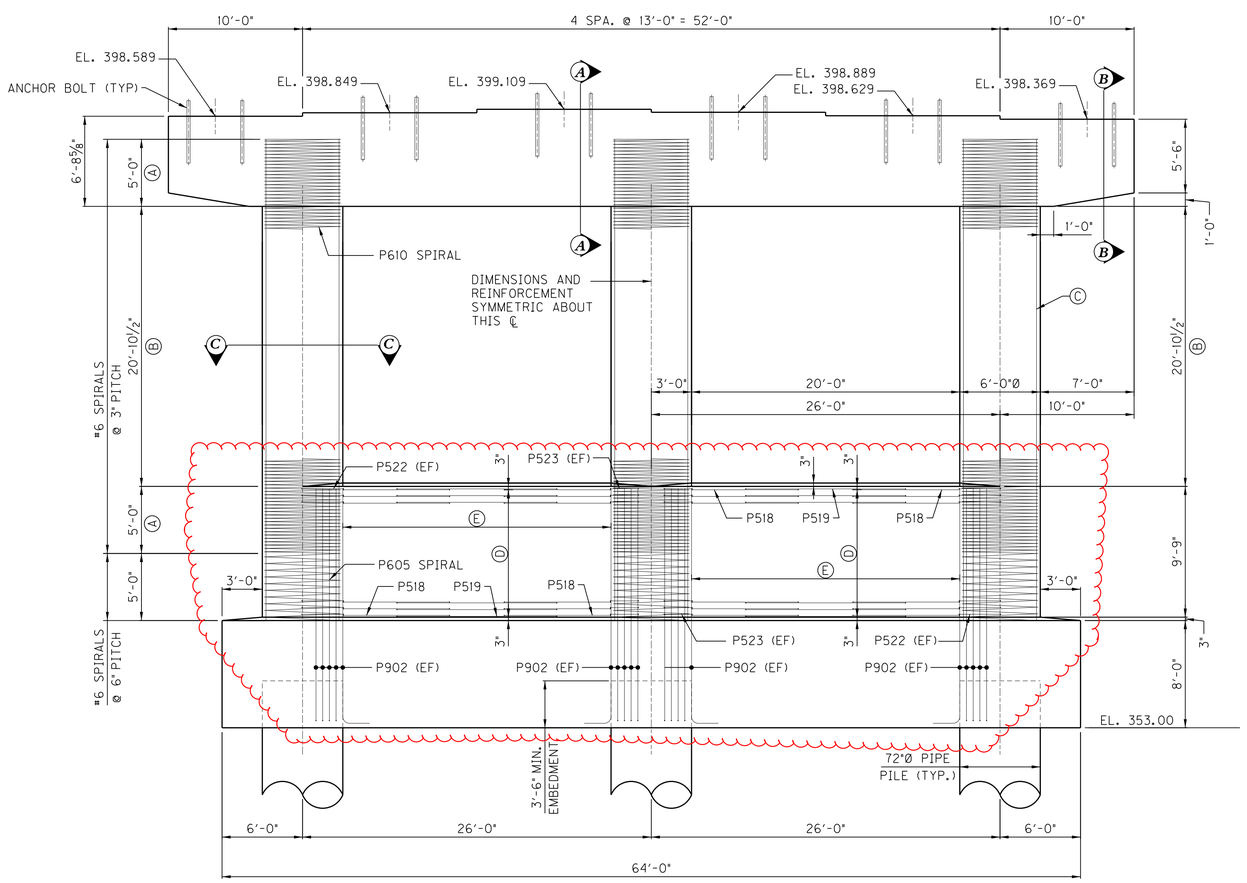
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PLAN OF CAP

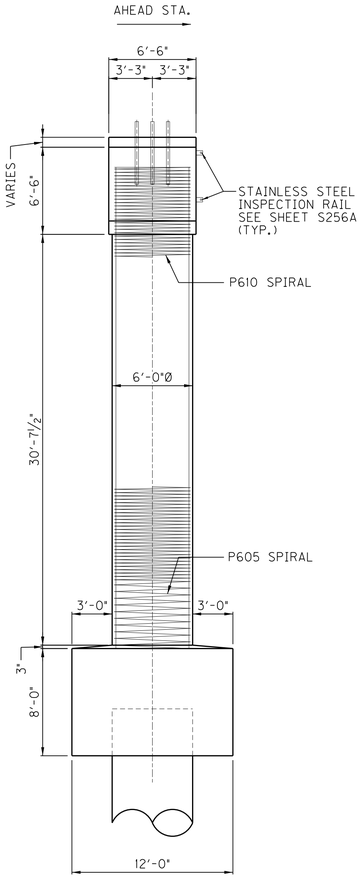


SECTION C–C



ELEVATION

(LOOKING AHEAD STATION)



SIDE ELEVATION

(LOOKING NORTH)

Ⓐ MIN. P610 SPIRAL EMBEDMENT

Ⓑ PLASTIC HINGE ZONE (SEE GENERAL NOTES ABOUT SPLICE RESTRICTIONS IN THIS ZONE)

Ⓒ P1136 (TYP. VERT COL. R/F)

Ⓓ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P20, 2~P522, AND 2~P523.

Ⓔ 50~P902 @ EQ. SPA. = 19'-9 5/8" (EA. FA. OF WEBWALL)

MIN. LAP SPLICES:

#5 BAR = 2'-2"
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#6 SPIRAL = USE WELDED LAP SPLICE SEE SHEET S058

FOR ADDITIONAL PIER 7 DETAILS SEE SHEET S080 & S083

3 ADDED/CHANGED NOTES & BARS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY: K.S. MCLEMORE — D.E. RUST
DETAILED BY: J.A. ROSE — D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** — CROSSING: **KENTUCKY LAKE**

PIER 7

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

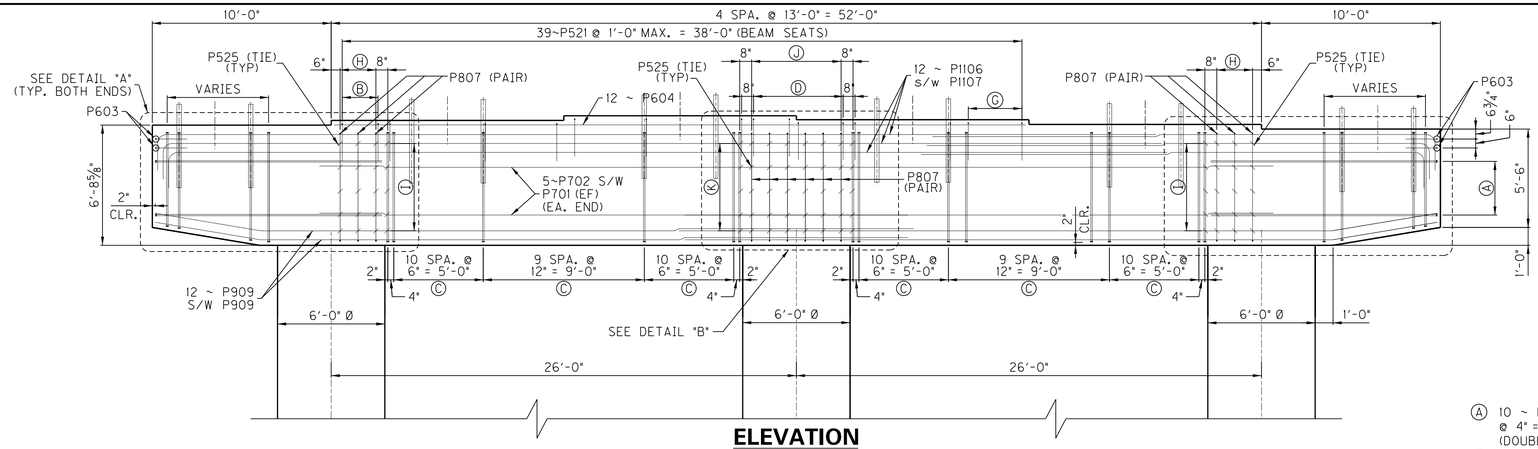
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S082

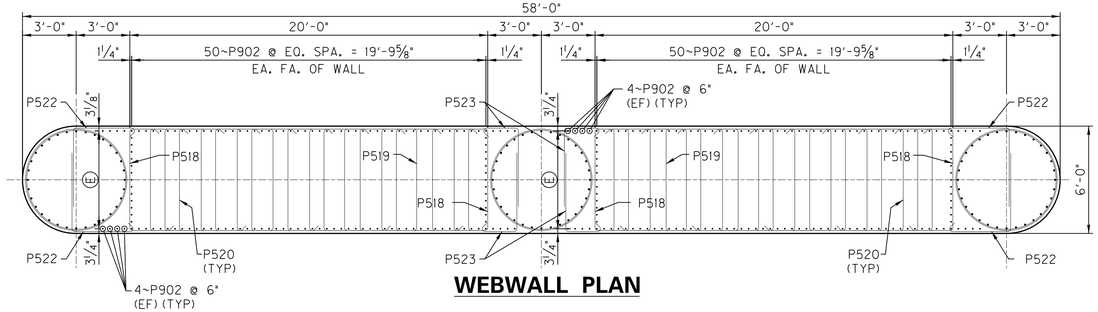
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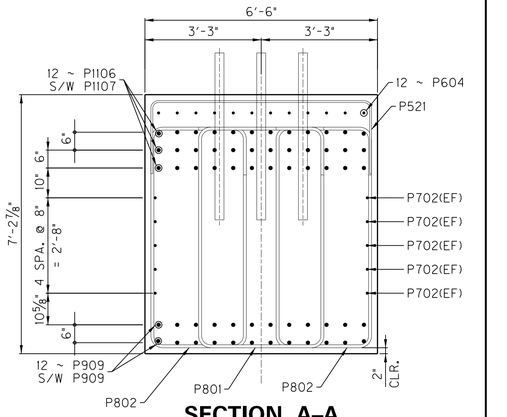


ELEVATION

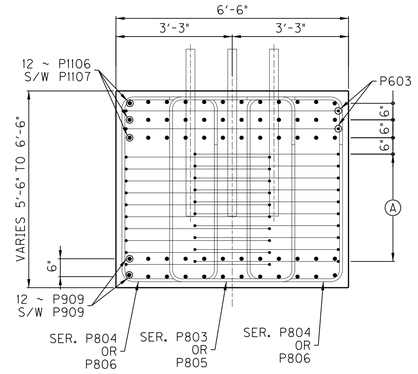
(LOOKING AHEAD STATION)



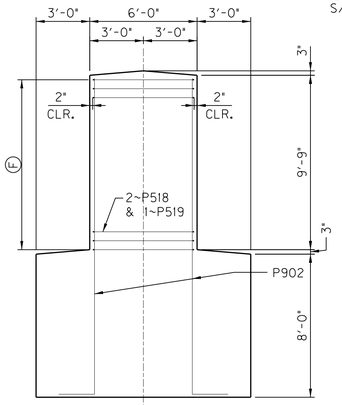
WEBWALL PLAN



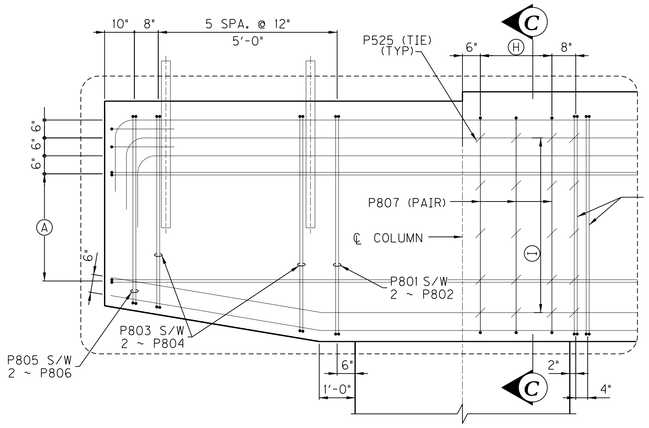
SECTION A–A



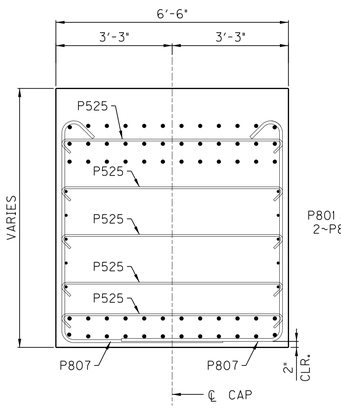
SECTION B–B



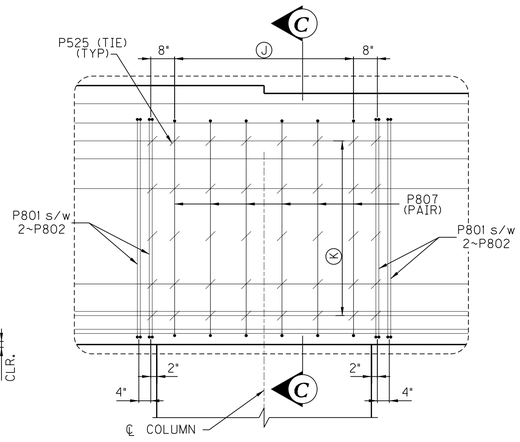
SECTION THRU WEBWALL



DETAIL "A"



SECTION "C"



DETAIL "B"

- (A) 10 ~ P701 S/W P701 @ 4" = 3'-0" (DOUBLE STIRRUPS)
- (B) 4 SPA. @ 6" = 2'-0", 5 ~ P521
- (C) P801 S/W 2 ~ P802 (TRIPLE STIRRUPS)
- (D) 10 SPA. @ 6" = 5'-0", 11 ~ P521
- (E) 13~P902 @ EQ. SPA. = 5'-5⅝"
- (F) 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520 (TIES WITH ALTERNATE ORIENTATION AS SHOWN IN PLAN), 2~P522, AND P523.
- (G) 3 SPA. @ 12" = 3'-0", 4 ~ P521
- (H) 3 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 2'-0"
- (I) 20~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN
- (J) 3 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 5'-0"
- (K) 40~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN

NOTE: CAP STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION & PLACEMENT OF CAST IN PLACE ANCHOR BOLTS.

NOTE: STAINLESS STEEL INSPECTION RAIL NOT SHOWN FOR CLARITY. SEE SHEET S256A FOR DETAILS.

MIN. LAP SPLICES:
#7 BAR = 3'-6"
#11 BAR = 12'-6"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	D.E. RUST
DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 7 DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

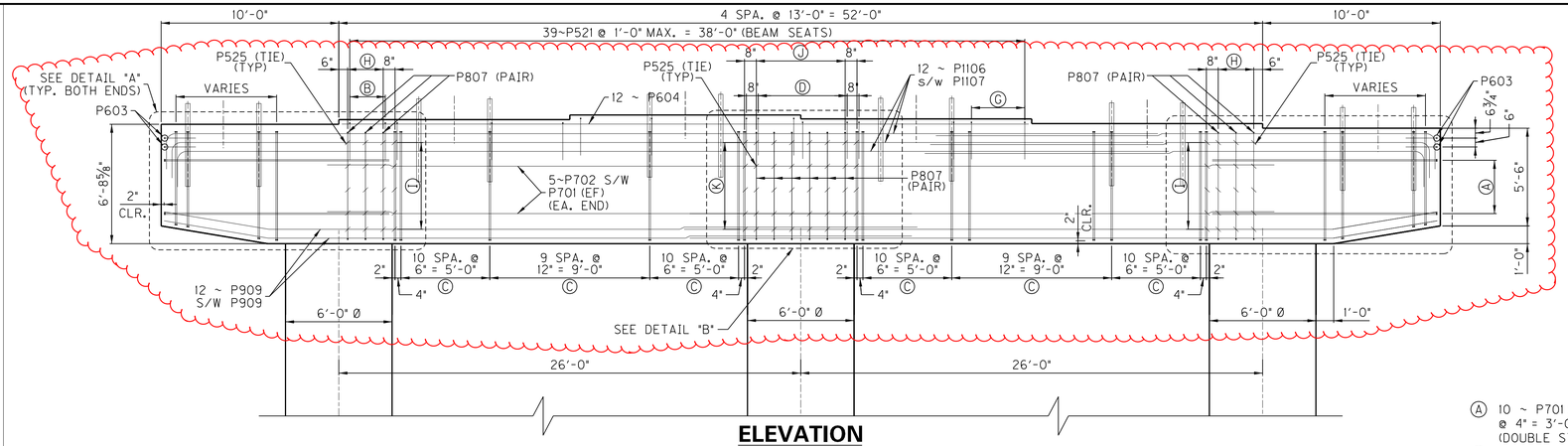
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S083

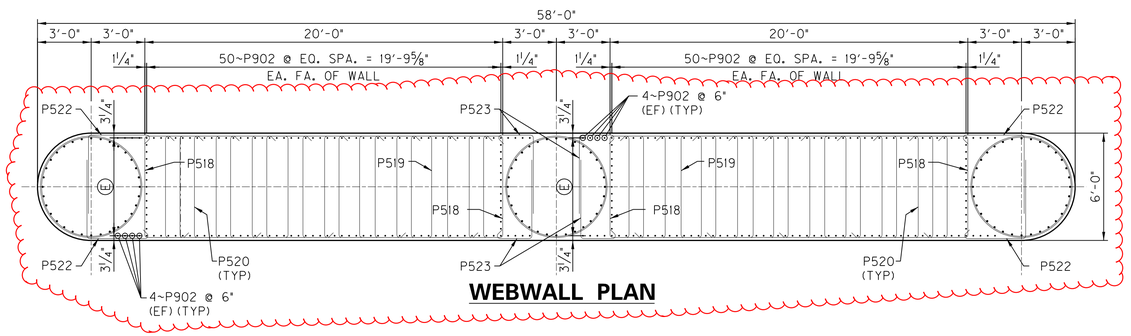
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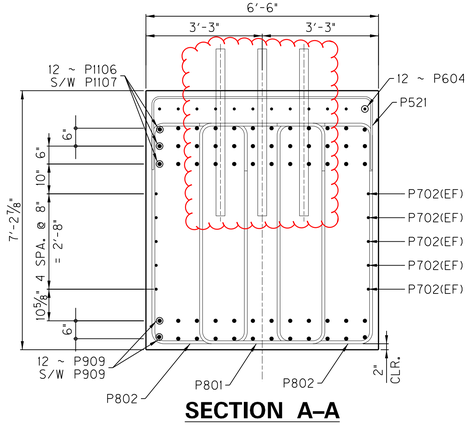


ELEVATION

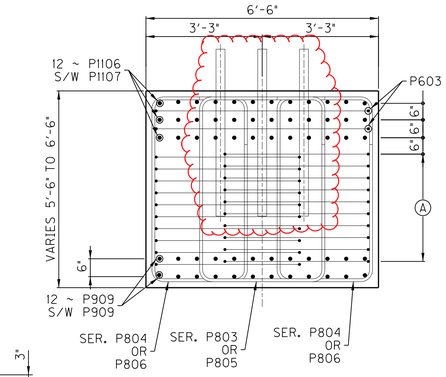
(LOOKING AHEAD STATION)



WEBWALL PLAN



SECTION A–A



SECTION B–B

Ⓐ 10 ~ P701 S/W P701 @ 4" = 3'-0" (DOUBLE STIRRUPS)

Ⓑ 4 SPA. @ 6" = 2'-0", 5 ~ P521

Ⓒ P801 S/W 2 ~ P802 (TRIPLE STIRRUPS)

Ⓓ 10 SPA. @ 6" = 5'-0", 11 ~ P521

Ⓔ 13~P902 @ EQ. SPA. = 5'-5⅝"

Ⓕ 20 ROWS @ 6" = 9'-6" EA. ROW CONSISTS OF 2~P518, 1~P519, 15~P520 (TIES WITH ALTERNATE ORIENTATION AS SHOWN IN PLAN), 2~P522, AND P523.

Ⓖ 3 SPA. @ 12" = 3'-0", 4 ~ P521

Ⓗ 3 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 2'-0"

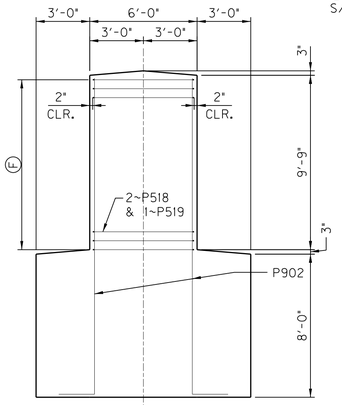
Ⓘ 20~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN

Ⓙ 6 PAIRS OF P807 @ 12" MAX. SPA. BETWEEN LONGITUDINAL COLUMN REINFORCEMENT = 5'-0"

Ⓚ 40~P525 TIED TO P702, P801, P807 AND SIDE FACE REINFORCEMENT AS SHOWN

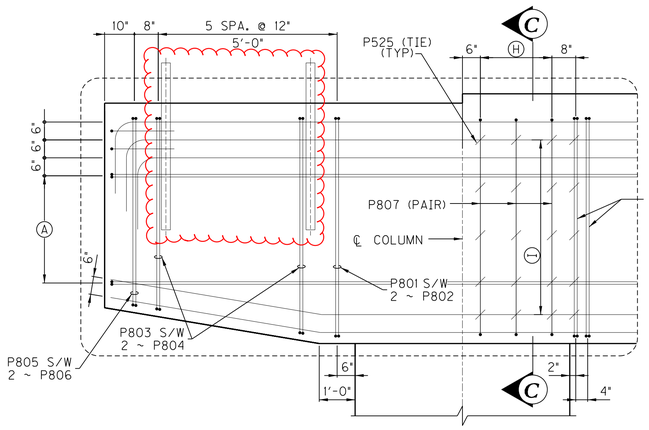
NOTE: CAP STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION & PLACEMENT OF CAST IN PLACE ANCHOR BOLTS.

NOTE: STAINLESS STEEL INSPECTION RAIL NOT SHOWN FOR CLARITY. SEE SHEET S256A FOR DETAILS.

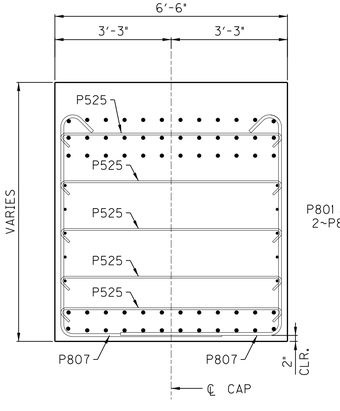


SECTION THRU WEBWALL

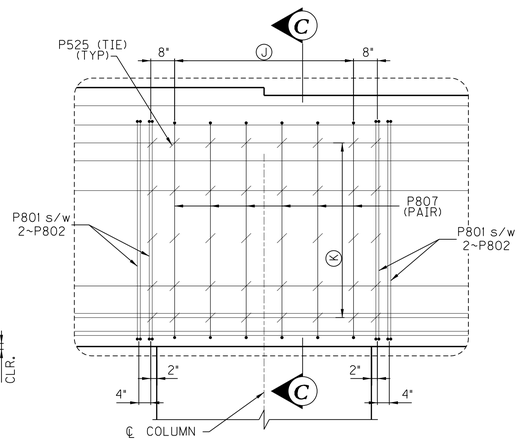
MIN. LAP SPLICES:
#7 BAR = 3'-6"
#11 BAR = 12'-6"



DETAIL "A"



SECTION "C"



DETAIL "B"

3	ADDED/CHANGED NOTES & BARS — 12/09/13
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DETAILED BY: J.A. ROSE	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** — CROSSING: **KENTUCKY LAKE**

PIER 7 DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S083

DRAWING NO.: **24686**

...\24686_S083_PIER 7 DETAILS.dgn
FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCT\FINAL DESIGN\KY LAKE\DGN\FINAL_PLANS\KYTC_STRUCT_20.IFBASE.DGN
USER: tim-e
DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443
12:47:42 PM
12/6/2013

BILL OF REINFORCEMENT – PIERS

MARK	TYPE	NUMBER PIER 6	PIER 7	PIER 8	PIER 9	SIZE	LENGTH	LOCATION	A	B	C	D
P401	34	0	0	330	130	# 4	6'-8"	WALL PIER	6"	5'-8"	6"	
P501	NOT	USED										
P502	NOT	USED										
P503	NOT	USED										
P504	34	1312	630	630	630	# 5	8'-7"	PILE CAP	6"	7'-7 1/4"	6"	
P505	34	0	294	294	294	# 5	12'-7"	PILE CAP	6"	11'-7 1/4"	6"	
P506	2	0	0	66	26	# 5	14'-4"	WALL PIER	2'-9"	8'-9 3/4"	5'-8"	
P507	33	0	0	66	26	# 5	52'-5"	WALL PIER	20'-0"	5'-8"	6 1/4"	
P508	2	0	0	66	26	# 5	38'-2"	WALL PIER	16'-3"	5'-8"		
P509	NOT	USED										
P510	2	0	0	22	22	# 5	17'-2"	WALL PIER	5'-6"	6'-2"		
P511	33	0	0	22	22	# 5	53'-5"	WALL PIER	20'-0"	6'-2"	6 1/4"	
P512	2	0	0	22	22	# 5	38'-8"	WALL PIER	16'-3"	6'-2"		
P513	NOT	USED										
P514	2	0	0	19	19	# 5	18'-6"	WALL PIER CAP	6'-2"	6'-2"		
P515	2	0	0	13	13	# 5	19'-6"	WALL PIER CAP	6'-7 3/4"	6'-2"		
P516	2	0	0	13	13	# 5	20'-0"	WALL PIER CAP	6'-11"	6'-2"		
P517	2	0	0	13	13	# 5	19'-7"	WALL PIER CAP	6'-8 3/4"	6'-2"		
P518	33	80	80	0	0	# 5	28'-4"	WEBWALL	8'-0"	5'-8"	6"	
P519	33	40	40	0	0	# 5	36'-4"	WEBWALL	12'-0"	5'-8"	6"	
P520	34	600	600	0	0	# 5	6'-8"	WEBWALL	6"	5'-8"	6"	
P521	2	39	39	0	0	# 5	10'-6"	PIER CAP	2'-2"	6'-2"		
P522	34	80	80	0	0	# 5	7'-6"	WEBWALL	6"	3'-6"	3'-6"	
P523	34	80	80	0	0	# 5	6'-6"	WEBWALL	6"	2'-6"	3'-6"	
P524	NOT	USED										
P525	34	140	80	0	0	# 5	7'-2"	T-JOINT BARS	6"	6'-2"	6"	
P601	8	0	0	24	24	# 6	16'-0"	WALL PIER CAP	10'-0"	6'-0"	1'-0"	5'-10"
P602	18	5	3	3	3	# 6	614'-0"	SPLICE CAGE	16'-9"	6"	5'-4"	
P603	2	4	4	4	4	# 6	9'-3"	PIER CAP	1'-9 1/2"	6'-0"		
P604	STR.	12	12	12	12	# 6	38'-8"	PIER CAP				
P605	18	3	3	0	0	# 6	232'-3"	COLUMNS	5'-0"	0'-6"	5'-8"	
P606	18	0	0	0	0	# 6	2098'-3"	COLUMNS	28'-8"	0'-3"	5'-8"	
P607	18	6	0	0	0	# 6	1123'-3"	COLUMNS	15'-0"	0'-3"	5'-8"	
P608	18	0	0	0	0	# 6	518'-4"	COLUMNS	13'-0 3/8"	0'-6"	5'-8"	
P609	18	3	0	0	0	# 6	572'-0"	COLUMNS	14'-6 3/8"	0'-6"	5'-8"	
P610	18	0	3	0	0	# 6	2253'-8"	COLUMNS	30'-10 1/2"	0'-3"	5'-8"	
P701	2	40	40	40	40	# 7	29'-4"	PIER CAP	12'-8"	4'-0"		
P702	STR.	10	10	0	0	# 7	53'-4"	PIER CAP				
P703	STR.	0	16	16	16	# 7	52'-0"	PILE CAP				
P704	22	60	56	56	56	# 7	16'-0"	PILE CAP	7'-6"	2'-9"	5'-9"	
P705	33	0	42	42	42	# 7	39'-6"	PILE CAP	11'-6"	7'-6"	9"	
P706	6	38	0	0	0	# 7	26'-6"	PILE CAP SLOPES	6'-0"	10'-3"	10 1/4"	10'-3 5/8"
P707	STR.	82	0	0	0	# 7	11'-3"	PILE CAP SLOPES				
P708	STR.	43	0	0	0	# 7	37'-0"	PILE CAP				
P801(S)	14	66	66	2	2	# 8	20'-6"	PIER CAP	6'-2"	3'-6"		
P802(S)	14	132	132	4	4	# 8	18'-10"	PIER CAP	6'-2"	2'-8"		
SERIES P803(S)	14	2 SETS	2 SETS	2 SETS	2 SETS	# 8	98'-4"	PIER CAP	5'-5" TO 6'-1"	3'-6"		
SERIES P804(S)	14	4 SETS	4 SETS	4 SETS	4 SETS	# 8	90'-0"	PIER CAP	5'-5" TO 6'-1"	2'-8"		
P805(S)	14	2	2	2	2	# 8	18'-6"	PIER CAP	5'-2"	3'-6"		
P806(S)	14	4	4	4	4	# 8	16'-10"	PIER CAP	5'-2"	2'-8"		
P807(S)	34	48	24	0	0	# 8	11'-6"	T-JOINT BARS	10"	6'-2"	4'-6"	
P901	5	0	0	0	0	# 9	29'-11"	WALL PIER	28'-4"	1'-7"		
P902	5	284	284	0	0	# 9	19'-0"	WEBWALL	17'-5"	1'-7"		
P903	NOT	USED										
P904	NOT	USED										
P905	NOT	USED										
P906	NOT	USED										
P907	5	0	0	248	0	# 9	32'-1"	WALL PIER	30'-6"	1'-7"		
P908	5	0	0	0	248	# 9	21'-10"	WALL PIER	20'-3"	1'-7"		
P909	8	48	48	0	0	# 9	42'-5"	PIER CAP	36'-6"	5'-11"	1'-0"	5'-10"

BILL OF REINFORCEMENT – PIERS

MARK	TYPE	NUMBER PIER 6	PIER 7	PIER 8	PIER 9	SIZE	LENGTH	LOCATION	A	B	C	D
P1101	5	0	16	16	16	# 11	54'-0"	PILE CAP	2'-0"	52'-0"		
P1102	5	0	16	16	16	# 11	23'-0"	PILE CAP	2'-0"	21'-0"		
P1103	2	0	20	20	20	# 11	23'-6"	PILE CAP	2'-0"	19'-6"		
P1104	NOT	USED										
P1105	5	0	0	48	48	# 11	18'-7"	WALL PIER CAP	16'-7"	2'-0"		
P1106	5	36	36	12	12	# 11	60'-0"	PIER CAP	55'-10"	4'-2"		
P1107	5	36	36	12	12	# 11	33'-8"	PIER CAP	29'-6"	4'-2"		
P1108	NOT	USED										
P1109	5	44	0	0	0	# 11	39'-0"	PILE CAP	2'-0"	37'-0"		
P1110	5	44	0	0	0	# 11	38'-0"	PILE CAP	2'-0"	36'-0"		
P1111	NOT	USED										
P1112	NOT	USED										
P1113	2	44	0	0	0	# 11	41'-0"	PILE CAP	2'-0"	37'-0"		
P1114	2	44	0	0	0	# 11	32'-9"	PILE CAP	2'-0"	28'-9"		
P1115	2	128	0	0	0	# 11	30'-6"	PILE CAP	2'-0"	26'-6"		
P1116	2	4	0	0	0	# 11	27'-7"	PILE CAP	2'-0"	23'-7"		
P1117	2	4	0	0	0	# 11	27'-1"	PILE CAP	2'-0"	23'-1"		
P1118	2	4	0	0	0	# 11	26'-6"	PILE CAP	2'-0"	22'-6"		
P1119	2	4	0	0	0	# 11	25'-10"	PILE CAP	2'-0"	21'-10"		
P1120	2	4	0	0	0	# 11	25'-1"	PILE CAP	2'-0"	21'-1"		
P1121	2	4	0	0	0	# 11	24'-4"	PILE CAP	2'-0"	20'-4"		
P1122	2	4	0	0	0	# 11	23'-5"	PILE CAP	2'-0"	19'-5"		
P1123	2	4	0	0	0	# 11	22'-5"	PILE CAP	2'-0"	18'-5"		
P1124	2	4	0	0	0	# 11	21'-4"	PILE CAP	2'-0"	17'-4"		
P1125	2	4	0	0	0	# 11	20'-2"	PILE CAP	2'-0"	16'-2"		
P1126	2	4	0	0	0	# 11	18'-9"	PILE CAP	2'-0"	14'-9"		
P1127	2	4	0	0	0	# 11	17'-3"	PILE CAP	2'-0"	13'-3"		
P1128	2	4	0	0	0	# 11	15'-2"	PILE CAP	2'-0"	11'-2"		
P1129	2	4	0	0	0	# 11	12'-9"	PILE CAP	2'-0"	8'-9"		
P1130	2	44	0	0	0	# 11	14'-3"	PILE CAP	2'-0"	10'-3"		
P1131	2	44	0	0	0	# 11	13'-0"	PILE CAP	2'-0"	9'-0"		
P1132	STR.	0	0	0	0	# 11	33'-8"	COLUMNS				
P1133	NOT	USED										
P1134	STR.	0	0	0	0	# 11	27'-3"	COLUMNS				
P1135	STR.	0	0	0	0	# 11	20'-9"	COLUMNS				
P1136	STR.	0	96	0	0	# 11	35'-10"	COLUMNS				
P1401	STR.	310	186	186	186	# 14	16'-9"	SPLICE CAGE				
P1402	10	0	16	16	16	# 14	39'-10"	PILE CAP	11'-0"	17'-10"	11'-6"	
P1403	STR.	186	0	0	0	# 14	27'-3"	COLUMNS				
P1404	STR.	186	0	0	0	# 14	22'-3"	COLUMNS				
P1801	10	0	16	16	16	# 18	38'-0"	PILE CAP	13'-0"	12'-0"	7'-10"	
P1802	STR.	0	16	16	16	# 18	26'-0"	PILE CAP				
P1803	10	56	0	0	0	# 18	26'-10"	PILE CAP	7'-6"	11'-9 3/8"	7'-6"	
P1804	10	28	0	0	0	# 18	42'-4"	PILE CAP	15'-3"	11'-9 3/8"	7'-6"	
P1805	10	16	0	0	0	# 18	29'-2"	PILE CAP	7'-6"	14'-1 1/8"	9'-0"	

NOTES:

1. FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.
2. FOR REINFORCEMENT DESIGNATIONS, SEE GENERAL NOTES SHEETS S004-S006.
3. FOR SPECIAL NOTES ON SPIRAL REINFORCEMENT SEE SHEET S058.

REVISION	DATE
3. ADDED/CHANGED DIMENSIONS & BARS	12/09/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: D.E. RUST | K.S. MCLEMORE
DETAILED BY: T.S. ELLIS | D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIERS 6 THRU 9 – BILL OF REINFORCEMENT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S087
DRAWING NO. 24686

...\24686_S087_PIER_BILL_REINF.dgn
FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCT\FINAL DESIGN\KY LAKE\DGN\FINAL_PLANS\KYTC_STRUCT_2D_IFBASE.DGN
USER: tim-e
DATE PLOTTED: July 27, 2011
12/9/2013 2:49:11 PM
E-SHEET NAME:
MicroStation v8.11.7.443

BILL OF REINFORCEMENT – PIERS

MARK	TYPE	NUMBER				SIZE	LENGTH	LOCATION	A	B	C	D
		PIER 6	PIER 7	PIER 8	PIER 9							
P401	34	0	0	330	130	# 4	6'-8"	WALL PIER	6"	5'-8"	6"	
P501	NOT	USED										
P502	NOT	USED										
P503	NOT	USED										
P504	34	1312	630	630	630	# 5	8'-7"	PILE CAP	6"	7'-7 1/4"	6"	
P505	34	0	294	294	294	# 5	12'-7"	PILE CAP	6"	11'-7 1/4"	6"	
P506	10	0	0	66	26	# 5	14'-4"	WALL PIER	2'-9"	8'-9 3/4"	5'-8"	
P507	33	0	0	66	26	# 5	52'-5"	WALL PIER	20'-0"	5'-8"	6 1/4"	
P508	2	0	0	66	26	# 5	38'-2"	WALL PIER	16'-3"	5'-8"		
P509	NOT	USED										
P510	2	0	0	22	22	# 5	17'-2"	WALL PIER	5'-6"	6'-2"		
P511	33	0	0	22	22	# 5	53'-5"	WALL PIER	20'-0"	6'-2"	6 1/4"	
P512	2	0	0	22	22	# 5	38'-8"	WALL PIER	16'-3"	6'-2"		
P513	NOT	USED										
P514	2	0	0	19	19	# 5	18'-6"	WALL PIER CAP	6'-2"	6'-2"		
P515	2	0	0	13	13	# 5	19'-6"	WALL PIER CAP	6'-7 3/4"	6'-2"		
P516	2	0	0	13	13	# 5	20'-0"	WALL PIER CAP	6'-11"	6'-2"		
P517	2	0	0	13	13	# 5	19'-7"	WALL PIER CAP	6'-8 3/4"	6'-2"		
P518	33	80	80	0	0	# 5	28'-4"	WEBWALL	8'-0"	5'-8"	6"	
P519	33	40	40	0	0	# 5	36'-4"	WEBWALL	12'-0"	5'-8"	6"	
P520	34	600	600	0	0	# 5	6'-8"	WEBWALL	6"	5'-8"	6"	
P521	2	39	39	0	0	# 5	10'-6"	PIER CAP	2'-2"	6'-2"		
P522	34	80	80	0	0	# 5	7'-6"	WEBWALL	6"	3'-6"	3'-6"	
P523	34	80	80	0	0	# 5	6'-6"	WEBWALL	6"	2'-6"	3'-6"	
P524	NOT	USED										
P525	34	140	80	0	0	# 5	7'-2"	T-JOINT BARS	6"	6'-2"	6"	
P601	8	0	0	24	24	# 6	16'-0"	WALL PIER CAP	10'-0"	6'-0"	1'-0"	5'-10"
P602	18	5	3	3	3	# 6	614'-0"	SPLICE CAGE	16'-9"	6"	5'-4"	
P603	2	4	4	4	4	# 6	9'-3"	PIER CAP	1'-9 1/2"	6'-0"		
P604	STR.	12	12	12	12	# 6	38'-8"	PIER CAP				
P605	18	3	3	0	0	# 6	232'-3"	COLUMNS	5'-0"	0'-6"	5'-8"	
P606	18	0	0	0	0	# 6	2098'-3"	COLUMNS	28'-8"	0'-3"	5'-8"	
P607	18	6	0	0	0	# 6	1123'-3"	COLUMNS	15'-0"	0'-3"	5'-8"	
P608	18	0	0	0	0	# 6	518'-4"	COLUMNS	13'-0 3/8"	0'-6"	5'-8"	
P609	18	3	0	0	0	# 6	572'-0"	COLUMNS	14'-6 3/8"	0'-6"	5'-8"	
P610	18	0	3	0	0	# 6	2253'-8"	COLUMNS	30'-10 1/2"	0'-3"	5'-8"	
P701	2	40	40	40	40	# 7	29'-4"	PIER CAP	12'-8"	4'-0"		
P702	STR.	10	10	0	0	# 7	53'-4"	PIER CAP				
P703	STR.	0	16	16	16	# 7	52'-0"	PILE CAP				
P704	22	60	56	56	56	# 7	16'-0"	PILE CAP	7'-6"	2'-9"	5'-9"	
P705	33	0	42	42	42	# 7	39'-6"	PILE CAP	11'-6"	7'-6"	9"	
P706	6	38	0	0	0	# 7	26'-6"	PILE CAP SLOPES	6'-0"	10'-3"	10 1/4"	10'-3 5/8"
P707	STR.	82	0	0	0	# 7	11'-3"	PILE CAP SLOPES				
P708	STR.	43	0	0	0	# 7	37'-0"	PILE CAP				
P801(S)	14	66	66	2	2	# 8	20'-6"	PIER CAP	6'-2"	3'-6"		
P802(S)	14	132	132	4	4	# 8	18'-10"	PIER CAP	6'-2"	2'-8"		
SERIES P803(S)	14	2 SETS	2 SETS	2 SETS	2 SETS	# 8	98'-4"	PIER CAP	5'-5" TO 6'-1"	3'-6"		
SERIES P804(S)	14	4 SETS	4 SETS	4 SETS	4 SETS	# 8	90'-0"	PIER CAP	5'-5" TO 6'-1"	2'-8"		
P805(S)	14	2	2	2	2	# 8	18'-6"	PIER CAP	5'-2"	3'-6"		
P806(S)	14	4	4	4	4	# 8	16'-10"	PIER CAP	5'-2"	2'-8"		
P807(S)	34	48	24	0	0	# 8	11'-6"	T-JOINT BARS	10"	6'-2"	4'-6"	
P901	5	0	0	0	0	# 9	29'-11"	WALL PIER	28'-4"	1'-7"		
P902	5	284	284	0	0	# 9	19'-0"	WEBWALL	17'-5"	1'-7"		
P903	NOT	USED										
P904	NOT	USED										
P905	NOT	USED										
P906	NOT	USED										
P907	5	0	0	248	0	# 9	32'-1"	WALL PIER	30'-6"	1'-7"		
P908	5	0	0	0	248	# 9	21'-10"	WALL PIER	20'-3"	1'-7"		
P909	8	48	48	0	0	# 9	42'-5"	PIER CAP	36'-6"	5'-11"	1'-0"	5'-10"

BILL OF REINFORCEMENT – PIERS

MARK	TYPE	NUMBER				SIZE	LENGTH	LOCATION	A	B	C	D
		PIER 6	PIER 7	PIER 8	PIER 9							
P1101	5	0	16	16	16	# 11	54'-0"	PILE CAP	2'-0"	52'-0"		
P1102	5	0	16	16	16	# 11	23'-0"	PILE CAP	2'-0"	21'-0"		
P1103	2	0	20	20	20	# 11	23'-6"	PILE CAP	2'-0"	19'-6"		
P1104	NOT	USED										
P1105	5	0	0	48	48	# 11	18'-7"	WALL PIER CAP	16'-7"	2'-0"		
P1106	5	36	36	12	12	# 11	60'-0"	PIER CAP	55'-10"	4'-2"		
P1107	5	36	36	12	12	# 11	33'-8"	PIER CAP	29'-6"	4'-2"		
P1108	NOT	USED										
P1109	5	44	0	0	0	# 11	39'-0"	PILE CAP	2'-0"	37'-0"		
P1110	5	44	0	0	0	# 11	38'-0"	PILE CAP	2'-0"	36'-0"		
P1111	NOT	USED										
P1112	NOT	USED										
P1113	2	44	0	0	0	# 11	41'-0"	PILE CAP	2'-0"	37'-0"		
P1114	2	44	0	0	0	# 11	32'-9"	PILE CAP	2'-0"	28'-9"		
P1115	2	128	0	0	0	# 11	30'-6"	PILE CAP	2'-0"	26'-6"		
P1116	2	4	0	0	0	# 11	27'-7"	PILE CAP	2'-0"	23'-7"		
P1117	2	4	0	0	0	# 11	27'-1"	PILE CAP	2'-0"	23'-1"		
P1118	2	4	0	0	0	# 11	26'-6"	PILE CAP	2'-0"	22'-6"		
P1119	2	4	0	0	0	# 11	25'-10"	PILE CAP	2'-0"	21'-10"		
P1120	2	4	0	0	0	# 11	25'-1"	PILE CAP	2'-0"	21'-1"		
P1121	2	4	0	0	0	# 11	24'-4"	PILE CAP	2'-0"	20'-4"		
P1122	2	4	0	0	0	# 11	23'-5"	PILE CAP	2'-0"	19'-5"		
P1123	2	4	0	0	0	# 11	22'-5"	PILE CAP	2'-0"	18'-5"		
P1124	2	4	0	0	0	# 11	21'-4"	PILE CAP	2'-0"	17'-4"		
P1125	2	4	0	0	0	# 11	20'-2"	PILE CAP	2'-0"	16'-2"		
P1126	2	4	0	0	0	# 11	18'-9"	PILE CAP	2'-0"	14'-9"		
P1127	2	4	0	0	0	# 11	17'-3"	PILE CAP	2'-0"	13'-3"		
P1128	2	4	0	0	0	# 11	15'-2"	PILE CAP	2'-0"	11'-2"		
P1129	2	4	0	0	0	# 11	12'-9"	PILE CAP	2'-0"	8'-9"		
P1130	2	44	0	0	0	# 11	14'-3"	PILE CAP	2'-0"	10'-3"		
P1131	2	44	0	0	0	# 11	13'-0"	PILE CAP	2'-0"	9'-0"		
P1132	STR.	0	0	0	0	# 11	33'-8"	COLUMNS				
P1133	NOT	USED										
P1134	STR.	0	0	0	0	# 11	27'-3"	COLUMNS				
P1135	STR.	0	0	0	0	# 11	20'-9"	COLUMNS				
P1136	STR.	0	96	0	0	# 11	35'-10"	COLUMNS				
P1401	STR.	310	186	186	186	# 14	16'-9"	SPLICE CAGE				
P1402	10	0	16	16	16	# 14	39'-10"	PILE CAP	11'-0"	17'-10"	11'-6"	
P1403	STR.	186	0	0	0	# 14	27'-3"	COLUMNS				
P1404	STR.	186	0	0	0	# 14	22'-3"	COLUMNS				
P1801	10	0	16	16	16	# 18	38'-0"	PILE CAP	13'-0"	12'-0"	7'-10"	
P1802	STR.	0	16	16	16	# 18	26'-0"	PILE CAP				
P1803	10	56	0	0	0	# 18	26'-10"	PILE CAP	7'-6"	11'-9 3/8"	7'-6"	
P1804	10	28	0	0	0	# 18	42'-4"	PILE CAP	15'-3"	11'-9 3/8"	7'-6"	
P1805	10	16	0	0	0	# 18	29'-2"	PILE CAP	7'-6"	14'-1 1/8"	9'-0"	

NOTES:

1. FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.
2. FOR REINFORCEMENT DESIGNATIONS, SEE GENERAL NOTES SHEETS S004-S006.
3. FOR SPECIAL NOTES ON SPIRAL REINFORCEMENT SEE SHEET S058.

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	K.S. MCLEMORE
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIERS 6 THRU 9 – BILL OF REINFORCEMENT

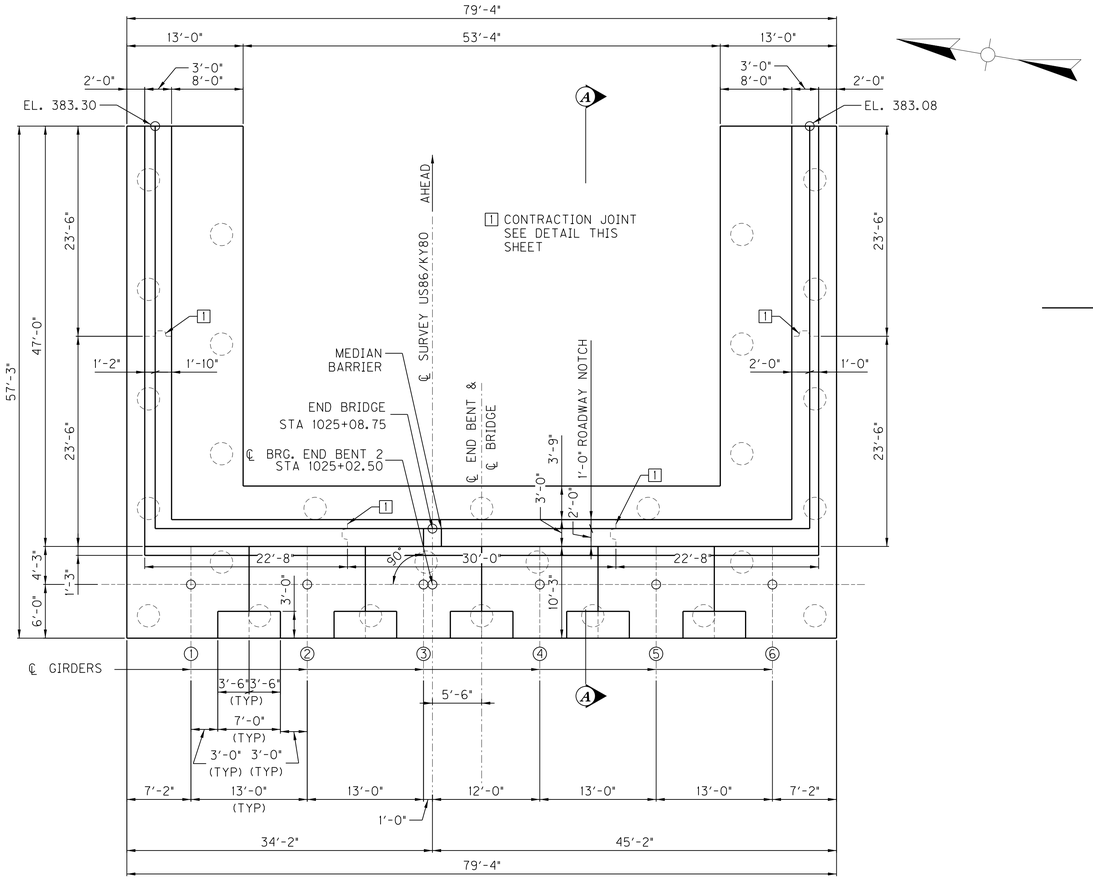
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

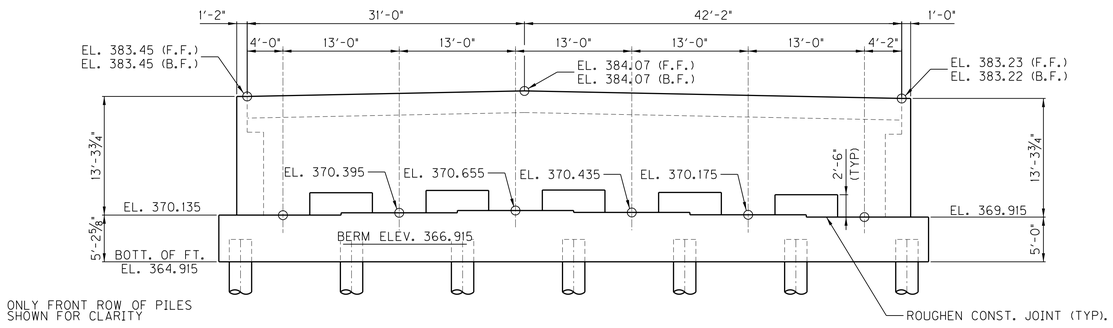
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DRAWING NO. 24686

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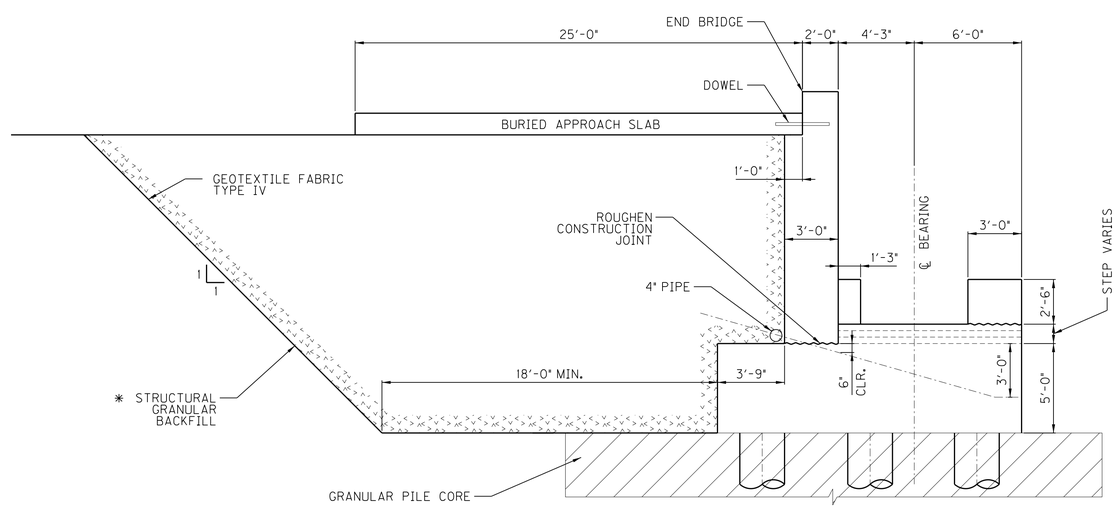


PLAN



ELEVATION

(LOOKING AHEAD STATION)

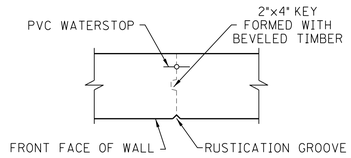


SECTION A–A

(THROUGH BACKWALL)

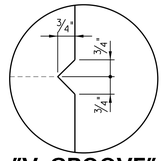
* 3'-0" WIDE DRAINAGE BLANKET SHALL BE PROVIDED ALONG THE FULL LENGTH OF THE WINGS FROM THE TOP OF THE FOOTING TO 2'-6" BELOW TOP OF WING WALL.

THE 18'-0" MIN. DIMENSION FOR STRUCTURAL GRANULAR BACKFILL IS NOT TYPICAL AND IS REQUIRED FOR THE DESIGNED EARTHQUAKE RESISTING SYSTEM AND SHALL NOT BE REDUCED.



CONTRACTION JOINT

(SPACED AT 30' INTERVALS)



"V-GROOVE" RUSTICATION

(N.T.S.)

ALL PREFORMED EXPANSION JOINT MATERIAL, CAULKING, WATERPROOFING MATERIALS, PIPE SLEEVE, PVC WATERSTOP, AND EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE JOINTS ARE INCIDENTAL TO CLASS "A" CONC.

NOTES:
SLOPE ABUTMENTS BETWEEN BEAM SEATS TO DRAIN.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: J.M. TOTTY	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

END BENT 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

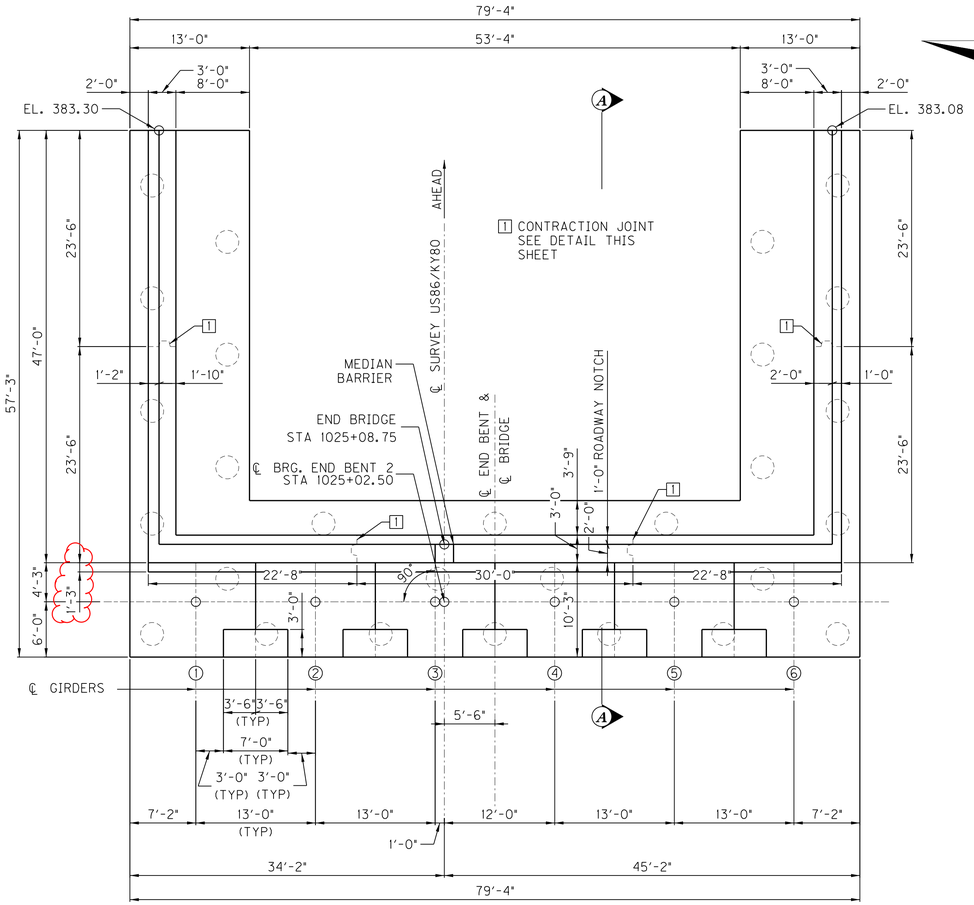
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

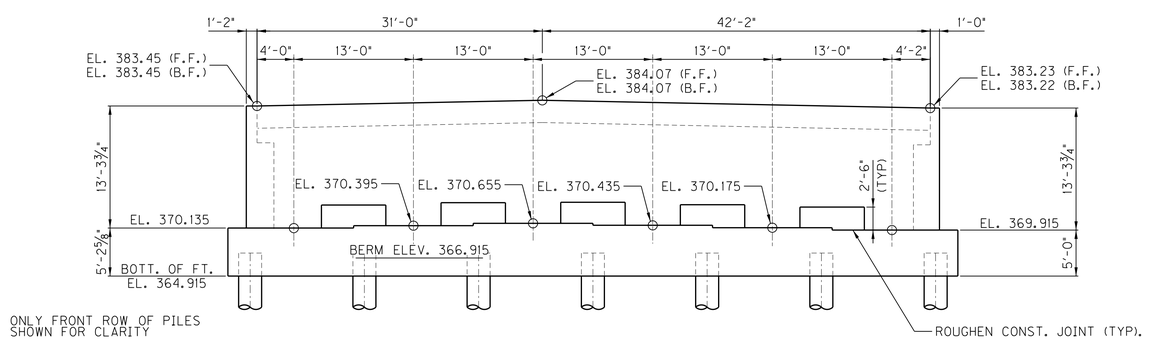
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DRAWING NO. **24686**

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:00:02 PM
E-SHEET NAME:
MicroStation v8.11.7.443

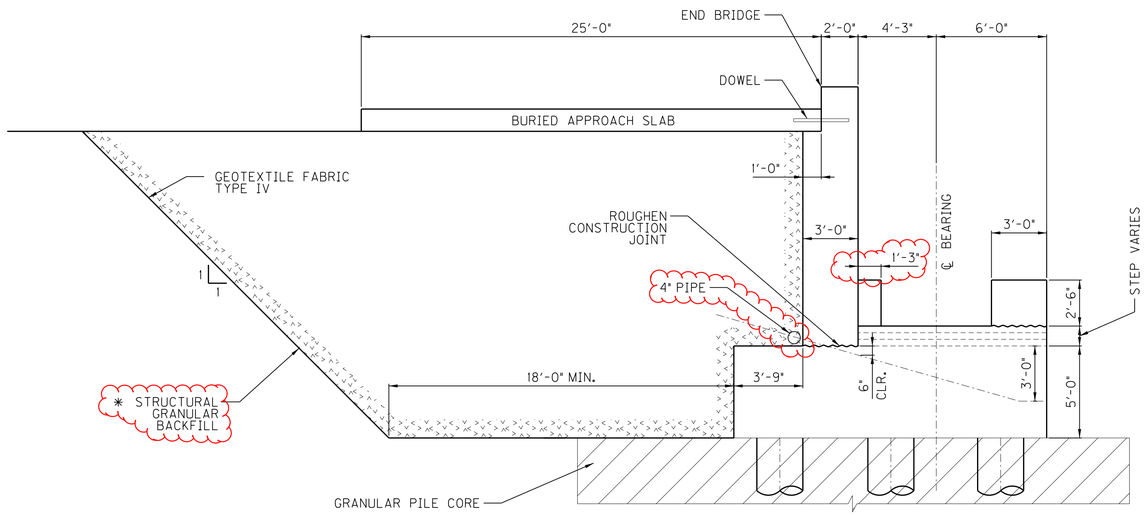


PLAN



ELEVATION

(LOOKING AHEAD STATION)

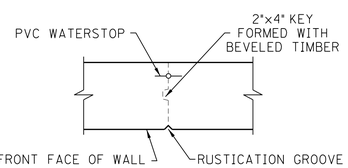


SECTION A–A

(THROUGH BACKWALL)

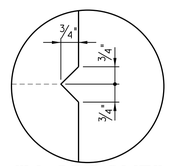
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CONTRACTION JOINT

(SPACED AT 30' INTERVALS)



"V-GROOVE" RUSTICATION

(N.T.S.)

ALL PREFORMED EXPANSION JOINT MATERIAL, CAULKING, WATERPROOFING MATERIALS, PIPE SLEEVE, PVC WATERSTOP, AND EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE JOINTS ARE INCIDENTAL TO CLASS "A" CONC.

NOTES:
SLOPE ABUTMENTS BETWEEN BEAM SEATS TO DRAIN.

2 CHANGED DIMENSIONS & NOTES	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: J.M. TOTTY	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

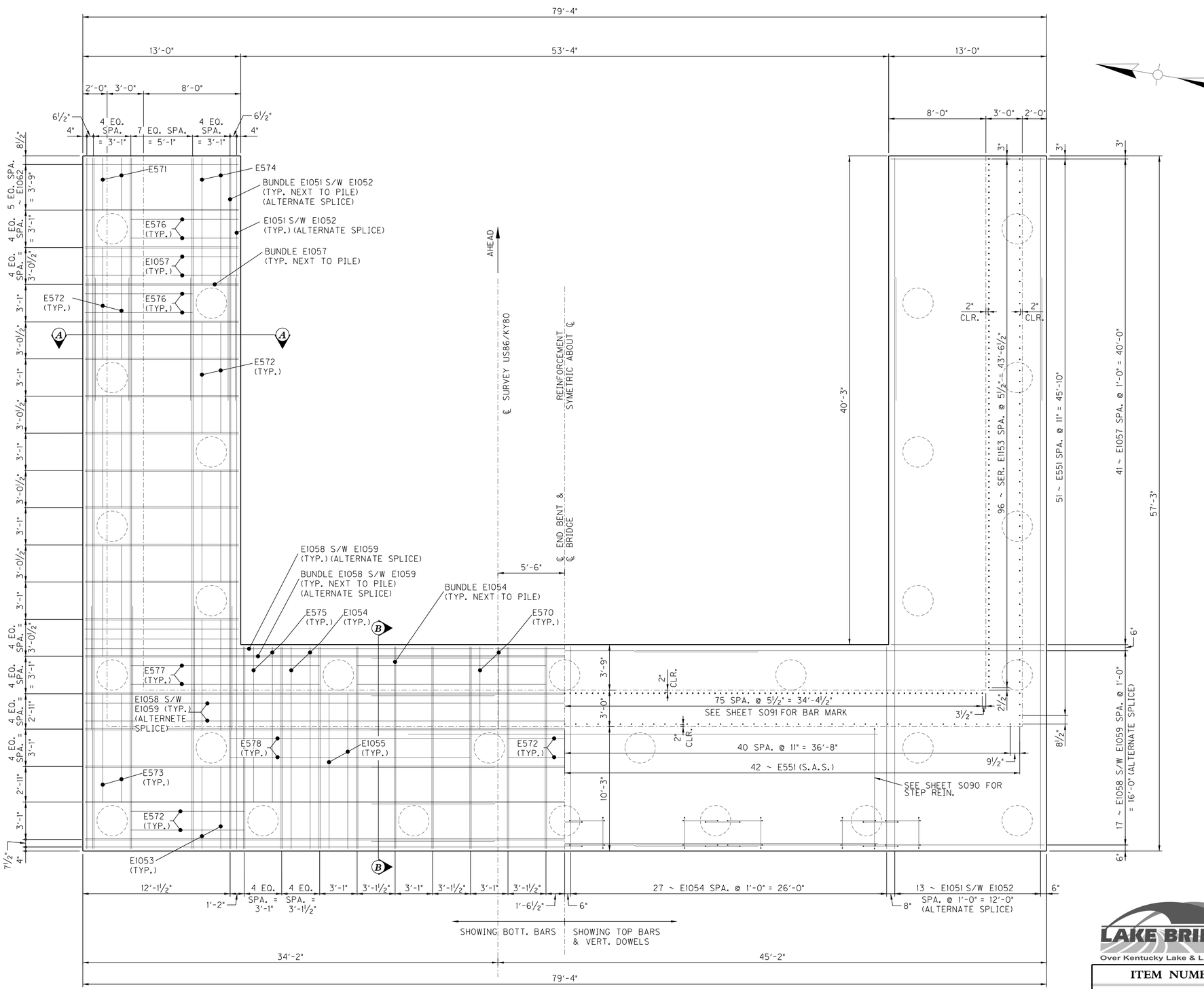
ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

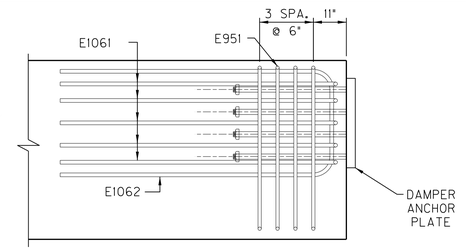
SHEET NO. S088

DRAWING NO. 24686

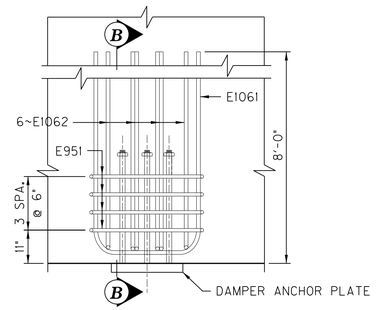
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DATE PLOTTED: July 27, 2011
11/27/2013 7:31:48 AM
E-SHEET NAME:
MicroStation v8.11.7.443



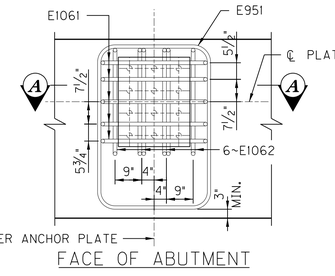
PLAN OF FOOTING



SECTION "B"



SECTION "A"



FACE OF ABUTMENT

DAMPER PLATE REINFORCEMENT

SHOWING ADDITIONAL REINFORCEMENT REQUIRED AT EACH DAMPER PLATE LOCATION

FOR ANCHOR PLATE DETAILS SEE SHT. S255

FOOTING STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION AND PLACEMENT OF DAMPER REINFORCEMENT AND ANCHOR BOLTS.

MIN. LAP SPLICES

"10 - 10'-1"

SEE SHEET S050 FOR FOOTING SECTIONS "A" & "B"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: J.A. ROSE	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

END BENT 2 – DETAILS

PREPARED BY: *PALMER ENGINEERING CO.*

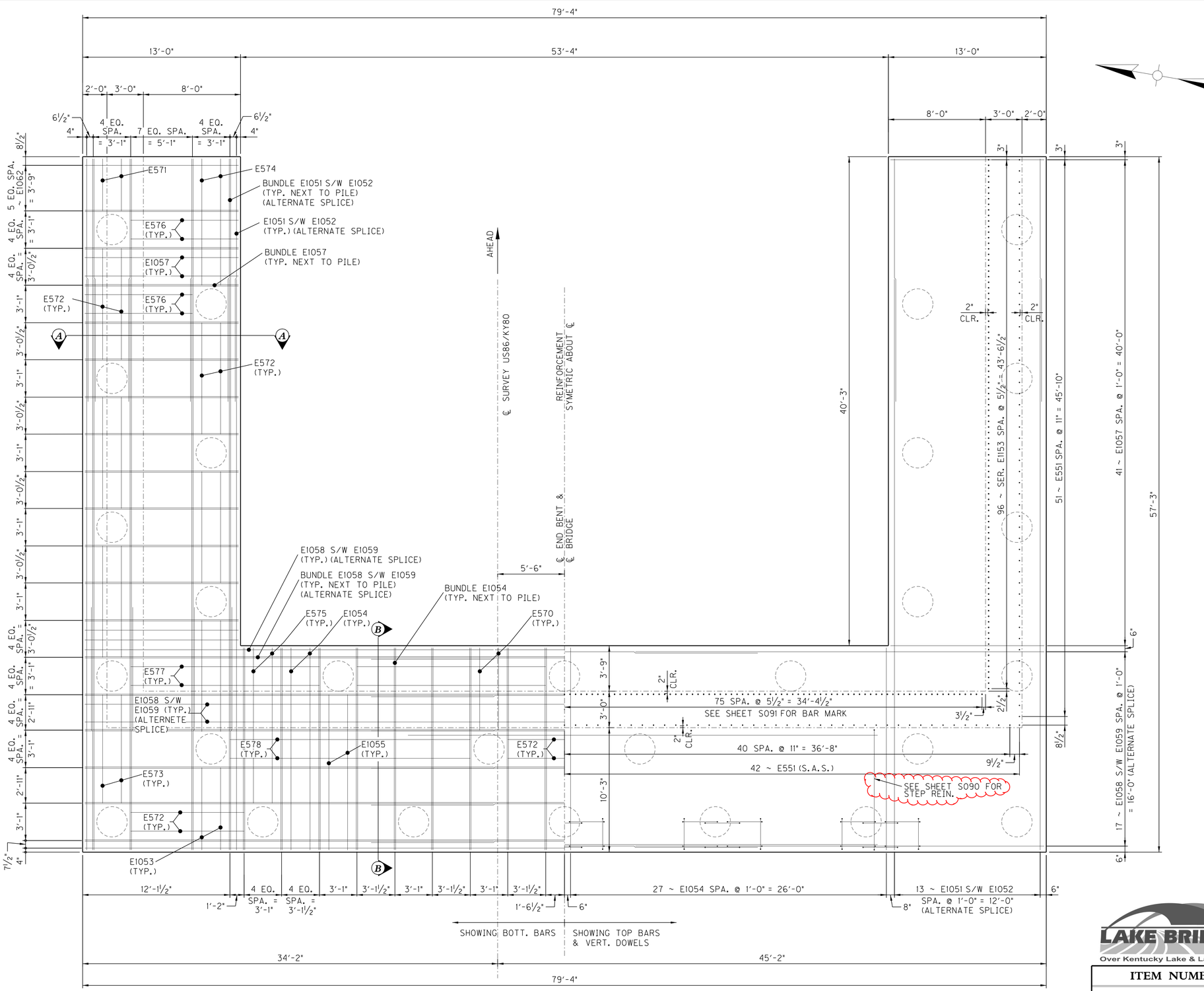
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DRAWING NO. 24686

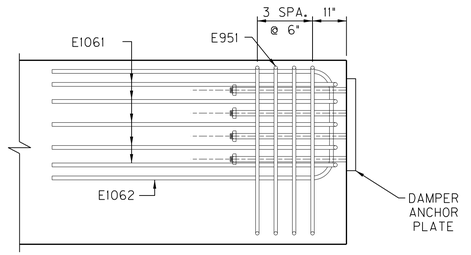
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

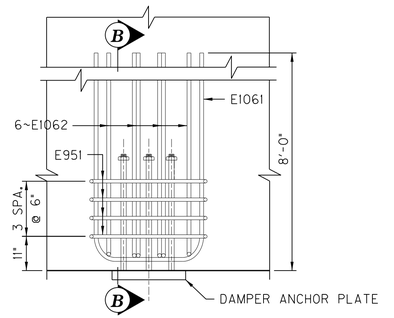
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MicroStation v8.11.7.443



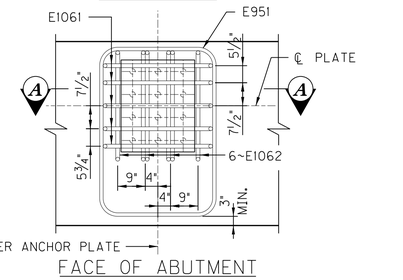
PLAN OF FOOTING



SECTION "B"



SECTION "A"



FACE OF ABUTMENT

DAMPER PLATE REINFORCEMENT

SHOWING ADDITIONAL REINFORCEMENT REQUIRED AT EACH DAMPER PLATE LOCATION

FOR ANCHOR PLATE DETAILS SEE SHT. S255

FOOTING STEEL MAY BE SHIFTED SLIGHTLY TO ACCOMMODATE LOCATION AND PLACEMENT OF DAMPER REINFORCEMENT AND ANCHOR BOLTS.

MIN. LAP SPLICES

#10 - 10'-1"

SEE SHEET S050 FOR FOOTING SECTIONS "A" & "B"

REVISION	DATE
3 CHANGED NOTES	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: J.A. ROSE	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

END BENT 2 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

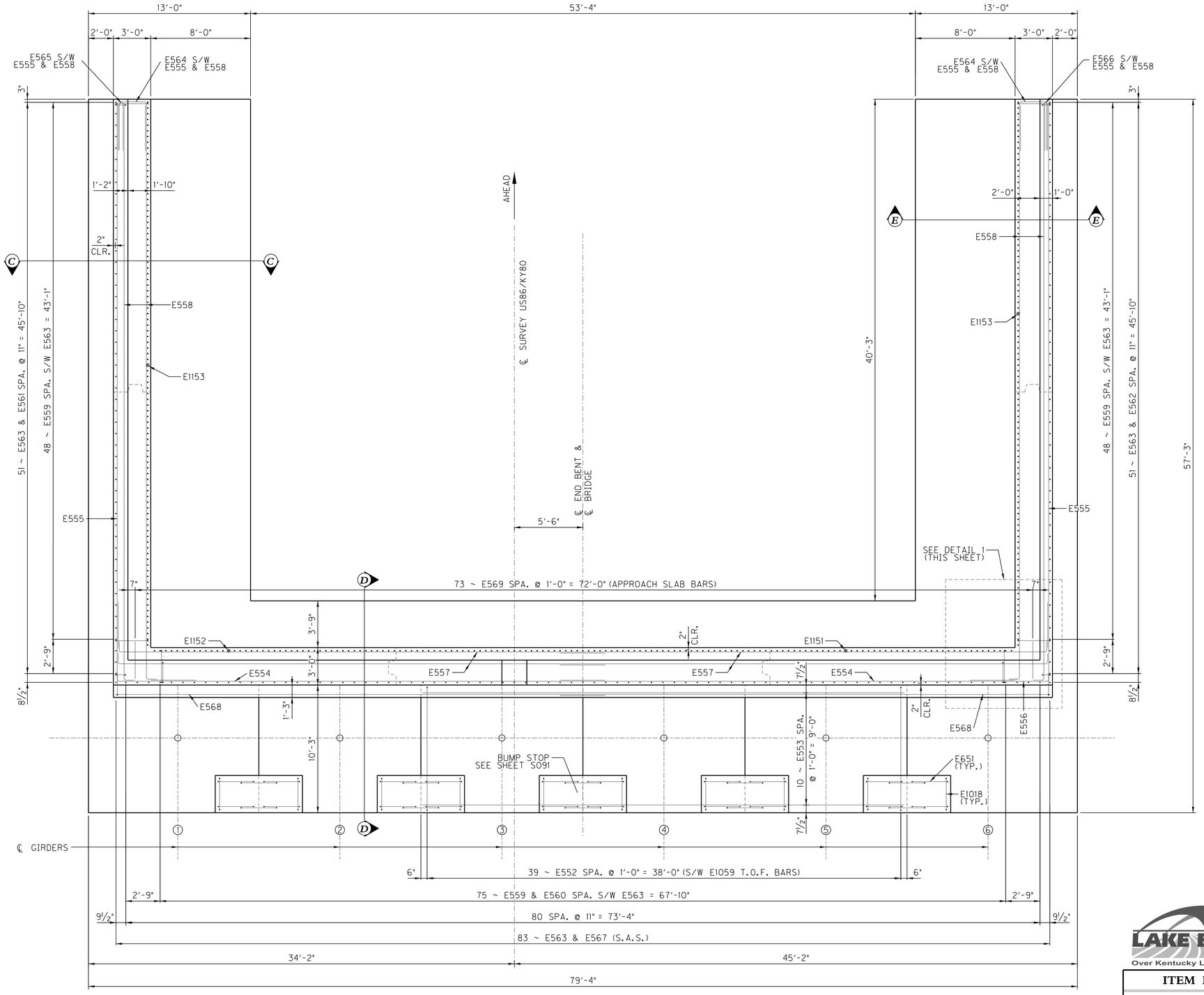
ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

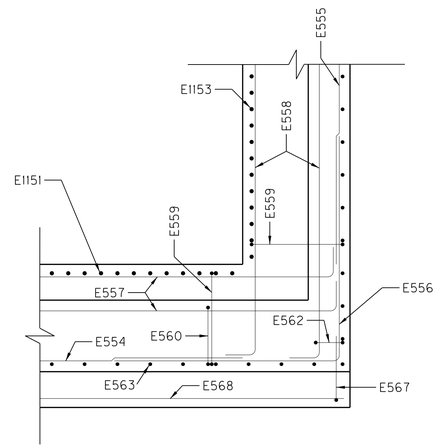
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DRAWING NO. 24686

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PLAN



DETAIL 1

MIN. LAP SPLICES
#5 - 3'-7"

SEE SHEET S093 FOR SECTION DETAILS

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 2 – DETAILS

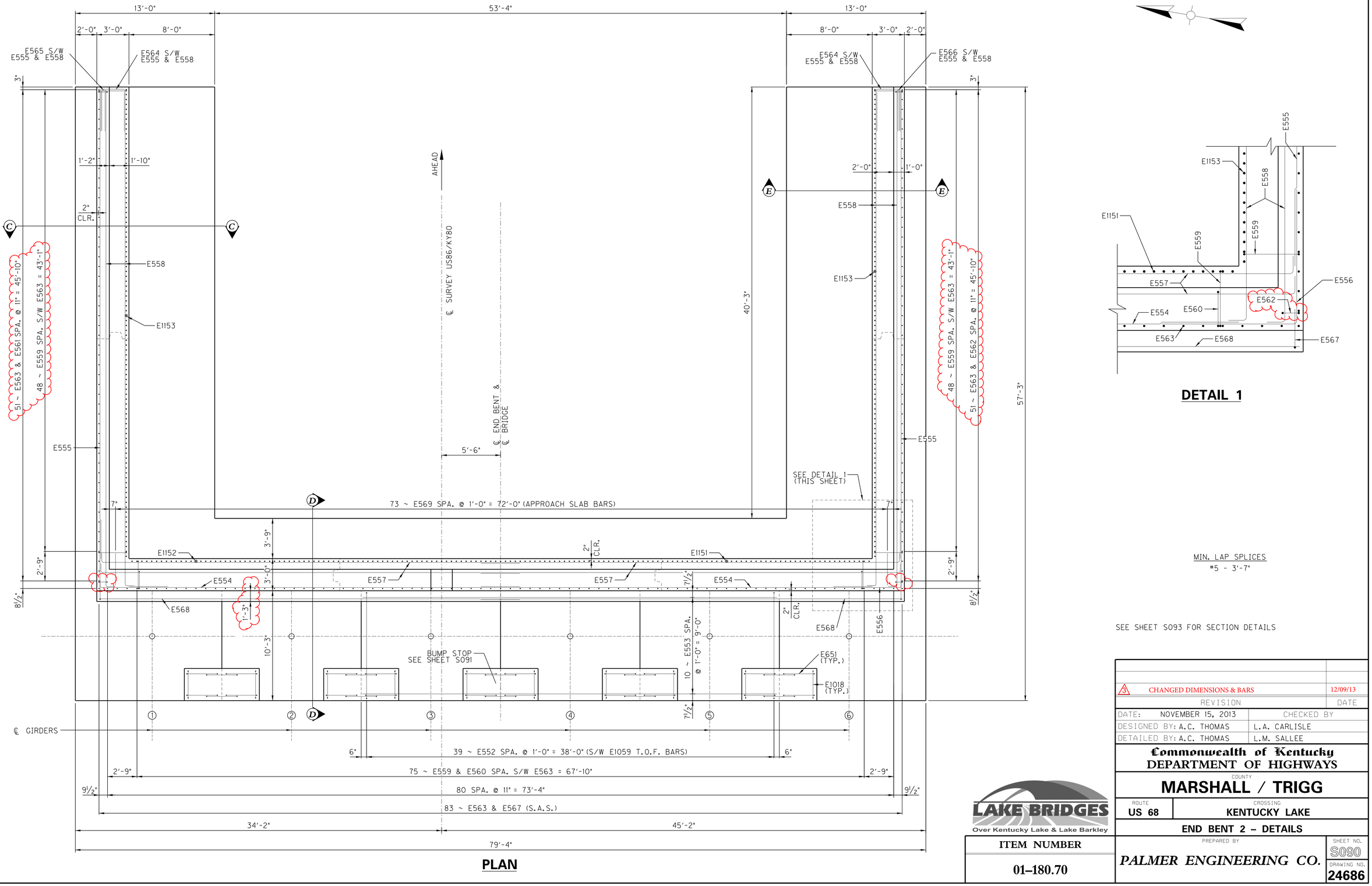
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S090
DRAWING NO. 24686

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FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCTYFINAL DESIGN\KY LAKE\DGN\ADDENDA\KYTC_STRUCT_2D_IFBASE.DGN
USER: tlm-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:03:09 PM
E-SHEET NAME:
MicroStation v8.11.7.443



PLAN

DETAIL 1

MIN. LAP SPLICES
#5 - 3'-7"

SEE SHEET S093 FOR SECTION DETAILS

3 CHANGED DIMENSIONS & BARS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

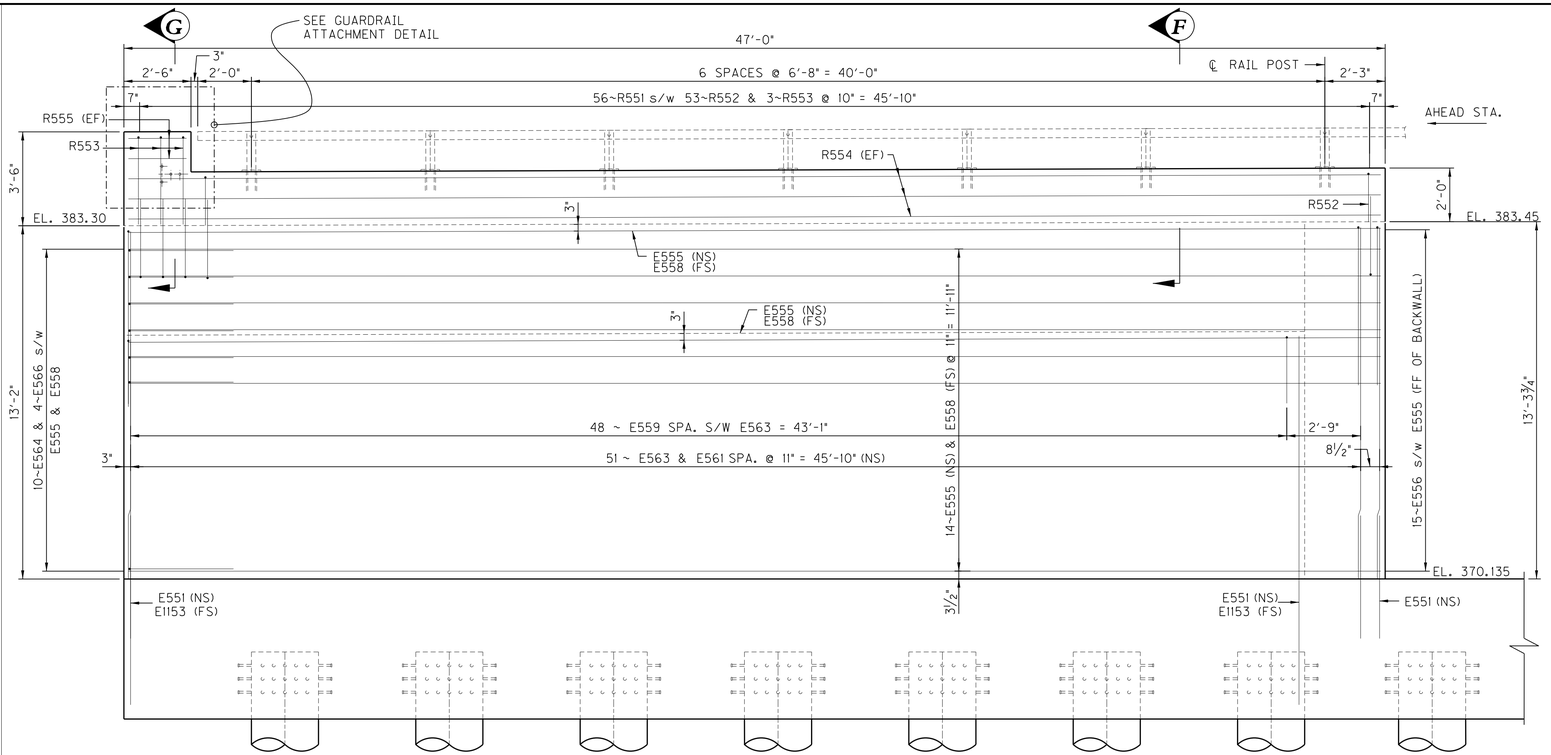
ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 2 – DETAILS

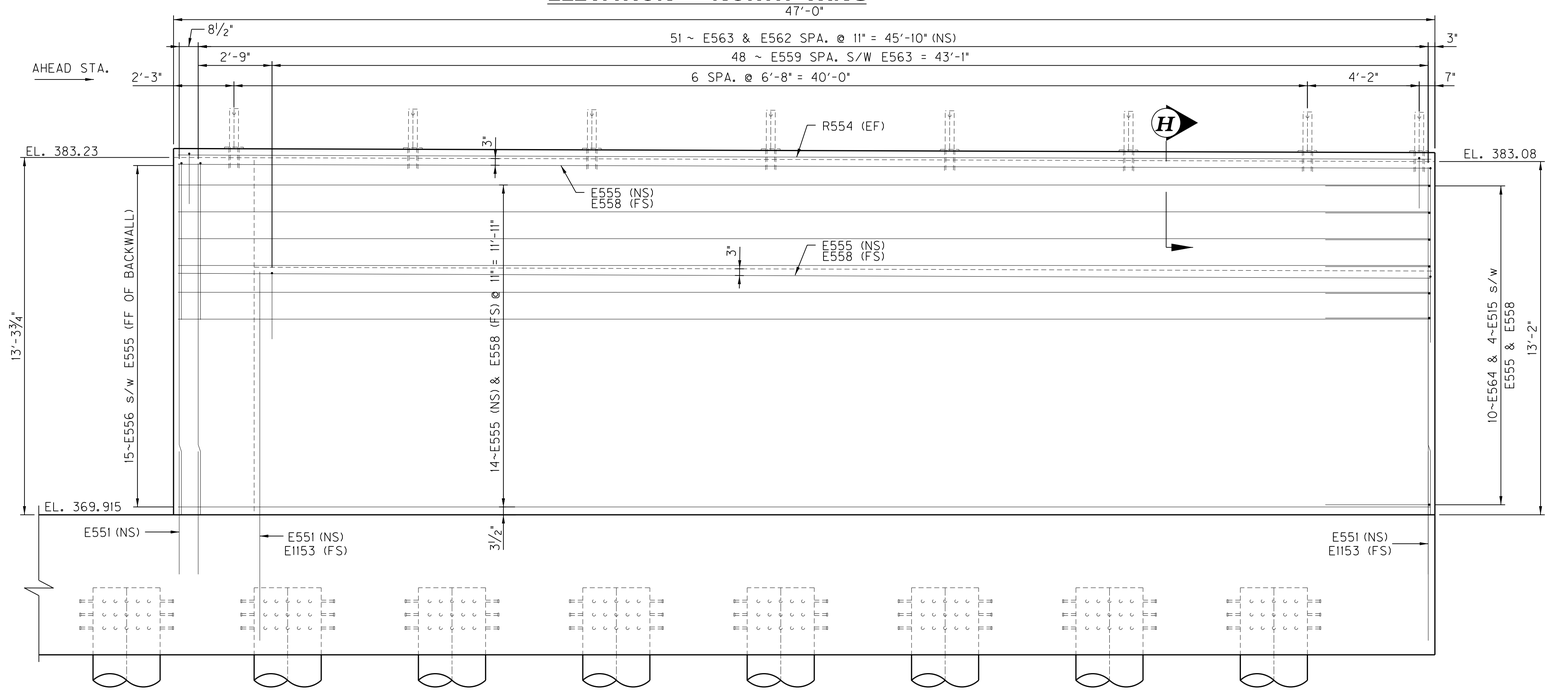
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	*PALMER ENGINEERING CO.*	S090
		DRAWING NO. 24686

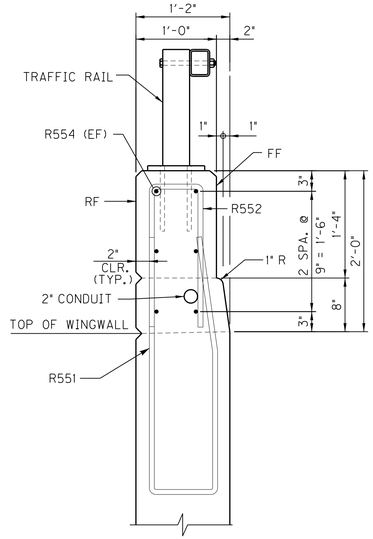
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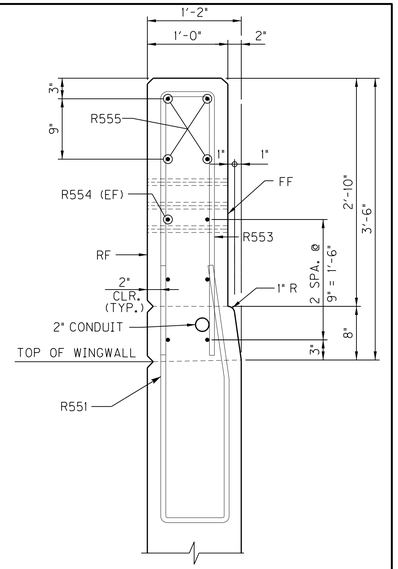
ELEVATION – NORTH WING



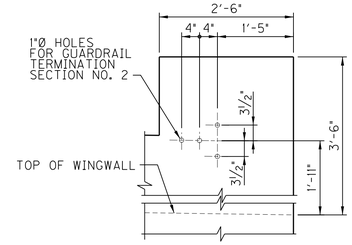
ELEVATION – SOUTH WING



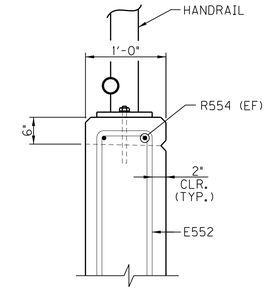
SECTION "F"



SECTION "G"



GUARDRAIL ATTACHMENT



SECTION "H"

NOTES:

1. SEE SHEET S247 FOR TRAFFIC AND COMBINATION RAIL EXPANSION JT. DETAILS.
2. SEE SHEET S249 FOR PEDESTRIAN RAIL EXPANSION JOINT DETAILS.

REVISION	DATE
DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 2 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

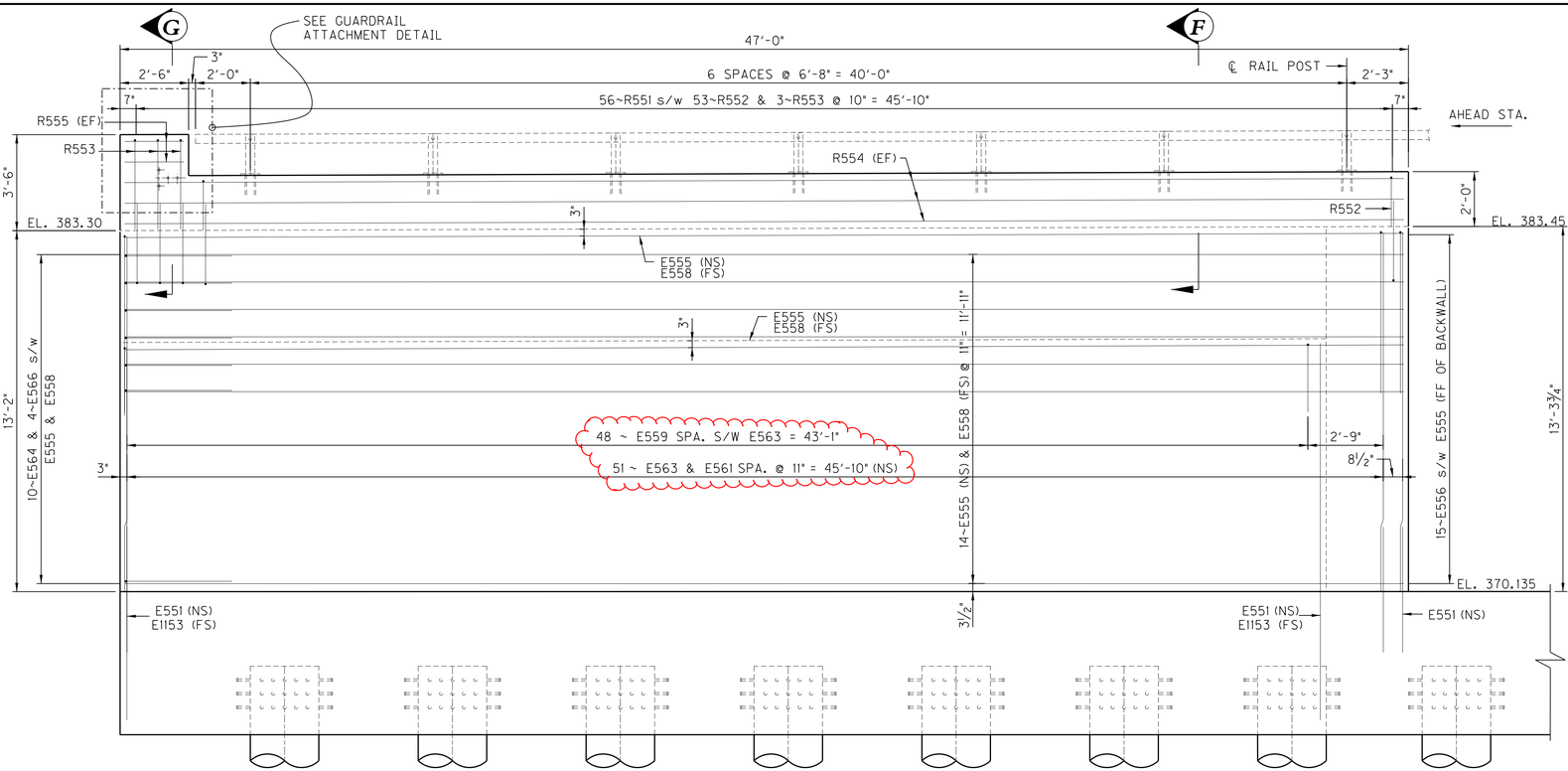
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

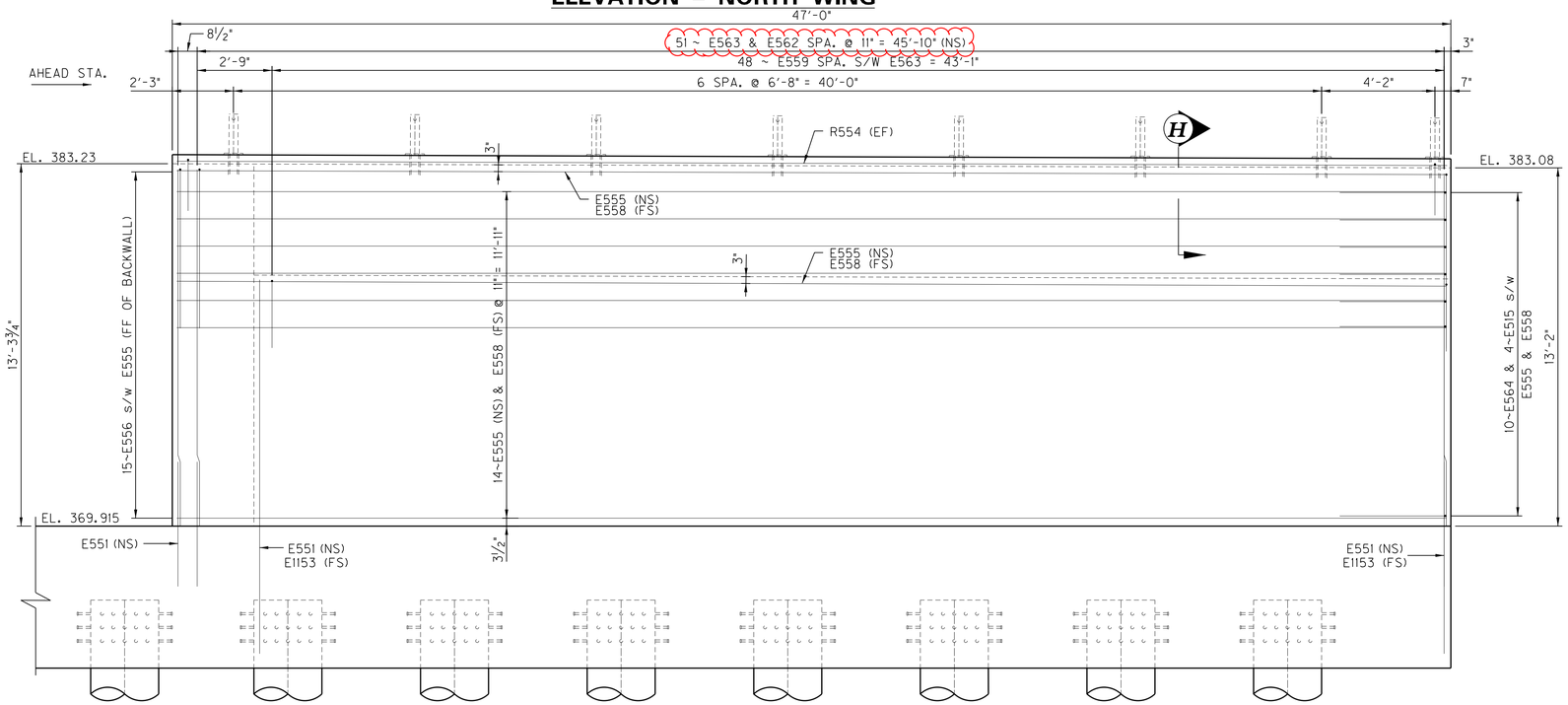
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DRAWING NO. 24686

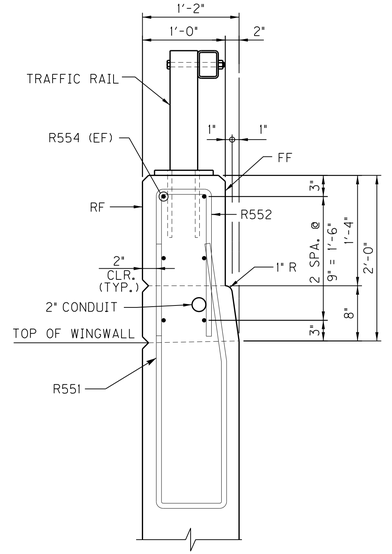
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DATE PLOTTED: July 27, 2011
12/11/2013 2:31:30 PM
E-SHEET NAME:
MicroStation v8.11.7.443



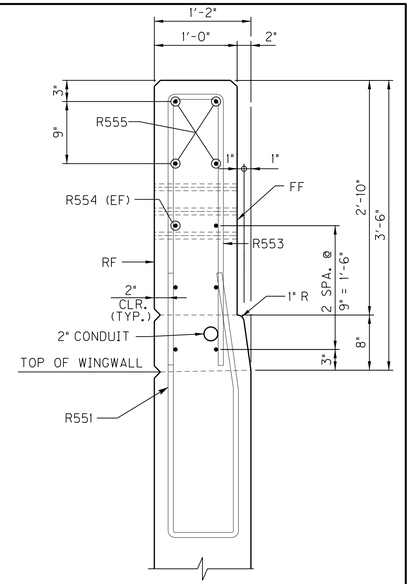
ELEVATION – NORTH WING



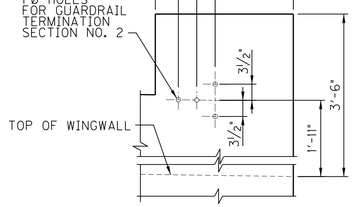
ELEVATION – SOUTH WING



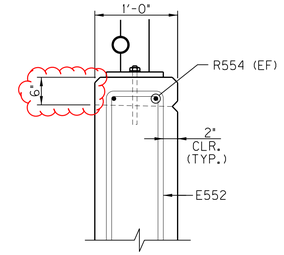
SECTION "F"



SECTION "G"



GUARDRAIL ATTACHMENT



SECTION "H"

NOTES:
1. SEE SHEET S247 FOR TRAFFIC AND COMBINATION RAIL EXPANSION JT. DETAILS.
2. SEE SHEET S249 FOR PEDESTRIAN RAIL EXPANSION JOINT DETAILS.

REVISION	DATE
3 CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

END BENT 2 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

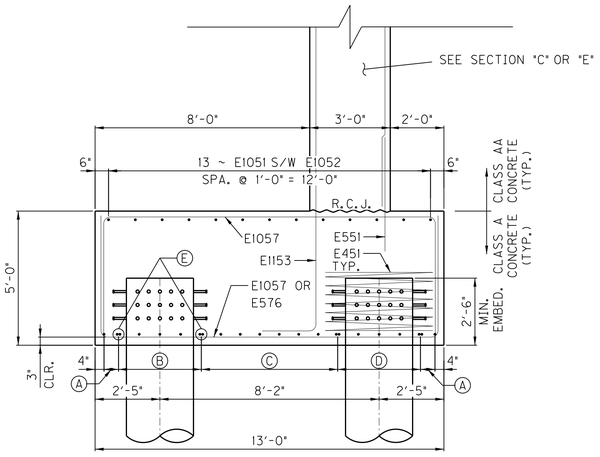
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

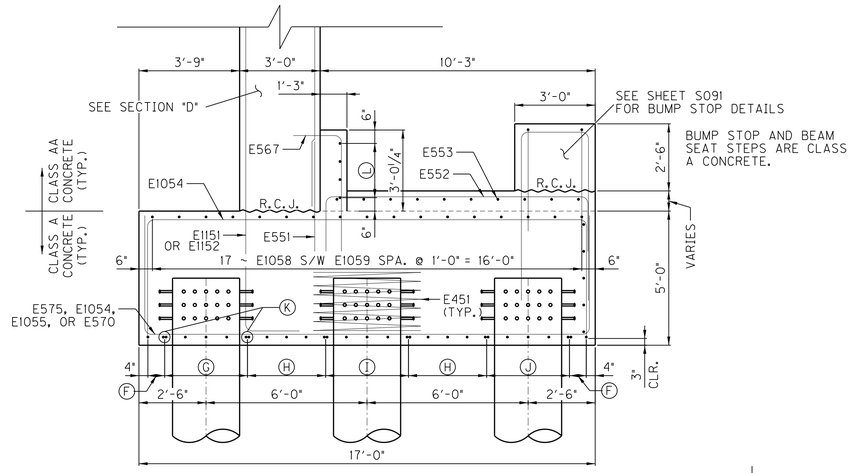
SHEET NO. S092

DRAWING NO. **24686**

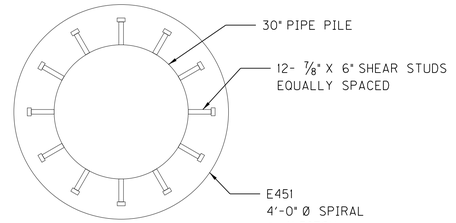
MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
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12/4/2013
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SECTION "A"

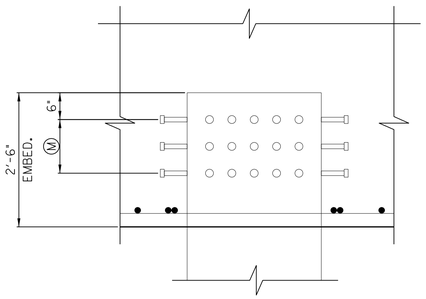


SECTION "B"

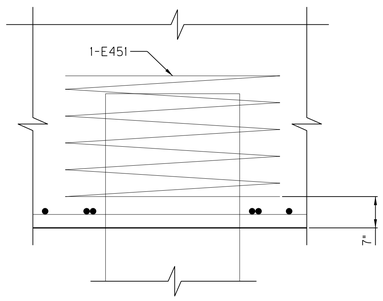


PIPE PILE TYPICAL SECTION

- (A) E1051 S/W E1052 SPA. @ 6½"
- (B) E574, E572, OR E1053 4 EQ. SPA. = 3'-1"
- (C) E1051 S/W E1052 7 EQ. SPA. = 5'-1"
- (D) E571, E572, OR E573 4 EQ. SPA = 3'-1"
- (E) E1051 S/W E1052 BUNDLED BARS (TYP. BOTH SIDES OF EA. PILE)
- (F) E1058 S/W E1059 SPA. @ 7½"
- (G) E577 4 EQ. SPA. = 3'-1"
- (H) E1058 S/W E1059 4 EQ. SPA. = 2'-11"
- (I) E576, E578, OR E572 4 EQ. SPA. = 3'-1"
- (J) E572 4 EQ. SPA. = 3'-1"
- (K) E1058 S/W E1059 BUNDLED BARS (TYP. BOTH SIDES OF EA. PLIE)
- (L) E568 S/W E568 @ 3 EQ. SPA. = 2'-0¼"
- (M) 3 ROWS OF 12 - 7/8" X 6" SHEAR STUDS SPA. @ 6" = 1'-0"

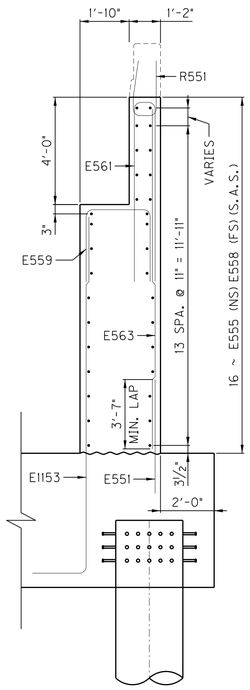


PIPE PILE STUD DETAIL

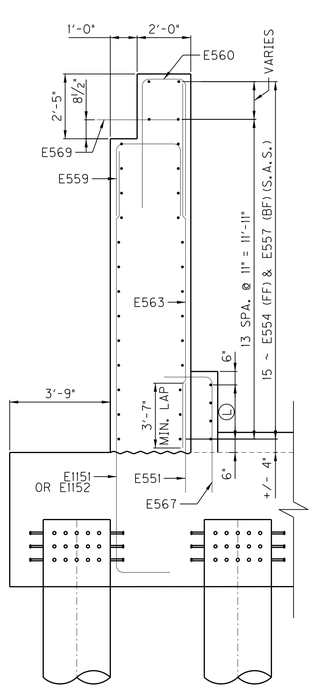


PIPE PILE SPIRAL DETAIL

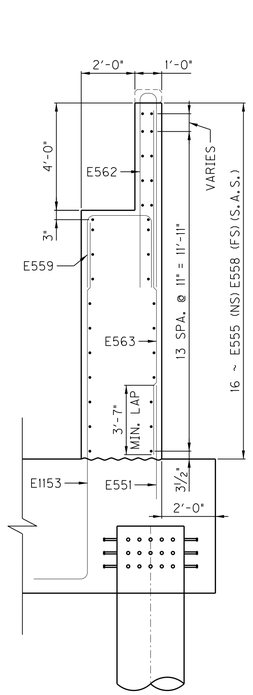
(TYPICAL EACH PILE)



SECTION "C"



SECTION "D"



SECTION "E"

MIN. LAP SPLICES
- #5 = 3'-7"
- #10 = 10'-1"

MIN. EMBEDMENT DEPTH
- #5 = 1'-6"
- #6 = 1'-6"
- #10 = 4'-1"

NOTE:

1. CLEAR COVER DISTANCE TO FACE OF CONCRETE IS 2" UNLESS OTHERWISE SHOWN
2. INSTALL SHEAR STUDS AFTER FINAL PILE CUTOFF ELEVATON IS MADE.
3. INCLUDE COST TO FURNISH AND INSTALL SHEAR STUDS TO THE PIPE PILE IN THE BID ITEM SHEAR CONNECTORS.
4. SHEAR STUDS AND SPIRALS ARE TO BE USED AT EACH PILE. NOT SHOWN FOR CLARITY.
5. CONCRETE IN PIPE PILES TO BE PLACED MONOLITHIC WITH THE FOOTING.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

END BENT 2 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

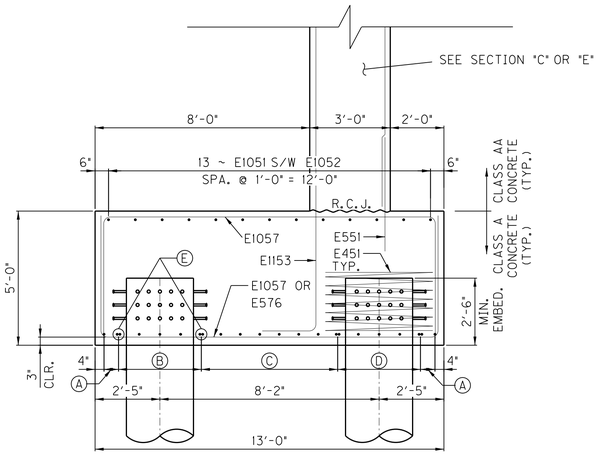
ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

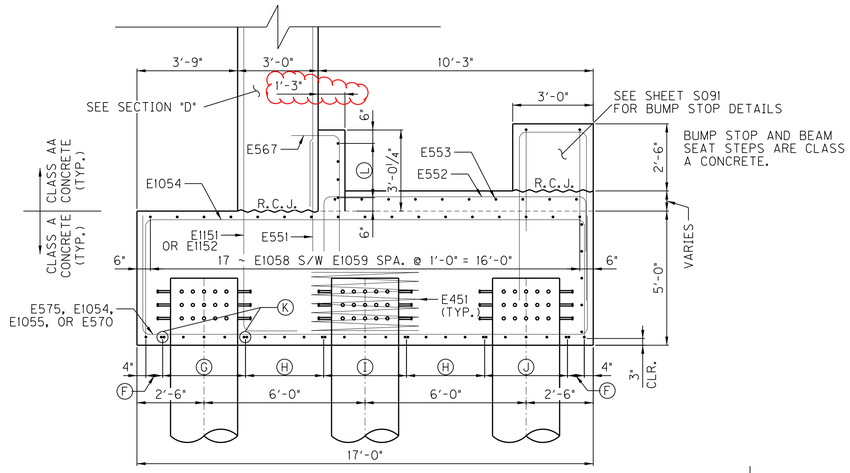
SHEET NO.: S093

DRAWING NO.: 24686

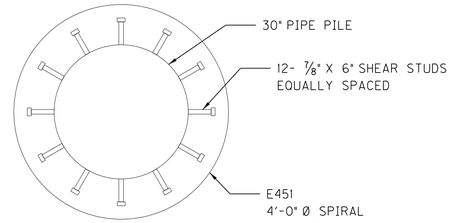
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DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443



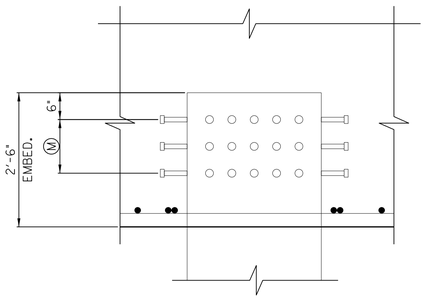
SECTION "A"



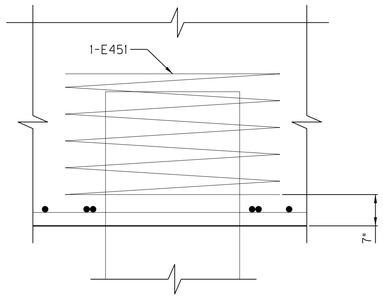
SECTION "B"



PIPE PILE TYPICAL SECTION

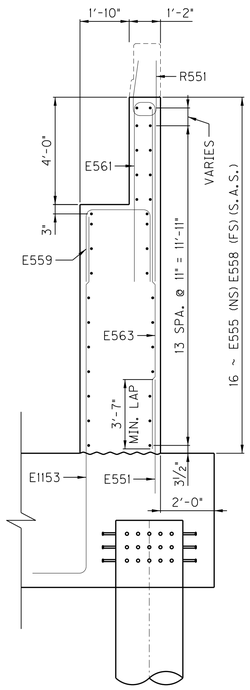


PIPE PILE STUD DETAIL

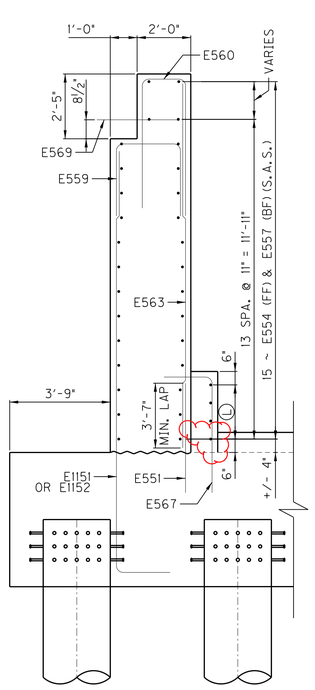


PIPE PILE SPIRAL DETAIL

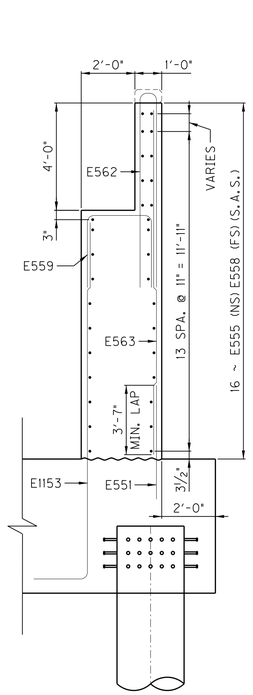
(TYPICAL EACH PILE)



SECTION "C"



SECTION "D"



SECTION "E"

- (A) E1051 S/W E1052 SPA. @ 6½"
- (B) E574, E572, OR E1053 4 EQ. SPA. = 3'-1"
- (C) E1051 S/W E1052 7 EQ. SPA. = 5'-1"
- (D) E571, E572, OR E573 4 EQ. SPA = 3'-1"
- (E) E1051 S/W E1052 BUNDLED BARS (TYP. BOTH SIDES OF EA. PILE)
- (F) E1058 S/W E1059 SPA. @ 7½"
- (G) E577 4 EQ. SPA. = 3'-1"
- (H) E1058 S/W E1059 4 EQ. SPA. = 2'-11"
- (I) E576, E578, OR E572 4 EQ. SPA. = 3'-1"
- (J) E572 4 EQ. SPA. = 3'-1"
- (K) E1058 S/W E1059 BUNDLED BARS (TYP. BOTH SIDES OF EA. PLIE)
- (L) E568 S/W E568 @ 3 EQ. SPA. = 2'-0¼"
- (M) 3 ROWS OF 12 - ⅞" X 6" SHEAR STUDS SPA. @ 6" = 1'-0"

MIN. LAP SPLICES
- #5 = 3'-7"
- #10 = 10'-1"

MIN. EMBEDMENT DEPTH
- #5 = 1'-6"
- #6 = 1'-6"
- #10 = 4'-1"

NOTE:

1. CLEAR COVER DISTANCE TO FACE OF CONCRETE IS 2" UNLESS OTHERWISE SHOWN
2. INSTALL SHEAR STUDS AFTER FINAL PILE CUTOFF ELEVATON IS MADE.
3. INCLUDE COST TO FURNISH AND INSTALL SHEAR STUDS TO THE PIPE PILE IN THE BID ITEM SHEAR CONNECTORS.
4. SHEAR STUDS AND SPIRALS ARE TO BE USED AT EACH PILE. NOT SHOWN FOR CLARITY.
5. CONCRETE IN PIPE PILES TO BE PLACED MONOLITHIC WITH THE FOOTING.

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

END BENT 2 – DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01-180.70

PREPARED BY: PALMER ENGINEERING CO.

SHEET NO.: S093

DRAWING NO.: 24686

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12/6/2013 1:55:38 PM
USER: tlm-e
DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443

BILL OF REINFORCEMENT – END BENT 2

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
E451	18	28	# 4	126'-0"	FOOTING	2'-4"	0'-4"	4'-0"	
E551(E)	STR.	185	# 5	8'-0"	FOOTING DOWEL				
E552(E)	2	39	# 5	13'-11"	BEAM SEAT	2'-0"	9'-11"		
E553(E)	STR.	10	# 5	38'-8"	BEAM SEAT				
E554(E)	STR.	30	# 5	36'-6"	BACK WALL				
E555(E)	STR.	32	# 5	44'-0"	WING				
E556(E)	5	30	# 5	13'-0"	BACK WALL	6'-6"	6'-6"		
E557(E)	2	30	# 5	41'-2"	BACK WALL	39'-6"	0'-10"		
E558(E)	5	32	# 5	47'-5"	WING	46'-7"	0'-10"		
E559(E)	2	171	# 5	9'-10"	BACK WALL & WING	3'-7"	2'-8"		
E560(E)	2	75	# 5	13'-8"	BACK WALL	6'-0"	1'-8"		
E561(E)	2	51	# 5	12'-10"	WING	6'-0"	0'-10"		
E562(E)	2	51	# 5	14'-0"	WING	6'-8"	0'-8"		
E563(E)	STR.	185	# 5	12'-5"	BACK WALL & WING				
E564(E)	2	20	# 5	9'-8"	WING	3'-7"	2'-6"		
E565(E)	2	5	# 5	7'-11"	WING	3'-7"	0'-8½"		
E566(E)	2	5	# 5	7'-9"	WING	3'-7"	0'-6½"		
E567(E)	5	83	# 5	6'-4"	BUMP STOP	4'-6"	1'-10"		
E568(E)	STR.	8	# 5	39'-6"	BUMP STOP				
E569(E)	STR.	73	# 5	3'-0"	APPROACH SLAB				
E570	5	6	# 5	11'-4"	FOOTING	6'-9"	4'-5"		
E571	5	6	# 5	8'-8"	FOOTING	4'-5"	4'-3"		
E572	STR.	57	# 5	9'-2"	FOOTING				
E573	STR.	9	# 5	8'-11"	FOOTING				
E574	STR.	6	# 5	10'-5"	FOOTING				
E575	5	12	# 5	17'-2"	FOOTING	12'-9"	4'-5"		
E576	5	42	# 5	13'-3"	FOOTING	8'-10"	4'-5"		
E577	STR.	12	# 5	15'-6"	FOOTING				
E578	STR.	6	# 5	19'-9"	FOOTING				
E651(E)	2	75	# 6	10'-6"	BUMP STOP	3'-10"	2'-10"		
E951	14	24	# 9	15'-2"	DAMPER	4'-6"	3'-1"		
E1051	5	58	# 10	24'-5"	FOOTING	20'-0"	4'-5"		
E1052	5	58	# 10	51'-5"	FOOTING	47'-0"	4'-5"		
E1053	5	12	# 10	11'-2"	FOOTING	6'-9"	4'-5"		
E1054	2	114	# 10	25'-6"	FOOTING	4'-5"	16'-8"		
E1055	5	6	# 10	17'-2"	FOOTING	12'-9"	4'-5"		
E1056					NOT USED				
E1057	2	176	# 10	21'-8"	FOOTING	4'-5"	12'-8"		
E1058	5	37	# 10	38'-1"	FOOTING	33'-8"	4'-5"		
E1059	5	37	# 10	59'-10"	FOOTING	55'-5"	4'-5"		
E1060(E)	2	80	# 10	15'-6"	BUMP STOP	6'-5"	2'-8"		
E1061	2	36	# 10	18'-11"	DAMPER	8'-0"	2'-11"		
E1062	2	30	# 10	18'-10"	DAMPER	8'-0"	2'-10"		
E1151(E)	5	1 SET 87 BARS	# 11	1740'-0"	FOOTING DOWEL	17'-8" TO 18'-4"	2'-0"		
E1152(E)	5	1 SET 64 BARS	# 11	1288'-0"	FOOTING DOWEL	17'-10" TO 18'-5"	2'-0"		
E1153(E)	5	2 SETS 96 BARS	# 11	1488'-0"	FOOTING DOWEL	13'-5" TO 13'-7"	2'-0"		
R551(E)	17	56	# 5	7'-8"	RAIL	3'-5"	2'-0"	0'-10"	
R552(E)	2	53	# 5	4'-4"	RAIL	1'-10"	0'-8"		
R553(E)	2	3	# 5	7'-4"	RAIL	3'-4"	0'-8"		
R554(E)	STR.	8	# 5	4'-8"	RAIL				
R555(E)	STR.	4	# 5	2'-2"	RAIL				

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

AT SPIRAL DISCONTINUITIES THE SPIRAL SHALL TERMINATE WITH ONE AND A HALF EXTRA TURNS.

NOTE :
REINFORCING BARS DESIGNATED WITH SUFFIX (E) IN PLANS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

REINFORCING BARS DESIGNATED WITH THE SUFFIX (S) IN PLANS ARE STIRRUP BARS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 2 – BILL OF REINFORCEMENT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S094
DRAWING NO. 24686

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FILE NAME: J:\KYDOT\LAKE_BRIDGES\STRUCT\FINAL DESIGN\KY LAKE\DGN\ADDENDA\KYTC_STRUCT_2D_IFBASE.DGN
USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:28:40 PM
E-SHEET NAME:
MicroStation v8.11.7.443

BILL OF REINFORCEMENT – END BENT 2

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
E451	18	28	# 4	126'-0"	FOOTING	2'-4"	0'-4"	4'-0"	
E551(E)	STR.	185	# 5	8'-0"	FOOTING DOWEL				
E552(E)	2	39	# 5	13'-11"	BEAM SEAT	2'-0"	9'-11"		
E553(E)	STR.	10	# 5	38'-8"	BEAM SEAT				
E554(E)	STR.	30	# 5	36'-6"	BACK WALL				
E555(E)	STR.	32	# 5	44'-0"	WING				
E556(E)	5	30	# 5	13'-0"	BACK WALL	6'-6"	6'-6"		
E557(E)	2	30	# 5	41'-2"	BACK WALL	39'-6"	0'-10"		
E558(E)	5	32	# 5	47'-5"	WING	46'-7"	0'-10"		
E559(E)	2	171	# 5	9'-10"	BACK WALL & WING	3'-7"	2'-8"		
E560(E)	2	75	# 5	13'-8"	BACK WALL	6'-0"	1'-8"		
E561(E)	2	51	# 5	12'-10"	WING	6'-0"	0'-10"		
E562(E)	2	51	# 5	14'-0"	WING	6'-8"	0'-8"		
E563(E)	STR.	185	# 5	12'-5"	BACK WALL & WING				
E564(E)	2	20	# 5	9'-8"	WING	3'-7"	2'-6"		
E565(E)	2	5	# 5	7'-11"	WING	3'-7"	0'-8½"		
E566(E)	2	5	# 5	7'-9"	WING	3'-7"	0'-6½"		
E567(E)	5	83	# 5	6'-4"	BUMP STOP	4'-6"	1'-10"		
E568(E)	STR.	8	# 5	39'-6"	BUMP STOP				
E569(E)	STR.	73	# 5	3'-0"	APPROACH SLAB				
E570	5	6	# 5	11'-4"	FOOTING	6'-9"	4'-5"		
E571	5	6	# 5	8'-8"	FOOTING	4'-5"	4'-3"		
E572	STR.	57	# 5	9'-2"	FOOTING				
E573	STR.	9	# 5	8'-11"	FOOTING				
E574	STR.	6	# 5	10'-5"	FOOTING				
E575	5	12	# 5	17'-2"	FOOTING	12'-9"	4'-5"		
E576	5	42	# 5	13'-3"	FOOTING	8'-10"	4'-5"		
E577	STR.	12	# 5	15'-6"	FOOTING				
E578	STR.	6	# 5	19'-9"	FOOTING				
E651(E)	2	75	# 6	10'-6"	BUMP STOP	3'-10"	2'-10"		
E951	14	24	# 9	15'-2"	DAMPER	4'-6"	3'-1"		
E1051	5	58	# 10	24'-5"	FOOTING	20'-0"	4'-5"		
E1052	5	58	# 10	51'-5"	FOOTING	47'-0"	4'-5"		
E1053	5	12	# 10	11'-2"	FOOTING	6'-9"	4'-5"		
E1054	2	114	# 10	25'-6"	FOOTING	4'-5"	16'-8"		
E1055	5	6	# 10	17'-2"	FOOTING	12'-9"	4'-5"		
E1056					NOT USED				
E1057	2	176	# 10	21'-8"	FOOTING	4'-5"	12'-8"		
E1058	5	37	# 10	38'-1"	FOOTING	33'-8"	4'-5"		
E1059	5	37	# 10	59'-10"	FOOTING	55'-5"	4'-5"		
E1060(E)	2	80	# 10	15'-6"	BUMP STOP	6'-5"	2'-8"		
E1061	2	36	# 10	18'-11"	DAMPER	8'-0"	2'-11"		
E1062	2	30	# 10	18'-10"	DAMPER	8'-0"	2'-10"		
E1151(E)	5	1 SET 87 BARS	# 11	1740'-0"	FOOTING DOWEL	17'-8" TO 18'-4"	2'-0"		
E1152(E)	5	1 SET 64 BARS	# 11	1288'-0"	FOOTING DOWEL	17'-10" TO 18'-5"	2'-0"		
E1153(E)	5	2 SETS 96 BARS	# 11	1488'-0"	FOOTING DOWEL	13'-5" TO 13'-7"	2'-0"		
R551(E)	17	56	# 5	7'-8"	RAIL	3'-5"	2'-0"	0'-10"	
R552(E)	2	53	# 5	4'-4"	RAIL	1'-10"	0'-8"		
R553(E)	2	3	# 5	7'-4"	RAIL	3'-4"	0'-8"		
R554(E)	STR.	8	# 5	4'-8"	RAIL				
R555(E)	STR.	4	# 5	2'-2"	RAIL				

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

AT SPIRAL DISCONTINUITIES THE SPIRAL SHALL TERMINATE WITH ONE AND A HALF EXTRA TURNS.

NOTE :
REINFORCING BARS DESIGNATED WITH SUFFIX (E) IN PLANS SHALL BE EPOXY COATED IN ACCORDANCE WITH THE SPECIFICATIONS.

REINFORCING BARS DESIGNATED WITH THE SUFFIX (S) IN PLANS ARE STIRRUP BARS.

REVISION	DATE
3 ADDED BARS & CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: A.C. THOMAS	L.A. CARLISLE
DETAILED BY: A.C. THOMAS	L.M. SALLEE

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

END BENT 2 – BILL OF REINFORCEMENT

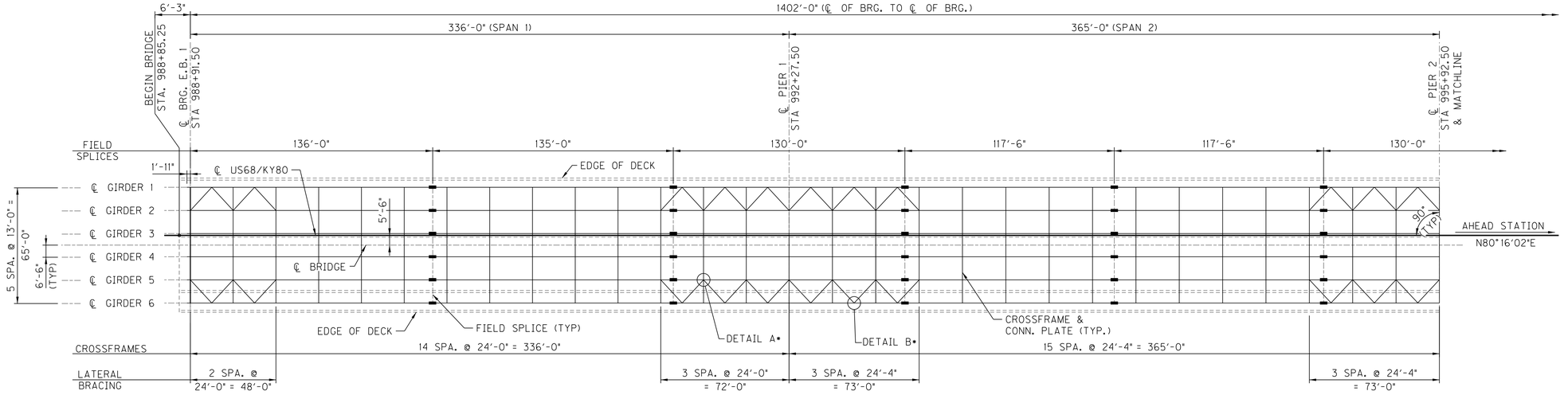
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

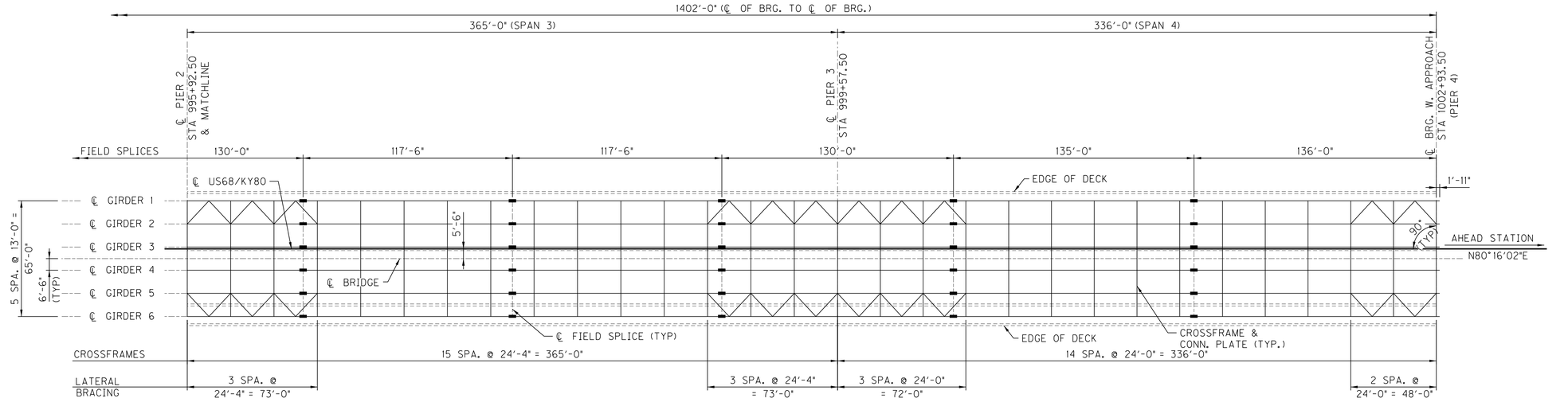
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S094
DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443





FRAMING PLAN
(WEST APPROACH)

• LATERAL BRACING CONNECTION TYPE. SEE SHEET S104 FOR DETAILS.

NOTE:
DUCTBANK AND UTILITY PLATFORM NOT SHOWN FOR CLARITY. SEE SHEETS S257 AND S258 FOR DETAILS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: J.A. ROSE	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: **US 68**
CROSSING: **KENTUCKY LAKE**

WEST APPROACH FRAMING PLAN

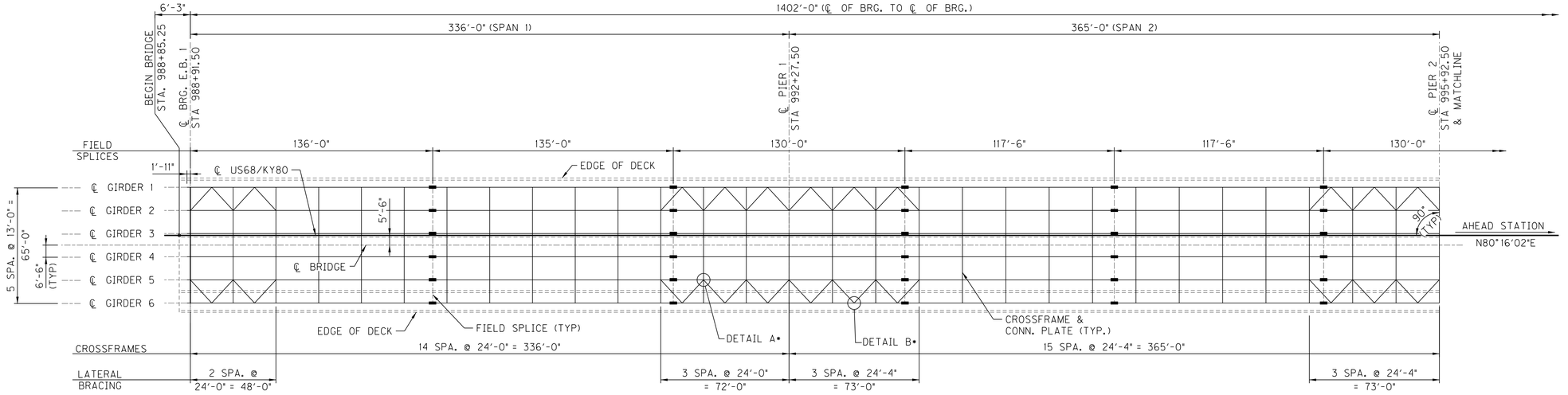
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

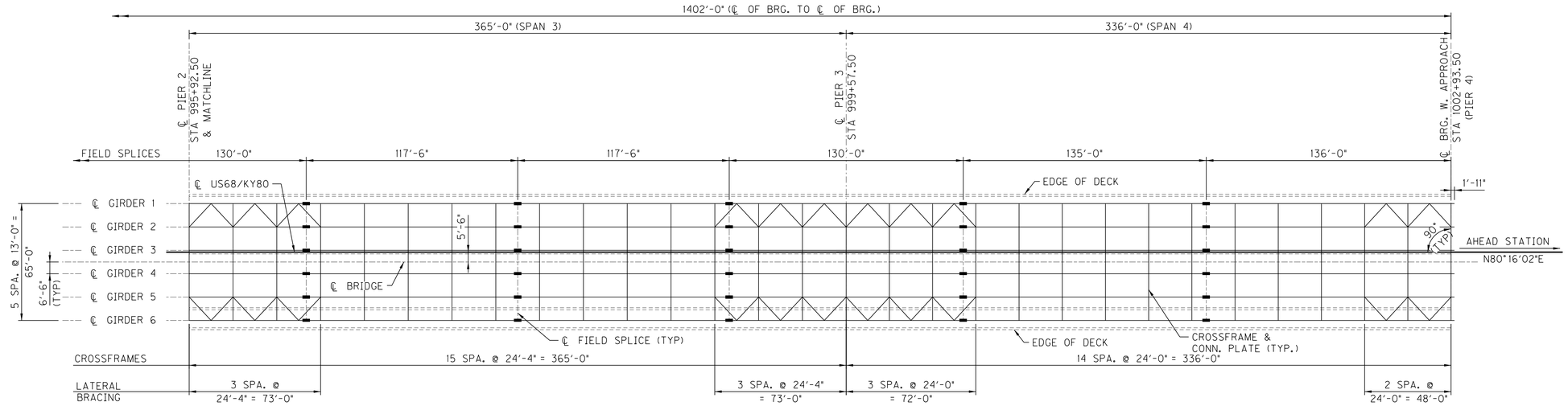
ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S095
DRAWING NO. 24686

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MicroStation v8.11.7.443





FRAMING PLAN
(WEST APPROACH)

• LATERAL BRACING CONNECTION TYPE. SEE SHEET S104 FOR DETAILS.

NOTE:
DUCTBANK AND UTILITY PLATFORM NOT SHOWN FOR CLARITY. SEE SHEETS S257 AND S258 FOR DETAILS.

REVISION	DATE
3 ADDED NOTE	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: J.A. ROSE	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68
CROSSING: KENTUCKY LAKE

WEST APPROACH FRAMING PLAN

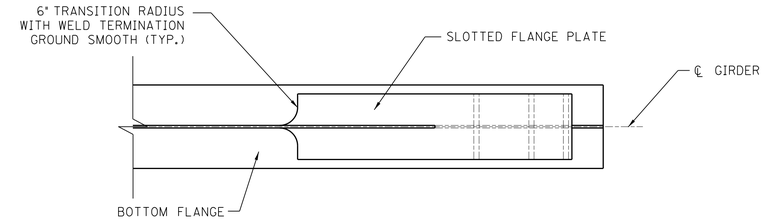
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

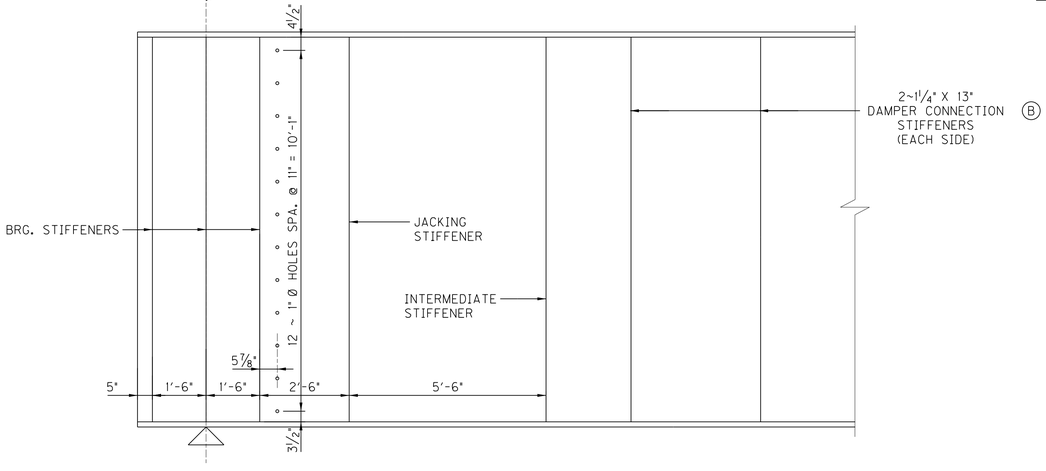
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S095
DRAWING NO. 24686

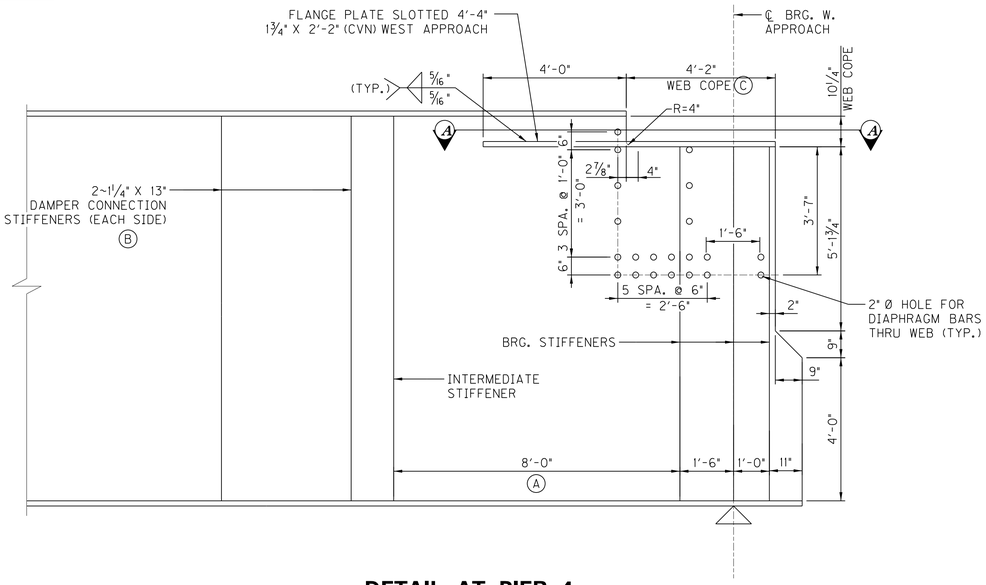
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MicroStation v8.11.7.443



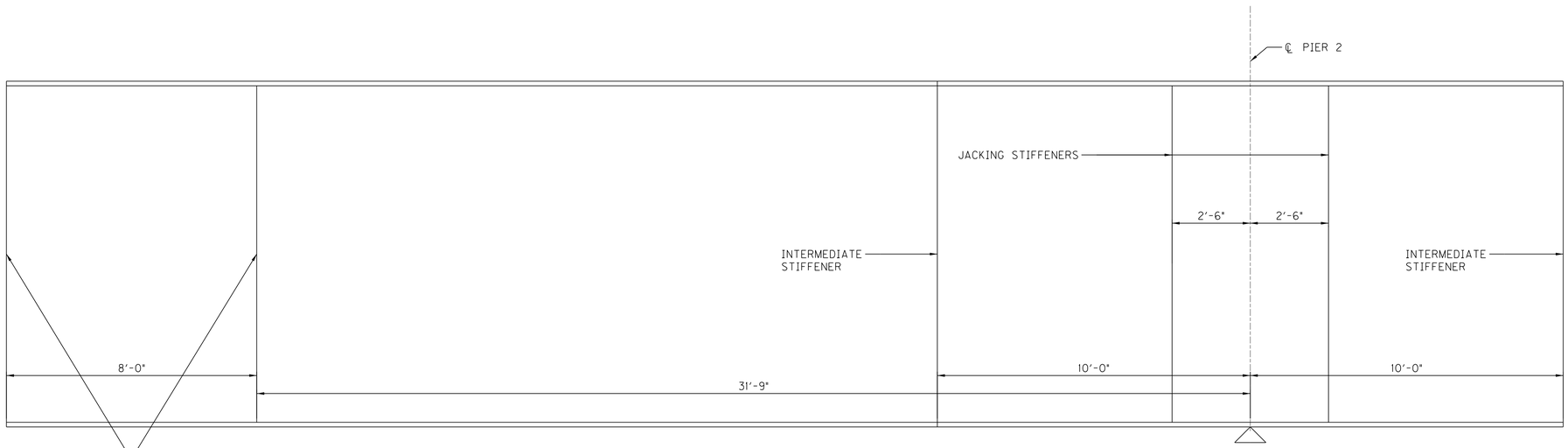
SECTION A–A



DETAIL AT END BENT 1



DETAIL AT PIER 4



DETAIL AT PIER 2

Ⓐ ALSO SERVES AS UTILITY PLATFORM CONNECTION STIFFENER ON EXTERIOR FACE OF GIRDER 5 AND INTERIOR FACE OF GIRDER 6. SEE SHEET S258 FOR DETAILS.

Ⓑ LOCATION OF DAMPER CONNECTION STIFFENERS SHALL BE COORDINATED WITH FVD MANUFACTURER TO ACCOMODATE MIDSTROKE LENGTH AND CONNECTION PLATES. GIRDER SHOP DRAWINGS SHALL INCLUDE FINAL CONNECTION DETAILS. SEE SHEET S255 FOR DETAILS.

Ⓒ SHEAR STUD CONNECTORS OMITTED AT COPED GIRDER END.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	B.N. ROBSON
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

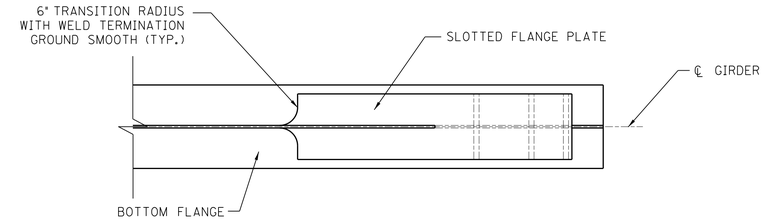
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

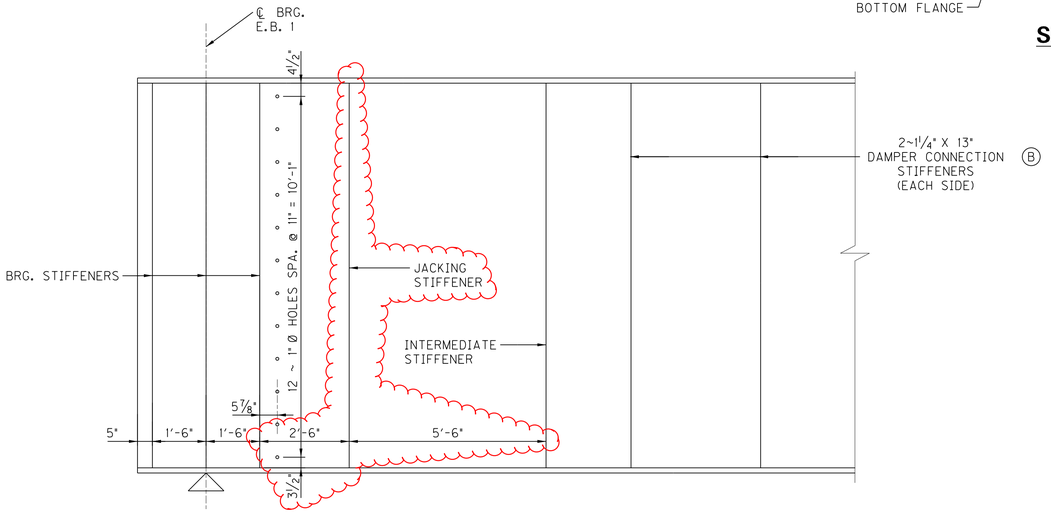
SHEET NO.
S097

DRAWING NO.
24686

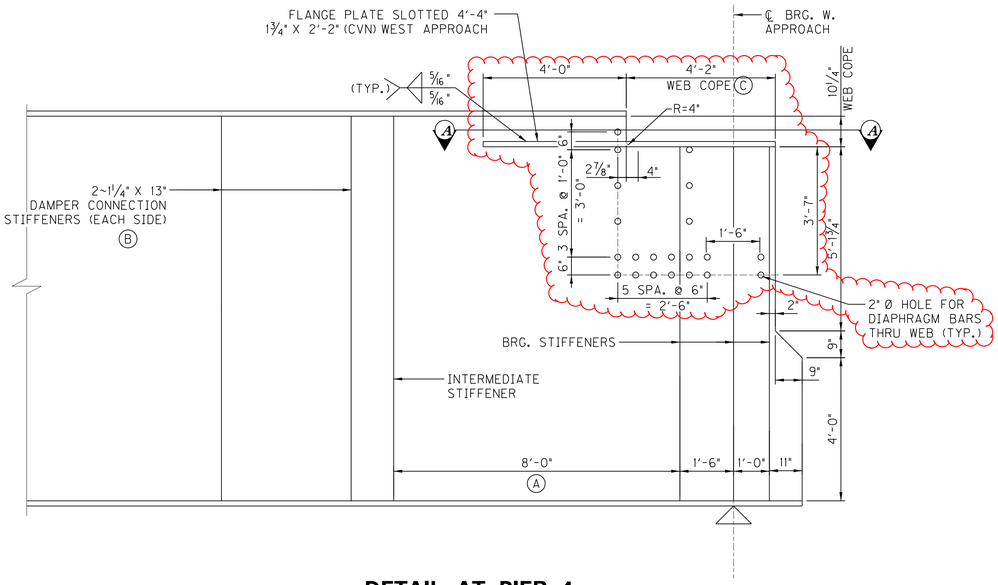
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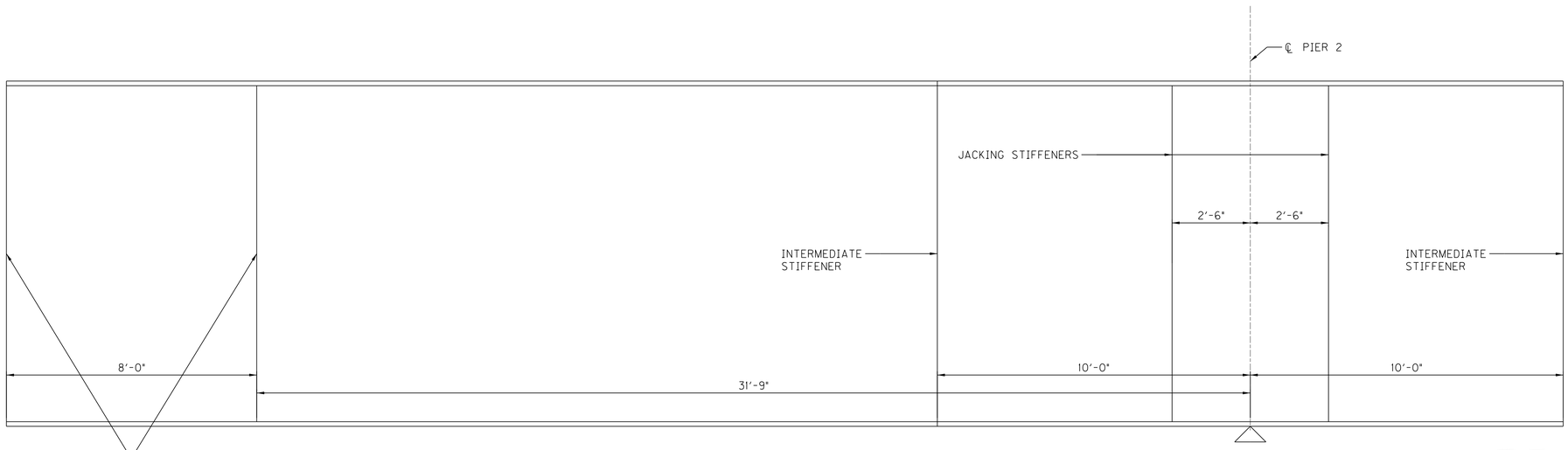
SECTION A–A



DETAIL AT END BENT 1



DETAIL AT PIER 4



DETAIL AT PIER 2

(A) ALSO SERVES AS UTILITY PLATFORM CONNECTION STIFFENER ON EXTERIOR FACE OF GIRDER 5 AND INTERIOR FACE OF GIRDER 6. SEE SHEET S258 FOR DETAILS.

(B) LOCATION OF DAMPER CONNECTION STIFFENERS SHALL BE COORDINATED WITH FVD MANUFACTURER TO ACCOMODATE MIDSTROKE LENGTH AND CONNECTION PLATES. GIRDER SHOP DRAWINGS SHALL INCLUDE FINAL CONNECTION DETAILS. SEE SHEET S255 FOR DETAILS.

(C) SHEAR STUD CONNECTORS OMITTED AT COPED GIRDER END.

REVISION	DATE
3 ADDED/CHANGED DIMENSIONS, NOTES, & STIFFENER	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	B.N. ROBSON
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

STRUCTURAL STEEL DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

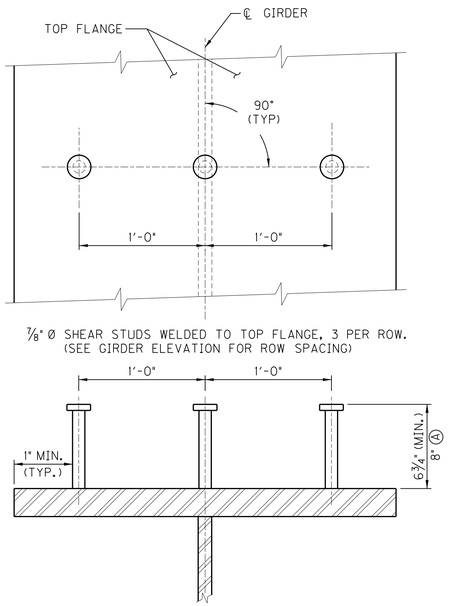
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S097

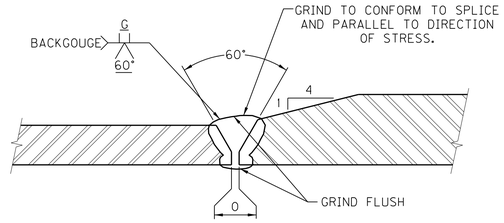
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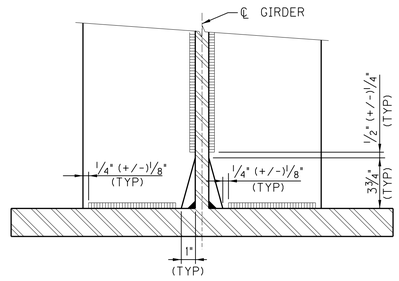
SHEAR CONNECTOR STUDS

USE ⅞" Ø GRANULAR OR SOLID FLUX FILLED



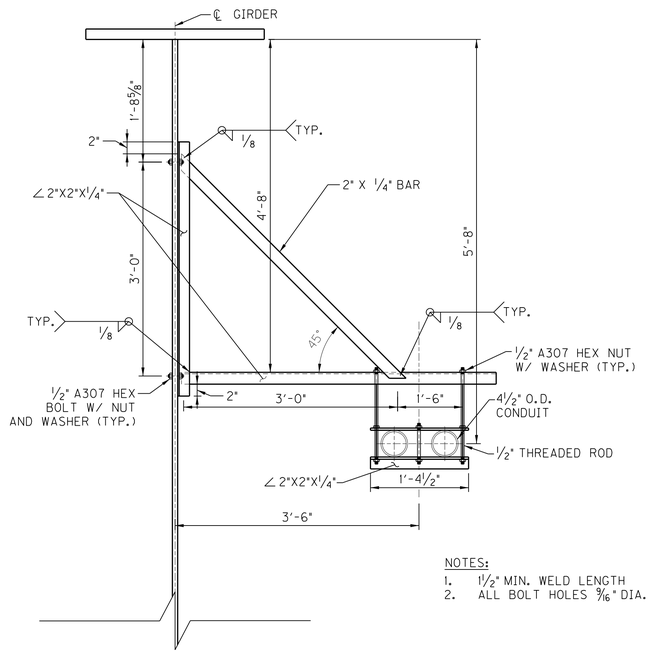
FLANGE BUTT WELD

(SHOP FLANGE SPLICE)



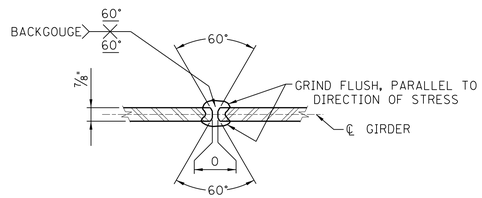
TERMINATION OF STIFFENER WELDS

Ⓐ OVER PIERS. SEE SHEETS S096 AND S222 FOR MORE DETAILS.



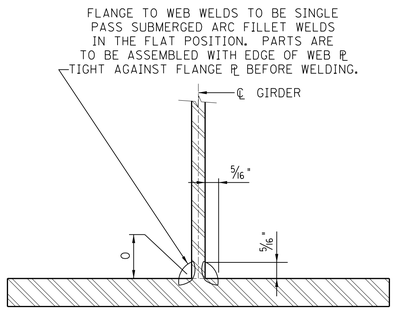
NOTES:
1. 1½" MIN. WELD LENGTH
2. ALL BOLT HOLES 9/16" DIA.

DUCT SUPPORT DETAIL



WEB BUTT WELD

(SHOP WEB SPLICE)



FLANGE TO WEB WELD

NOTES

1. ALL SHOP SPLICES IN FLANGE OR WEB PLATES SHALL BE MADE PRIOR TO WELDING FLANGE PLATES TO WEB PLATES.
2. WELDS SHALL BE GROUND FLUSH ON BOTH SIDES. ALL GRINDING SHALL BE PARALLEL TO THE DIRECTION OF STRESS.
3. WEB SPLICES SHALL BE MINIMUM OF 6" CLEAR OF SHOP FLANGE SPLICES, CROSS FRAME CONNECTIONS, LATERAL BRACING CONNECTIONS, BEARING STIFFENER PLATES, JACKING STIFFENER PLATES, AND INTERMEDIATE STIFFENER PLATES.
4. SEE SHEET S258 FOR MORE DUCT SUPPORT DETAILS.
5. SEE GENERAL NOTES FOR MORE SHEAR CONNECTOR STUD REQUIREMENTS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	B.N. ROBSON
DETAILED BY: T.S. ELLIS	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

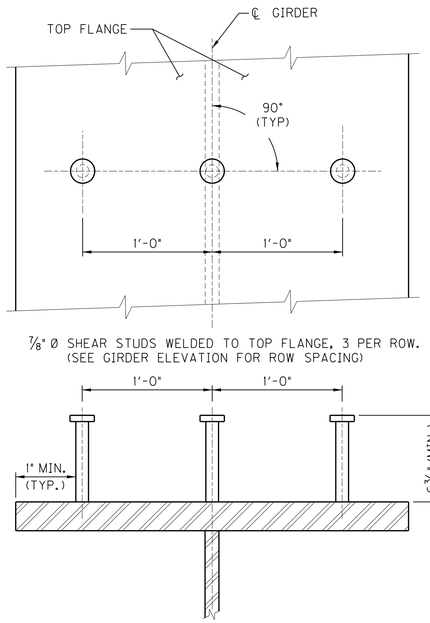
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S102
DRAWING NO. **24686**

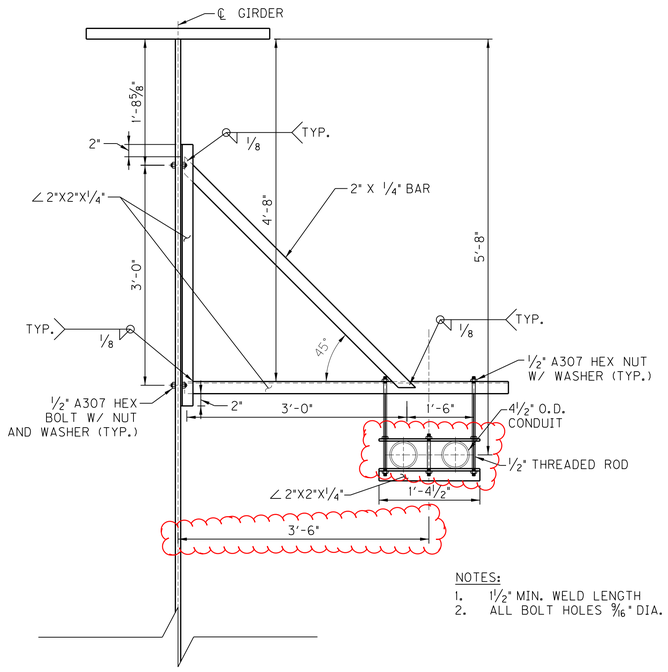
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:05:21 PM
E-SHEET NAME:
MicroStation v8.11.7.443



⅞" Ø SHEAR STUDS WELDED TO TOP FLANGE, 3 PER ROW.
(SEE GIRDER ELEVATION FOR ROW SPACING)

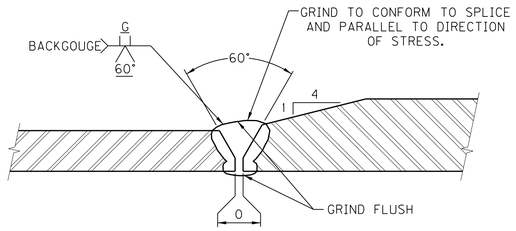
SHEAR CONNECTOR STUDS

USE ⅞" Ø GRANULAR OR SOLID FLUX FILLED



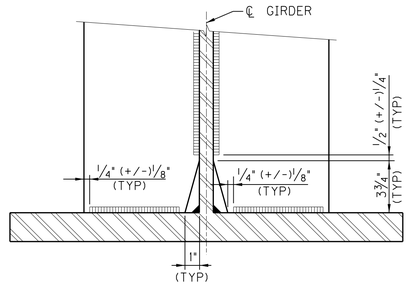
NOTES:
1. 1½" MIN. WELD LENGTH
2. ALL BOLT HOLES 9/16" DIA.

DUCT SUPPORT DETAIL

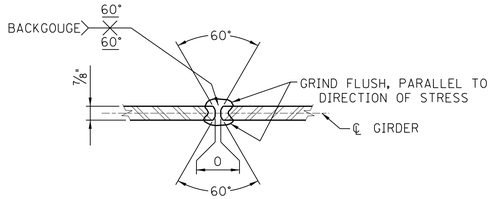


FLANGE BUTT WELD

(SHOP FLANGE SPLICE)

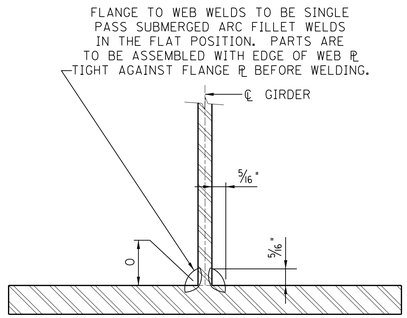


TERMINATION OF STIFFENER WELDS



WEB BUTT WELD

(SHOP WEB SPLICE)



FLANGE TO WEB WELD

Ⓐ OVER PIERS. SEE SHEETS S096 AND S222 FOR MORE DETAILS.

NOTES

1. ALL SHOP SPLICES IN FLANGE OR WEB PLATES SHALL BE MADE PRIOR TO WELDING FLANGE PLATES TO WEB PLATES.
2. WELDS SHALL BE GROUND FLUSH ON BOTH SIDES. ALL GRINDING SHALL BE PARALLEL TO THE DIRECTION OF STRESS.
3. WEB SPLICES SHALL BE MINIMUM OF 6" CLEAR OF SHOP FLANGE SPLICES, CROSS FRAME CONNECTIONS, LATERAL BRACING CONNECTIONS, BEARING STIFFENER PLATES, JACKING STIFFENER PLATES, AND INTERMEDIATE STIFFENER PLATES.
4. SEE SHEET S258 FOR MORE DUCT SUPPORT DETAILS.
5. SEE GENERAL NOTES FOR MORE SHEAR CONNECTOR STUD REQUIREMENTS.

3	CHANGED DIMENSIONS & ADDED ROD	12/09/13
	REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	B.N. ROBSON
DETAILED BY: T.S. ELLIS	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

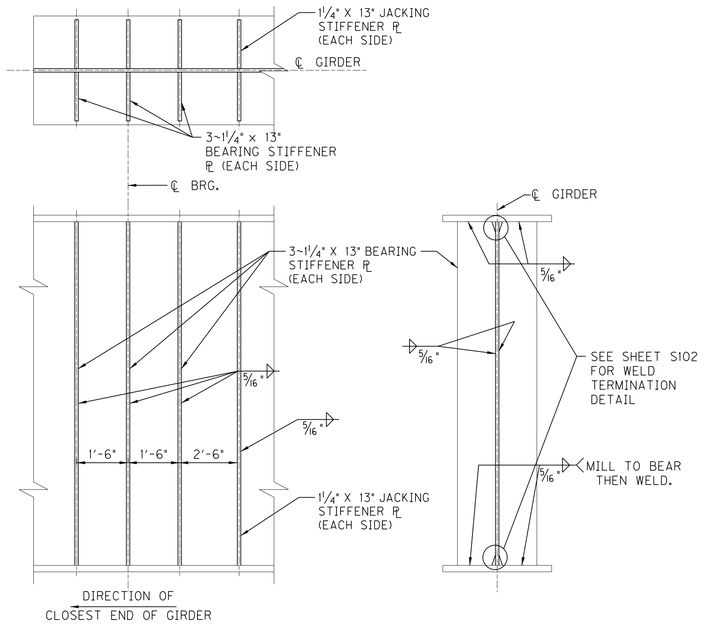
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

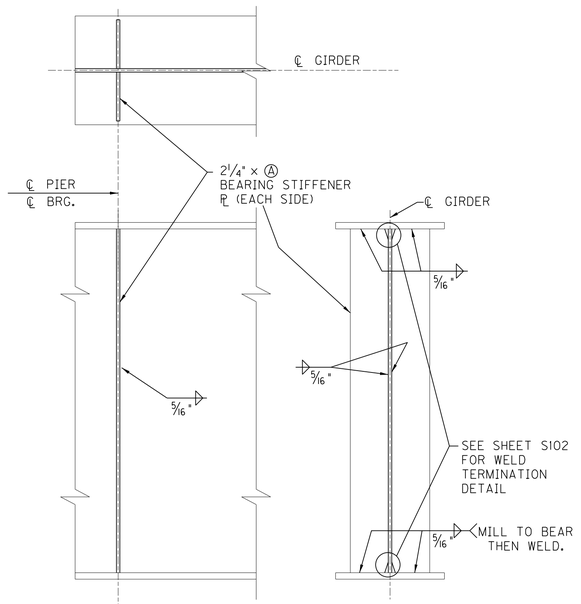
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DRAWING NO. 24686

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
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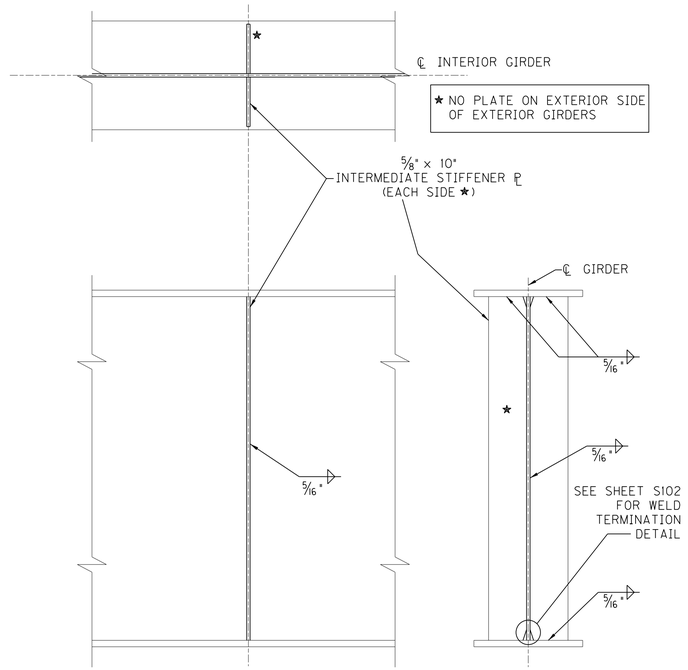
JACKING AND BEARING STIFFENERS

(END BENT 1 AND END BENT 2)

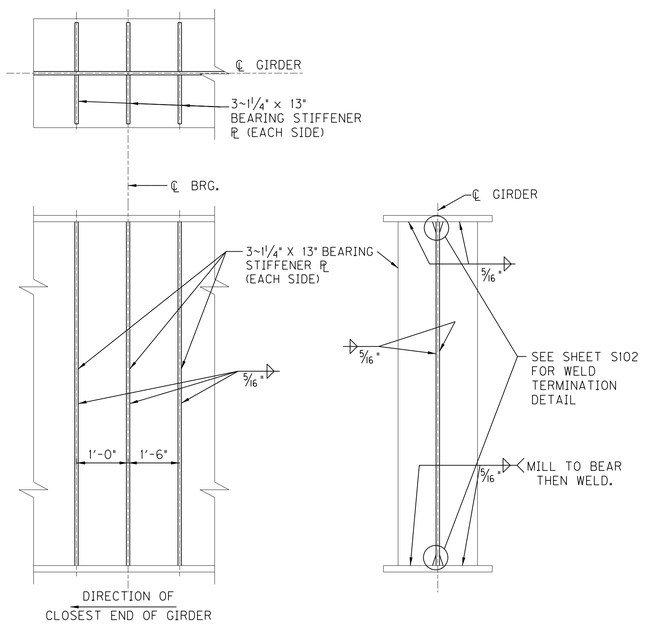


BEARING STIFFENER

(PIERS 1-3 AND PIERS 6-9)

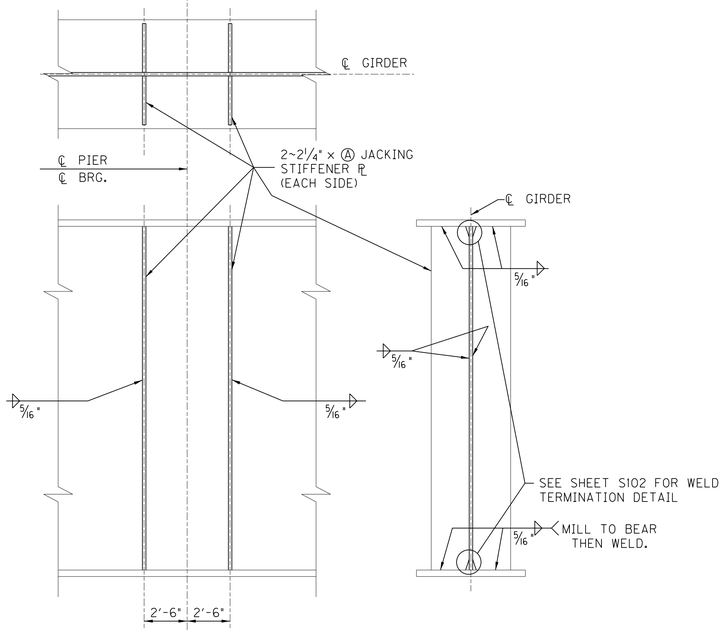


INTERMEDIATE STIFFENER



BEARING STIFFENER

(PIER 4 AND PIER 5)



JACKING STIFFENERS

(PIERS 1-3 AND PIERS 6-9)

BEARING AND JACKING STIFFENER WIDTHS	
LOCATION	Ⓐ
PIER 1	17"
PIER 2	15½"
PIER 3	17"
PIER 6	17"
PIER 7	15½"
PIER 8	15½"
PIER 9	17"

NOTES

1. INTERMEDIATE STIFFENERS AT CROSSFRAME LOCATIONS SHALL BE WELDED TO TOP AND BOTTOM FLANGES. FOR ALL OTHER LOCATIONS, WELD AT COMPRESSION FLANGE, TIGHT FIT AT TENSION FLANGE.
2. FOR ALL BEARING AND JACKING STIFFENERS, MILL TO BEAR AT BOTTOM FLANGE AND TIGHT FIT AT TOP FLANGE.
3. ENDS OF WEB AND ALL BEARING STIFFENERS ARE TO BE VERTICAL IN THE FINAL ERECTED POSITION. INTERMEDIATE STIFFENERS ARE TO BE NORMAL TO THE FLANGE.
4. ALL PLATES AND ANGLES SHALL BE HIGH STRENGTH LOW ALLOY STRUCTURAL STEEL, AASHTO M-270 GRADE 50W
5. DAMPER AND UTILITY PLATFORM CONNECTION STIFFENERS NOT SHOWN. FOR MORE DETAILS, SEE SHEETS S097, S223, AND S255.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: R.M. DAMON	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

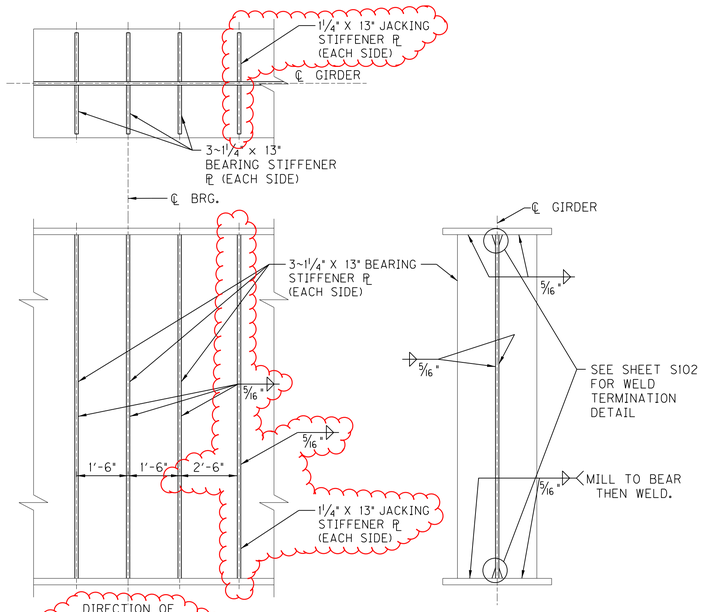
ITEM NUMBER: 01–180.70

PREPARED BY: PALMER ENGINEERING CO.

SHEET NO. S103

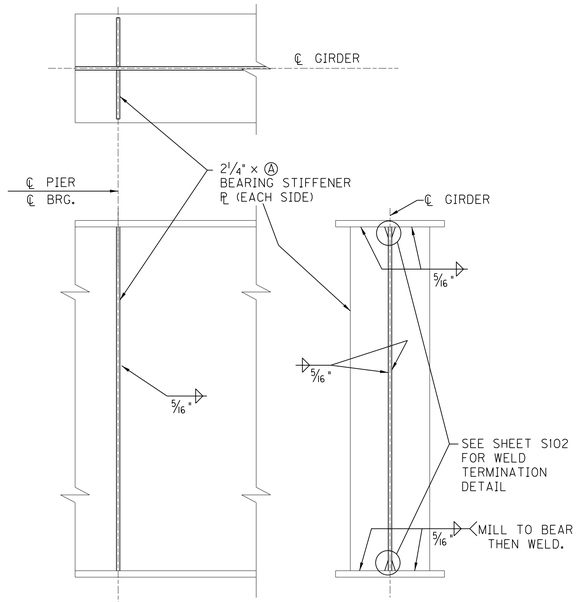
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MicroStation v8.11.7.443
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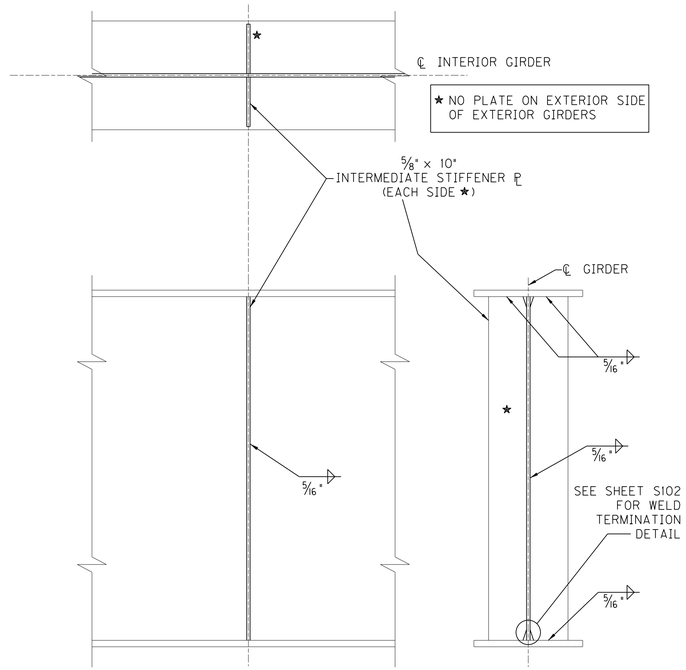
JACKING AND BEARING STIFFENERS

(END BENT 1 AND END BENT 2)

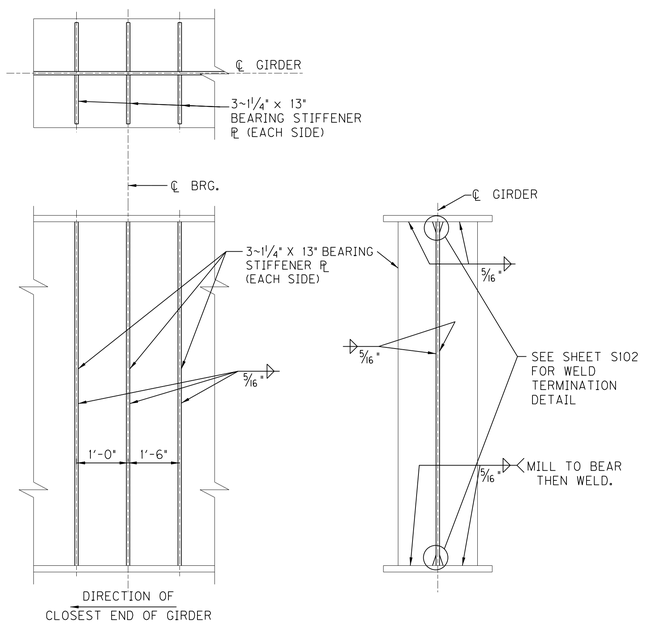


BEARING STIFFENER

(PIERS 1-3 AND PIERS 6-9)

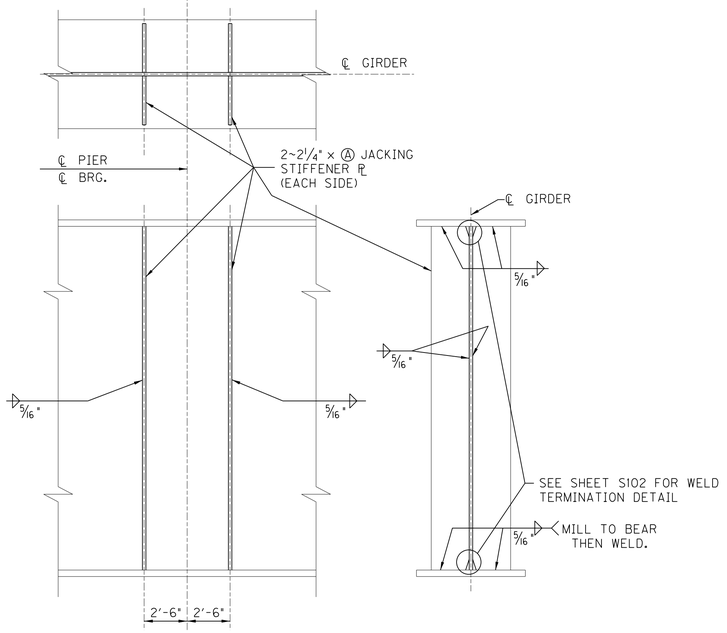


INTERMEDIATE STIFFENER



BEARING STIFFENER

(PIER 4 AND PIER 5)



JACKING STIFFENERS

(PIERS 1-3 AND PIERS 6-9)

BEARING AND JACKING STIFFENER WIDTHS	
LOCATION	Ⓐ
PIER 1	17"
PIER 2	15½"
PIER 3	17"
PIER 6	17"
PIER 7	15½"
PIER 8	15½"
PIER 9	17"

NOTES

1. INTERMEDIATE STIFFENERS AT CROSSFRAME LOCATIONS SHALL BE WELDED TO TOP AND BOTTOM FLANGES. FOR ALL OTHER LOCATIONS, WELD AT COMPRESSION FLANGE, TIGHT FIT AT TENSION FLANGE.
2. FOR ALL BEARING AND JACKING STIFFENERS, MILL TO BEAR AT BOTTOM FLANGE AND TIGHT FIT AT TOP FLANGE.
3. ENDS OF WEB AND ALL BEARING STIFFENERS ARE TO BE VERTICAL IN THE FINAL ERECTED POSITION. INTERMEDIATE STIFFENERS ARE TO BE NORMAL TO THE FLANGE.
4. ALL PLATES AND ANGLES SHALL BE HIGH STRENGTH LOW ALLOY STRUCTURAL STEEL, AASHTO M-270 GRADE 50W
5. DAMPER AND UTILITY PLATFORM CONNECTION STIFFENERS NOT SHOWN. FOR MORE DETAILS, SEE SHEETS S097, S223, AND S255.

REVISION	DATE
3 ADDED STIFFENER & NOTES/CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: B.T. DRECKMAN | C.M. GREENWELL
DETAILED BY: R.M. DAMON | B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

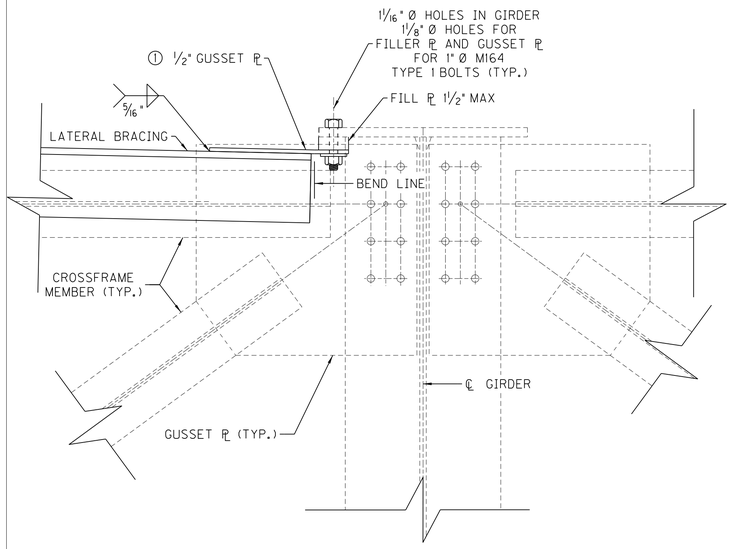
ITEM NUMBER: 01–180.70

PREPARED BY: PALMER ENGINEERING CO.

SHEET NO. S103

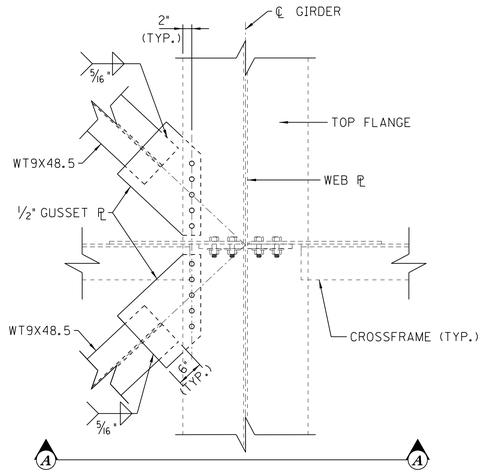
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/5/2013 2:54:17 PM
E-SHEET NAME:
MicroStation v8.11.7.443



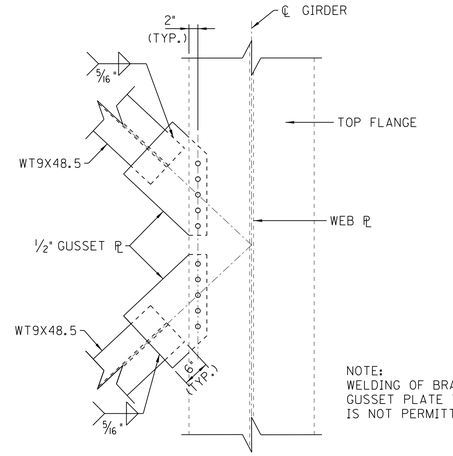
SECTION A–A

CROSSFRAME WITH
LATERAL BRACE



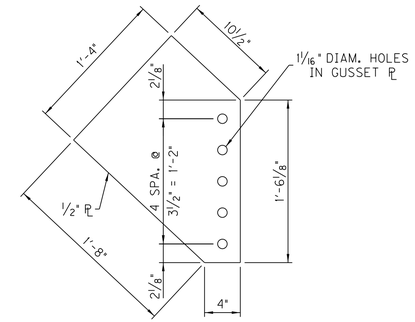
LATERAL BRACING DETAIL A

CROSSFRAME WITH
TWO LATERAL BRACES



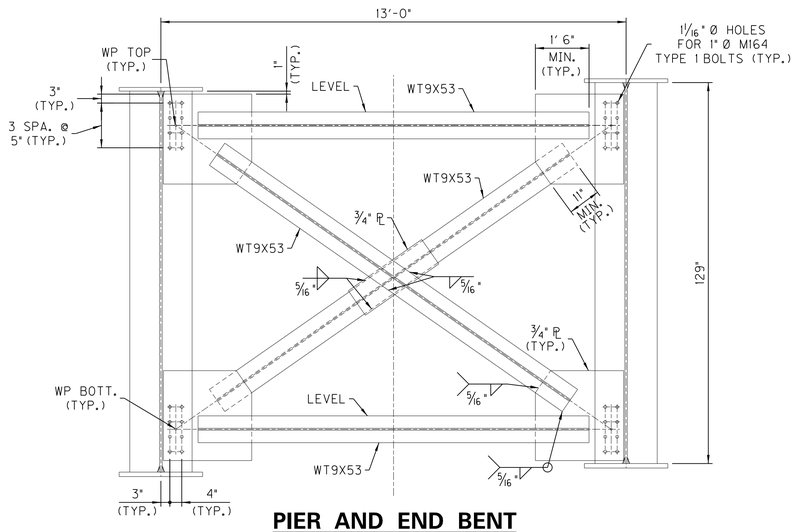
LATERAL BRACING DETAIL B

INTERMEDIATE BRACING POINT

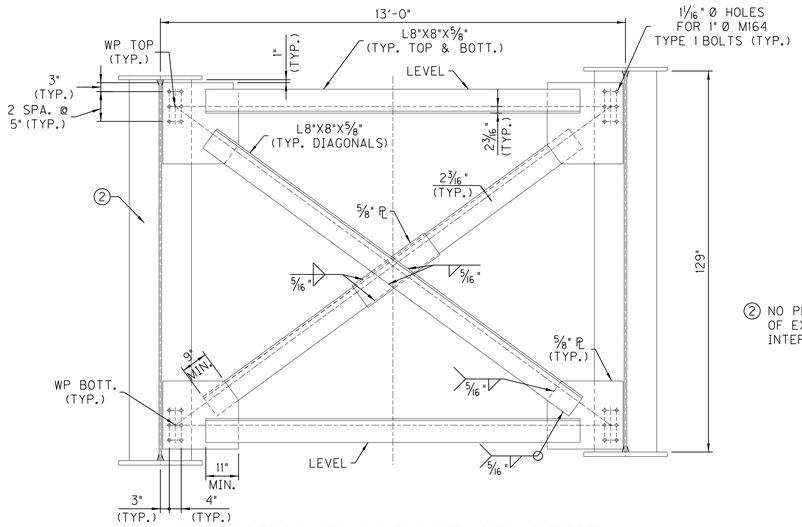


GUSSET PLATE DETAIL

① BEND LATERAL BRACING GUSSET PLATES
TO ACCOMODATE CROSS SLOPE GEOMETRY
AND SPECIAL CONDITOINS AT PIER 4 & 5.



PIER AND END BENT CROSSFRAME DETAIL



INTERMEDIATE CROSSFRAME DETAIL

② NO PLATE ON EXTERIOR SIDE
OF EXTERIOR GIRDERS @
INTERMEDIATE CROSSFRAMES.

NOTE:

1. ALL BOLTS SHALL BE 1"Ø AASHTO M-164 TYPE 1 HIGH STRENGTH BOLTS THROUGH-OUT THE CROSSFRAMES AND LATERAL BRACING. SLIP CRITICAL CONNECTION SLIP COEFFICIENT - 0.50. BOLT THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANES. USE HEAVY HEX NUTS AND DIRECT TENSION INDICATOR WASHERS.
2. ALL PLATES, WT'S, AND ANGLES SHALL BE HIGH STRENGTH LOW ALLOY STRUCTURAL STEEL, AASHTO M-270 GRADE 50W.
3. ALL WELDS SHALL BE E70XX.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: L.M. SALLEE	C.M. GREENWELL
DETAILED BY: L.M. SALLEE	A.C. THOMAS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

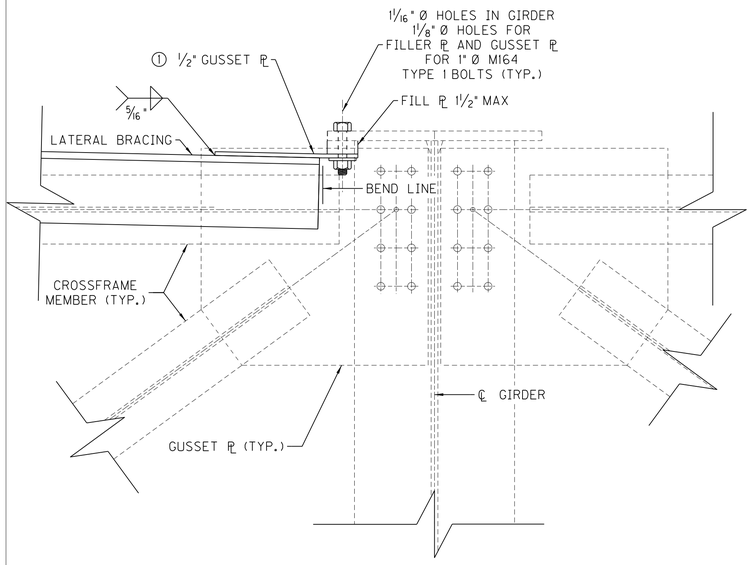
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

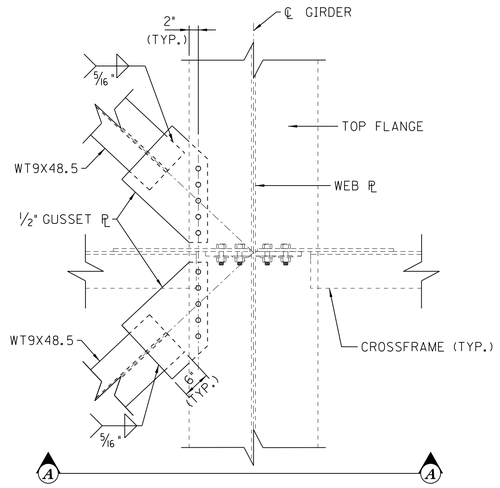
SHEET NO. S104
DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443



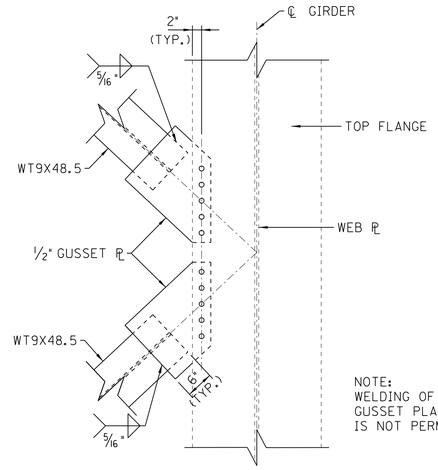
SECTION A–A

CROSSFRAME WITH
LATERAL BRACE



LATERAL BRACING DETAIL A

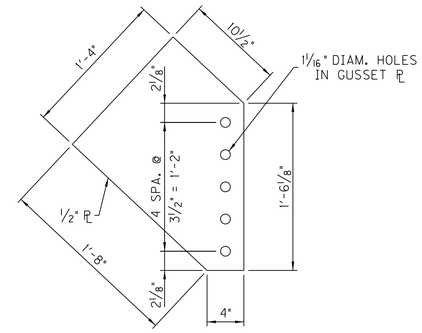
CROSSFRAME WITH
TWO LATERAL BRACES



NOTE:
WELDING OF BRACING MEMBER OR GUSSET PLATE TO GIRDER FLANGE IS NOT PERMITTED

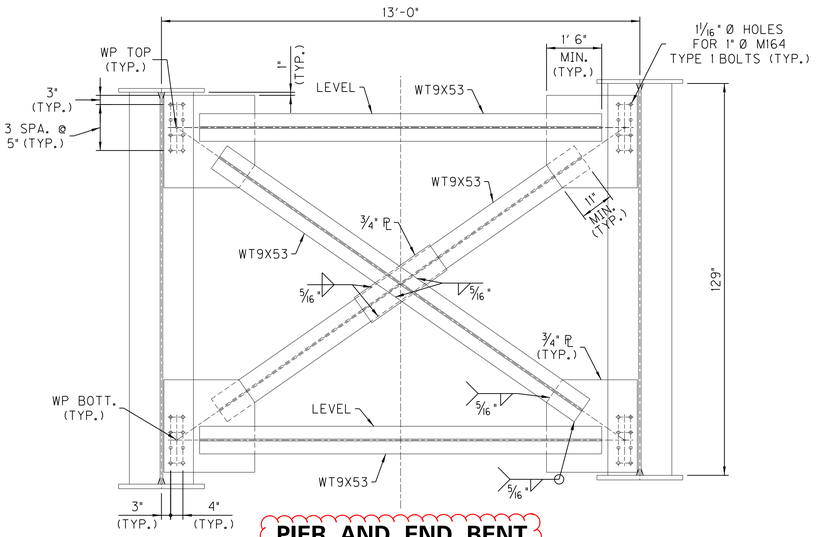
LATERAL BRACING DETAIL B

INTERMEDIATE BRACING POINT

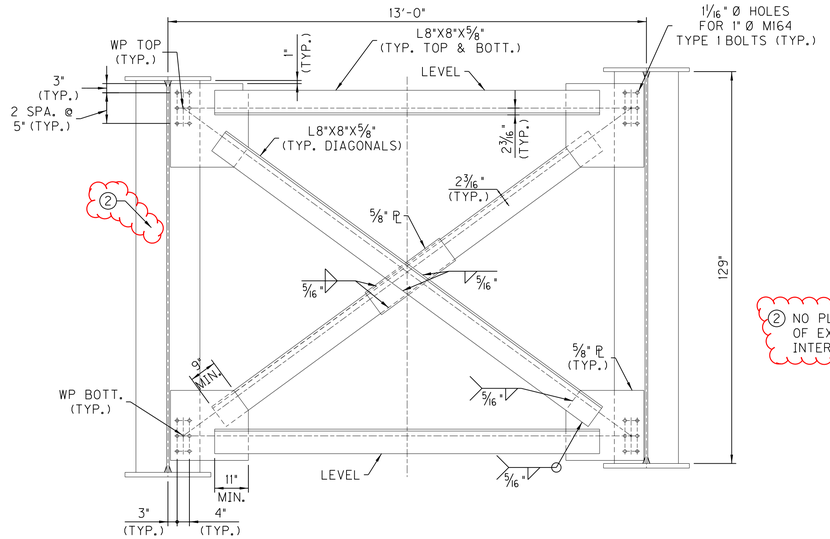


GUSSET PLATE DETAIL

① BEND LATERAL BRACING GUSSET PLATES TO ACCOMODATE CROSS SLOPE GEOMETRY AND SPECIAL CONDITOINS AT PIER 4 & 5.



PIER AND END BENT CROSSFRAME DETAIL



INTERMEDIATE CROSSFRAME DETAIL

② NO PLATE ON EXTERIOR SIDE OF EXTERIOR GIRDERS @ INTERMEDIATE CROSSFRAMES.

NOTE:
1. ALL BOLTS SHALL BE 1"Ø AASHTO M-164 TYPE 1 HIGH STRENGTH BOLTS THROUGH-OUT THE CROSSFRAMES AND LATERAL BRACING. SLIP CRITICAL CONNECTION SLIP COEFFICIENT - 0.50. BOLT THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANES. USE HEAVY HEX NUTS AND DIRECT TENSION INDICATOR WASHERS.
2. ALL PLATES, WT'S, AND ANGLES SHALL BE HIGH STRENGTH LOW ALLOY STRUCTURAL STEEL, AASHTO M-270 GRADE 50W.
3. ALL WELDS SHALL BE E70XX.

REVISION	DATE
3 CHANGED NOTES	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: L.M. SALLEE	C.M. GREENWELL
DETAILED BY: L.M. SALLEE	A.C. THOMAS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

STRUCTURAL STEEL DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

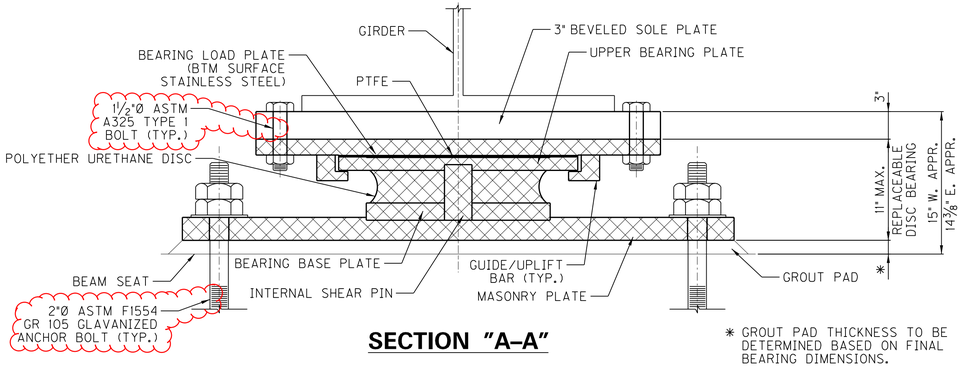
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S104

DRAWING NO. **24686**

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FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCT\FINAL DESIGN\KY LAKE\DGN\FINAL_PLANS\KYTC_STRUCT_2D.IFBASE.DGN
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DATE PLOTTED: July 27, 2011
12/2/2013 9:17:21 AM
E-SHEET NAME:
MicroStation v8.11.7.443

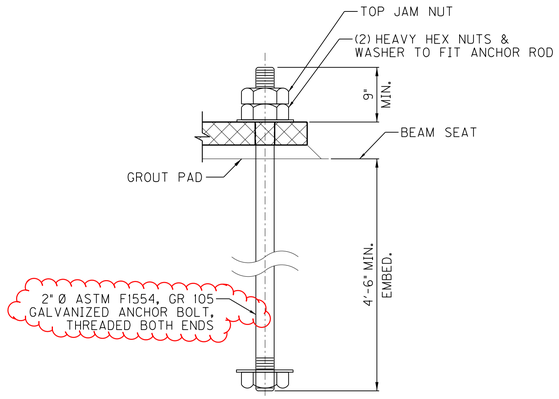


SECTION "A–A"

* GROUT PAD THICKNESS TO BE DETERMINED BASED ON FINAL BEARING DIMENSIONS.

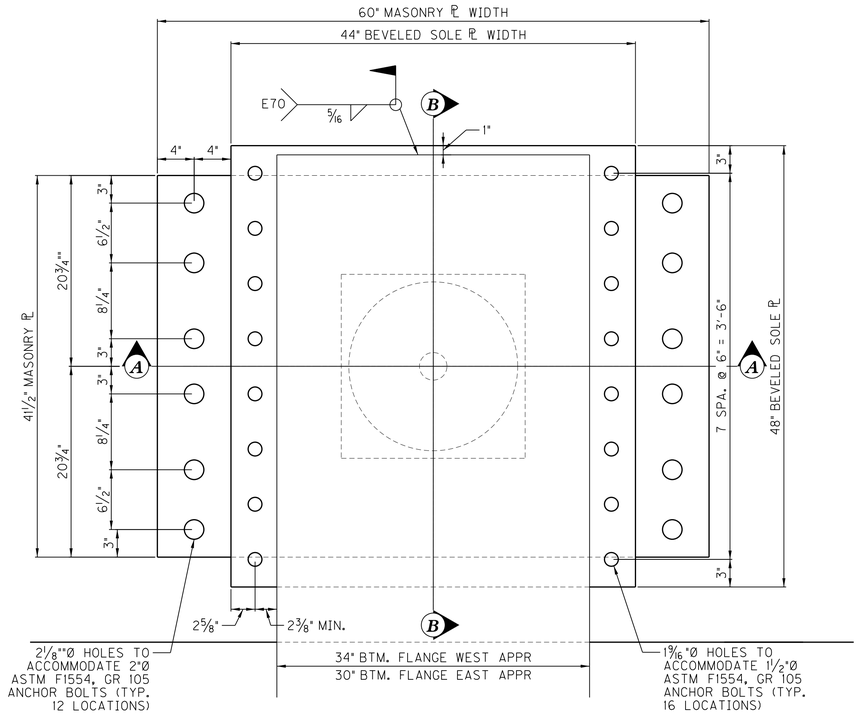
BEARING CAPACITY REQUIREMENTS

BEARING CAPACITY	SERVICE	STRENGTH	EXTREME EVENT
VERTICAL LOAD (KIPS)	800	1200	1200
HORIZONTAL LOAD (KIPS)	240	240	240
UPLIFT LOAD (KIPS)	-	-	240
LONGITUDINAL DISPLACEMENT (IN)	± 9.5"	± 9.5"	± 12"
ROTATION (RAD)	± 0.026	± 0.036	± 0.036

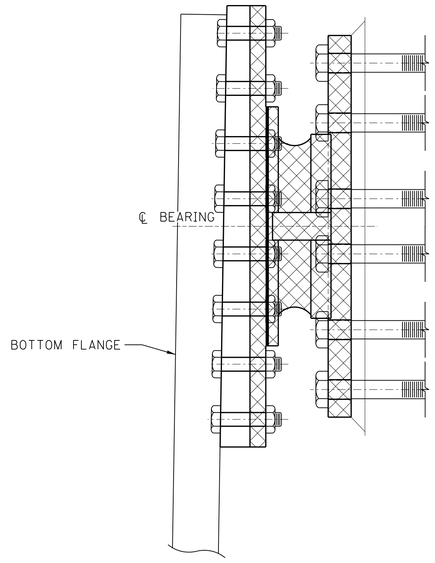


ANCHOR BOLT ASSEMBLY DETAIL

INSTALLATION NOTE: INSTALL WASHER & 1 HEAVY HEX NUT, FINGER TIGHT, ON EACH ANCHOR BOLT. BACK NUT OFF HALF A TURN AND INSTALL JAM NUT.



EXPANSION BEARING PLAN



SECTION "B–B"

LEGEND:

INDICATES BEARING PARTS TO BE DESIGNED AND SUPPLIED BY THE BEARING MANUFACTURER WITHIN THE PARAMETERS SHOWN ON THESE PLANS.

NOTES:

1. THE BEARING DEVICES SUPPLIED SHALL BE CAPABLE OF TRANSMITTING THE LOADS AND MOVEMENT SHOWN ON THESE PLANS.
2. BEARINGS SHALL BE DISC TYPE, UNI-DIRECTIONAL BEARINGS WITH UPLIFT PROTECTION.
3. FIELD WELD BEVELED SOLE PLATE TO BOTTOM FLANGE OF GIRDER AS SHOWN TO ACCOMMODATE CONSTRUCTION TOLERANCE.
4. FOR BEVELED SOLE PLATE DIMENSIONS, SEE SHEET S107.
5. BEARING LOAD PLATE SHALL BE BOLTED TO THE BEVELED SOLE PLATE TO ACCOMODATE A FUTURE REPLACEMENT.
6. THE CONNECTION OF BEARING BASE PLATE TO MASONRY PLATE SHALL BE DESIGNED BY THE BEARING MANUFACTURER.
7. CONCRETE SURFACE UNDER THE GROUT PAD SHALL BE INTENTIONALLY ROUGHENED AND BLAST CLEANED PRIOR TO INSTALLATION OF GROUT.
8. USE NON-SHRINK GROUT FROM THE DEPARTMENT'S LIST OF APPROVED MATERIALS AND CONFORMING TO SECTION 601 OF THE STANDARD SPECIFICATIONS.
9. CONTRARY TO THE STANDARD SPECIFICATIONS, ANCHOR BOLTS SHALL BE CAST-IN.
10. FOR MORE INFORMATION SEE SPECIAL NOTE FOR DISC BEARINGS.

3 CHANGED NOTES	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	K.S. MCLEMORE
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

BEARING DETAILS

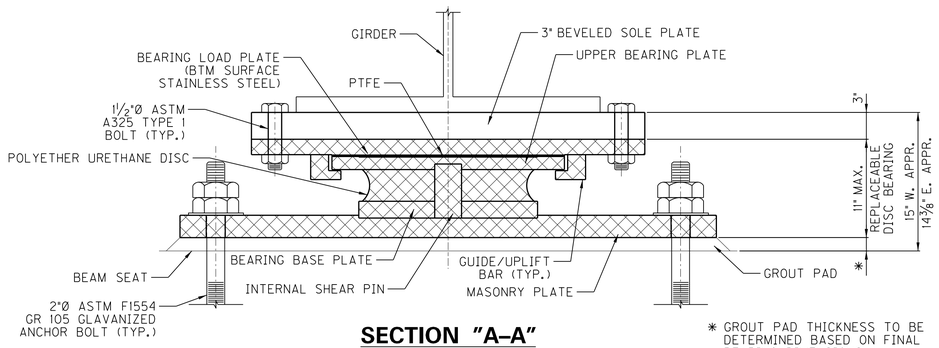
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

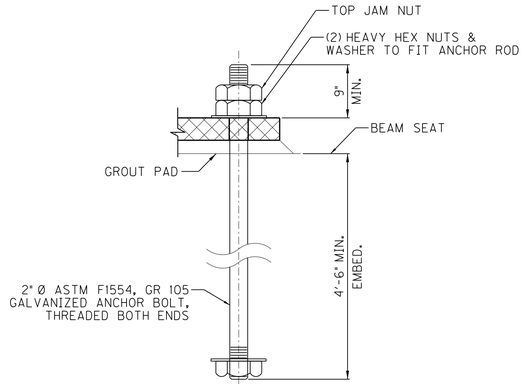
SHEET NO. S105
DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
10:25:11 AM
12/2/2013
E-SHEET NAME:
MicroStation v8.11.7.443



SECTION "A–A"

* GROUT PAD THICKNESS TO BE DETERMINED BASED ON FINAL BEARING DIMENSIONS.

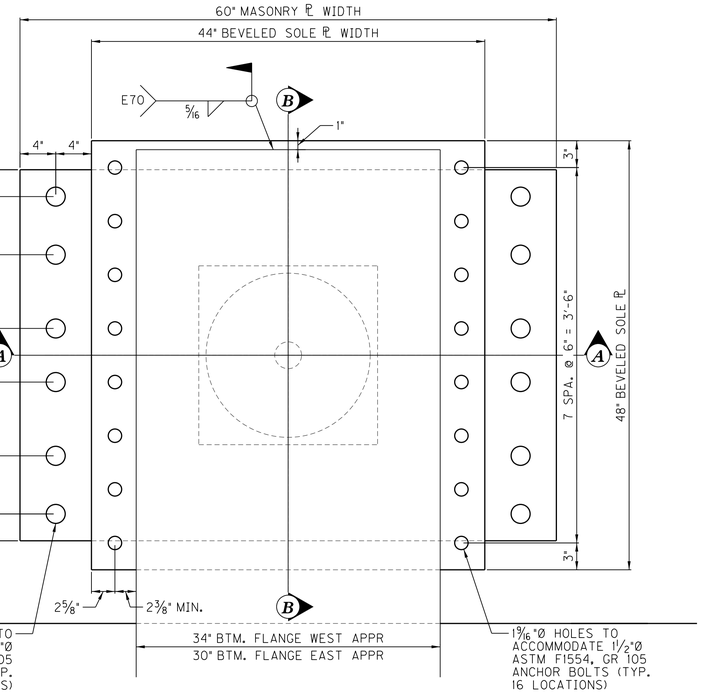


ANCHOR BOLT ASSEMBLY DETAIL

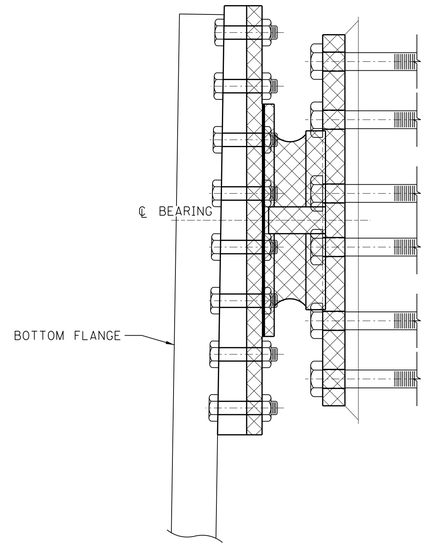
INSTALLATION NOTE: INSTALL WASHER & 1 HEAVY HEX NUT, FINGER TIGHT, ON EACH ANCHOR BOLT. BACK NUT OFF HALF A TURN AND INSTALL JAM NUT.

BEARING CAPACITY REQUIREMENTS

BEARING CAPACITY	SERVICE	STRENGTH	EXTREME EVENT
VERTICAL LOAD (KIPS)	800	1200	1200
HORIZONTAL LOAD (KIPS)	240	240	240
UPLIFT LOAD (KIPS)	-	-	240
LONGITUDINAL DISPLACEMENT (IN)	± 9.5"	± 9.5"	± 12"
ROTATION (RAD)	± 0.026	± 0.036	± 0.036



EXPANSION BEARING PLAN



SECTION "B–B"

LEGEND:

INDICATES BEARING PARTS TO BE DESIGNED AND SUPPLIED BY THE BEARING MANUFACTURER WITHIN THE PARAMETERS SHOWN ON THESE PLANS.

NOTES:

1. THE BEARING DEVICES SUPPLIED SHALL BE CAPABLE OF TRANSMITTING THE LOADS AND MOVEMENT SHOWN ON THESE PLANS.
2. BEARINGS SHALL BE DISC TYPE, UNI-DIRECTIONAL BEARINGS WITH UPLIFT PROTECTION.
3. FIELD WELD BEVELED SOLE PLATE TO BOTTOM FLANGE OF GIRDER AS SHOWN TO ACCOMMODATE CONSTRUCTION TOLERANCE.
4. FOR BEVELED SOLE PLATE DIMENSIONS, SEE SHEET S107.
5. BEARING LOAD PLATE SHALL BE BOLTED TO THE BEVELED SOLE PLATE TO ACCOMODATE A FUTURE REPLACEMENT.
6. THE CONNECTION OF BEARING BASE PLATE TO MASONRY PLATE SHALL BE DESIGNED BY THE BEARING MANUFACTURER.
7. CONCRETE SURFACE UNDER THE GROUT PAD SHALL BE INTENTIONALLY ROUGHENED AND BLAST CLEANED PRIOR TO INSTALLATION OF GROUT.
8. USE NON-SHRINK GROUT FROM THE DEPARTMENT'S LIST OF APPROVED MATERIALS AND CONFORMING TO SECTION 601 OF THE STANDARD SPECIFICATIONS.
9. CONTRARY TO THE STANDARD SPECIFICATIONS, ANCHOR BOLTS SHALL BE CAST-IN.
10. FOR MORE INFORMATION SEE SPECIAL NOTE FOR DISC BEARINGS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	K.S. MCLEMORE
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

BEARING DETAILS

ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S105

DRAWING NO. 24686

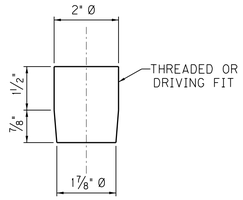
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GENERAL NOTES FOR BEARING PADS

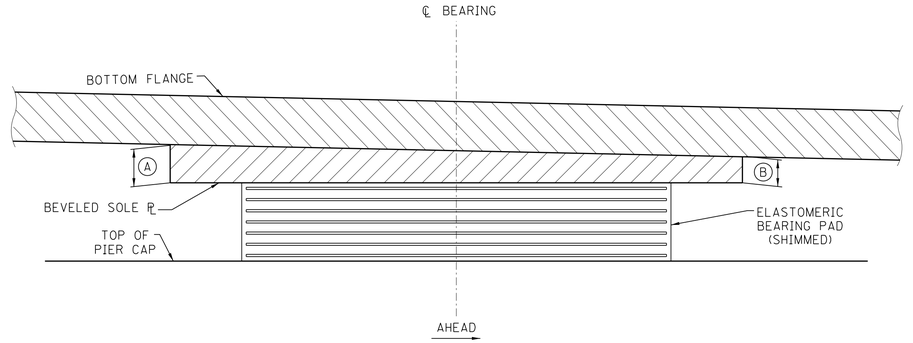
1. ALL PLATES SHALL BE M270 GR 50W AND LOAD PLATES SHALL BE VULCANIZED TO THE ELASTOMER DURING THE MOLDING PROCESS.
2. ELASTOMERIC BEARINGS SHALL CONFORM TO AASHTO BRIDGE DESIGN SPECIFICATIONS WITH A SHEAR MODULUS OF 130 PSI AND A MINIMUM LOW-TEMPERATURE ELASTOMER GRADE OF 3.
3. METALLIC SHIM MATERIAL SHALL BE ASTM A209 OR A1011 GRADE 36.
4. STEEL REINFORCED ELASTOMERIC BEARING PADS SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENT CORRESPONDING TO DESIGN METHOD "B".
5. ELASTOMERIC BEARING PADS ARE INCLUDED IN THE LUMP SUM BID FOR STRUCTURAL STEEL.

INSTALLATION PROCEDURES

1. CAST PIER CAPS ENSURING THAT CAP STEEL WILL NOT INTERFERE WITH INSTALLATION OF ANCHOR BOLTS.
2. AFTER PIER CAPS ARE CAST, ALL BEARING AREAS SHALL BE GROUND SMOOTH AND HORIZONTAL.
3. CONTRARY TO THE STANDARD SPECIFICATIONS ANCHOR BOLTS SHALL BE CAST-IN-PLACE.



PINTLE DETAIL



BEVELED SOLE PLATES

BEVELED SOLE PLATE DIMENSIONS

LOCATION	A	B
END BENT 1	2 5/8"	3 3/8"
PIER 1	2 3/8"	3 5/8"
PIER 2	2 1/4"	3 3/4"
PIER 3	2 3/8"	3 5/8"
PIER 4	2 5/8"	3 3/8"
PIER 5	3 3/8"	2 5/8"
PIER 6	3 5/8"	2 3/8"
PIER 7	3 3/4"	2 1/4"
PIER 8	3 3/4"	2 1/4"
PIER 9	3 3/8"	2 5/8"
END BENT 2	3 1/8"	2 7/8"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: L.A. BEATTIE	B.T. DRECKMAN
DETAILED BY: T.S. ELLIS	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

BEARING DETAILS

ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S107

DRAWING NO. 24686

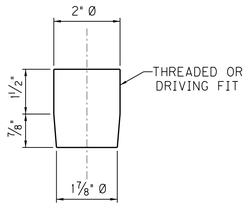
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GENERAL NOTES FOR BEARING PADS

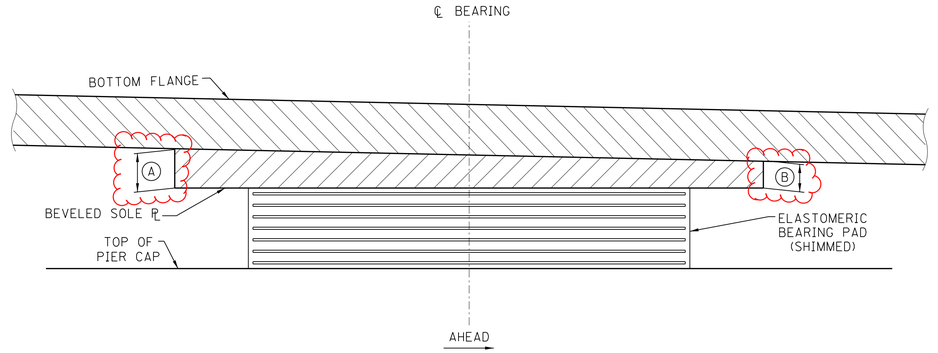
1. ALL PLATES SHALL BE M270 GR 50W AND LOAD PLATES SHALL BE VULCANIZED TO THE ELASTOMER DURING THE MOLDING PROCESS.
2. ELASTOMERIC BEARINGS SHALL CONFORM TO AASHTO BRIDGE DESIGN SPECIFICATIONS WITH A SHEAR MODULUS OF 130 PSI AND A MINIMUM LOW-TEMPERATURE ELASTOMER GRADE OF 3.
3. METALLIC SHIM MATERIAL SHALL BE ASTM A209 OR A1011 GRADE 36.
4. STEEL REINFORCED ELASTOMERIC BEARING PADS SHALL BE SUBJECTED TO THE LOAD TESTING REQUIREMENT CORRESPONDING TO DESIGN METHOD "B".
5. ELASTOMERIC BEARING PADS ARE INCLUDED IN THE LUMP SUM BID FOR STRUCTURAL STEEL.

INSTALLATION PROCEDURES

1. CAST PIER CAPS ENSURING THAT CAP STEEL WILL NOT INTERFERE WITH INSTALLATION OF ANCHOR BOLTS.
2. AFTER PIER CAPS ARE CAST, ALL BEARING AREAS SHALL BE GROUND SMOOTH AND HORIZONTAL.
3. CONTRARY TO THE STANDARD SPECIFICATIONS ANCHOR BOLTS SHALL BE CAST-IN-PLACE.



PINTLE DETAIL



BEVELED SOLE PLATES

BEVELED SOLE PLATE DIMENSIONS

LOCATION	A	B
END BENT 1	2 5/8"	3 3/8"
PIER 1	2 3/8"	3 5/8"
PIER 2	2 1/4"	3 3/4"
PIER 3	2 3/8"	3 5/8"
PIER 4	2 5/8"	3 3/8"
PIER 5	3 3/8"	2 5/8"
PIER 6	3 5/8"	2 3/8"
PIER 7	3 3/4"	2 1/4"
PIER 8	3 3/4"	2 1/4"
PIER 9	3 3/8"	2 5/8"
END BENT 2	3 1/8"	2 7/8"

1 CHANGED NOTES & DIMENSIONS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: L.A. BEATTIE	B.T. DRECKMAN
DETAILED BY: T.S. ELLIS	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE **US 68** | CROSSING **KENTUCKY LAKE**

BEARING DETAILS

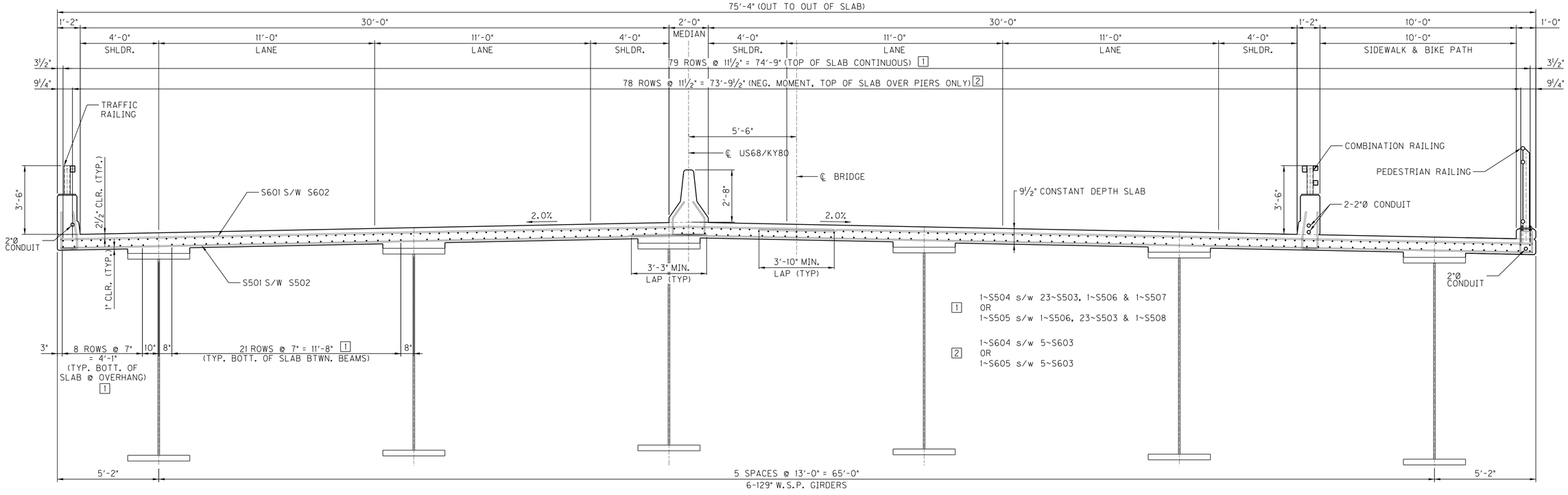
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S107
DRAWING NO. 24686

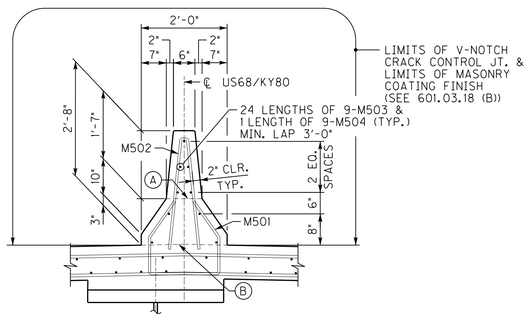
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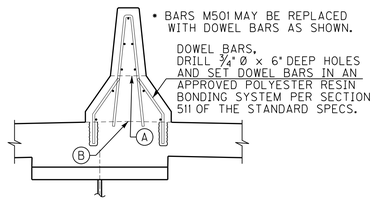
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OR
1~S505 s/w 1~S506, 23~S503 & 1~S508

2 1~S604 s/w 5~S603
OR
1~S605 s/w 5~S603

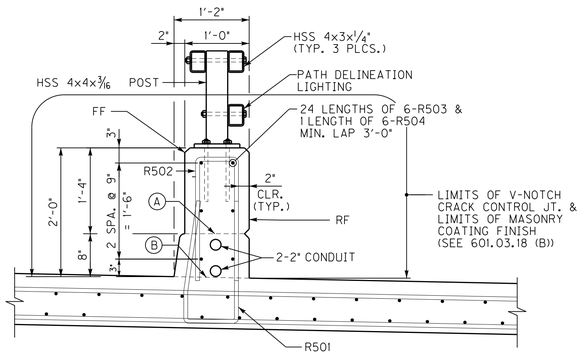
WEST APPROACH TYPICAL SECTION
(LOOKING AHEAD STATION)



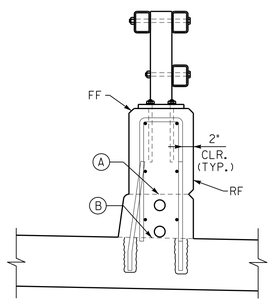
MEDIAN BARRIER DETAIL



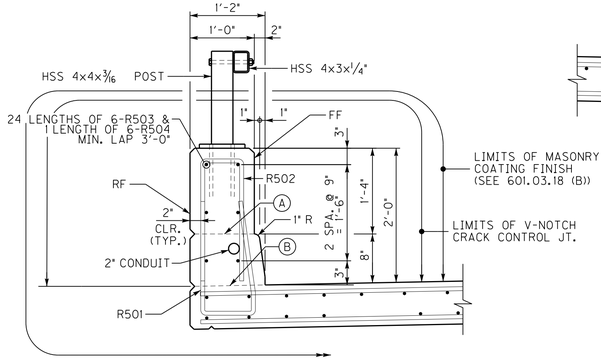
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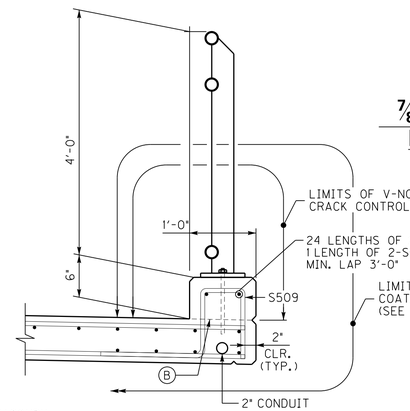
COMBINATION RAIL DETAIL
LOOKING AHEAD STATION



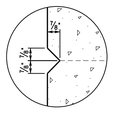
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LOOKING AHEAD STATION



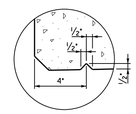
TRAFFIC RAIL DETAIL
LOOKING AHEAD STATION



PEDESTRIAN RAIL
LOOKING AHEAD STATION



⅞" "V-GROOVE" RUSTICATION



DRIP NOTCH DETAIL

LEGEND

(A) PERMISSIBLE CONSTRUCTION JOINT.

(B) MANDATORY ROUGHENED CONSTRUCTION JOINT. CONCRETE ABOVE THIS JOINT SHALL BE PLACED AFTER THE SLAB HAS BEEN PROPERLY CURED.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

SLAB TYPICAL SECTION

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

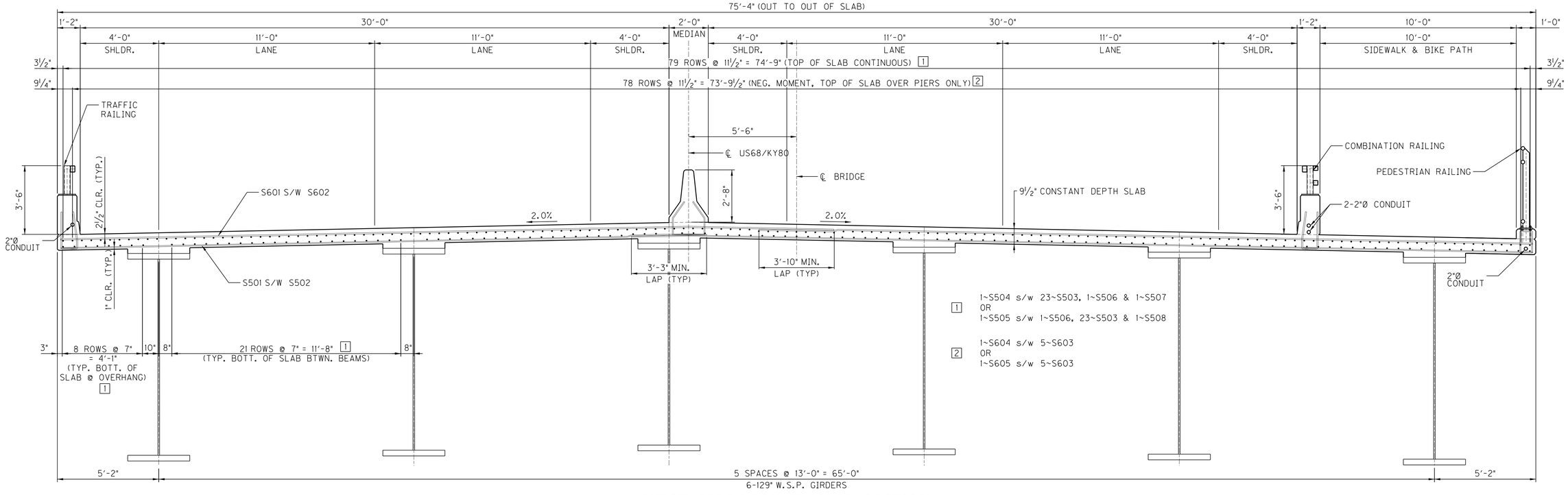
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S108

DRAWING NO. 24686

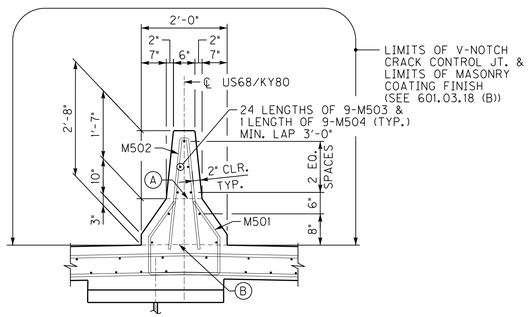
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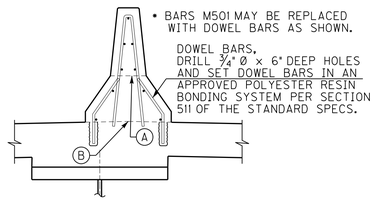
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OR
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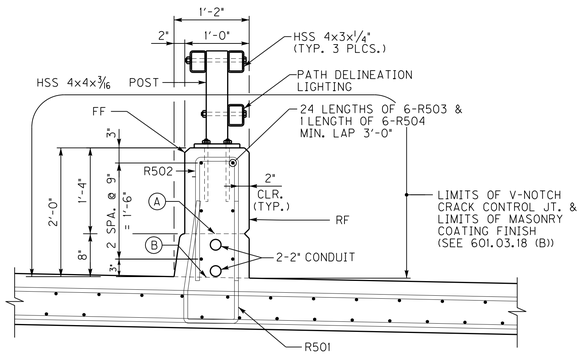
WEST APPROACH TYPICAL SECTION
(LOOKING AHEAD STATION)



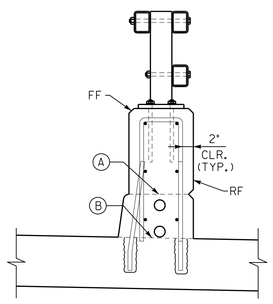
MEDIAN BARRIER DETAIL



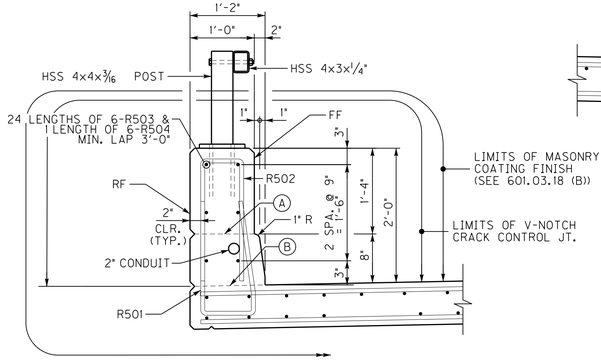
OPTIONAL MEDIAN BARRIER CONNECTION



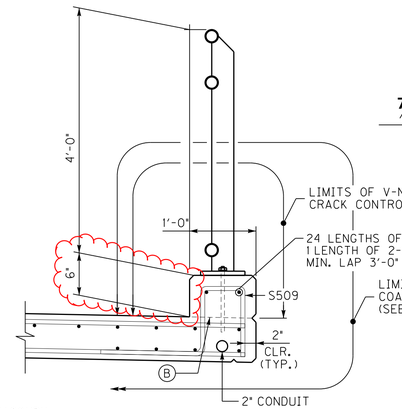
COMBINATION RAIL DETAIL
LOOKING AHEAD STATION



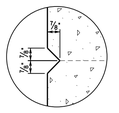
OPTIONAL COMBINATION RAIL CONNECTION
LOOKING AHEAD STATION



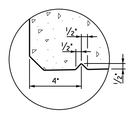
TRAFFIC RAIL DETAIL
LOOKING AHEAD STATION



PEDESTRIAN RAIL
LOOKING AHEAD STATION



⅞" "V-GROOVE" RUSTICATION



DRIP NOTCH DETAIL

LEGEND

(A) PERMISSIBLE CONSTRUCTION JOINT.

(B) MANDATORY ROUGHENED CONSTRUCTION JOINT. CONCRETE ABOVE THIS JOINT SHALL BE PLACED AFTER THE SLAB HAS BEEN PROPERLY CURED.

3 CHANGED DIMENSION	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

SLAB TYPICAL SECTION

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

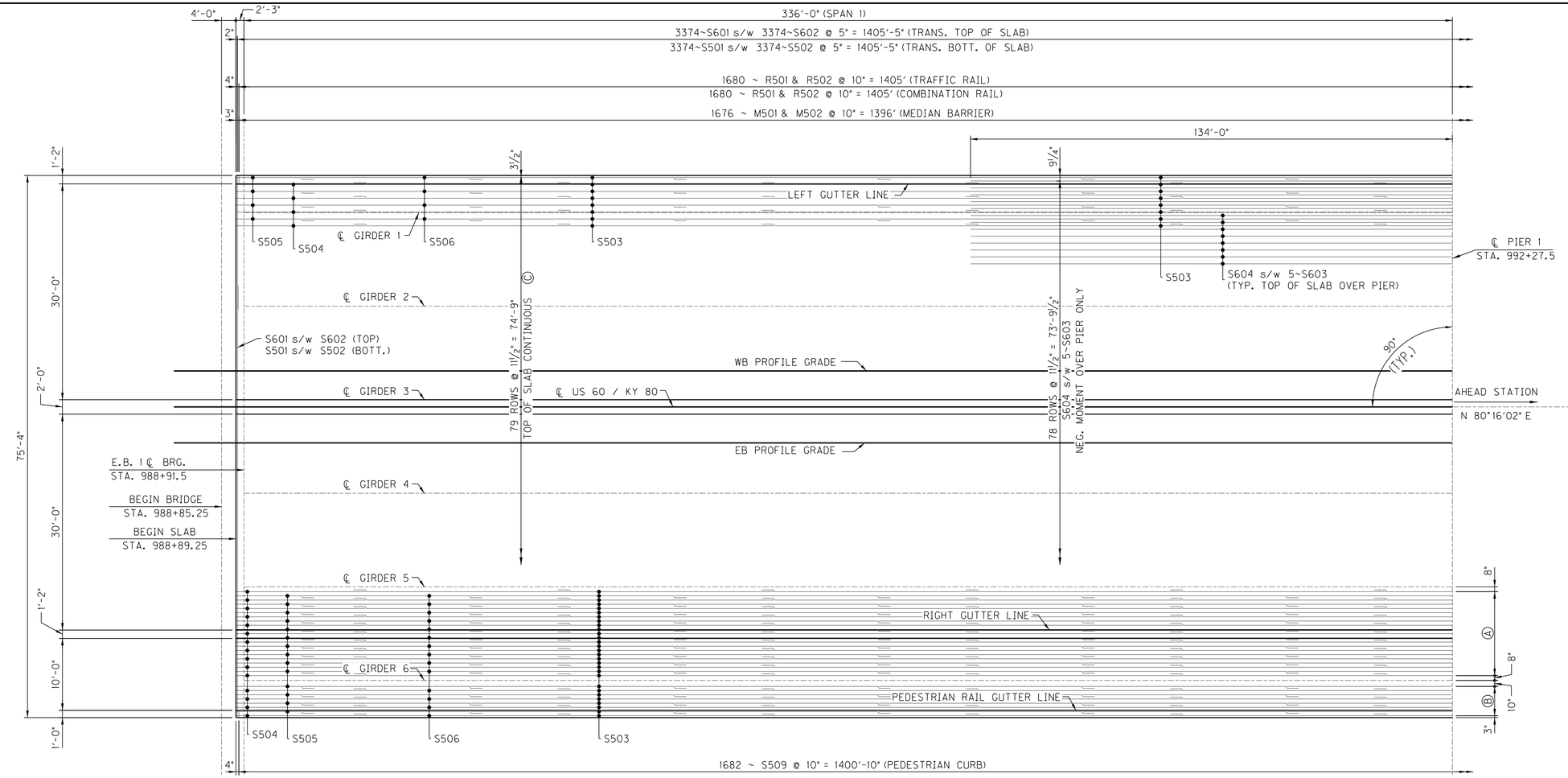
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

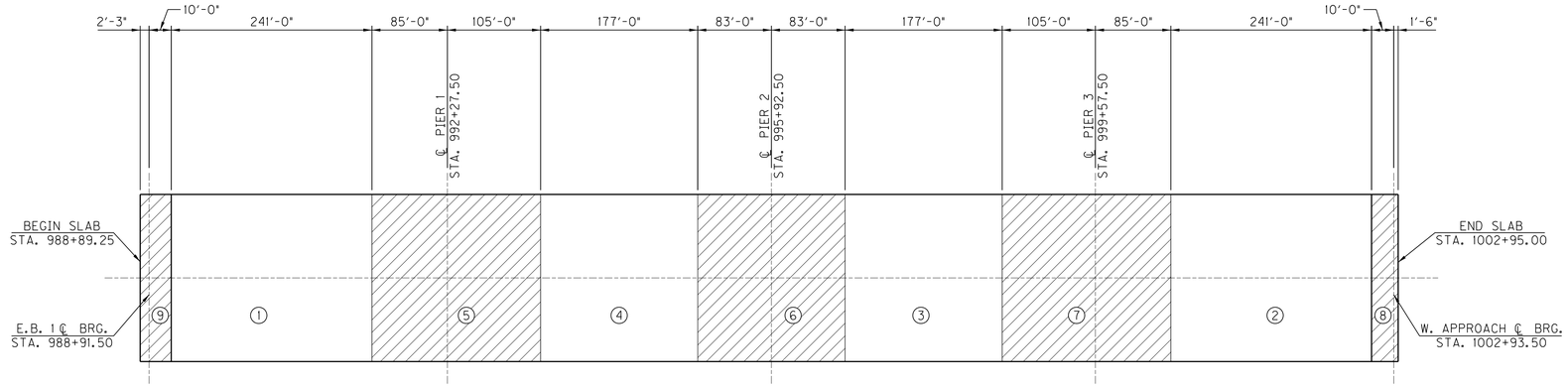
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MicroStation v8.11.7.443



SLAB – SPAN 1



SLAB POURING SEQUENCE

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ 1~S504 s/w 23~S503,
1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

MIN LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

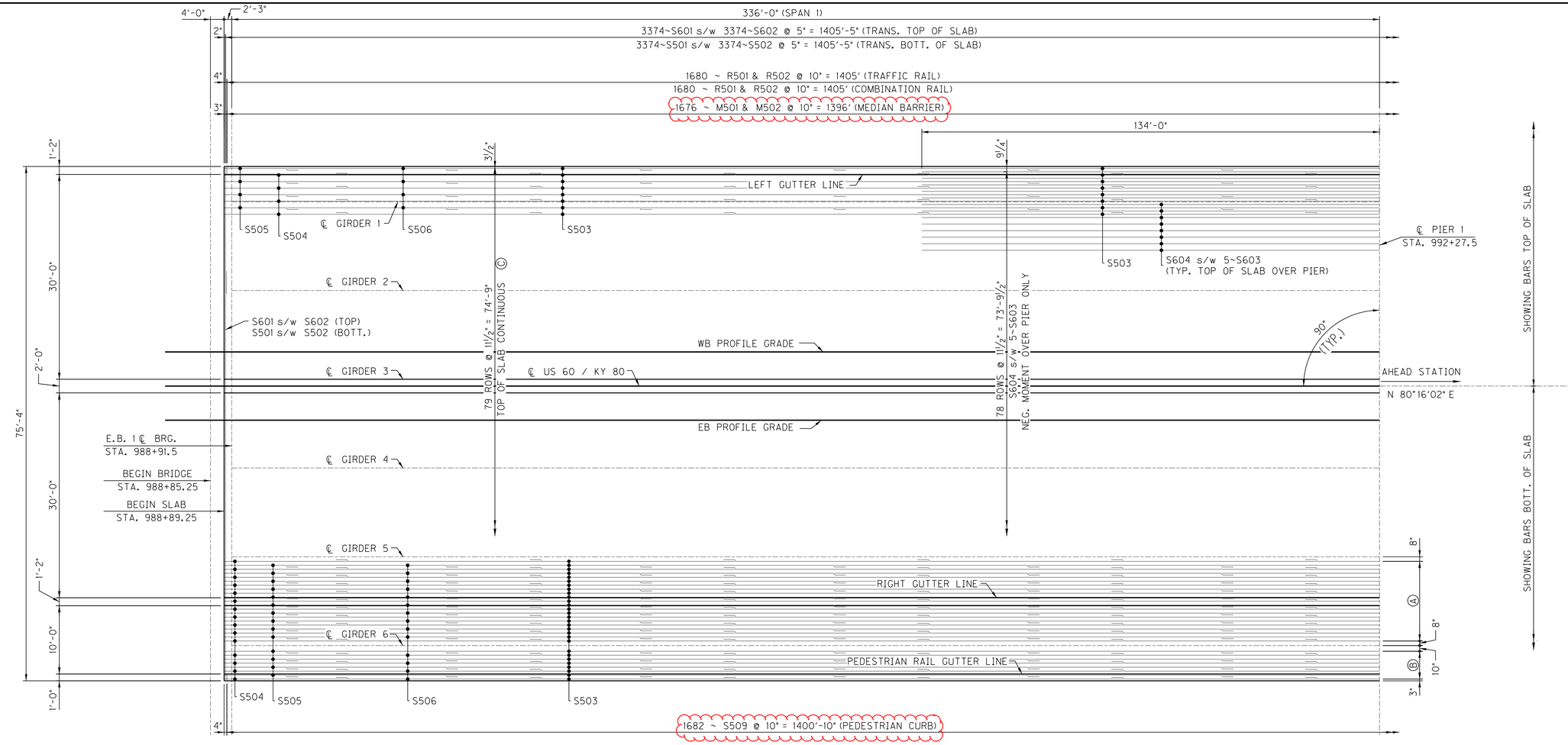
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

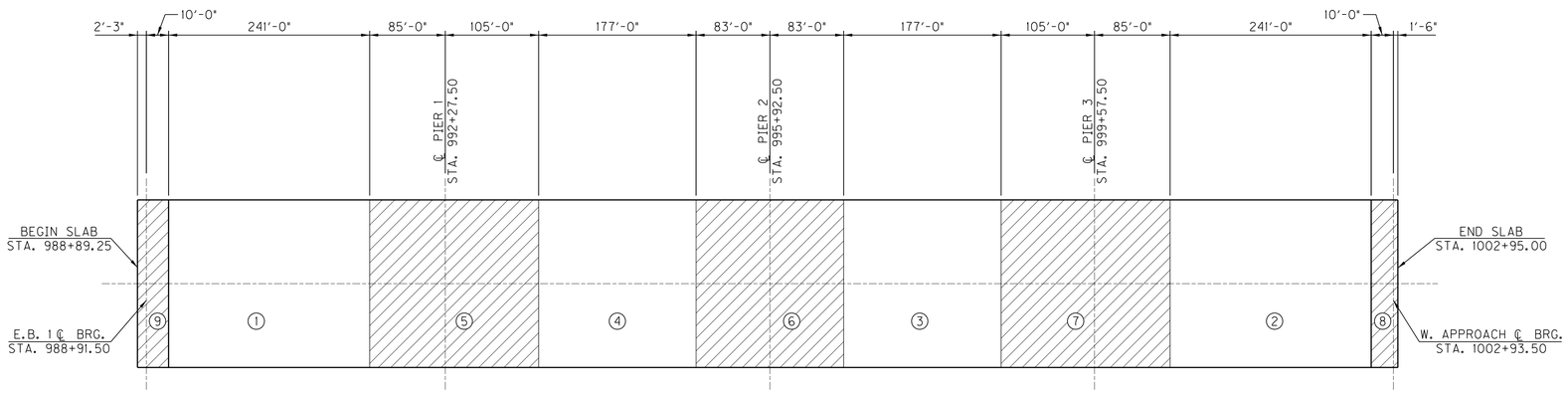
PREPARED BY
PALMER ENGINEERING CO.

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SLAB – SPAN 1



SLAB POURING SEQUENCE

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
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BOTT. OF SLAB @ OVERHANGS

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1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

MIN LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

A	CHANGED DIMENSIONS	12/09/13
	REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

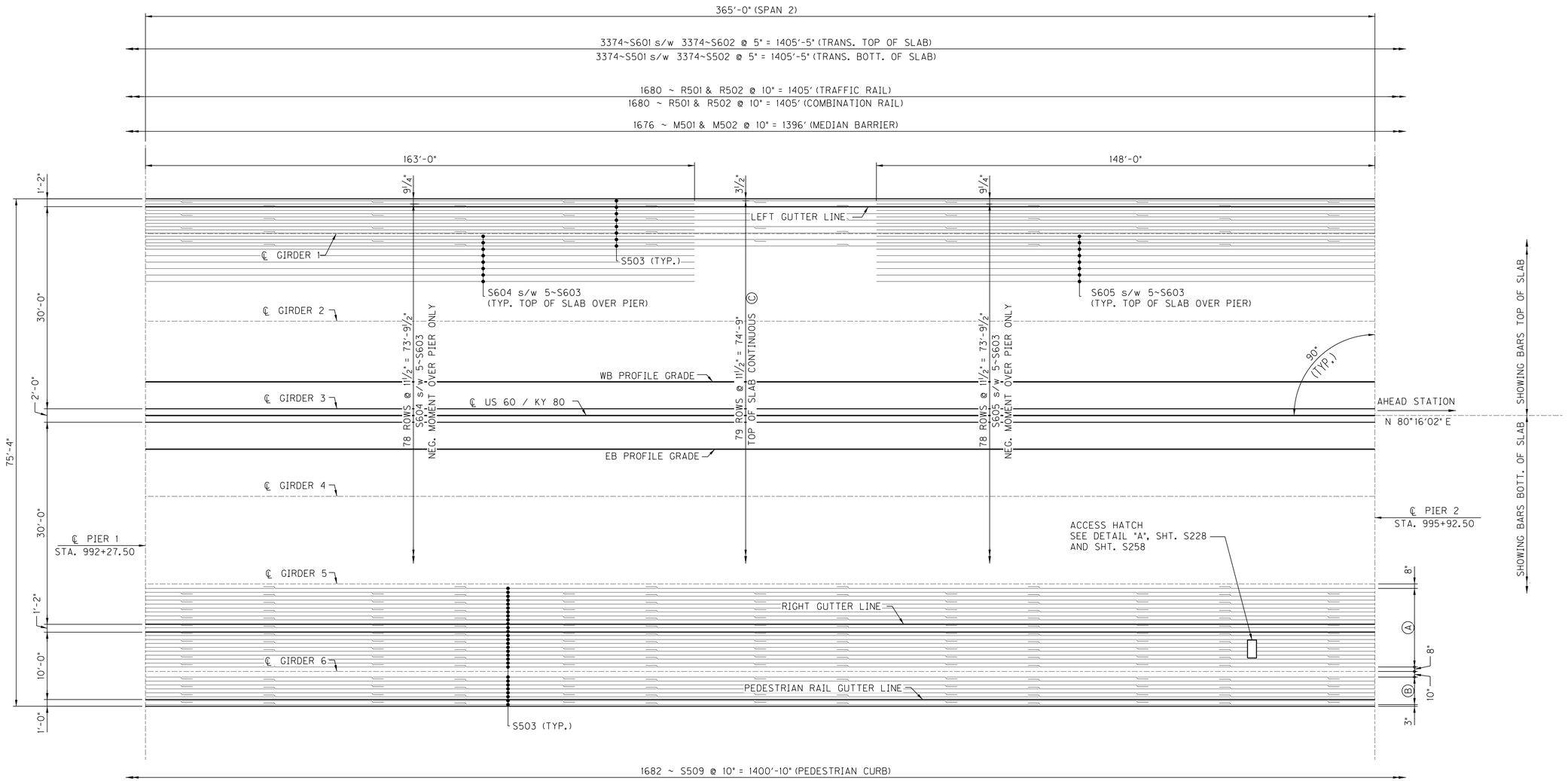
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S109
DRAWING NO. 24686

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SLAB – SPAN 2

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ 1~S504 s/w 23~S503,
1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

PLAN OF SLAB

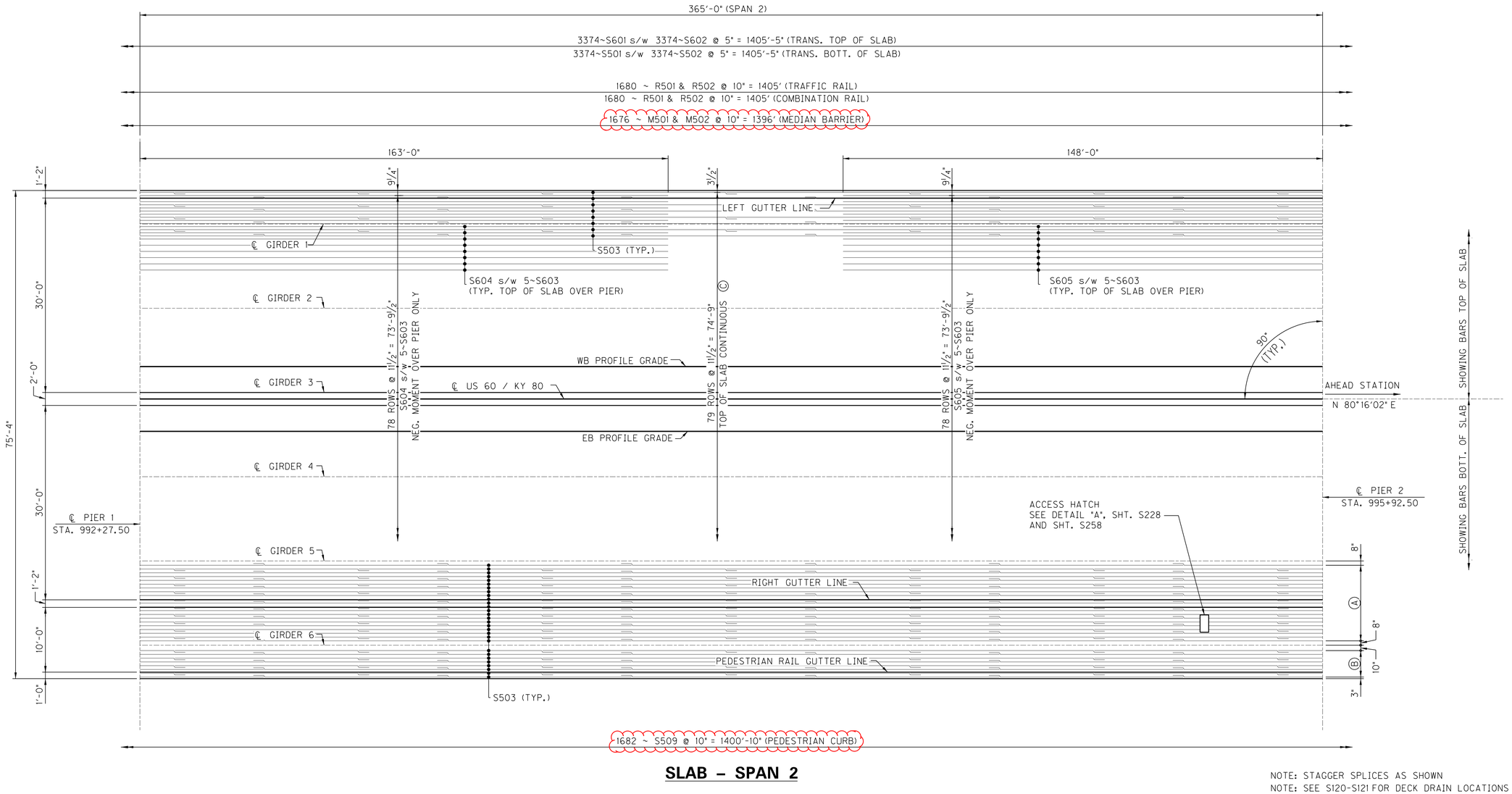
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S110
DRAWING NO. 24686

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MicroStation v8.11.7.443



SLAB – SPAN 2

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

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BOTT. OF SLAB @ OVERHANGS

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1~S506, 1~S507
OR
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23~S503, 1~S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

REVISION	DATE
3 CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

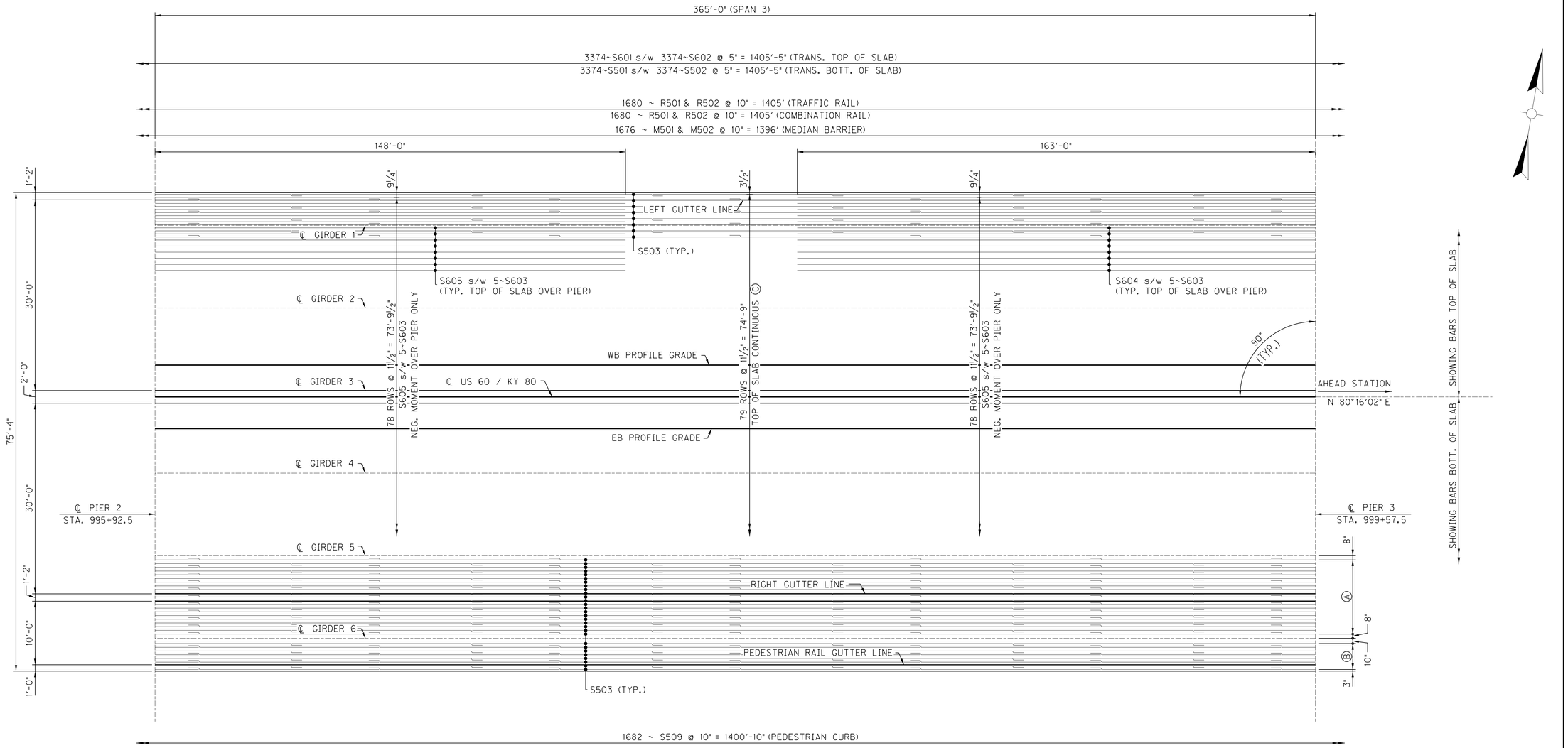
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S110
DRAWING NO. 24686

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12/5/2013 1:16:15 PM



SLAB – SPAN 3

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ 1~S504 s/w 23~S503,
1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PLAN OF SLAB

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

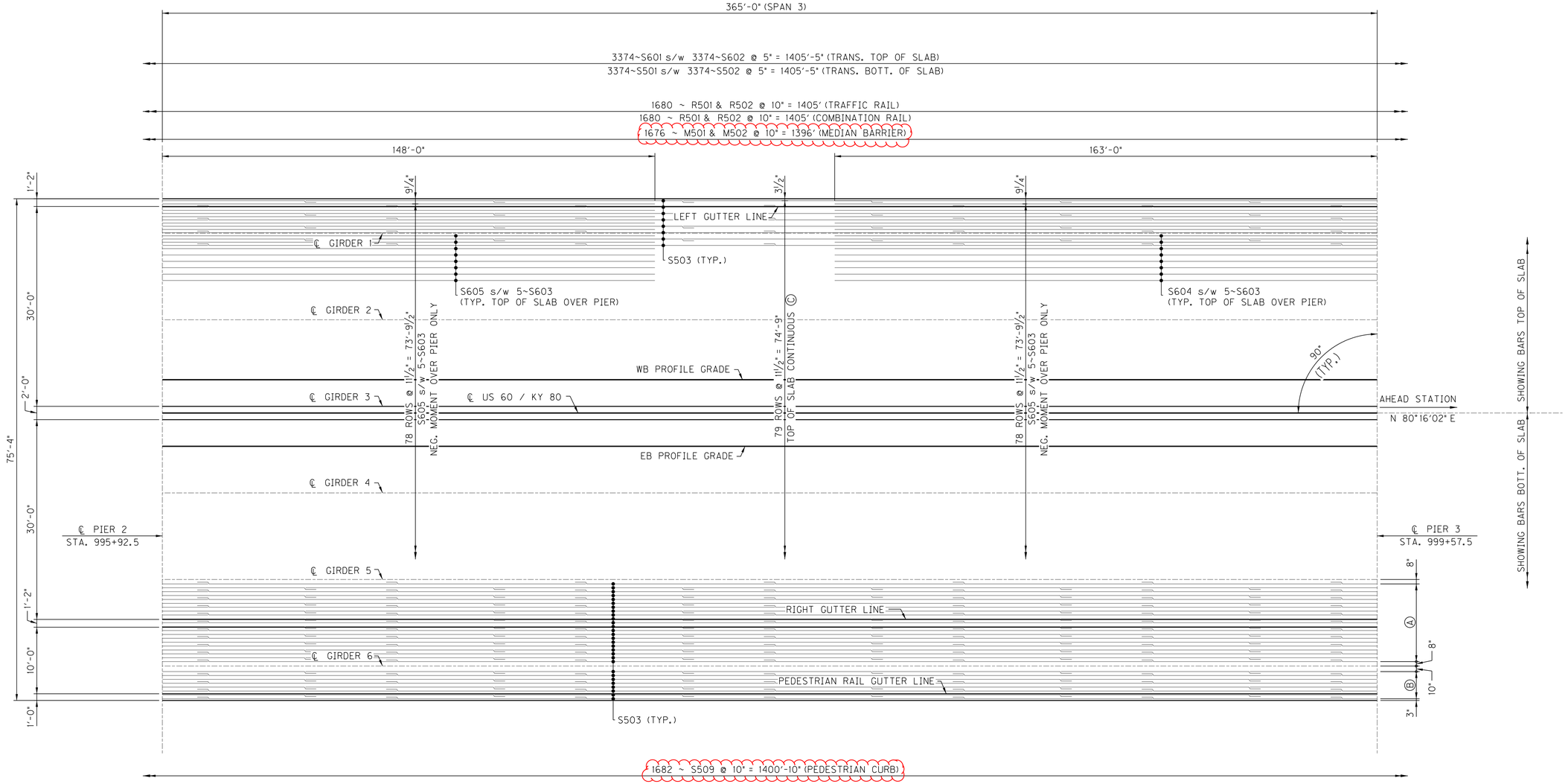
ITEM NUMBER: **01-180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S111

DRAWING NO.: **24686**

MicroStation v8.11.7.443
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USER: timre
DATE PLOTTED: July 27, 2011
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...\24686_SIII_PLAN_OF_SLAB.dgn



SLAB – SPAN 3

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ 1~S504 s/w 23~S503,
1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PLAN OF SLAB

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

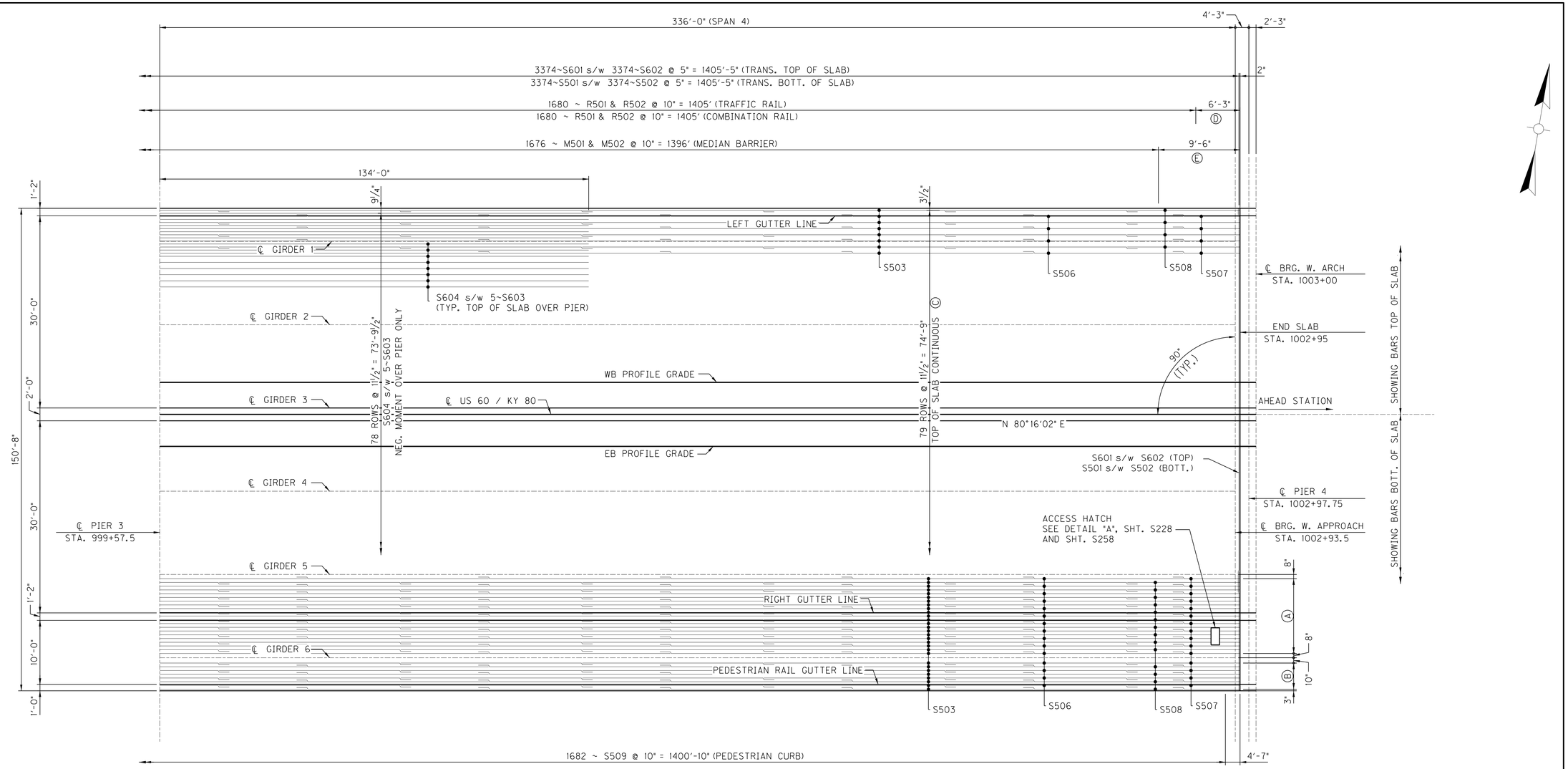
ITEM NUMBER: **01-180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S111

DRAWING NO.: **24686**

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E-SHEET NAME:
MicroStation v8.11.7.443



SLAB – SPAN 4

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ 1~S504 s/w 23~S503,
1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

Ⓓ SEE SHEET S207B FOR TRAFFIC AND COMBINATION RAIL DETAILS

Ⓔ SEE SHEET S208B FOR MEDIAN BARRIER DETAILS

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

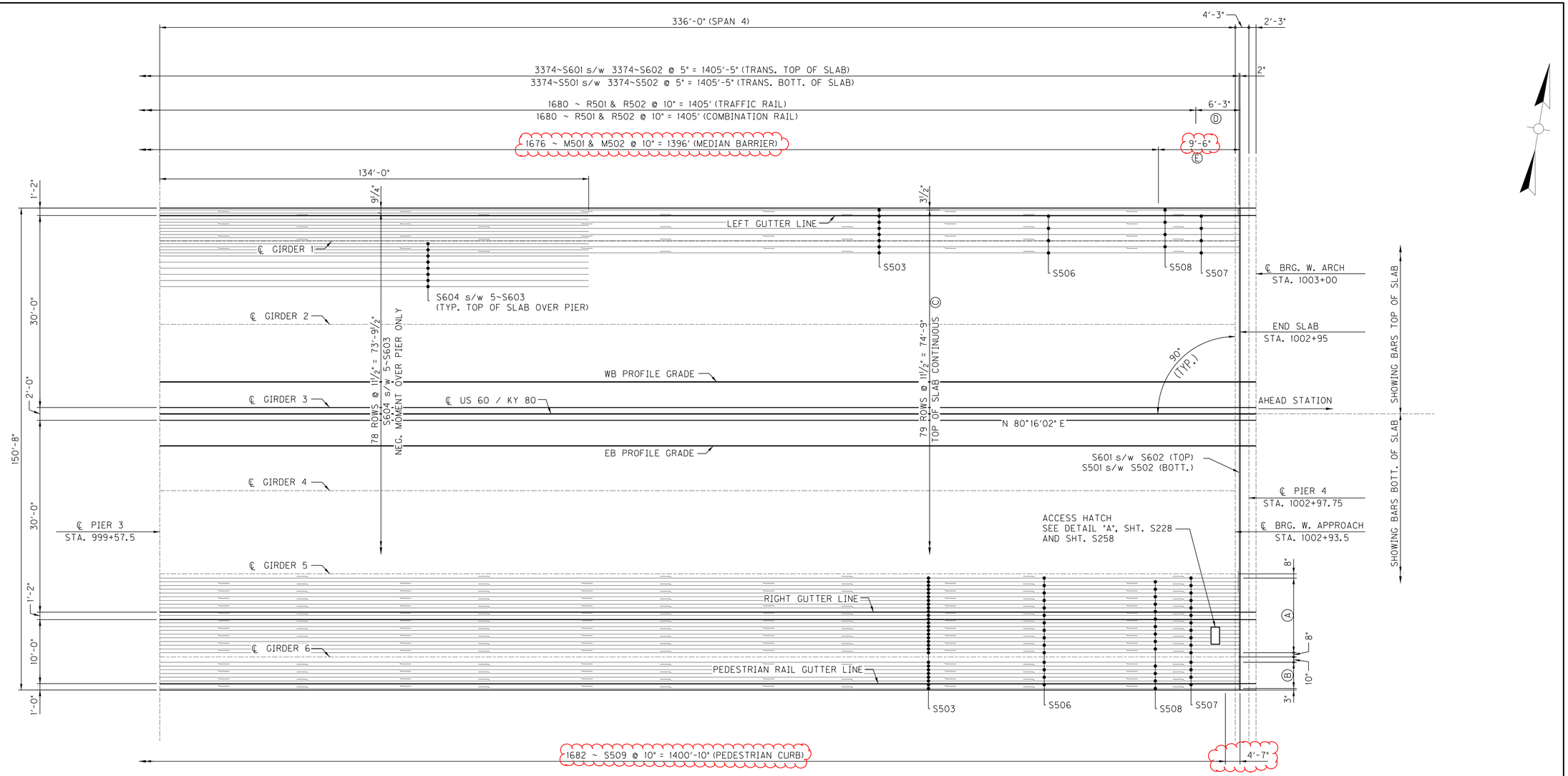
ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S112
DRAWING NO. 24686

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FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCT\FINAL DESIGN\KY LAKE\DGN\ADDENDA\KYTC_STRUCT_2D_IFBASE.DGN
USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:17:09 PM
E-SHEET NAME:
MicroStation v8.11.7.443



SLAB – SPAN 4

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S120-S121 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ 1~S504 s/w 23~S503,
1~S506, 1~S507
OR
1~S505 s/w 1~S506,
23~S503, 1~S508

Ⓓ SEE SHEET S207B FOR TRAFFIC AND COMBINATION RAIL DETAILS

Ⓔ SEE SHEET S208B FOR MEDIAN BARRIER DETAILS

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

REVISION	DATE
3 CHANGED DIMENSIONS & NOTES	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

PLAN OF SLAB

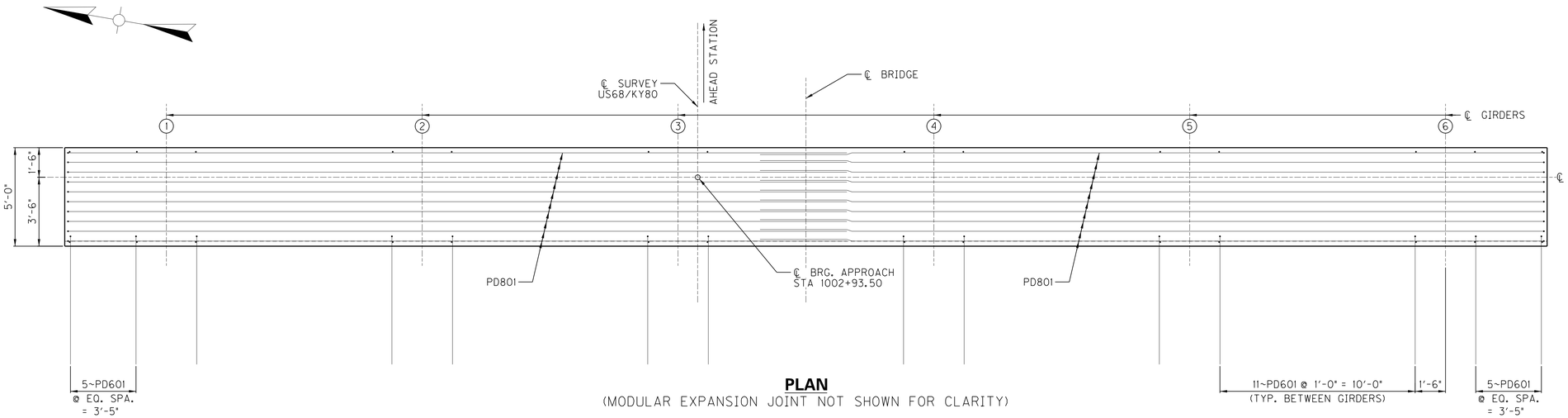
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S112

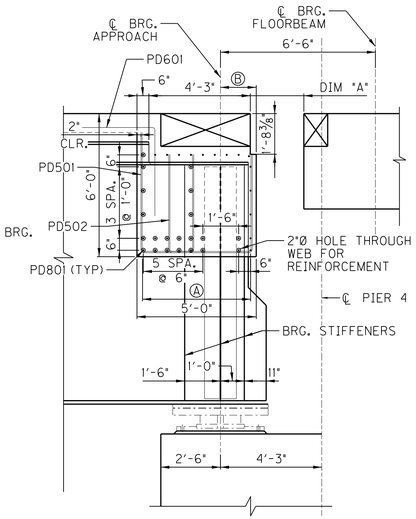
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DATE PLOTTED: July 27, 2011
12/5/2013 1:02:37 PM
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MicroStation v8.11.7.443



PLAN

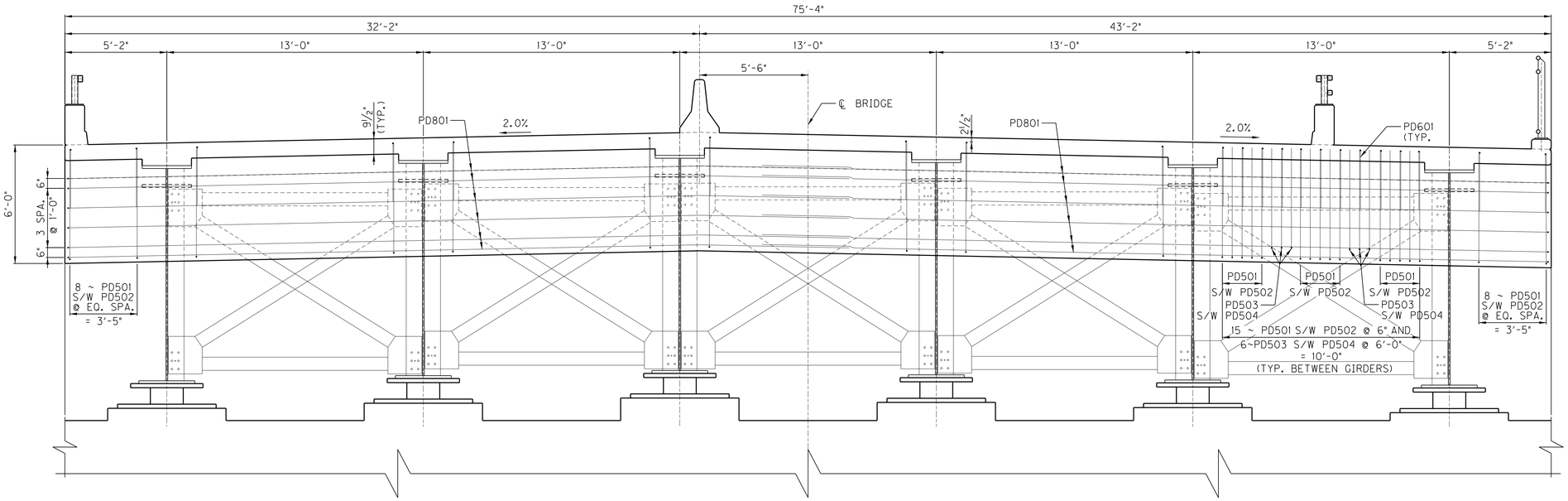
(MODULAR EXPANSION JOINT NOT SHOWN FOR CLARITY)



PROFILE AT PIER 4

Ⓐ 35~PD801 S/W
35~PD801 SPACED
AS SHOWN

Ⓑ 1'-6" TO END
OF SLAB



ELEVATION

(LOOKING AHEAD STATION, FRONT FACE OF DIAPHRAGM)

NOTES

1. DUE TO VARIATIONS IN MODULAR JOINTS B/T VARIOUS APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL DESIGN AND DETAILING OF THE BLOCKOUT BASED ON SELECTED MODULAR JOINT.
2. REINFORCEMENT REQUIRED FOR THE SELECTED MODULAR JOINT SHALL BE PROVIDED IN ADDITION TO THE REINFORCEMENT SHOWN IN THESE PLANS.
3. SEE SHT. S206 FOR MODULAR EXPANSION JOINT DETAILS.

MIN LAP SPLICE
#5 3'-7"
#7 5'-5"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	D.H. DEITZ
DETAILED BY: T.S. ELLIS	R.M. DAMON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 4 DIAPHRAGM

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

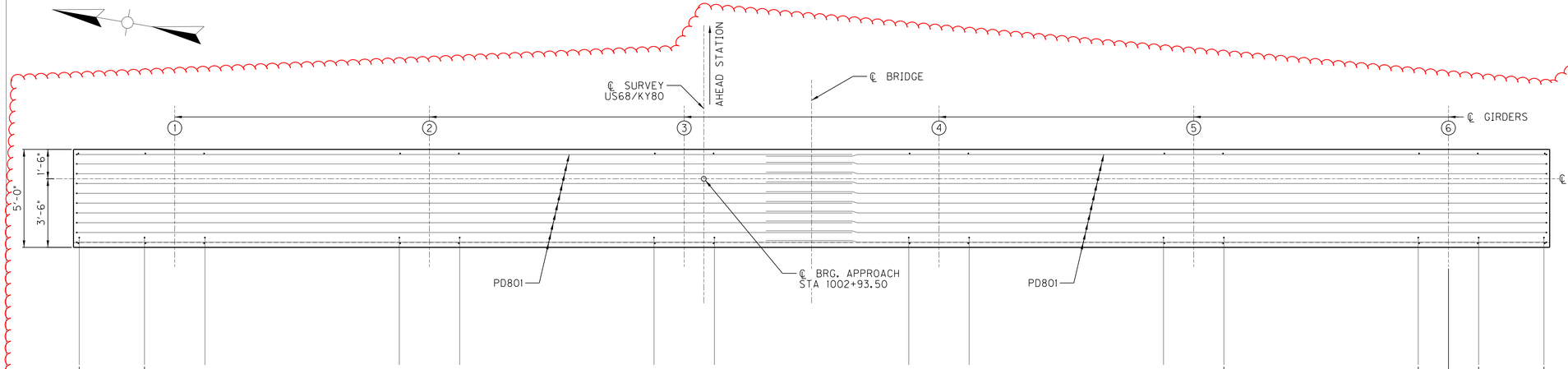
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S114

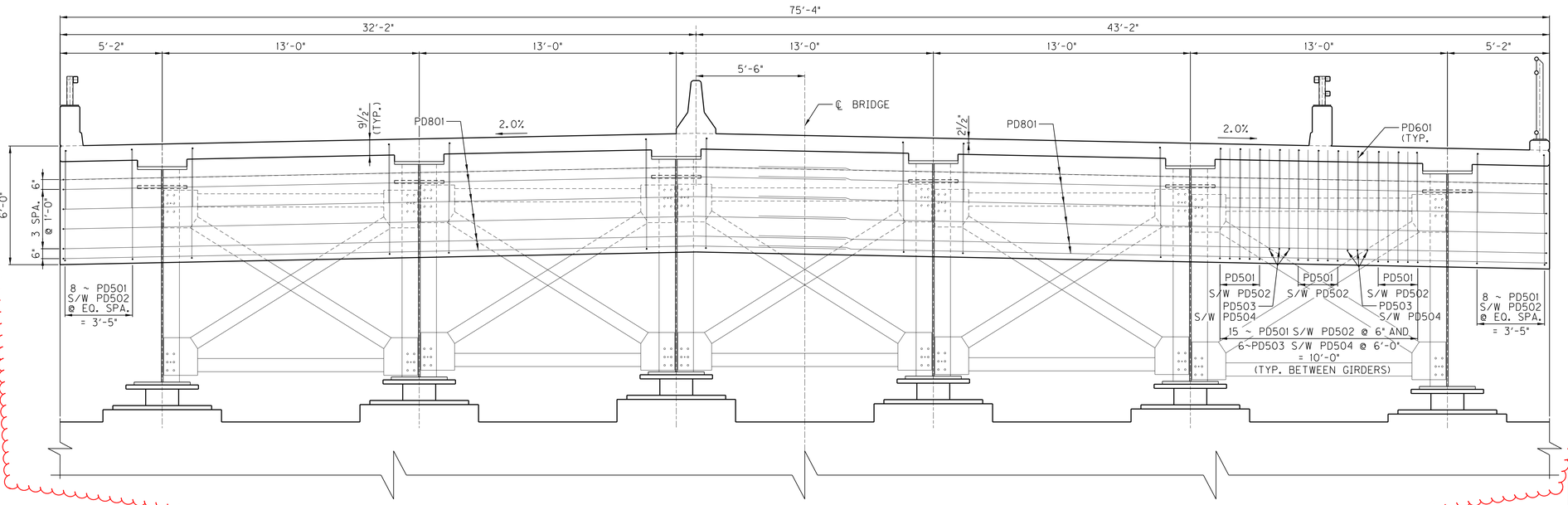
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:44:36 PM
E-SHEET NAME:
MicroStation v8.11.7.443



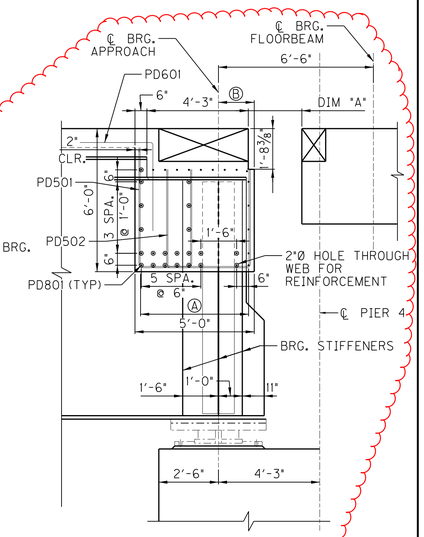
PLAN

(MODULAR EXPANSION JOINT NOT SHOWN FOR CLARITY)



ELEVATION

(LOOKING AHEAD STATION, FRONT FACE OF DIAPHRAGM)



PROFILE AT PIER 4

Ⓐ 35~PD801 S/W 35~PD801 SPACED AS SHOWN

Ⓑ 1'-6" TO END OF SLAB

MIN LAP SPLICE
#5 3'-7"
#7 5'-5"

NOTES

1. DUE TO VARIATIONS IN MODULAR JOINTS B/T VARIOUS APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL DESIGN AND DETAILING OF THE BLOCKOUT BASED ON SELECTED MODULAR JOINT.
2. REINFORCEMENT REQUIRED FOR THE SELECTED MODULAR JOINT SHALL BE PROVIDED IN ADDITION TO THE REINFORCEMENT SHOWN IN THESE PLANS.
3. SEE SHT. S206 FOR MODULAR EXPANSION JOINT DETAILS.

3 ADDED/CHANGED BARS & DIMENSIONS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	D.H. DEITZ
DETAILED BY: T.S. ELLIS	R.M. DAMON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 4 DIAPHRAGM

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

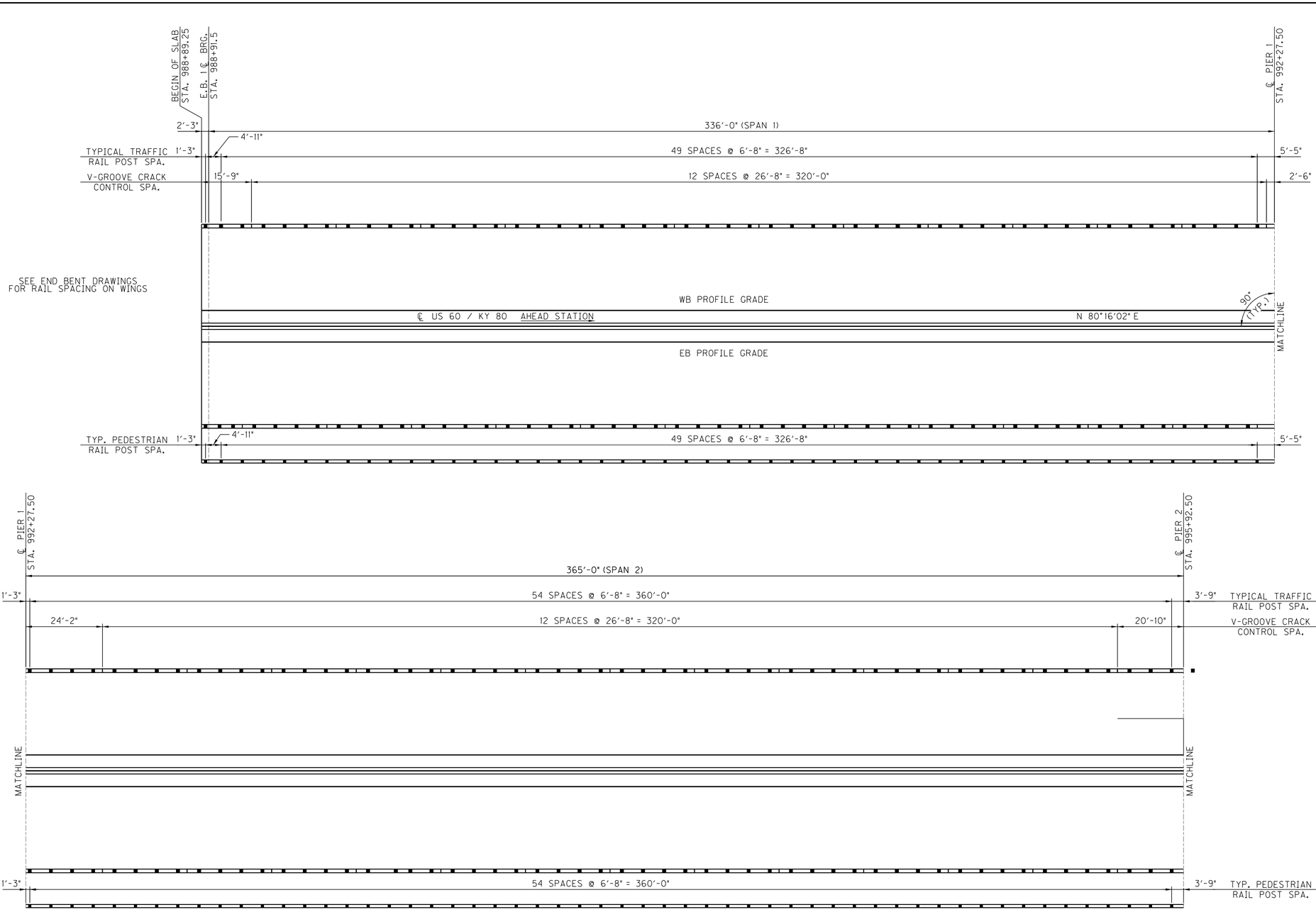
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S114

DRAWING NO. 24686

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MicroStation v8.11.7.443



SPAN 1 & 2 PART PLAN

(SHOWING SPACING FOR RAIL POSTS)

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

RAIL POST SPACING – SPAN 1 & 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

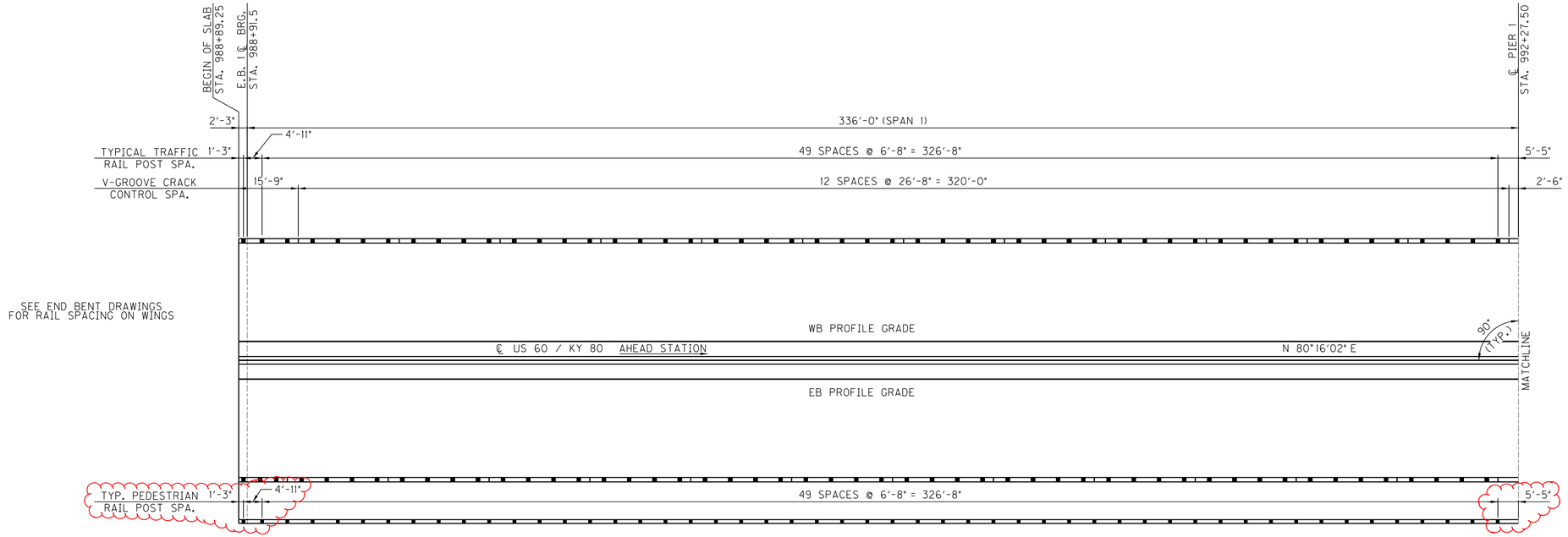
ITEM NUMBER
01–180.70

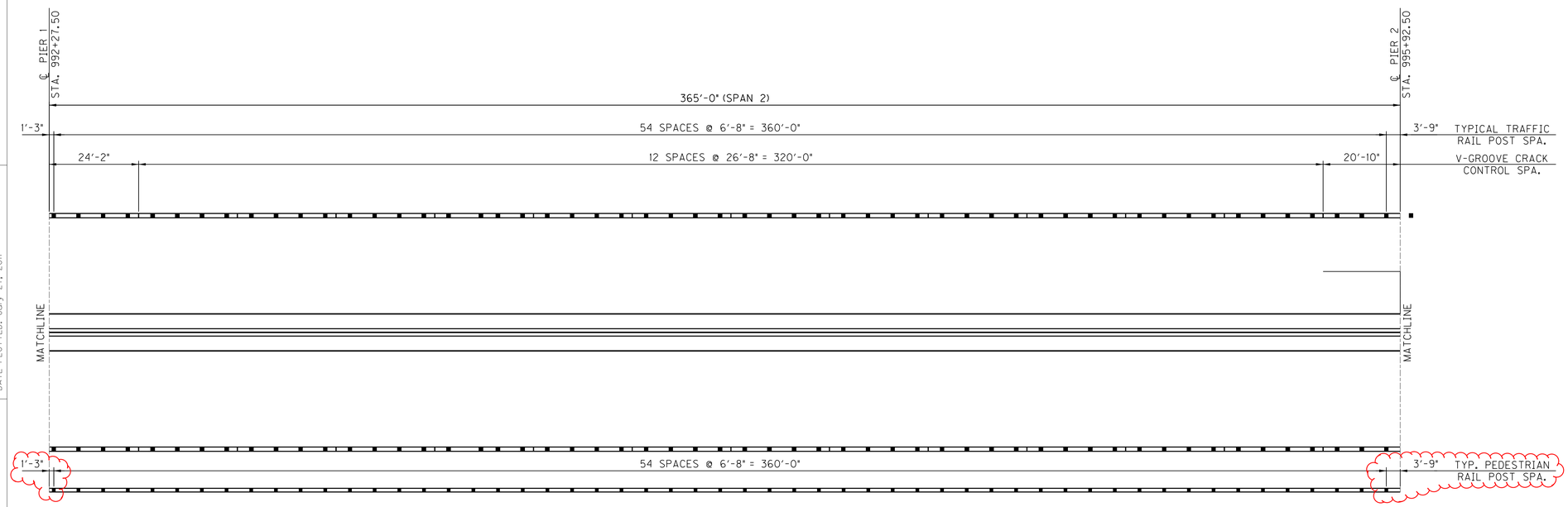
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S115

DRAWING NO. **24686**

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:13:09 PM
E-SHEET NAME:
MicroStation v8.11.7.443





SPAN 1 & 2 PART PLAN

(SHOWING SPACING FOR RAIL POSTS)

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

RAIL POST SPACING – SPAN 1 & 2

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

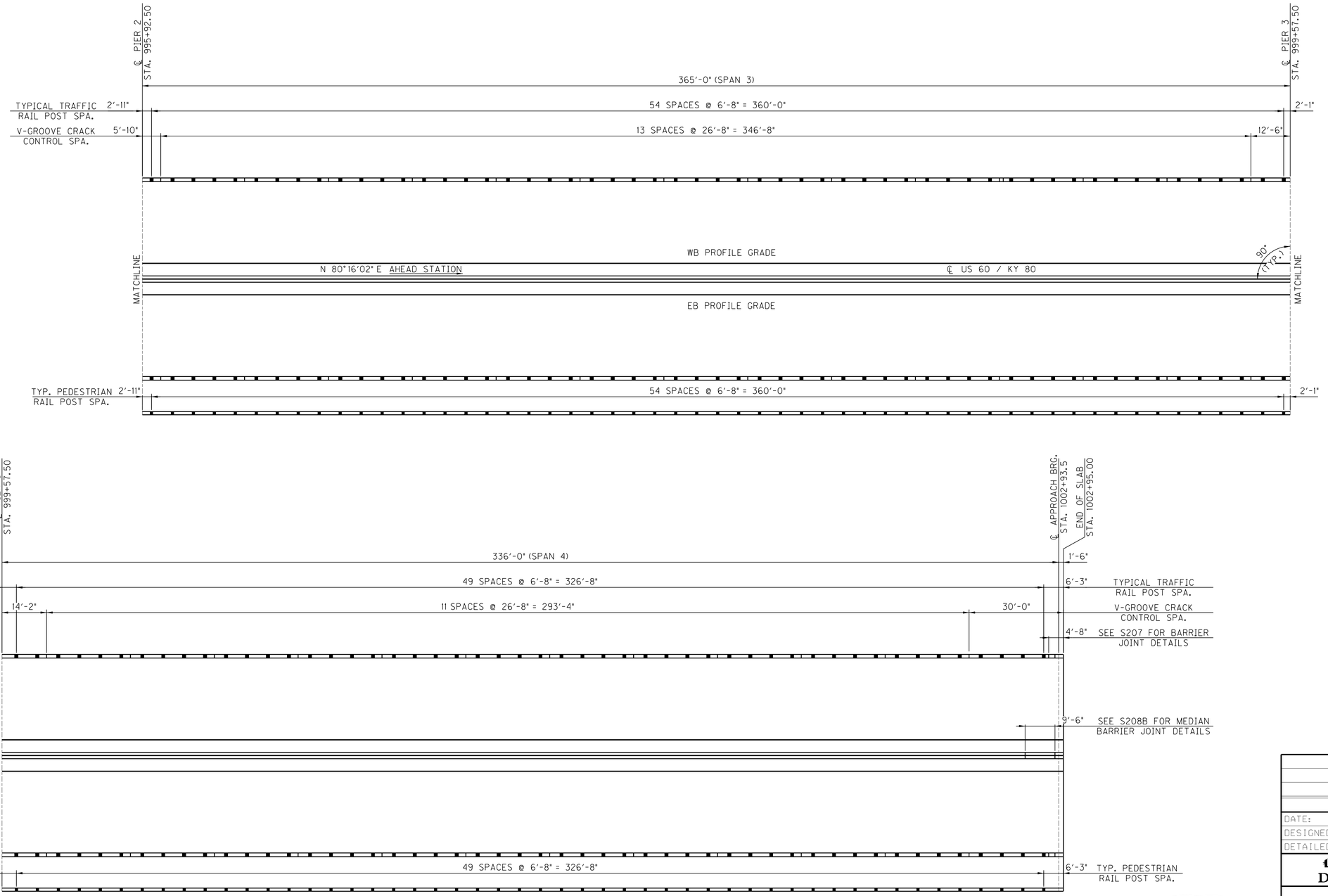
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S115

DRAWING NO.: **24686**

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E-SHEET NAME:
MicroStation v8.11.7.443



SPAN 3 & 4 PART PLAN

(SHOWING SPACING FOR RAIL POSTS)

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DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

RAIL POST SPACING – SPAN 3 & 4

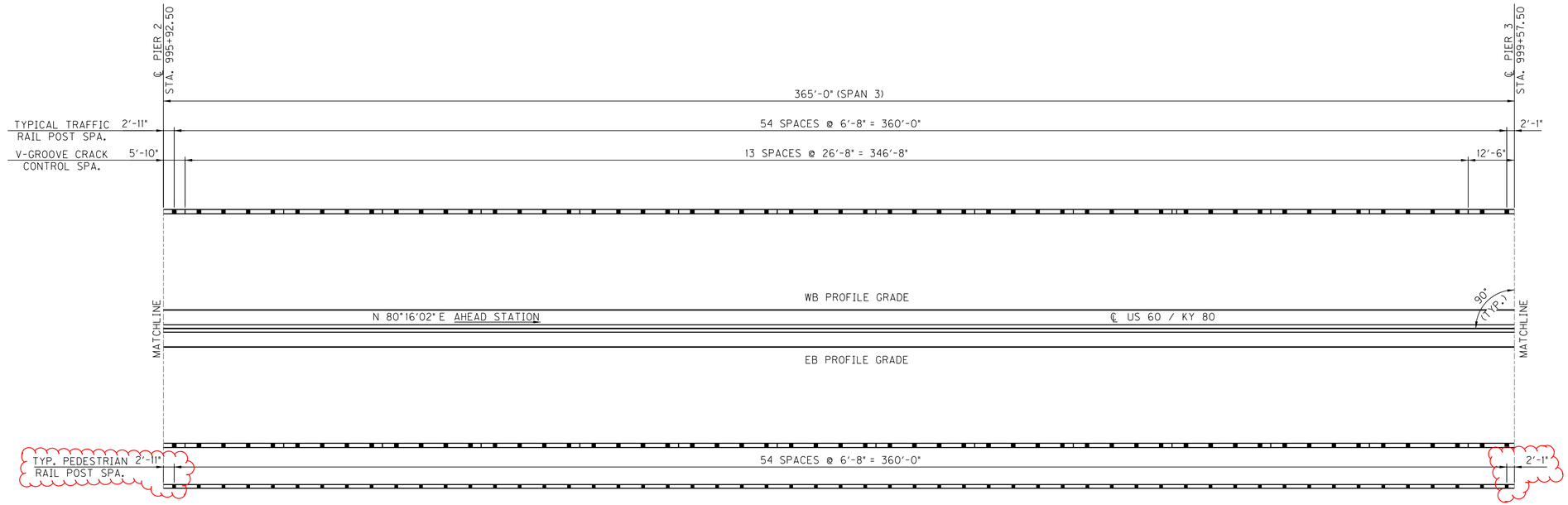
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

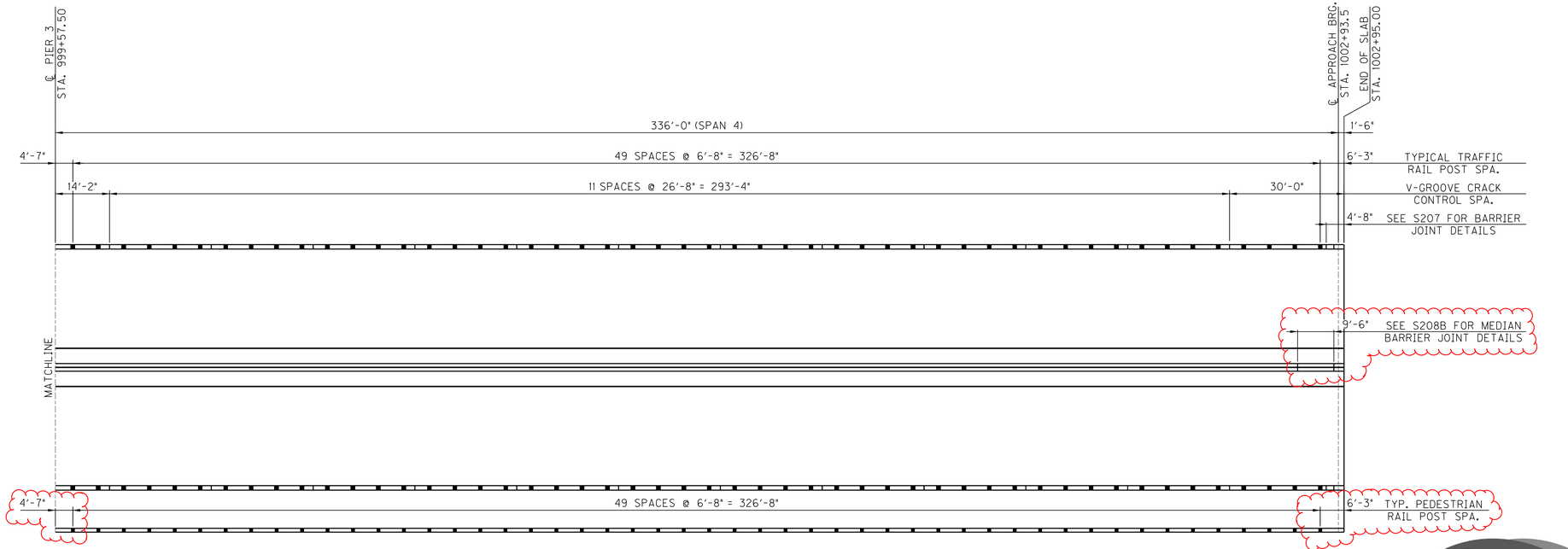
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S116

DRAWING NO. 24686





SPAN 3 & 4 PART PLAN

(SHOWING SPACING FOR RAIL POSTS)

REVISION	DATE
3 CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

RAIL POST SPACING – SPAN 3 & 4

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S116

DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/10/2013 10:27:41 AM
E-SHEET NAME:
MicroStation v8.11.7.443

WEST APPROACH SLAB BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
S601(E)	STR.	3374	# 6	60'-0"	TRANS. TOP				
S602(E)	STR.	3374	# 6	18'-10"	TRANS. TOP				
S501(E)	STR.	3374	# 5	60'-0"	TRANS. BOTT.				
S502(E)	STR.	3374	# 5	18'-3"	TRANS. BOTT.				
S503(E)	STR.	4600	# 5	60'-0"	LONGIT. TOP & BOTT.				
S504(E)	STR.	100	# 5	36'-0"	LONGIT. TOP & BOTT.				
S505(E)	STR.	100	# 5	22'-0"	LONGIT. TOP & BOTT.				
S506(E)	STR.	200	# 5	50'-0"	LONGIT. TOP & BOTT.				
S507(E)	STR.	100	# 5	21'-0"	LONGIT. TOP & BOTT.				
S508(E)	STR.	100	# 5	35'-0"	LONGIT. TOP & BOTT.				
S509(E)(S)	26	1682	# 5	4'-7"	CURB	1'-3"	0'-8"	1'-3"	1'-6"
S603(E)	STR.	1170	# 6	60'-0"	NEGATIVE MOMENT				
S604(E)	STR.	156	# 6	16'-2"	NEGATIVE MOMENT				
S605(E)	STR.	78	# 6	44'-2"	NEGATIVE MOMENT				
S606					NOT USED				
S607(E)	STR.	48	# 6	60'-0"	CURB				
S608(E)	STR.	4	# 6	38'-6"	CURB				
S609(E)	STR.	88	# 6	9'-0"	ACCESS HATCH R/F				

WEST APPROACH BARRIER BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
M501(E)(S)	29	1676	# 5	5'-4"	MEDIAN BARRIER	0'-10"	1'-8"		
M502(E)(S)	30	1676	# 5	5'-2"	MEDIAN BARRIER				
M503(E)	STR.	216	# 5	60'-0"	MEDIAN BARRIER (LONG.)				
M504(E)	STR.	9	# 5	35'-3"	MEDIAN BARRIER (LONG.)				
R501(E)(S)	17	3360	# 5	5'-0"	RAIL BARRIERS	2'-2"	0'-8"	0'-10"	
R502(E)(S)	2	3360	# 5	4'-4"	RAIL BARRIERS	1'-10"	0'-8"		
R503(E)	STR.	288	# 5	60'-0"	RAIL BARRIERS (LONG.)				
R504(E)	STR.	12	# 5	40'-6"	RAIL BARRIERS (LONG.)				

WEST APPROACH DIAPHRAGMS BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
ED601(E)(S)	2	65	# 6	27'-1"	END BENT 1 DIAPHRAGM	11'-6"	4'-1"		
ED602(E)	STR.	52	# 6	39'-9"	END BENT 1 DIAPHRAGM				
ED603(E)(S)	5	130	# 6	14'-6"	END BENT 1 DIAPHRAGM	10'-6"	4'-0"		
PD501(E)(S)	22	91	# 5	11'-3"	PIER 4 DIAPHRAGM	4'-1"	2'-2"	5'-0"	
PD502(E)(S)	22	91	# 5	11'-8"	PIER 4 DIAPHRAGM	4'-1"	3'-6"	4'-1"	
PD503(E)(S)	22	30	# 5	10'-3"	PIER 4 DIAPHRAGM	3'-7"	2'-2"	4'-6"	
PD504(E)(S)	22	30	# 5	10'-8"	PIER 4 DIAPHRAGM	3'-7"	3'-6"	3'-7"	
PD601(E)(S)	5	65	# 6	14'-6"	PIER 4 DIAPHRAGM	4'-0"	10'-6"		
PD801(E)	5	70	# 8	42'-5"	PIER 4 DIAPHRAGM	41'-1"	1'-4"		

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

SUPERSTRUCTURE – BILL OF REINFORCEMENT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S119

DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
12/11/2013 2:46:10 PM
E-SHEET NAME:
MicroStation v8.11.7.443

WEST APPROACH SLAB BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
S601(E)	STR.	3374	# 6	60'-0"	TRANS. TOP				
S602(E)	STR.	3374	# 6	18'-10"	TRANS. TOP				
S501(E)	STR.	3374	# 5	60'-0"	TRANS. BOTT.				
S502(E)	STR.	3374	# 5	18'-3"	TRANS. BOTT.				
S503(E)	STR.	4600	# 5	60'-0"	LONGIT. TOP & BOTT.				
S504(E)	STR.	100	# 5	36'-0"	LONGIT. TOP & BOTT.				
S505(E)	STR.	100	# 5	22'-0"	LONGIT. TOP & BOTT.				
S506(E)	STR.	200	# 5	50'-0"	LONGIT. TOP & BOTT.				
S507(E)	STR.	100	# 5	21'-0"	LONGIT. TOP & BOTT.				
S508(E)	STR.	100	# 5	35'-0"	LONGIT. TOP & BOTT.				
S509(E)(S)	26	1682	# 5	4'-7"	CURB	1'-3"	0'-8"	1'-3"	1'-6"
S603(E)	STR.	1170	# 6	60'-0"	NEGATIVE MOMENT				
S604(E)	STR.	156	# 6	16'-2"	NEGATIVE MOMENT				
S605(E)	STR.	78	# 6	44'-2"	NEGATIVE MOMENT				
S606					NOT USED				
S607(E)	STR.	48	# 6	60'-0"	CURB				
S608(E)	STR.	4	# 6	38'-6"	CURB				
S609(E)	STR.	88	# 6	9'-0"	ACCESS HATCH R/F				

WEST APPROACH BARRIER BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
M501(E)(S)	29	1676	# 5	5'-4"	MEDIAN BARRIER	0'-10"	1'-8"		
M502(E)(S)	30	1676	# 5	5'-2"	MEDIAN BARRIER				
M503(E)	STR.	216	# 5	60'-0"	MEDIAN BARRIER (LONG.)				
M504(E)	STR.	9	# 5	35'-3"	MEDIAN BARRIER (LONG.)				
R501(E)(S)	17	3360	# 5	5'-0"	RAIL BARRIERS	2'-2"	0'-8"	0'-10"	
R502(E)(S)	2	3360	# 5	4'-4"	RAIL BARRIERS	1'-10"	0'-8"		
R503(E)	STR.	288	# 5	60'-0"	RAIL BARRIERS (LONG.)				
R504(E)	STR.	12	# 5	40'-6"	RAIL BARRIERS (LONG.)				

WEST APPROACH DIAPHRAGMS BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
ED601(E)(S)	2	65	# 6	27'-1"	END BENT 1 DIAPHRAGM	11'-6"	4'-1"		
ED602(E)	STR.	52	# 6	39'-9"	END BENT 1 DIAPHRAGM				
ED603(E)(S)	5	130	# 6	14'-6"	END BENT 1 DIAPHRAGM	10'-6"	4'-0"		
PD501(E)(S)	22	91	# 5	11'-3"	PIER 4 DIAPHRAGM	4'-1"	2'-2"	5'-0"	
PD502(E)(S)	22	91	# 5	11'-8"	PIER 4 DIAPHRAGM	4'-1"	3'-6"	4'-1"	
PD503(E)(S)	22	30	# 5	10'-3"	PIER 4 DIAPHRAGM	3'-7"	2'-2"	4'-6"	
PD504(E)(S)	22	30	# 5	10'-8"	PIER 4 DIAPHRAGM	3'-7"	3'-6"	3'-7"	
PD601(E)(S)	5	65	# 6	14'-6"	PIER 4 DIAPHRAGM	4'-0"	10'-6"		
PD801(E)	5	70	# 8	42'-5"	PIER 4 DIAPHRAGM	41'-1"	1'-4"		

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

REVISION	DATE
3 ADDED NOTES & CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: B.T. DRECKMAN | C.M. GREENWELL
DETAILED BY: L.A. BEATTIE | B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

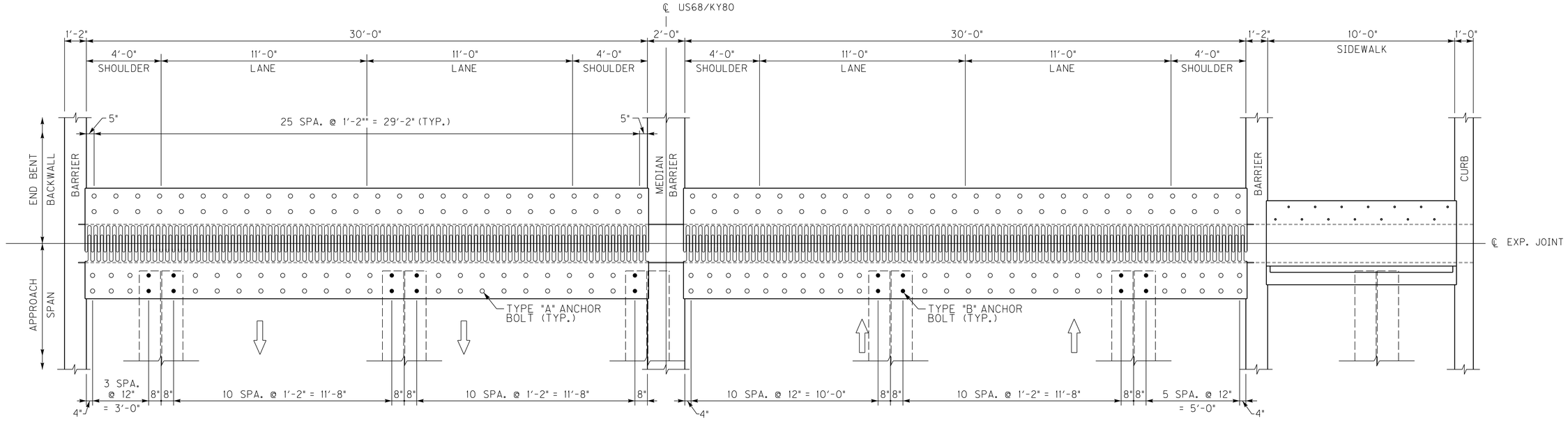
SUPERSTRUCTURE – BILL OF REINFORCEMENT

ITEM NUMBER
01–180.70

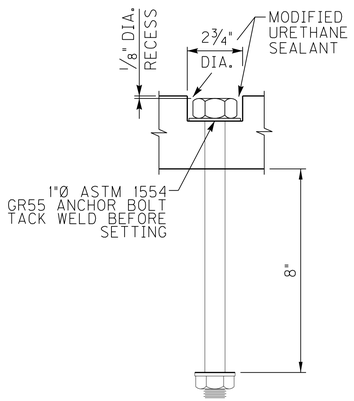
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S119
DRAWING NO. 24686

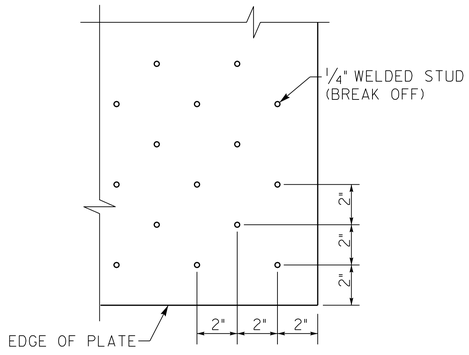
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DATE PLOTTED: July 27, 2011
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MicroStation v8.11.7.443



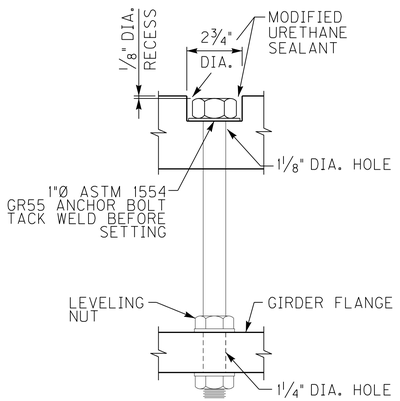
FINGER JOINT PLAN



TYPE "A" ANCHOR BOLT DETAIL



ANTI-SKID PATTERN DETAIL



TYPE "B" ANCHOR BOLT DETAIL

NOTES

STEEL PLATE, BARS AND SHAPES SHALL CONFORM TO AASHTO M270 GRADE 50 UNLESS NOTED OTHERWISE.

AREAS OF EXPANSION JOINTS TO RECIEVE ANTI SKID SURFACE SHALL ALSO BE PIERCED BY ¾" DIAMETER VENT HOLES. VENT HOLES SHALL BE SPACED AT 1'-6" (MAX.)

SEE FINGER DAM SPECIAL NOTE FOR MORE DETAILS.

COST OF SLIDING PLATES SHALL BE INCLUDED IN THE UNIT PRICE FOR FINGER EXPANSION JOINT.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

FINGER DAM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

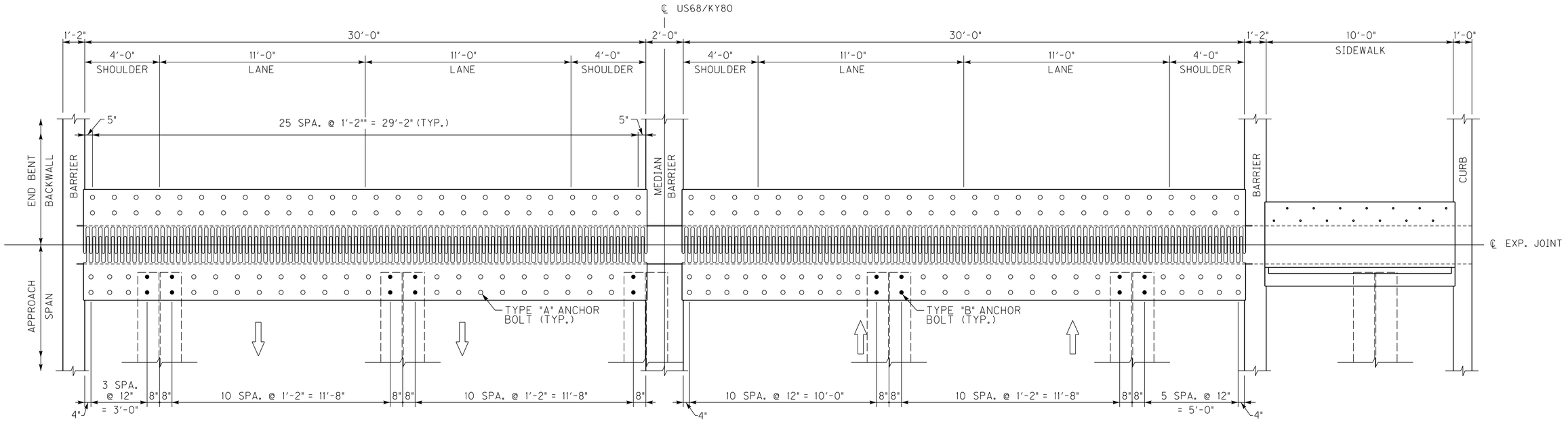
ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

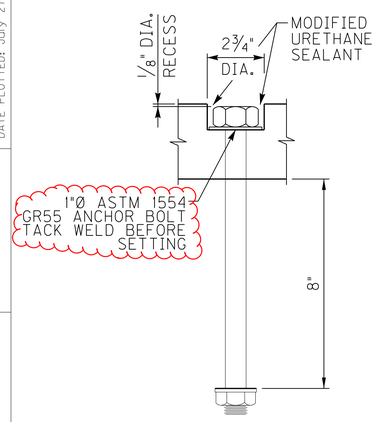
SHEET NO. S126

DRAWING NO. 24686

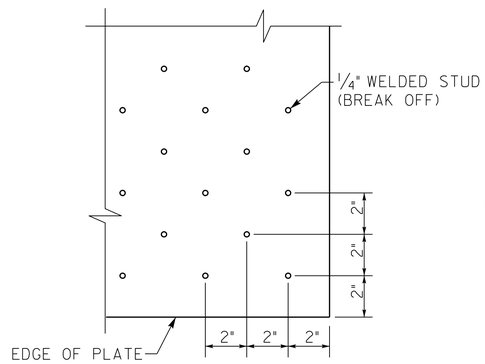
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DATE PLOTTED: July 27, 2011
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MicroStation v8.11.7.443



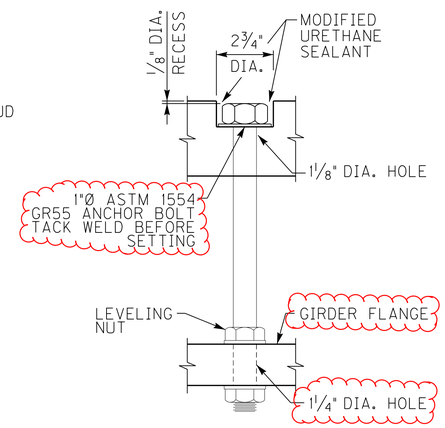
FINGER JOINT PLAN



TYPE "A" ANCHOR BOLT DETAIL



ANTI-SKID PATTERN DETAIL



TYPE "B" ANCHOR BOLT DETAIL

NOTES

STEEL PLATE, BARS AND SHAPES SHALL CONFORM TO AASHTO M270 GRADE 50 UNLESS NOTED OTHERWISE.

AREAS OF EXPANSION JOINTS TO RECIEVE ANTI SKID SURFACE SHALL ALSO BE PIERCED BY 3/4" DIAMETER VENT HOLES. VENT HOLES SHALL BE SPACED AT 1'-6" (MAX.)

SEE FINGER DAM SPECIAL NOTE FOR MORE DETAILS.

COST OF SLIDING PLATES SHALL BE INCLUDED IN THE UNIT PRICE FOR FINGER EXPANSION JOINT.

REVISION	DATE
3 CHANGED NOTES	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

FINGER DAM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

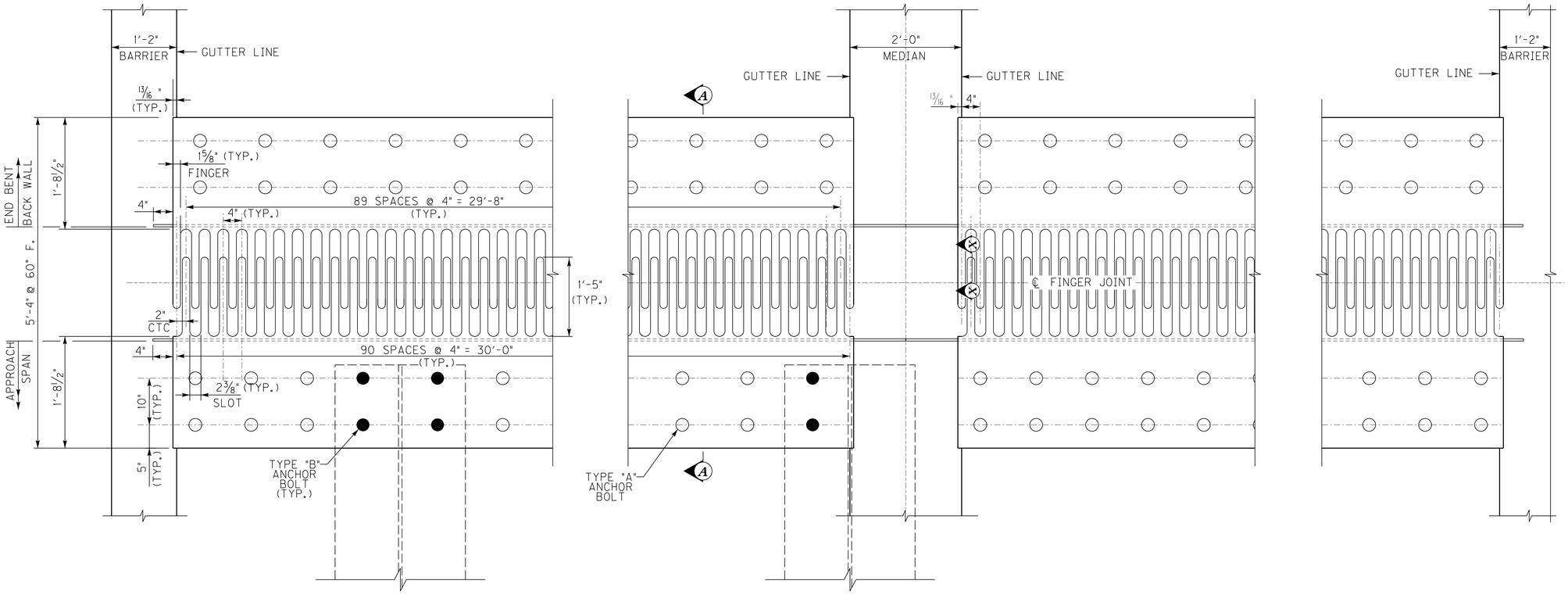
ITEM NUMBER: **01-180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

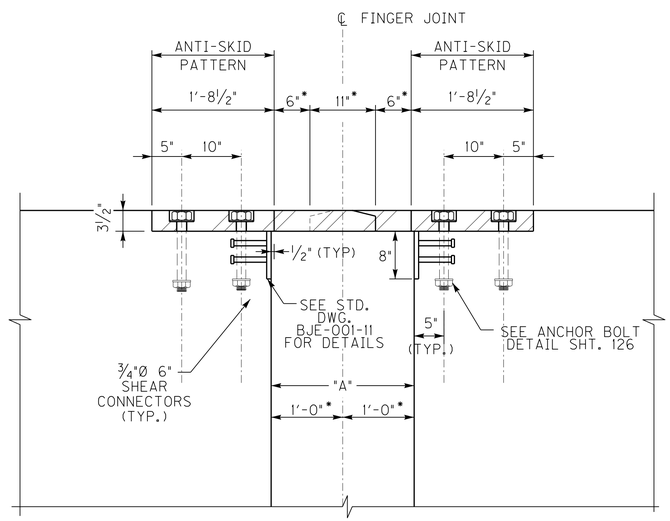
SHEET NO. S126

DRAWING NO. 24686

MicroStation v8.11.7.443
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USER: time
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DETAIL PLAN – FINGER PLATES

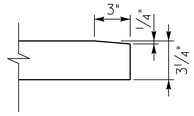


NOTE: DRAIN TROUGH NOT SHOWN FOR CLARITY

*MEASURED @ 60°F

SECTION A–A

EXPANSION JOINT OPENING FOR VARIABLE TEMPERATURES		
TEMPERATURE	E.B.1 DIM "A"	E.B.2 DIM "A"
30°F	2'-1 5/8"	2'-1 7/8"
40°F	2'-1 1/16"	2'-1 1/4"
50°F	2'-9/16"	2'-5/8"
60°F	2'-0"	2'-0"
70°F	1'-11 7/16"	1'-11 3/8"
80°F	1'-10 15/16"	1'-10 3/4"
90°F	1'-10 3/8"	1'-10 1/8"
100°F	1'-9 7/8"	1'-9 1/2"



SECTION X–X

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

FINGER DAM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

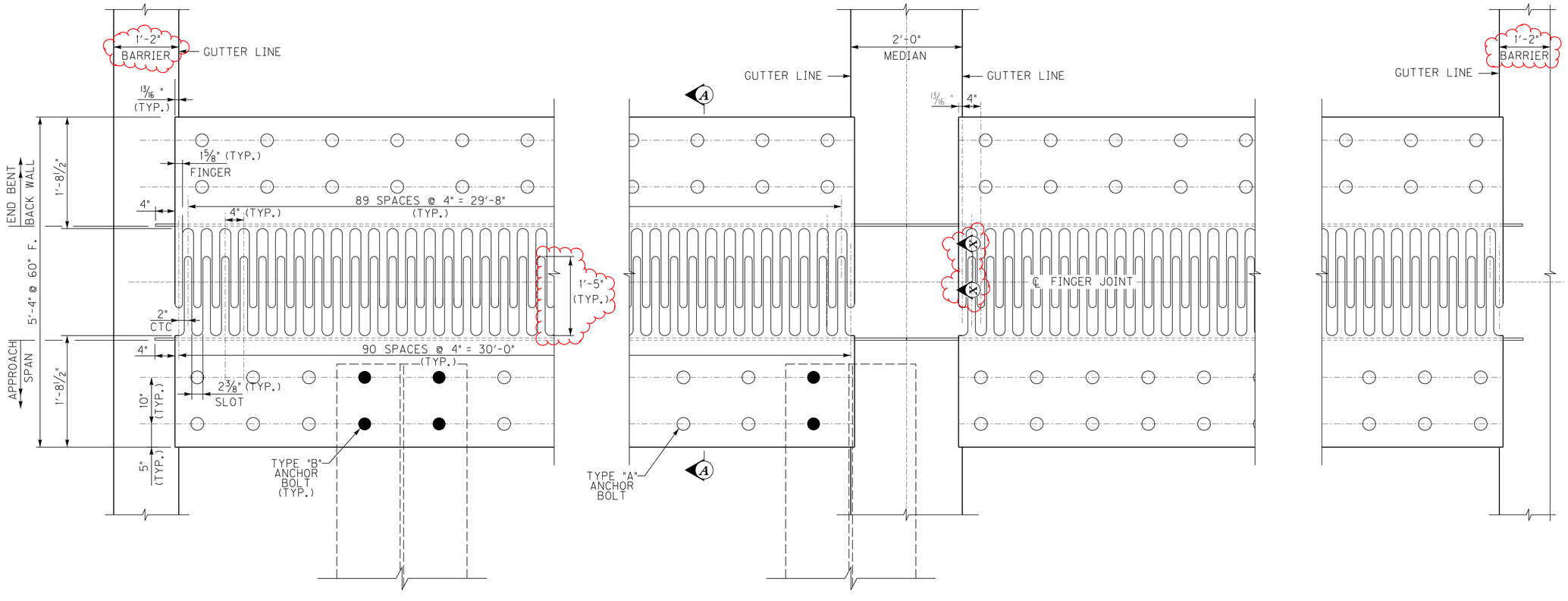
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

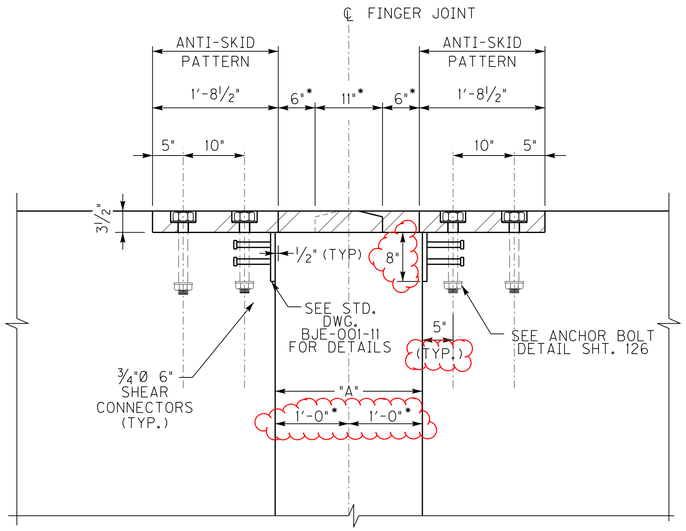
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DRAWING NO.: **24686**

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
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DETAIL PLAN – FINGER PLATES

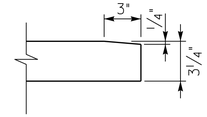


SECTION A–A

NOTE: DRAIN TROUGH NOT SHOWN FOR CLARITY

*MEASURED @ 60°F

EXPANSION JOINT OPENING FOR VARIABLE TEMPERATURES		
TEMPERATURE	E.B.1 DIM "A"	E.B.2 DIM "A"
30°F	2'-1 5/8"	2'-1 7/8"
40°F	2'-1 11/16"	2'-1 1/4"
50°F	2'-9/16"	2'-5/8"
60°F	2'-0"	2'-0"
70°F	1'-11 7/16"	1'-11 3/8"
80°F	1'-10 15/16"	1'-10 3/4"
90°F	1'-10 3/8"	1'-10 1/8"
100°F	1'-9 7/8"	1'-9 1/2"



SECTION X–X

3 ADDED & CHANGED DIMENSIONS & NOTES	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

FINGER DAM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

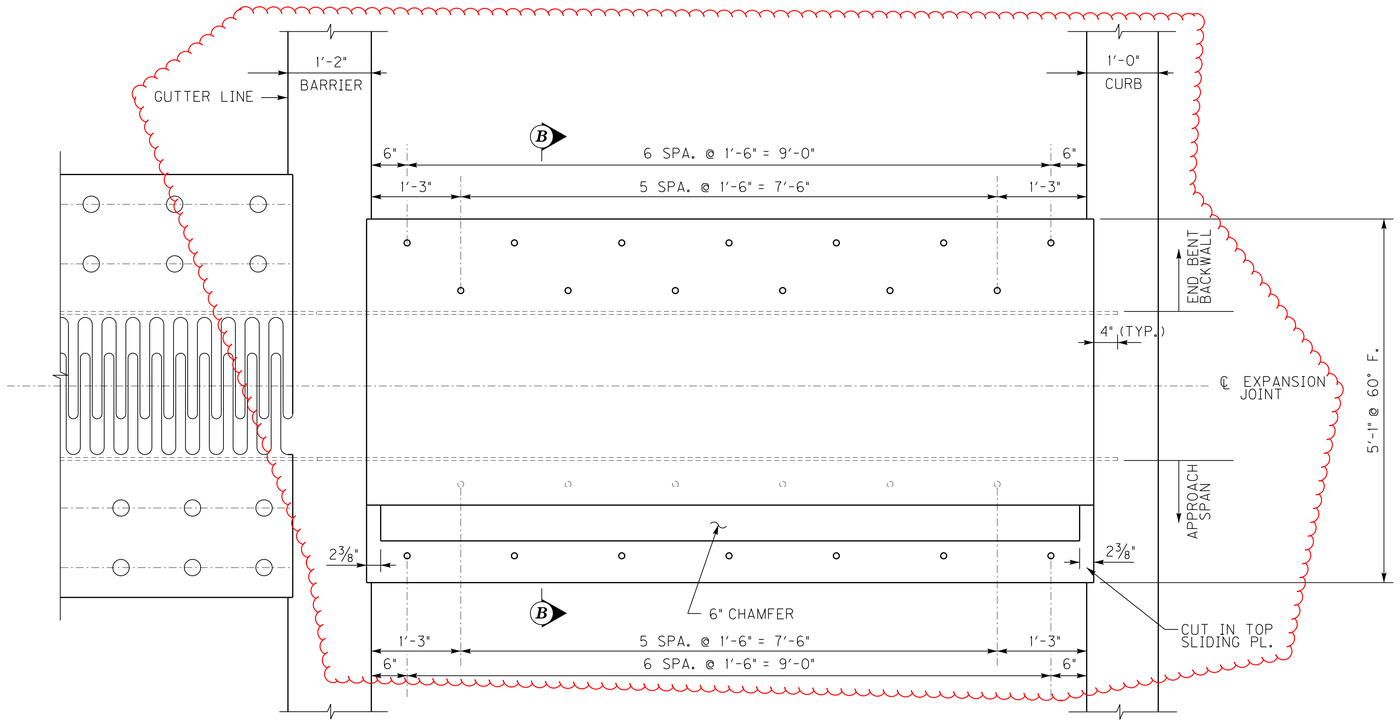
ITEM NUMBER: 01–180.70

PREPARED BY: PALMER ENGINEERING CO.

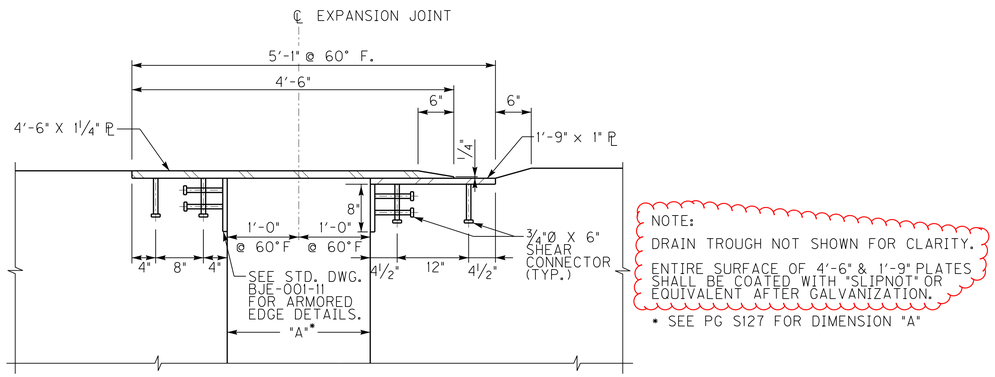
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DRAWING NO.: 24686

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DATE PLOTTED: July 27, 2011
11/25/2013 4:40:58 PM
E-SHEET NAME:
MicroStation v8.11.7.443



DETAIL PLAN – SLIDING PLATE



NOTE:
DRAIN TROUGH NOT SHOWN FOR CLARITY.

ENTIRE SURFACE OF 4'-6" & 1'-9" PLATES SHALL BE COATED WITH "SLIPNOT" OR EQUIVALENT AFTER GALVANIZATION.

* SEE PG S127 FOR DIMENSION "A"

SECTION B–B

REVISION	DATE
3 ADDED NOTES & CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

SIDEWALK EXPANSION JOINT

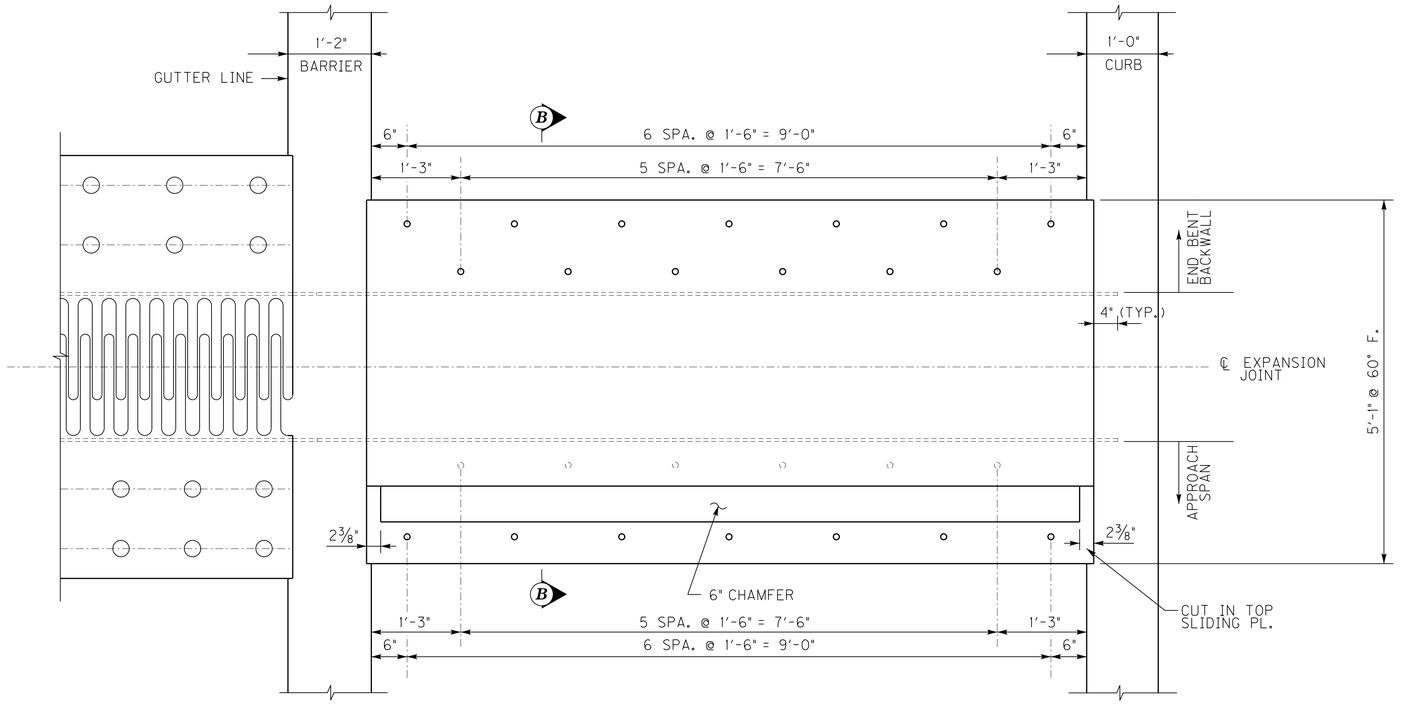
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

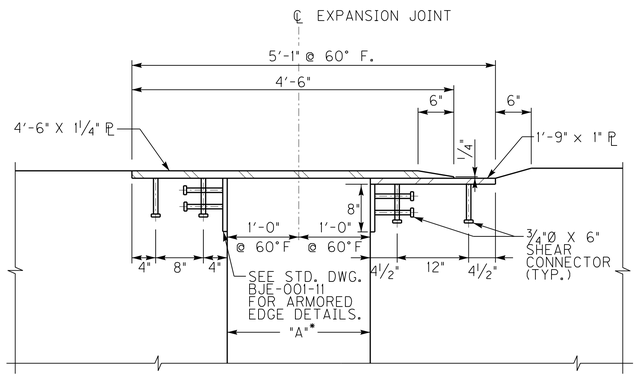
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S128
DRAWING NO. **24686**

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DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443



DETAIL PLAN – SLIDING PLATE



SECTION B–B

NOTE:

DRAIN TROUGH NOT SHOWN FOR CLARITY.

ENTIRE SURFACE OF 4'-6" & 1'-9" PLATES SHALL BE COATED WITH "SLIPNOT" OR EQUIVALENT AFTER GALVANIZATION.

* SEE PG S127 FOR DIMENSION "A"

REVISION	DATE
DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

SIDEWALK EXPANSION JOINT

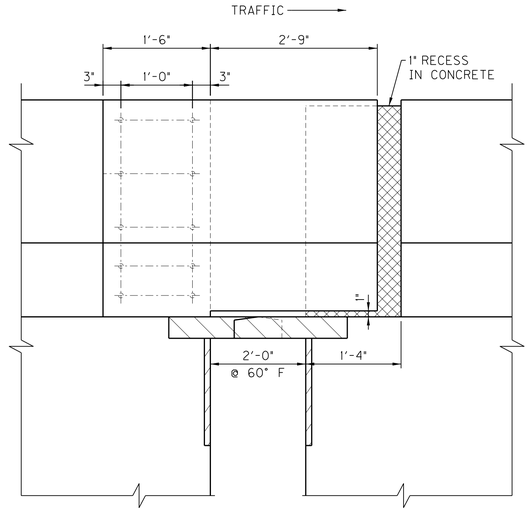
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

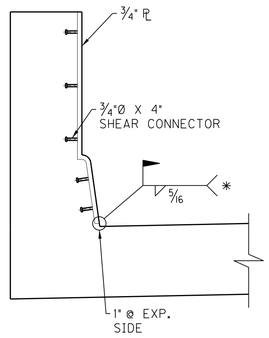
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DRAWING NO. 24686

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
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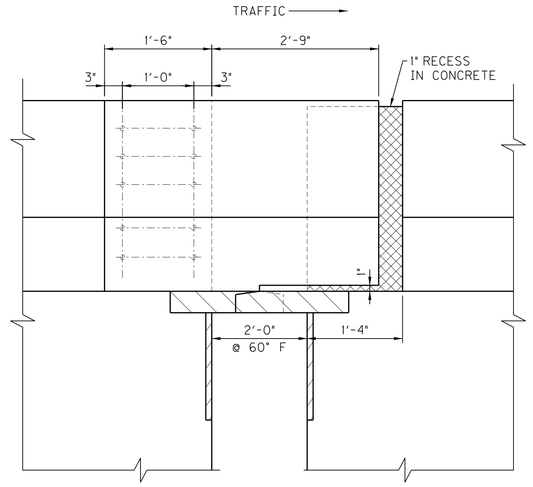


ELEVATION

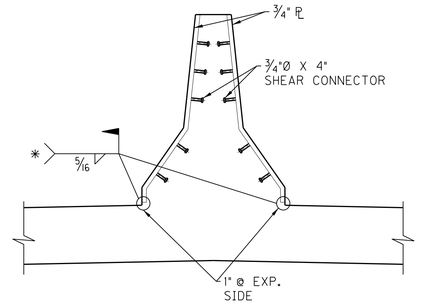


SECTION

TRAFFIC BARRIER SLIDING PLATE

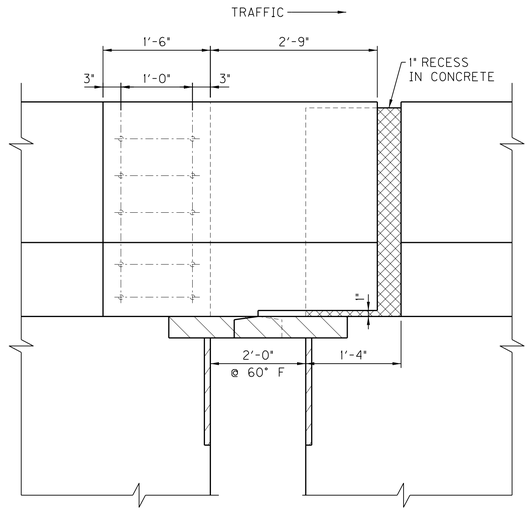


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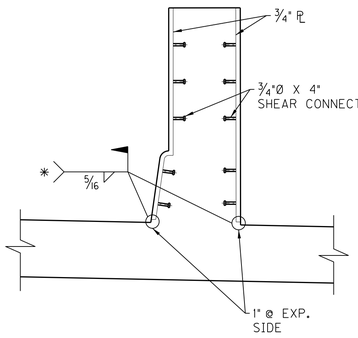


SECTION

MEDIAN BARRIER SLIDING PLATE

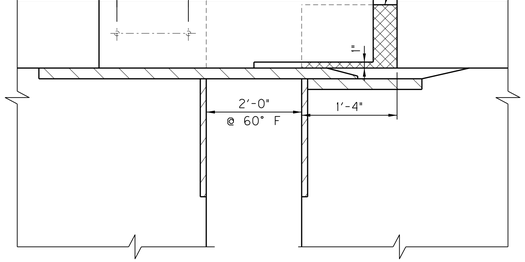


ELEVATION

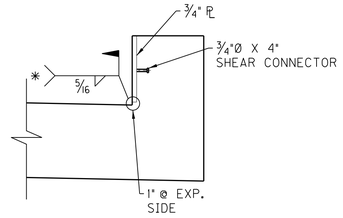


SECTION

COMBINATION RAIL SLIDING PLATE



ELEVATION



SECTION

PEDESTRIAN CURB SLIDING PLATE

NOTE: ALL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50.

* BARRIER PLATE SHALL BE WELDED TO THE EXPANSION DAM PLATE THAT TRAFFIC COMES TO FIRST.

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	J.N. MCNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

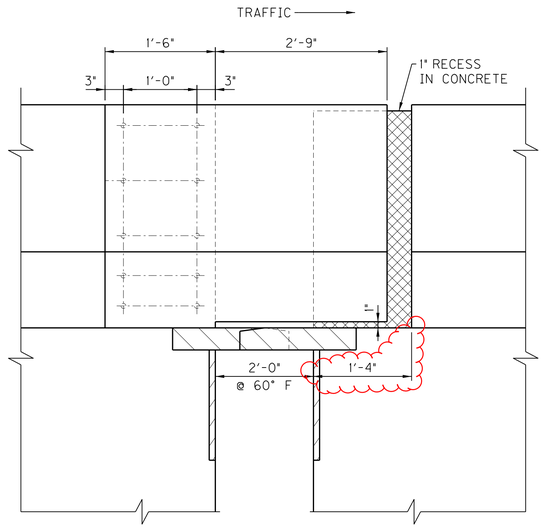
SLIDING PLATE DETAILS

PREPARED BY: *PALMER ENGINEERING CO.*

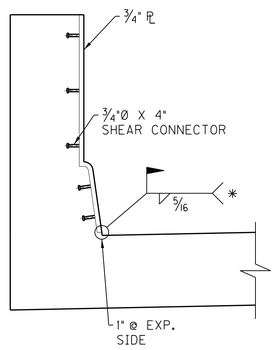
SHEET NO. S129

DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
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E-SHEET NAME:
MicroStation v8.11.7.443

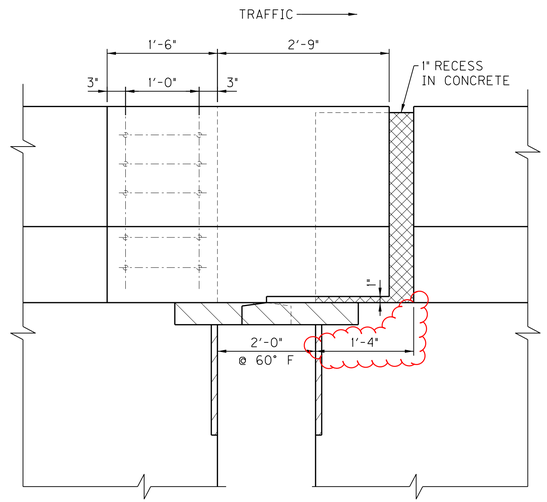


ELEVATION

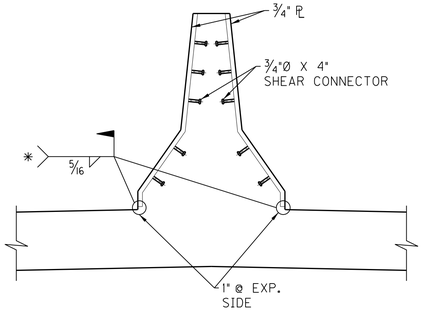


SECTION

TRAFFIC BARRIER SLIDING PLATE

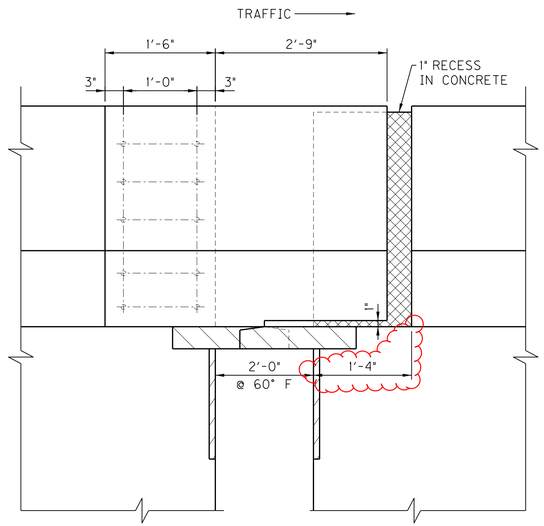


ELEVATION

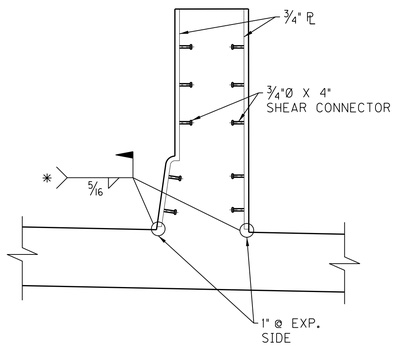


SECTION

MEDIAN BARRIER SLIDING PLATE

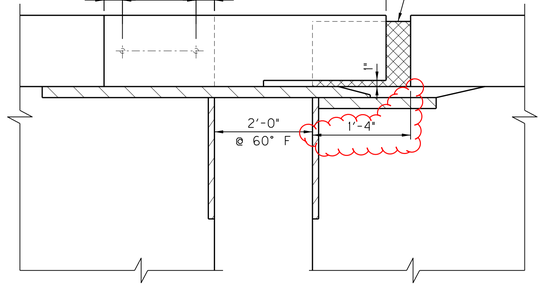


ELEVATION

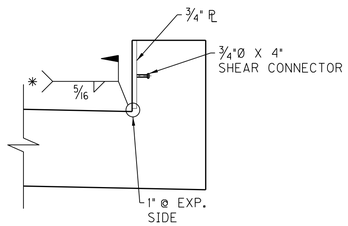


SECTION

COMBINATION RAIL SLIDING PLATE



ELEVATION



SECTION

PEDESTRIAN CURB SLIDING PLATE

NOTE: ALL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50.

* BARRIER PLATE SHALL BE WELDED TO THE EXPANSION DAM PLATE THAT TRAFFIC COMES TO FIRST.

3	CHANGED DIMENSIONS	12/09/13
	REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	J.N. MCNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

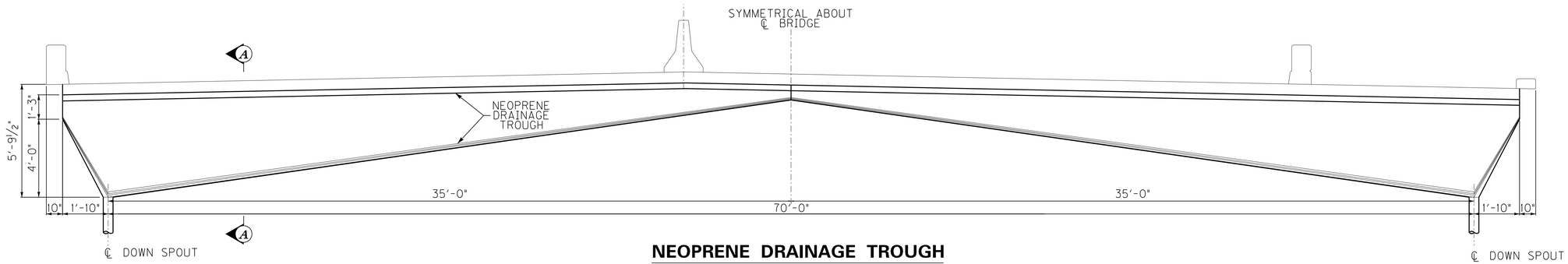
ROUTE	CROSSING
US 68	KENTUCKY LAKE

SLIDING PLATE DETAILS

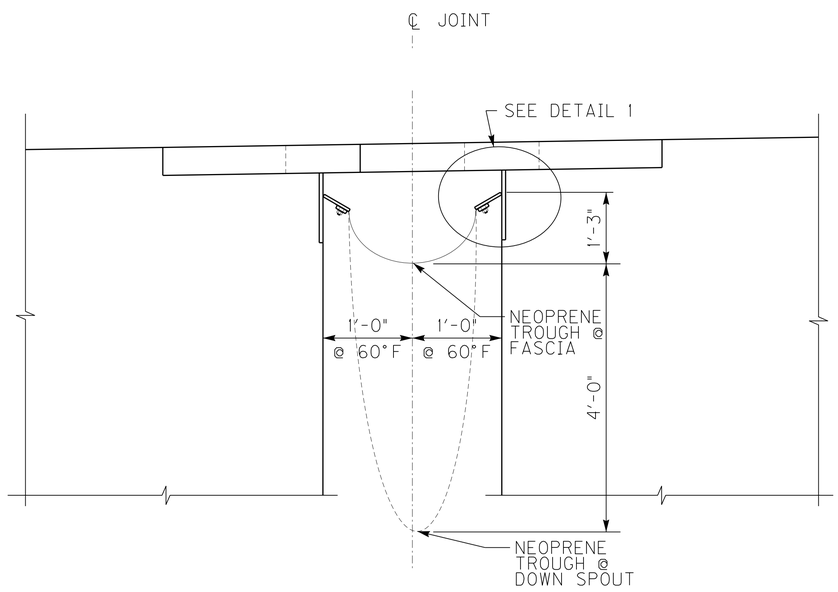
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	*PALMER ENGINEERING CO.*	S129
		DRAWING NO. 24686

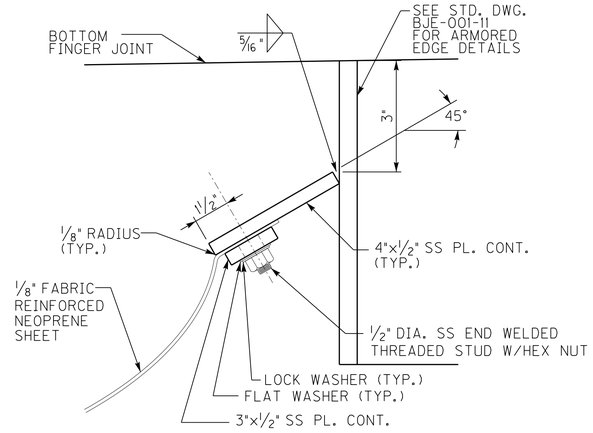
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/5/2013 9:08:49 AM
E-SHEET NAME:
MicroStation v8.11.7.443



NEOPRENE DRAINAGE TROUGH



SECTION A–A THROUGH TROUGH DRAIN



DETAIL 1

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

FINGER DAM DETAILS

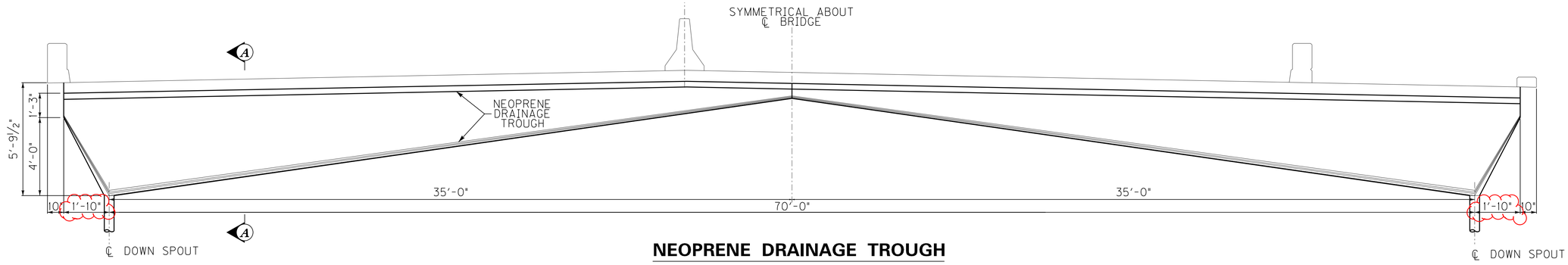
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

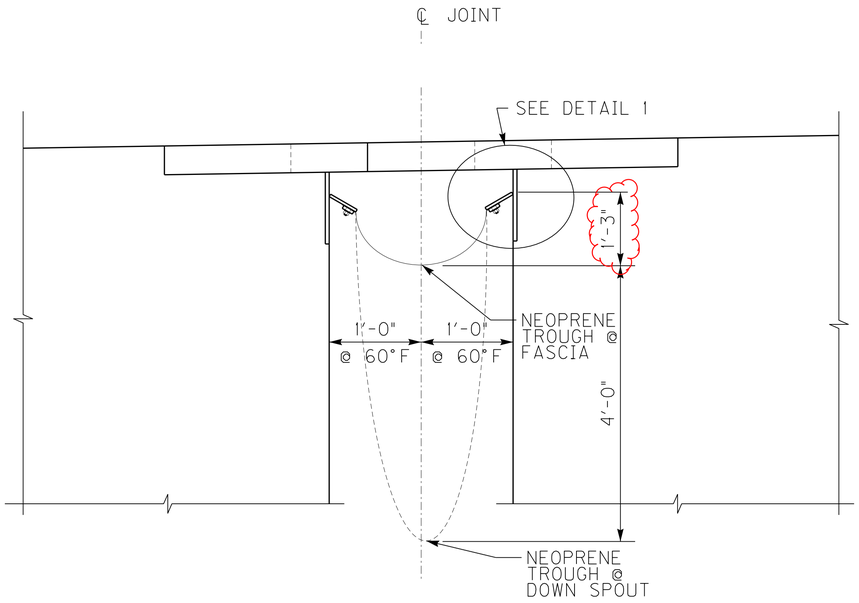
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S130
DRAWING NO. 24686

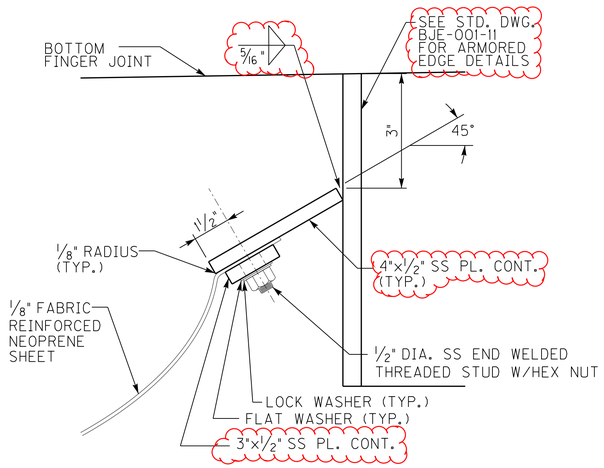
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NEOPRENE DRAINAGE TROUGH



SECTION A–A THROUGH TROUGH DRAIN



DETAIL 1

3 CHANGED DIMENSIONS & NOTES	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

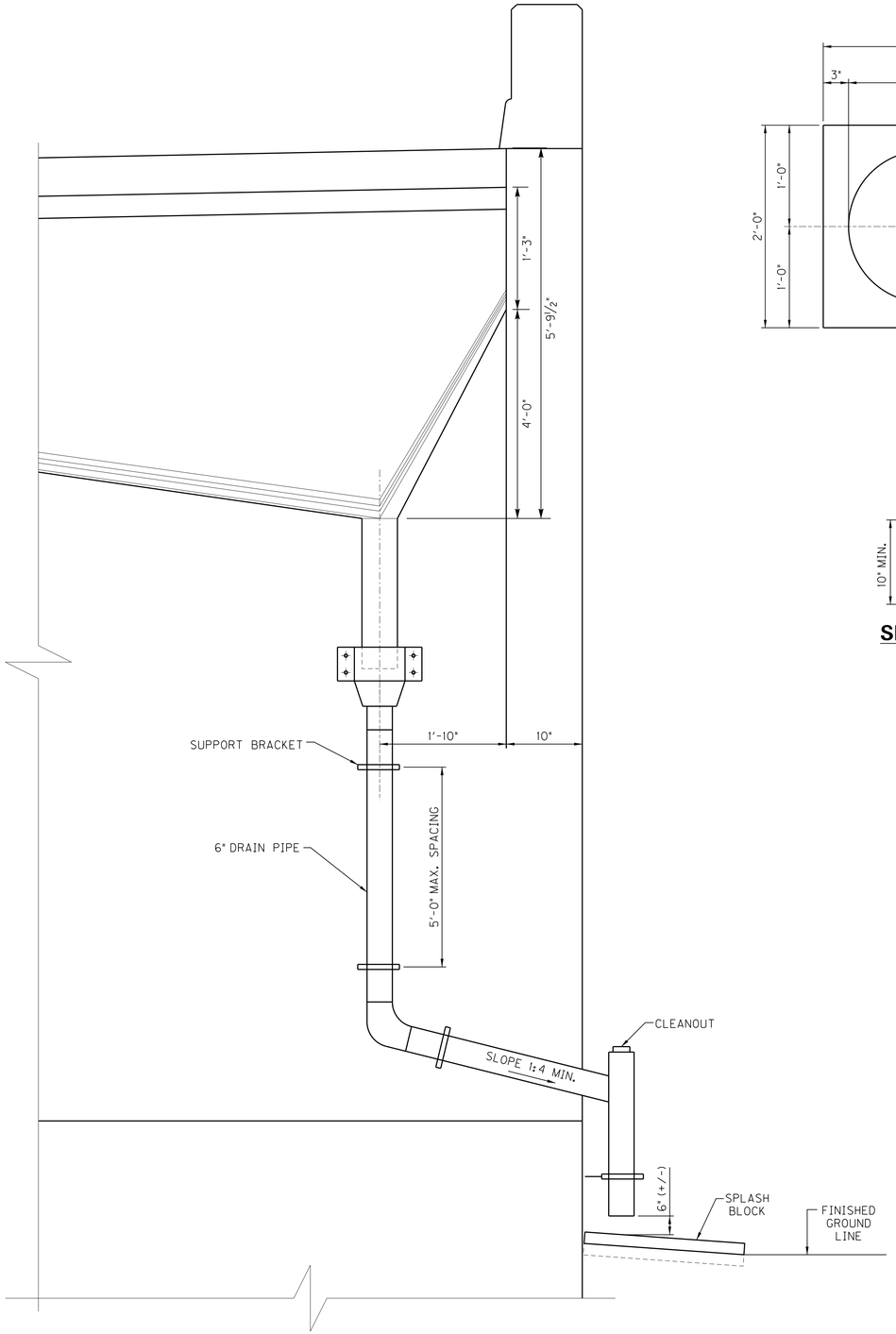
ROUTE	CROSSING
US 68	KENTUCKY LAKE

FINGER DAM DETAILS

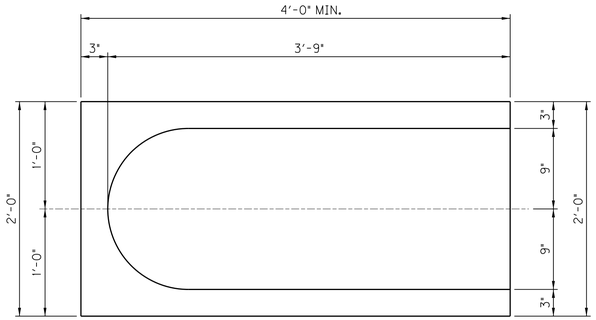
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	*PALMER ENGINEERING CO.*	S130
		DRAWING NO. 24686

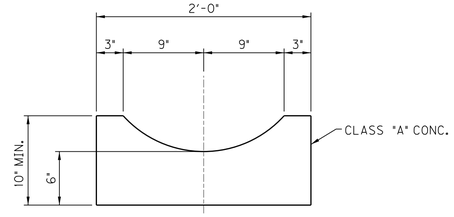
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USER: tim-e
DATE PLOTTED: July 27, 2011
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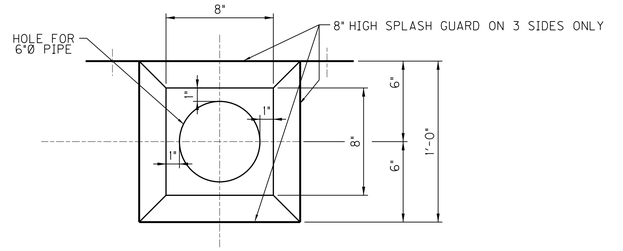
FINGER DAM DRAIN SYSTEM



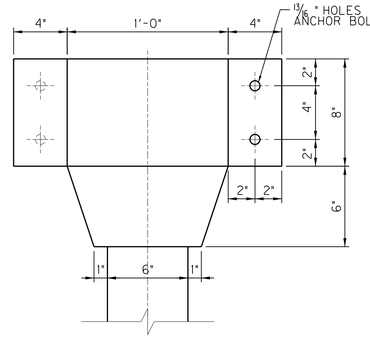
SPLASH BLOCK – PLAN



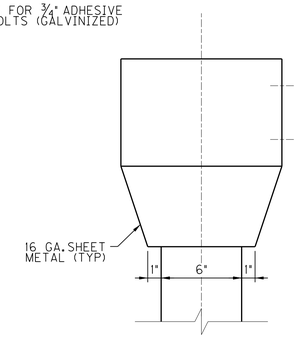
SECTION THRU SPLASH BLOCK



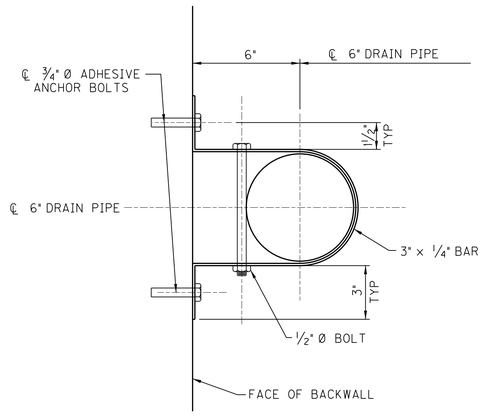
PLAN – DRAIN BOX



ELEVATION



SIDE ELEVATION



PIPE SUPPORT BRACKET – PLAN

NOTES

1. PAYMENT FOR THE DRAIN BOX, PIPING, SUPPORTS, AND SPLASH BLOCK SHALL BE CONSIDERED INCIDENTAL TO THE FINGER JOINTS.
2. ALL MATERIALS FOR DRAINAGE SHALL BE GALVANIZED AND PAINTED AFTER FABRICATION.
3. THE SPLASH BLOCK SHALL BE CONSTRUCTED TO MATCH THE FINISHED GROUND LINE.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

FINGER DAM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

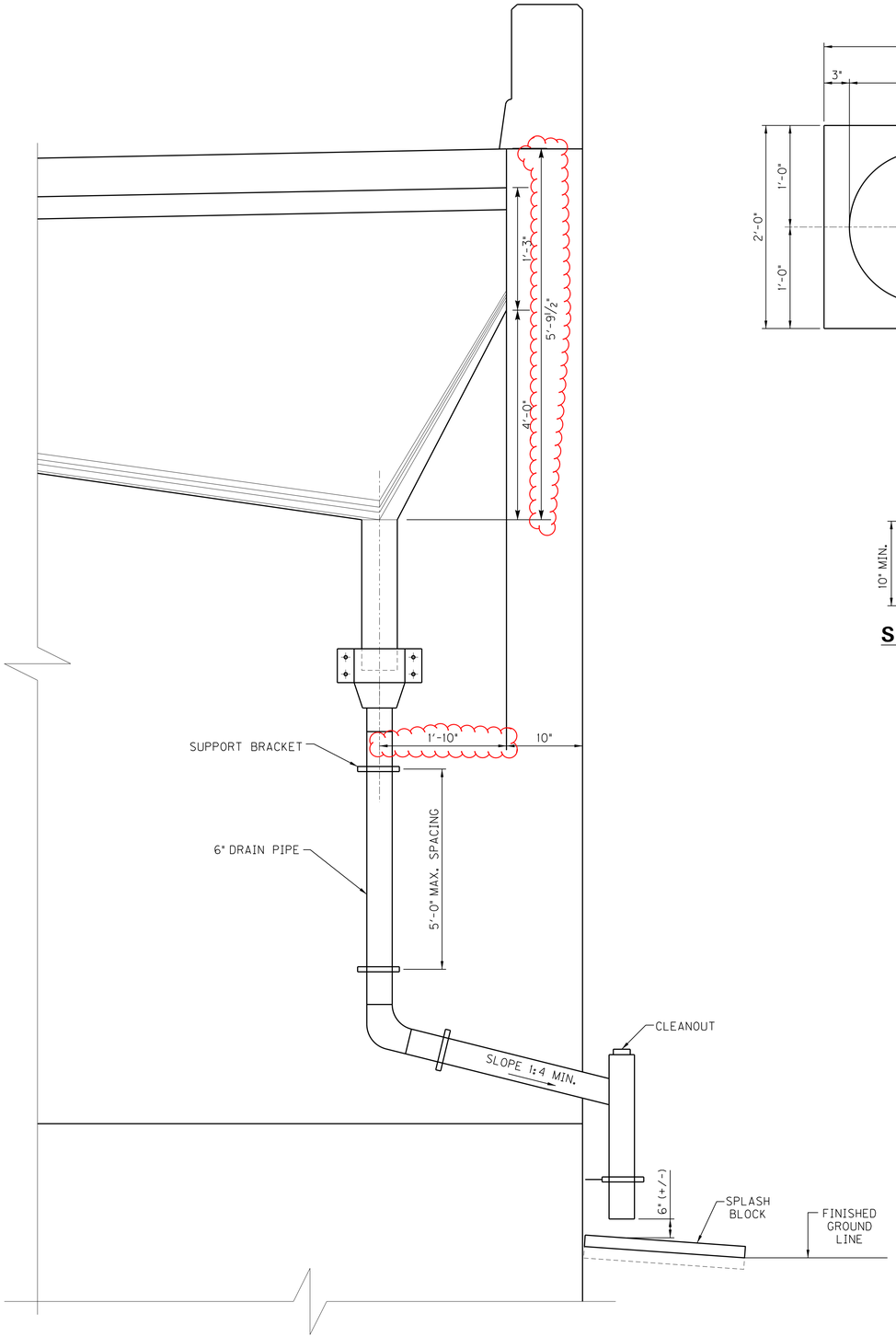
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

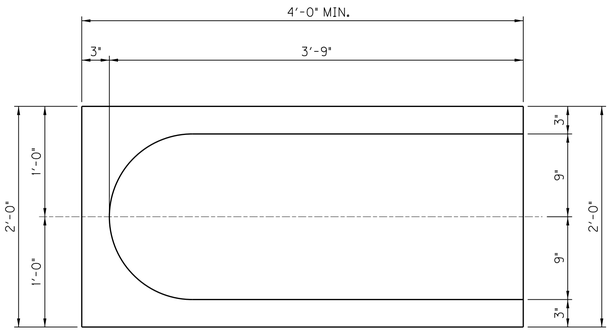
SHEET NO. S131

DRAWING NO. 24686

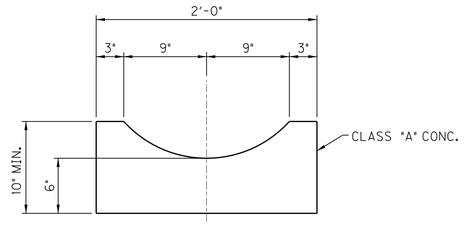
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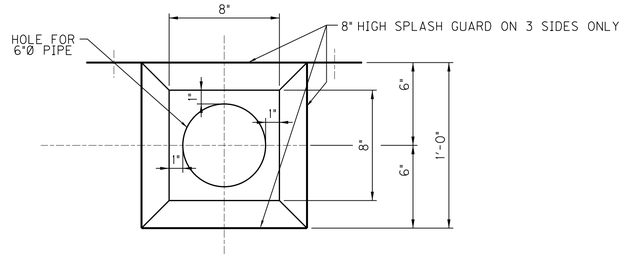
FINGER DAM DRAIN SYSTEM



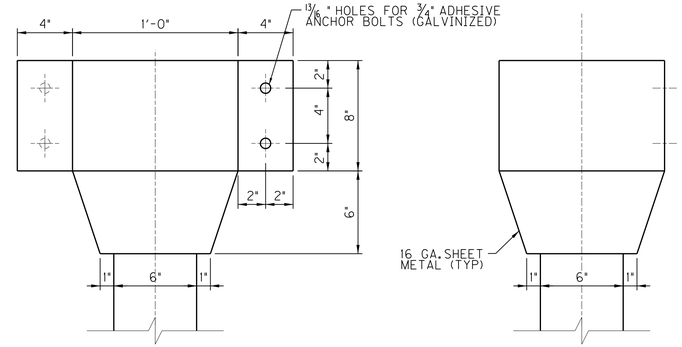
SPLASH BLOCK – PLAN



SECTION THRU SPLASH BLOCK

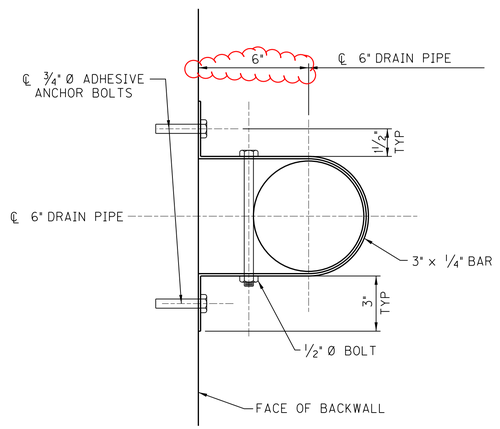


PLAN – DRAIN BOX



ELEVATION

SIDE ELEVATION



PIPE SUPPORT BRACKET – PLAN

NOTES

1. PAYMENT FOR THE DRAIN BOX, PIPING, SUPPORTS, AND SPLASH BLOCK SHALL BE CONSIDERED INCIDENTAL TO THE FINGER JOINTS.
2. ALL MATERIALS FOR DRAINAGE SHALL BE GALVANIZED AND PAINTED AFTER FABRICATION.
3. THE SPLASH BLOCK SHALL BE CONSTRUCTED TO MATCH THE FINISHED GROUND LINE.

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.H. DEITZ	J.N. MCNUTT
DETAILED BY: T.S. ELLIS	D.H. DEITZ

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

FINGER DAM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

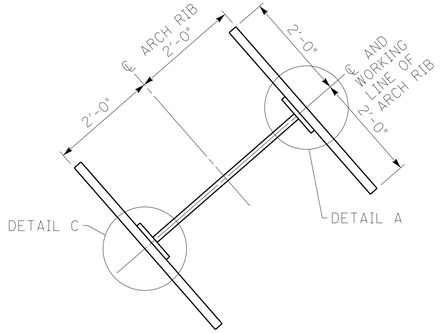
SHEET NO. S131

DRAWING NO. 24686

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
11/25/2013 3:40:41 PM
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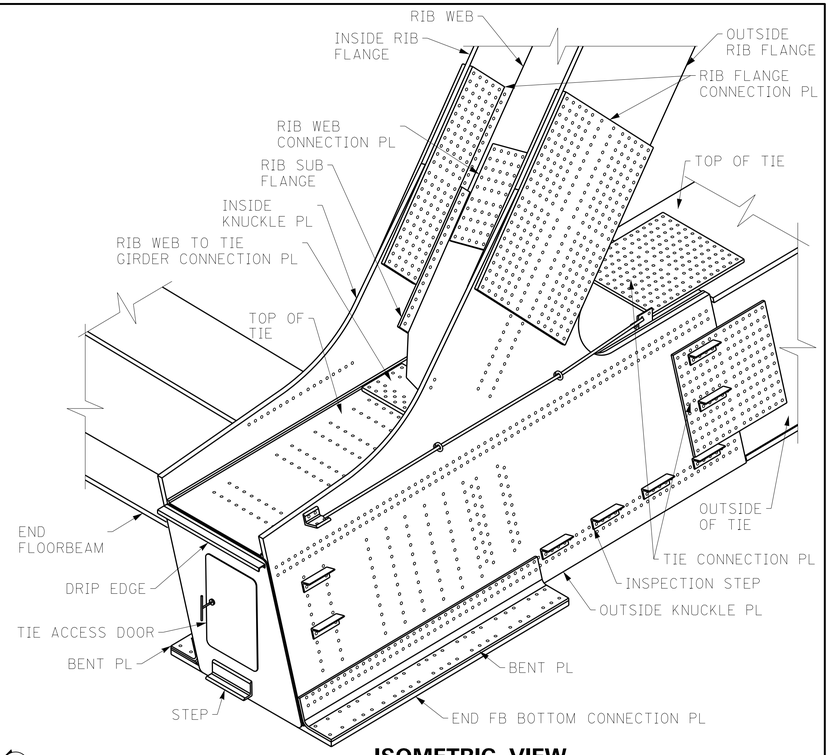
NOTES

1. FOR GENERAL NOTES, SEE SHEET NO. S004-S006A.
2. WORK THIS SHEET WITH SHEET NOS. S149-S155.
3. FOR ARCH GEOMETRY AND WP DEFINITION SEE SHEET NOS. S133-S136.
4. FOR ARCH RIB ELEVATION SEE SHEET NOS. S156-S161.
5. FOR TIE GIRDER ELEVATIONS SEE SHEET NOS. S171-S174.
6. FOR SECTION A-A SEE SHEET NO. S149.
7. FOR SECTION B-B SEE SHEET NO. S152.
8. FOR VIEW C-C SEE SHEET NO. S155.
9. FOR SECTION D-D, SECTION G-G, AND SECTION H-H SEE SHEET NO. S154.
10. FOR SECTION E-E AND SECTION F-F SEE SHEET NO. S153.
11. FOR VIEW L-L, DETAIL A AND DETAIL B SEE SHEET NO. S150.
12. FOR VIEW M-M, DETAIL C AND DETAIL D SEE SHEET NO. S151.

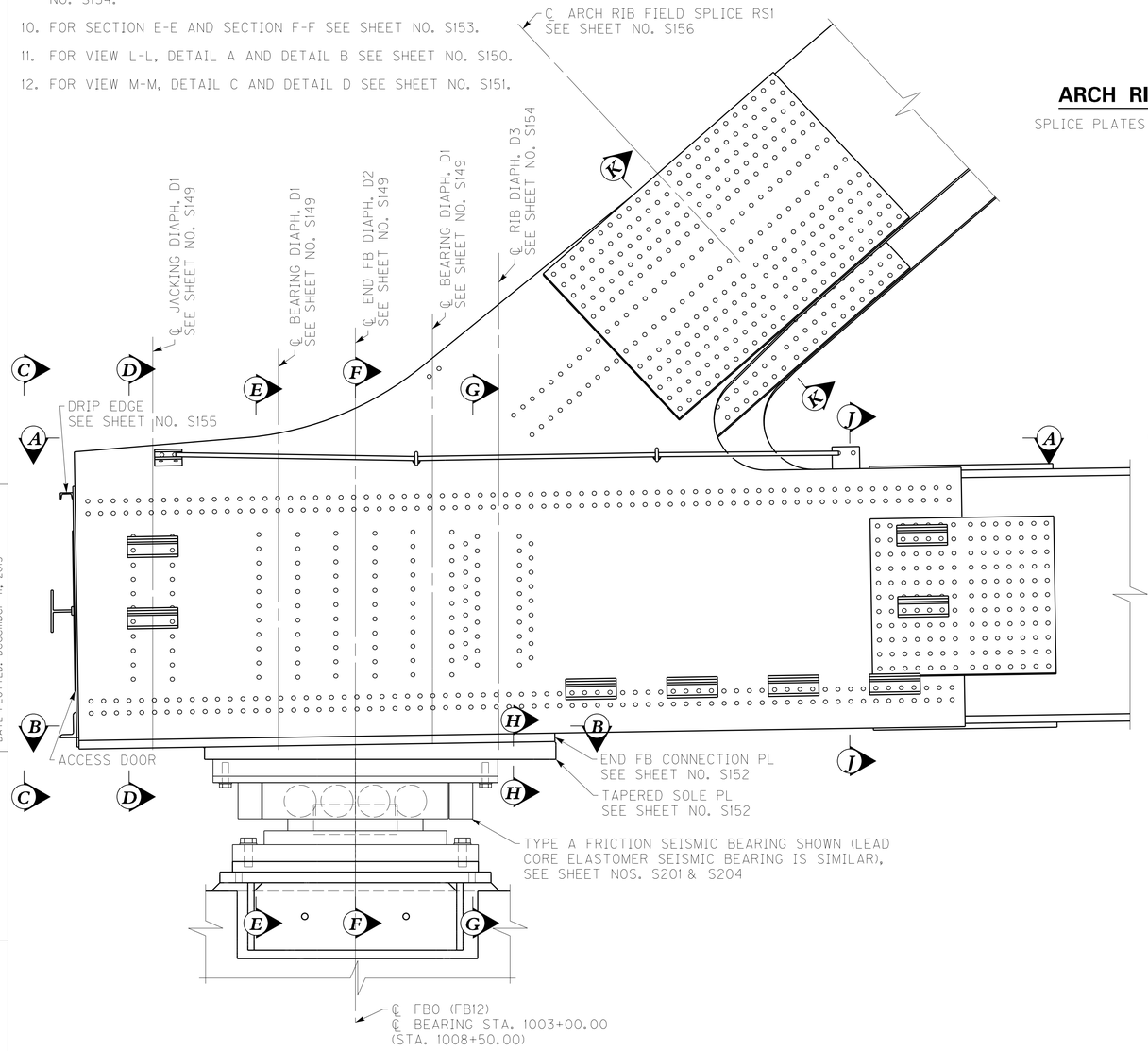


ARCH RIB SECTION K–K

SPLICE PLATES NOT SHOWN FOR CLARITY

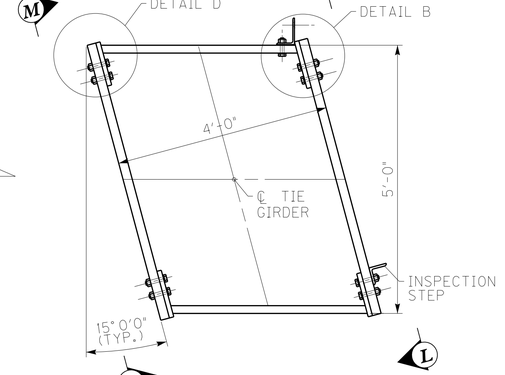


ISOMETRIC VIEW



ELEVATION

KNUCKLE JOINT FO SHOWN (F12 OPPOSITE HAND)



TIE GIRDER SECTION J–J

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: DMB	RMS
DETAILED BY: CEW	RMS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

KNUCKLE JOINT ELEVATION

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: **01–180.70**

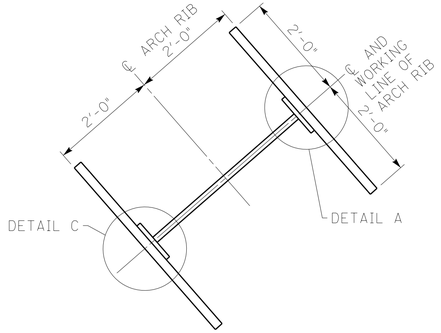
PREPARED BY
Baker
MICHAEL BAKER JR. INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S148
DRAWING NO. 24686

MicroStation v8.11.9.459 E-SHEET NAME: S24686 148 USER: cwethington DATE PLOTTED: December 11, 2013 FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 KN05.DGN

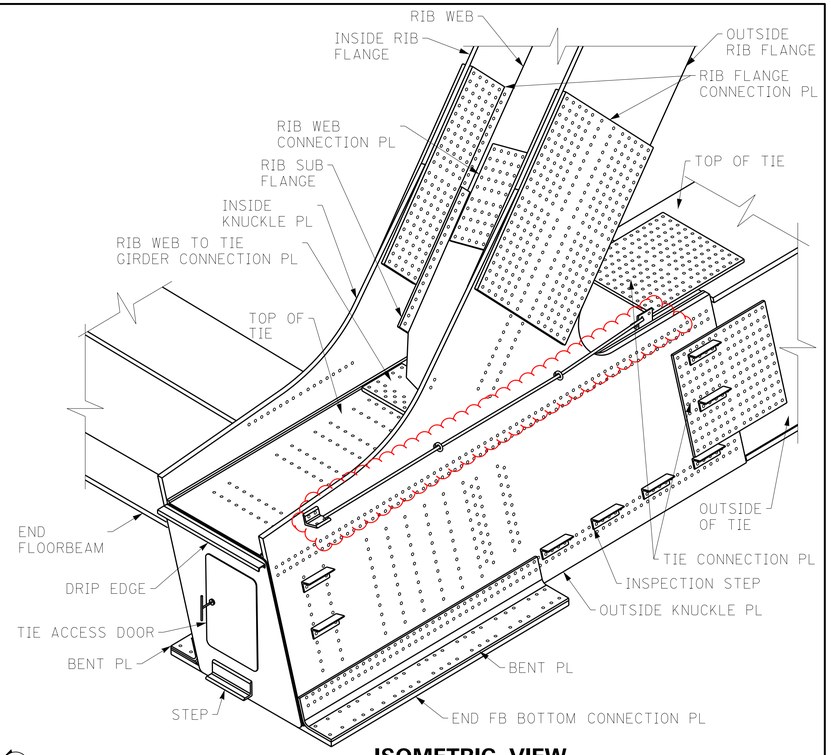
NOTES

1. FOR GENERAL NOTES, SEE SHEET NO. S004-S006A.
2. WORK THIS SHEET WITH SHEET NOS. S149-S155.
3. FOR ARCH GEOMETRY AND WP DEFINITION SEE SHEET NOS. S133-S136.
4. FOR ARCH RIB ELEVATION SEE SHEET NOS. S156-S161.
5. FOR TIE GIRDER ELEVATIONS SEE SHEET NOS. S171-S174.
6. FOR SECTION A-A SEE SHEET NO. S149.
7. FOR SECTION B-B SEE SHEET NO. S152.
8. FOR VIEW C-C SEE SHEET NO. S155.
9. FOR SECTION D-D, SECTION G-G, AND SECTION H-H SEE SHEET NO. S154.
10. FOR SECTION E-E AND SECTION F-F SEE SHEET NO. S153.
11. FOR VIEW L-L, DETAIL A AND DETAIL B SEE SHEET NO. S150.
12. FOR VIEW M-M, DETAIL C AND DETAIL D SEE SHEET NO. S151.

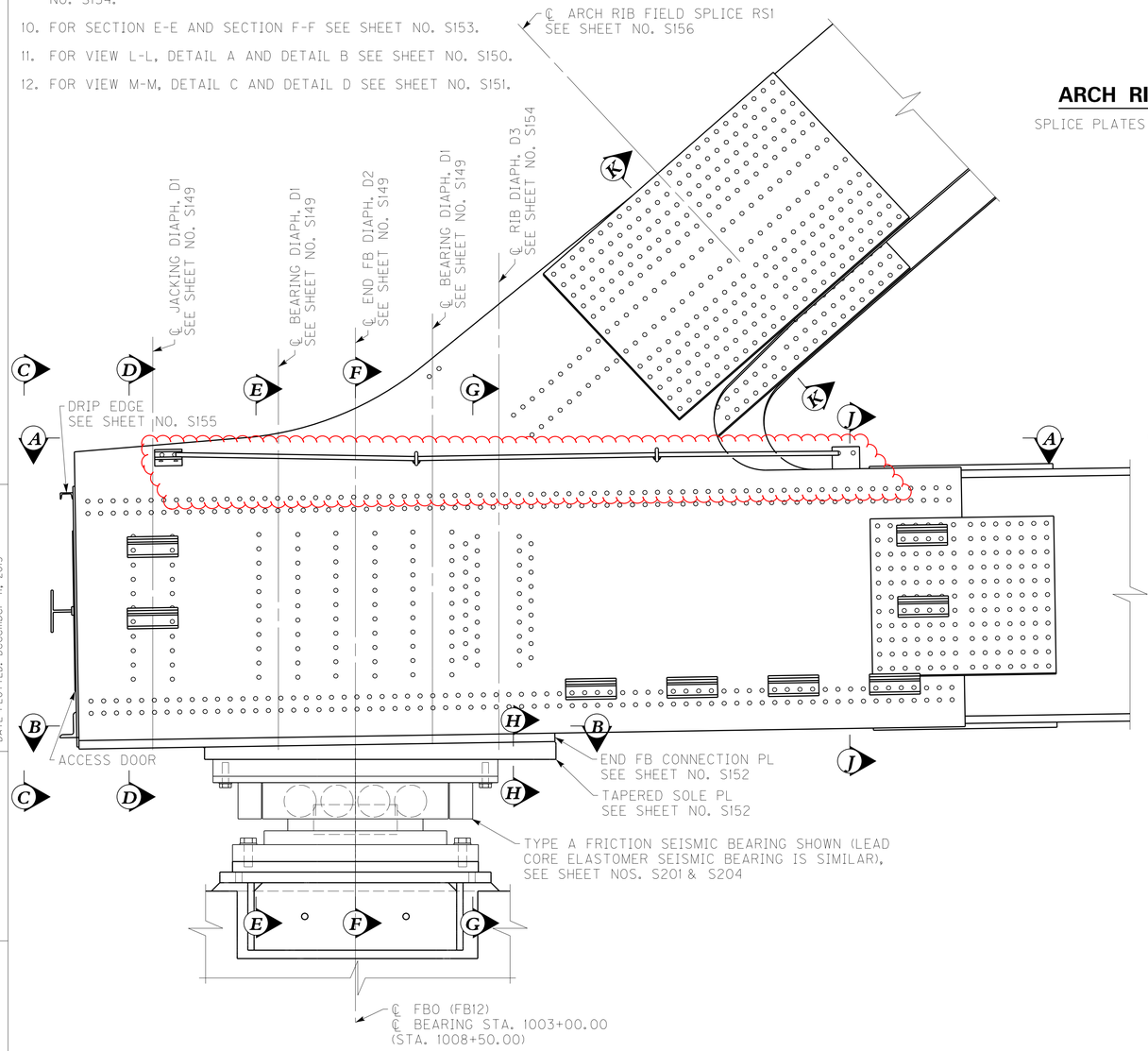


ARCH RIB SECTION K-K

SPLICE PLATES NOT SHOWN FOR CLARITY

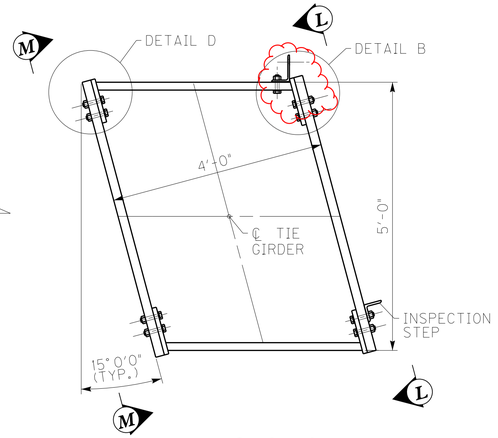


ISOMETRIC VIEW



ELEVATION

KNUCKLE JOINT FO SHOWN (F12 OPPOSITE HAND)



TIE GIRDER SECTION J-J

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: DMB	RMS
DETAILED BY: CEW	RMS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

KNUCKLE JOINT ELEVATION

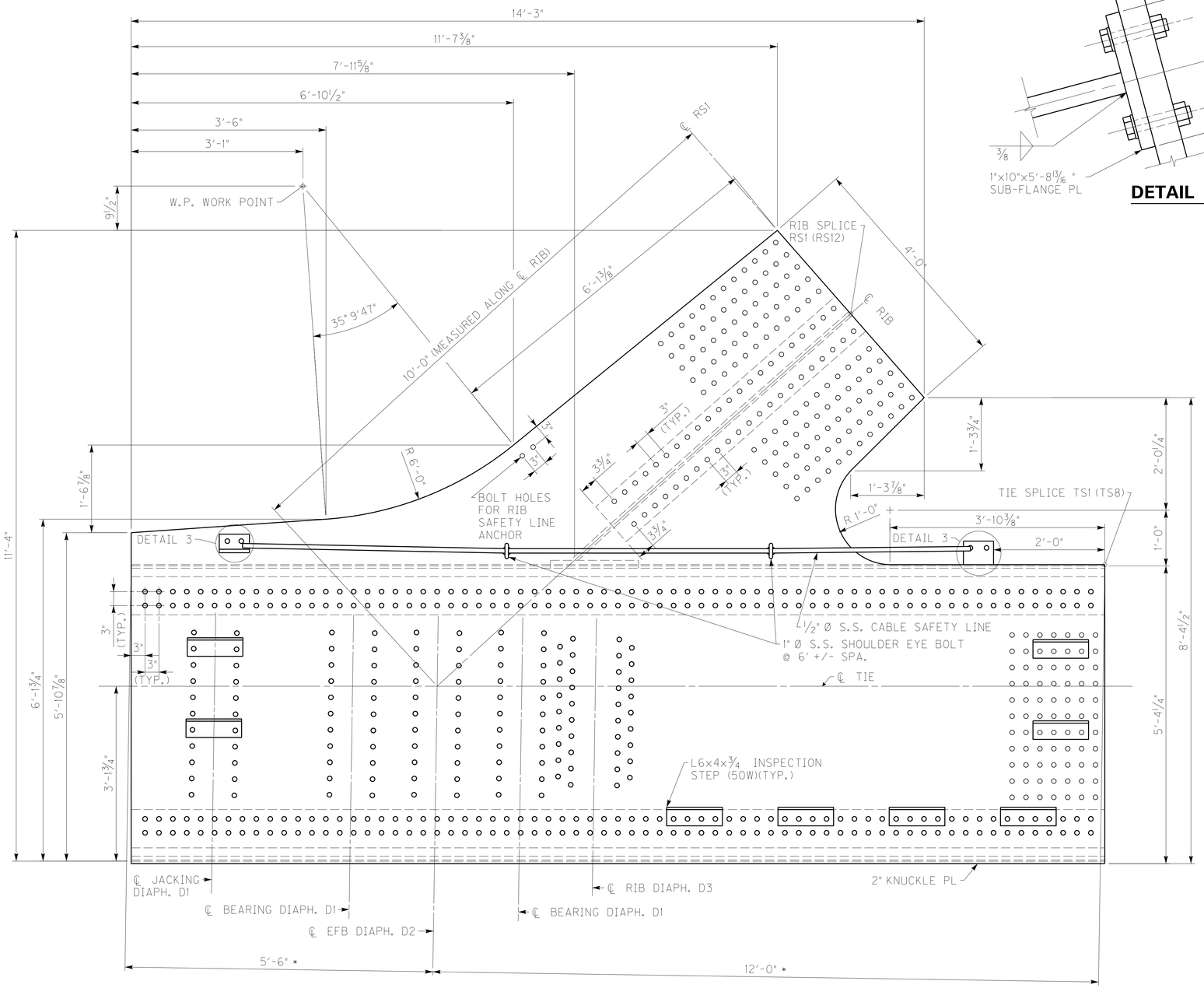
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: **01-180.70**

PREPARED BY
Baker
MICHAEL BAKER JR. INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S148
DRAWING NO. 24686

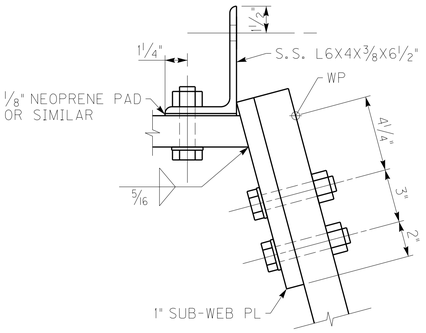
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USER: cwethington
DATE PLOTTED: December 11, 2013
E-SHEET NAME: S24686 148
MicroStation v8.11.9.459



VIEW L–L

OUTSIDE KNUCKLE PLATE

DETAIL A



DETAIL B

LEGEND

* MEASURED ALONG HORIZONTAL WORKING LINE BETWEEN CTO & CT12.

NOTES

1. FOR NOTES ON KNUCKLE, SEE SHEET NO. S148.
2. KNUCKLE PLATE SHALL CONFORM TO AASHTO M270 GRADE HPS 70W AND BE FCM TESTED.
3. ALL BOLTS SHALL BE 1" DIAMETER A325-X HIGH STRENGTH BOLTS.
4. FOR RIB SPLICE DETAILS SEE SHEET NOS. S162-S163.
5. FOR TIE SPLICE DETAILS SEE SHEET NOS. S174-S177.
6. FOR DETAIL 3, SEE SHEET NO. S178A.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: DMB	RMS
DETAILED BY: CEW	DMB/JCS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

KNUCKLE DETAILS – 2

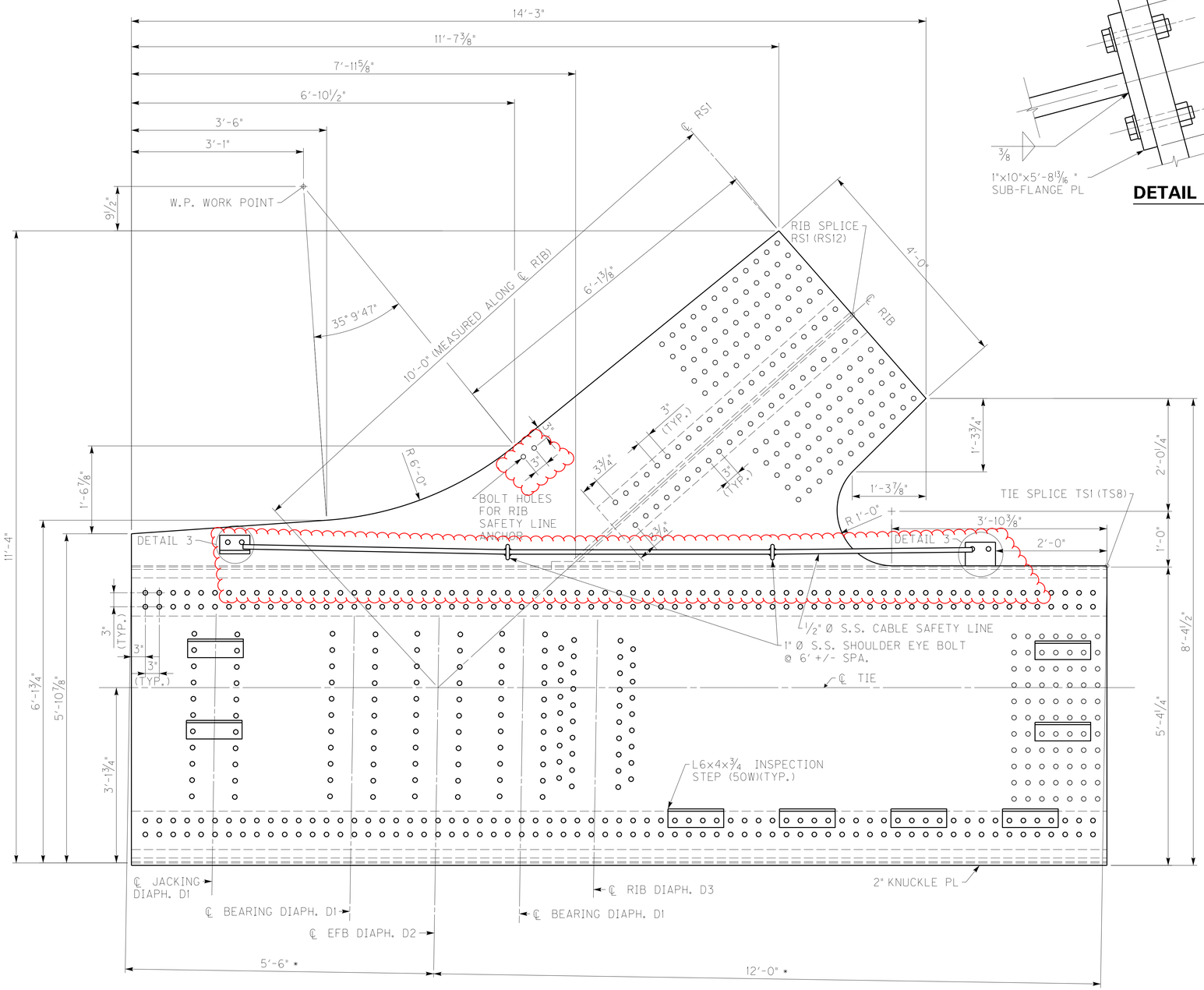
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S150
DRAWING NO. 24686

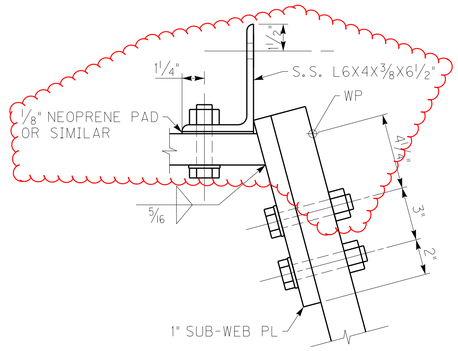
MicroStation v8.11.9.459
E-SHEET NAME: S24686 150
USER: cwethington
DATE PLOTTED: November 21, 2013
FILE NAME: C:\PW81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 KN03.DGN



VIEW L–L

OUTSIDE KNUCKLE PLATE

DETAIL A



DETAIL B

LEGEND

* MEASURED ALONG HORIZONTAL WORKING LINE BETWEEN CTO & CT12.

NOTES

1. FOR NOTES ON KNUCKLE, SEE SHEET NO. S148.
2. KNUCKLE PLATE SHALL CONFORM TO AASHTO M270 GRADE HPS 70W AND BE FCM TESTED.
3. ALL BOLTS SHALL BE 1" DIAMETER A325-X HIGH STRENGTH BOLTS.
4. FOR RIB SPLICE DETAILS SEE SHEET NOS. S162-S163.
5. FOR TIE SPLICE DETAILS SEE SHEET NOS. S174-S177.
6. FOR DETAIL 3, SEE SHEET NO. S178A.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: DMB	RMS
DETAILED BY: CEW	DMB/JCS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

KNUCKLE DETAILS – 2

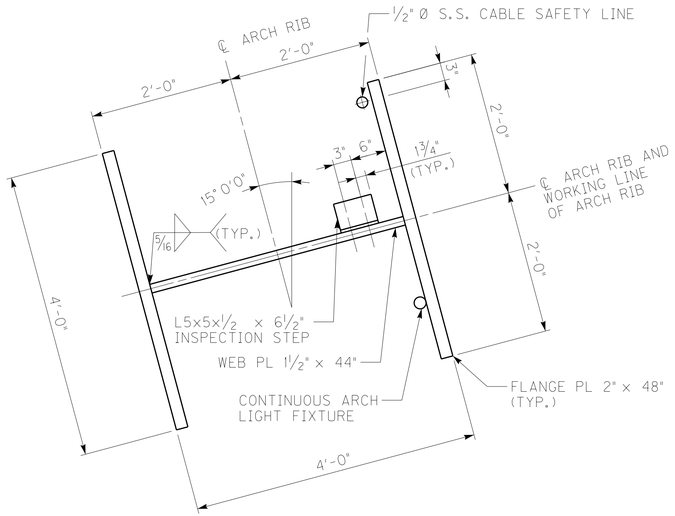
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S150
DRAWING NO. 24686

MicroStation v8.11.9.459
E-SHEET NAME: S24686 150
USER: cwethington
DATE PLOTTED: November 21, 2013
FILE NAME: C:\PW81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 KN03.DGN



SECTION A–A

RIB ELEVATION

IN PLANE OF THE ARCH

KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR GENERAL NOTES, SEE SHEET NOS. S004 - S006A.
2. ALL BOLTS SHALL BE 1" DIAMETER A325-X HIGH STRENGTH BOLTS.
3. ALL STRUCTURAL STEEL FOR ARCH RIB FLANGE PLATES, WEB PLATES AND STIFFENERS SHALL CONFORM TO AASHTO M270 GRADE HPS 70W UNLESS NOTED OTHERWISE AND SHALL BE CVN TESTED.
4. FOR ARCH RIB GEOMETRY, SEE SHEET NO. S134.
5. FOR ARCH RIB SPLICE DETAILS SEE SHEET NOS. S162-S163.
6. FOR HANGER WORK POINTS AND BETA ANGLE SEE SHEET NOS. S135 & S137.
7. FOR HANGER CONNECTION DETAILS SEE SHEET NOS. S179-S182.
8. FOR RIB BRACING WORK POINTS, SEE SHEET NO. S138.
9. FOR RIB BRACING, CONNECTION AND DETAILS, SEE SHEET NOS. S164-S169.
10. FOR INSPECTION ACCESS DETAILS, SEE SHEET NO S161.
11. FOR ARCH LIGHT FIXTURE, SEE SHEET NOS. S263, S269, S270 & S275.
12. FOR ARCH RIB CAMBER, SEE SHEET NO. S140.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

ARCH RIB RS1–RS2 (RS11–RS12)

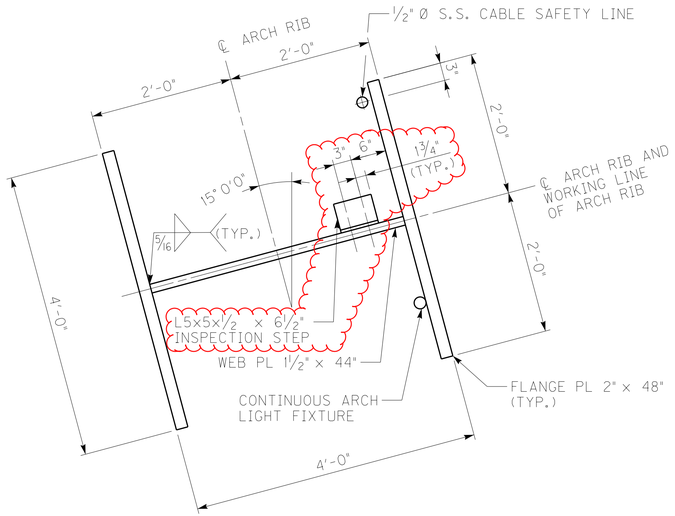
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR, INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S156
DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 RIBOLDGN
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
E-SHEET NAME: S24686 156
MicroStation v8.11.7.469



SECTION A–A

RIB ELEVATION

IN PLANE OF THE ARCH

KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR GENERAL NOTES, SEE SHEET NOS. S004 - S006A.
2. ALL BOLTS SHALL BE 1" DIAMETER A325-X HIGH STRENGTH BOLTS.
3. ALL STRUCTURAL STEEL FOR ARCH RIB FLANGE PLATES, WEB PLATES AND STIFFENERS SHALL CONFORM TO AASHTO M270 GRADE HPS 70W UNLESS NOTED OTHERWISE AND SHALL BE CVN TESTED.
4. FOR ARCH RIB GEOMETRY, SEE SHEET NO. S134.
5. FOR ARCH RIB SPLICE DETAILS SEE SHEET NOS. S162-S163.
6. FOR HANGER WORK POINTS AND BETA ANGLE SEE SHEET NOS. S135 & S137.
7. FOR HANGER CONNECTION DETAILS SEE SHEET NOS. S179-S182.
8. FOR RIB BRACING WORK POINTS, SEE SHEET NO. S138.
9. FOR RIB BRACING, CONNECTION AND DETAILS, SEE SHEET NOS. S164-S169.
10. FOR INSPECTION ACCESS DETAILS, SEE SHEET NO S161.
11. FOR ARCH LIGHT FIXTURE, SEE SHEET NOS. S263, S269, S270 & S275.
12. FOR ARCH RIB CAMBER, SEE SHEET NO. S140.

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

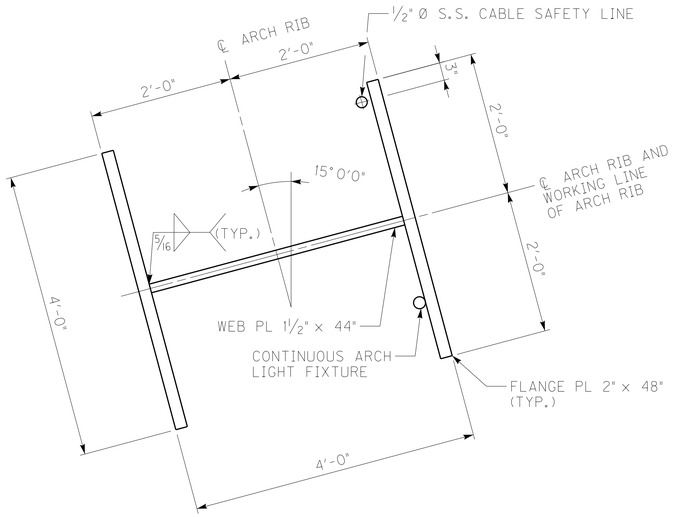
ROUTE	CROSSING
US68	KENTUCKY LAKE

ARCH RIB RS1–RS2 (RS11–RS12)

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER	PREPARED BY	SHEET NO.
01–180.70	Baker — MICHAEL BAKER JR., INC. 9750 ORMSBY STATION ROAD SUITE 210 LOUISVILLE, KY 40223	S156
		DRAWING NO. 24686

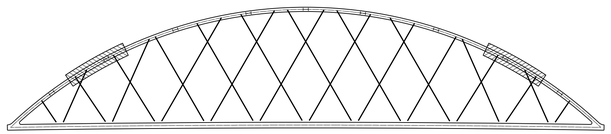
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USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
E-SHEET NAME: S24686 156
MicroStation v8.11.7.469



SECTION A–A

RIB ELEVATION

IN PLANE OF THE ARCH



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH RIB RS2–RS3 (RS10–RS11)

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

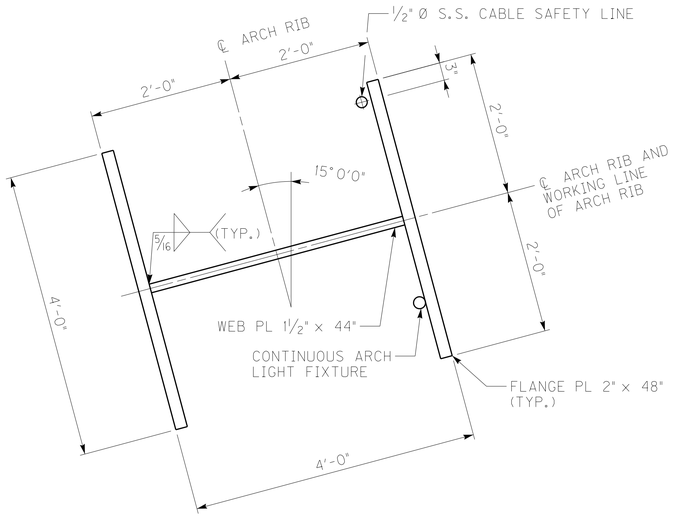
ITEM NUMBER: 01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S157

DRAWING NO. 24686

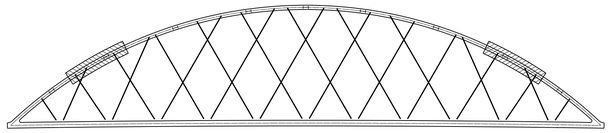
MicroStation v8.11.7.469
E-SHEET NAME: 524686 157
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW181-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 RIB02.DGN



SECTION A–A

RIB ELEVATION

IN PLANE OF THE ARCH



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

ARCH RIB RS2–RS3 (RS10–RS11)

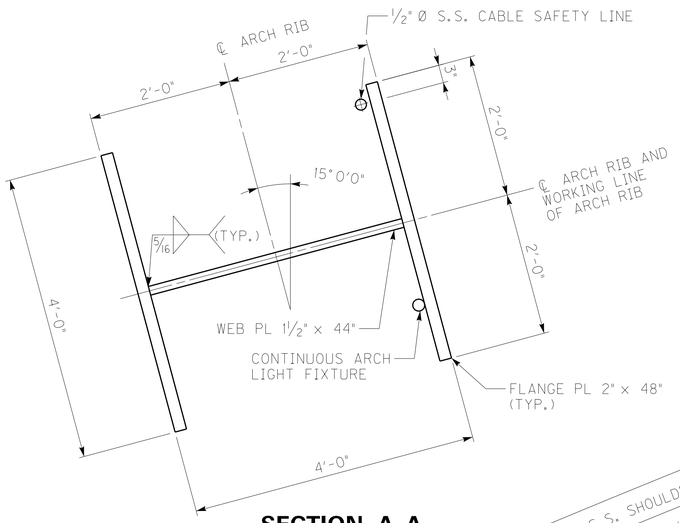
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S157
DRAWING NO. 24686

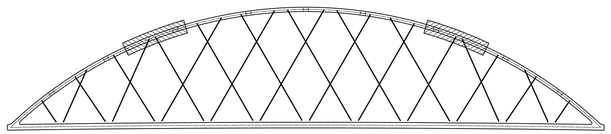
MicroStation v8.11.7.469
E-SHEET NAME: S24686 157
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 RIB02.DGN



SECTION A–A

RIB ELEVATION

IN PLANE OF THE ARCH



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

ARCH RIB RS3–RS4 (RS9–RS10)

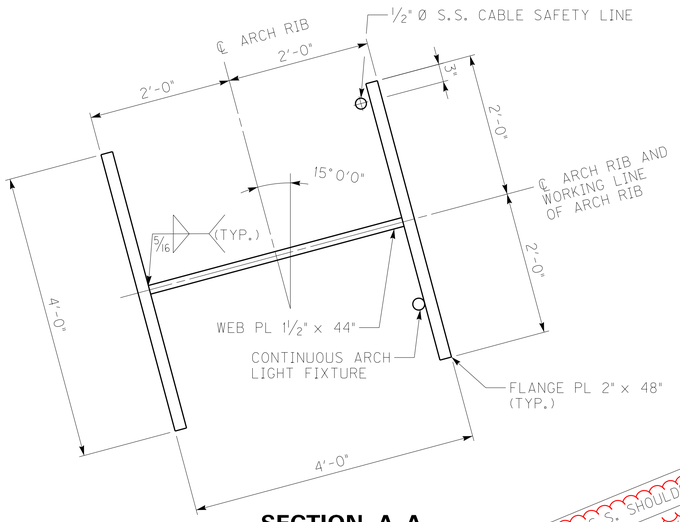
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S158
DRAWING NO. 24686

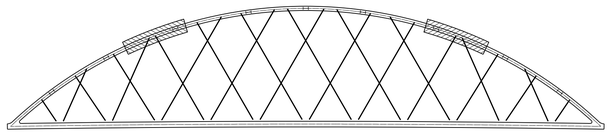
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E-SHEET NAME: S24686 158
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 RIB03.DGN



SECTION A–A

RIB ELEVATION

IN PLANE OF THE ARCH



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

3 ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

ARCH RIB RS3–RS4 (RS9–RS10)

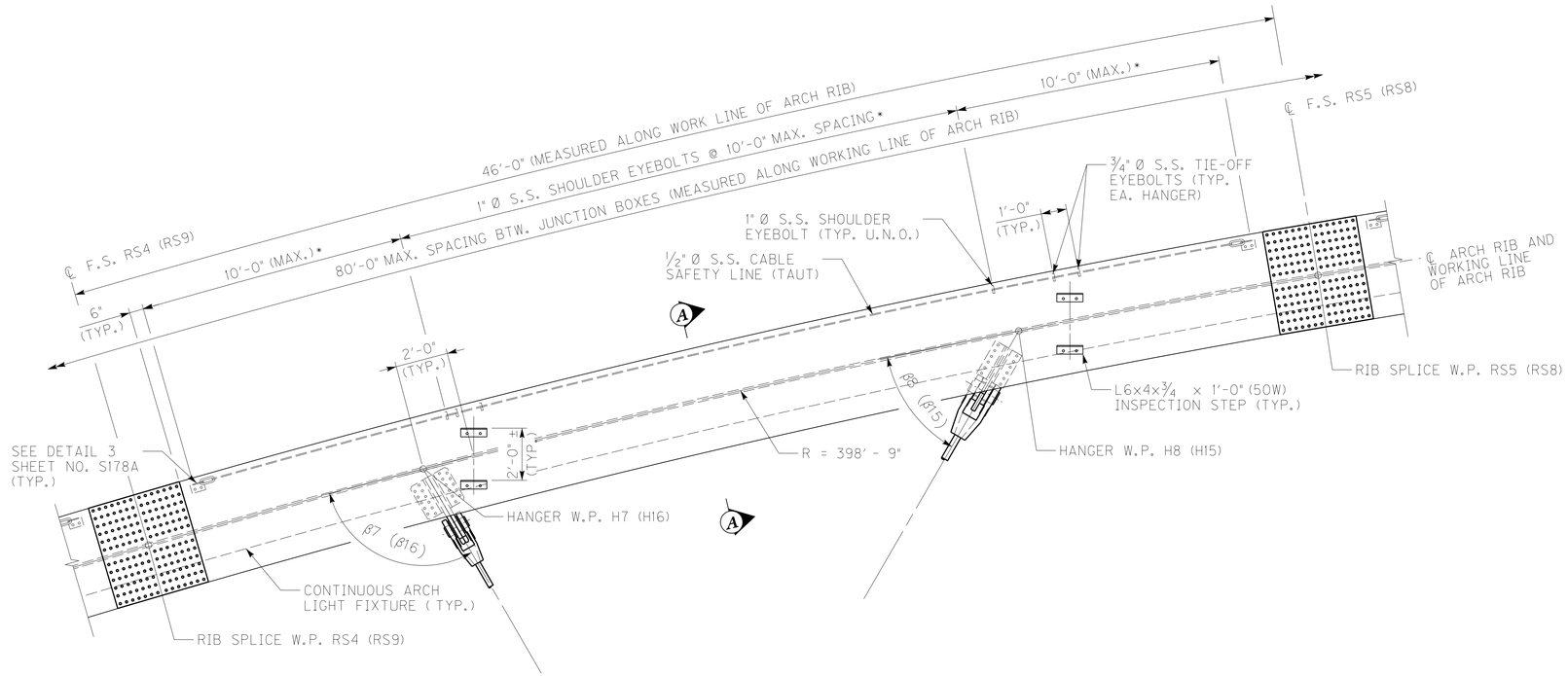
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

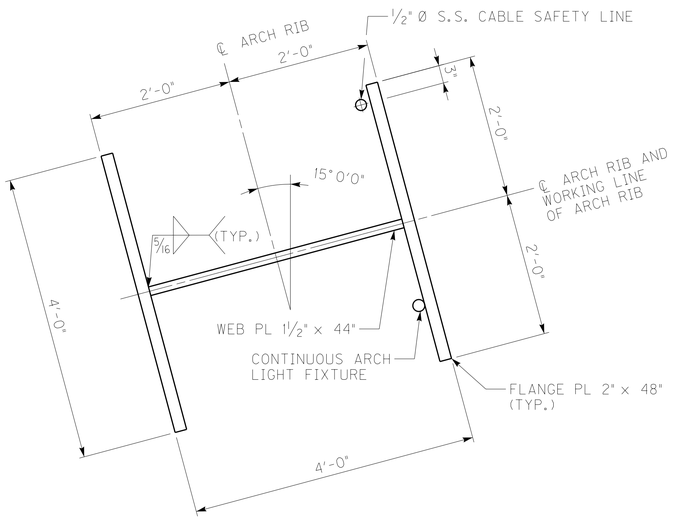
SHEET NO. S158
DRAWING NO. 24686

MicroStation v8.11.7.469
E-SHEET NAME: S24686 158
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
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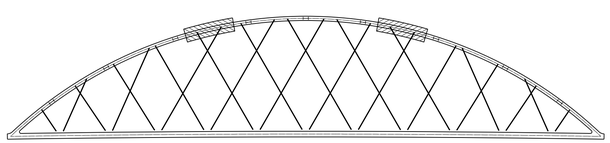


RIB ELEVATION

IN PLANE OF THE ARCH



SECTION A–A



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH RIB RS4–RS5 (RS8–RS9)

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

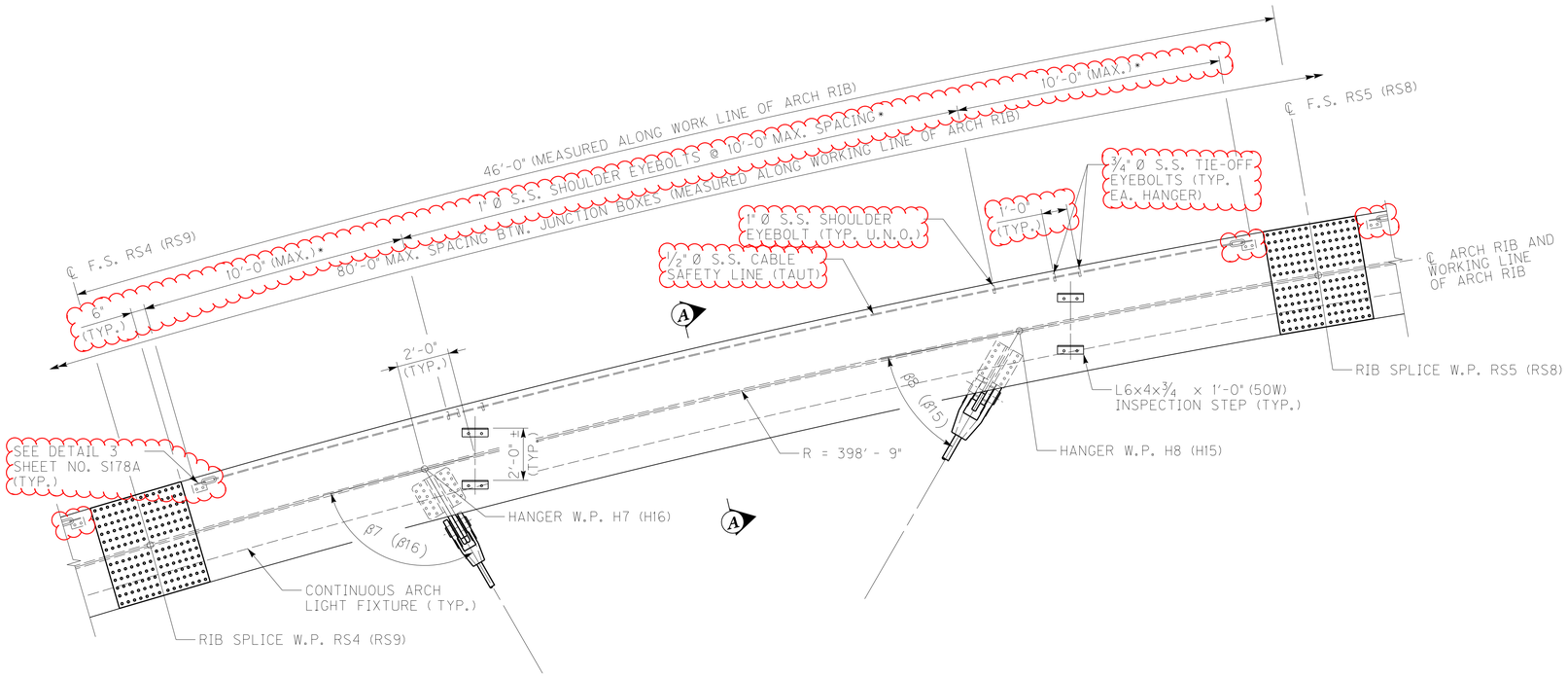
ITEM NUMBER: 01–180.70

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S159

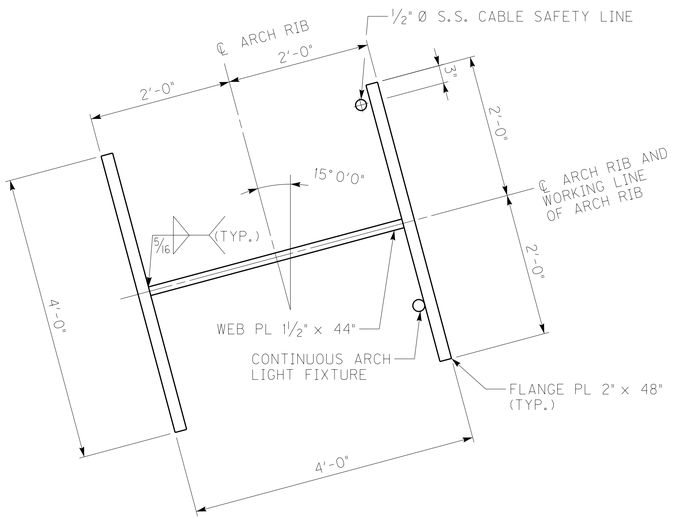
DRAWING NO. 24686

MicroStation v8.11.7.469
E-SHEET NAME: 524686 159
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 RIB04.DGN

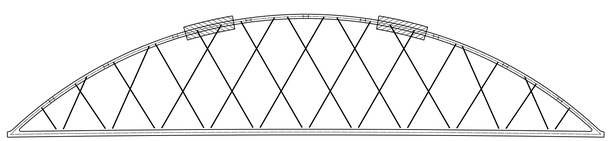


RIB ELEVATION

IN PLANE OF THE ARCH



SECTION A–A



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH RIB RS4–RS5 (RS8–RS9)

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

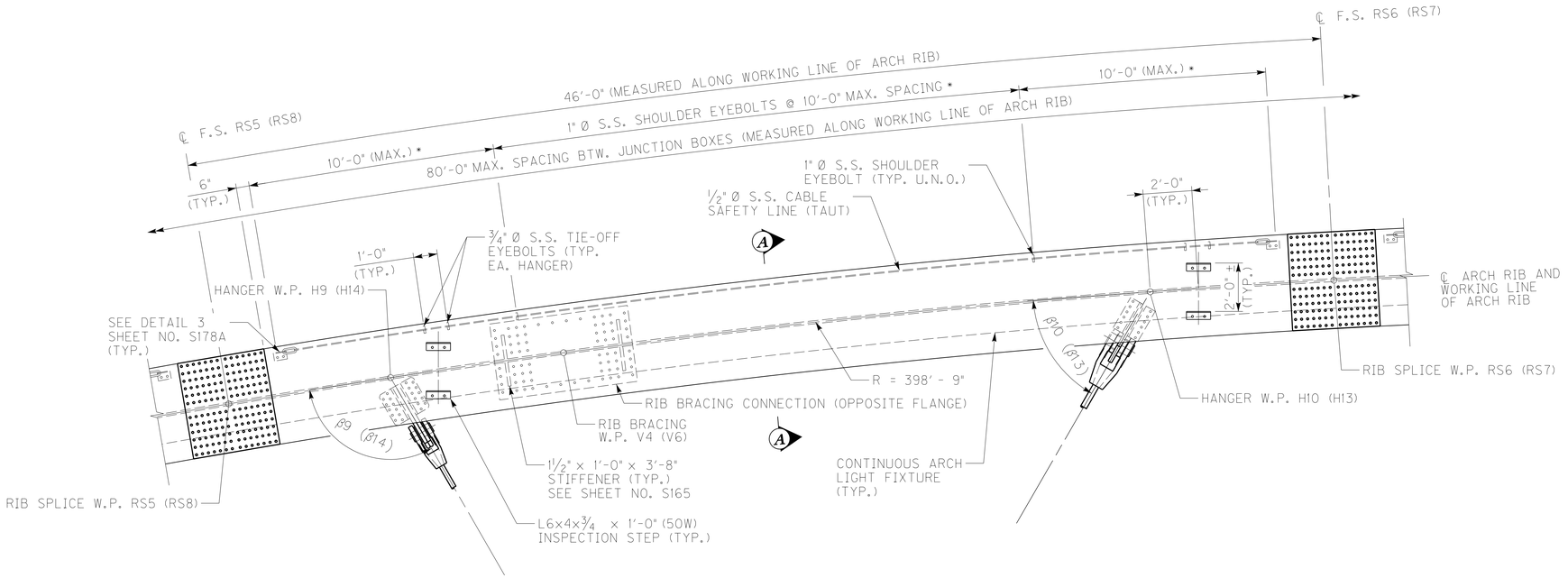
ITEM NUMBER: 01–180.70

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S159

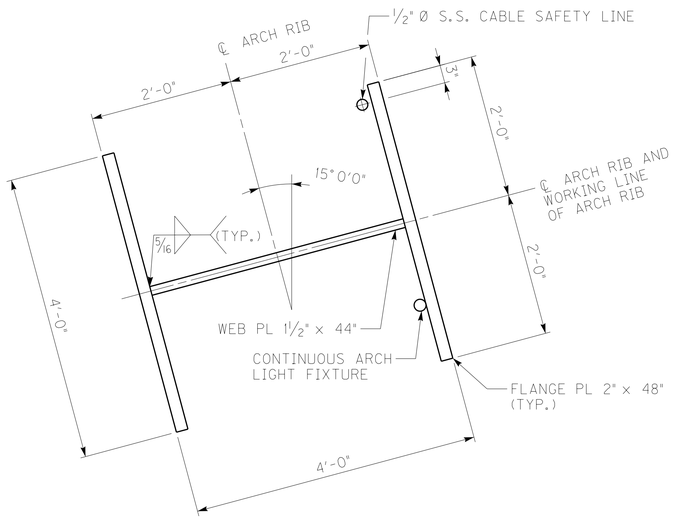
DRAWING NO. 24686

MicroStation v8.11.7.469
E-SHEET NAME: 524686 159
USER: Maryjo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 RIB04.DGN

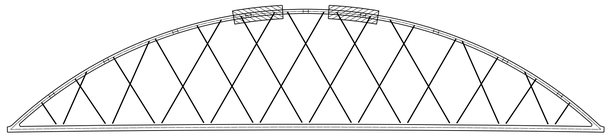


RIB ELEVATION

IN PLANE OF THE ARCH



SECTION A–A



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH RIB RS5–RS6 (RS7–RS8)

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

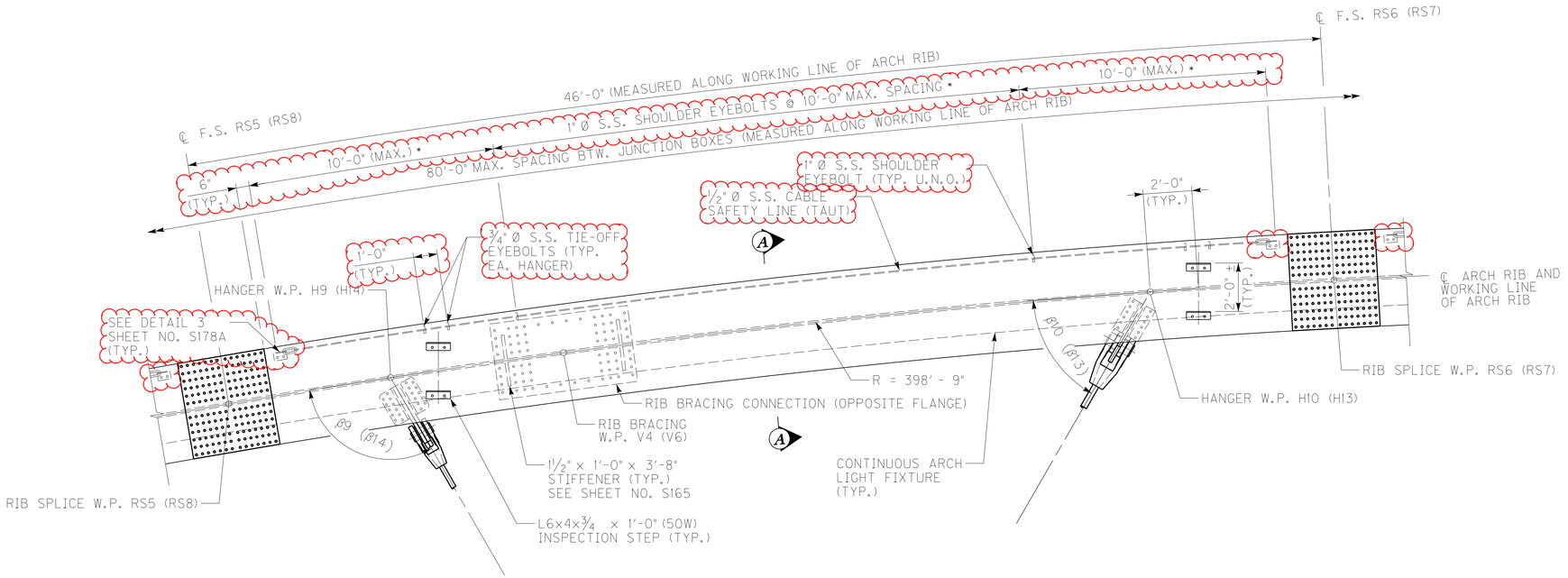
ITEM NUMBER: 01–180.70

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S160

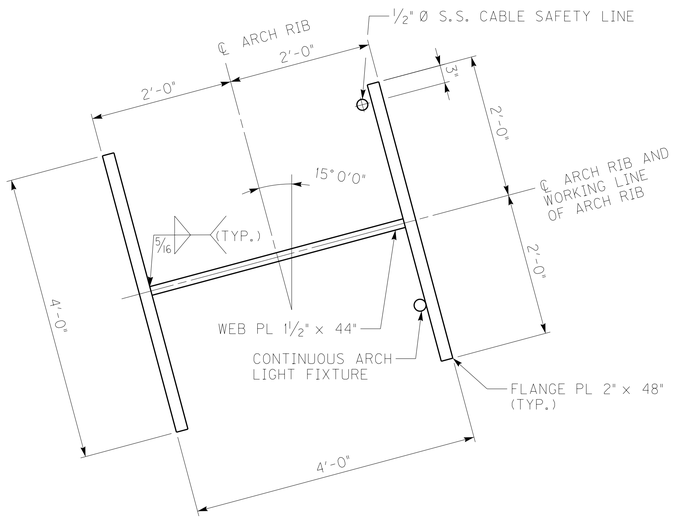
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USER: Maryjo.Dwyer
DATE PLOTTED: December 11, 2013
E-SHEET NAME: 524686 160
MicroStation v8.11.7.469

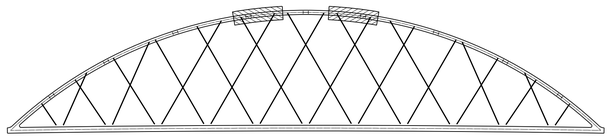


RIB ELEVATION

IN PLANE OF THE ARCH



SECTION A–A



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH RIB RS5–RS6 (RS7–RS8)

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

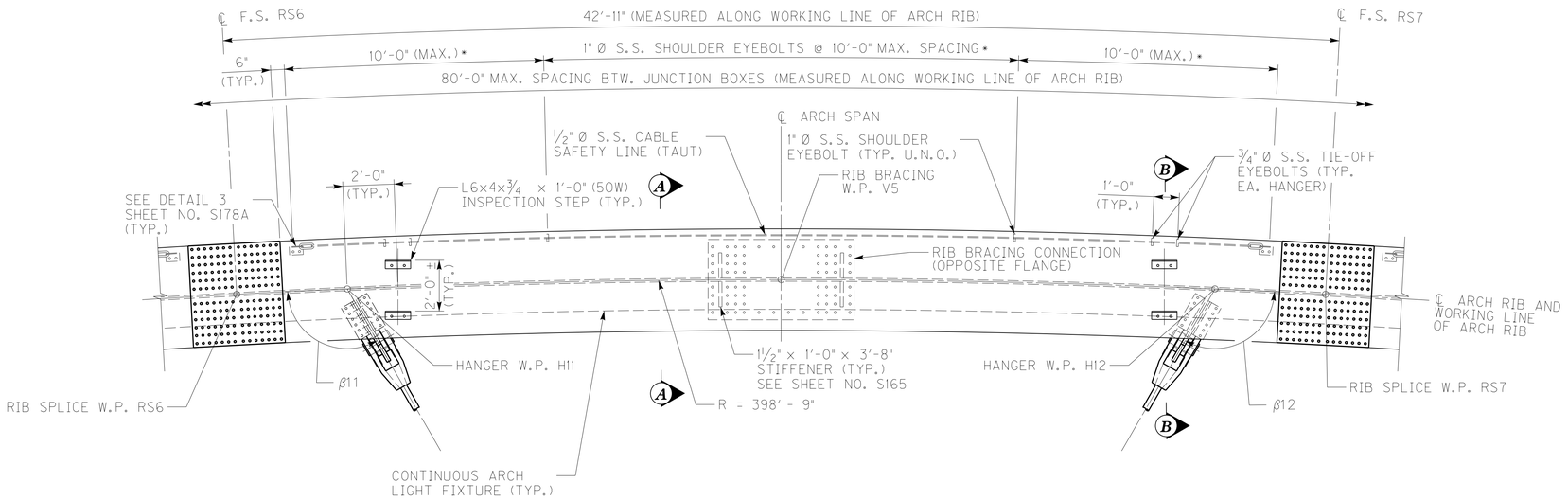
ITEM NUMBER: 01–180.70

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S160

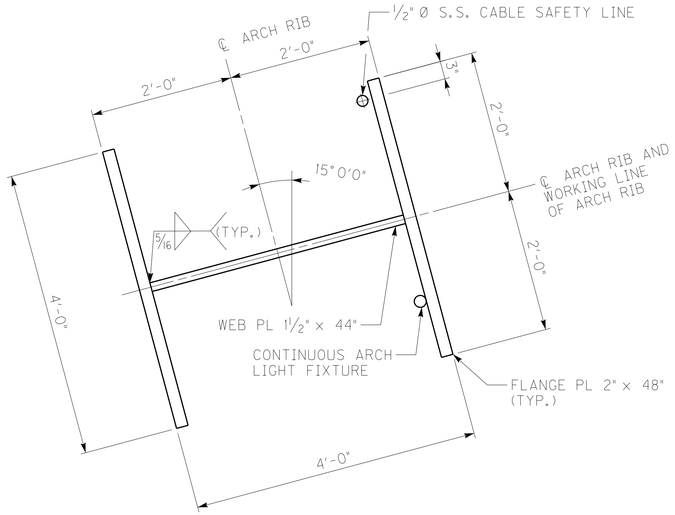
DRAWING NO. 24686

MicroStation v8.11.7.469
E-SHEET NAME: 524686 160
USER: Maryjo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 RIB05.DGN

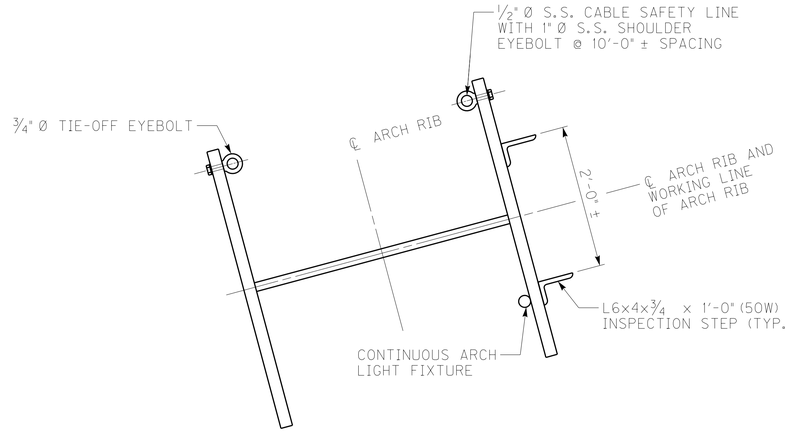


RIB ELEVATION

IN PLANE OF THE ARCH

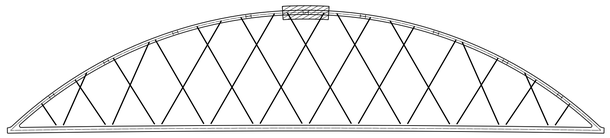


SECTION A–A



SECTION B–B
INSPECTION ACCESS DETAIL

HANGERS AND CONNECTION DETAILS NOT SHOWN FOR CLARITY



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY: CYY — RMS
DETAILED BY: MJD — CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** — CROSSING: **KENTUCKY LAKE**

ARCH RIB RS6–RS7

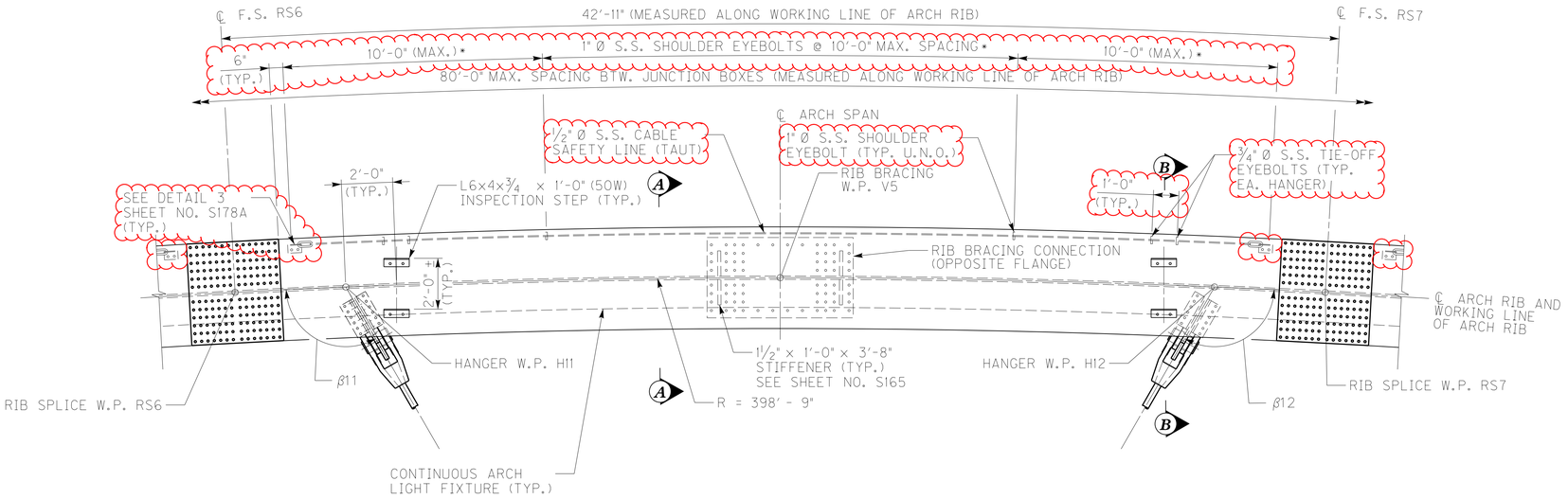
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: **01–180.70**

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

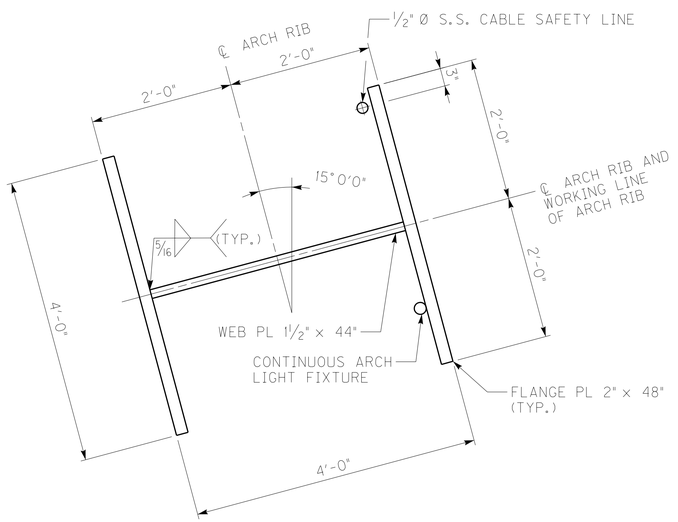
SHEET NO. S161
DRAWING NO. 24686

MicroStation v8.11.7.469
E-SHEET NAME: S24686 161
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 RIB06.DGN

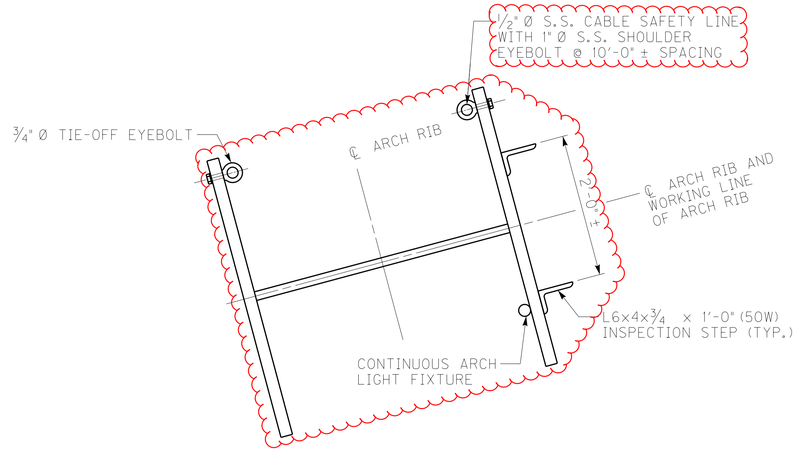


RIB ELEVATION

IN PLANE OF THE ARCH

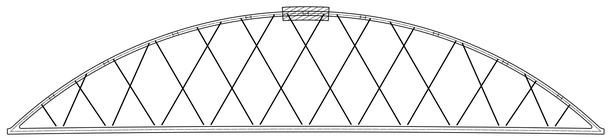


SECTION A–A



SECTION B–B
INSPECTION ACCESS DETAIL

HANGERS AND CONNECTION DETAILS NOT SHOWN FOR CLARITY



KEY ELEVATION

LEGEND

* MEASURED ALONG WORKING LINE OF ARCH RIB

NOTES

1. FOR ARCH RIB NOTES, SEE SHEET NO. S156.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: CYY	RMS
DETAILED BY: MJD	CYY

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ARCH RIB RS6–RS7

ITEM NUMBER: 01–180.70

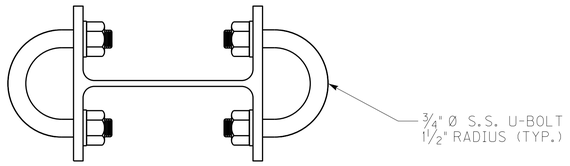
PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S161

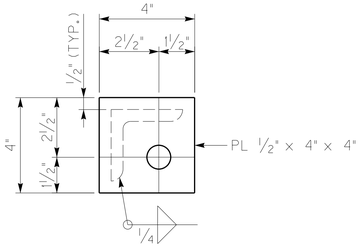
DRAWING NO. 24686

MicroStation v8.11.7.469 E-SHEET NAME: S24686 161 USER: MaryJo.Dwyer DATE PLOTTED: December 11, 2013 FILE NAME: C:\PW\V8I-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 RIB06.DGN

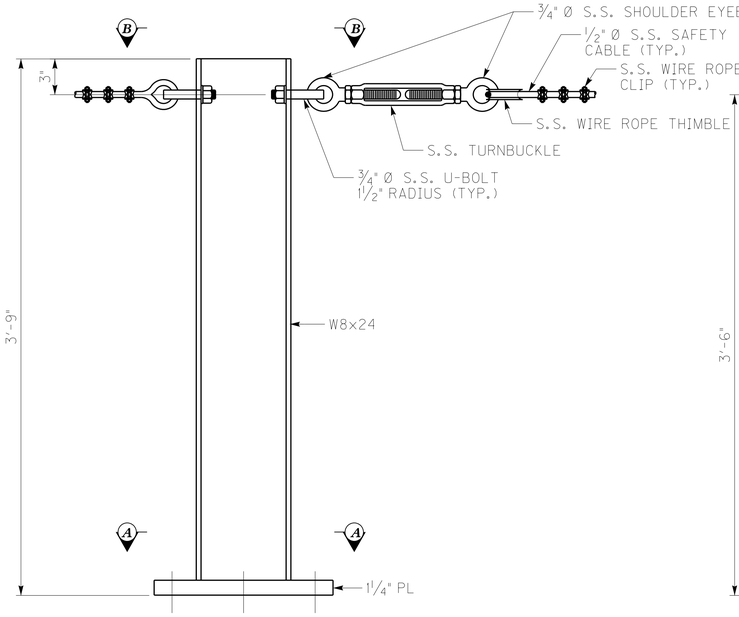
MicroStation v8.11.7.469 | E-SHEET NAME: S24686 178A | USER: Maryjo.Dwyer DATE PLOTTED: December 11, 2013 | FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686 1A.DGN



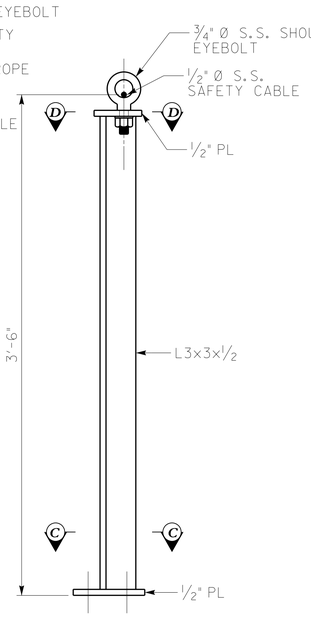
SECTION B–B



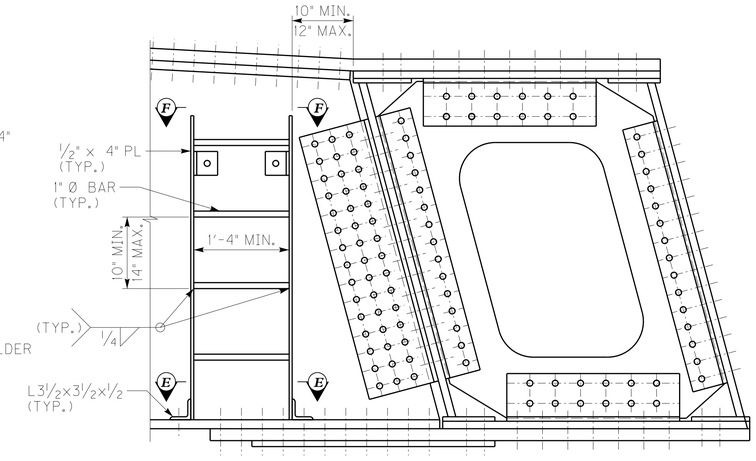
SECTION D–D



INSPECTION ACCESS ANCHOR POST



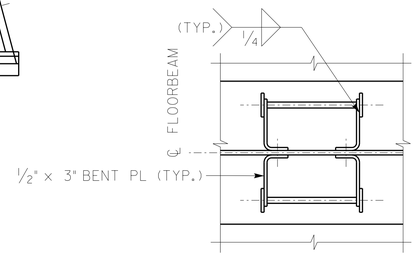
INSPECTION ACCESS SUPPORT POST



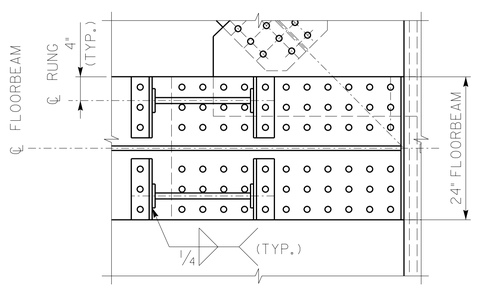
FLOORBEAM ELEVATION AT TIE CONNECTION

NOTES

1. ALL INSPECTION ACCESS STEEL SHALL CONFORM TO AASHTO M270 GRADE 50W UNLESS OTHERWISE NOTED.
2. FOR INSPECTION ACCESS POST LOCATIONS, SEE SHEET NOS. S171-S174 & S183.
3. FOR FLOORBEAM DETAILS, SEE SHEET NO. S188.
4. FOR FLOORBEAM TO TIE CONNECTION DETAILS, SEE SHEET NOS. S190-S190A.
5. LOCATION OF FLOORBEAM LADDER SUPPORT ANGLES TO MATCH BOLT HOLES IN BOTTOM FLANGE OF FLOORBEAM.
6. ALL INSPECTION ACCESS SECTIONS, PLATES, COMPONENTS, TOOLS, LABOR AND INCIDENTAL MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STRUCTURAL STEEL.
7. THE COMPONENTS FOR THE SAFETY LINE (CABLE, OVAL LINK, ETC.) SHALL HAVE A MINIMUM BREAK STRENGTH = 25,000 LBS.

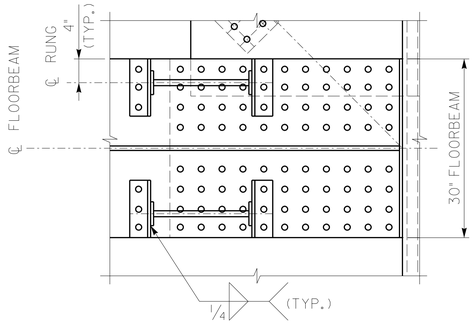


SECTION F–F



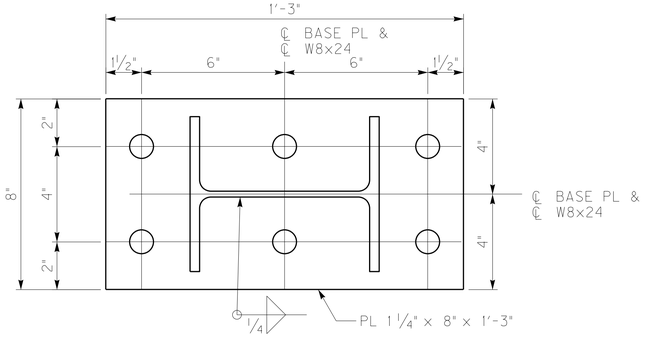
SECTION E–E

FB2-FB5 (FB7-FB10)
FB6 SIMILAR

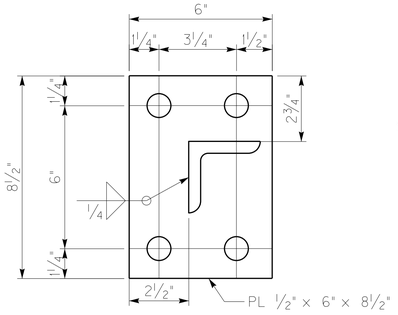


SECTION E–E

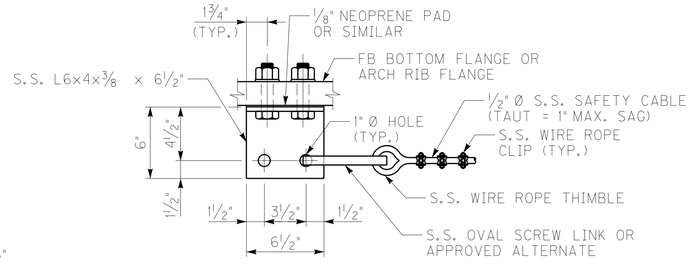
FB1 (FB11)



SECTION A–A



SECTION C–C



DETAIL 3

ITEM NUMBER
01–180.70

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: JAW	JCS
DETAILED BY: MJD	JCS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

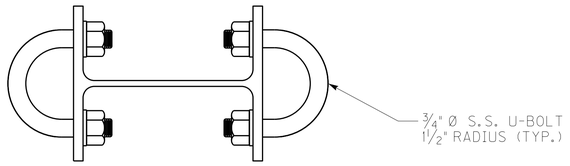
ROUTE: US68 | CROSSING: KENTUCKY LAKE

INSPECTION ACCESS DETAILS

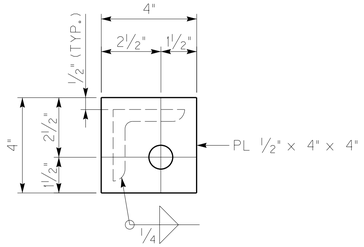
PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S178A
DRAWING NO. 24686

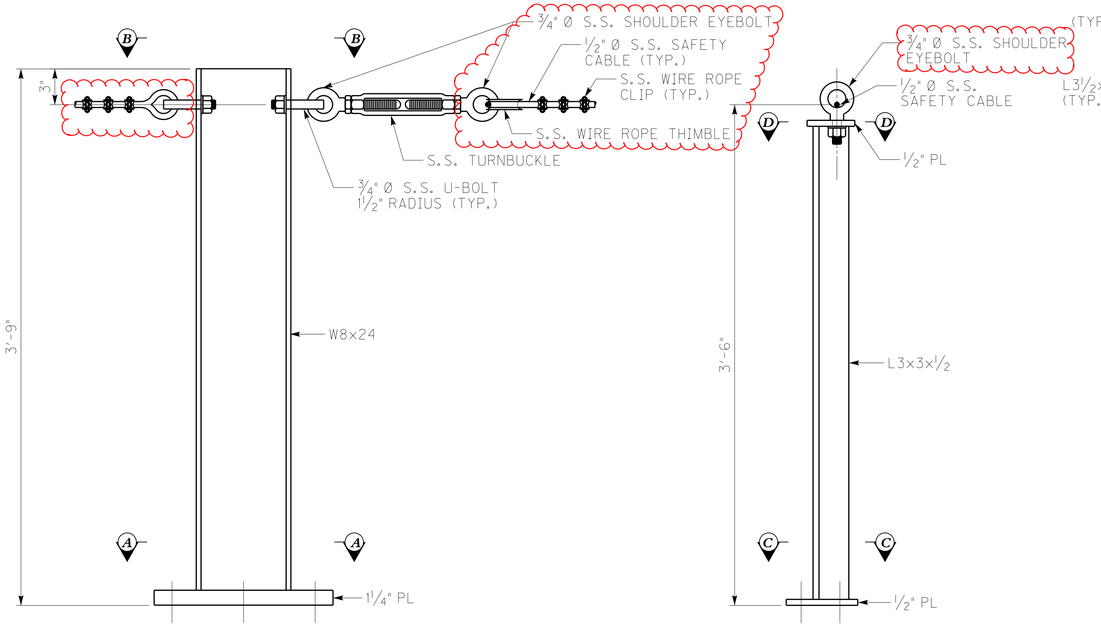
MicroStation v8.11.9.459
FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 1A.DGN
USER: cwethington
DATE PLOTTED: December 11, 2013
E-SHEET NAME: S24686 178A



SECTION B–B

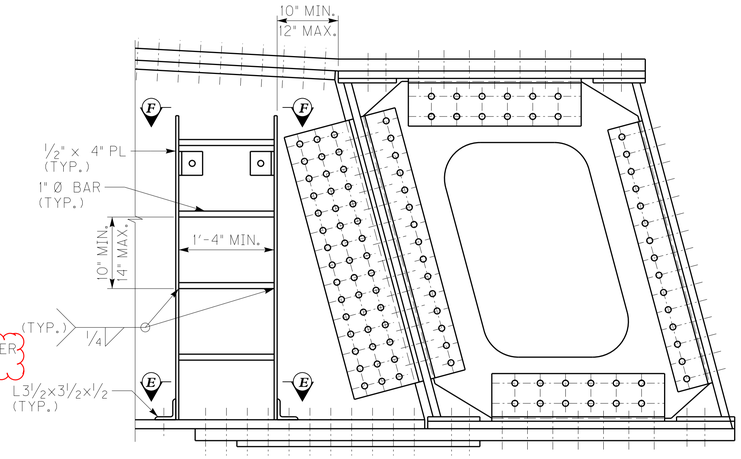


SECTION D–D



INSPECTION ACCESS ANCHOR POST

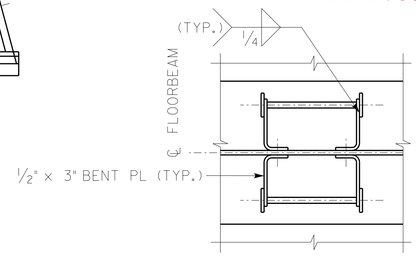
INSPECTION ACCESS SUPPORT POST



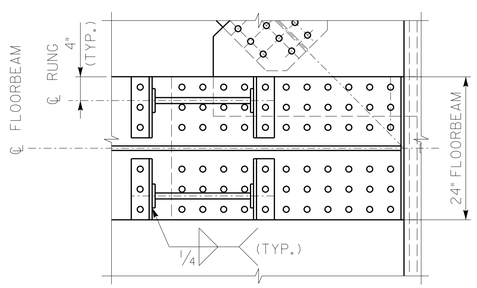
FLOORBEAM ELEVATION AT TIE CONNECTION

NOTES

1. ALL INSPECTION ACCESS STEEL SHALL CONFORM TO AASHTO M270 GRADE 50W UNLESS OTHERWISE NOTED.
2. FOR INSPECTION ACCESS POST LOCATIONS, SEE SHEET NOS. S171-S174 & S183.
3. FOR FLOORBEAM DETAILS, SEE SHEET NO. S188.
4. FOR FLOORBEAM TO TIE CONNECTION DETAILS, SEE SHEET NOS. S190-S190A.
5. LOCATION OF FLOORBEAM LADDER SUPPORT ANGLES TO MATCH BOLT HOLES IN BOTTOM FLANGE OF FLOORBEAM.
6. ALL INSPECTION ACCESS SECTIONS, PLATES, COMPONENTS, TOOLS, LABOR AND INCIDENTAL MATERIAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR STRUCTURAL STEEL.
7. THE COMPONENTS FOR THE SAFETY LINE (CABLE, OVAL LINK, ETC.) SHALL HAVE A MINIMUM BREAK STRENGTH = 25,000 LBS.

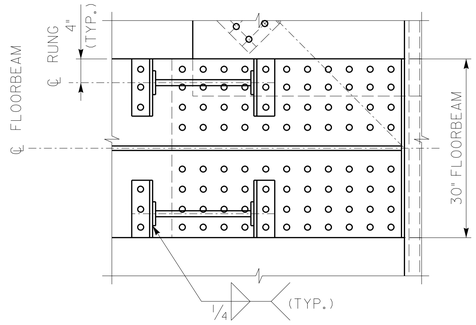


SECTION F–F



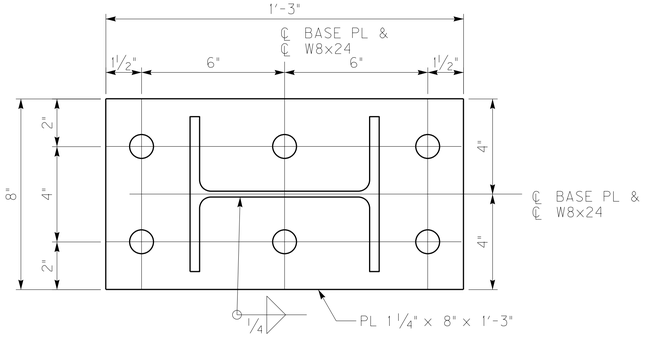
SECTION E–E

FB2-FB5 (FB7-FB10)
FB6 SIMILAR

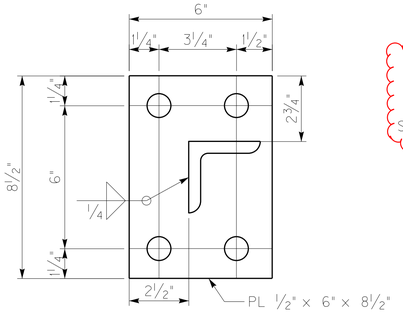


SECTION E–E

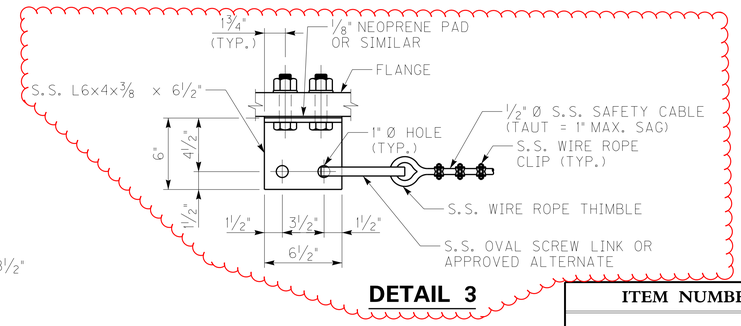
FB1 (FB11)



SECTION A–A



SECTION C–C



DETAIL 3

ITEM NUMBER
01–180.70

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: JAW	JCS
DETAILED BY: MJD	JCS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

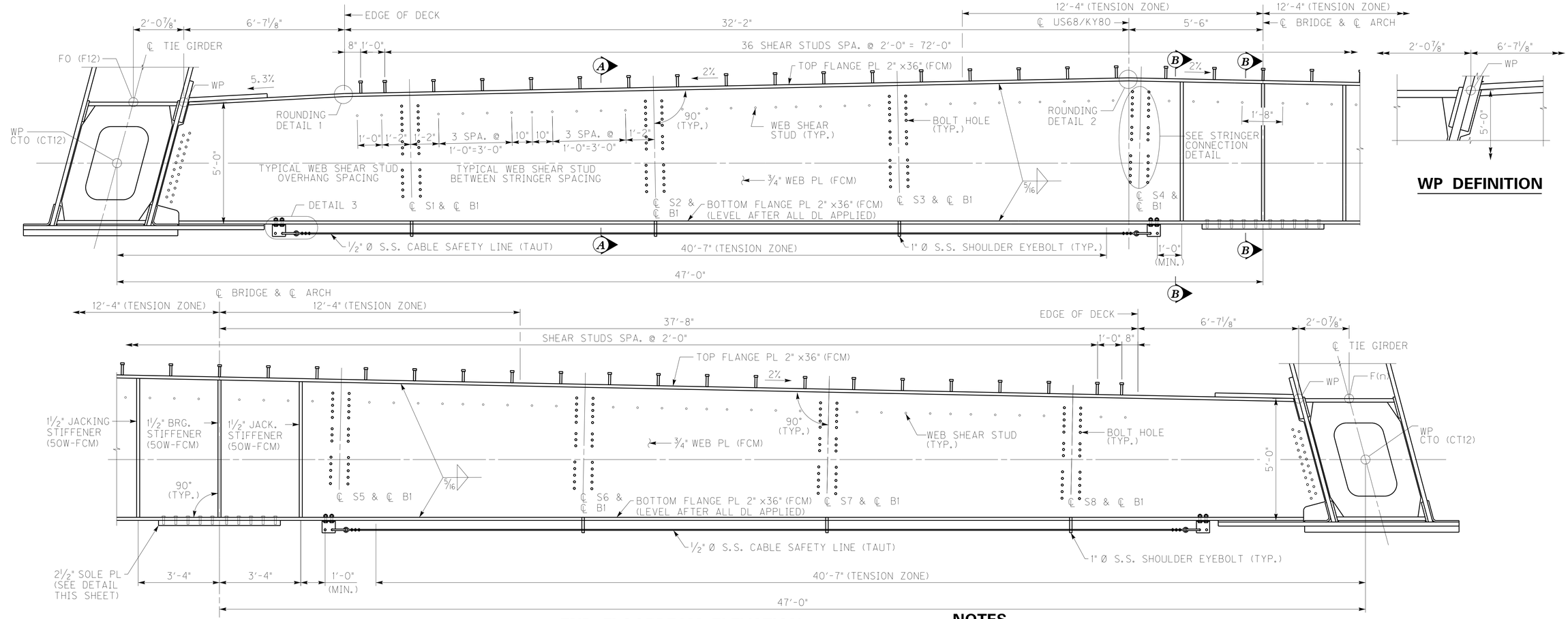
COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

INSPECTION ACCESS DETAILS

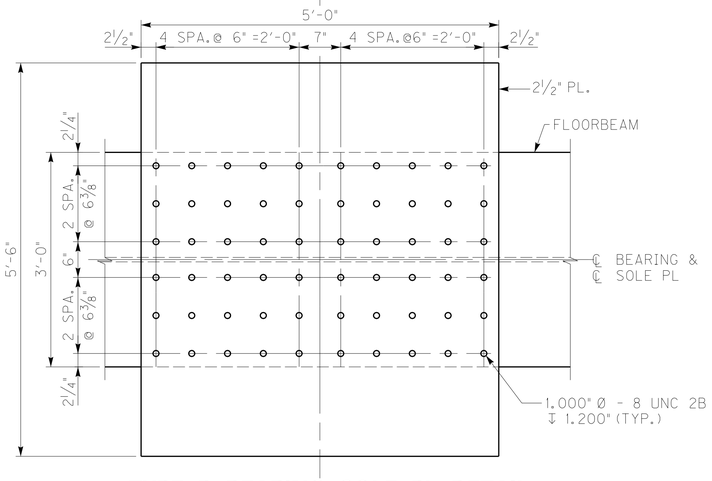
PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO.
S178A
DRAWING NO.
24686

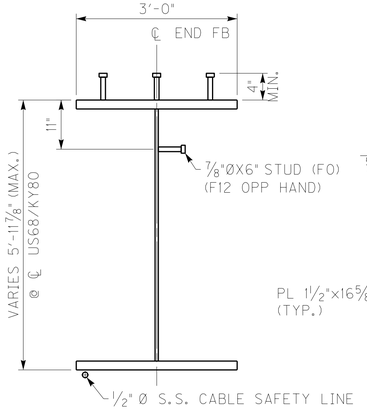


END FLOORBEAM ELEVATION

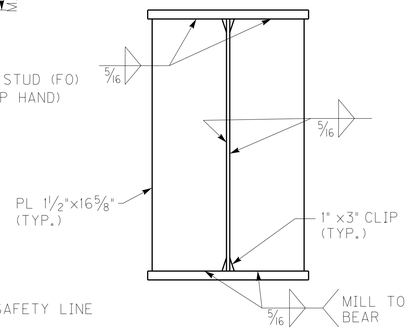
FB0 LOOKING AHEAD STATION
FB12 LOOKING BACK STATION



TYPE B BEARING SOLE PL DETAIL



SECTION A–A



SECTION B–B

JACKING STIFFENER
BEARING STIFFENER

NOTES

1. FOR GENERAL NOTES, SEE SHEET NOS. S004-S006A.
2. ALL BOLTS SHALL BE 1" DIAMETER A325-X HIGH STRENGTH BOLTS.
3. END FLOORBEAMS SHALL CONFORM TO AASHTO M270 GRADE HPS 70W AND SHALL BE FCM TESTED WHERE INDICATED.
4. THE SOLE PLATE SHALL CONFORM TO AASHTO M270 GRADE 50W AND SHALL BE CVN TESTED.
5. FOR END FLOORBEAM CONNECTIONS SEE SHEET NOS. S152-S154.
6. FOR STRINGER CONNECTION DETAILS SEE SHEET NO. S194.
7. FOR TYPE B BEARING DETAILS SEE SHEET NOS. S202 & S205.
8. FOR SHEAR STUD DETAIL, WELD TERMINATION DETAIL, ROUNDING DETAIL 1 & ROUNDING DETAIL 2 SEE SHEET NO. S188.
9. FOR FLOORBEAM CAMBER SEE SHEET NO. S189.
10. THE JACKING AND BRG. STIFFENERS SHALL CONFORM TO AASHTO M270 GRADE 50W AND SHALL BE FCM TESTED.
11. FOR DETAIL 3, SEE SHEET NO. S178A.

REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: JCS	RMS
DETAILED BY: MJD	JCS/ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

END FLOORBEAM

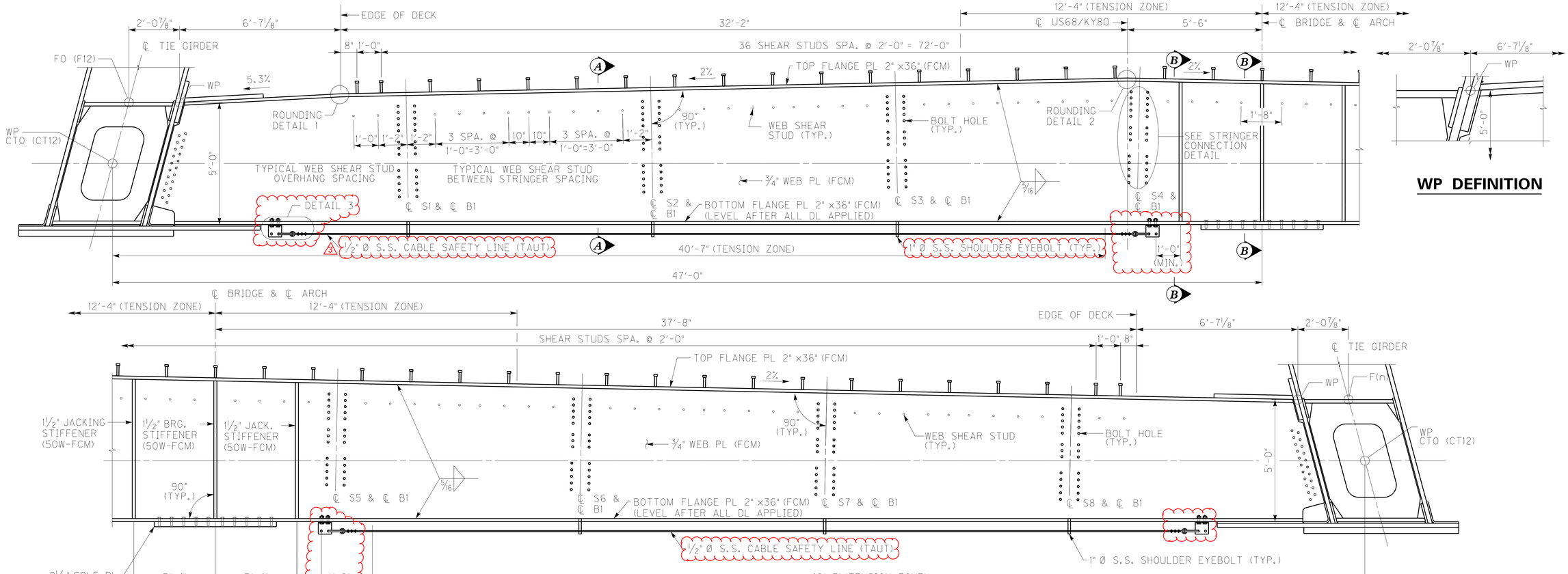
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S187
DRAWING NO. 24686

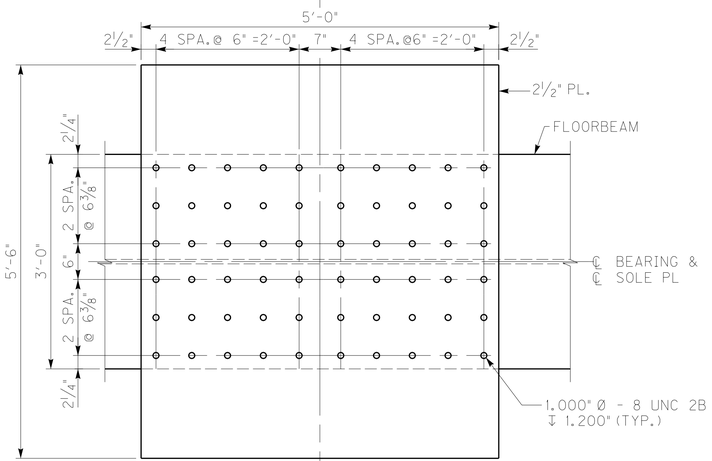
MicroStation v8.11.7.469
FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\CWETHINGTON\D0141582\S24686_FB02.DGN
E-SHEET NAME: S24686_187
USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013



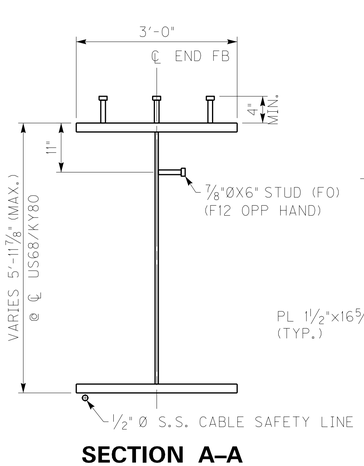
WP DEFINITION

END FLOORBEAM ELEVATION

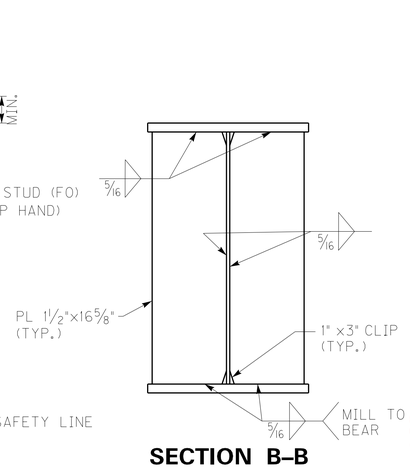
FB0 LOOKING AHEAD STATION
FB12 LOOKING BACK STATION



TYPE B BEARING SOLE PL DETAIL



SECTION A–A



SECTION B–B

JACKING STIFFENER
BEARING STIFFENER

NOTES

1. FOR GENERAL NOTES, SEE SHEET NOS. S004-S006A.
2. ALL BOLTS SHALL BE 1" DIAMETER A325-X HIGH STRENGTH BOLTS.
3. END FLOORBEAMS SHALL CONFORM TO AASHTO M270 GRADE HPS 70W AND SHALL BE FCM TESTED WHERE INDICATED.
4. THE SOLE PLATE SHALL CONFORM TO AASHTO M270 GRADE 50W AND SHALL BE CVN TESTED.
5. FOR END FLOORBEAM CONNECTIONS SEE SHEET NOS. S152-S154.
6. FOR STRINGER CONNECTION DETAILS SEE SHEET NO. S194.
7. FOR TYPE B BEARING DETAILS SEE SHEET NOS. S202 & S205.
8. FOR SHEAR STUD DETAIL, WELD TERMINATION DETAIL, ROUNDING DETAIL 1 & ROUNDING DETAIL 2 SEE SHEET NO. S188.
9. FOR FLOORBEAM CAMBER SEE SHEET NO. S189.
10. THE JACKING AND BRG. STIFFENERS SHALL CONFORM TO AASHTO M270 GRADE 50W AND SHALL BE FCM TESTED.
11. FOR DETAIL 3, SEE SHEET NO. S178A.

REVISION	DATE
3 ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: JCS	RMS
DETAILED BY: MJD	JCS/ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

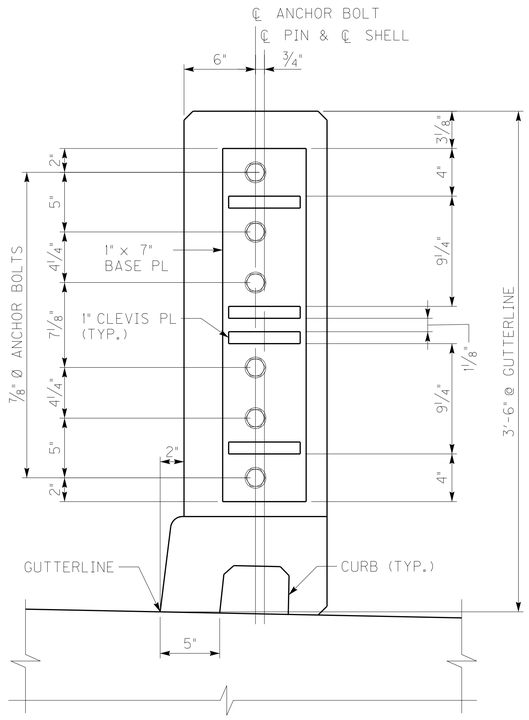
END FLOORBEAM

ITEM NUMBER: 01–180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

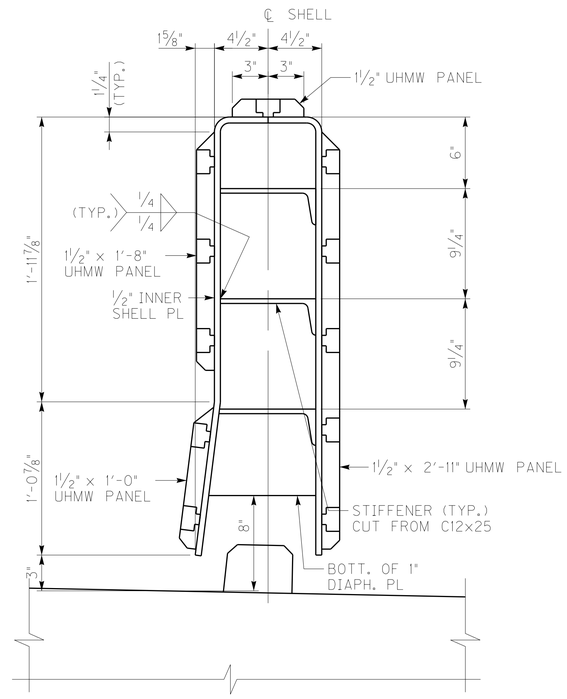
SHEET NO. S187
DRAWING NO. 24686

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USER: MaryJo.Dwyer
DATE PLOTTED: December 11, 2013
E-SHEET NAME: S24686 187
MicroStation v8.11.7.469



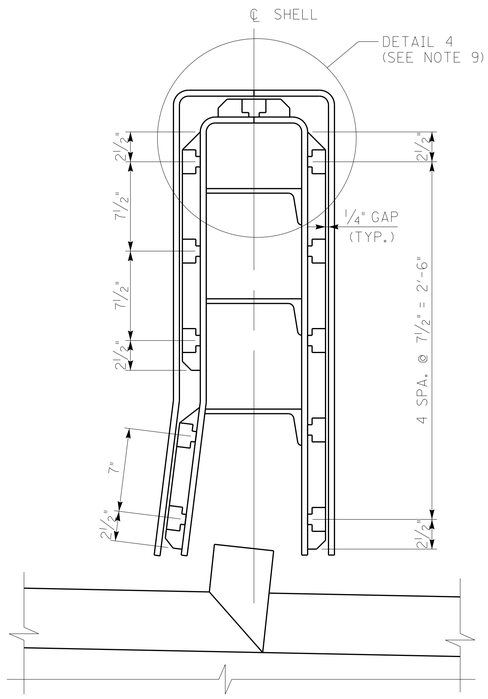
SECTION G–G

COMBINATION BARRIER
APPROACH SPAN SHOWN
MAIN SPAN OPP. HAND



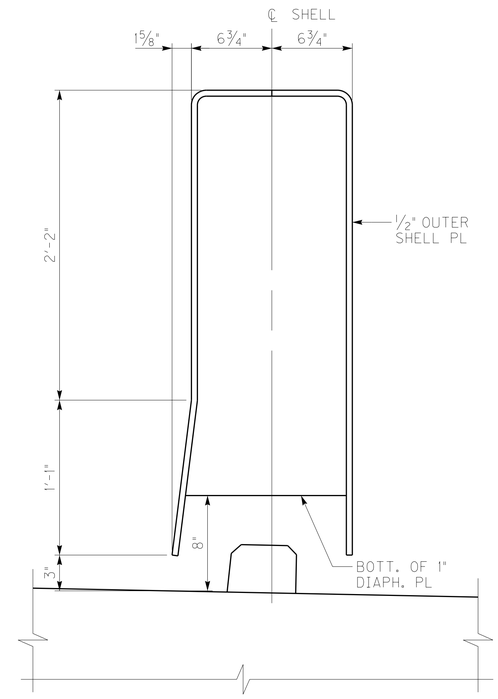
SECTION H–H

COMBINATION BARRIER



SECTION I–I

COMBINATION BARRIER



SECTION J–J

COMBINATION BARRIER

NOTES

1. THE UPTURN IS REQUIRED UNDER THE COMBINATION BARRIER TO PREVENT ROADWAY WATER FROM FLOWING ACROSS THE SIDEWALK.
2. THE SIDEWALK MODULAR JOINT BEAMS MAY BE WELDED TO THE UPTURN AT THE CONTRACTOR'S OPTION.

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

REVISION	DATE
⚠3 ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: DMB | TJT
DETAILED BY: MJD | DMB

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

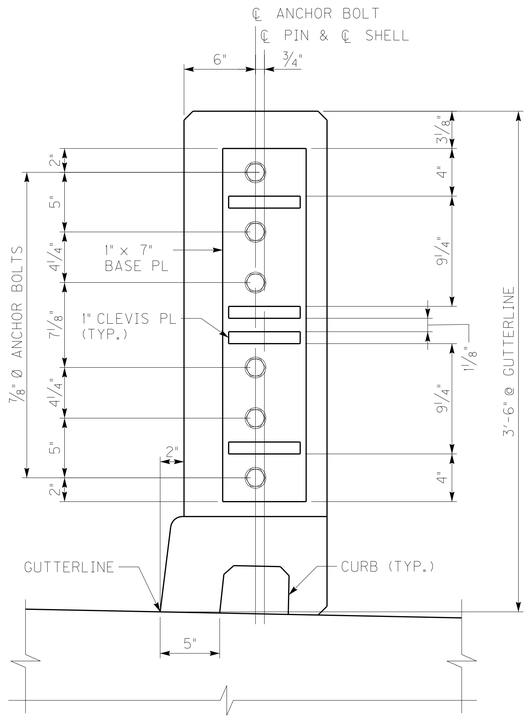
ROUTE: US68 | CROSSING: KENTUCKY LAKE

MODULAR EXP. JOINT DETAILS–3A

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

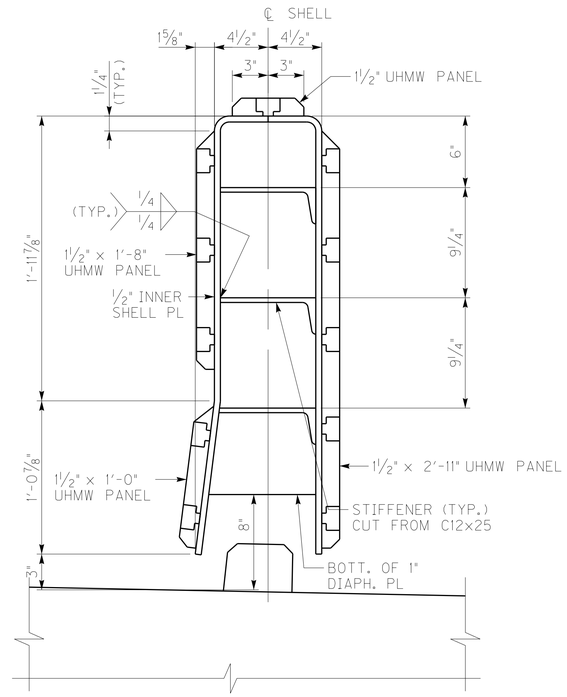
SHEET NO. S207C
DRAWING NO. 24686

FILE NAME: C:\PW\81-LOCAL\BAKER.PROJECTS\MARYJO.DWYER\D0141582\S24686 EJT7.DGN
USER: MaryJo.Dwyer
DATE PLOTTED: December 12, 2013
E-SHEET NAME: S24686 207A
MicroStation v8.11.7.469



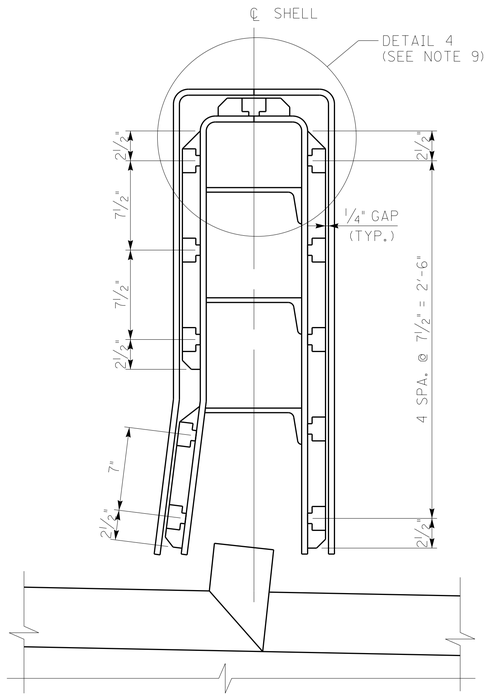
SECTION G–G

COMBINATION BARRIER
APPROACH SPAN SHOWN
MAIN SPAN OPP. HAND



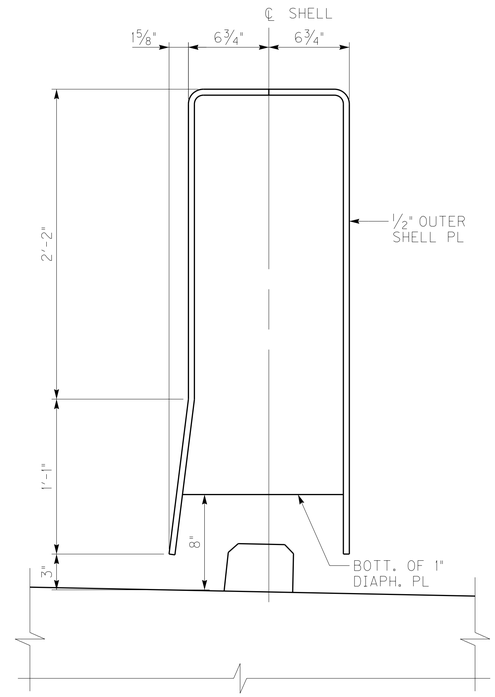
SECTION H–H

COMBINATION BARRIER



SECTION I–I

COMBINATION BARRIER



SECTION J–J

COMBINATION BARRIER

NOTES

1. THE UPTURN IS REQUIRED UNDER THE COMBINATION BARRIER TO PREVENT ROADWAY WATER FROM FLOWING ACROSS THE SIDEWALK.
2. THE SIDEWALK MODULAR JOINT BEAMS MAY BE WELDED TO THE UPTURN AT THE CONTRACTOR'S OPTION.

REVISION	DATE
⚠3 ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013
DESIGNED BY: DMB — CHECKED BY: TJT
DETAILED BY: MJD — DMB

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68
CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

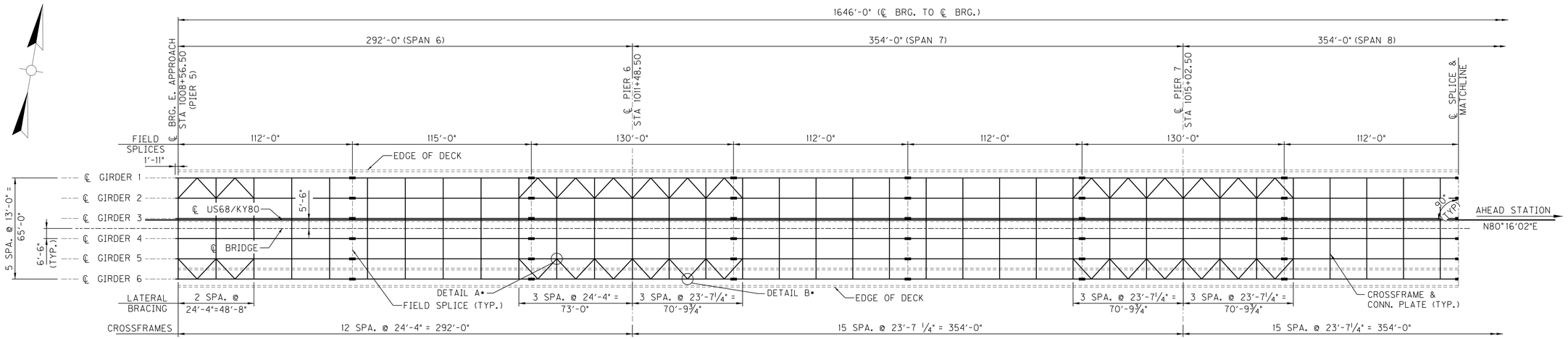
MODULAR EXP. JOINT DETAILS–3A

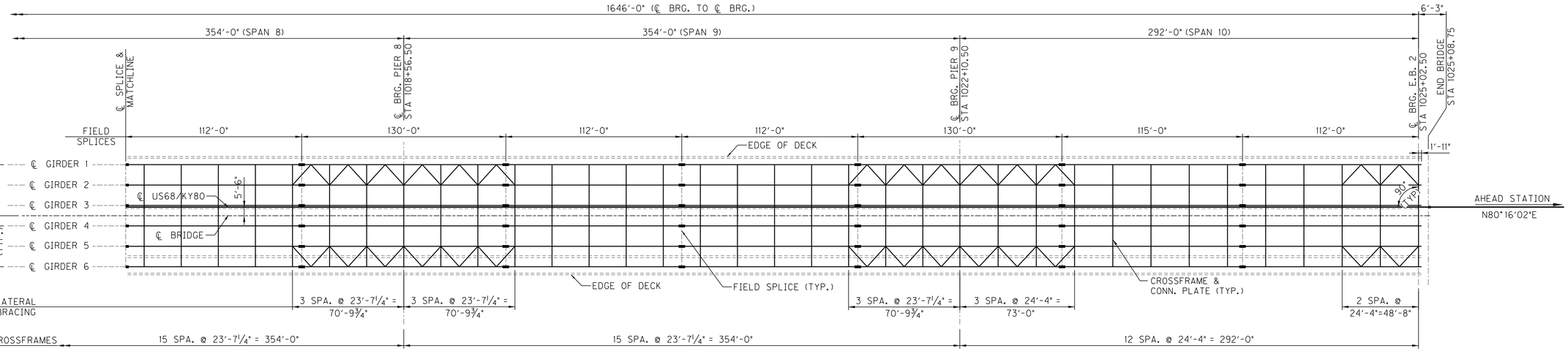
ITEM NUMBER: 01–180.70

PREPARED BY:
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S207C
DRAWING NO. 24686

FILE NAME: C:\PW181-LOCAL\BAKER.PROJECTS\MARYJO.DWYER\D0141582\S24686 EJI7.DGN
USER: MaryJo.Dwyer
DATE PLOTTED: December 12, 2013
E-SHEET NAME: S24686 207A
MicroStation v8.11.7.469





FRAMING PLAN
(EAST APPROACH)

• LATERAL BRACING CONNECTION TYPE. SEE SHEET S104 FOR DETAILS.

NOTE:
DUCTBANK AND UTILITY PLATFORM NOT SHOWN FOR CLARITY. SEE SHEETS S257 AND S258 FOR DETAILS.

3 ADDED NOTE	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: R.M. DAMON	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: **US 68**
CROSSING: **KENTUCKY LAKE**

EAST APPROACH FRAMING PLAN

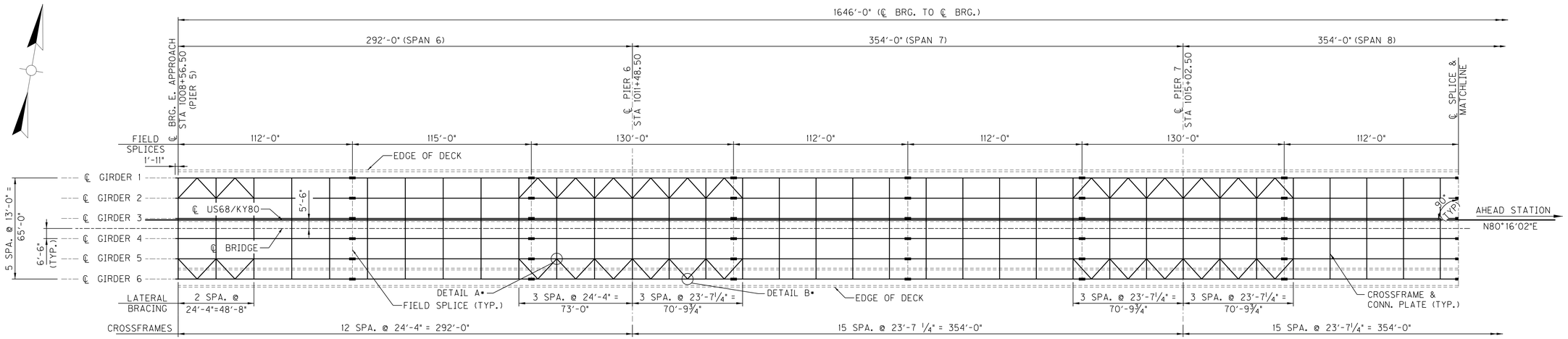
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

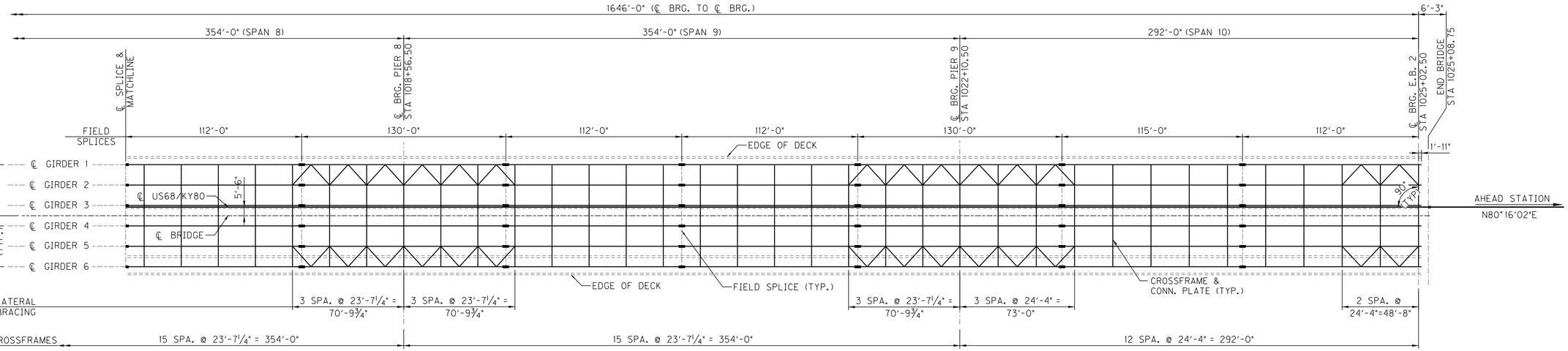
ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S221
DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443





FRAMING PLAN
(EAST APPROACH)

• LATERAL BRACING CONNECTION TYPE. SEE SHEET S104 FOR DETAILS.

NOTE:
DUCTBANK AND UTILITY PLATFORM NOT SHOWN FOR CLARITY. SEE SHEETS S257 AND S258 FOR DETAILS.

REVISION	DATE
DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: R.M. DAMON	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

EAST APPROACH FRAMING PLAN

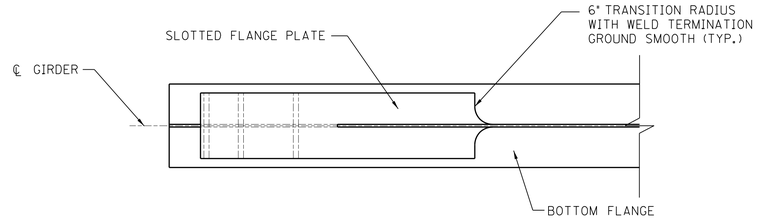
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

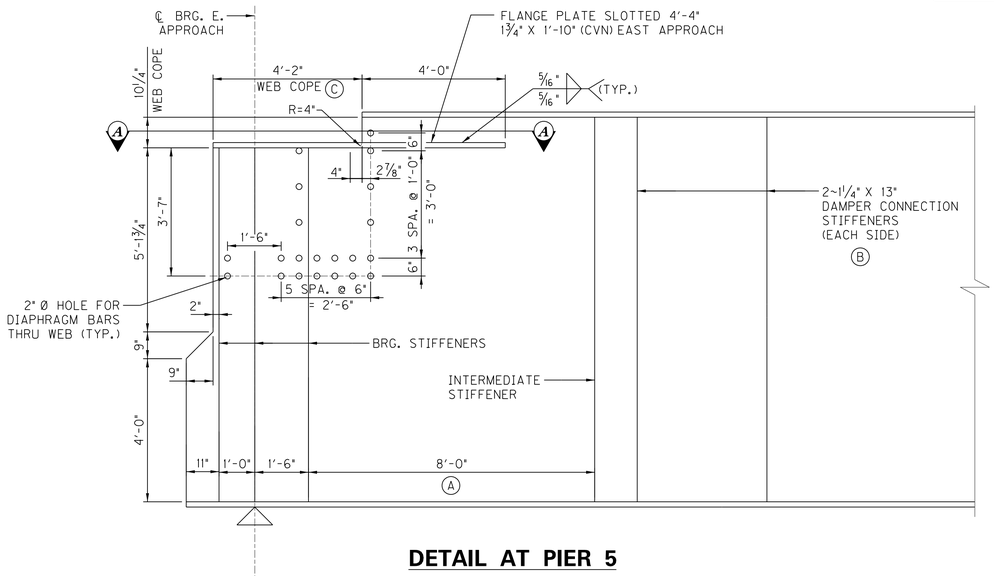
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S221
DRAWING NO. 24686

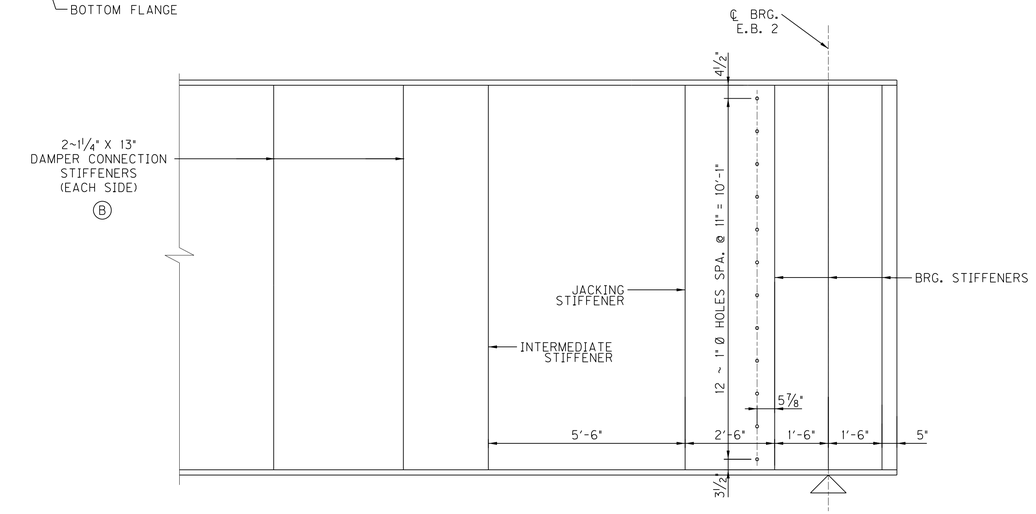
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MicroStation v8.11.7.443



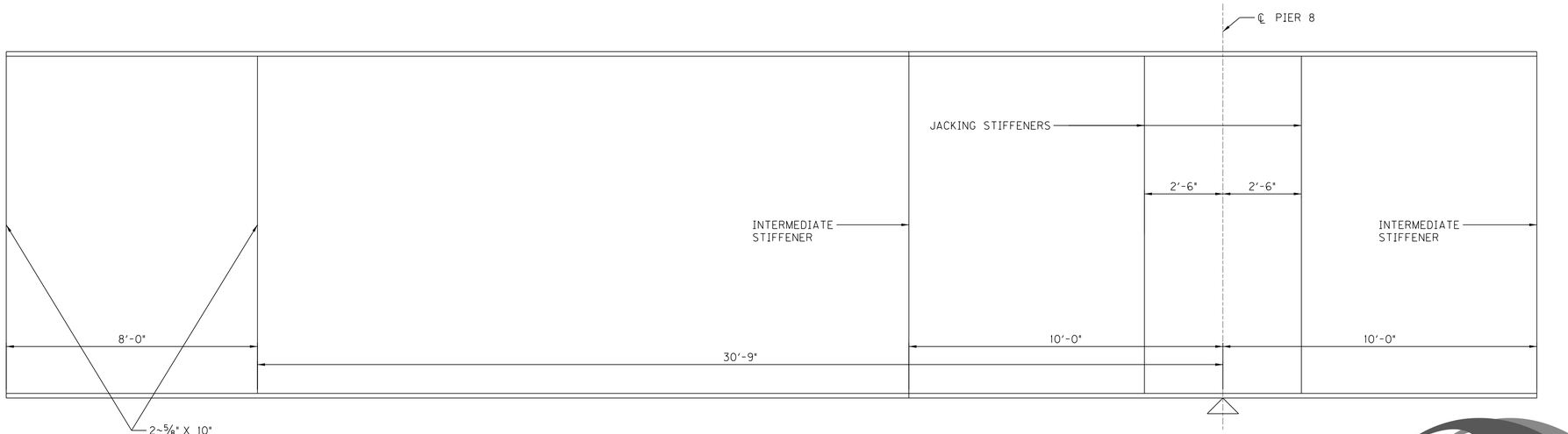
SECTION A–A



DETAIL AT PIER 5



DETAIL AT END BENT 2



DETAIL AT PIER 8

(A) ALSO SERVES AS UTILITY PLATFORM CONNECTION STIFFENER ON EXTERIOR FACE OF GIRDER 5 AND INTERIOR FACE OF GIRDER 6. SEE SHEET S258 FOR DETAILS.

(B) LOCATION OF DAMPER CONNECTION STIFFENERS SHALL BE COORDINATED WITH FVD MANUFACTURER TO ACCOMODATE MIDSTROKE LENGTH AND CONNECTION PLATES. GIRDER SHOP DRAWINGS SHALL INCLUDE FINAL CONNECTION DETAILS. SEE SHEET S255 FOR DETAILS.

(C) SHEAR STUD CONNECTORS OMITTED AT COPED GIRDER END.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	B.N. ROBSON
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US 68	KENTUCKY LAKE

STRUCTURAL STEEL DETAILS

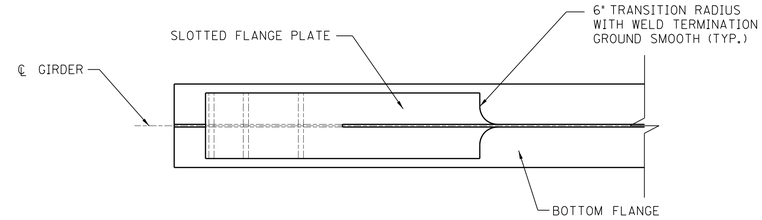
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

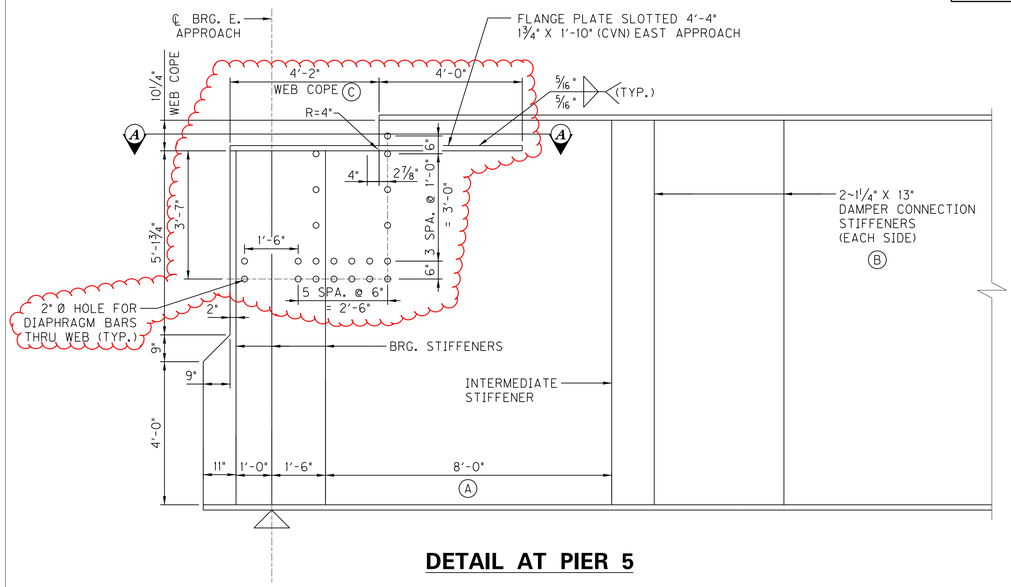
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S223
DRAWING NO. 24686

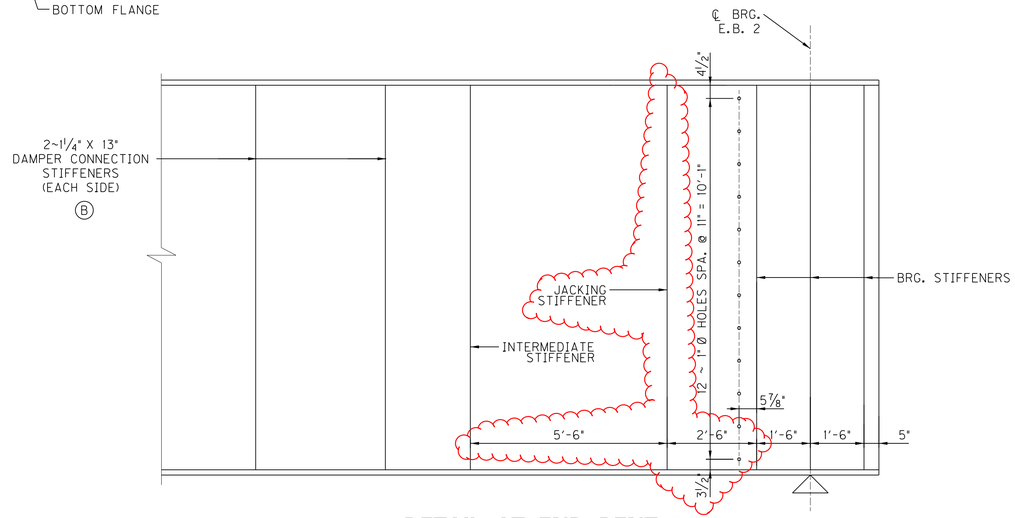
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USER: tim-e
DATE PLOTTED: July 27, 2011
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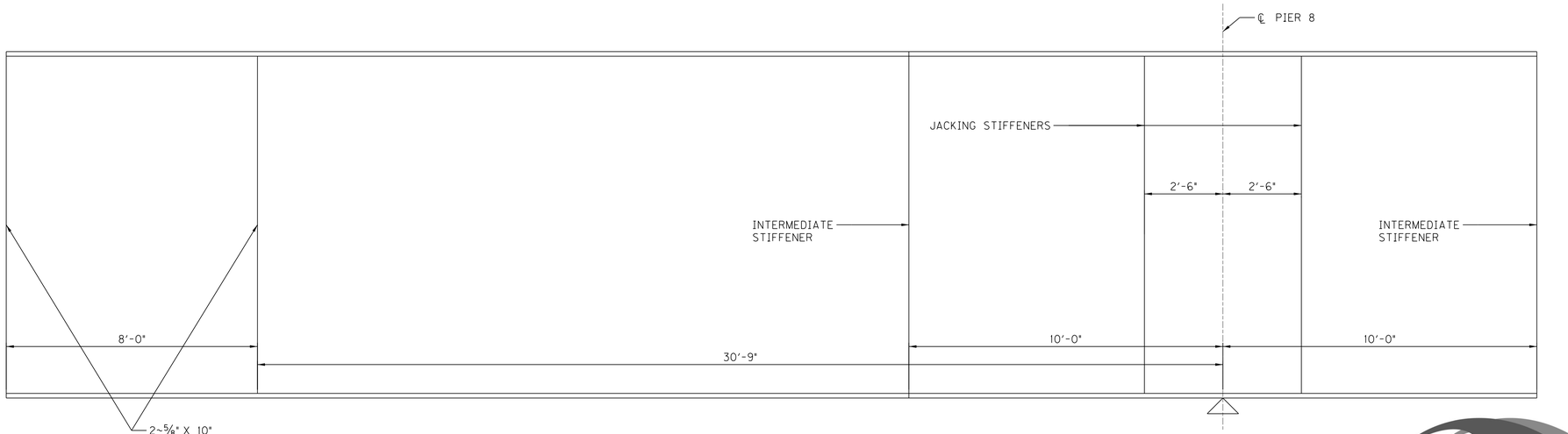
SECTION A–A



DETAIL AT PIER 5



DETAIL AT END BENT 2



DETAIL AT PIER 8

(A) ALSO SERVES AS UTILITY PLATFORM CONNECTION STIFFENER ON EXTERIOR FACE OF GIRDER 5 AND INTERIOR FACE OF GIRDER 6. SEE SHEET S258 FOR DETAILS.

(B) LOCATION OF DAMPER CONNECTION STIFFENERS SHALL BE COORDINATED WITH FVD MANUFACTURER TO ACCOMODATE MIDSTROKE LENGTH AND CONNECTION PLATES. GIRDER SHOP DRAWINGS SHALL INCLUDE FINAL CONNECTION DETAILS. SEE SHEET S255 FOR DETAILS.

(C) SHEAR STUD CONNECTORS OMITTED AT COPED GIRDER END.

REVISION	DATE
3 ADDED/CHANGED DIMENSIONS, NOTES, & STIFFENER	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	B.N. ROBSON
DETAILED BY: T.S. ELLIS	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

STRUCTURAL STEEL DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

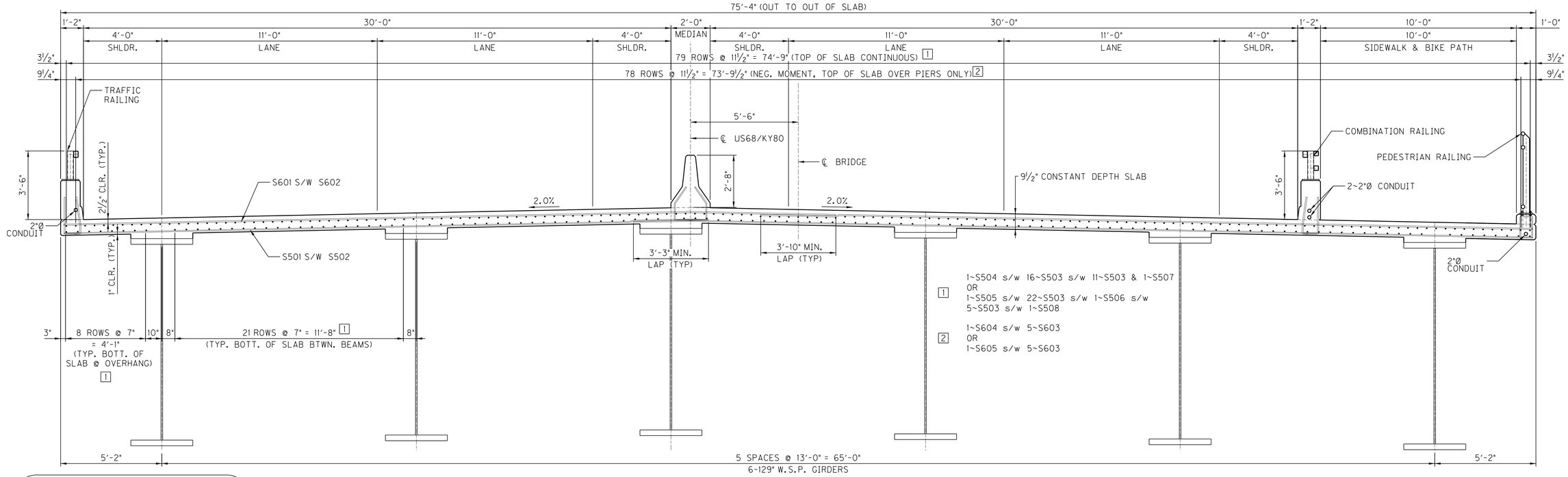
ITEM NUMBER: **01–180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

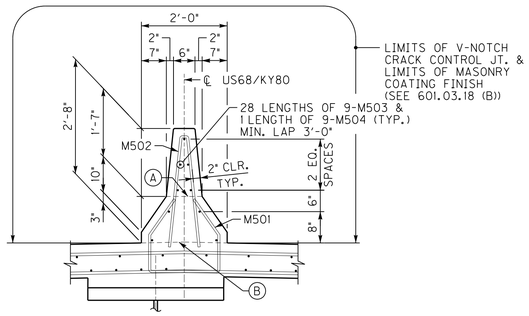
SHEET NO. S223

DRAWING NO. 24686

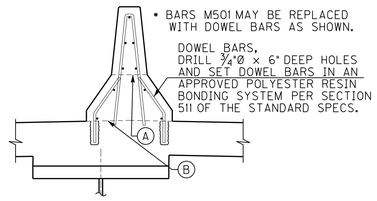
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USER: tim-e
DATE PLOTTED: July 27, 2011
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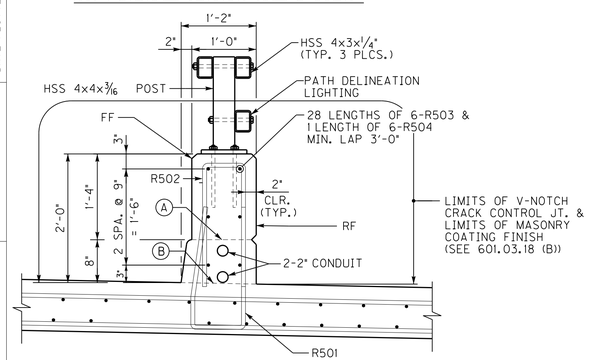
EAST APPROACH TYPICAL SECTION
(LOOKING AHEAD)



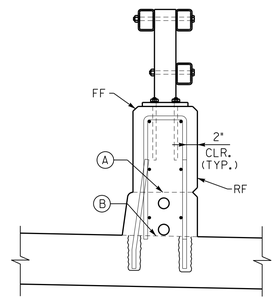
MEDIAN BARRIER DETAIL



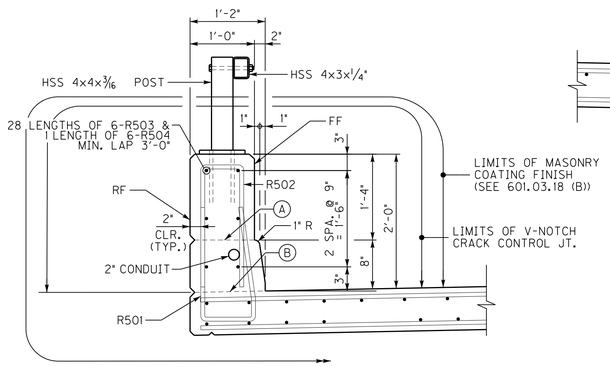
OPTIONAL MEDIAN BARRIER CONNECTION



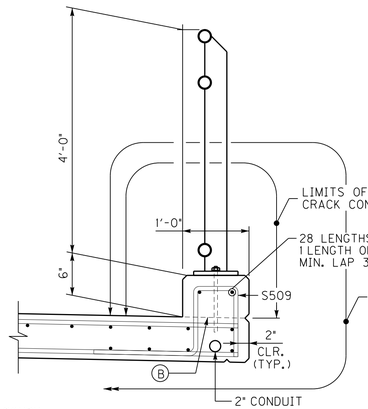
COMBINATION RAIL DETAIL
LOOKING AHEAD STATION



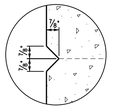
OPTIONAL COMBINATION RAIL CONNECTION
LOOKING AHEAD STATION



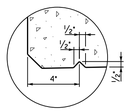
TRAFFIC RAIL DETAIL
LOOKING AHEAD STATION



PEDESTRIAN RAIL
LOOKING AHEAD STATION



7/8" "V-GROOVE" RUSTICATION



DRIP NOTCH DETAIL

LEGEND

(A) PERMISSIBLE CONSTRUCTION JOINT.

(B) MANDATORY ROUGHENED CONSTRUCTION JOINT. CONCRETE ABOVE THIS JOINT SHALL BE PLACED AFTER THE SLAB HAS BEEN PROPERLY CURED.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

SLAB TYPICAL SECTION

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

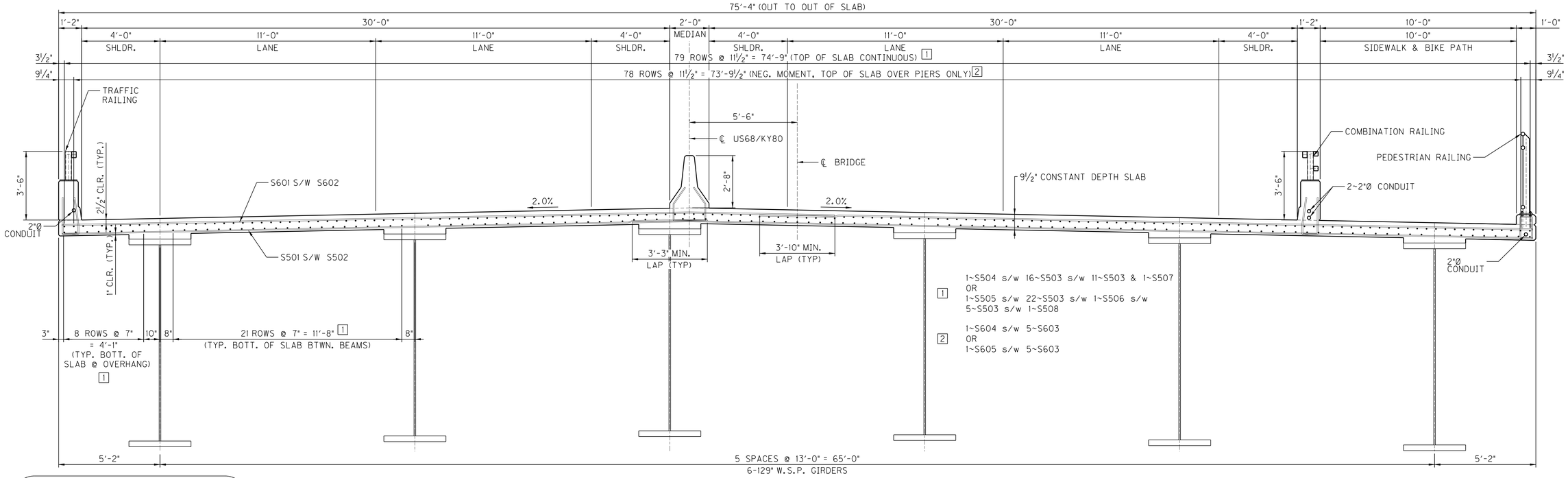
ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

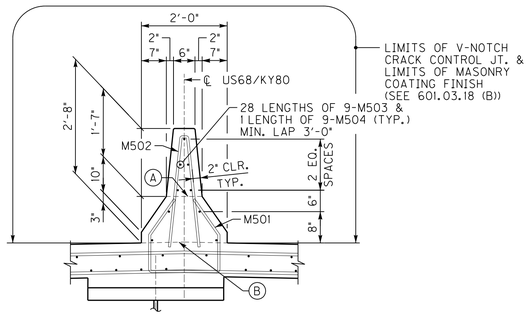
SHEET NO. S227

DRAWING NO. 24686

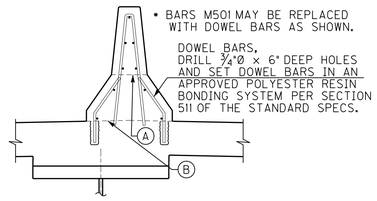
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DATE PLOTTED: July 27, 2011
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MicroStation v8.11.7.443



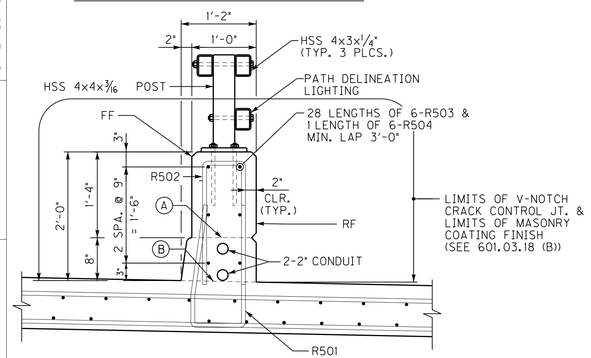
EAST APPROACH TYPICAL SECTION
(LOOKING AHEAD)



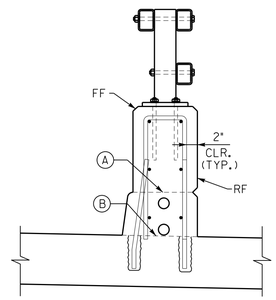
MEDIAN BARRIER DETAIL



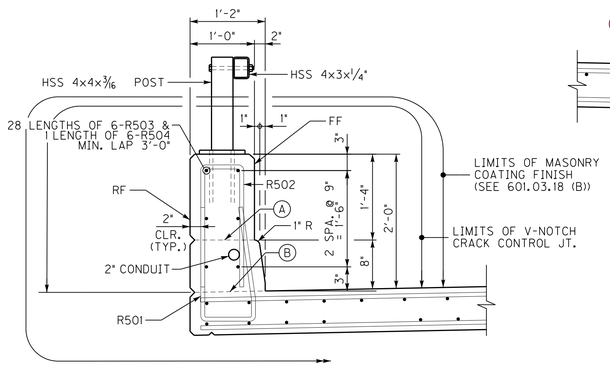
OPTIONAL MEDIAN BARRIER CONNECTION



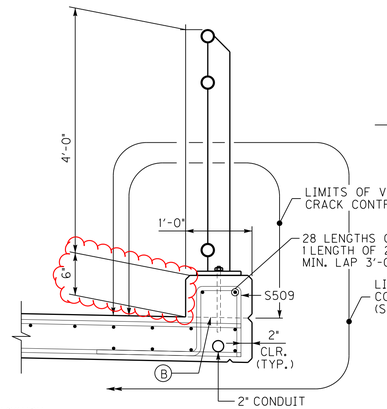
COMBINATION RAIL DETAIL
LOOKING AHEAD STATION



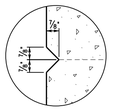
OPTIONAL COMBINATION RAIL CONNECTION
LOOKING AHEAD STATION



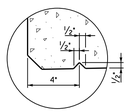
TRAFFIC RAIL DETAIL
LOOKING AHEAD STATION



PEDESTRIAN RAIL
LOOKING AHEAD STATION



7/8" "V-GROOVE" RUSTICATION



DRIP NOTCH DETAIL

LEGEND

(A) PERMISSIBLE CONSTRUCTION JOINT.

(B) MANDATORY ROUGHENED CONSTRUCTION JOINT. CONCRETE ABOVE THIS JOINT SHALL BE PLACED AFTER THE SLAB HAS BEEN PROPERLY CURED.

3	CHANGED DIMENSION	12/09/13
	REVISION	DATE

DATE: NOVEMBER 15, 2013 — CHECKED BY

DESIGNED BY: B.T. DRECKMAN — C.M. GREENWELL

DETAILED BY: L.A. BEATTIE — J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** — CROSSING: **KENTUCKY LAKE**

SLAB TYPICAL SECTION

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

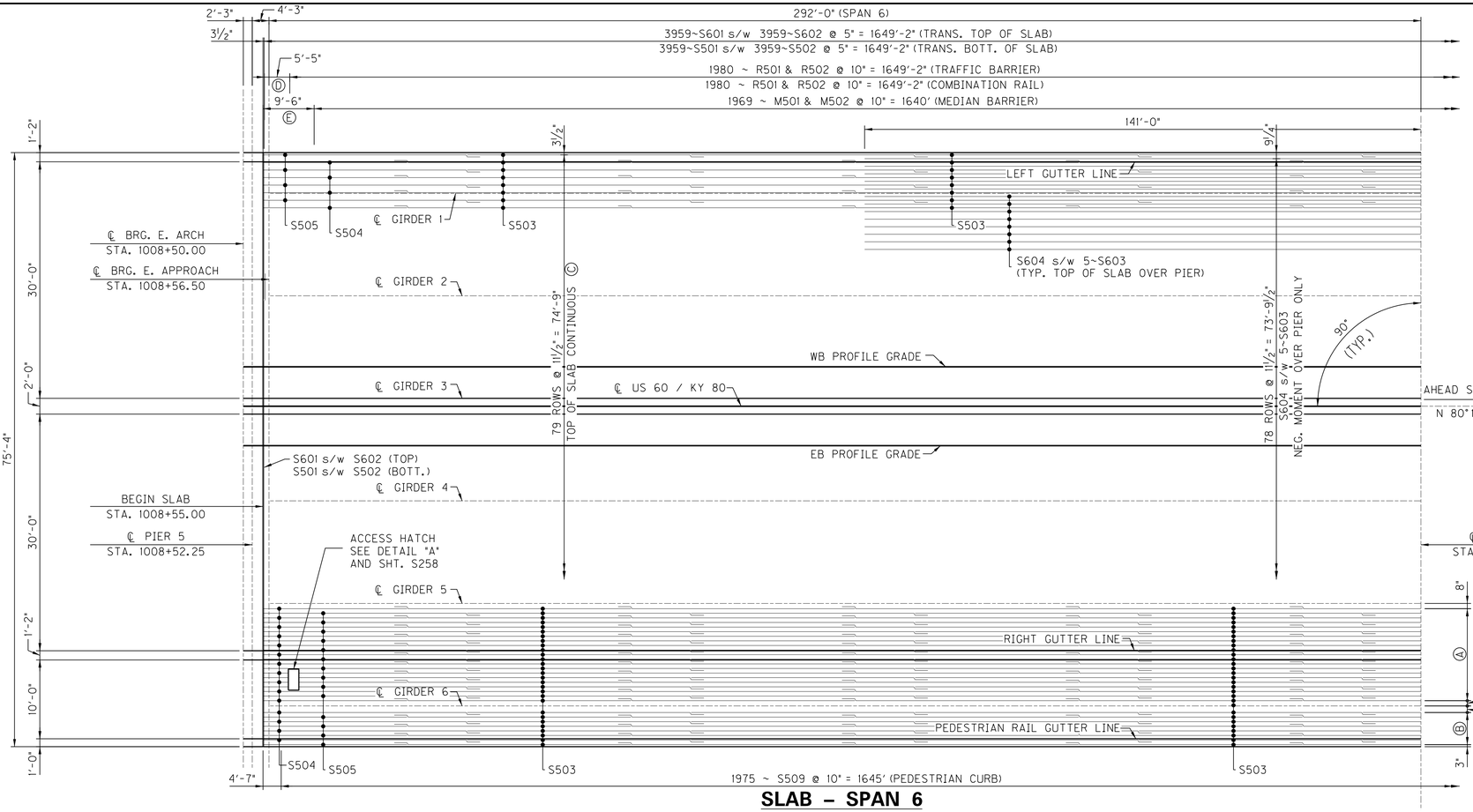
ITEM NUMBER: **01-180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

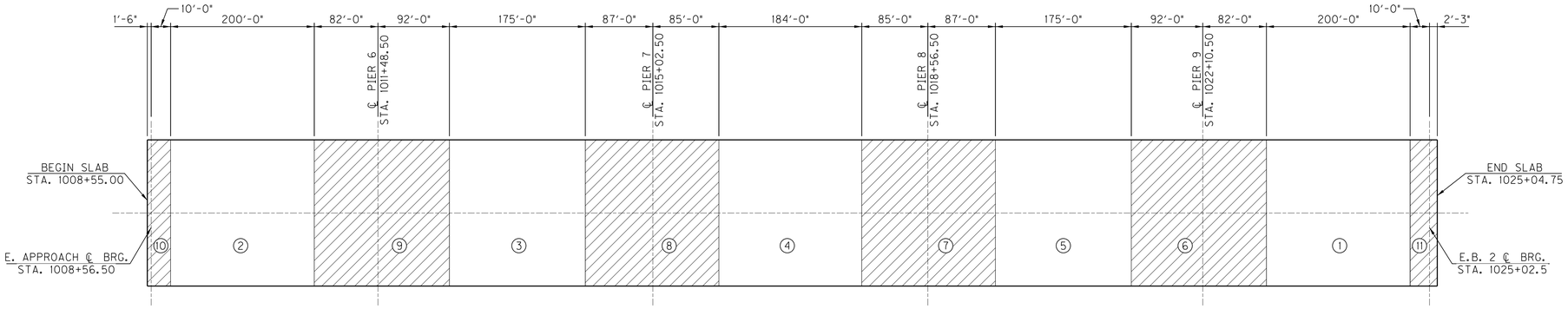
SHEET NO. S227

DRAWING NO. 24686

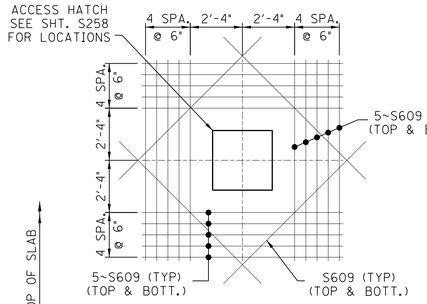
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SLAB – SPAN 6



SLAB POURING SEQUENCE



ACCESS HATCH REINFORCEMENT

THIS ADDITIONAL SLAB REINFORCEMENT IS REQUIRED
IN BOTH TOP AND BOTTOM OF SLAB
AT EACH ACCESS HATCH LOCATION.
SEE SHTS. S258 AND S259 FOR DETAILS

SHOWING BARS TOP OF SLAB

SHOWING BARS BOTT. OF SLAB

NOTE: STAGGER SPLICES AS SHOWN

NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

Ⓓ SEE SHEET S207B FOR TRAFFIC
AND COMBINATION RAIL DETAILS

Ⓔ SEE SHEET S208B FOR
MEDIAN BARRIER DETAILS

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

REVISION	DATE
DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

PLAN OF SLAB

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

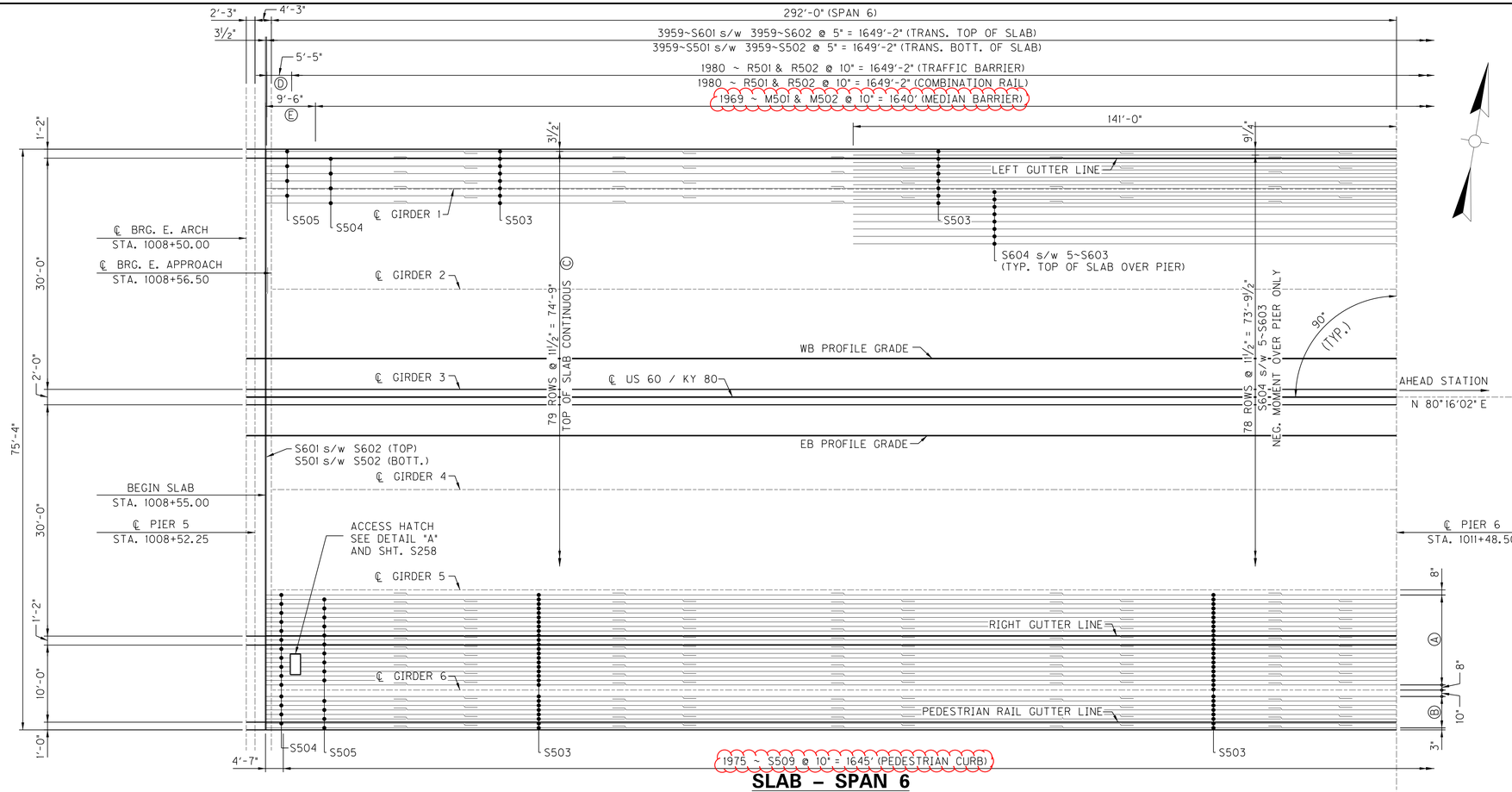
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

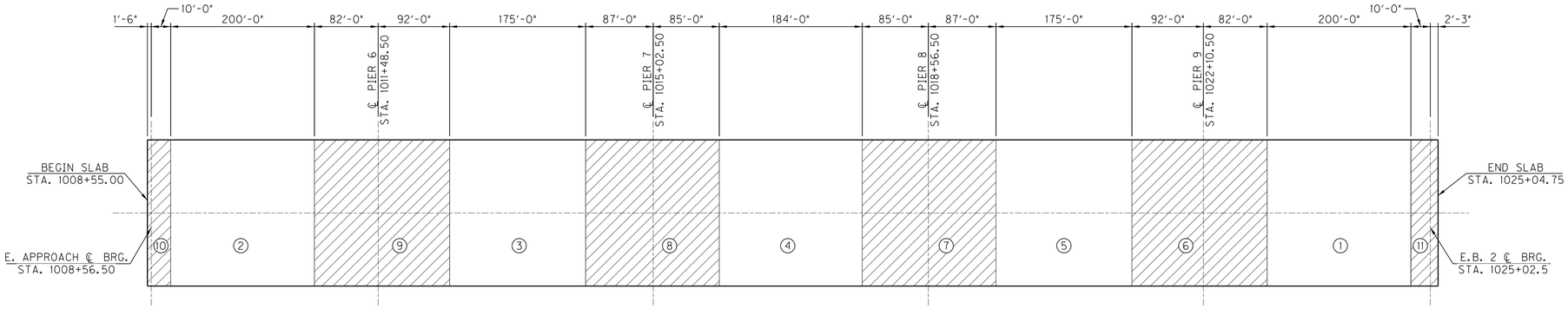
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DRAWING NO. 24686

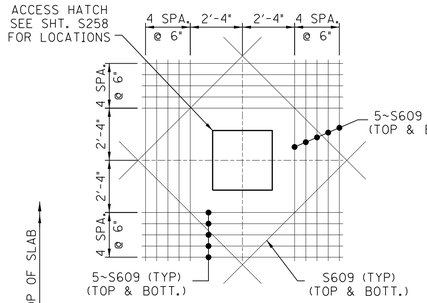
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:20:15 PM
E-SHEET NAME:
MicroStation v8.11.7.443



SLAB – SPAN 6



SLAB POURING SEQUENCE



ACCESS HATCH REINFORCEMENT

THIS ADDITIONAL SLAB REINFORCEMENT IS REQUIRED IN BOTH TOP AND BOTTOM OF SLAB AT EACH ACCESS HATCH LOCATION. SEE SHTS. S258 AND S259 FOR DETAILS

NOTE: STAGGER SPLICES AS SHOWN

NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

Ⓓ SEE SHEET S207B FOR TRAFFIC AND COMBINATION RAIL DETAILS

Ⓔ SEE SHEET S208B FOR MEDIAN BARRIER DETAILS

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

3 CHANGED DIMENSIONS & NOTES	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE
US 68

CROSSING
KENTUCKY LAKE

PLAN OF SLAB

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

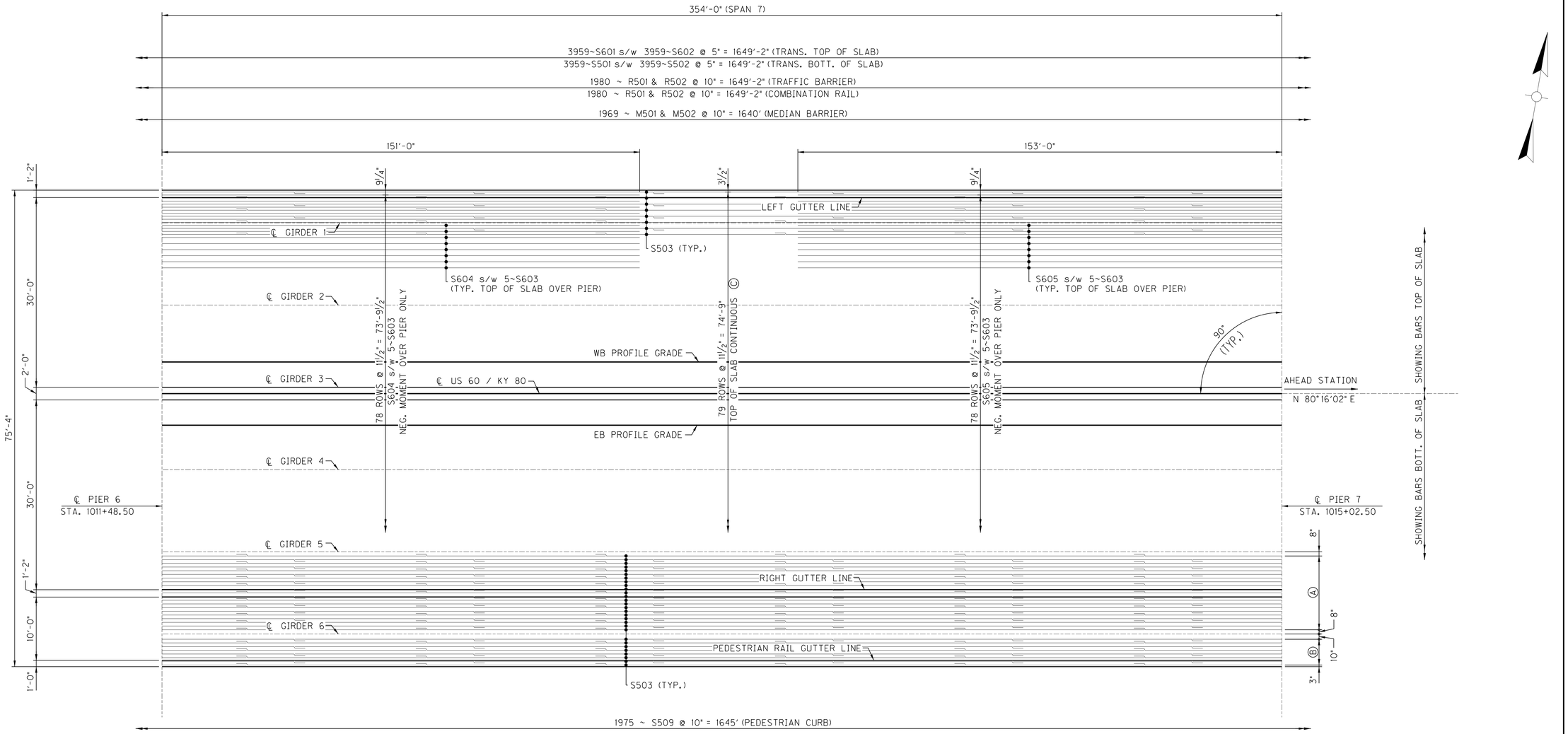
ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO.
S228

DRAWING NO.
24686

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MicroStation v8.11.7.443



SLAB – SPAN 7

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATION

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

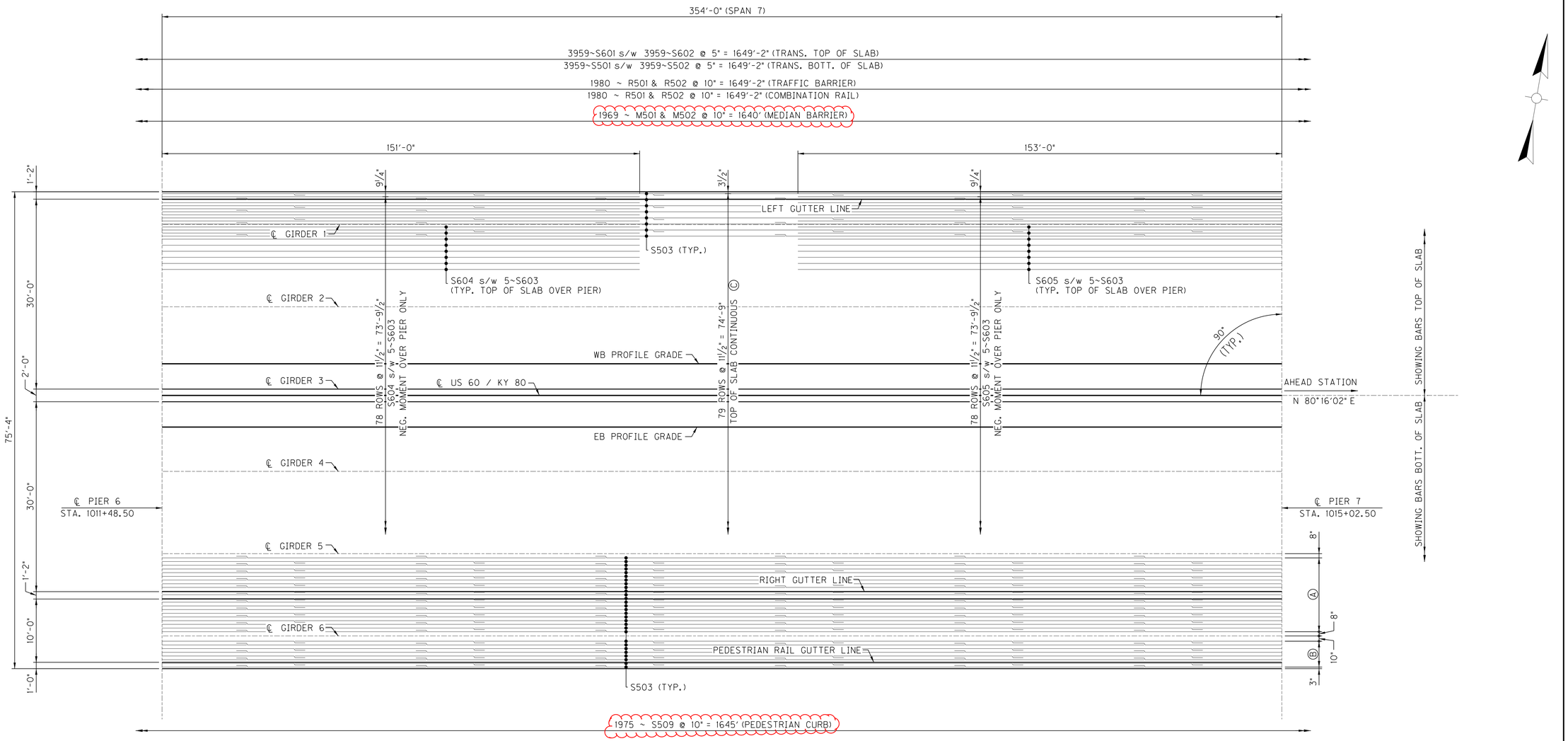
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S229
DRAWING NO. 24686

MicroStation v8.11.7.443
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USER: tlm-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:20:49 PM
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SLAB – SPAN 7

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATION

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68**

CROSSING: **KENTUCKY LAKE**

PLAN OF SLAB

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

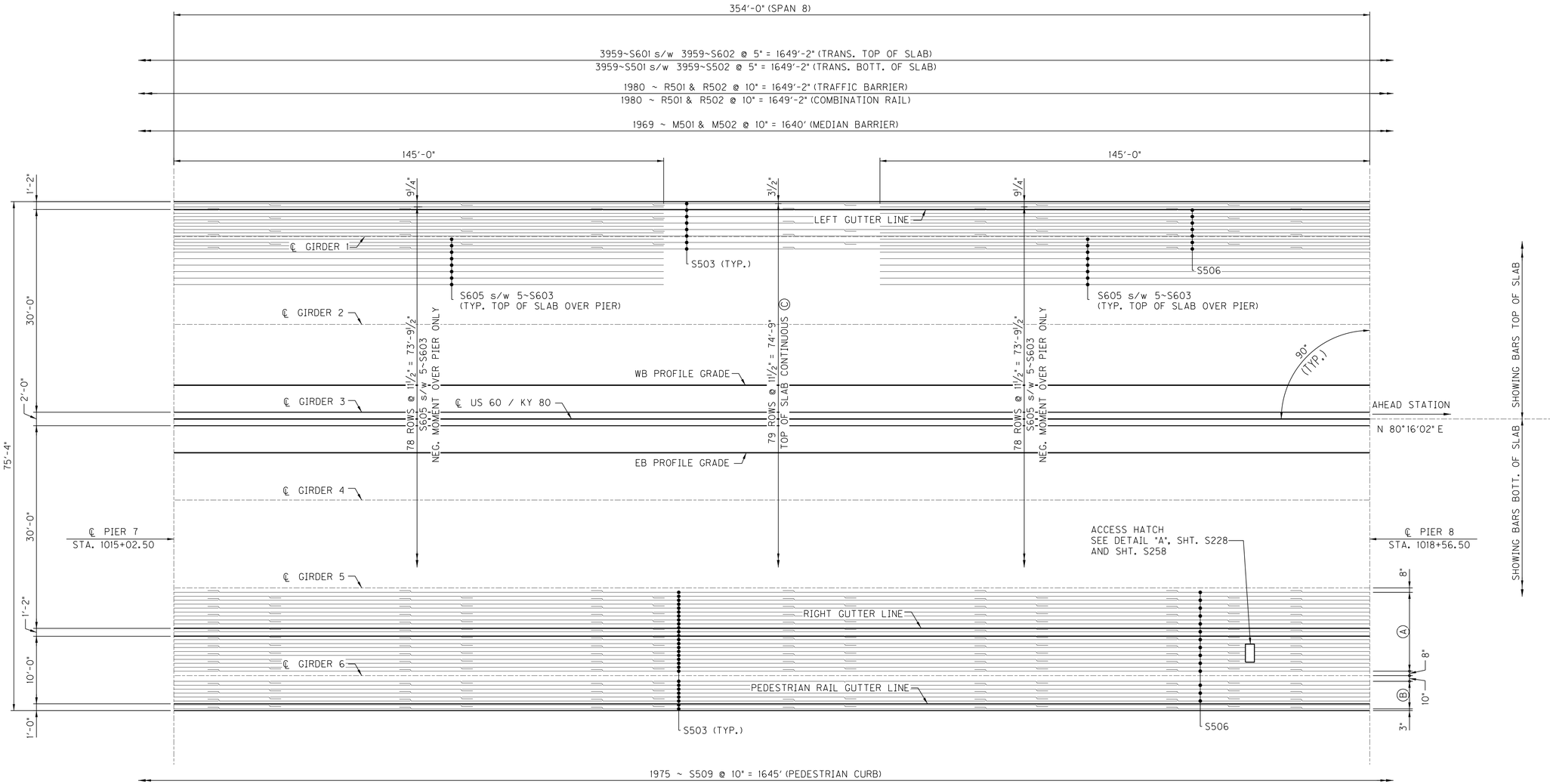
ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S229

DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
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MicroStation v8.11.7.443
12/5/2013 2:22:07 PM



SLAB – SPAN 8

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

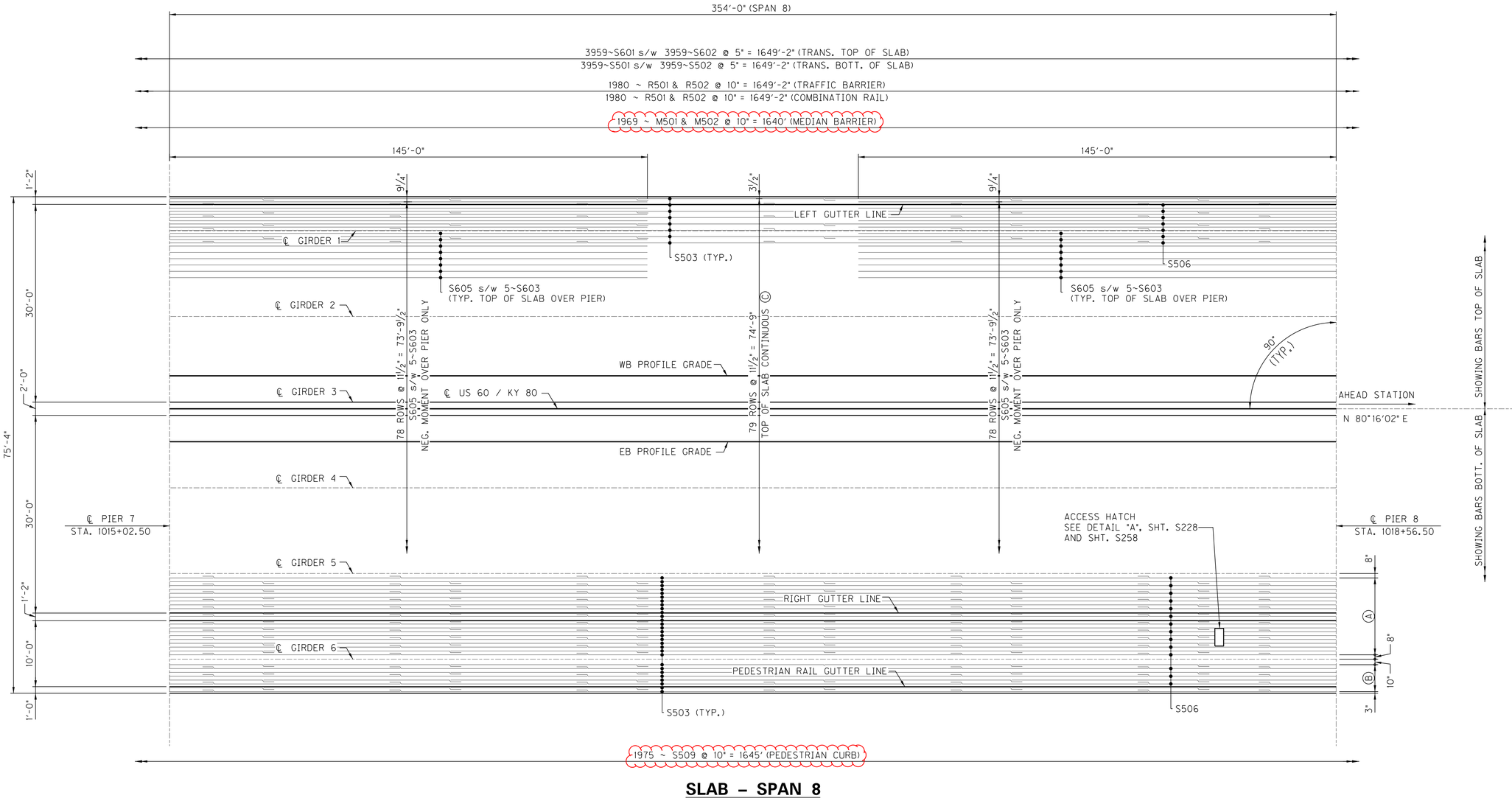
ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S230
DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
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MicroStation v8.11.7.443
12/11/2013 2:22:52 PM



SLAB – SPAN 8

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

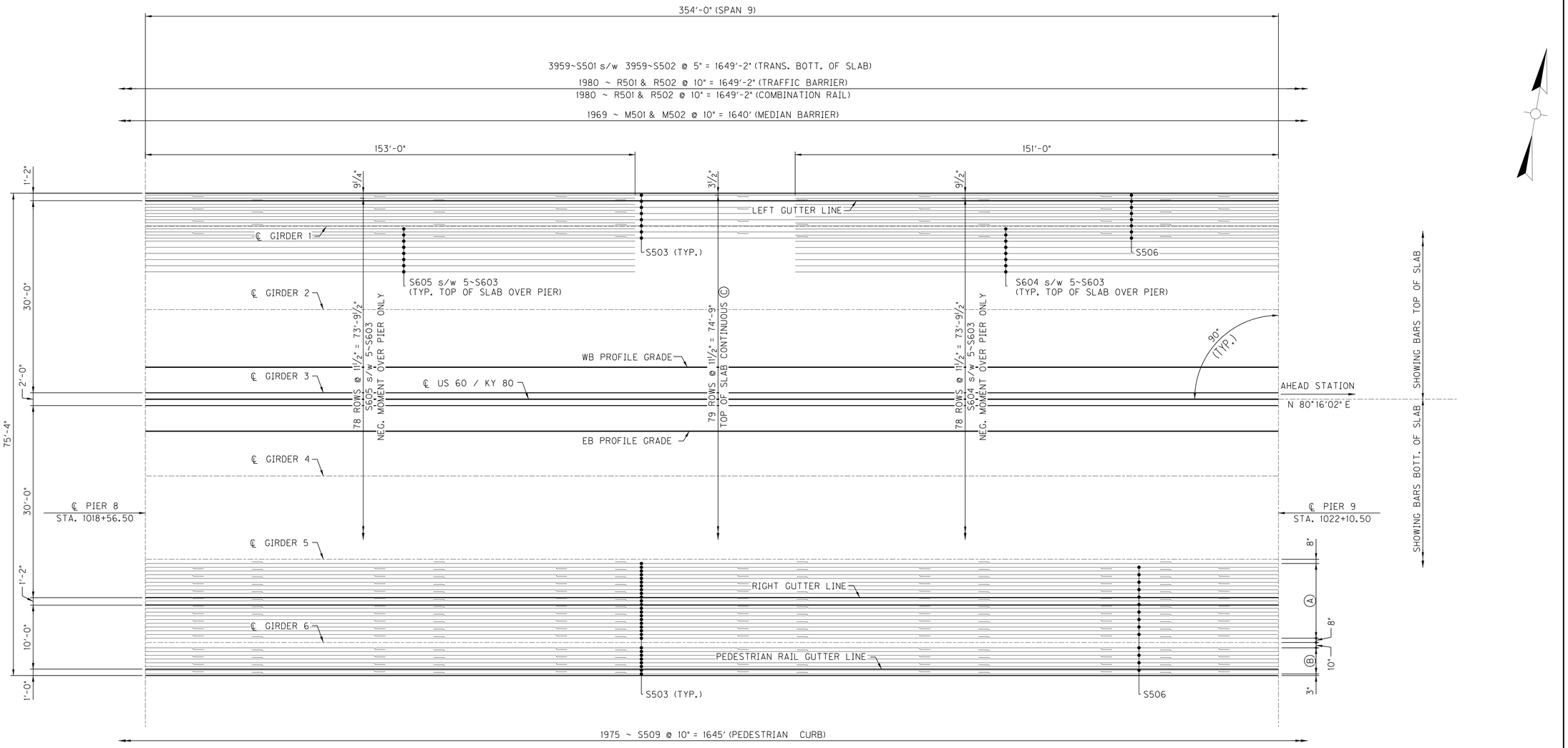
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S230
DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
E-SHEET NAME:
MicroStation v8.11.7.443
12/5/2013 2:28:42 PM



SLAB – SPAN 9

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

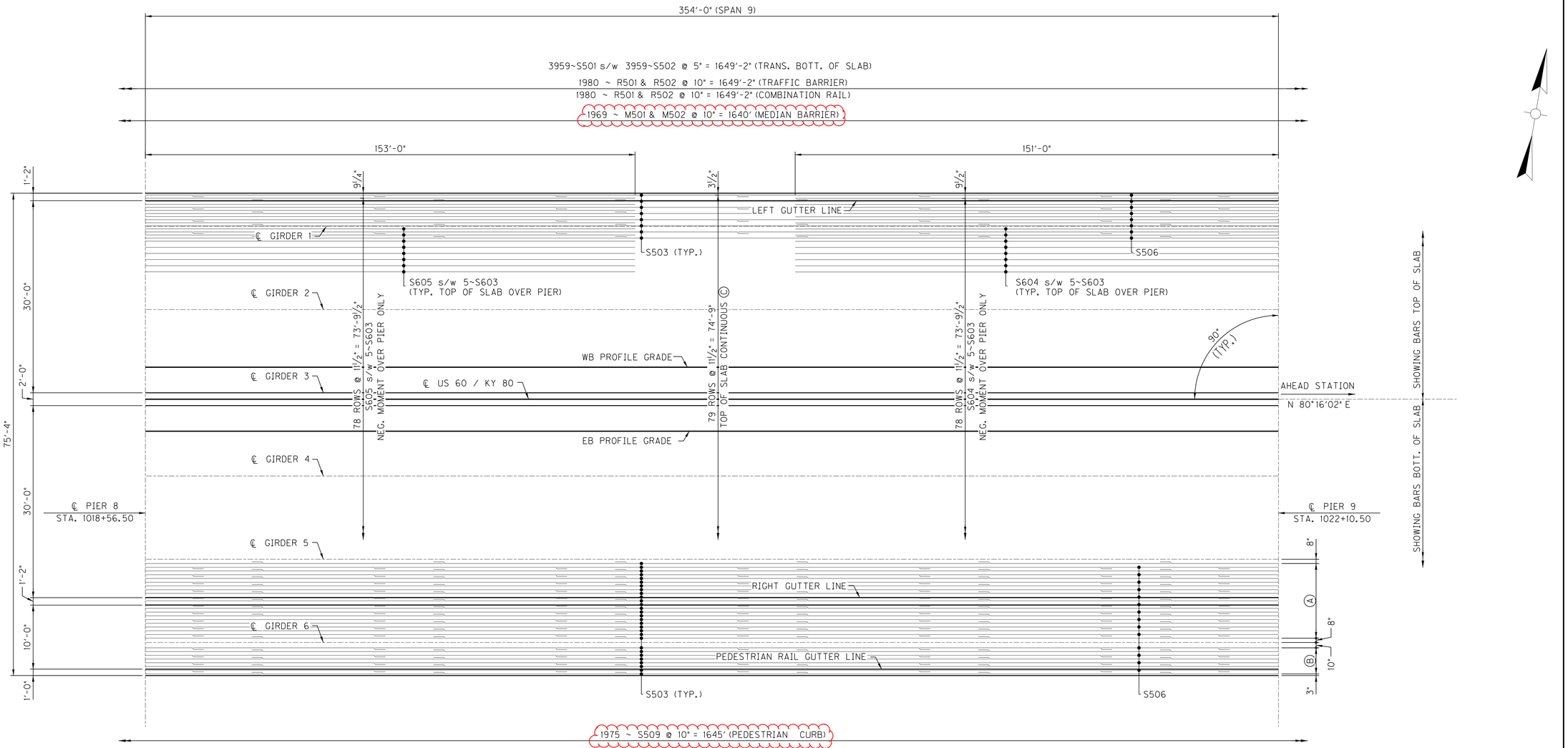
ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S231
DRAWING NO. 24686

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:23:45 PM
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SLAB – SPAN 9

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

REVISION	DATE
3 CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: B.T. DRECKMAN | C.M. GREENWELL
DETAILED BY: L.A. BEATTIE | J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

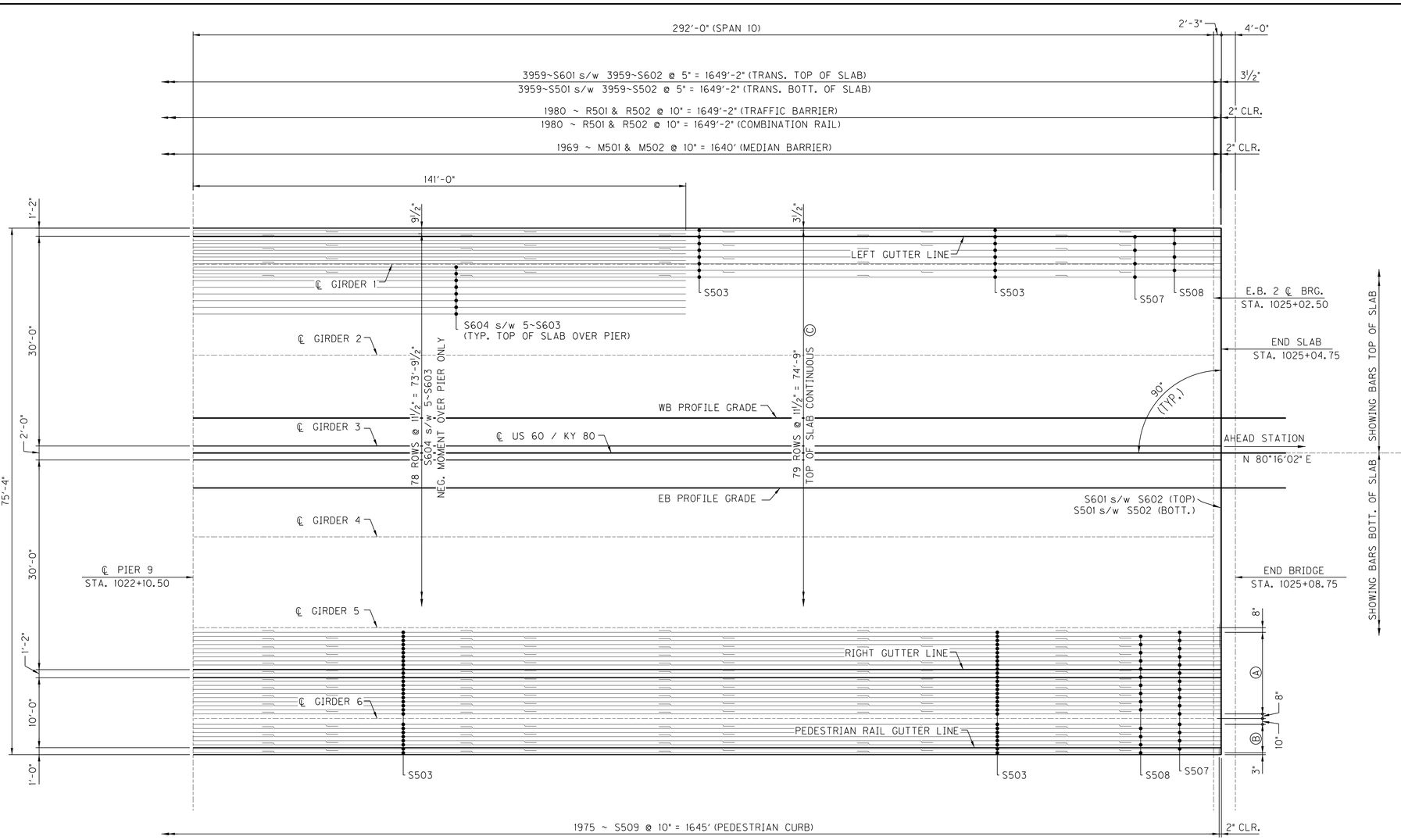
PLAN OF SLAB

ITEM NUMBER: **01-180.70**

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S231
DRAWING NO. 24686

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SLAB – SPAN 10

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

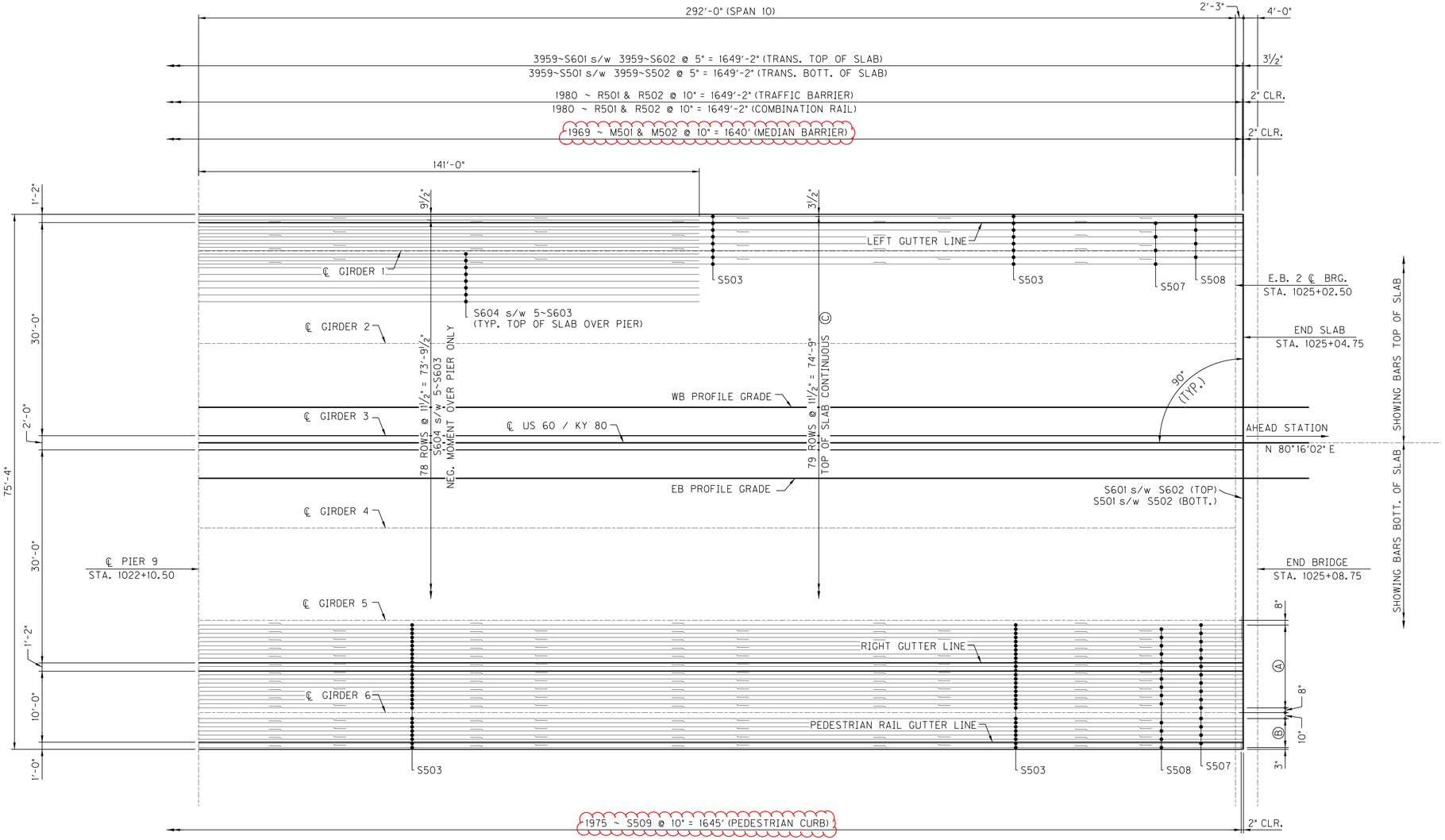
ROUTE: US 68
CROSSING: KENTUCKY LAKE

PLAN OF SLAB

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S232
DRAWING NO. 24686

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12/11/2013 2:24:14 PM
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MicroStation v8.11.7.443



SLAB – SPAN 10

NOTE: STAGGER SPLICES AS SHOWN
NOTE: SEE S239-S241 FOR DECK DRAIN LOCATIONS

Ⓐ 21 ROWS @ 7" = 11'-8"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB BTWN. BEAMS

Ⓑ 8 ROWS @ 7" = 4'-1"
TYP. LONGIT. REINFORCEMENT
BOTT. OF SLAB @ OVERHANGS

Ⓒ S504 S/W 16 LENGTHS S503 S/W
S506 S/W 11 LENGTHS S503 S/W S507 OR
S505 S/W 22 LENGTHS S503 S/W
S506 S/W 5 LENGTHS S503 S/W S508

MIN. LAP SPLICES

#5 BAR - 3'-3"
#6 BAR - 3'-10"

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

3	CHANGED DIMENSIONS	12/09/13
	REVISION	DATE

DATE: NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY: B.T. DRECKMAN — C.M. GREENWELL
DETAILED BY: L.A. BEATTIE — J.N. McNUTT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

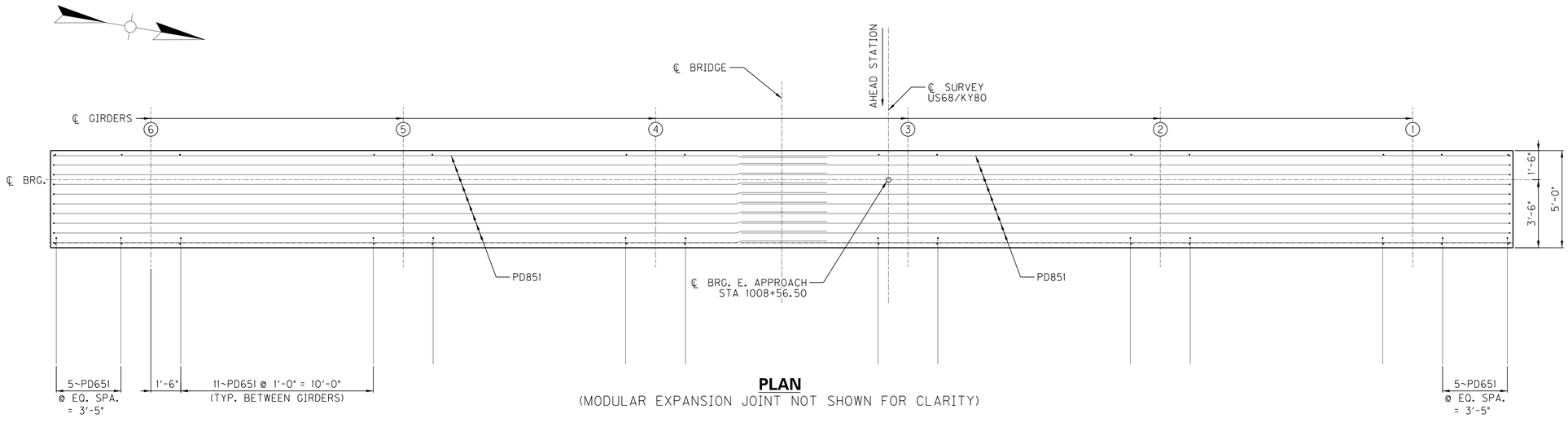
ROUTE: US 68 — CROSSING: KENTUCKY LAKE

PLAN OF SLAB

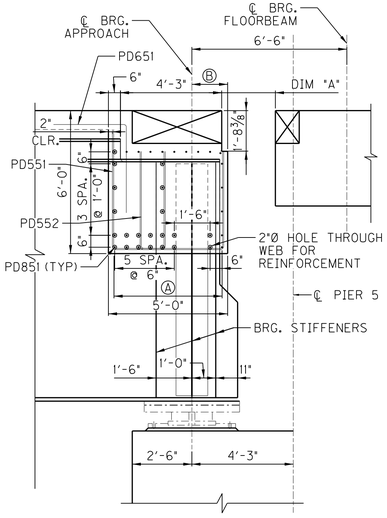
PREPARED BY: PALMER ENGINEERING CO.

SHEET NO. S232
DRAWING NO. 24686

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DATE PLOTTED: July 27, 2011
12/5/2013 2:41:16 PM
E-SHEET NAME:
MicroStation v8.11.7.443



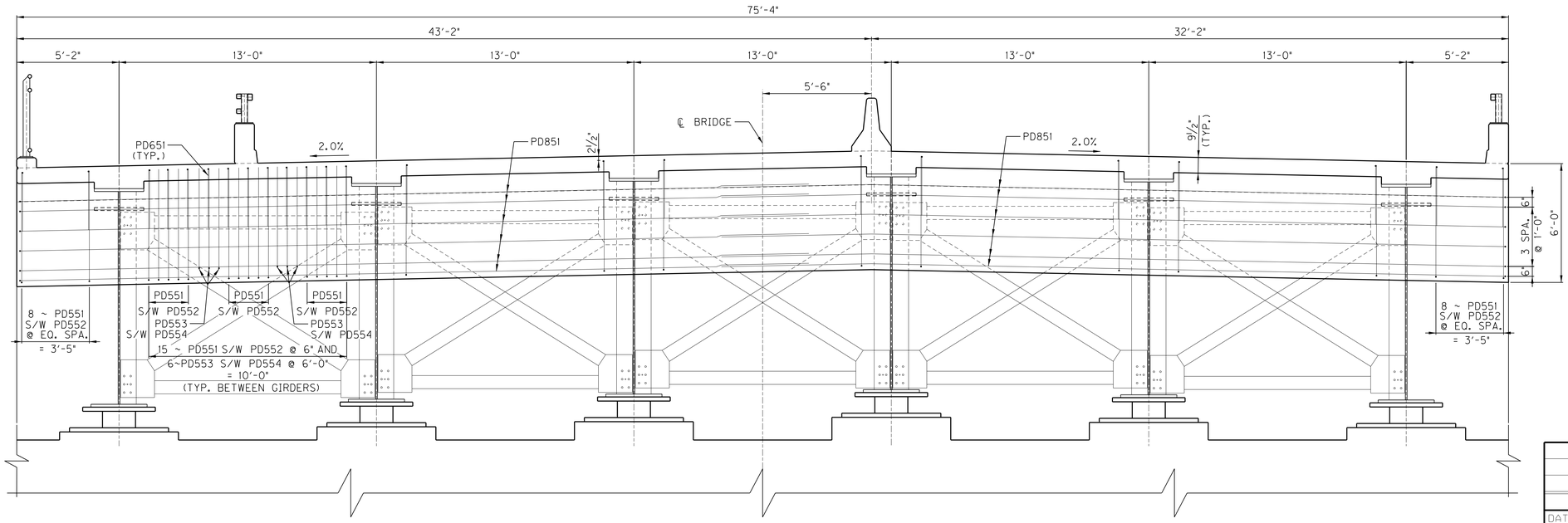
PLAN
(MODULAR EXPANSION JOINT NOT SHOWN FOR CLARITY)



PROFILE AT PIER 5

Ⓐ 35~PD851 S/W 35~PD851 SPACED AS SHOWN

Ⓑ 1'-6" TO END OF SLAB



ELEVATION
(LOOKING BACK STATION, FRONT FACE OF DIAPHRAGM)

NOTES

1. DUE TO VARIATIONS IN MODULAR JOINTS B/T VARIOUS APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL DESIGN AND DETAILING OF THE BLOCKOUT BASED ON SELECTED MODULAR JOINT.
2. REINFORCEMENT REQUIRED FOR THE SELECTED MODULAR JOINT SHALL BE PROVIDED IN ADDITION TO THE REINFORCEMENT SHOWN IN THESE PLANS.
3. SEE SHT. S206 FOR MODULAR EXPANSION JOINT DETAILS.

MIN LAP SPLICE
#5 3'-7"
#7 5'-5"

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	D.H. DEITZ
DETAILED BY: T.S. ELLIS	R.M. DAMON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

PIER 5 DIAPHRAGM

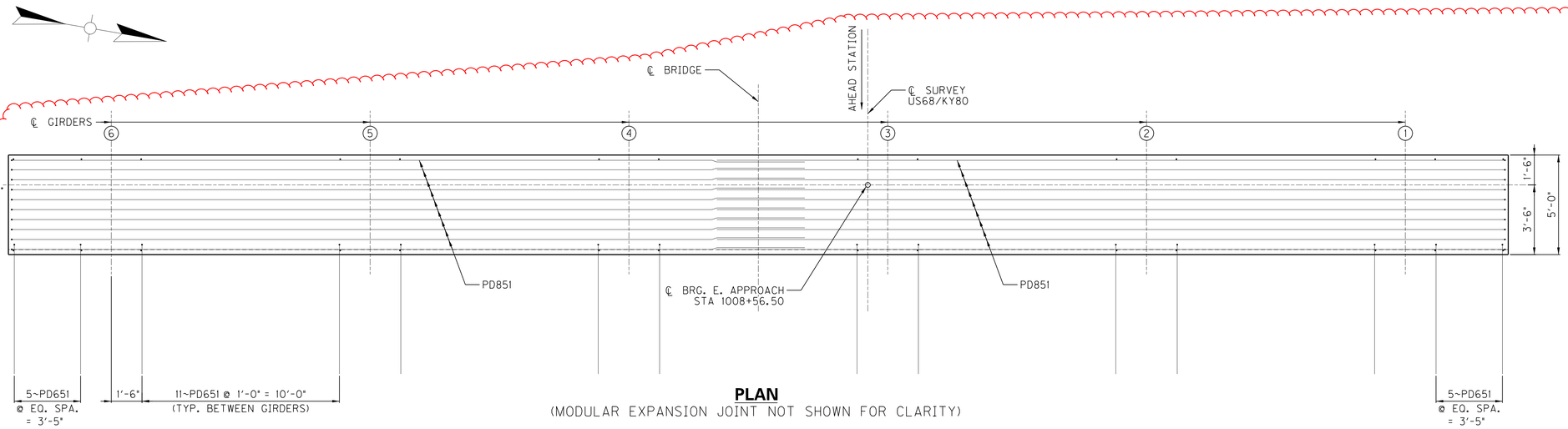
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
PALMER ENGINEERING CO.

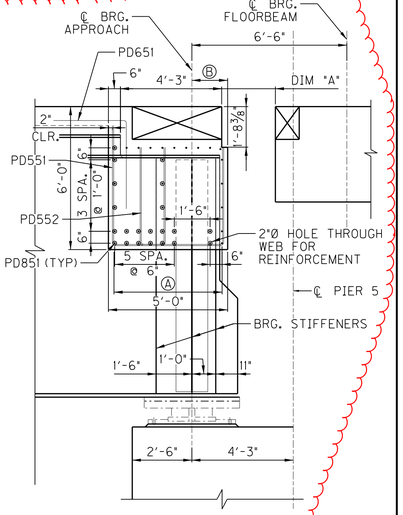
SHEET NO. S233
DRAWING NO. **24686**

MicroStation v8.11.7.443
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12/11/2013 2:45:10 PM
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PLAN

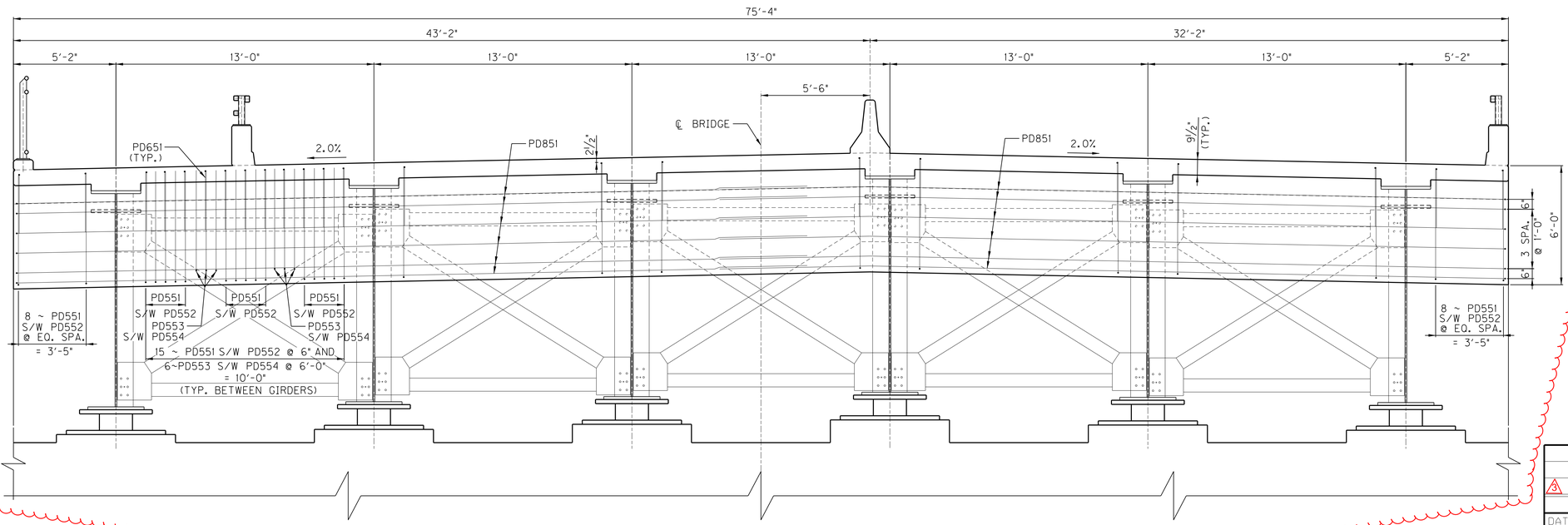
(MODULAR EXPANSION JOINT NOT SHOWN FOR CLARITY)



PROFILE AT PIER 5

Ⓐ 35~PD851 S/W 35~PD851 SPACED AS SHOWN

Ⓑ 1'-6" TO END OF SLAB



ELEVATION

(LOOKING BACK STATION, FRONT FACE OF DIAPHRAGM)

NOTES

1. DUE TO VARIATIONS IN MODULAR JOINTS B/T VARIOUS APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL DESIGN AND DETAILING OF THE BLOCKOUT BASED ON SELECTED MODULAR JOINT.
2. REINFORCEMENT REQUIRED FOR THE SELECTED MODULAR JOINT SHALL BE PROVIDED IN ADDITION TO THE REINFORCEMENT SHOWN IN THESE PLANS.
3. SEE SHT. S206 FOR MODULAR EXPANSION JOINT DETAILS.

MIN LAP SPLICE
#5 3'-7"
#7 5'-5"

REVISION	DATE
3 ADDED/CHANGED BARS & DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013 | CHECKED BY
DESIGNED BY: D.E. RUST | D.H. DEITZ
DETAILED BY: T.S. ELLIS | R.M. DAMON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

PIER 5 DIAPHRAGM

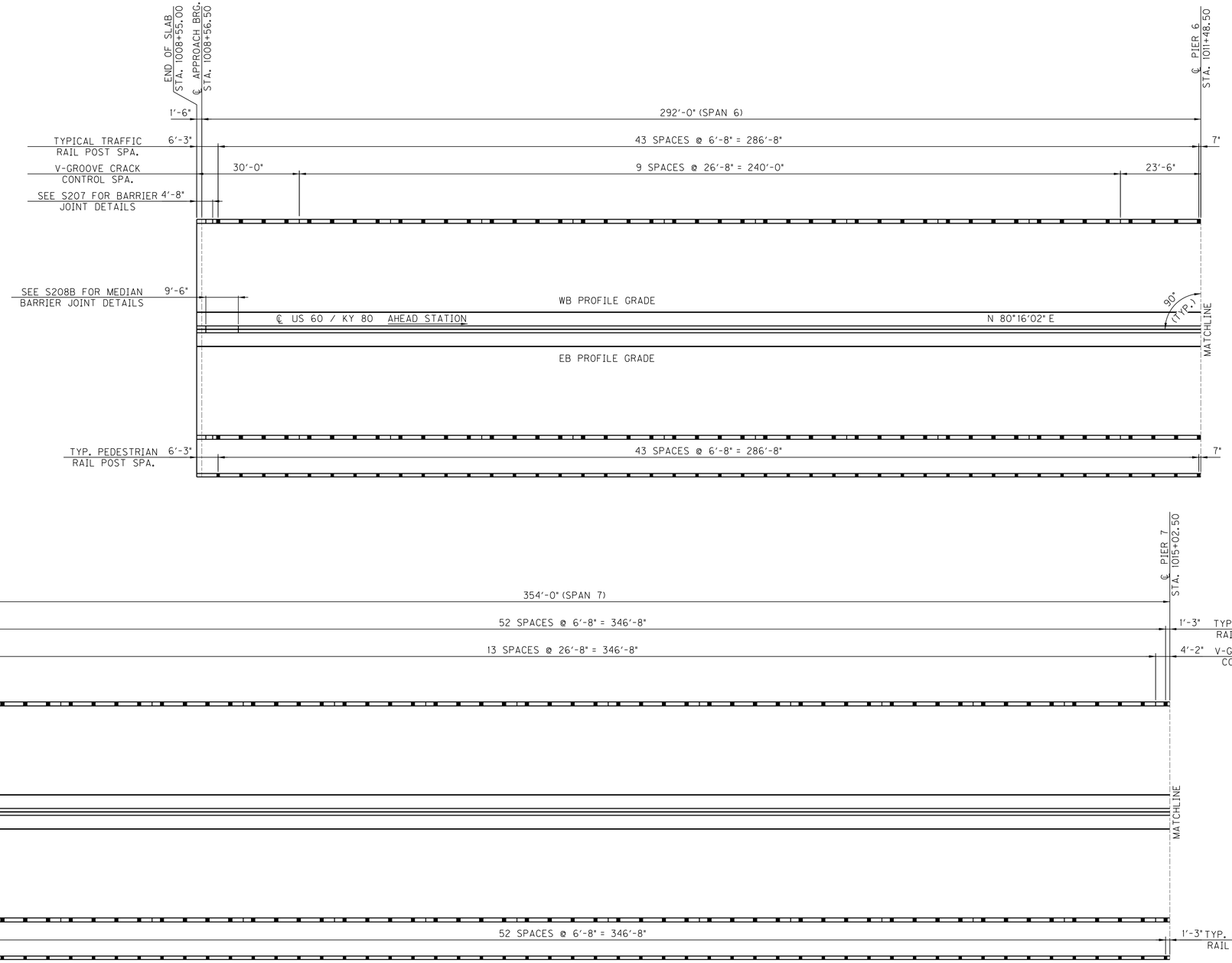
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY: PALMER ENGINEERING CO.

SHEET NO. S233
DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 1:31:08 PM
E-SHEET NAME:
MicroStation v8.11.7.443



SPAN 6 & 7 PART PLAN

(SHOWING SPACING FOR RAIL POSTS)

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

RAIL POST SPACING – SPAN 6 & 7

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

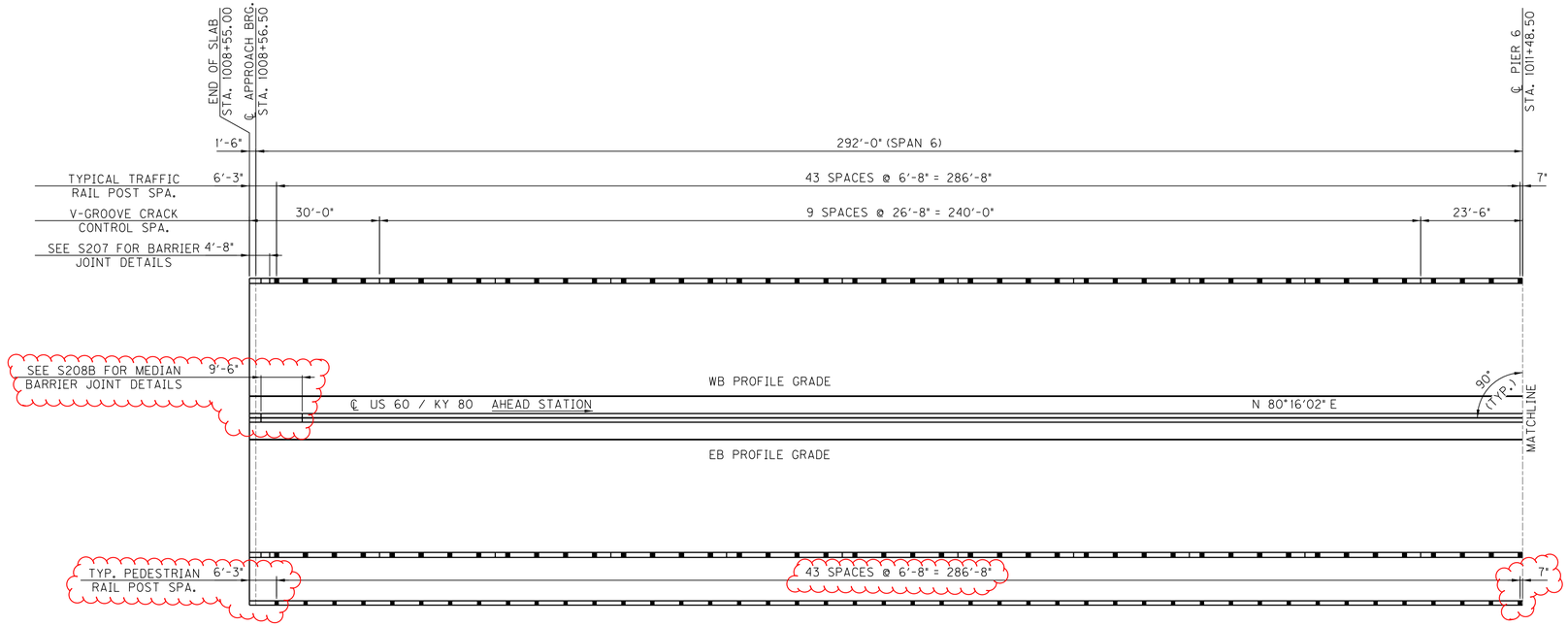
ITEM NUMBER: **01–180.70**

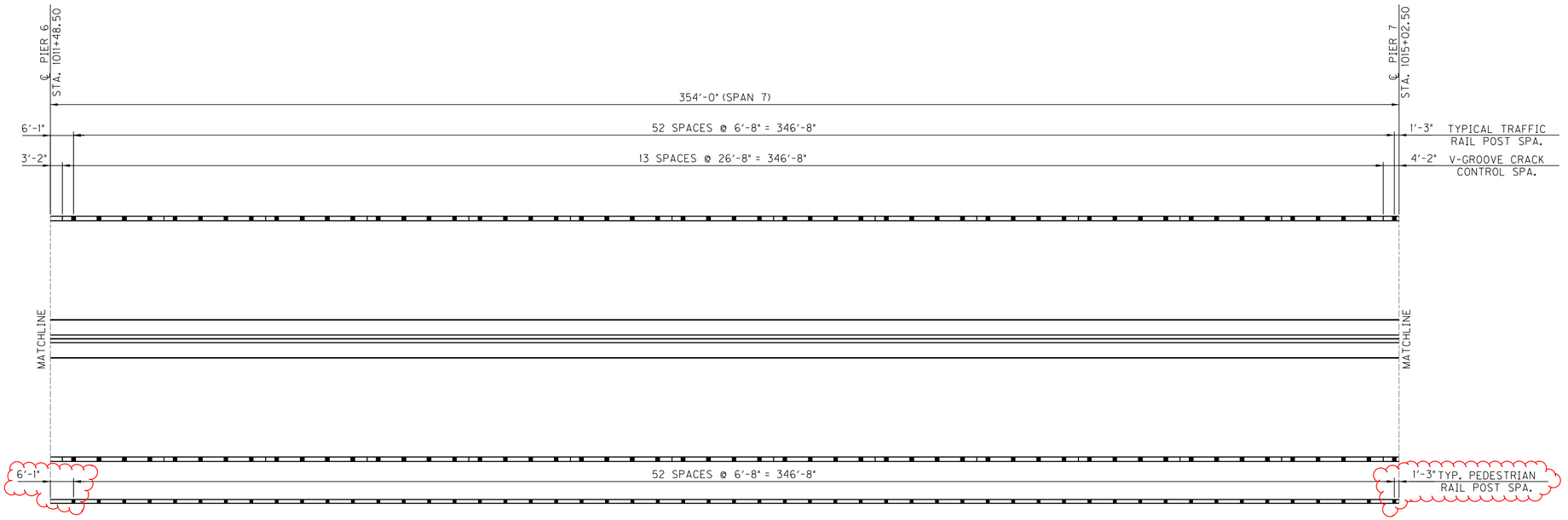
PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO.: S235

DRAWING NO.: **24686**

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:40:37 PM
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SPAN 6 & 7 PART PLAN

(SHOWING SPACING FOR RAIL POSTS)

REVISION	DATE
3 ADDED NOTES & CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

RAIL POST SPACING – SPAN 6 & 7

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

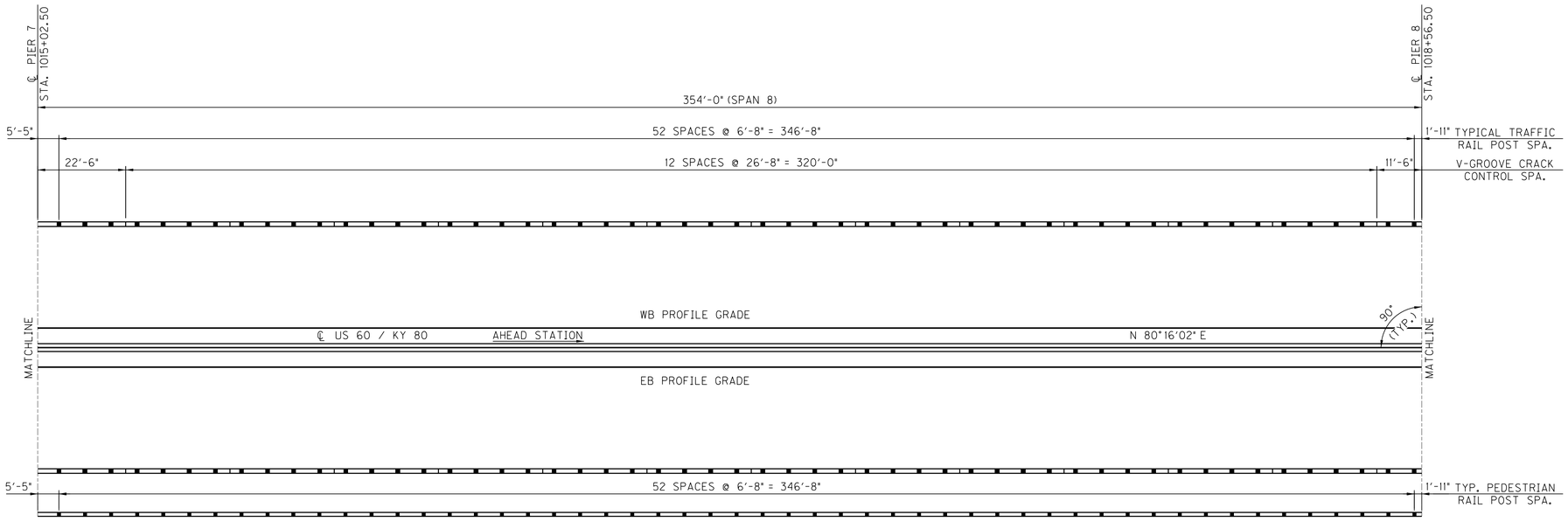
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S235

DRAWING NO. 24686

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12/10/2013 10:29:05 AM
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MicroStation v8.11.7.443



SPAN 8 PART PLAN
(SHOWING SPACING FOR RAIL POSTS)

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
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12/11/2013 2:13:40 PM

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

RAIL POST SPACING – SPAN 8

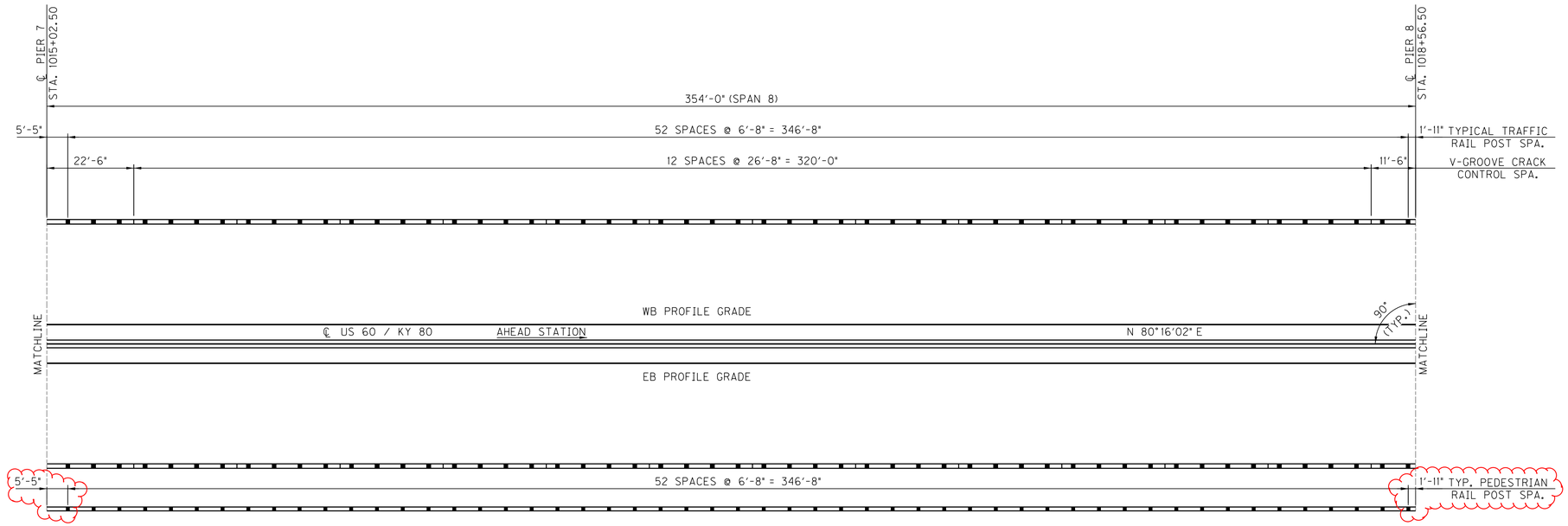
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S236

DRAWING NO. 24686



SPAN 8 PART PLAN
(SHOWING SPACING FOR RAIL POSTS)

MicroStation v8.11.7.443
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USER: tim-e
DATE PLOTTED: July 27, 2011
12/5/2013 9:59:29 AM
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REVISION	DATE
3 CHANGED DIMENSIONS	12/09/13

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68

CROSSING: KENTUCKY LAKE

RAIL POST SPACING – SPAN 8

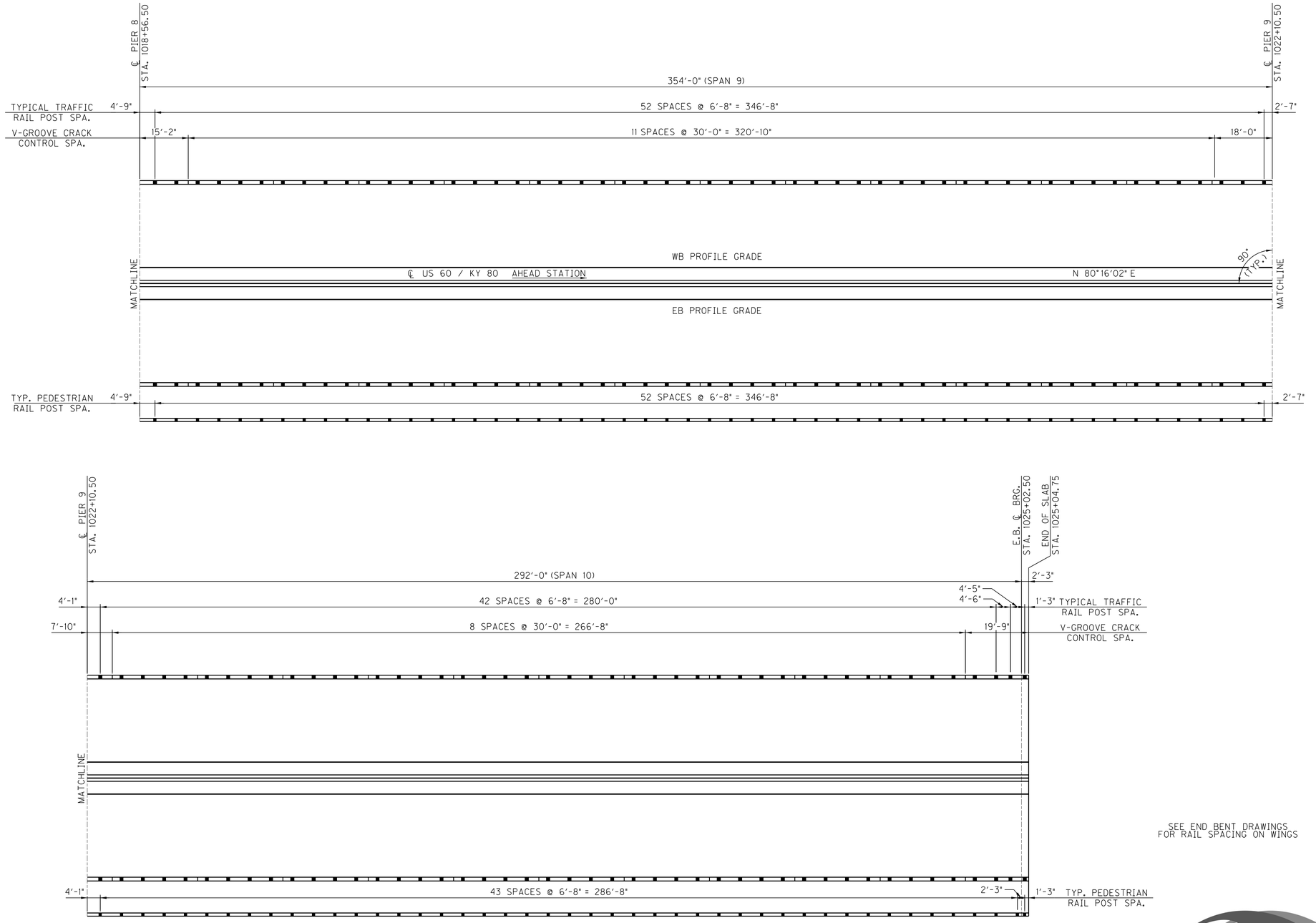
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: 01–180.70

PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S236

DRAWING NO. 24686



SPAN 9 & 10 PART PLAN
(SHOWING SPACING FOR RAIL POSTS)

SEE END BENT DRAWINGS FOR RAIL SPACING ON WINGS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US 68** | CROSSING: **KENTUCKY LAKE**

RAIL POST SPACING – SPAN 9 & 10

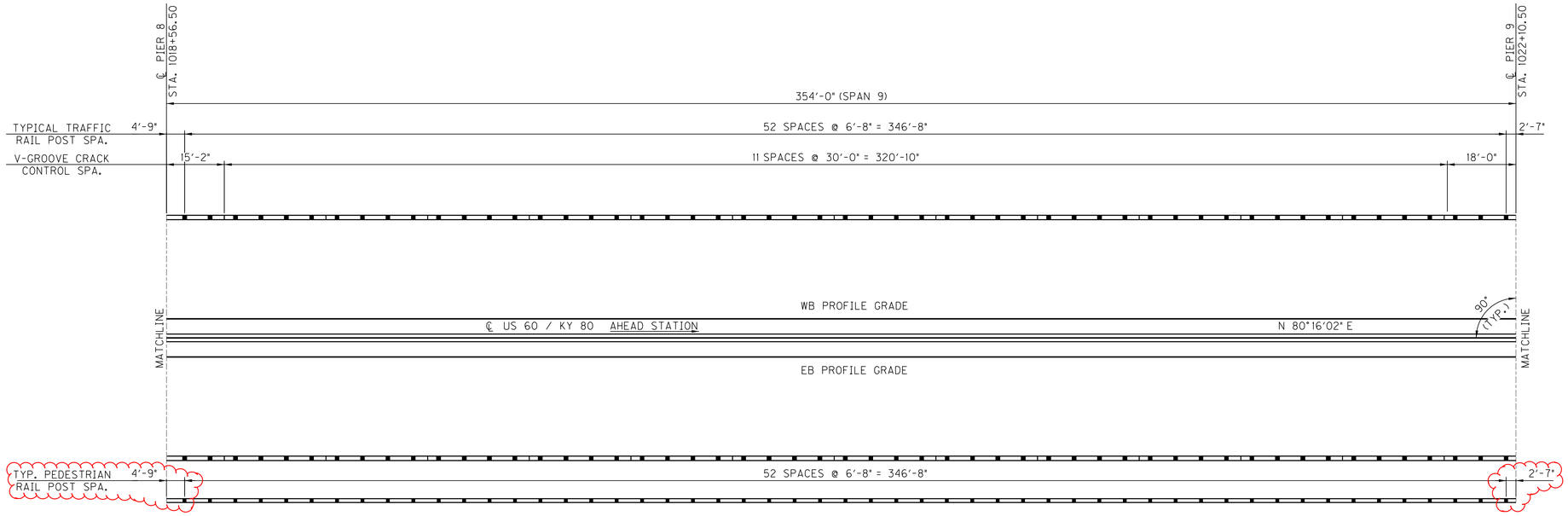
ITEM NUMBER: **01–180.70**

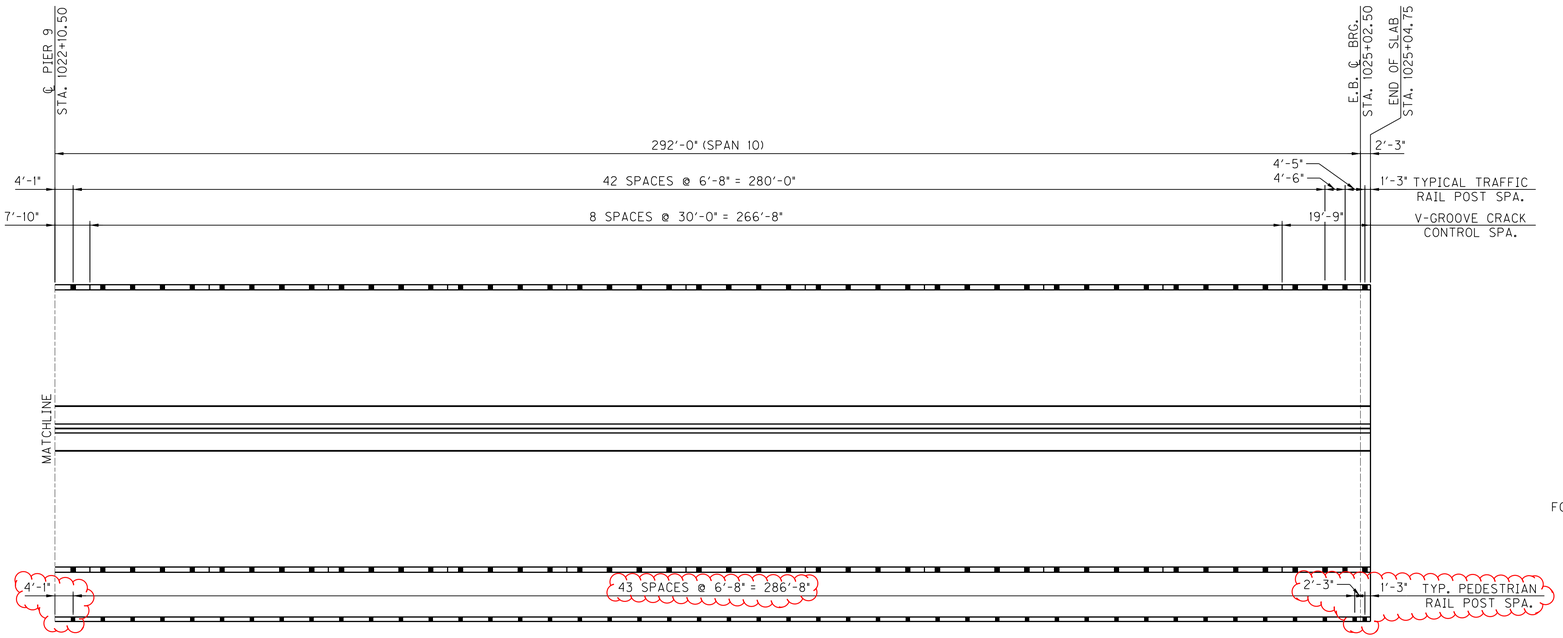
PREPARED BY: *PALMER ENGINEERING CO.*

SHEET NO. S237

DRAWING NO. **24686**

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:14:23 PM
E-SHEET NAME:
MicroStation v8.11.7.443





SPAN 9 & 10 PART PLAN
(SHOWING SPACING FOR RAIL POSTS)

SEE END BENT DRAWINGS FOR RAIL SPACING ON WINGS

3 CHANGED DIMENSIONS	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: B.N. ROBSON	J.N. MCNUTT
DETAILED BY: J.N. MCNUTT	B.N. ROBSON

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

RAIL POST SPACING – SPAN 9 & 10

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S237
DRAWING NO. 24686

...\24686 S237 RAIL POST SPA.dgn
FILE NAME: u:\KDOT\LAKE_BRIDGES\STRUCT\FINAL DESIGN\KY LAKE\DGN\FINAL_PLANS\KYTC_STRUCT_20.IFBASE.DGN
USER: tim-e
DATE PLOTTED: July 27, 2011
12/5/2013 10:13:52 AM
E-SHEET NAME:
MicroStation v8.11.7.443

EAST APPROACH SLAB BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
S601(E)	STR.	3959	# 6	60'-0"	TRANS. TOP				
S602(E)	STR.	3959	# 6	18'-10"	TRANS. TOP				
S501(E)	STR.	3959	# 5	60'-0"	TRANS. BOTT.				
S502(E)	STR.	3959	# 5	18'-3"	TRANS. BOTT.				
S503(E)	STR.	5400	# 5	60'-0"	LONGIT. TOP & BOTT.				
S504(E)	STR.	100	# 5	36'-6"	LONGIT. TOP & BOTT.				
S505(E)	STR.	100	# 5	55'-0"	LONGIT. TOP & BOTT.				
S506(E)	STR.	200	# 5	40'-0"	LONGIT. TOP & BOTT.				
S507(E)	STR.	100	# 5	47'-6"	LONGIT. TOP & BOTT.				
S508(E)	STR.	100	# 5	29'-0"	LONGIT. TOP & BOTT.				
S509(E)	26	1975	# 5	4'-7"	CURB	1'-3"	0'-8"	1'-3"	1'-6"
S603(E)	STR.	1560	# 6	60'-0"	NEGATIVE MOMENT				
S604(E)	STR.	156	# 6	11'-2"	NEGATIVE MOMENT				
S605(E)	STR.	156	# 6	17'-2"	NEGATIVE MOMENT				
S606(E)					NOT USED				
S607(E)	STR.	56	# 6	60'-0"	CURB				
S608(E)	STR.	4	# 6	50'-6"	CURB				
S609(E)	STR.	88	# 6	9'-0"	ACCESS HATCH R/F				

EAST APPROACH BARRIER BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
M501(E)	29	1969	# 5	5'-4"	MEDIAN BARRIER	0'-10"	1'-8"		
M502(E)	30	1969	# 5	5'-2"	MEDIAN BARRIER				
M503(E)	STR.	252	# 5	60'-0"	MEDIAN BARRIER (LONG.)				
M504(E)	STR.	9	# 5	47'-3"	MEDIAN BARRIER (LONG.)				
R501(E)(S)	17	3948	# 5	5'-0"	RAIL BARRIERS	2'-2"	0'-8"	0'-10"	
R502(E)(S)	2	3948	# 5	4'-4"	RAIL BARRIERS	1'-10"	0'-8"		
R503(E)	STR.	336	# 5	60'-0"	RAIL BARRIERS (LONG.)				
R504(E)	STR.	12	# 5	52'-3"	RAIL BARRIERS (LONG.)				

EAST APPROACH DIAPHRAGMS BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
PD551(E)(S)	22	91	# 5	11'-3"	PIER 5 DIAPHRAGM	4'-1"	2'-2"	5'-0"	
PD552(E)(S)	22	91	# 5	11'-8"	PIER 5 DIAPHRAGM	4'-1"	3'-6"	4'-1"	
PD553(E)(S)	22	30	# 5	10'-3"	PIER 5 DIAPHRAGM	3'-7"	2'-2"	4'-6"	
PD554(E)(S)	22	30	# 5	10'-8"	PIER 5 DIAPHRAGM	3'-7"	3'-6"	3'-7"	
PD651(E)(S)	5	65	# 6	14'-6"	PIER 5 DIAPHRAGM	4'-0"	10'-6"		
PD851(E)	5	70	# 8	42'-5"	PIER 5 DIAPHRAGM	41'-1"	1'-4"		
ED651(E)(S)	2	65	# 6	27'-1"	END BENT 2	11'-6"	4'-1"		
ED652(E)	STR.	52	# 6	39'-9"	END BENT 2				
ED653(E)(S)	5	130	# 6	14'-6"	END BENT 2	10'-6"	4'-0"		

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: B.T. DRECKMAN	C.M. GREENWELL
DETAILED BY: L.A. BEATTIE	B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

SUPERSTRUCTURE – BILL OF REINFORCEMENT

ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S238

DRAWING NO. 24686

...\24686_S238_SUPERSTRUCTURE_BAR_BILL.dgn
FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCTYFINAL DESIGN\KY LAKE\DGN\ADDENDA\KYTC_STRUCT_2D.IFBASE.DGN
USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 2:46:43 PM
E-SHEET NAME:
MicroStation v8.11.7.443

EAST APPROACH SLAB BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
S601(E)	STR.	3959	# 6	60'-0"	TRANS. TOP				
S602(E)	STR.	3959	# 6	18'-10"	TRANS. TOP				
S501(E)	STR.	3959	# 5	60'-0"	TRANS. BOTT.				
S502(E)	STR.	3959	# 5	18'-3"	TRANS. BOTT.				
S503(E)	STR.	5400	# 5	60'-0"	LONGIT. TOP & BOTT.				
S504(E)	STR.	100	# 5	36'-6"	LONGIT. TOP & BOTT.				
S505(E)	STR.	100	# 5	55'-0"	LONGIT. TOP & BOTT.				
S506(E)	STR.	200	# 5	40'-0"	LONGIT. TOP & BOTT.				
S507(E)	STR.	100	# 5	47'-6"	LONGIT. TOP & BOTT.				
S508(E)	STR.	100	# 5	29'-0"	LONGIT. TOP & BOTT.				
S509(E)	26	1975	# 5	4'-7"	CURB	1'-3"	0'-8"	1'-3"	1'-6"
S603(E)	STR.	1560	# 6	60'-0"	NEGATIVE MOMENT				
S604(E)	STR.	156	# 6	11'-2"	NEGATIVE MOMENT				
S605(E)	STR.	156	# 6	17'-2"	NEGATIVE MOMENT				
S606(E)					NOT USED				
S607(E)	STR.	56	# 6	60'-0"	CURB				
S608(E)	STR.	4	# 6	50'-6"	CURB				
S609(E)	STR.	88	# 6	9'-0"	ACCESS HATCH R/F				

EAST APPROACH BARRIER BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
M501(E)	29	1969	# 5	5'-4"	MEDIAN BARRIER	0'-10"	1'-8"		
M502(E)	30	1969	# 5	5'-2"	MEDIAN BARRIER				
M503(E)	STR.	252	# 5	60'-0"	MEDIAN BARRIER (LONG.)				
M504(E)	STR.	9	# 5	47'-3"	MEDIAN BARRIER (LONG.)				
R501(E)(S)	17	3948	# 5	5'-0"	RAIL BARRIERS	2'-2"	0'-8"	0'-10"	
R502(E)(S)	2	3948	# 5	4'-4"	RAIL BARRIERS	1'-10"	0'-8"		
R503(E)	STR.	336	# 5	60'-0"	RAIL BARRIERS (LONG.)				
R504(E)	STR.	12	# 5	52'-3"	RAIL BARRIERS (LONG.)				

EAST APPROACH DIAPHRAGMS BILL OF REINFORCEMENT

MARK	TYPE	NUMBER	SIZE	LENGTH	LOCATION	A	B	C	D
PD551(E)(S)	22	91	# 5	11'-3"	PIER 5 DIAPHRAGM	4'-1"	2'-2"	5'-0"	
PD552(E)(S)	22	91	# 5	11'-8"	PIER 5 DIAPHRAGM	4'-1"	3'-6"	4'-1"	
PD553(E)(S)	22	30	# 5	10'-3"	PIER 5 DIAPHRAGM	3'-7"	2'-2"	4'-6"	
PD554(E)(S)	22	30	# 5	10'-8"	PIER 5 DIAPHRAGM	3'-7"	3'-6"	3'-7"	
PD651(E)(S)	5	65	# 6	14'-6"	PIER 5 DIAPHRAGM	4'-0"	10'-6"		
PD851(E)	5	70	# 8	42'-5"	PIER 5 DIAPHRAGM	41'-1"	1'-4"		
ED651(E)(S)	2	65	# 6	27'-1"	END BENT 2	11'-6"	4'-1"		
ED652(E)	STR.	52	# 6	39'-9"	END BENT 2				
ED653(E)(S)	5	130	# 6	14'-6"	END BENT 2	10'-6"	4'-0"		

FOR BAR TYPES AND FABRICATION NOTES, SEE SHEET S011.

REVISION	DATE
3 CHANGED DIMENSIONS & BARS	12/09/13

DATE: NOVEMBER 15, 2013 — CHECKED BY
DESIGNED BY: B.T. DRECKMAN — C.M. GREENWELL
DETAILED BY: L.A. BEATTIE — B.T. DRECKMAN

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 — CROSSING: KENTUCKY LAKE

SUPERSTRUCTURE – BILL OF REINFORCEMENT

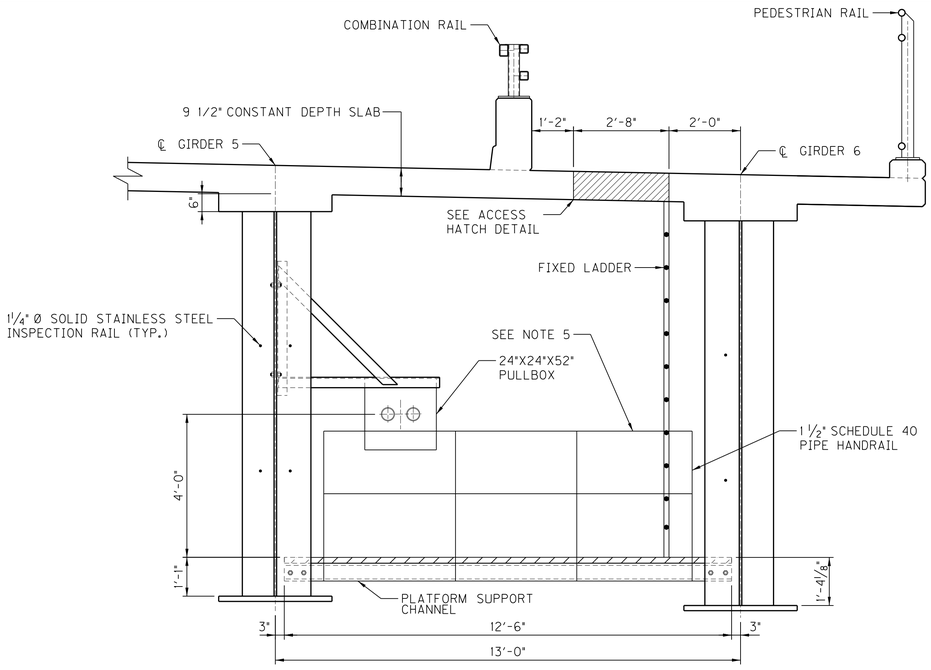
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01–180.70

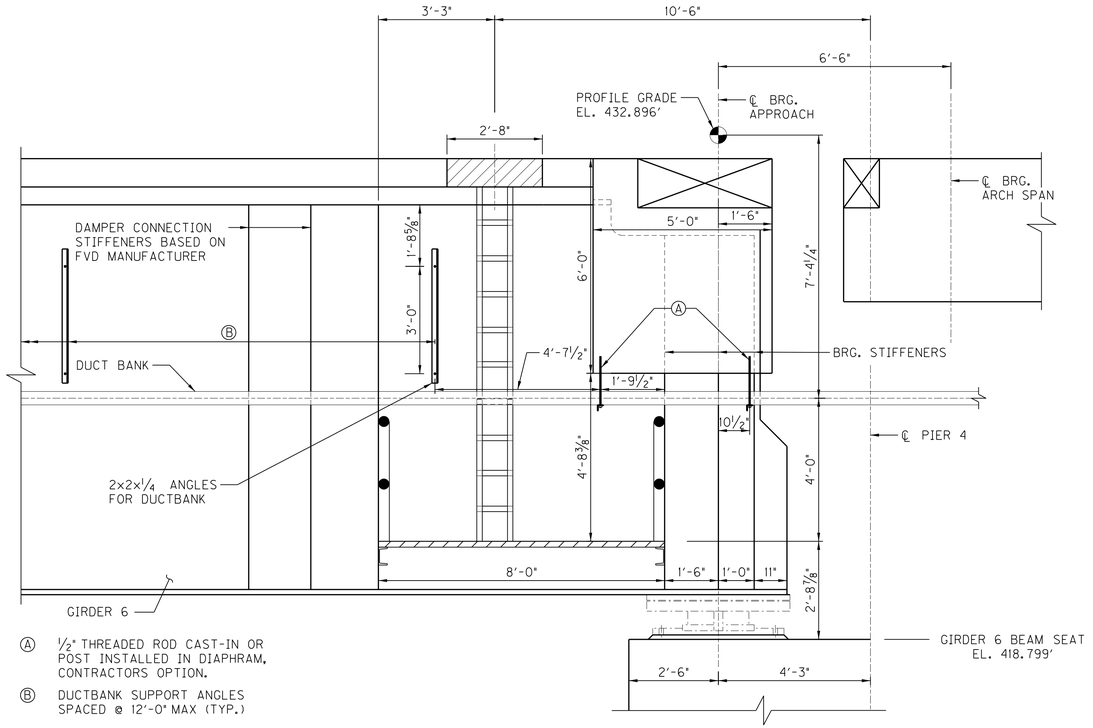
PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S238
DRAWING NO. 24686

MicroStation v8.11.7.443
E-SHEET NAME:
USER: tim-e
DATE PLOTTED: July 27, 2011
12/11/2013 1:38:25 PM
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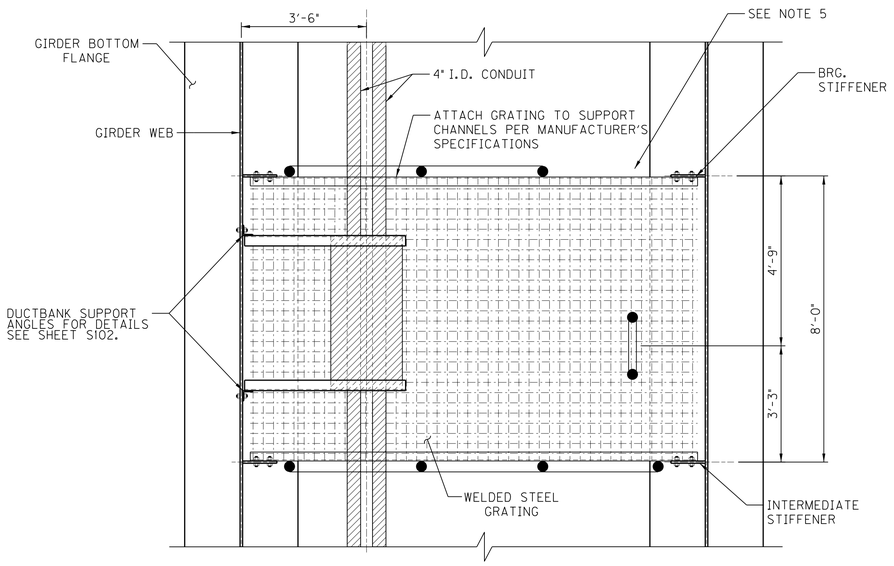
SECTION OF BAY 5
(LOOKING AHEAD STATION)



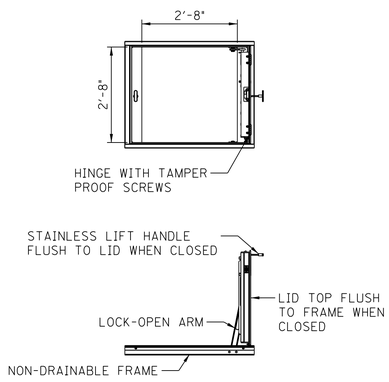
Ⓐ ½" THREADED ROD CAST-IN OR POST INSTALLED IN DIAPHRAM, CONTRACTORS OPTION.

Ⓑ DUCTBANK SUPPORT ANGLES SPACED @ 12'-0" MAX (TYP.)

PROFILE AT PIER 4 SHOWING UTILITY PLATFORM
(PIER 5 SIMILAR)



PLAN



ACCESS HATCH DETAIL

UTILITY PLATFORM NOTES:

1. SHOP DRAWINGS SHOWING CONNECTIONS AND MEMBER SIZES SHALL BE SUBMITTED TO THE ENGINEER WITH THE STEEL GIRDER SHOP DRAWINGS.
2. DESIGN LOADS SHALL BE IN ACCORDANCE WITH ASCE 7-c.e. EXCEPT THE MINIMUM LIVE LOAD SHALL BE TWO 300 lb CONCENTRATED LOADS IN ADDITION TO 40 psf UNIFORM LOAD.
3. ALL STEEL SHALL BE PAINTED TO MATCH GIRDERS.
4. PLATFORM SUPPORT CHANNELS SHALL BE BOLTED TO GIRDER STIFFENERS. WELDING TO THE GIRDERS SHALL NOT BE PERMITTED.
5. PROVIDE OPENING ON UTILITY PLATFORM AT PIERS 4 AND 5 FOR INSPECTION ACCESS TO PIER CAPS.
6. THE DESIGN OF THE UTILITY PLATFORM AND ITS COMPONENTS, INCLUDING THE HATCH, LADDER, RAILING, FRAMING, PULL BOX, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR CONTRACTOR'S ENGINEER. THE DESIGN SHALL BE PREPARED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF KENTUCKY. COST FOR THE DESIGN SHALL BE INCLUDED IN INSTALL-AT&T DUCTBANK.

ACCESS HATCH NOTES:

1. UNIT SHALL BE DESIGNED TO BE CAST IN CONCRETE AND BE RATED FOR H20 WHEEL LOAD.
2. UNIT SHALL BE DUSTPROOF WITH NO SEALS ON LID TO FRAME.
3. ALL FASTENERS AND HARDWARE SHALL BE A316 STAINLESS STEEL.
4. SLAM LOCK LATCH SHALL BE PROVIDED WITH A TAMPER PROOF PLUG INSTALLED IN LID.
5. ASSEMBLY SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

REVISION	DATE

DATE: DECEMBER 9, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	D.H. DEITZ
DETAILED BY: R.M. DAMON	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

GRATED UTILITY PLATFORM DETAILS

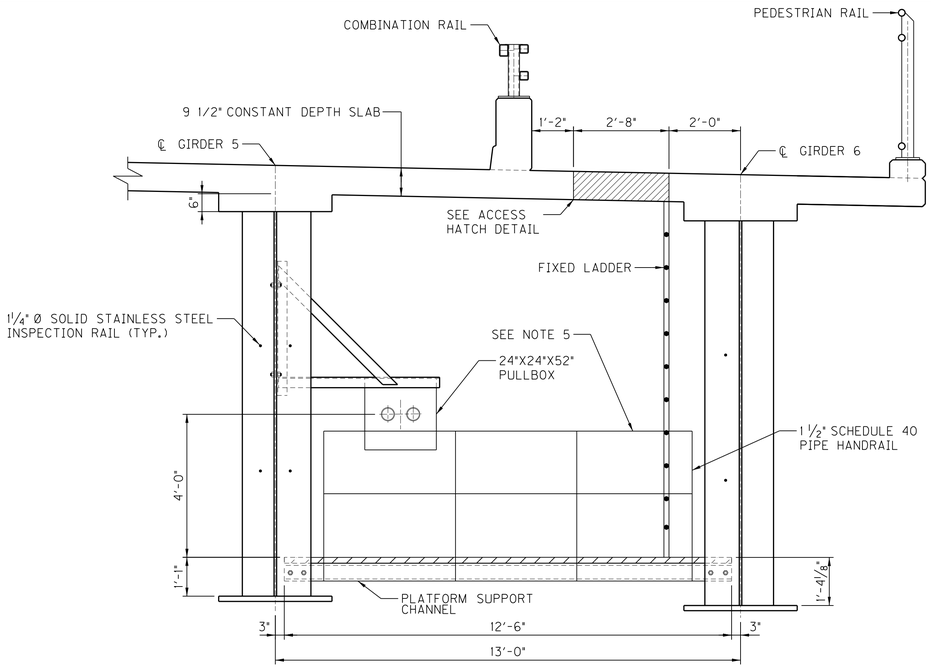
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

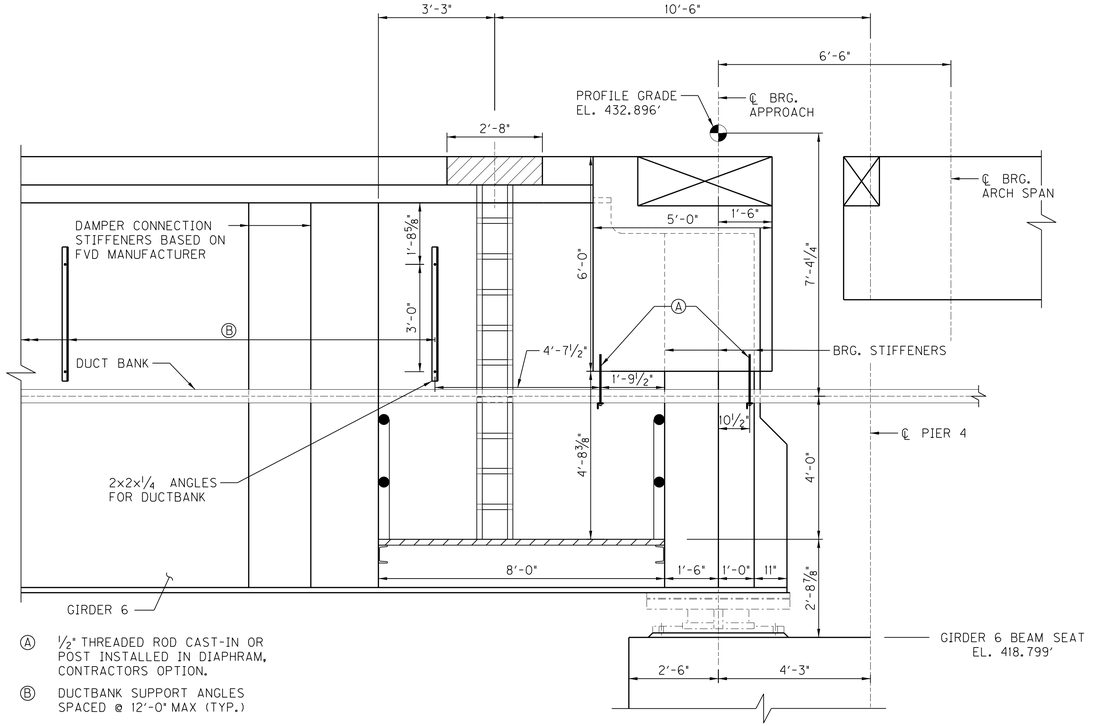
SHEET NO. S258

DRAWING NO. 24686

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12/11/2013 2:27:59 PM
USER: tim-e
DATE PLOTTED: July 27, 2011
FILE NAME: J:\KDOT\LAKE_BRIDGES\STRUCTV\FINAL DESIGN\KY LAKE\DGN\ADDENDA\KYTC_STRUCT_2D_IFBASE.DGN
E-SHEET NAME:
MicroStation v8.11.7.443



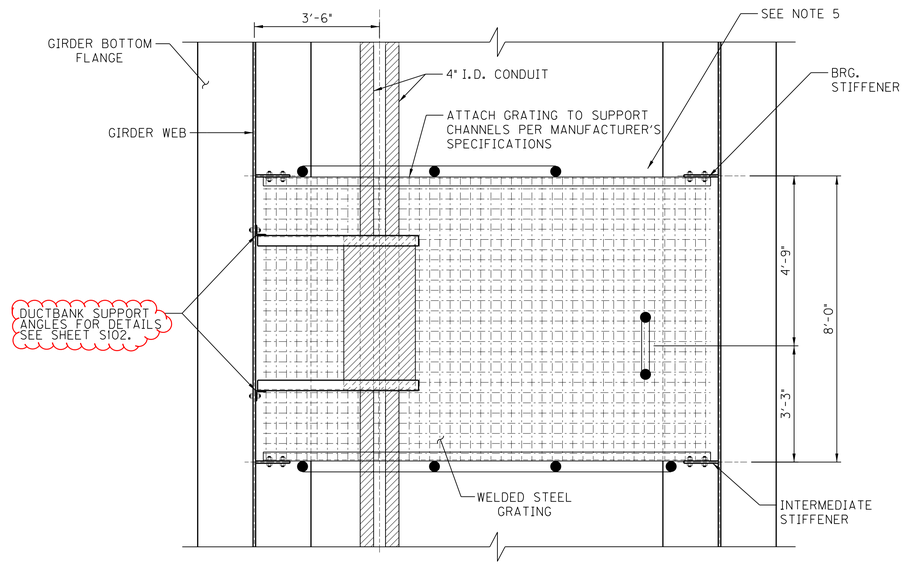
SECTION OF BAY 5
(LOOKING AHEAD STATION)



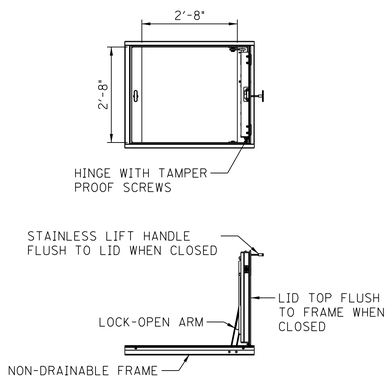
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3. CHANGED & ADDED NOTES	12/09/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: D.E. RUST	D.H. DEITZ
DETAILED BY: R.M. DAMON	D.E. RUST

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 | CROSSING: KENTUCKY LAKE

GRATED UTILITY PLATFORM DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

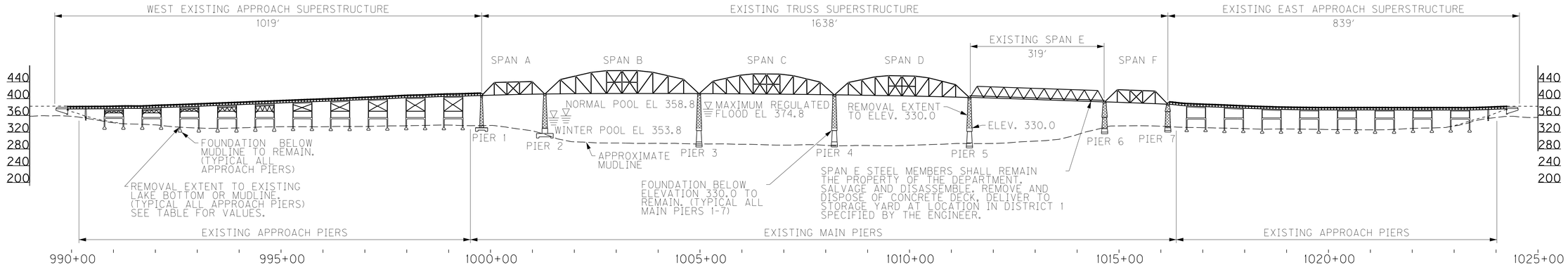
ITEM NUMBER
01–180.70

PREPARED BY
PALMER ENGINEERING CO.

SHEET NO. S258

DRAWING NO. 24686

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USER: tim-e
DATE PLOTTED: July 27, 2011
12/5/2013 4:13:13 PM
E-SHEET NAME:
MicroStation v8.11.7.443



ELEVATION VIEW

TABLE OF APPORXIMATE PIER ELEVATIONS		
PIER NUMBER	APPROXIMATE MUDLINE	REMOVAL EXTENT ELEVATION
WEST APPROACH 1	353′	353′
WEST APPROACH 2	346′	346′
WEST APPROACH 3	340′	340′
WEST APPROACH 4	339′	339′
WEST APPROACH 5	336′	336′
WEST APPROACH 6	332′	332′
WEST APPROACH 7	330′	330′
WEST APPROACH 8	329′	329′
WEST APPROACH 9	330′	330′
WEST APPROACH 10	332′	332′
WEST APPROACH 11	333′	333′
WEST APPROACH 12	333′	333′
WEST APPROACH 13	333′	333′
WEST APPROACH 14	333′	333′
WEST APPROACH 15	334′	334′
WEST APPROACH 16	334′	334′
WEST APPROACH 17	335′	335′
WEST APPROACH 18	335′	335′
WEST APPROACH 19	336′	336′
WEST APPROACH 20	337′	337′
WEST APPROACH 21	336′	336′
MAIN PIER 1	336′	330′
MAIN PIER 2	308′	330′
MAIN PIER 3	292′	330′
MAIN PIER 4	288′	330′
MAIN PIER 5	293′	330′
MAIN PIER 6	330′	330′
MAIN PIER 7	333′	330′
EAST APPROACH 1	331′	331′
EAST APPROACH 2	331′	331′
EAST APPROACH 3	330′	330′
EAST APPROACH 4	329′	329′
EAST APPROACH 5	327′	327′
EAST APPROACH 6	328′	328′
EAST APPROACH 7	327′	327′
EAST APPROACH 8	327′	327′
EAST APPROACH 9	326′	326′
EAST APPROACH 10	326′	326′
EAST APPROACH 11	326′	326′
EAST APPROACH 12	327′	327′
EAST APPROACH 13	329′	329′
EAST APPROACH 14	330′	330′
EAST APPROACH 15	334′	334′
EAST APPROACH 16	343′	343′
EAST APPROACH 17	353′	353′

NOTES

1. SEE SPECIAL NOTE FOR REMOVAL OF EXISTING BRIDGE.
2. REMOVING THE DEEP WATER CHANNEL PIERS SHOULD BE DONE TO CLEAR EL.330.0.
3. APPROACH SPAN PIERS SHOULD BE REMOVED TO THE SURROUNDING BOTTOM ELEVATION OR MUD LINE.
4. THE APPROACH SUPERSTRUCTURE LENGTH INCLUDES THE VAULTED ABUTMENT.
5. REMOVE THE ENTIRE ABUTMENT COMPRISED OF WINGWALLS, T-BEAM DECK SLAB, BACKWALL AND PILE CAPS. CUT OFF PILES TWO FEET BELOW FINAL GRADE.
6. THE EXISTING BRIDGE PLANS, INCLUDING MODIFICATIONS TO RAISE THE BRIDGE FOR THE LAKE, WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER UPON REQUEST.

⚠ ADDENDUM 3	12/11/13
REVISION	DATE
DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: GDS	CDW
DETAILED BY: CEW	GDS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

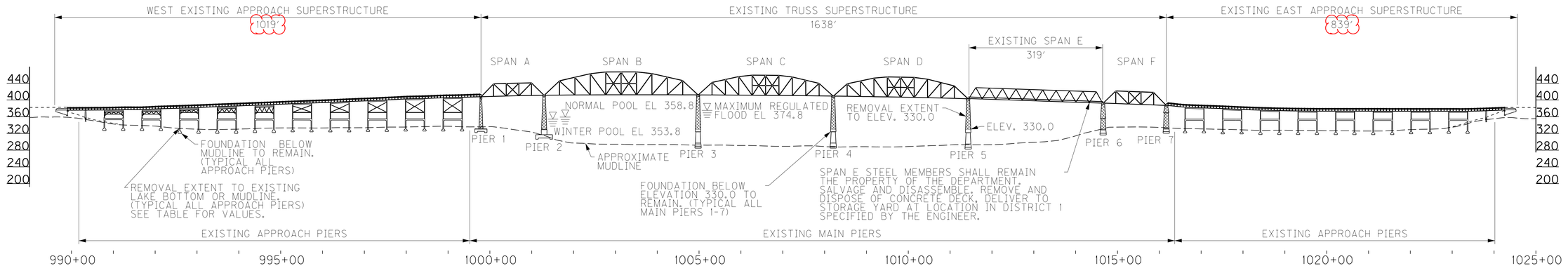
REMOVAL OF BRIDGE STRUCTURE

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S259
DRAWING NO. 24686

MicroStation v8.11.9.459 E-SHEET NAME: S24686 259 USER: CWethington DATE PLOTTED: November 21, 2013 FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 DEMO.DGN



ELEVATION VIEW

TABLE OF APPORXIMATE PIER ELEVATIONS		
PIER NUMBER	APPROXIMATE MUDLINE	REMOVAL EXTENT ELEVATION
WEST APPROACH 1	353′	353′
WEST APPROACH 2	346′	346′
WEST APPROACH 3	340′	340′
WEST APPROACH 4	339′	339′
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NOTES

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REVISION	DATE
⚠ ADDENDUM 3	12/11/13

DATE: NOVEMBER 15, 2013 | CHECKED BY

DESIGNED BY: GDS | CDW

DETAILED BY: CEW | GDS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE **US68** | CROSSING **KENTUCKY LAKE**

REMOVAL OF BRIDGE STRUCTURE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR., INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S259
DRAWING NO. 24686

MicroStation v8.11.9.459 | E-SHEET NAME: S24686 259 | USER: CWethington DATE PLOTTED: November 21, 2013 | FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 DEMO.DGN

NAVIGATION LIGHTING

GENERAL:

THE CENTER CHANNEL NAVIGATION LIGHT SHALL BE DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING CENTER OF CHANNEL FOR FIXED SPANS, AND SHALL MEET OR EXCEED ALL COAST GUARD RECOMMENDATIONS AND REQUIREMENTS PERTAINING TO CENTER OF CHANNEL MARKING SIGNALS.

THE CHANNEL MARGIN LIGHT SHALL BE DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING THE CHANNEL MARGIN, AND SHALL MEET OR EXCEED ALL COAST GUARD RECOMMENDATIONS AND REQUIREMENTS PERTAINING TO CHANNEL MARGIN AND OBSTRUCTION MARKING SIGNALS.

HOUSING AND GENERAL CONSTRUCTION:

THE HOUSING SHALL BE OF CAST ALUMINUM. CASTING ALLOY USED SHALL BE SUITABLE FOR MARINE ENVIRONMENT. CONSTRUCTION SHALL BE RAIN -TIGHT AND FULLY GASKETED. THE LIGHT ASSEMBLY SHALL BE DESIGNED FOR HEAVY DUTY, LONG LIFE SERVICE. DESIGN SHALL PROVIDE READY ACCESS FOR LAMP SERVICE.

LENS:

LENS SHALL BE TEMPERED FRESNEL GLASS. INSIDE LENS DIAMETER SHALL MEASURE APPROXIMATELY 7 INCHES, OUTSIDE LENS DIAMETER SHALL MEASURE APPROXIMATELY 8 INCHES. LENS SHALL HAVE A WIDE ANGLE OF DIVERGENCE SUITABLE FOR HIGH MOUNTING ON BRIDGES OR STRUCTURES. THE ANGLE OF DIVERGENCE SHALL NOT BE LESS THAN 27 DEGREES.

CENTER CHANNEL LIGHT LENSES SECTION SHALL BE 360° MARINE GREEN.

CHANNEL MARGIN LIGHT LENSES SHALL BE 180° RED.

LAMPS AND RECEPTACLES:

LAMPS SHALL HAVE A RATED LIFE OF 100,000 HOURS AND SHALL BE OF A ROUGH SERVICE DESIGN WITH MULTIPLE FILAMENT SUPPORT FINGERS. MEDIUM BASE RECEPTACLE SHALL BE RATED FOR 250V, 660W, AND SHALL BE PORCELAIN WITH A NICKEL-PLATED BRASS SHELL TO RESIST LAMP FREEZING.

CENTER CHANNEL LAMP SHALL BE 1.44 W, 120 VOLT, LED A-19 SHAPE, CLEAR, WITH DUAL LAMPS AND RECEPTACLE.

CHANNEL MARGIN LAMPS SHALL BE 1.8 W, 120 VOLT, LED A-19 SHAPE, CLEAR.

STEM:

CENTER CHANNEL LIGHTS AND CHANNEL MARGIN LIGHTS ON PIERS 1-3 AND 6-9 SHALL BE AS FOLLOWS:

LAMP FIXTURE HEAD SHALL BE SUSPENDED FROM THE SWIVEL ON A 1½ INCHES SCHEDULE 40 PIPE, 1.90 INCHES O.D. (48MM). PIPE MATERIAL SHALL BE GALVANIZED STEEL. DIMENSION FROM CENTER OF SWIVEL TO FOCAL PLANE OF LENS SHALL BE 48 INCHES (1219MM).

CHANNEL MARGIN LIGHTS ON PIERS 4 AND 5 SHALL BE AS FOLLOWS:

LAMP FIXTURE AND BASE SHALL BE INSTALLED ON THE TOPS OF THE PIERS AS SHOWN IN THE DETAILS OF THIS PLAN SET AND SHALL BE MOUNTED ON THE 1½ INCHES SCHEDULE 40 PIPE, 1.90" O.D. (48MM) PIPE MATERIAL SHALL BE GALVANIZED STEEL.

SWIVEL:

THE SWIVEL DESIGN SHALL PROVIDE FOR ALL WIRING TO BE COMPLETELY CONTAINED INSIDE THE LIGHT ASSEMBLY. GASKETS AND O-RINGS SHALL BE USED TO PROVIDE A WEATHER-TIGHT ASSEMBLY. SWIVEL SHALL BE OF HEAVY-DUTY CONSTRUCTION, CAST OF THE SAME MATERIAL AS THE FIXTURE HEAD. SPINDLE SHALL BE OF STAINLESS STEEL.

AUTOMATIC LATCH:

AN AUTOMATIC LATCH SHALL HOLD THE LIGHT SECURELY IN NORMAL OPERATING AND SERVICE POSITIONS. A FIRM PULL ON THE SERVICE CHAIN SHALL AUTOMATICALLY RELEASE THE LATCH, ALLOWING THE FIXTURE TO PIVOT. AS THE LIGHT IS RAISED, LATCH SHALL AUTOMATICALLY ENGAGE TO HOLD LIGHT IN THE SERVICE POSITION. SERVICE POSITION SHALL BE 30° FROM VERTICAL. FIXTURE ASSEMBLY SHALL BE DUAL -HANDED (I.E. LIGHT MAY BE PULLED UP FROM EITHER SIDE).

MOUNTING:

BASE SHALL BE CAST OF THE SAME MATERIAL AS THE FIXTURE HEAD. LIGHT ASSEMBLY SHALL MOUNT VIA FOUR 1/2 INCH DIAMETER BOLTS THROUGH THE BASE, PROVIDED BY INSTALLER TO SUIT INSTALLATION.

SERVICE CHAIN:

A STAINLESS STEEL, #25 SASH TYPE SERVICE CHAIN SHALL BE PROVIDED TO FACILITATE RAISING AND LOWERING LIGHTS FOR SERVICE. THIS DOES NOT APPLY TO CHANNEL MARGIN LIGHTS ON PIERS 4 AND 5.

JUNCTION BOX:

A CAST JUNCTION BOX WITH GASKETED ACCESS COVER SHALL BE PROVIDED. JUNCTION BOX SHALL BE OF THE SAME MATERIAL AS THE FIXTURE ASSEMBLY AND SHALL MATCH THE NAVIGATION LIGHT BASE FOOTPRINT. ORIENTATION OF JUNCTION BOX SHALL BE CAPABLE OF ROTATION IN 90 DEGREE INCREMENTS.

WIRELESS MONITORING SYSTEM

MONITORING SYSTEM:

A MONITORING SYSTEM SHALL BE INSTALLED TO MONITOR THE STATUS OF EACH INDIVIDUAL NAVIGATION LIGHTING UNITS. THE LIGHTING MONITORING SYSTEM SHALL CONSIST OF AN AUTANI MANAGER APPLIANCE AND ENERGY CENTER SOFTWARE OR APPROVED EQUAL. THIS SYSTEM SHALL BE WIRELESS AND WILL BE POWERED BY THE 12 VOLT FEED FROM THE CONTROL CABINET TO THE INDIVIDUAL NAVIGATION LIGHT VIA A MONITORING MODULE MOUNTED INSIDE THE CONTROL CABINET.

THE MONITORING SYSTEM SHALL BE INSTALLED IN THE CONTROL CABINET ON A SHELF DEDICATED TO THE MONITORING SYSTEM. THE SECTION IN THE CONTROL CABINET THAT HOUSES THE MONITORING SYSTEM WILL HAVE THE NECESSARY COMMUNICATIONS EQUIPMENT TO RELAY MONITORING INFORMATION TO THE DISTRICT OFFICE BY STANDARD WIRELESS COMMUNICATION. THE MONITORING SYSTEM SHALL BE CAPABLE OF SENSING CURRENT FLOW AND VOLTAGE FOR EACH OF THE NAVIGATION LIGHTS, AS WELL AS FAULT CONDITIONS. THE MONITORING SYSTEM SHALL ALSO MONITOR THE STATUS OF THE SOLAR POWERED BATTERY BACK-UP SYSTEM.

THE CONTRACTOR SHALL COORDINATE INTERCONNECTION OF MONITORING SYSTEM WITH THE NAVIGATION LIGHTING SYSTEM TO ENSURE SEAMLESS OPERATION OF BOTH SYSTEMS.

THE PURPOSE OF THIS MONITORING SYSTEM IS TO PROVIDE A COMPLETE, PROGRAMMABLE, INTELLIGENT, NETWORKABLE, AND EXPANDABLE LOW VOLTAGE MONITORING SYSTEM FOR THE NAVIGATIONAL LIGHTING AS DESCRIBED HEREIN AND SHOWN ON THE SCHEMATIC DRAWINGS AND SCHEDULES.

THE CONTRACTOR WILL FURNISH AND INSTALL A COMPLETE MICROPROCESSOR BASED, ADDRESSABLE, NETWORKABLE DISTRIBUTED INTELLIGENT LOW VOLTAGE LIGHTING COMMUNICATION SYSTEM FOR CENTRALIZED MONITORING. THE SYSTEM SHALL INCLUDE THE FOLLOWING, BUT NOT LIMITED TO: RELAYS, CONTROLLERS, LIGHT LEVEL SENSORS, RADIO FREQUENCY TRANSCEIVERS, LOW VOLTAGE CONTROL POWER AND DATA LINE WIRING, SOFTWARE, PROGRAMMING, CUSTOM GRAPHICAL SCREENS, AND MISCELLANEOUS COMPONENTS AS REQUIRED FOR A COMPLETE, OPERABLE LIGHTING MONITORING SYSTEM. ALL SYSTEM COMPONENTS SHALL ARRIVE AT THE JOB SITE COMPLETELY FACTORY PRE-WIRED AND READY FOR FIELD INSTALLATION. ALL CONNECTIONS SHALL BE CLEARLY AND PERMANENTLY LABELED TO FACILITATE CORRECT AND EASY TERMINATION OF EQUIPMENT.

THE SYSTEM SHALL HAVE A ONE YEAR WARRANTY ON PARTS AND MATERIALS. THE WARRANTY SHALL START ON THE DATE OF ACCEPTANCE OF THE JOB BY THE KENTUCKY TRANSPORTATION CABINET. THE NAVIGATIONAL LIGHTING MONITORING SYSTEM SHALL CONSIST OF A WIRELESS NETWORK. WIRELESS MONITORING SHALL BE POSSIBLE FROM A 5 MILE LINE OF SIGHT DISTANCE TO OR FROM THE CLOSEST TRANSCEIVER IN AN URBAN ENVIRONMENT OR WITH WIRELESS REPEATERS, A MAXIMUM DETERMINED BY APPLICATION. FULLY PROGRAMMABLE CIRCUIT DIAGNOSTIC CAPABILITY AND ALARMING VIA PERSONAL COMPUTER (PC) SHALL BE POSSIBLE FOR THE FIXTURES.

THE CURRENT TRANSFORMERS SHALL BE HARDWIRED FROM THE LIGHTING CONTROL SECTION TO THE MONITOR SYSTEM SECTION IN THE SAME CABINET.

THE MONITOR NETWORK SHALL CONFORM TO THE FOLLOWING:

WIRELESS MONITORS SHALL OPERATE WITH AN UNLICENSED FCC BAND, UTILIZING SPREAD SPECTRUM AND FREQUENCY HOPPING TECHNOLOGY. LIGHTING MONITORS SHALL BE TRANSPARENT ACROSS MODEM, RJ-00, RS-232, USB, RS-485, ETHERNET (LAN), WIRED, AND WIRELESS LIGHTING MONITORING NETWORK.

ALL OF THE DATA ACCUMULATION EXECUTED OVER THE WIRELESS RF NETWORK SHALL BE AUTOMATICALLY ERROR CHECKED. SYSTEMS THAT DO NOT PROVIDE SEND/ACKNOWLEDGE ERROR CHECKING SHALL NOT BE ACCEPTABLE. NETWORK SHALL BE VIA ONE-WAY HIGH-SPEED DIGITAL COMMUNICATIONS.

PASSWORD PROTECTED ACCESS VIA THE MODEM SHALL BE POSSIBLE FOR INTEROPERABLE CONNECTION FROM AN OFF-SITE BASED PC FOR FACTORY PROGRAMMING AND SUPPORT AND OWNER ACCESS.

SYSTEM COMMUNICATIONS SHALL INCLUDE THE MODEM AND BRIDGE TO THE LIGHTING MONITORING SYSTEM. FACTORY PROGRAMMING AND TROUBLESHOOTING ASSISTANCE SHALL BE AVAILABLE VIA THE MODEM USING A DEDICATED, FAX COMPATIBLE, ANALOG TELEPHONE LINE.

THE SYSTEM SHALL BE CAPABLE OF ACCEPTING ANY NUMBER OF COMMANDS OR COMMAND SEQUENCES ALLOWING PROGRAMS TO RUN CONTINUOUSLY.

CONTRACTOR SHALL FURNISH AND INSTALL ENCLOSURES, WIRELESS ROUTER, ANTENNA, ANTENNA CABLING, POWER SUPPLY, DATA CABLES, AND ALL CONNECTORS AND HARDWARE REQUIRED FOR COMMUNICATIONS. WIRELESS ROUTER SHALL BE SIERRA WIRELESS RAVEN XT OR APPROVED EQUAL AND SHALL SUPPORT AT&T EDGE/3G SERVICES. ANTENNA SHALL BE LOIRD ANTENEX TRAB806/17103P OR APPROVED EQUAL.

THE CONTRACTOR SHALL DELIVER THE ROUTER TO CENTRAL OFFICE TRAFFIC OPERATIONS FOR PROVISIONING ON THE KYTC APN. THE CABINET WILL PROVISION THE ROUTER WITHIN 4 WEEKS OF RECEIPT AND RETURN VIA MAIL TO THE CONTRACTOR.

THE CABINET WILL PAY FOR THE MONTHLY PLAN CHARGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIGURING THE ROUTER. THE CONTRACTOR SHALL CONFIGURE THE ROUTER TO ALLOW REMOTE ACCESS BY THE CABINET.

PROGRAMMABLE LIGHTING DIAGNOSTICS RELAYS:

INDIVIDUALLY PROGRAMMABLE RELAY/DIAGNOSTIC MODULES SHALL BE MICROPROCESSOR BASED, NETWORKABLE, AND ABLE TO SWITCH CIRCUITS, AS REQUIRED. RELAY MODULES SHALL BE HOUSE IN APPROPRIATE ENCLOSURES, FULLY PRE-WIRED. ENCLOSURES SHALL BE FABRICATED FROM ALUMINUM FOR ATTACHMENT TO THE BRACKET ON WHICH THE NAVIGATION CONTROL CABINET IS MOUNTED.

ALL MONITOR MODULES SHOULD BE CAPABLE OF CURRENT AND VOLTAGE SENSING AND ON/OFF STATUS REPORT. THE LIGHTING MONITORING SYSTEM SOFTWARE SHALL AUTOMATICALLY ACCUMULATE THE DATA FROM ALL DIAGNOSTICS SENSORS IN THE SYSTEM. THE INFORMATION SHALL BE ACCESSIBLE IN THE FORM OF A DATABASE OR SPREADSHEET ALLOWING THE USER TO CONFIGURE HOW THE INFORMATION IS PROCESSED AND ARCHIVED.

THE SYSTEM SHALL BE CAPABLE OF SENSING CURRENT AND VOLTAGE, AS WELL AS FAULT CONDITIONS.

EACH RELAY/DIAGNOSTIC MODULE SHALL BE SELF-CONTAINED AND OPERATE INDEPENDENTLY FROM OTHER SERVICES ON THE NETWORK. IF ONE MODULE FAILS FOR ANY REASON, ONLY THE FUNCTIONS ASSOCIATED WITH THAT MODULE ARE AFFECTED, THE REST OF THE SYSTEM CONTINUES TO OPERATE NORMALLY.

ALL CONTROL ENCLOSURES SHALL BE DESIGNED FOR SIMPLE REMOVAL AND REPLACEMENT WITHOUT THE NEED OF SPECIAL TOOLS OR REWIRING, OTHER THAN THE SIMPLE DISCONNECTION OR RECONNECTION.

EACH LIGHTING MONITOR SHALL BE EQUIPPED WITH A AN INTELLIGENT STAND ALONE MICROPROCESSOR CPU BOARD, WITH AN ON-BOARD COMMUNICATION PART, I/O CAPABILITY SUFFICIENT TO OPERATE THE REQUIRED NUMBER OF DEVICES WITHIN THE ENCLOSURE, PLUS SUPPORT EXTERIOR DEVICES AS NECESSARY.

NETWORKING:

UP TO 64,000 CONTROLLER NETWORKED ON A WIRELESS SYSTEM.

NONVOLATILE MEMORY:

PROGRAMMED DATA BEING STORED IN STATIC RAM SHALL BE PROTECTED FROM LOSS DURING POWER FAILURE. THE CPU BASED REAL TIME SHALL BE PROTECTED BY A RECHARGEABLE NICAD OR LITHIUM BATTERY CAPABLE OF WITHSTANDING UP TO A 30 DAY POWER LOSS.

PROGRAMMABLE WIRELESS RF LINKING:

PROVIDE WIRELESS LINKING EXPANDABILITY WITH WIRELESS CARD SLOT IN COMMUNICATIONS HUB. WIRELESS LINK SHALL PROVIDE FULL FUNCTION ZONE CONTROL AND DATA ACCUMULATION, DIAGNOSTICS, INCLUDING CURRENT SENSING, AND VOLTAGE SENSING.

WIRELESS COMMUNICATIONS SHALL BE BI-DIRECTIONAL. RFTRANSCEIVER SHALL OPERATE IN AN UNLICENSED FCC ISM BAND, FCC/IC CERTIFIED. RF RANGE SHALL BE A MINIMUM OF A MILE LINE OF SIGHT. MAXIMUM DISTANCES OF UP TO 20 MILES ARE SUBJECT TO URBAN ENVIRONMENTAL CONDITIONS AND OBSTRUCTIONS. SURGE PROTECTION SHALL BE A MINIMUM 2500 VOLTS TO GROUND. EQUIPMENT SHALL OPERATE AT A VOLTAGE OF 12 VDC. EQUIPMENT SHALL BE CAPABLE OF OPERATING AT TEMPERATURES RANGING FROM -40° C TO 65° C AND 95% RELATIVE HUMIDITY AND AT A RELATIVE HUMIDITY FROM 0-95% NON-CONDENSING. PROVIDE DEPENDENT RF LINK WHERE SPECIFIED, ONE FOR EACH TRANSCEIVER USED.

SYSTEM SOFTWARE:

PROVIDE LIGHTING CONTROL SOFTWARE FOR USE WITH IBM COMPATIBLE PC. SOFTWARE SHALL CONSIST OF SYSTEM SET UP SCREEN, SYSTEM MANAGER SCREEN, AND GRAPHIC CONTROL SCREEN.

CUSTOM GRAPHICAL SCREENS:

PROVIDE CUSTOM GRAPHICAL SITE SCREENS USING CAD DRAWINGS OF THE SITE PROVIDED BY THE KENTUCKY TRANSPORTATION CABINET TO SERVE AS BACKGROUNDS FOR THE SITE ZOOM SCREENS. PROVIDE A CUSTOM GRAPHICAL SCREEN FOR EACH INTERSECTION OF CONTROL. FROM THERE THE USER SHALL BE ABLE TO ACCESS EACH FIXTURE INDIVIDUALLY, VIEW FIXTURE STATUS, DIAGNOSTIC FILES AND DATA LOGS.

DATA ACCUMULATION AND ARCHIVES:

THE LIGHTING MONITOR SYSTEM SOFTWARE SHALL ALLOW ALL TYPES OF DATA FROM THE SYSTEM TO BE LOGGED AND ARCHIVED. DATA SHALL BE ACCESSIBLE VIA SPREADSHEET OR DATABASE AND CONTAIN THE FOLLOWING:

1. NAVIGATION LIGHTING
   - A. VOLTAGE LEVELS FOR EACH VOLTAGE SENSOR.
   - B. CURRENT DRAWN PER FIXTURE.
   - C. TRUE AND REAL POWER.
   - D. TIME AND DATE STAMPING, AS REQUIRED BY USER.
2. PATHWAY DELINEATION LIGHTING
   - A. CURRENT DRAWN FOR EACH FIXTURE.
   - B. TIME AND DATE STAMPING, AS REQUIRED BY THE USER.

ENCLOSURES:

EXPOSED WIRELESS TRANSCEIVER MODULES WILL BE WATER TIGHT, DIE CAST ALUMINUM.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SHOP DRAWINGS FOR CABINET, MOUNTING BRACKETS, AND OTHER STRUCTURAL ITEMS PRIOR TO FABRICATION OF THESE ITEMS.

FACTORY SERVICE SUPPORT AND START- UP:

THE MANUFACTURER MUST PROVIDE FACTORY ASSEMBLY AND TESTING OF ALL MONITOR STATIONS AND ASSORTED APPARATUS. MONITOR MODULES SHALL BE FACTORY PROGRAMMED PER PROJECT SPECIFICATIONS. ALL REQUIRED SOFTWARE SHALL BE INSTALLED PRIOR TO THE FACTORY SHIPMENT OR UPLOADED FROM THE FACTORY VIA MODEM LINK.

AN ON-SITE FACTORY START-UP BY QUALIFIED TECHNICIAN SHALL BE REQUIRED AND PROVIDED AS A PART OF THE SYSTEM PACKAGE. START-UP WILL NOT BE PERFORMED UNLESS AND UNTIL THE SYSTEM INSTALLATION IS COMPLETE AND A FAX COMPATIBLE PHONE LINE HAS BEEN INSTALLED FOR THE SYSTEM. START- UP SHALL INCLUDE SYSTEM INSPECTION, ADDITIONAL SOFTWARE INSTALLATION, IF NECESSARY, PROGRAM TESTING, TRAINING, AND TROUBLESHOOTING ASSISTANCE, IF SELECTED. SUPPORT VIA MODEM FROM FACTORY FOR DIRECT SYSTEM DIAGNOSIS AND PROGRAMMING ASSISTANCE WILL BE PROVIDED AT NO CHARGE UNTIL SUCH TIME AS THE FINAL ACCEPTANCE OF THE COMPLETE SYSTEM HAS BEEN ACHIEVED. THE MANUFACTURER SHALL PROVIDE A COMPLETE SUBMITTAL PACKAGE FOR APPROVAL PRIOR TO SHIPMENT. THE PACKAGE SHALL CONSIST OF PRODUCT CUTS AND SPECIFICATIONS, BILL OF MATERIALS, WARRANTY INFORMATION, WIRE RISER DIAGRAMS, AND FIELD WIRING INSTRUCTIONS. IN ADDITION TO THE SUBMITTAL A SET OF INSTALLATION, OPERATOR, AND MAINTENANCE MANUALS SHALL BE SHIPPED WITH THE

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2 ADDENDUM 2	12/5/13
3 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 CROSSING: KENTUCKY LAKE

LIGHTING NOTES

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY: BARR & PREVOST ENGINEERING | TESTING | SURVEYING

SHEET NO. S260

DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S260-S261-LIGHTING NOTES.DGN
USER: lthto
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

NAVIGATION LIGHTING

GENERAL:

THE CENTER CHANNEL NAVIGATION LIGHT SHALL BE DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING CENTER OF CHANNEL FOR FIXED SPANS, AND SHALL MEET OR EXCEED ALL COAST GUARD RECOMMENDATIONS AND REQUIREMENTS PERTAINING TO CENTER OF CHANNEL MARKING SIGNALS.

THE CHANNEL MARGIN LIGHT SHALL BE DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING THE CHANNEL MARGIN, AND SHALL MEET OR EXCEED ALL COAST GUARD RECOMMENDATIONS AND REQUIREMENTS PERTAINING TO CHANNEL MARGIN AND OBSTRUCTION MARKING SIGNALS.

HOUSING AND GENERAL CONSTRUCTION:

THE HOUSING SHALL BE OF CAST ALUMINUM. CASTING ALLOY USED SHALL BE SUITABLE FOR MARINE ENVIRONMENT. CONSTRUCTION SHALL BE RAIN -TIGHT AND FULLY GASKETED. THE LIGHT ASSEMBLY SHALL BE DESIGNED FOR HEAVY DUTY, LONG LIFE SERVICE. DESIGN SHALL PROVIDE READY ACCESS FOR LAMP SERVICE.

LENS:

LENS SHALL BE TEMPERED FRESNEL GLASS. INSIDE LENS DIAMETER SHALL MEASURE APPROXIMATELY 7 INCHES, OUTSIDE LENS DIAMETER SHALL MEASURE APPROXIMATELY 8 INCHES. LENS SHALL HAVE A WIDE ANGLE OF DIVERGENCE SUITABLE FOR HIGH MOUNTING ON BRIDGES OR STRUCTURES. THE ANGLE OF DIVERGENCE SHALL NOT BE LESS THAN 27 DEGREES.

CENTER CHANNEL LIGHT LENSES SECTION SHALL BE 360° MARINE GREEN.

CHANNEL MARGIN LIGHT LENSES SHALL BE 180° RED.

LAMPS AND RECEPTACLES:

LAMPS SHALL HAVE A RATED LIFE OF 100,000 HOURS AND SHALL BE OF A ROUGH SERVICE DESIGN WITH MULTIPLE FILAMENT SUPPORT FINGERS. MEDIUM BASE RECEPTACLE SHALL BE RATED FOR 250V, 660W, AND SHALL BE PORCELAIN WITH A NICKEL-PLATED BRASS SHELL TO RESIST LAMP FREEZING.

CENTER CHANNEL LAMP SHALL BE 1.44 W, 120 VOLT, LED A-19 SHAPE, CLEAR, WITH DUAL LAMPS AND RECEPTACLE.

CHANNEL MARGIN LAMPS SHALL BE 1.8 W, 120 VOLT, LED A-19 SHAPE, CLEAR.

STEM:

CENTER CHANNEL LIGHTS AND CHANNEL MARGIN LIGHTS ON PIERS 1-3 AND 6-9 SHALL BE AS FOLLOWS:

LAMP FIXTURE HEAD SHALL BE SUSPENDED FROM THE SWIVEL ON A 1½ INCHES SCHEDULE 40 PIPE, 1.90 INCHES O.D. (48MM). PIPE MATERIAL SHALL BE GALVANIZED STEEL. DIMENSION FROM CENTER OF SWIVEL TO FOCAL PLANE OF LENS SHALL BE 48 INCHES (1219MM).

CHANNEL MARGIN LIGHTS ON PIERS 4 AND 5 SHALL BE AS FOLLOWS:

LAMP FIXTURE AND BASE SHALL BE INSTALLED ON THE TOPS OF THE PIERS AS SHOWN IN THE DETAILS OF THIS PLAN SET AND SHALL BE MOUNTED ON THE 1½ INCHES SCHEDULE 40 PIPE, 1.90" O.D. (48MM) PIPE MATERIAL SHALL BE GALVANIZED STEEL.

SWIVEL:

THE SWIVEL DESIGN SHALL PROVIDE FOR ALL WIRING TO BE COMPLETELY CONTAINED INSIDE THE LIGHT ASSEMBLY. GASKETS AND O-RINGS SHALL BE USED TO PROVIDE A WEATHER-TIGHT ASSEMBLY. SWIVEL SHALL BE OF HEAVY-DUTY CONSTRUCTION, CAST OF THE SAME MATERIAL AS THE FIXTURE HEAD. SPINDLE SHALL BE OF STAINLESS STEEL.

AUTOMATIC LATCH:

AN AUTOMATIC LATCH SHALL HOLD THE LIGHT SECURELY IN NORMAL OPERATING AND SERVICE POSITIONS. A FIRM PULL ON THE SERVICE CHAIN SHALL AUTOMATICALLY RELEASE THE LATCH, ALLOWING THE FIXTURE TO PIVOT. AS THE LIGHT IS RAISED, LATCH SHALL AUTOMATICALLY ENGAGE TO HOLD LIGHT IN THE SERVICE POSITION. SERVICE POSITION SHALL BE 30° FROM VERTICAL. FIXTURE ASSEMBLY SHALL BE DUAL -HANDED (I.E. LIGHT MAY BE PULLED UP FROM EITHER SIDE).

MOUNTING:

BASE SHALL BE CAST OF THE SAME MATERIAL AS THE FIXTURE HEAD. LIGHT ASSEMBLY SHALL MOUNT VIA FOUR 1/2 INCH DIAMETER BOLTS THROUGH THE BASE, PROVIDED BY INSTALLER TO SUIT INSTALLATION.

SERVICE CHAIN:

A STAINLESS STEEL, #25 SASH TYPE SERVICE CHAIN SHALL BE PROVIDED TO FACILITATE RAISING AND LOWERING LIGHTS FOR SERVICE. THIS DOES NOT APPLY TO CHANNEL MARGIN LIGHTS ON PIERS 4 AND 5.

JUNCTION BOX:

A CAST JUNCTION BOX WITH GASKETED ACCESS COVER SHALL BE PROVIDED. JUNCTION BOX SHALL BE OF THE SAME MATERIAL AS THE FIXTURE ASSEMBLY AND SHALL MATCH THE NAVIGATION LIGHT BASE FOOTPRINT. ORIENTATION OF JUNCTION BOX SHALL BE CAPABLE OF ROTATION IN 90 DEGREE INCREMENTS.

WIRELESS MONITORING SYSTEM

MONITORING SYSTEM:

A MONITORING SYSTEM SHALL BE INSTALLED TO MONITOR THE STATUS OF EACH INDIVIDUAL NAVIGATION LIGHTING UNITS. THE LIGHTING MONITORING SYSTEM SHALL CONSIST OF AN AUTANI MANAGER APPLIANCE AND ENERGY CENTER SOFTWARE OR APPROVED EQUAL. THIS SYSTEM SHALL BE WIRELESS AND WILL BE POWERED BY THE 12 VOLT FEED FROM THE CONTROL CABINET TO THE INDIVIDUAL NAVIGATION LIGHT VIA A MONITORING MODULE MOUNTED INSIDE THE CONTROL CABINET.

THE MONITORING SYSTEM SHALL BE INSTALLED IN THE CONTROL CABINET ON A SHELF DEDICATED TO THE MONITORING SYSTEM. THE SECTION IN THE CONTROL CABINET THAT HOUSES THE MONITORING SYSTEM WILL HAVE THE NECESSARY COMMUNICATIONS EQUIPMENT TO RELAY MONITORING INFORMATION TO THE DISTRICT OFFICE BY STANDARD WIRELESS COMMUNICATION. THE MONITORING SYSTEM SHALL BE CAPABLE OF SENSING CURRENT FLOW AND VOLTAGE FOR EACH OF THE NAVIGATION LIGHTS, AS WELL AS FAULT CONDITIONS. THE MONITORING SYSTEM SHALL ALSO MONITOR THE STATUS OF THE SOLAR POWERED BATTERY BACK-UP SYSTEM.

THE CONTRACTOR SHALL COORDINATE INTERCONNECTION OF MONITORING SYSTEM WITH THE NAVIGATION LIGHTING SYSTEM TO ENSURE SEAMLESS OPERATION OF BOTH SYSTEMS.

THE PURPOSE OF THIS MONITORING SYSTEM IS TO PROVIDE A COMPLETE, PROGRAMMABLE, INTELLIGENT, NETWORKABLE, AND EXPANDABLE LOW VOLTAGE MONITORING SYSTEM FOR THE NAVIGATIONAL LIGHTING AS DESCRIBED HEREIN AND SHOWN ON THE SCHEMATIC DRAWINGS AND SCHEDULES.

THE CONTRACTOR WILL FURNISH AND INSTALL A COMPLETE MICROPROCESSOR BASED, ADDRESSABLE, NETWORKABLE DISTRIBUTED INTELLIGENT LOW VOLTAGE LIGHTING COMMUNICATION SYSTEM FOR CENTRALIZED MONITORING. THE SYSTEM SHALL INCLUDE THE FOLLOWING, BUT NOT LIMITED TO: RELAYS, CONTROLLERS, LIGHT LEVEL SENSORS, RADIO FREQUENCY TRANSCEIVERS, LOW VOLTAGE CONTROL POWER AND DATA LINE WIRING, SOFTWARE, PROGRAMMING, CUSTOM GRAPHICAL SCREENS, AND MISCELLANEOUS COMPONENTS AS REQUIRED FOR A COMPLETE, OPERABLE LIGHTING MONITORING SYSTEM. ALL SYSTEM COMPONENTS SHALL ARRIVE AT THE JOB SITE COMPLETELY FACTORY PRE-WIRED AND READY FOR FIELD INSTALLATION. ALL CONNECTIONS SHALL BE CLEARLY AND PERMANENTLY LABELED TO FACILITATE CORRECT AND EASY TERMINATION OF EQUIPMENT.

THE SYSTEM SHALL HAVE A ONE YEAR WARRANTY ON PARTS AND MATERIALS. THE WARRANTY SHALL START ON THE DATE OF ACCEPTANCE OF THE JOB BY THE KENTUCKY TRANSPORTATION CABINET. THE NAVIGATIONAL LIGHTING MONITORING SYSTEM SHALL CONSIST OF A WIRELESS NETWORK. WIRELESS MONITORING SHALL BE POSSIBLE FROM A 5 MILE LINE OF SIGHT DISTANCE TO OR FROM THE CLOSEST TRANSCEIVER IN AN URBAN ENVIRONMENT OR WITH WIRELESS REPEATERS, A MAXIMUM DETERMINED BY APPLICATION. FULLY PROGRAMMABLE CIRCUIT DIAGNOSTIC CAPABILITY AND ALARMING VIA PERSONAL COMPUTER (PC) SHALL BE POSSIBLE FOR THE FIXTURES.

THE CURRENT TRANSFORMERS SHALL BE HARDWIRED FROM THE LIGHTING CONTROL SECTION TO THE MONITOR SYSTEM SECTION IN THE SAME CABINET.

THE MONITOR NETWORK SHALL CONFORM TO THE FOLLOWING:

WIRELESS MONITORS SHALL OPERATE WITH AN UNLICENSED FCC BAND, UTILIZING SPREAD SPECTRUM AND FREQUENCY HOPPING TECHNOLOGY. LIGHTING MONITORS SHALL BE TRANSPARENT ACROSS MODEM, RJ-00, RS-232, USB, RS-485, ETHERNET (LAN), WIRED, AND WIRELESS LIGHTING MONITORING NETWORK.

ALL OF THE DATA ACCUMULATION EXECUTED OVER THE WIRELESS RF NETWORK SHALL BE AUTOMATICALLY ERROR CHECKED. SYSTEMS THAT DO NOT PROVIDE SEND/ACKNOWLEDGE ERROR CHECKING SHALL NOT BE ACCEPTABLE. NETWORK SHALL BE VIA ONE-WAY HIGH-SPEED DIGITAL COMMUNICATIONS.

PASSWORD PROTECTED ACCESS VIA THE MODEM SHALL BE POSSIBLE FOR INTEROPERABLE CONNECTION FROM AN OFF-SITE BASED PC FOR FACTORY PROGRAMMING AND SUPPORT AND OWNER ACCESS.

SYSTEM COMMUNICATIONS SHALL INCLUDE THE MODEM AND BRIDGE TO THE LIGHTING MONITORING SYSTEM. FACTORY PROGRAMMING AND TROUBLESHOOTING ASSISTANCE SHALL BE AVAILABLE VIA THE MODEM USING A DEDICATED, FAX COMPATIBLE, ANALOG TELEPHONE LINE.

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CONTRACTOR SHALL FURNISH AND INSTALL ENCLOSURES, WIRELESS ROUTER, ANTENNA, ANTENNA CABLING, POWER SUPPLY, DATA CABLES, AND ALL CONNECTORS AND HARDWARE REQUIRED FOR COMMUNICATIONS. WIRELESS ROUTER SHALL BE SIERRA WIRELESS RAVEN XT OR APPROVED EQUAL AND SHALL SUPPORT AT&T EDGE/3G SERVICES. ANTENNA SHALL BE LOIRD ANTENEX TRAB806/17103P OR APPROVED EQUAL.

THE CONTRACTOR SHALL DELIVER THE ROUTER TO CENTRAL OFFICE TRAFFIC OPERATIONS FOR PROVISIONING ON THE KYTC APN. THE CABINET WILL PROVISION THE ROUTER WITHIN 4 WEEKS OF RECEIPT AND RETURN VIA MAIL TO THE CONTRACTOR.

THE CABINET WILL PAY FOR THE MONTHLY PLAN CHARGES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIGURING THE ROUTER. THE CONTRACTOR SHALL CONFIGURE THE ROUTER TO ALLOW REMOTE ACCESS BY THE CABINET.

PROGRAMMABLE LIGHTING DIAGNOSTICS RELAYS:

INDIVIDUALLY PROGRAMMABLE RELAY/DIAGNOSTIC MODULES SHALL BE MICROPROCESSOR BASED, NETWORKABLE, AND ABLE TO SWITCH CIRCUITS, AS REQUIRED. RELAY MODULES SHALL BE HOUSE IN APPROPRIATE ENCLOSURES, FULLY PRE-WIRED. ENCLOSURES SHALL BE FABRICATED FROM ALUMINUM FOR ATTACHMENT TO THE BRACKET ON WHICH THE NAVIGATION CONTROL CABINET IS MOUNTED.

ALL MONITOR MODULES SHOULD BE CAPABLE OF CURRENT AND VOLTAGE SENSING AND ON/OFF STATUS REPORT. THE LIGHTING MONITORING SYSTEM SOFTWARE SHALL AUTOMATICALLY ACCUMULATE THE DATA FROM ALL DIAGNOSTICS SENSORS IN THE SYSTEM. THE INFORMATION SHALL BE ACCESSIBLE IN THE FORM OF A DATABASE OR SPREADSHEET ALLOWING THE USER TO CONFIGURE HOW THE INFORMATION IS PROCESSED AND ARCHIVED.

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NETWORKING:

UP TO 64,000 CONTROLLER NETWORKED ON A WIRELESS SYSTEM.

NONVOLATILE MEMORY:

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PROVIDE WIRELESS LINKING EXPANDABILITY WITH WIRELESS CARD SLOT IN COMMUNICATIONS HUB. WIRELESS LINK SHALL PROVIDE FULL FUNCTION ZONE CONTROL AND DATA ACCUMULATION, DIAGNOSTICS, INCLUDING CURRENT SENSING, AND VOLTAGE SENSING.

WIRELESS COMMUNICATIONS SHALL BE BI-DIRECTIONAL. RFTRANSCEIVER SHALL OPERATE IN AN UNLICENSED FCC ISM BAND, FCC/IC CERTIFIED. RF RANGE SHALL BE A MINIMUM OF A MILE LINE OF SIGHT. MAXIMUM DISTANCES OF UP TO 20 MILES ARE SUBJECT TO URBAN ENVIRONMENTAL CONDITIONS AND OBSTRUCTIONS. SURGE PROTECTION SHALL BE A MINIMUM 2500 VOLTS TO GROUND. EQUIPMENT SHALL OPERATE AT A VOLTAGE OF 12 VDC. EQUIPMENT SHALL BE CAPABLE OF OPERATING AT TEMPERATURES RANGING FROM -40° C TO 65° C AND 95% RELATIVE HUMIDITY AND AT A RELATIVE HUMIDITY FROM 0-95% NON-CONDENSING. PROVIDE DEPENDENT RF LINK WHERE SPECIFIED, ONE FOR EACH TRANSCEIVER USED.

SYSTEM SOFTWARE:

PROVIDE LIGHTING CONTROL SOFTWARE FOR USE WITH IBM COMPATIBLE PC. SOFTWARE SHALL CONSIST OF SYSTEM SET UP SCREEN, SYSTEM MANAGER SCREEN, AND GRAPHIC CONTROL SCREEN.

CUSTOM GRAPHICAL SCREENS:

PROVIDE CUSTOM GRAPHICAL SITE SCREENS USING CAD DRAWINGS OF THE SITE PROVIDED BY THE KENTUCKY TRANSPORTATION CABINET TO SERVE AS BACKGROUNDS FOR THE SITE ZOOM SCREENS. PROVIDE A CUSTOM GRAPHICAL SCREEN FOR EACH INTERSECTION OF CONTROL. FROM THERE THE USER SHALL BE ABLE TO ACCESS EACH FIXTURE INDIVIDUALLY, VIEW FIXTURE STATUS, DIAGNOSTIC FILES AND DATA LOGS.

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1. NAVIGATION LIGHTING
   - A. VOLTAGE LEVELS FOR EACH VOLTAGE SENSOR.
   - B. CURRENT DRAWN PER FIXTURE.
   - C. TRUE AND REAL POWER.
   - D. TIME AND DATE STAMPING, AS REQUIRED BY USER.
2. PATHWAY DELINEATION LIGHTING
   - A. CURRENT DRAWN FOR EACH FIXTURE.
   - B. TIME AND DATE STAMPING, AS REQUIRED BY THE USER.

ENCLOSURES:

EXPOSED WIRELESS TRANSCEIVER MODULES WILL BE WATER TIGHT, DIE CAST ALUMINUM.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, SHOP DRAWINGS FOR CABINET, MOUNTING BRACKETS, AND OTHER STRUCTURAL ITEMS PRIOR TO FABRICATION OF THESE ITEMS.

FACTORY SERVICE SUPPORT AND START- UP:

THE MANUFACTURER MUST PROVIDE FACTORY ASSEMBLY AND TESTING OF ALL MONITOR STATIONS AND ASSORTED APPARATUS. MONITOR MODULES SHALL BE FACTORY PROGRAMMED PER PROJECT SPECIFICATIONS. ALL REQUIRED SOFTWARE SHALL BE INSTALLED PRIOR TO THE FACTORY SHIPMENT OR UPLOADED FROM THE FACTORY VIA MODEM LINK.

AN ON-SITE FACTORY START-UP BY QUALIFIED TECHNICIAN SHALL BE REQUIRED AND PROVIDED AS A PART OF THE SYSTEM PACKAGE. START-UP WILL NOT BE PERFORMED UNLESS AND UNTIL THE SYSTEM INSTALLATION IS COMPLETE AND A FAX COMPATIBLE PHONE LINE HAS BEEN INSTALLED FOR THE SYSTEM. START- UP SHALL INCLUDE SYSTEM INSPECTION, ADDITIONAL SOFTWARE INSTALLATION, IF NECESSARY, PROGRAM TESTING, TRAINING, AND TROUBLESHOOTING ASSISTANCE, IF SELECTED. SUPPORT VIA MODEM FROM FACTORY FOR DIRECT SYSTEM DIAGNOSIS AND PROGRAMMING ASSISTANCE WILL BE PROVIDED AT NO CHARGE UNTIL SUCH TIME AS THE FINAL ACCEPTANCE OF THE COMPLETE SYSTEM HAS BEEN ACHIEVED. THE MANUFACTURER SHALL PROVIDE A COMPLETE SUBMITTAL PACKAGE FOR APPROVAL PRIOR TO SHIPMENT. THE PACKAGE SHALL CONSIST OF PRODUCT CUTS AND SPECIFICATIONS, BILL OF MATERIALS, WARRANTY INFORMATION, WIRE RISER DIAGRAMS, AND FIELD WIRING INSTRUCTIONS. IN ADDITION TO THE SUBMITTAL A SET OF INSTALLATION, OPERATOR, AND MAINTENANCE MANUALS SHALL BE SHIPPED WITH THE

REVISION	DATE
2 ADDENDUM 2	12/5/13
3 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

LIGHTING NOTES

ITEM NUMBER
01-180.70

PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S260
DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S260-S261-LIGHTING NOTES.DGN
USER: lthto
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

PATHWAY DELINEATION LIGHTING

GENERAL:

THE PATHWAY DELINEATION LIGHTING SHALL BE IN THE COMBINATION RAIL (SEE DETAILS SHEET S268). THE HSS STEEL RAIL WITH LED ILLUMINATION STRIP LIGHTING, SERIES LIA/D. CUSTOM DESIGNED LED, NICHIA WHITE LAMP DS SERIES ILLUMINATION ASSEMBLIES, HIGH LUMINOUS INTENSITY WHITE LIGHT LEDS. LIGHTING ASSEMBLIES SHALL BE PRE-APPROVED BY THE ENGINEER.

BASIC DESIGN:

THE DESIGN SHALL BE A COMPLETE READY TO INSTALL FIXTURE THAT INCLUDES:

1. ILLUMINATION ASSEMBLY WITH DIRECT VIEW LEDS.
2. ELECTRONIC CONTROL CIRCUITS ENCLOSED IN SEALED FLEXIBLE RIBBED POLYCARBONATE CO-EXTRUSIONS 40 FEET IN LENGTH.
3. REMOTE DRIVER ENCLOSURES.

EXTRUSION SHALL CONSIST OF UV STABILIZED, 94V-2 FLAMMABILITY RATING AND SHALL HAVE A GALVANIZED FINISH. THIS PRODUCT SHALL BE LISTED BY AN INDEPENDENT LABORATORY.

MOUNTING:

THIS INSTALLATION SHALL INCLUDE ONE NICHIA WHITE LAMP DS SERIES LEDS InNGaN TYPE F 5MM THROUGH-HOLE LEDS WITH 50,000 PERFORMANCE HRS TO 70LM @20MA. ATTACHED INSIDE THE FENCE RAIL WITH A JUNCTION BOX EVERY 80 FEET.

ELECTRICAL:

ALL ASSEMBLIES ARE NOMINALLY RATED AT 24VDC. THEY ARE DESIGNED FOR INSTALLATION USING CLASS 2 WIRING METHODS. THE LED DRIVER SHALL HAVE OUTPUT CAPABILITY OF 100.0W 4.1A AND 24.0V, WITH IN/OUT CAPABILITIES OF 117W, 120V/240V, .42A, WITH HARD WIRED LEAD, CONSTANT VOLTAGE OUTPUT, AND AN OUTDOOR RATED SYSTEM.

AN ADDITIONAL 1 FOOT OF EXTRA WIRE SHALL BE INCLUDED BEFORE AND AFTER EACH CIRCUIT TO ACCOUNT FOR THE EXPANSION THAT MAY OCCUR WITH ANY STRUCTURE.

COST FOR THIS ITEM SHALL INCLUDE ALL DRIVERS, SPLICES, ATTACHMENT HARDWARE, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS, AS WELL AS AN ADDITIONAL 10% OF THE LED ILLUMINATION ASSEMBILES.

AESTHETIC (ARCH) LIGHTING

GENERAL:

THE AESTHETIC (ARCH) LIGHTING SHALL CONSIST OF LED STRIP LIGHTING ASSEMBLIES, SERIES LIA/D CUSTOM DESIGNED LED, NICHIA WHITE LAMP DS SERIES ILLUMINATION ASSEMBLIES, HIGH LUMINOUS INTENSITY WHITE LIGHT LEDS OR EQUIVALENT.

BASIC DESIGN:

ASSEMBLIES SHALL INCLUDE ILLUMINATION BOARDS WITH DIRECT VIEW LEDS AND ELECTRONIC CONTROL CIRCUITS ENCLOSED IN SEALED FLEXIBLE RIBBED POLYCARBONATE CO-EXTRUSIONS 40 FEET IN LENGTH (UNLESS OTHERWISE DIRECTED IN THE FIELD). EXTRUSION SHALL CONSIST OF UV STABILIZED, 94V-2 FLAMMABILITY RATING. THE LIGHTING ASSEMBLY SHALL BE INSTALLED SO THAT AT 10 FEET DOWN THE CABLES FROM THE ARCH, THE FOOTCANDLES ARE LESS THAN 40% OF THE TOTAL FOOTCANDLES.

MOUNTING:

THE MOUNTING ASSEMBLY SHALL INCLUDE STAINLESS STEEL MOUNTING CLIPS AND ARTICULATING BRACKETS, AS DETAILED SEE SHEET S269. ALL CONDUIT AND MOUNTING HARDWARE SHALL BE PAINTED THE SAME COLOR AS THE ARCH RIB, FEDERAL NO. 37722. THE FIXTURES SHALL NOT RUN CONTINUOUS PAST A RAIL SPLICE/RAIL JOINT.

ELECTRICAL:

ALL ASSEMBLIES ARE NOMINALLY RATED AT 24VDC. THEY ARE DESIGNED FOR INSTALLATION USING CLASS 2 WIRING METHODS. THE LED DRIVER SHALL HAVE OUTPUT CAPABILITY OF 100.0W 4.1 A AND 24.0V, WITH IN/OUT CAPABILITIES OF 117W, 120V/240V, .42A, WITH HARD WIRED LEAD, CONSTANT VOLTAGE OUTPUT AND AN OUTDOOR RATED SYSTEM.

AN ADDITIONAL 1 FOOT OF EXTRA WIRE SHALL BE INCLUDED BEFORE AND AFTER EACH CIRCUIT TO ACCOUNT FOR THE EXPANSION THAT MAY OCCUR WITH ANY STRUCTURE.

COST FOR THIS ITEM SHALL INCLUDE ALL DRIVERS, SPLICES, ATTACHMENT HARDWARE, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS.

SOLAR POWERED BATTERY BACK-UP

GENERAL:

THIS INSTALLATION SHALL BE A B&B ROADWAY SOLAR BATTERY BACK-UP SYSTEM OR APPROVED EQUAL AND SHALL CONSIST OF ALL COMPONENTS NECESSARY FOR CONSTRUCTION OF A 12 VOLT SOLAR POWERED BACK-UP LIGHTING SYSTEM FOR US 68/KY 80 KENTUCKY LAKE BRIDGE REPLACEMENT PROJECT, AS DETAILED ELSEWHERE IN THESE PLANS. WHEN IN USE THE LIGHTING SYSTEM SHALL BE REQUIRED TO OPERATE FOR A MINIMUM OF 10 DAYS AND SHALL INCLUDE NAVIGATION LIGHTS AND THE WIRELESS MONITORING SYSTEM.

THE COMPLETED SYSTEM SHALL CONFORM TO THE REQUIREMENTS OF THE U.S. COAST GUARD AND ALL OTHER APPLICABLE REGULATORY AGENCIES.

SYSTEM DESIGN:

THE SYSTEM SHALL BE DESIGNED TO UTILIZE SOLAR ELECTRIC MODULES WITH FOUR (4) 265Ah BATTERIES AS THE BACK-UP POWER SOURCE TO PROVIDE CONTINUOUS POWER FOR THE NAVIGATION LIGHTING, AS WELL AS THE WIRELESS MONITORING SYSTEM. THE SYSTEM MUST BE DESIGNED FOR OPERATION AT AN AVERAGE MONTHLY INSOLATION ON A HORIZONTAL SURFACE, INSOLATION AT TILT, AND AVERAGE MONTHLY TEMPERATURES AT THIS SITE.

SOLAR MODULES AND MOUNTING STRUCTURE:

THE SOLAR ELECTRIC PANELS SHALL BE TRIPLE JUNCTION SOLAR CELLS WITH AN UNBREAKABLE CONSTRUCTION. THE SOLAR PANELS SHALL CONSIST OF TWO (2) 140W, TEMPERED GLASS PANELS OR APPROVED EQUAL TO SUPPLY ENOUGH POWER TO OPERATE THE 20 NAVIGATION LIGHTS AND THE WIRELESS MONITORING SYSTEM. THE CELL SHALL BE ENCAPSULATED TO PROTECT FROM AN ENVIRONMENT CONSISTENT WITH BRIDGE LOCATION IN WHICH IT IS MOUNTED. EACH MODULE SHALL PROVIDE A WEATHER TIGHT JUNCTION BOX FOR CONNECTING THE ARRAY OUTPUT CABLE TO THE MARINE RATED TERMINALS. THE MODULES SHALL BE DESIGNED TO PROVIDE RATED POWER OUTPUT FOR A MINIMUM OF FIFTEEN (15) YEARS. AS SHOWN ON THE PLANS, THE SOLAR PANELS WILL POWER THE UPSTREAM AND DOWNSTREAM NAVIGATION LIGHTS, AND THE WIRELESS MONITORING SYSTEM. THE PANELS WILL BE APPROPRIATELY SIZED FOR THE INSTALLATION AND SHALL TAKE INTO CONSIDERATION ESH (WINTERTIME EQUIVALENT SUN HOURS) AND SPECIFIED LAMP POWER REQUIREMENTS.

A SUPPORT POLE AND ALL HARDWARE NECESSARY FOR MOUNTING THE PANEL AND WIRING NECESSARY TO CONNECT THE PANEL TO THE CONTROLLER SHALL BE INCLUDED.

THE SOLAR ELECTRIC MODULES SHALL BE DESIGNED TO BE SECURELY ATTACHED TO POLE NEAR THE POWER SERVICE. THE MANUFACTURER SHALL PROVIDE A SCHEMATIC DIAGRAM SHOWING THE ATTACHMENT. MOUNTING BRACKETS AND ARMS SHALL BE FABRICATED FROM ALUMINUM STRUCTURE MATERIALS SUFFICIENT TO PROVIDE NECESSARY STABILITY FOR THE PANEL ARRAY. PANEL ORIENTATION SHALL BE ADJUSTABLE TO FACILITATE MAXIMUM SOLAR INPUT. SHOP DRAWINGS DETAILING THE MOUNTING SYSTEM FOR THE SOLAR PANELS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION. ALL MOUNTING HARDWARE FOR ATTACHMENT TO THE BRIDGE SHALL BE STAINLESS STEEL.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL FOR SHOP DRAWINGS FOR CABINETS, MOUNTING BRACKETS, AND OTHER STRUCTURAL ITEMS PRIOR TO THE FABRICATIONS OF THESE ITEMS.

SOLAR CONTROLS:

THE SYSTEM SHALL UTILIZE A SOLID STATE INTEGRATED CONTROL UNIT CAPABLE OF MANAGING BATTERY CHARGING AND LIGHTING OUTPUT CONTROL. THESES FUNCTIONS SHALL BE ACCOMPLISHED WITHIN A SINGLE CABINET IN EACH SPECIFIED LOCATION.

THE CHARGE CONTROL PORTION OF THE CONTROL UNIT SHALL BE DESIGNED SUCH THAT IT DRAWS POWER ONLY FROM THE SOLAR ARRAY WHEN POWER IS AVAILABLE AS TO REDUCE PARASITIC LOAD ON THE SYSTEM. UNITS SHALL USE AMBIENT TEMPERATURE SENSOR TO ADJUST THE CHARGE TERMINATION POINT (TEMPERATURE COMPENSATED CHARGING) THUS PROLONGING THE BATTERY LIFE. THE CHARGE CIRCUIT SHALL ALSO EMPLOY A PULSE-WIDTH MODULATIONS ALGORITHM FOR CHARGING THE BATTERIES AND SHALL BE OF SOLID STATE SERIES SWITCH TYPE CONFIGURATION.

ON BOARD SHORT CIRCUIT PROTECTION SHALL BE PROVIDED. THE CONTROLS SHALL HAVE THE ABILITY TO DETECT DAY AND NIGHT THROUGH A PV ARRAY (DUSK TILL DAWN ACTIVATOR). THE LOAD CONTROL FUNCTION SHALL INCORPORATE A LOW VOLTAGE DISCONNECT (LVD) CIRCUIT TO DISCONNECT POWER TO THE CONTROL CIRCUIT WHEN BATTERY VOLTAGE FALLS TO A LOW STATE OF CHARGE (TYPICALLY 20%).

SYSTEM ENCLOSURE:

THE SYSTEM SHALL UTILIZE A SINGLE ENCLOSURE FOR EASE OF INSTALLATION. THE ENCLOSURE SHALL BE FABRICATED FROM ALUMINUM WITH A MINIMUM THICKNESS OF 0.125". THE CABINET SHALL PROVIDE SCREENED LOUVERED VENTS ON EACH SIDE OF EACH COMPARTMENT. THE LOUVERED SCREENING SHALL BE ALUMINUM FOR LONGEVITY. AND INTEGRAL RAIN LIP SHALL BE PROVIDED AT THE TOP OF THE MAIN CABINET BODY TO MINIMIZE ENTRY OF THE RAIN.

THE MAINTENANCE ENTRANCE SHALL BE HINGED DOUBLE LOCKING. THIS ENTRANCE SHALL HAVE A NEOPRENE GASKET AROUND THE ENTIRE EDGE. THE ENTRANCE SHALL BE SECURED WITH A STANDARD TRAFFIC SIGNAL CONTROLLER CABINET CORBIN #2 LOCK. THE KEYHOLE FOR THIS LOCK SHALL HAVE A DEEP COVER ATTACHED TO THE DOOR WITH A SINGLE RIVET. THE BATTERY COMPARTMENT SHALL HAVE INSULATING SHEETING AROUND ENCLOSURE WALL. THE AROUND THE BATTERY AND THE CABINET SHALL BE OF SUFFICIENT SIZE TO HOUSE THE BATTERY AND ALL CONTROL COMPONENTS AND ALLOW SUFFICIENT ROOM FOR ROUTINE MAINTENANCE. MINIMUM SIZE: 16' HIGH x 15' WIDE AND 9' DEEP. ALL CONDUIT ATTACHMENTS TO THIS CABINET SHALL BE MADE TO THE BASE OF THE CABINET TO MINIMIZE MOISTURE PENETRATION.

BATTERY:

THE BATTERY FOR THIS LOCATION SHALL BE A 265Ah VALVE REGULATED, GEL CELL MAINTENANCE FREE, AND NON-SPILLABLE. IT SHALL BE A DEEP CYCLE MARINE BATTERY AND SHALL BE 12 VOLT MINIMUM 90 AMP HOUR.

SYSTEM WIRING:

THE SYSTEM SHALL FEATURE A COLOR CODED WIRING HARNESS FOR THE PARTICULAR LIGHTING/LAMPS AND SOLAR ARRAY OUTPUT. A KEYED LOCKING CONNECTOR SHALL BE UTILIZED IN THE HARNESS TO ALLOW LAMPS TO BE QUICKLY AND EASILY DISCONNECTED FROM THE CONTROL ELECTRONICS. AN INTEGRAL FUSE ASSEMBLY SHALL BE INCLUDED IN THE LAMP POSITIVE WIRE OF THE HARNESS. ALL CONNECTIONS SHALL BE TERMINATED WITH CRIMPED SPADE TERMINALS FOR EASY INSTALLATION AND MAINTENANCE.

THE OUTPUT HARNESS FOR THE SOLAR ARRAY SHALL CONSIST OF A JACKETED PAIR OF CONDUCTORS. THE SIZE OF THE CONDUCTORS SHALL BE APPROPRIATE TO THE SOLAR ARRAY OUTPUT CURRENT. JACKETS SHALL BE OF UV RESISTANT PVC OR XLT MATERIAL. MARINE TERMINALS SHALL BE UTILIZED FOR INSTALLATION AND MAINTENANCE. ALL WIRING SHALL BE ENCASED IN FLEXIBLE CONDUIT TO PROTECT FROM VANDALISM. ALL CONDUCTORS SHALLT BE SIZED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS AND SHALL BE TYPE THHN OR THWN.

INVERTER/CHARGER:

THE INVERTER/CHARGER WILL NEED TO ASSIST THE SOLAR POWERED BATTERY BACK-UP WITH TRANSFERRING POWER IN THE EVENT THE BATTERY BACK-UP NEEDS TO BE UTILIZED.

A VERSATILE INVERTER/CHARGER WITH AUTO TRANSFER SWITCHING WHICH SERVES AS AN AUTO INVERTER FOR ALTERNATIVE ENERGY OR EXPORT APPLICATIONS, SUCH AS AN UNITERRUPTIBLE POWER SUPPLY (UPS).

CONDUIT:

FOR THE SOLAR AND POWER CABLE TO CONTROL PANELS CONDUIT EXPANSION SLEEVE SHALL BE PROVIDED AT ALL LOCATIONS THAT CROSS ALL EXPANSION JOINTS. THE COST OF THE CONDUIT EXPANSION SLEEVE IS INCIDENTAL TO THE PRICE OF THE CONDUIT.

FLEXIBLE CONDUIT SHALL BE USED FOR ALL THE ARCH LIGHTING

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DATE: NOVEMBER, 2013 CHECKED BY: CFD
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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

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ROUTE US68 | CROSSING KENTUCKY LAKE

LIGHTING NOTES

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S261
DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S260-S261-LIGHTING NOTES.DGN
USER: ltito
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

PATHWAY DELINEATION LIGHTING

GENERAL:

THE PATHWAY DELINEATION LIGHTING SHALL BE IN THE COMBINATION RAIL (SEE DETAILS SHEET S268). THE HSS STEEL RAIL WITH LED ILLUMINATION STRIP LIGHTING, SERIES LIA/D. CUSTOM DESIGNED LED, NICHIA WHITE LAMP DS SERIES ILLUMINATION ASSEMBLIES, HIGH LUMINOUS INTENSITY WHITE LIGHT LEDS. LIGHTING ASSEMBLIES SHALL BE PRE-APPROVED BY THE ENGINEER.

BASIC DESIGN:

THE DESIGN SHALL BE A COMPLETE READY TO INSTALL FIXTURE THAT INCLUDES:

1. ILLUMINATION ASSEMBLY WITH DIRECT VIEW LEDS.
2. ELECTRONIC CONTROL CIRCUITS ENCLOSED IN SEALED FLEXIBLE RIBBED POLYCARBONATE CO-EXTRUSIONS 40 FEET IN LENGTH.
3. REMOTE DRIVER ENCLOSURES.

EXTRUSION SHALL CONSIST OF UV STABILIZED, 94V-2 FLAMMABILITY RATING AND SHALL HAVE A GALVANIZED FINISH. THIS PRODUCT SHALL BE LISTED BY AN INDEPENDENT LABORATORY.

MOUNTING:

THIS INSTALLATION SHALL INCLUDE ONE NICHIA WHITE LAMP DS SERIES LEDS InNGaN TYPE F 5MM THROUGH-HOLE LEDS WITH 50,000 PERFORMANCE HRS TO 70LM @20MA. ATTACHED INSIDE THE FENCE RAIL WITH A JUNCTION BOX EVERY 80 FEET.

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AN ADDITIONAL 1 FOOT OF EXTRA WIRE SHALL BE INCLUDED BEFORE AND AFTER EACH CIRCUIT TO ACCOUNT FOR THE EXPANSION THAT MAY OCCUR WITH ANY STRUCTURE.

COST FOR THIS ITEM SHALL INCLUDE ALL DRIVERS, SPLICES, ATTACHMENT HARDWARE, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS, AS WELL AS AN ADDITIONAL 10% OF THE LED ILLUMINATION ASSEMBILES.

AESTHETIC (ARCH) LIGHTING

GENERAL:

THE AESTHETIC (ARCH) LIGHTING SHALL CONSIST OF LED STRIP LIGHTING ASSEMBLIES, SERIES LIA/D CUSTOM DESIGNED LED, NICHIA WHITE LAMP DS SERIES ILLUMINATION ASSEMBLIES, HIGH LUMINOUS INTENSITY WHITE LIGHT LEDS OR EQUIVALENT.

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ASSEMBLIES SHALL INCLUDE ILLUMINATION BOARDS WITH DIRECT VIEW LEDS AND ELECTRONIC CONTROL CIRCUITS ENCLOSED IN SEALED FLEXIBLE RIBBED POLYCARBONATE CO-EXTRUSIONS 40 FEET IN LENGTH (UNLESS OTHERWISE DIRECTED IN THE FIELD). EXTRUSION SHALL CONSIST OF UV STABILIZED, 94V-2 FLAMMABILITY RATING. THE LIGHTING ASSEMBLY SHALL BE INSTALLED SO THAT AT 10 FEET DOWN THE CABLES FROM THE ARCH, THE FOOTCANDLES ARE LESS THAN 40% OF THE TOTAL FOOTCANDLES.

MOUNTING:

THE MOUNTING ASSEMBLY SHALL INCLUDE STAINLESS STEEL MOUNTING CLIPS AND ARTICULATING BRACKETS, AS DETAILED SEE SHEET S269. ALL CONDUIT AND MOUNTING HARDWARE SHALL BE PAINTED THE SAME COLOR AS THE ARCH RIB, FEDERAL NO. 37722. THE FIXTURES SHALL NOT RUN CONTINUOUS PAST A RAIL SPLICE/RAIL JOINT.

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SOLAR POWERED BATTERY BACK-UP

GENERAL:

THIS INSTALLATION SHALL BE A B&B ROADWAY SOLAR BATTERY BACK-UP SYSTEM OR APPROVED EQUAL AND SHALL CONSIST OF ALL COMPONENTS NECESSARY FOR CONSTRUCTION OF A 12 VOLT SOLAR POWERED BACK-UP LIGHTING SYSTEM FOR US 68/KY 80 KENTUCKY LAKE BRIDGE REPLACEMENT PROJECT, AS DETAILED ELSEWHERE IN THESE PLANS. WHEN IN USE THE LIGHTING SYSTEM SHALL BE REQUIRED TO OPERATE FOR A MINIMUM OF 10 DAYS AND SHALL INCLUDE NAVIGATION LIGHTS AND THE WIRELESS MONITORING SYSTEM.

THE COMPLETED SYSTEM SHALL CONFORM TO THE REQUIREMENTS OF THE U.S. COAST GUARD AND ALL OTHER APPLICABLE REGULATORY AGENCIES.

SYSTEM DESIGN:

THE SYSTEM SHALL BE DESIGNED TO UTILIZE SOLAR ELECTRIC MODULES WITH FOUR (4) 265Ah BATTERIES AS THE BACK-UP POWER SOURCE TO PROVIDE CONTINUOUS POWER FOR THE NAVIGATION LIGHTING, AS WELL AS THE WIRELESS MONITORING SYSTEM. THE SYSTEM MUST BE DESIGNED FOR OPERATION AT AN AVERAGE MONTHLY INSOLATION ON A HORIZONTAL SURFACE, INSOLATION AT TILT, AND AVERAGE MONTHLY TEMPERATURES AT THIS SITE.

SOLAR MODULES AND MOUNTING STRUCTURE:

THE SOLAR ELECTRIC PANELS SHALL BE TRIPLE JUNCTION SOLAR CELLS WITH AN UNBREAKABLE CONSTRUCTION. THE SOLAR PANELS SHALL CONSIST OF TWO (2) 140W, TEMPERED GLASS PANELS OR APPROVED EQUAL TO SUPPLY ENOUGH POWER TO OPERATE THE 20 NAVIGATION LIGHTS AND THE WIRELESS MONITORING SYSTEM. THE CELL SHALL BE ENCAPSULATED TO PROTECT FROM AN ENVIRONMENT CONSISTENT WITH BRIDGE LOCATION IN WHICH IT IS MOUNTED. EACH MODULE SHALL PROVIDE A WEATHER TIGHT JUNCTION BOX FOR CONNECTING THE ARRAY OUTPUT CABLE TO THE MARINE RATED TERMINALS. THE MODULES SHALL BE DESIGNED TO PROVIDE RATED POWER OUTPUT FOR A MINIMUM OF FIFTEEN (15) YEARS. AS SHOWN ON THE PLANS, THE SOLAR PANELS WILL POWER THE UPSTREAM AND DOWNSTREAM NAVIGATION LIGHTS, AND THE WIRELESS MONITORING SYSTEM. THE PANELS WILL BE APPROPRIATELY SIZED FOR THE INSTALLATION AND SHALL TAKE INTO CONSIDERATION ESH (WINTERTIME EQUIVALENT SUN HOURS) AND SPECIFIED LAMP POWER REQUIREMENTS.

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THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL FOR SHOP DRAWINGS FOR CABINETS, MOUNTING BRACKETS, AND OTHER STRUCTURAL ITEMS PRIOR TO THE FABRICATIONS OF THESE ITEMS.

SOLAR CONTROLS:

THE SYSTEM SHALL UTILIZE A SOLID STATE INTEGRATED CONTROL UNIT CAPABLE OF MANAGING BATTERY CHARGING AND LIGHTING OUTPUT CONTROL. THESES FUNCTIONS SHALL BE ACCOMPLISHED WITHIN A SINGLE CABINET IN EACH SPECIFIED LOCATION.

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SYSTEM ENCLOSURE:

THE SYSTEM SHALL UTILIZE A SINGLE ENCLOSURE FOR EASE OF INSTALLATION. THE ENCLOSURE SHALL BE FABRICATED FROM ALUMINUM WITH A MINIMUM THICKNESS OF 0.125". THE CABINET SHALL PROVIDE SCREENED LOUVERED VENTS ON EACH SIDE OF EACH COMPARTMENT. THE LOUVERED SCREENING SHALL BE ALUMINUM FOR LONGEVITY. AND INTEGRAL RAIN LIP SHALL BE PROVIDED AT THE TOP OF THE MAIN CABINET BODY TO MINIMIZE ENTRY OF THE RAIN.

THE MAINTENANCE ENTRANCE SHALL BE HINGED DOUBLE LOCKING. THIS ENTRANCE SHALL HAVE A NEOPRENE GASKET AROUND THE ENTIRE EDGE. THE ENTRANCE SHALL BE SECURED WITH A STANDARD TRAFFIC SIGNAL CONTROLLER CABINET CORBIN #2 LOCK. THE KEYHOLE FOR THIS LOCK SHALL HAVE A DEEP COVER ATTACHED TO THE DOOR WITH A SINGLE RIVET. THE BATTERY COMPARTMENT SHALL HAVE INSULATING SHEETING AROUND ENCLOSURE WALL. THE AROUND THE BATTERY AND THE CABINET SHALL BE OF SUFFICIENT SIZE TO HOUSE THE BATTERY AND ALL CONTROL COMPONENTS AND ALLOW SUFFICIENT ROOM FOR ROUTINE MAINTENANCE. MINIMUM SIZE: 16' HIGH x 15' WIDE AND 9' DEEP. ALL CONDUIT ATTACHMENTS TO THIS CABINET SHALL BE MADE TO THE BASE OF THE CABINET TO MINIMIZE MOISTURE PENETRATION.

BATTERY:

THE BATTERY FOR THIS LOCATION SHALL BE A 265Ah VALVE REGULATED, GEL CELL MAINTENANCE FREE, AND NON-SPILLABLE. IT SHALL BE A DEEP CYCLE MARINE BATTERY AND SHALL BE 12 VOLT MINIMUM 90 AMP HOUR.

SYSTEM WIRING:

THE SYSTEM SHALL FEATURE A COLOR CODED WIRING HARNESS FOR THE PARTICULAR LIGHTING/LAMPS AND SOLAR ARRAY OUTPUT. A KEYED LOCKING CONNECTOR SHALL BE UTILIZED IN THE HARNESS TO ALLOW LAMPS TO BE QUICKLY AND EASILY DISCONNECTED FROM THE CONTROL ELECTRONICS. AN INTEGRAL FUSE ASSEMBLY SHALL BE INCLUDED IN THE LAMP POSITIVE WIRE OF THE HARNESS. ALL CONNECTIONS SHALL BE TERMINATED WITH CRIMPED SPADE TERMINALS FOR EASY INSTALLATION AND MAINTENANCE.

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INVERTER/CHARGER:

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A VERSATILE INVERTER/CHARGER WITH AUTO TRANSFER SWITCHING WHICH SERVES AS AN AUTO INVERTER FOR ALTERNATIVE ENERGY OR EXPORT APPLICATIONS, SUCH AS AN UNITERRUPTIBLE POWER SUPPLY (UPS).

CONDUIT:

FOR THE SOLAR AND POWER CABLE TO CONTROL PANELS CONDUIT EXPANSION SLEEVE SHALL BE PROVIDED AT ALL LOCATIONS THAT CROSS ALL EXPANSION JOINTS. THE COST OF THE CONDUIT EXPANSION SLEEVE IS INCIDENTAL TO THE PRICE OF THE CONDUIT.

FLEXIBLE CONDUIT SHALL BE USED FOR ALL THE ARCH LIGHTING

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DEPARTMENT OF HIGHWAYS

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CROSSING: KENTUCKY LAKE

LIGHTING NOTES

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

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DRAWING NO. 24686

MicroStation v8.11.9.357 E-SHEET NAME: USER: ltito DATE PLOTTED: December 12, 2013 FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S260-S261-LIGHTING NOTES.DGN

REVISED 12/12/13

ITEM CODE	ITEM	UNIT					TOTAL
2650	MAINTAIN & CONTROL TRAFFIC	LP SUM					1
3666	UTILITY LINE HANGER FOR BRIDGE	EACH					15
	NAVIGATION LIGHTING						
4761	LIGHTING CONTROL EQUIPMENT	EACH					3
4775	NAVIGATION LIGHT 360 DEG GREEN - LED	EACH					2
4776	NAVIGATION LIGHT 180 DEG RED - LED	EACH					18
4780	FUSED CONNECTOR KIT	EACH					44
4795	CONDUIT - 2 INCH	LIN FT					6,601
4810	ELECTRICAL JUNCTION BOX	EACH					27
4820	TRENCHING AND BACKFILLING	LIN FT					700
4834	WIRE - NO. 6	LIN FT					32,450
4835	WIRE NO. 4	LIN FT					2,400
21565NN	WIRELESS LIGHTING MONITORING SYSTEM	LP SUM					1
21565NN	PULL BOX	EACH					3
	SOLAR POWERED BATTERY BACK-UP	LP SUM					1
	PATH DELINEATION LIGHTING						
4780	FUSED CONNECTOR KIT	EACH					176
4795	CONDUIT - 2 INCH	LIN FT					3,515
4810	ELECTRICAL JUNCTION BOX	EACH					44
4834	WIRE - NO. 6	LIN FT					14,530
4835	WIRE - NO. 4	LIN FT					2,625
24616EC	PATH DELINEATION LIGHTING	LP SUM					1
	ARCH LIGHTING						
4780	FUSED CONNECTOR KIT	EACH					72
4795	CONDUIT - 2 INCH	LIN FT					1,390
4810	ELECTRICAL JUNCTION BOX	EACH					18
4834	WIRE - NO. 6	LIN FT					4,400
4835	WIRE - NO. 4	LIN FT					2,625
24615	ARCH FEATURE LIGHTING	LP SUM					1

REVISION	DATE
3 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US68
CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

LIGHTING GENERAL SUMMARY

ITEM NUMBER
01–180.70

PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S262
DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S262 S24686-SUMMARIES.DGN
USER: ttito
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

REVISED 12/12/13

ITEM CODE	ITEM	UNIT					TOTAL
2650	MAINTAIN & CONTROL TRAFFIC	LP SUM					1
3666	UTILITY LINE HANGER FOR BRIDGE	EACH					15
	NAVIGATION LIGHTING						
4761	LIGHTING CONTROL EQUIPMENT	EACH					3
4775	NAVIGATION LIGHT 360 DEG GREEN - LED	EACH					2
4776	NAVIGATION LIGHT 180 DEG RED - LED	EACH					18
4780	FUSED CONNECTOR KIT	EACH					44
4795	CONDUIT - 2 INCH	LIN FT					6,601
4810	ELECTRICAL JUNCTION BOX	EACH					27
4820	TRENCHING AND BACKFILLING	LIN FT					700
4834	WIRE - NO. 6	LIN FT					32,450
4835	WIRE NO. 4	LIN FT					2,400
21565NN	WIRELESS LIGHTING MONITORING SYSTEM	LP SUM					1
21565NN	PULL BOX	EACH					3
	SOLAR POWERED BATTERY BACK-UP	LP SUM					1
	PATH DELINEATION LIGHTING						
4780	FUSED CONNECTOR KIT	EACH					176
4795	CONDUIT - 2 INCH	LIN FT					3,515
4810	ELECTRICAL JUNCTION BOX	EACH					44
4834	WIRE - NO. 6	LIN FT					14,530
4835	WIRE - NO. 4	LIN FT					2,625
24616EC	PATH DELINEATION LIGHTING	LP SUM					1
	ARCH LIGHTING						
4780	FUSED CONNECTOR KIT	EACH					72
4795	CONDUIT - 2 INCH	LIN FT					1,390
4810	ELECTRICAL JUNCTION BOX	EACH					18
4834	WIRE - NO. 6	LIN FT					4,400
4835	WIRE - NO. 4	LIN FT					2,625
24615	ARCH FEATURE LIGHTING	LP SUM					1

MicroStation v8.11.9.357
E-SHEET NAME:
USER: ttito
DATE PLOTTED: December 12, 2013
FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S262 S24686-SUMMARIES.DGN

3 ADDENDUM 3	12/12/13
REVISION	DATE

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

LIGHTING GENERAL SUMMARY

ITEM NUMBER
01–180.70

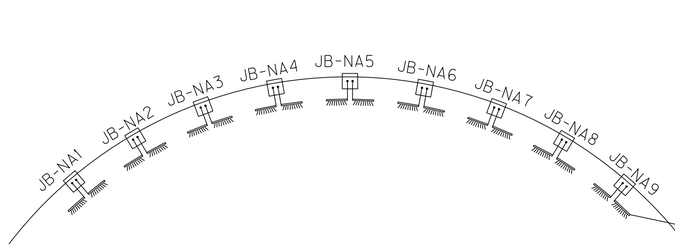
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

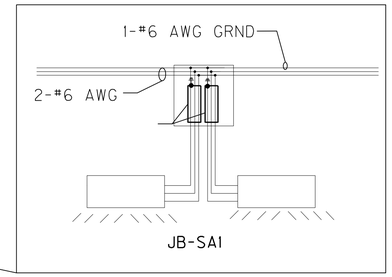
SHEET NO. S262
DRAWING NO. 24686

REVISED 12/12/13

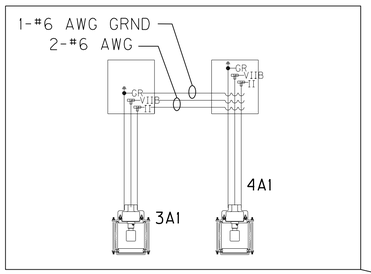
LEGEND

- LIA/D, COOL WHITE, LED ILLUMINATION ASSEMBLIES, 40 FT IN LENGTH.
- NAVIGATION LIGHT
- CABLE SPLICE
- GROUND
- FUSE





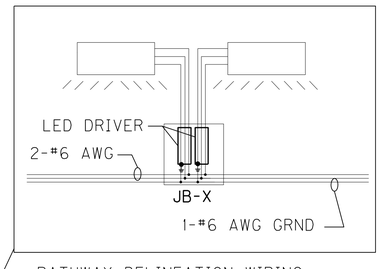
ARCH WIRING (TYPICAL)



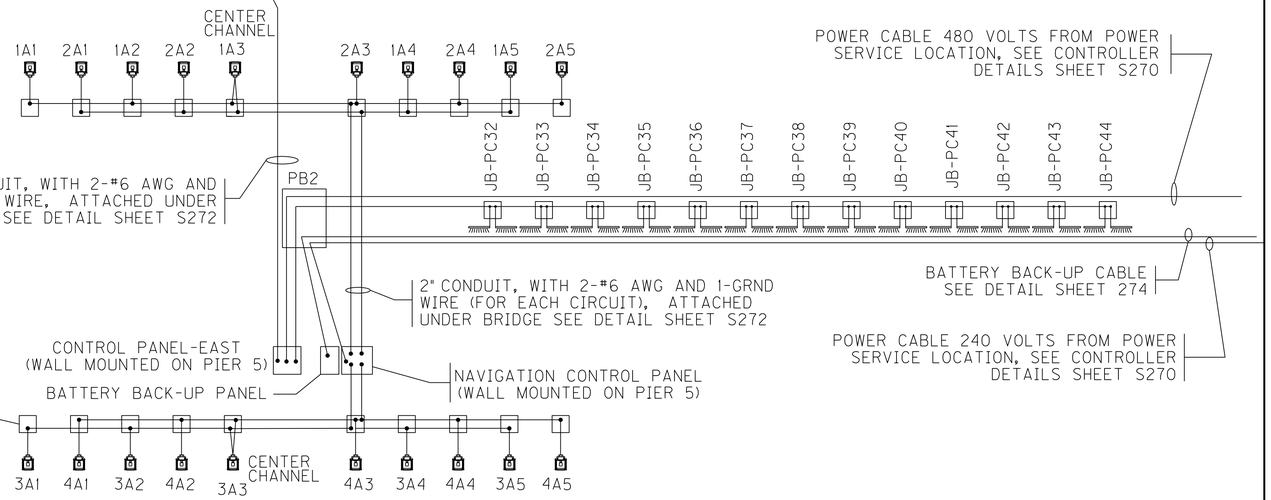
NAVIGATION WIRING (TYPICAL)

NOTE:

NO SPLICES IN JUNCTION BOXES TO NAVIGATION LIGHTS



PATHWAY DELINEATION WIRING (TYPICAL)



2" CONDUIT, WITH 2-#6 AWG AND 1-GRND WIRE, ATTACHED UNDER BRIDGE SEE DETAIL SHEET S272

POWER CABLE 480 VOLTS FROM POWER SERVICE LOCATION, SEE CONTROLLER DETAILS SHEET S270

BATTERY BACK-UP CABLE SEE DETAIL SHEET 274

2" CONDUIT, WITH 2-#6 AWG AND 1-GRND WIRE (FOR EACH CIRCUIT), ATTACHED UNDER BRIDGE SEE DETAIL SHEET S272

CONTROL PANEL-EAST (WALL MOUNTED ON PIER 5)

BATTERY BACK-UP PANEL

NAVIGATION CONTROL PANEL (WALL MOUNTED ON PIER 5)

POWER CABLE 240 VOLTS FROM POWER SERVICE LOCATION, SEE CONTROLLER DETAILS SHEET S270

CONTROL PANEL-WEST (WALL MOUNTED ON PIER 4)

POWER CABLE 480 VOLTS FROM POWER SERVICE LOCATION, SEE CONTROLLER DETAILS SHEET S270

REVISION	DATE
⚠1 ADDENDUM 1	11/25/13
⚠2 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

WIRING DIAGRAM

ITEM NUMBER
01–180.70

PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S263

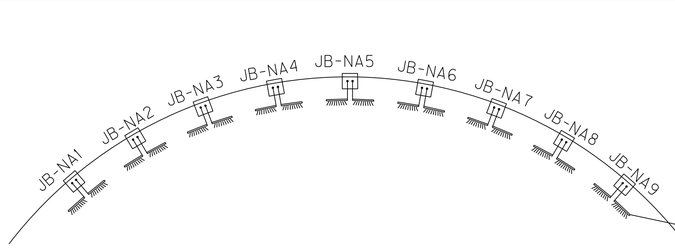
DRAWING NO. 24686

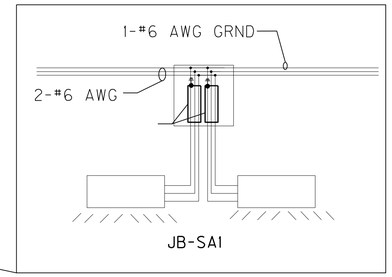
MicroStation v8.11.9.357
E-SHEET NAME:
USER: ttto
DATE PLOTTED: December 12, 2013
FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S263 WIRING.DGN

REVISED 12/12/13

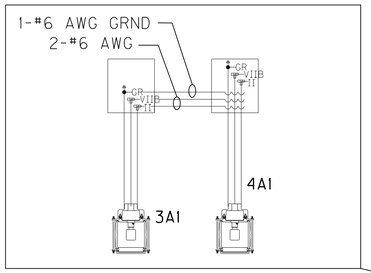
LEGEND

- LIA/D, COOL WHITE, LED ILLUMINATION ASSEMBLIES, 40 FT IN LENGTH.
- NAVIGATION LIGHT
- CABLE SPLICE
- GROUND
- FUSE





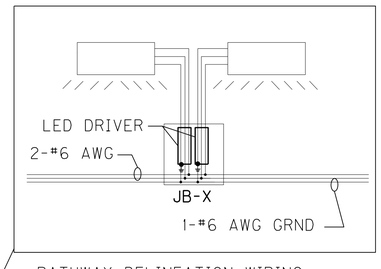
ARCH WIRING (TYPICAL)



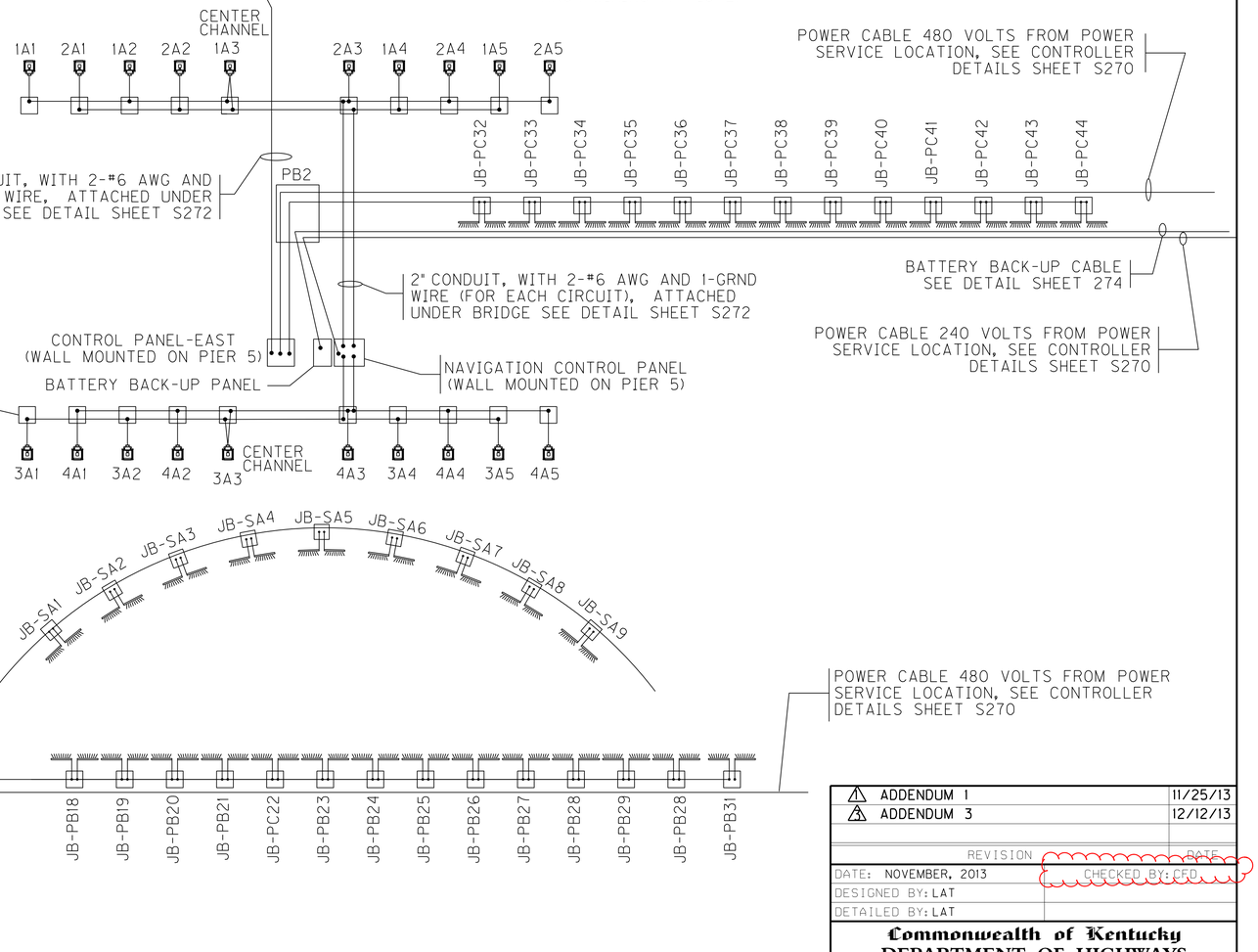
NAVIGATION WIRING (TYPICAL)

NOTE:

NO SPLICES IN JUNCTION BOXES TO NAVIGATION LIGHTS



PATHWAY DELINEATION WIRING (TYPICAL)



⚠1	ADDENDUM 1	11/25/13
⚠2	ADDENDUM 3	12/12/13
	REVISION	DATE

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** CROSSING: **KENTUCKY LAKE**

WIRING DIAGRAM

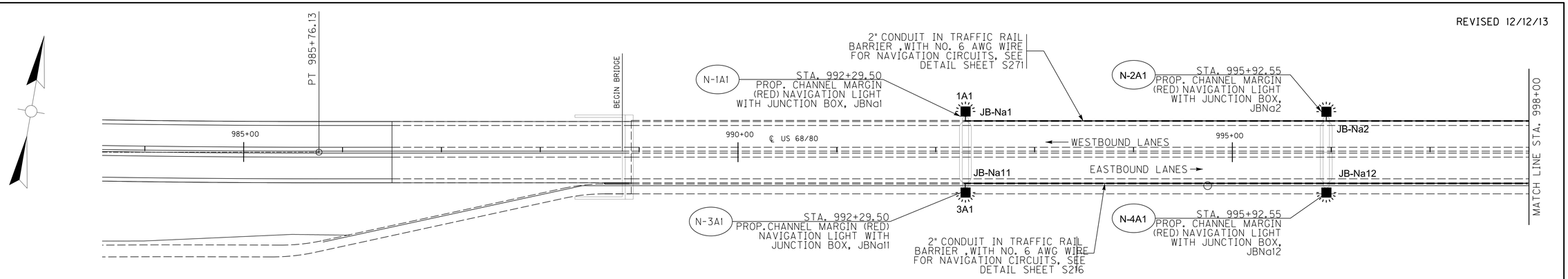
ITEM NUMBER
01-180.70

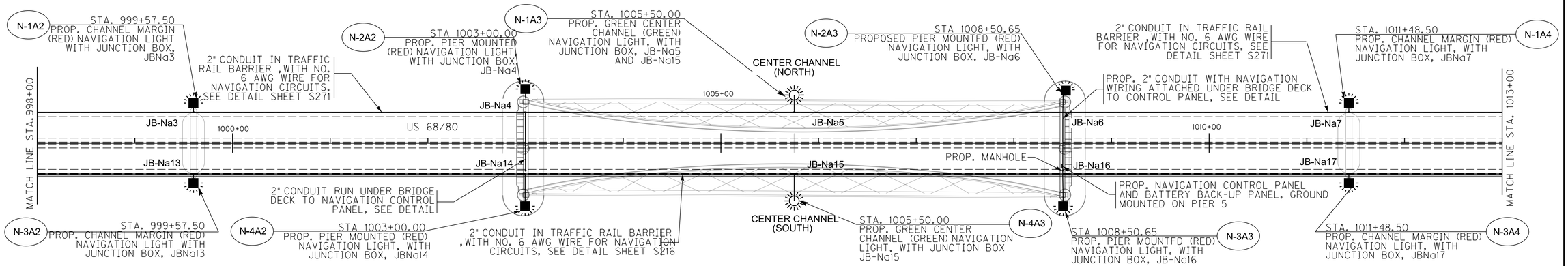
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

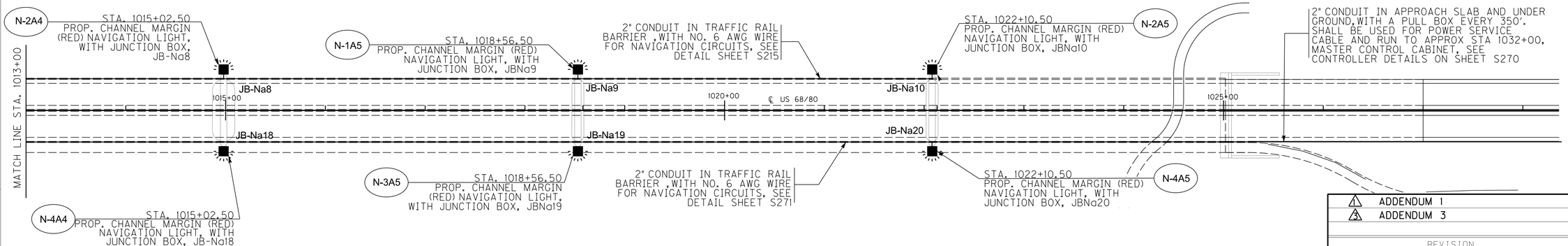
SHEET NO. **S263**
DRAWING NO. **24686**

MicroStation v8.11.9.357 E-SHEET NAME: USER: ttto DATE PLOTTED: December 12, 2013 FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S263 WIRING.DGN

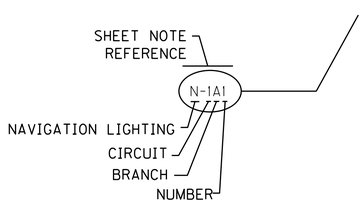
REVISED 12/12/13







1. CENTER CHANNEL (NORTH AND SOUTH) LIGHTS SEE DETAILS ON SHEET S262
2. PROPOSED CHANNEL MARGIN LIGHTS, 1A1, 1A2, 1A4, 1A5 2A1, 2A4, 2A5, SEE DETAILS ON SHEETS S262, ANDS266
3. PROPOSED PIER MOUNTED (RED) LIGHTS, 2A2, 2A3 4A2, 4A3 SHEET DETAILS ON SHEETS S262, S265, AND S267



REVISION	DATE
⚠1 ADDENDUM 1	11/25/13
⚠3 ADDENDUM 3	12/12/13

DATE: NOVEMBER 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** CROSSING: **KENTUCKY LAKE**

NAVIGATION LIGHTING LAYOUT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

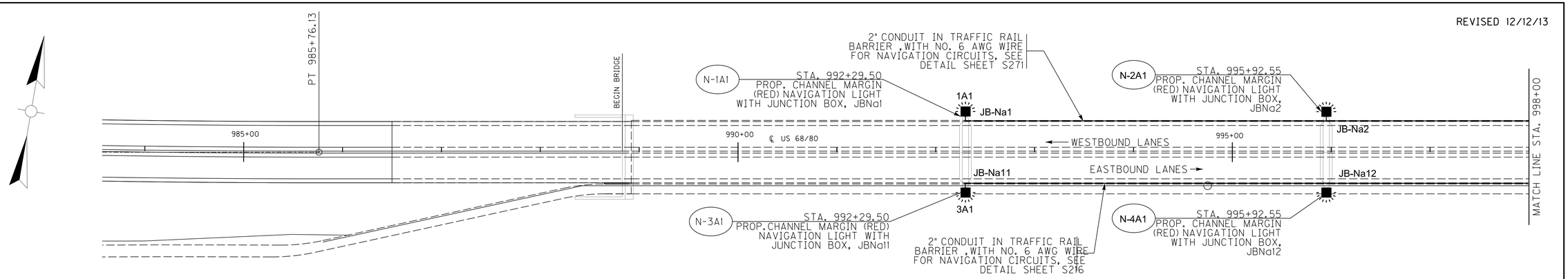
ITEM NUMBER
01-180.70

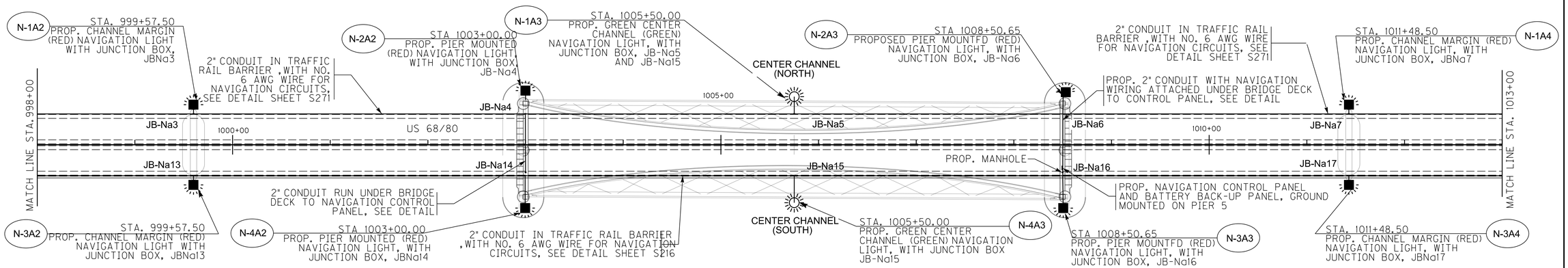
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

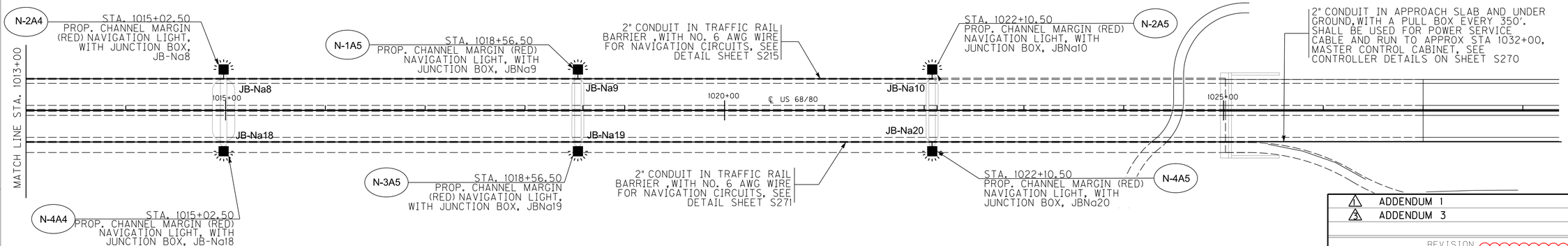
SHEET NO. S264
DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S264 NAVIGATION PLAN SHEET.DGN
USER: latto
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

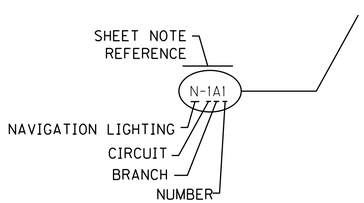
REVISED 12/12/13







1. CENTER CHANNEL (NORTH AND SOUTH) LIGHTS SEE DETAILS ON SHEET S262
2. PROPOSED CHANNEL MARGIN LIGHTS, 1A1, 1A2, 1A4, 1A5 2A1, 2A4, 2A5, SEE DETAILS ON SHEETS S262, ANDS266
3. PROPOSED PIER MOUNTED (RED) LIGHTS, 2A2, 2A3 4A2, 4A3 SHEET DETAILS ON SHEETS S262, S265, AND S267



1	ADDENDUM 1	11/25/13
3	ADDENDUM 3	12/12/13
	REVISION	DATE

DATE: NOVEMBER 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** CROSSING: **KENTUCKY LAKE**

NAVIGATION LIGHTING LAYOUT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

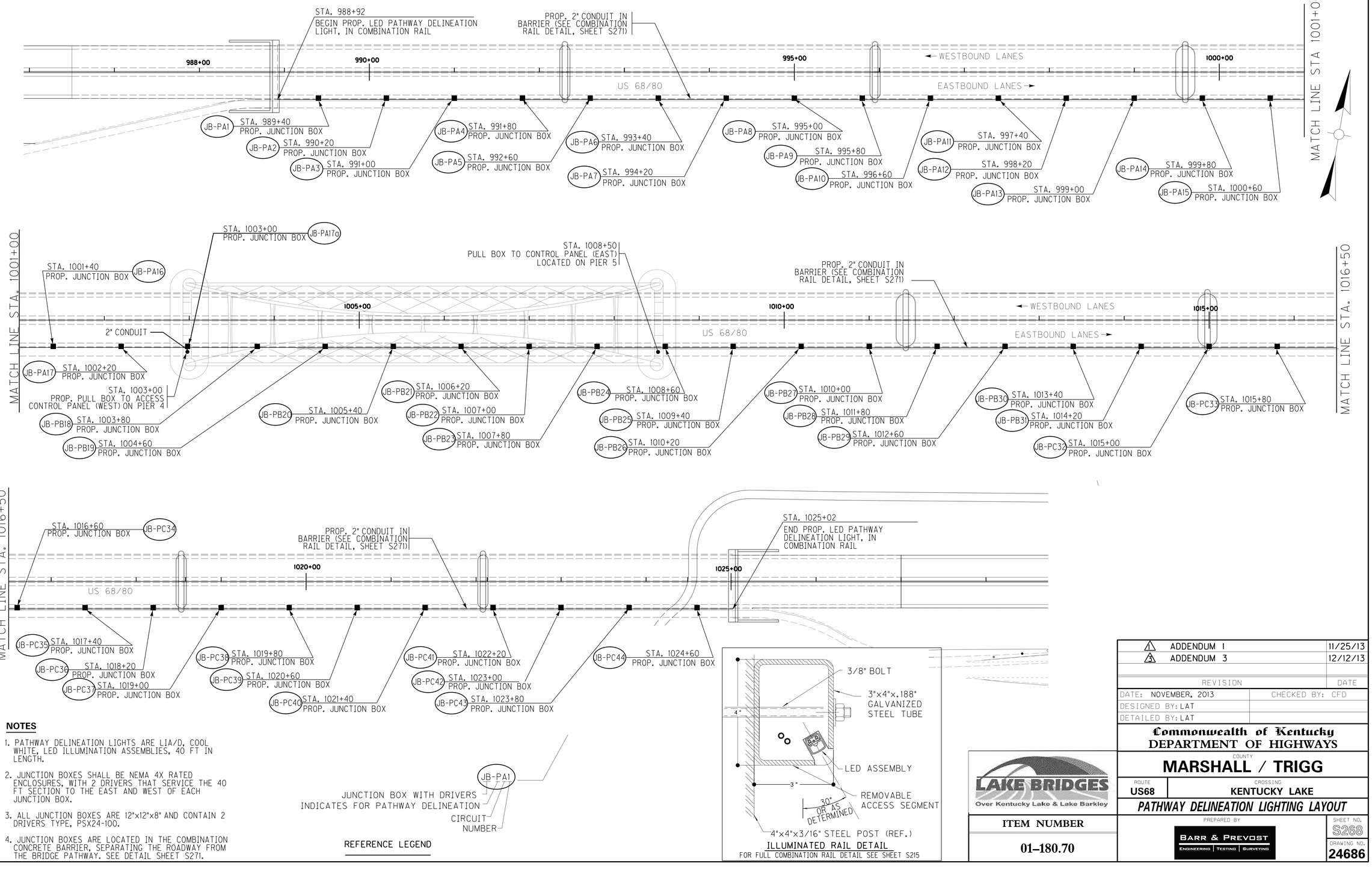
ITEM NUMBER
01-180.70

PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S264
DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S264 NAVIGATION PLAN SHEET.DGN
USER: latto
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

REVISED 12/12/13



NOTES

1. PATHWAY DELINEATION LIGHTS ARE LIA/D, COOL WHITE, LED ILLUMINATION ASSEMBLIES, 40 FT IN LENGTH.
2. JUNCTION BOXES SHALL BE NEMA 4X RATED ENCLOSURES, WITH 2 DRIVERS THAT SERVICE THE 40 FT SECTION TO THE EAST AND WEST OF EACH JUNCTION BOX.
3. ALL JUNCTION BOXES ARE 12"x12"x8" AND CONTAIN 2 DRIVERS TYPE, PSX24-100.
4. JUNCTION BOXES ARE LOCATED IN THE COMBINATION CONCRETE BARRIER, SEPARATING THE ROADWAY FROM THE BRIDGE PATHWAY. SEE DETAIL SHEET S271.

1	ADDENDUM 1	11/25/13
3	ADDENDUM 3	12/12/13
	REVISION	DATE

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** CROSSING: **KENTUCKY LAKE**

PATHWAY DELINEATION LIGHTING LAYOUT

ITEM NUMBER: **01-180.70**

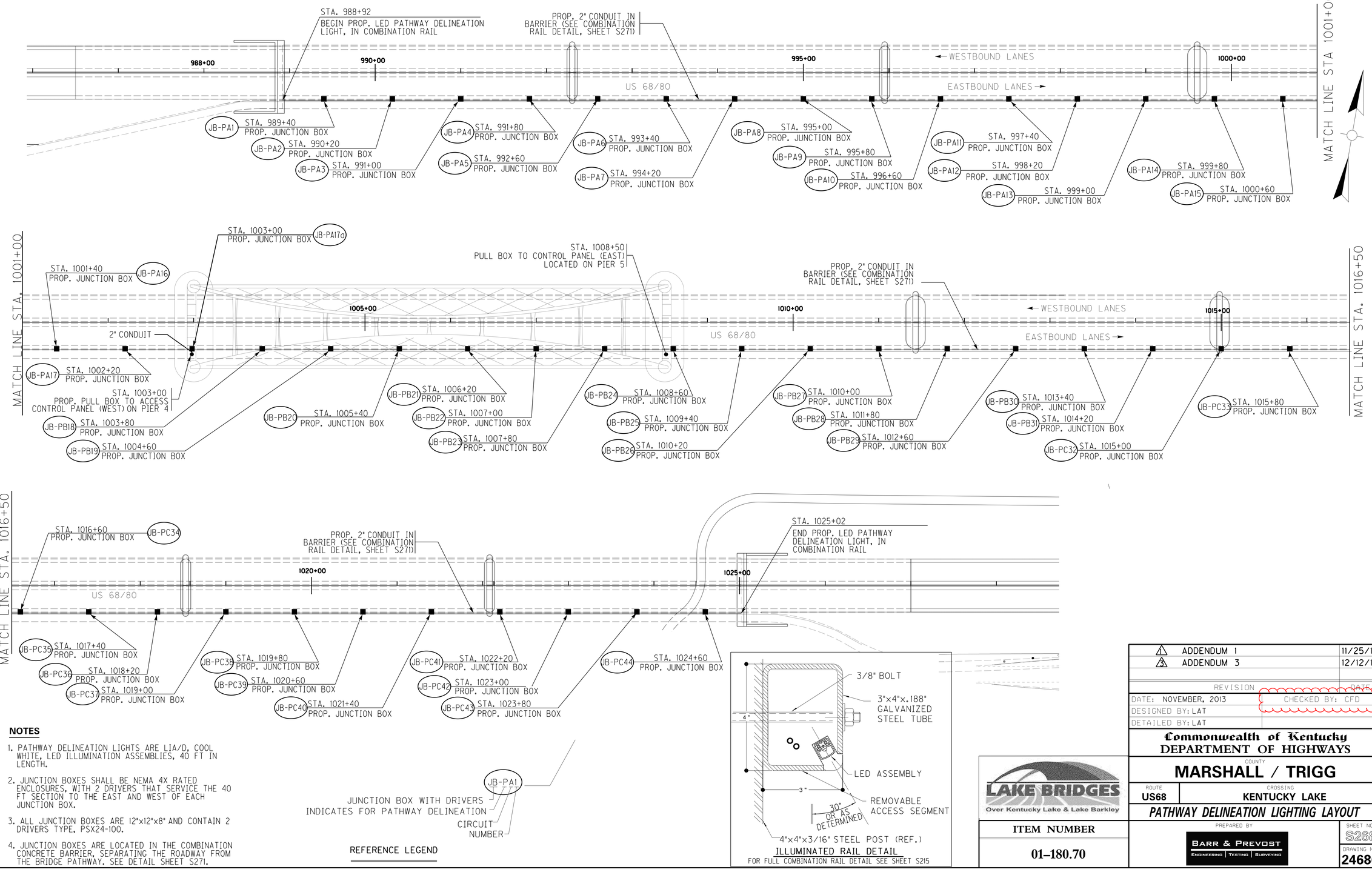
PREPARED BY: BARR & PREVOST ENGINEERING | TESTING | SURVEYING

SHEET NO. S268

DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S268 PATHWAYDELINEATION LAYOUT.DGN
USER: lmho
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

REVISED 12/12/13



NOTES

1. PATHWAY DELINEATION LIGHTS ARE LIA/D, COOL WHITE, LED ILLUMINATION ASSEMBLIES, 40 FT IN LENGTH.
2. JUNCTION BOXES SHALL BE NEMA 4X RATED ENCLOSURES, WITH 2 DRIVERS THAT SERVICE THE 40 FT SECTION TO THE EAST AND WEST OF EACH JUNCTION BOX.
3. ALL JUNCTION BOXES ARE 12"x12"x8" AND CONTAIN 2 DRIVERS TYPE, PSX24-100.
4. JUNCTION BOXES ARE LOCATED IN THE COMBINATION CONCRETE BARRIER, SEPARATING THE ROADWAY FROM THE BRIDGE PATHWAY. SEE DETAIL SHEET S271.

1	ADDENDUM 1	11/25/13
3	ADDENDUM 3	12/12/13
	REVISION	DATE

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

COUNTY: **MARSHALL / TRIGG**
ROUTE: **US68** CROSSING: **KENTUCKY LAKE**

PATHWAY DELINEATION LIGHTING LAYOUT

ITEM NUMBER: **01-180.70**

PREPARED BY: BARR & PREVOST ENGINEERING | TESTING | SURVEYING

SHEET NO. S268
DRAWING NO. 24686

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S268 PATHWAYDELINEATION LAYOUT.DGN
USER: lmho
DATE PLOTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

MicroStation v8.11.9.357 | E-SHEET NAME: | USER: ltito | DATE PLOTTED: December 12, 2013 | FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S269 S24686 ARCH.DGN

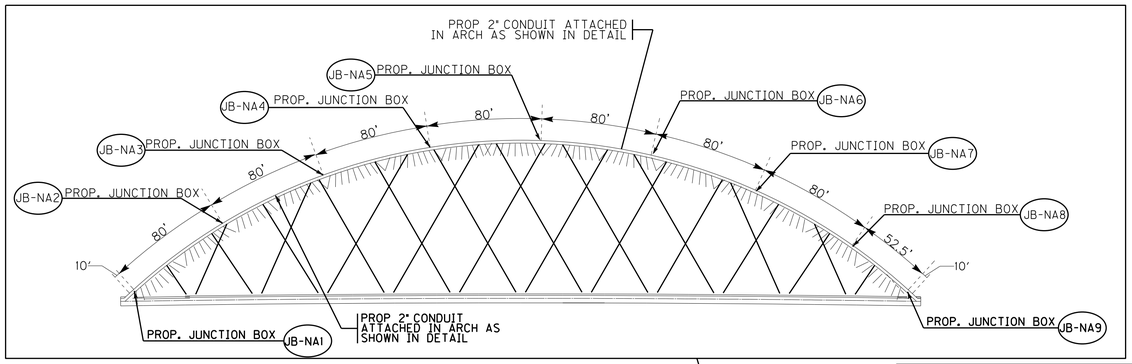
REVISED 12/12/13

NOTES

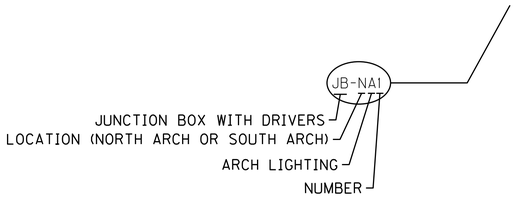
1. THE ARCH LGHTING FOR THE NORTH SIDE AND SOUTH SIDE OF THE KY LAKE BRIDGE WILL HAVE THE SAME JUNCTION BOX LAYOUT.

2. TO SERVICE THE ARCH LIGHTING ON THE NORTH SIDE OF THE BRIDGE THE LIGHTING CABLE WILL CROSS VIA A 2" CONDUIT, ATTACHED UNDER THE CONCRETE BRIDGE DECK, AT STA. 1008+50, PIER 5 AND CONNECT TO CONROL PANEL (EAST).

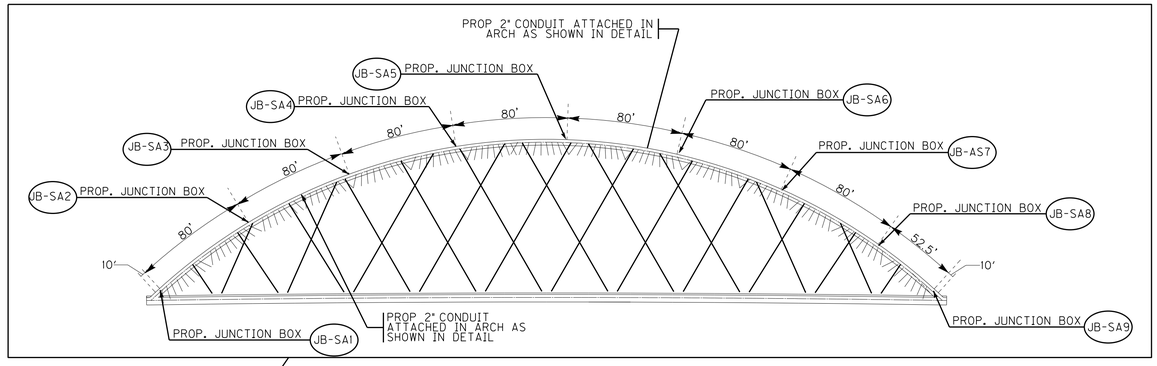
3. TO SERVICE THE ARCH LIGHTING ON THE SOUTH SIDE OF THE BRIDGE, THE CONDUIT AND WIRING SHALL RUN DOWN THE ARCH TO THE UNDERSIDE OF THE BRIDGE DECK AT PIER 4 AND CONNECT TO CONTROL PANEL (WEST).



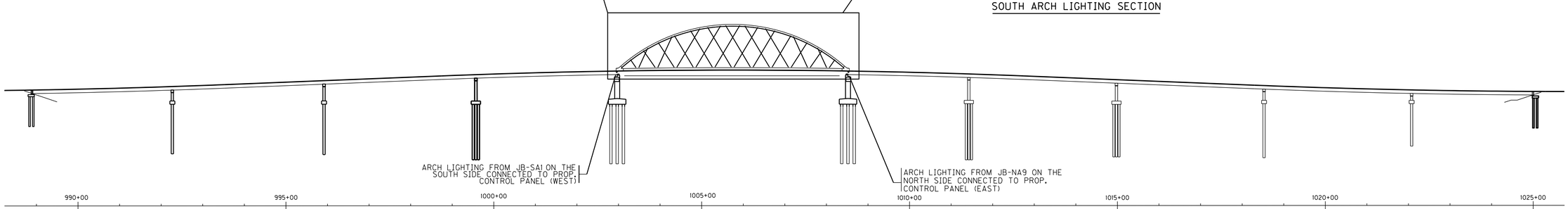
NORTH ARCH LIGHTING SECTION

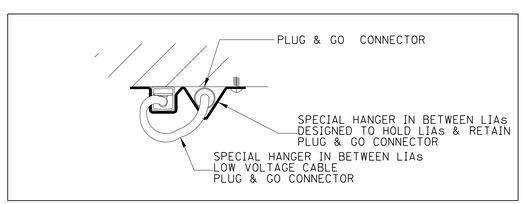


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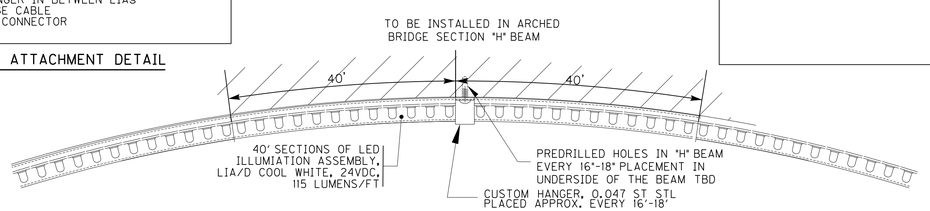


SOUTH ARCH LIGHTING SECTION

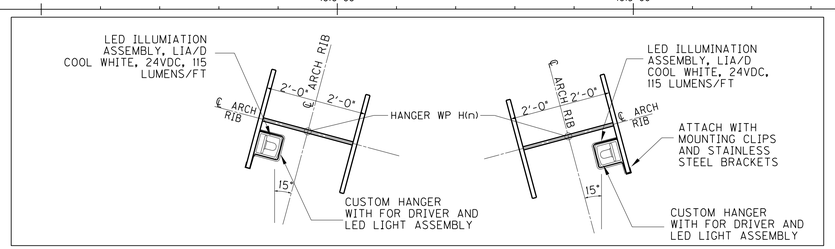




DRIVER ASSEMBLY AND CONDUIT ATTACHMENT DETAIL



ARCH LIGHTING AND HANGER ASSEMBLY DETAIL



LIGHTING ATTACHMENT -ARCH RIB SECTION

REVISION	DATE
3 ADDENDUM 3	12/12/13
DATE: NOVEMBER, 2013	CHECKED BY: CFD
DESIGNED BY: LAT	
DETAILED BY: LAT	

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH LIGHTING LAYOUT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S269

DRAWING NO. 24686

MicroStation v8.11.9.357 | E-SHEET NAME: | USER: ltito | DATE PLOTTED: December 12, 2013 | FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S269 S24686 ARCH.DGN

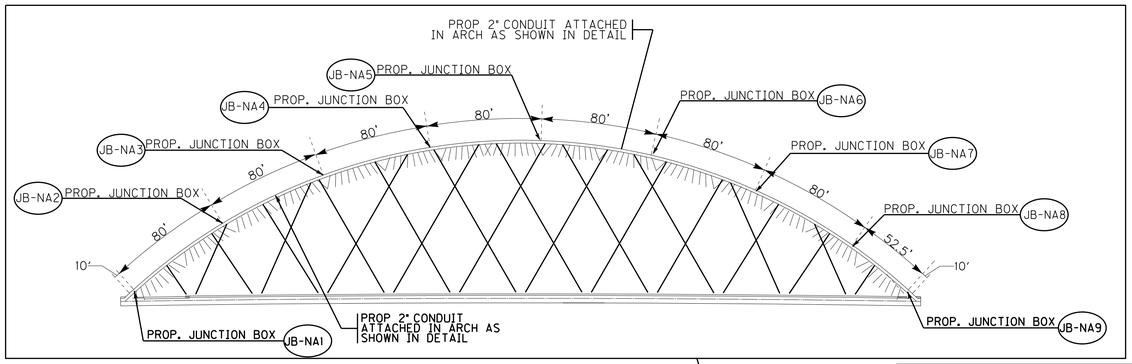
REVISED 12/12/13

NOTES

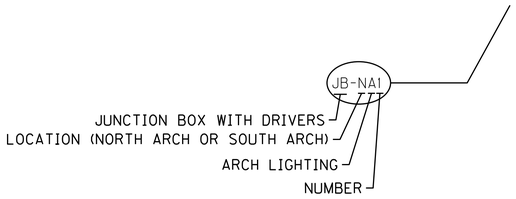
1. THE ARCH LGHTING FOR THE NORTH SIDE AND SOUTH SIDE OF THE KY LAKE BRIDGE WILL HAVE THE SAME JUNCTION BOX LAYOUT.

2. TO SERVICE THE ARCH LIGHTING ON THE NORTH SIDE OF THE BRIDGE THE LIGHTING CABLE WILL CROSS VIA A 2" CONDUIT, ATTACHED UNDER THE CONCRETE BRIDGE DECK, AT STA. 1008+50, PIER 5 AND CONNECT TO CONROL PANEL (EAST).

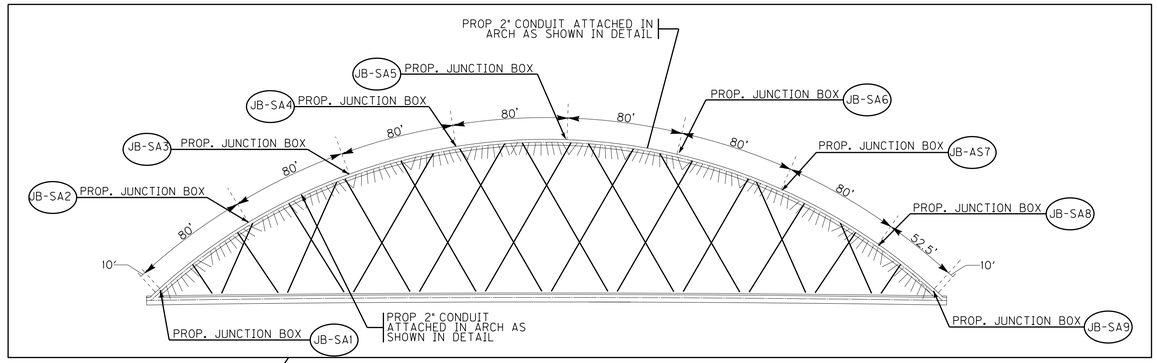
3. TO SERVICE THE ARCH LIGHTING ON THE SOUTH SIDE OF THE BRIDGE, THE CONDUIT AND WIRING SHALL RUN DOWN THE ARCH TO THE UNDERSIDE OF THE BRIDGE DECK AT PIER 4 AND CONNECT TO CONTROL PANEL (WEST).



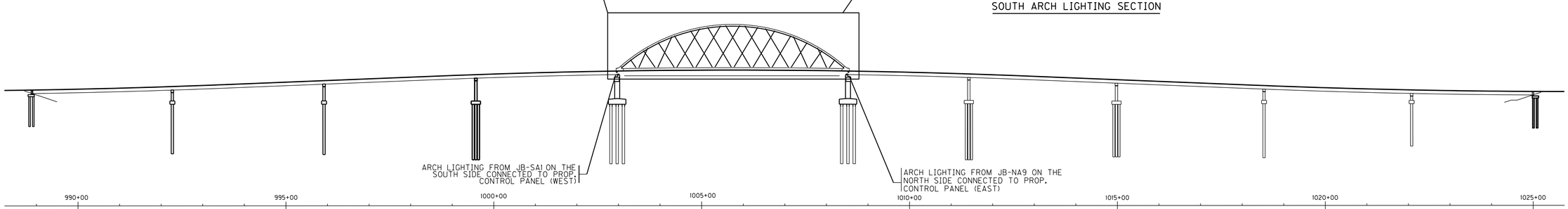
NORTH ARCH LIGHTING SECTION

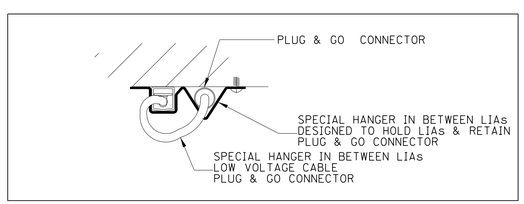


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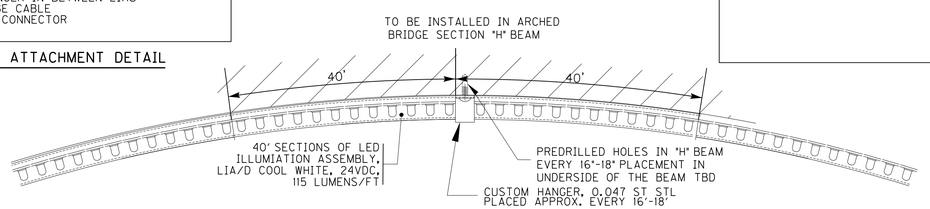


SOUTH ARCH LIGHTING SECTION

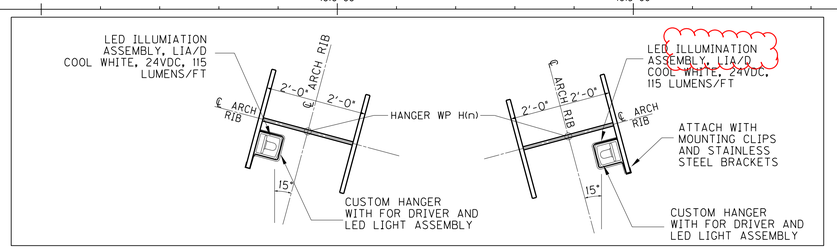




DRIVER ASSEMBLY AND CONDUIT ATTACHMENT DETAIL



ARCH LIGHTING AND HANGER ASSEMBLY DETAIL



LIGHTING ATTACHMENT -ARCH RIB SECTION

⚠3 ADDENDUM 3	12/12/13
REVISION	DATE
DATE: NOVEMBER, 2013	CHECKED BY: CFD
DESIGNED BY: LAT	
DETAILED BY: LAT	

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68

CROSSING: KENTUCKY LAKE

ARCH LIGHTING LAYOUT

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

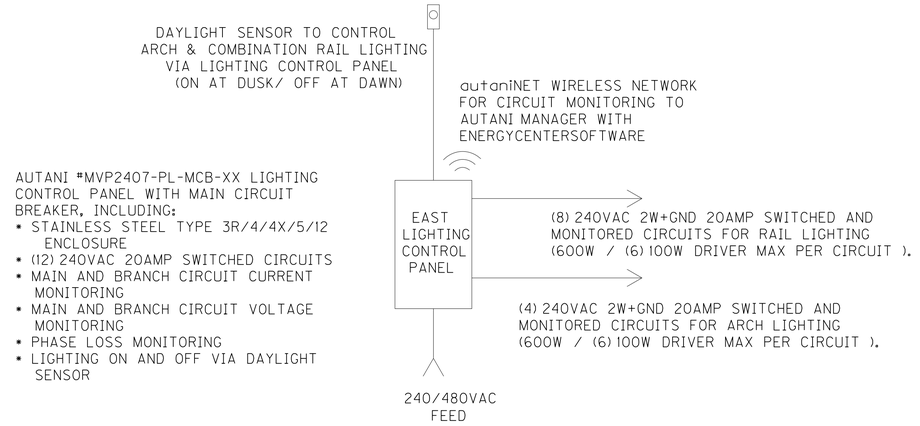
ITEM NUMBER
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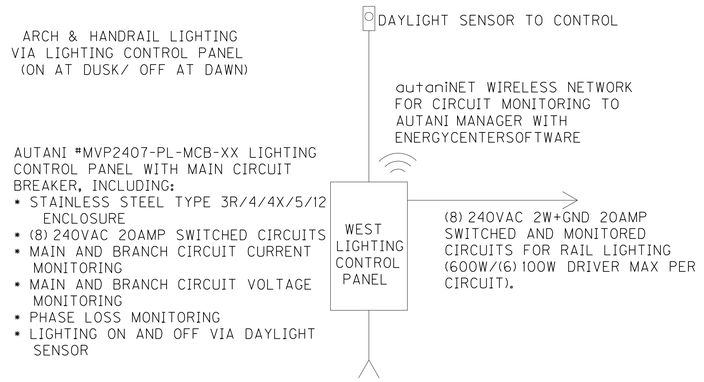
SHEET NO. S269

DRAWING NO. 24686

REVISED 12/12/13



EAST LIGHTING CONTROL PANEL (COMBINATION RAIL LIGHTING AND NORTH ARCH LIGHTING)



WEST LIGHTING CONTROL PANEL (COMBINATION RAIL LIGHTING AND SOUTH ARCH LIGHTING)

THE LIGHTING MONITORING SYSTEM SHALL CONSIST OF AN AUTANI MANAGER APPLIANCE AND ENERGYCENTER SOFTWARE THE LIGHTING MONITORING SYSTEM SHALL:

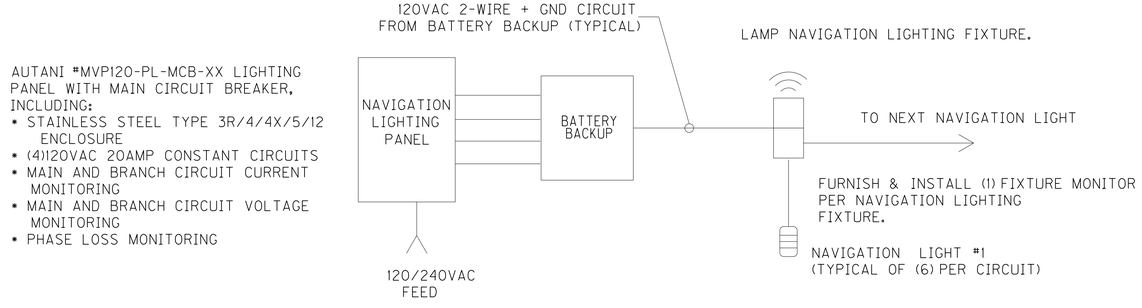
1) MONITOR THE FOLLOWING PER LIGHTING PANEL AND CIRCUIT:
- MAIN AND BRANCH CIRCUIT CURRENT
- MAIN AND BRANCH CIRCUIT VOLTAGE
- PHASE LOSS
- COMMUNICATIONS LOSS

DATA SHALL BE ACCESSIBLE VIA THE INTERNET PROPERLY AUTHORIZED DEVICES WITH A WEB BROWSER. THE AUTANI MANAGER SHALL STORE UP TO (2) YEARS OF DATA FOR RETRIEVAL AND ACCESS. DATA SHALL BE AVAILABLE FOR EXPORT VIA .CSV FILES.

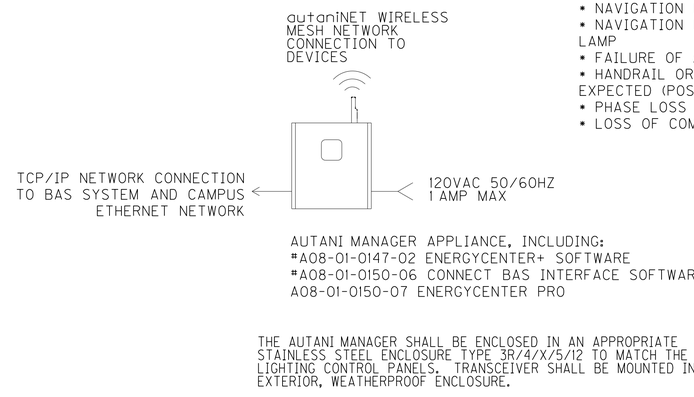
2) MONITOR THE FOLLOWING PER NAVIGATION LIGHTING FIXTURE:
- FIXTURE CURRENT
- FAILURE OF PRIMARY LAMP AS INDICATED BY DUAL LAMP NAVIGATION LIGHTING FIXTURE.

THE AFC- FIXTURE MONITOR SHALL BE A PASSIVE DEVICE. NAVIGATION LIGHTING FIXTURES SHALL NOT RELY ON THE FIXTURE MONITOR TO TURN ON OR TURN OFF.

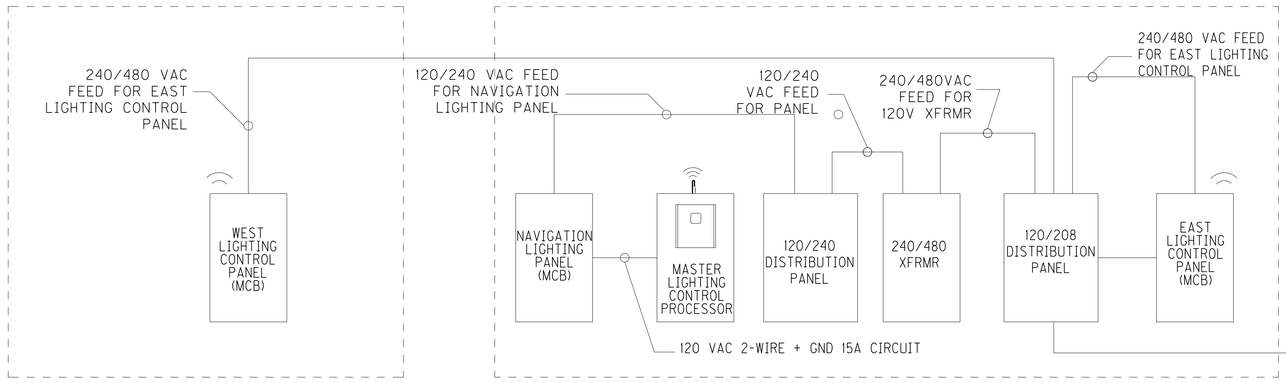
3) THE LIGHTING MONITORING SYSTEM SHALL BE ABLE TO DISPLAY AND, VIA EMAIL, DISTRIBUTE THE FOLLOWING ALERTS:
- NAVIGATION LIGHTING FIXTURE IS NOT ON
- NAVIGATION LIGHTING FIXTURE HAS SWITCHED TO BACKUP LAMP
- FAILURE OF ARCH OR HANDRAIL LIGHTING CIRCUIT
- HANDRAIL OR ARCH LIGHTING CIRCUIT LOAD IS LESS THAN EXPECTED (POSSIBLE DRIVER OR SEGMENT FAILURE)
- PHASE LOSS AT LIGHTING OR LIGHTING CONTROL PANEL
- LOSS OF COMMUNICATIONS WITH A GIVEN DEVICE



NAVIGATION LIGHTING PANEL & FIXTURE MONITORS



MASTER LIGHTING CONTROL PROCESSOR



PIER 4 EQUIPMENT

PIER 5 EQUIPMENT

IT IS RECOMMENDED THAT THE MANAGER BE POWERED FROM A DEDICATED, CLEAN UPS, PROTECTED SOURCE

1	ADDENDUM 1	11/25/13
3	ADDENDUM 3	12/12/13
	REVISION	DATE

DATE: NOVEMBER, 2013 — CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 — CROSSING: KENTUCKY LAKE

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

CONTROLLER DETAILS

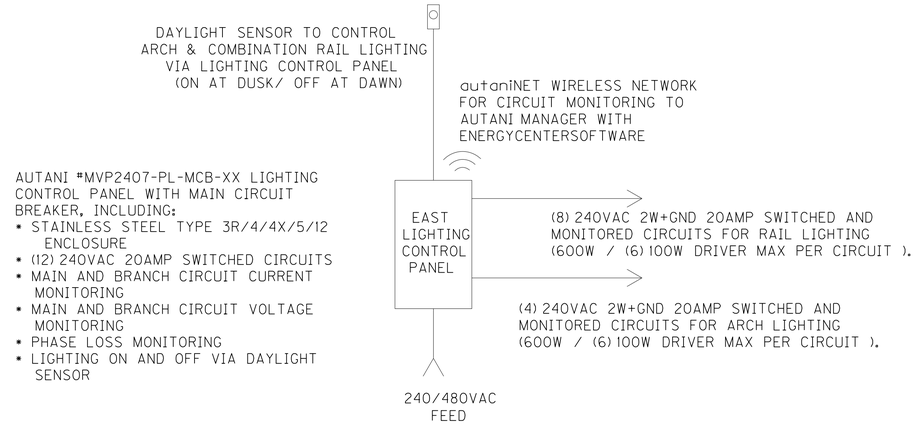
ITEM NUMBER
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PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

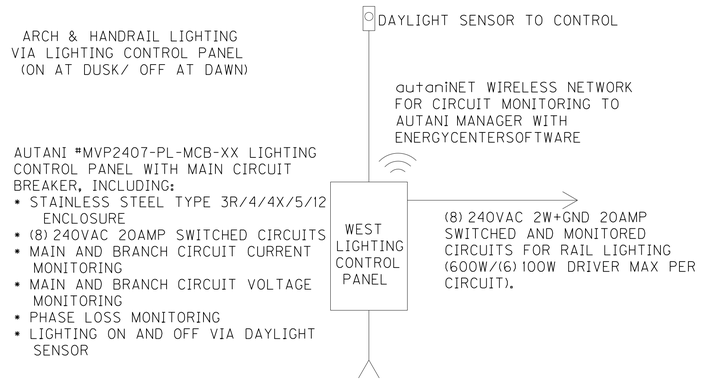
SHEET NO. S270
DRAWING NO. 24686

MicroStation v8.11.9.357 E-SHEET NAME: USER: lltlo DATE PLOTTED: December 12, 2013 FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S270 S24686 CONTROLLER DETAILS.DGN

REVISED 12/12/13



EAST LIGHTING CONTROL PANEL
(COMBINATION RAIL LIGHTING AND NORTH ARCH LIGHTING)



WEST LIGHTING CONTROL PANEL
(COMBINATION RAIL LIGHTING AND SOUTH ARCH LIGHTING)

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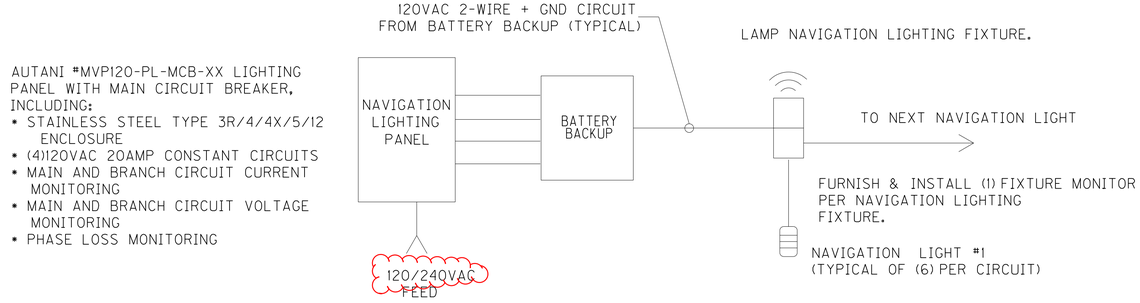
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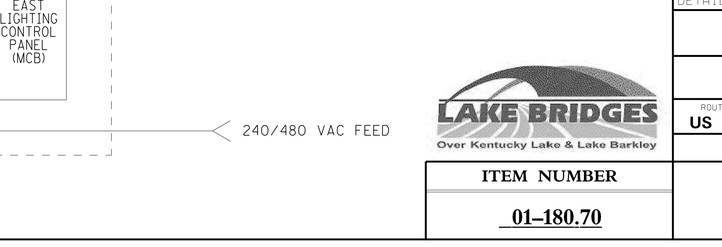
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- LOSS OF COMMUNICATIONS WITH A GIVEN DEVICE

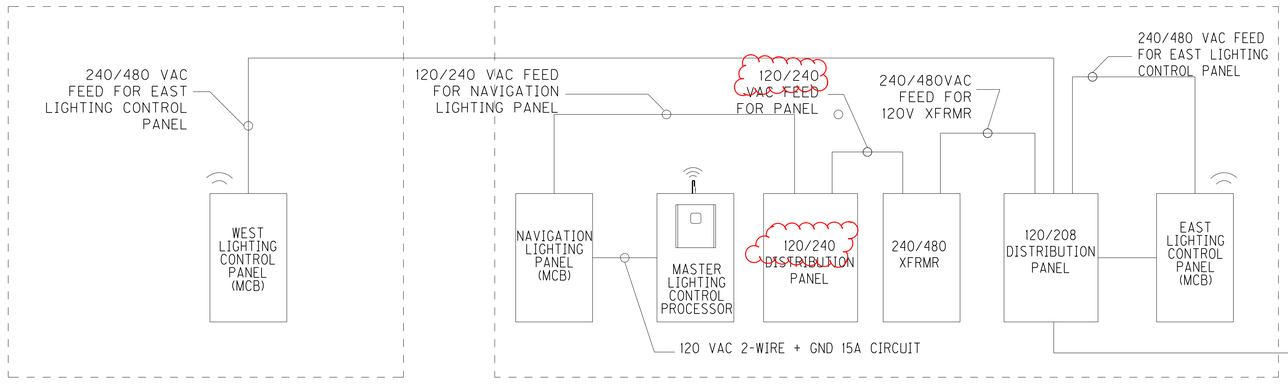


NAVIGATION LIGHTING PANEL & FIXTURE MONITORS



THE AUTANI MANAGER SHALL BE ENCLOSED IN AN APPROPRIATE STAINLESS STEEL ENCLOSURE TYPE 3R/4/4X/5/12 TO MATCH THE LIGHTING CONTROL PANELS. TRANSCEIVER SHALL BE MOUNTED IN AN EXTERIOR, WEATHERPROOF ENCLOSURE.

MASTER LIGHTING CONTROL PROCESSOR



PIER 4 EQUIPMENT

PIER 5 EQUIPMENT

IT IS RECOMMENDED THAT THE MANAGER BE POWERED FROM A DEDICATED, CLEAN UPS, PROTECTED SOURCE

REVISION	DATE
⚠1 ADDENDUM 1	11/25/13
⚠3 ADDENDUM 3	12/12/13

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DESIGNED BY: LAT
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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US 68 CROSSING: KENTUCKY LAKE

CONTROLLER DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

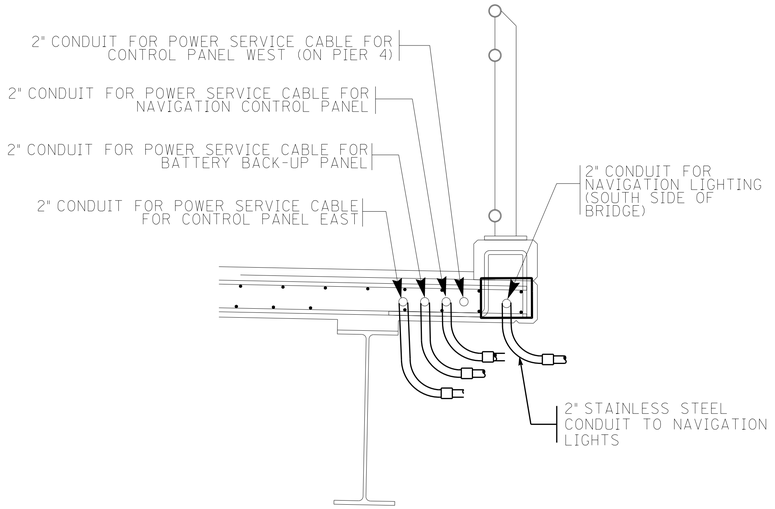
ITEM NUMBER
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PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

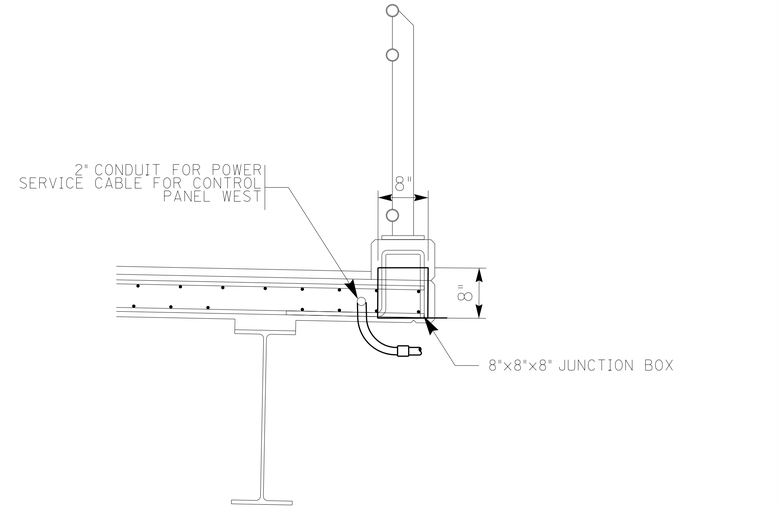
SHEET NO. S270
DRAWING NO. 24686

MicroStation v8.11.9.357 E-SHEET NAME: USER: ltitto DATE PLOTTED: December 12, 2013 FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S270 S24686 CONTROLLER DETAILS.DGN

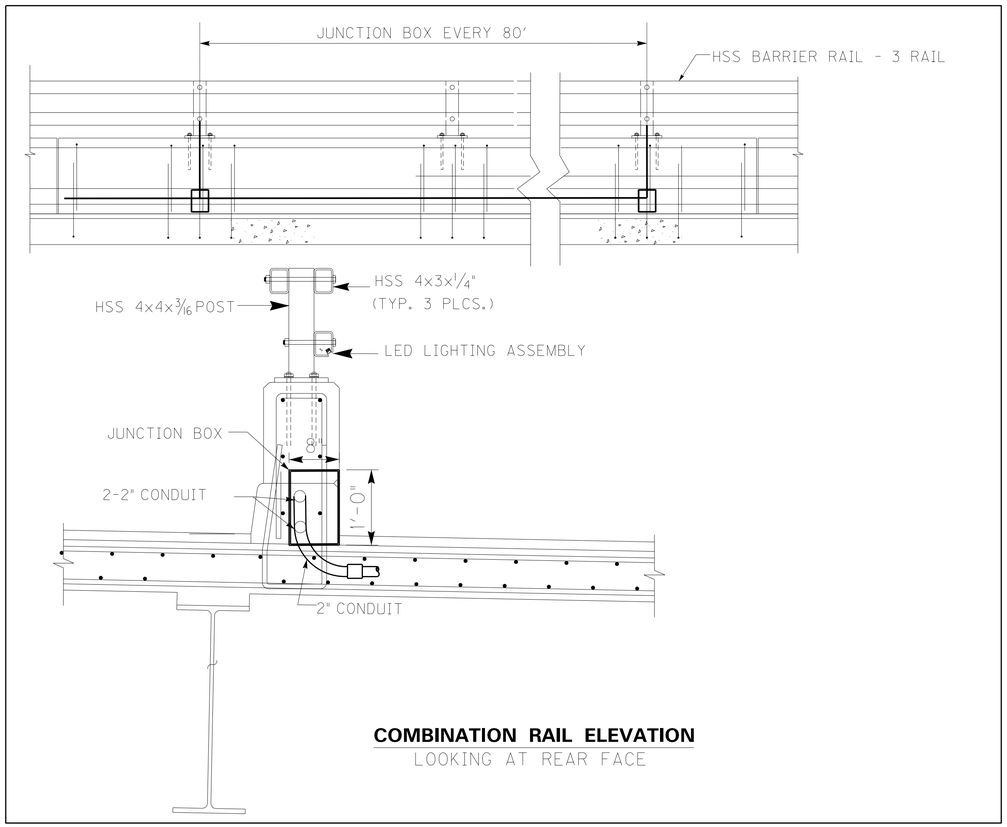
REVISED 12/12/13



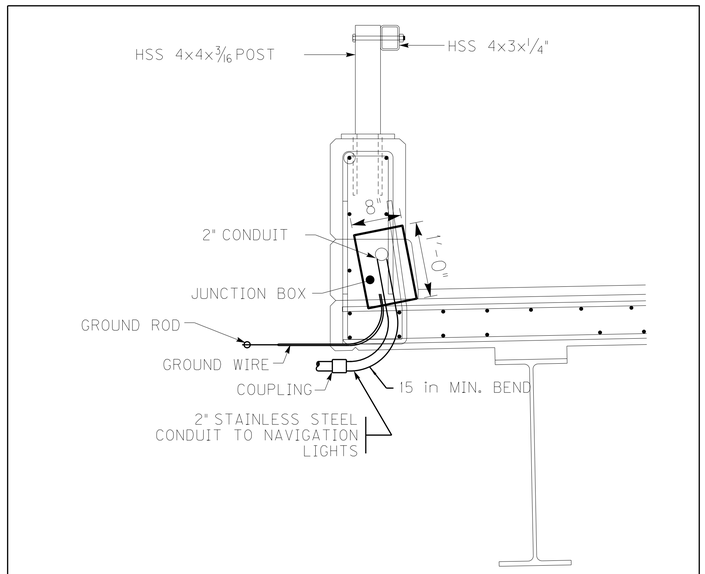
PEDESTRIAN RAILING (SOUTH SIDE OF BRIDGE)
AT PIER 5 CONNECTS UNDER BRIDGE DECK TO CONTROL PANEL



PEDESTRIAN RAILING (SOUTH SIDE OF BRIDGE)
AT PIER 4 CONNECTS UNDER BRIDGE DECK TO CONTROL PANEL



COMBINATION RAIL ELEVATION
LOOKING AT REAR FACE



TRAFFIC RAIL (NORTH SIDE OF BRIDGE)
NAVIGATION LIGHTING CONDUIT

REVISION	DATE
1 ADDENDUM 1 - ENTIRE SHEET	11/25/13
3 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 | CHECKED BY: CFD
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Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

LIGHTING DETAILS

ITEM NUMBER: **01-180.70**

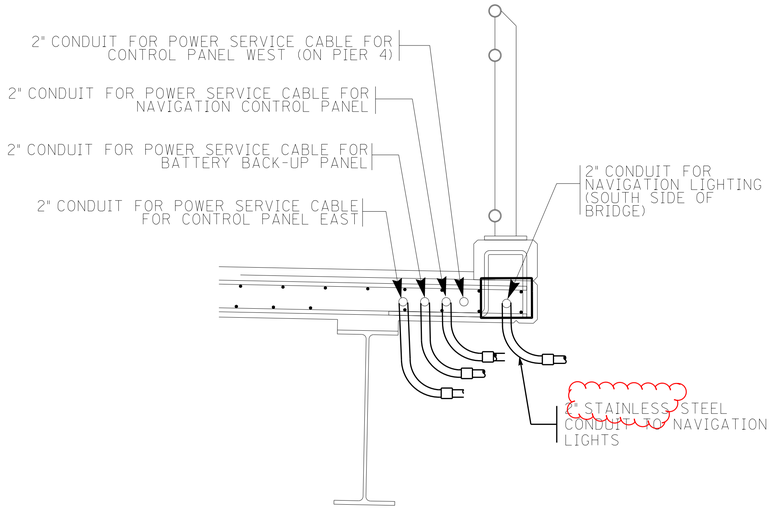
PREPARED BY: BARR & PREVOST ENGINEERING | TESTING | SURVEYING

SHEET NO. S271
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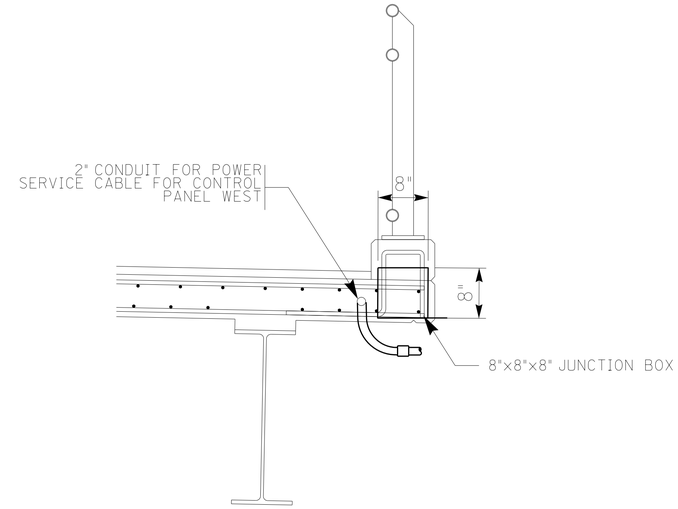
LAKE BRIDGES Over Kentucky Lake & Lake Barkley

MicroStation v8.11.9.357 | E-SHEET NAME: ——— | USER: lftto | DATE PLOTTED: December 12, 2013 | FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S271 S274 DETAILS.DGN

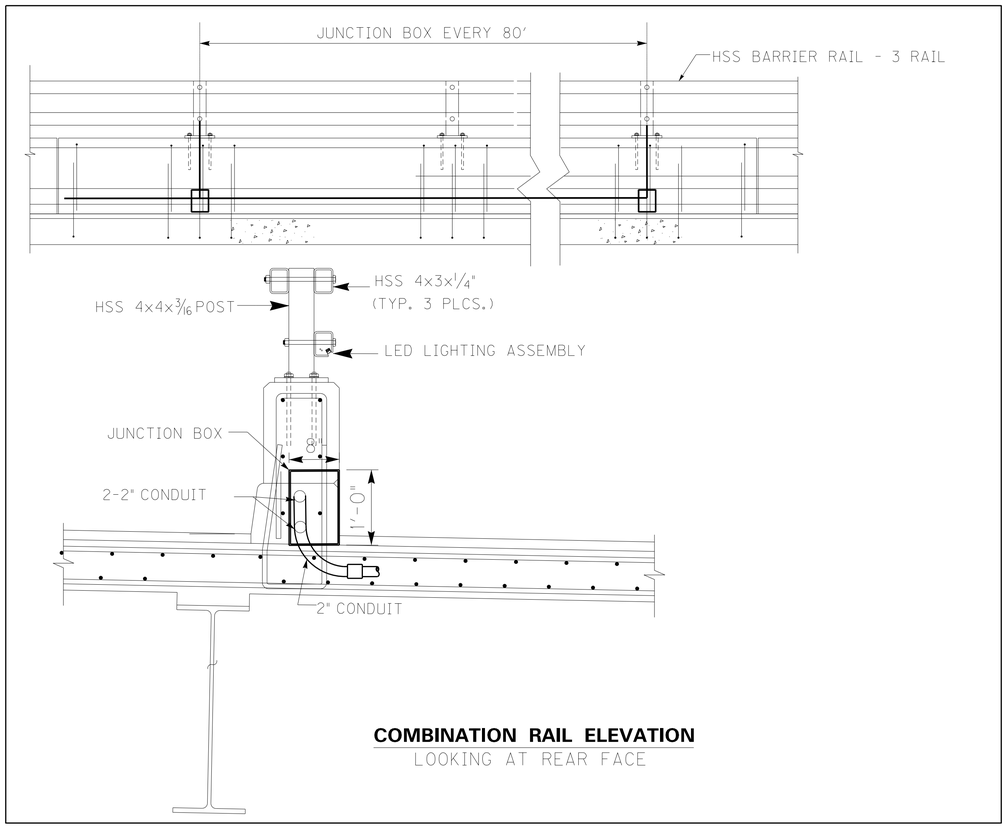
REVISED 12/12/13



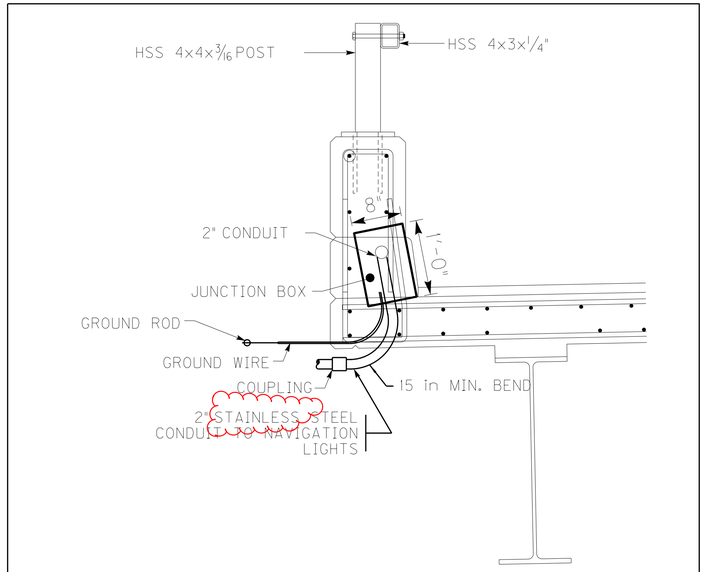
PEDESTRIAN RAILING (SOUTH SIDE OF BRIDGE)
AT PIER 5 CONNECTS UNDER BRIDGE DECK TO CONTROL PANEL



PEDESTRIAN RAILING (SOUTH SIDE OF BRIDGE)
AT PIER 4 CONNECTS UNDER BRIDGE DECK TO CONTROL PANEL



COMBINATION RAIL ELEVATION
LOOKING AT REAR FACE



TRAFFIC RAIL (NORTH SIDE OF BRIDGE)
NAVIGATION LIGHTING CONDUIT

1	ADDENDUM 1 - ENTIRE SHEET	11/25/13
3	ADDENDUM 3	12/12/13
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DATE: NOVEMBER, 2013 — CHECKED BY: CFD
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DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** — CROSSING: **KENTUCKY LAKE**

LIGHTING DETAILS

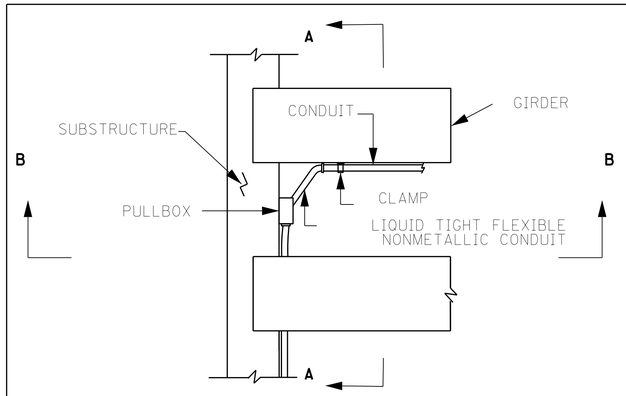
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PREPARED BY: BARR & PREVOST — ENGINEERING | TESTING | SURVEYING

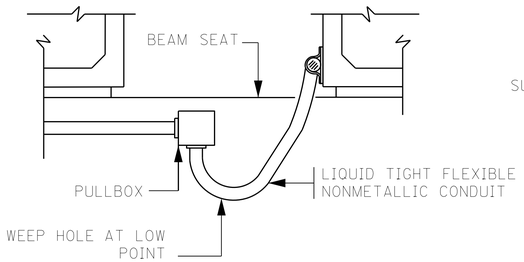
SHEET NO.: S271
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LAKE BRIDGES — Over Kentucky Lake & Lake Barkley

MicroStation v8.11.9.357
E-SHEET NAME: ———
USER: lfito
DATE PLOTTED: December 12, 2013
FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S271 S274 DETAILS.DGN

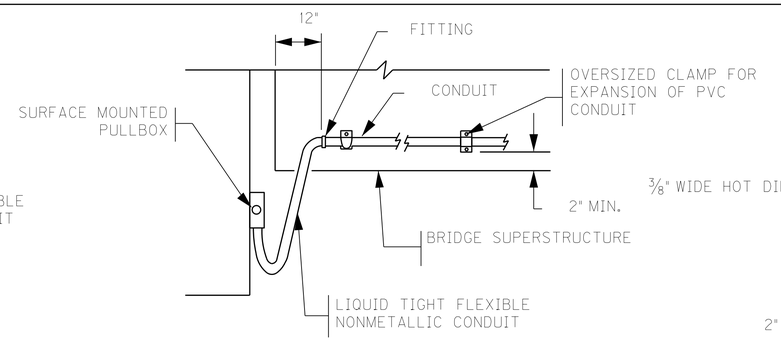


PLAN

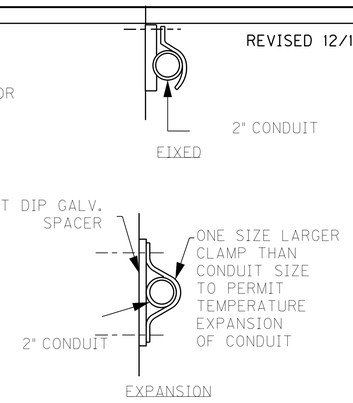


SECTION A-A

CONDUIT EXPANSION SLEEVE DETAIL

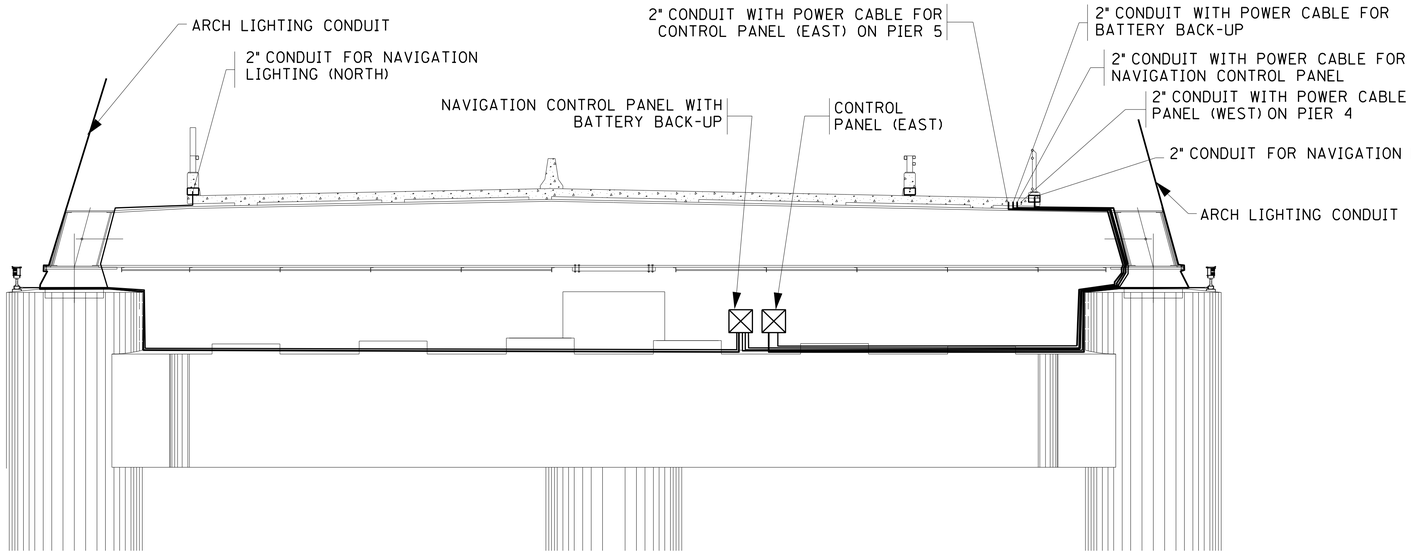


SECTION B-B



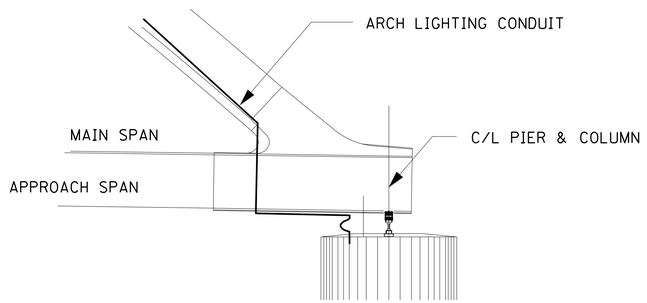
REVISED 12/12/13

* ALL COMPONENTS SHOWN ARE INCLUDED IN THE COST OF THE CONDUIT

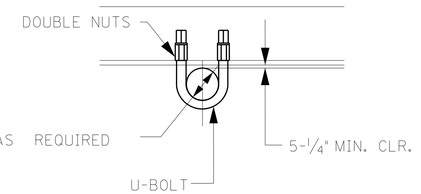


PIER 5 ELEVATION WITH CONDUIT LAYOUT

SIMILAR LAYOUT FOR PIER 4 WITH ONLY ONE CONTROL PANEL
AND ONE 2" CONDUIT



END ELEVATION



MOUNTING DETAIL FOR CONDUIT HANGER IS FOR STEEL CONDUIT ONLY. ALL HARDWARE & STEEL TO BE GALVANIZED. ALL OTHER METHODS MUST BE APPROVED BY THE ENGINEER.

CONDUIT HANGER FOR UNDER
BRIDGE DECK

REVISION	DATE
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DEPARTMENT OF HIGHWAYS

COUNTY: MARSHALL / TRIGG

ROUTE: US68 | CROSSING: KENTUCKY LAKE

LIGHTING DETAILS

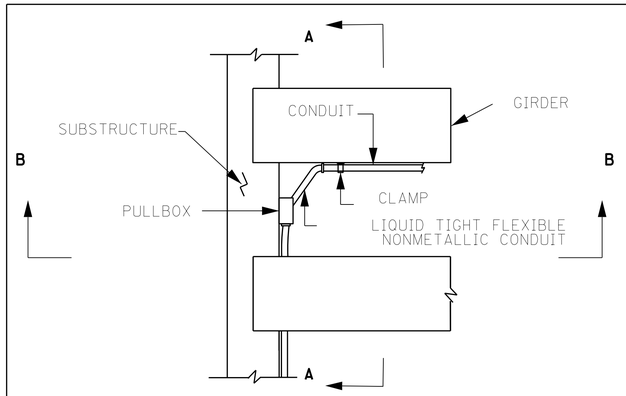
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PREPARED BY: BARR & PREVOST ENGINEERING | TESTING | SURVEYING

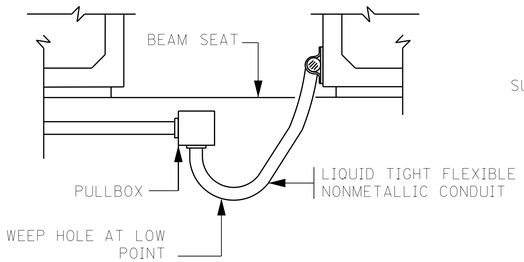
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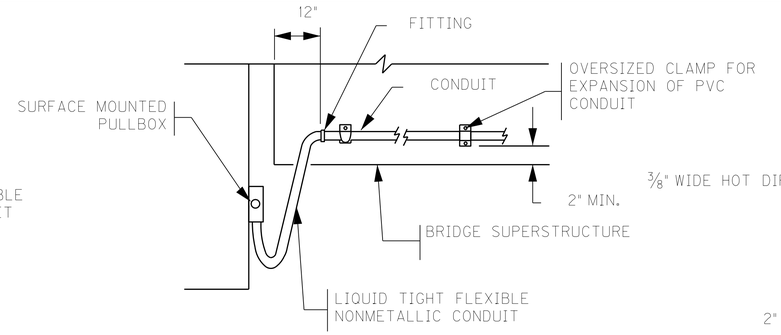


PLAN

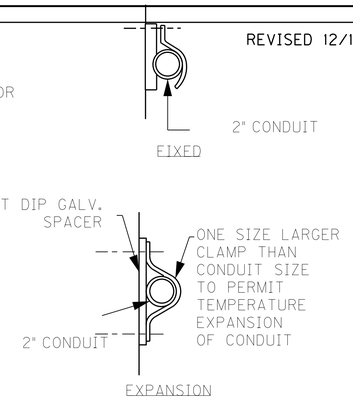


SECTION A-A

CONDUIT EXPANSION SLEEVE DETAIL



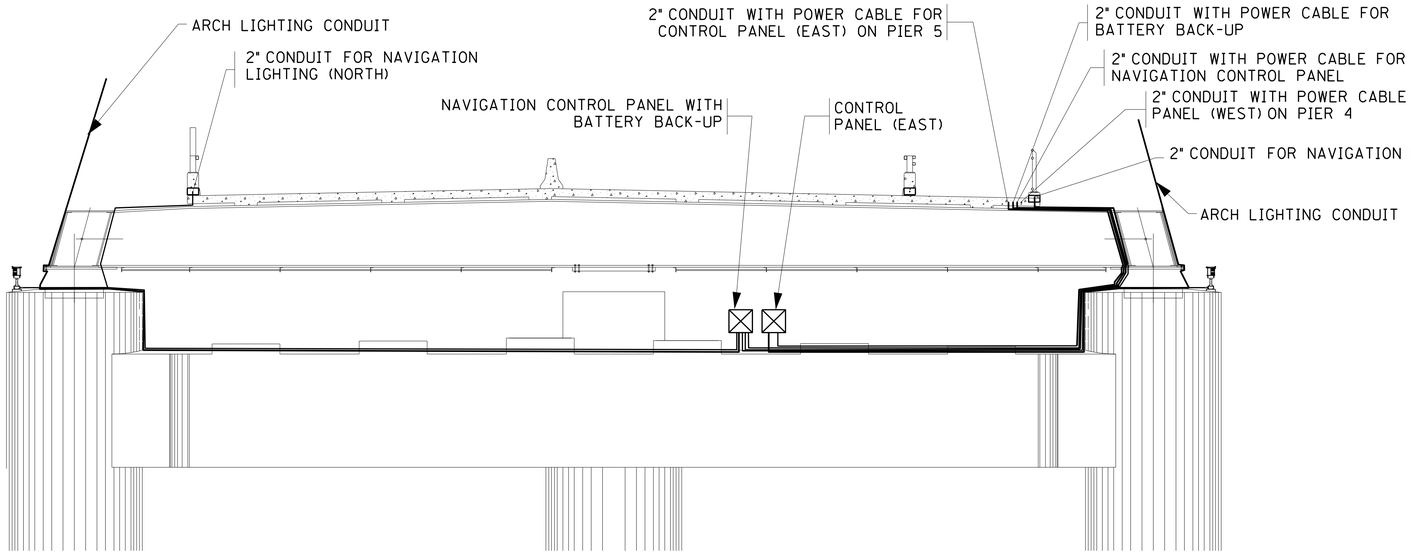
SECTION B-B



EXPANSION

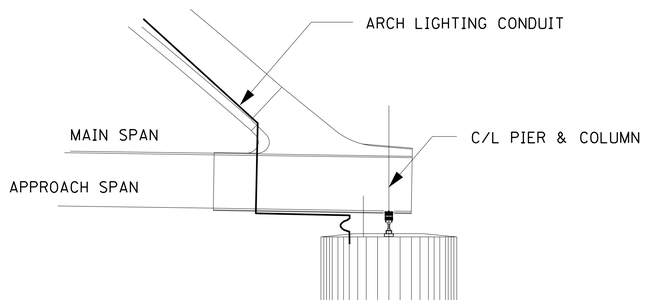
REVISED 12/12/13

* ALL COMPONENTS SHOWN ARE INCLUDED IN THE COST OF THE CONDUIT

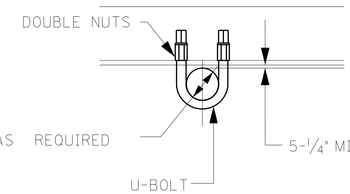


PIER 5 ELEVATION WITH CONDUIT LAYOUT

SIMILAR LAYOUT FOR PIER 4 WITH ONLY ONE CONTROL PANEL
AND ONE 2" CONDUIT



END ELEVATION



MOUNTING DETAIL FOR CONDUIT HANGER IS FOR STEEL CONDUIT ONLY. ALL HARDWARE & STEEL TO BE GALVANIZED. ALL OTHER METHODS MUST BE APPROVED BY THE ENGINEER.

CONDUIT HANGER FOR UNDER
BRIDGE DECK

1	ADDENDUM - ENTIRE SHEET	11/25/13
3	ADDENDUM 3	12/12/13
	REVISION	DATE

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE **US68** CROSSING **KENTUCKY LAKE**

LIGHTING DETAILS

ITEM NUMBER
01-180.70

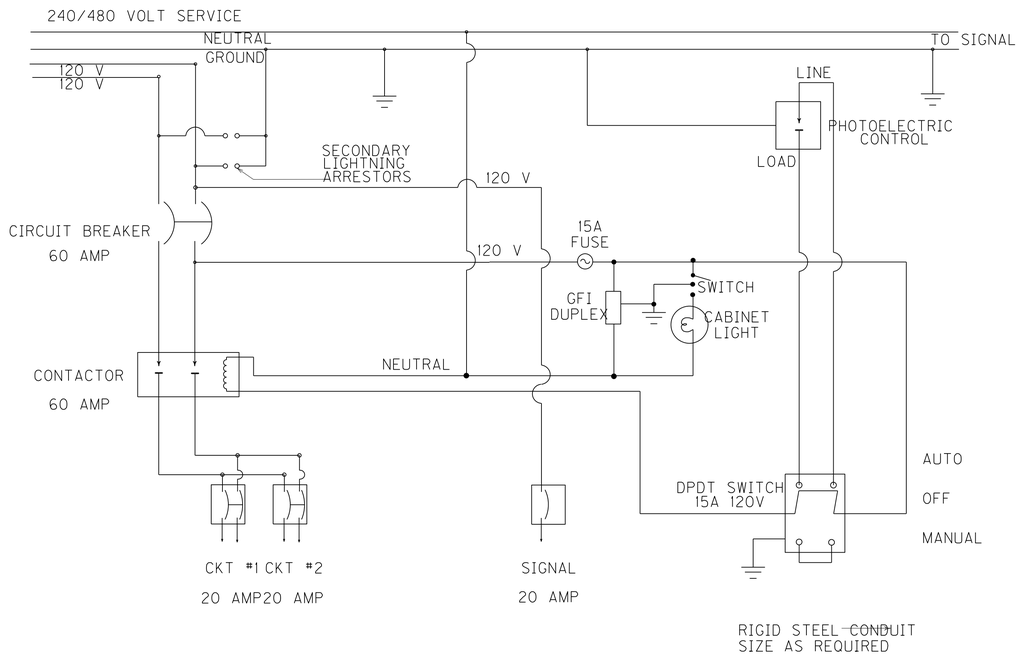
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

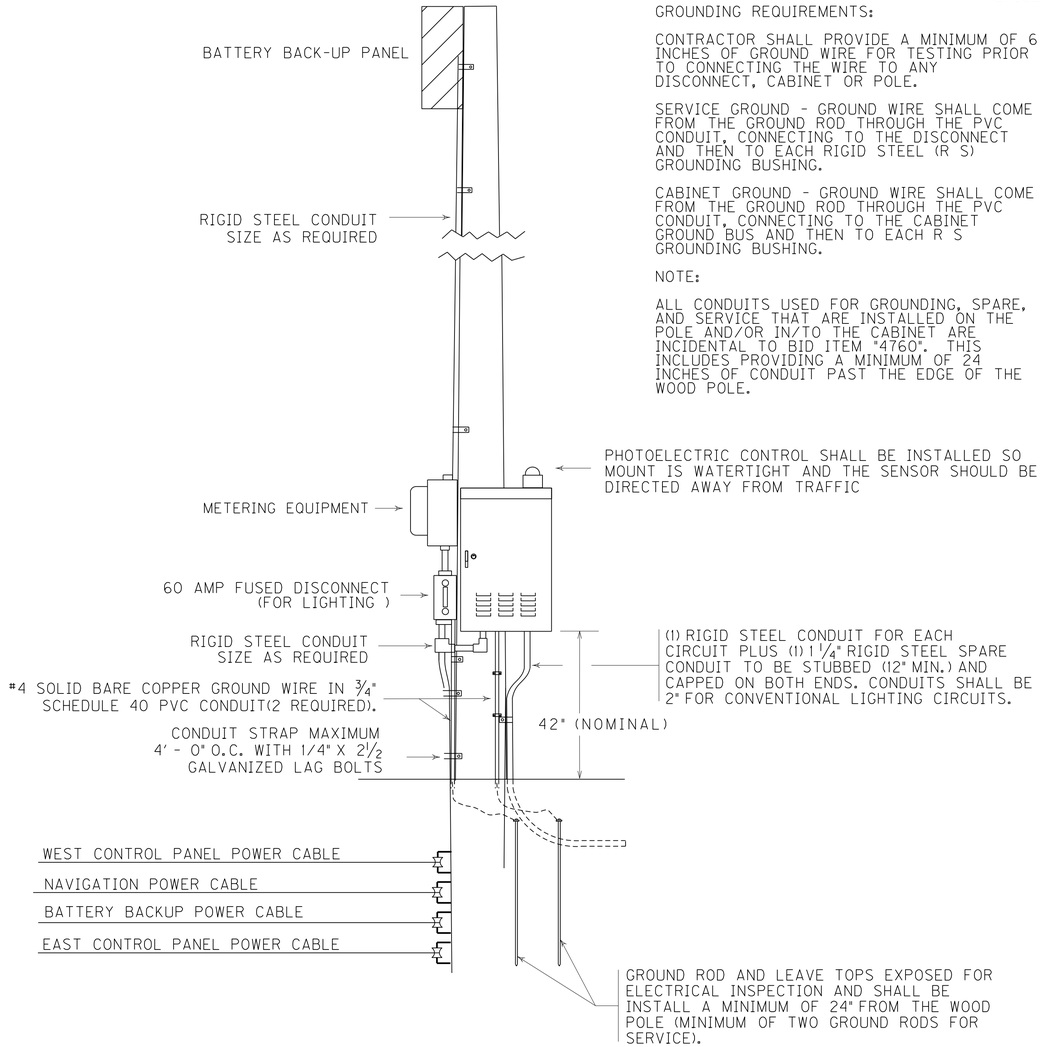
SHEET NO. S272
DRAWING NO. **24686**

FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S271 S274 DETAILS.DGN
USER: lmito
DATE PLOTTED: December 12, 2013
E-SHEET NAME:
MicroStation v8.11.9.357

MicroStation v8.11.9.357
E-SHEET NAME: _____
USER: ttto
DATE PLOTTED: December 12, 2013
FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S271 S274 DETAILS.DGN

REVISED 12/12/13





GROUNDING REQUIREMENTS:

CONTRACTOR SHALL PROVIDE A MINIMUM OF 6 INCHES OF GROUND WIRE FOR TESTING PRIOR TO CONNECTING THE WIRE TO ANY DISCONNECT, CABINET OR POLE.

SERVICE GROUND - GROUND WIRE SHALL COME FROM THE GROUND ROD THROUGH THE PVC CONDUIT, CONNECTING TO THE DISCONNECT AND THEN TO EACH RIGID STEEL (R S) GROUNDING BUSHING.

CABINET GROUND - GROUND WIRE SHALL COME FROM THE GROUND ROD THROUGH THE PVC CONDUIT, CONNECTING TO THE CABINET GROUND BUS AND THEN TO EACH R S GROUNDING BUSHING.

NOTE:

ALL CONDUITS USED FOR GROUNDING, SPARE, AND SERVICE THAT ARE INSTALLED ON THE POLE AND/OR IN/TO THE CABINET ARE INCIDENTAL TO BID ITEM "4760". THIS INCLUDES PROVIDING A MINIMUM OF 24 INCHES OF CONDUIT PAST THE EDGE OF THE WOOD POLE.

PHOTOELECTRIC CONTROL SHALL BE INSTALLED SO MOUNT IS WATERTIGHT AND THE SENSOR SHOULD BE DIRECTED AWAY FROM TRAFFIC

(1) RIGID STEEL CONDUIT FOR EACH CIRCUIT PLUS (1) 1 1/4" RIGID STEEL SPARE CONDUIT TO BE STUBBED (12" MIN.) AND CAPPED ON BOTH ENDS. CONDUITS SHALL BE 2" FOR CONVENTIONAL LIGHTING CIRCUITS.

GROUND ROD AND LEAVE TOPS EXPOSED FOR ELECTRICAL INSPECTION AND SHALL BE INSTALL A MINIMUM OF 24" FROM THE WOOD POLE (MINIMUM OF TWO GROUND RODS FOR SERVICE).

REVISION	DATE
1 ADDENDUM - ENTIRE SHEET	11/25/13
3 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE
US68

CROSSING
KENTUCKY LAKE

LIGHTING DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

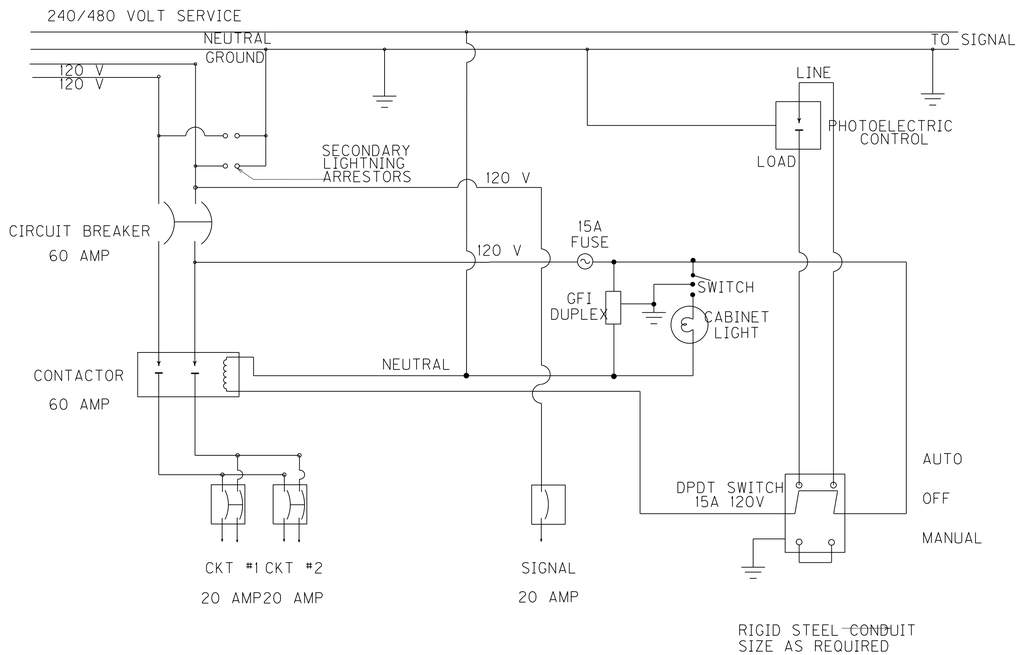
ITEM NUMBER
01-180.70

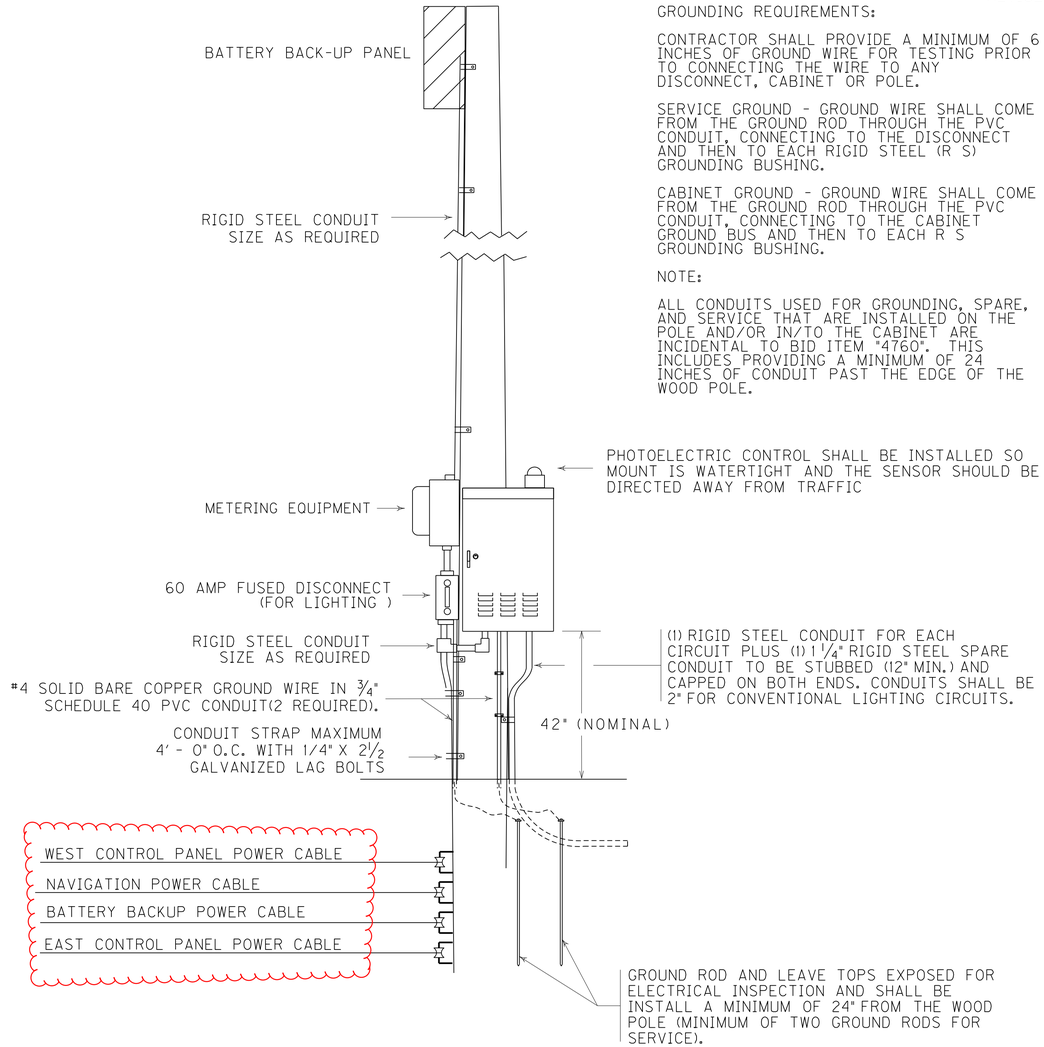
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO.
S273

DRAWING NO.
24686

REVISED 12/12/13





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DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE **US68** CROSSING **KENTUCKY LAKE**

LIGHTING DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

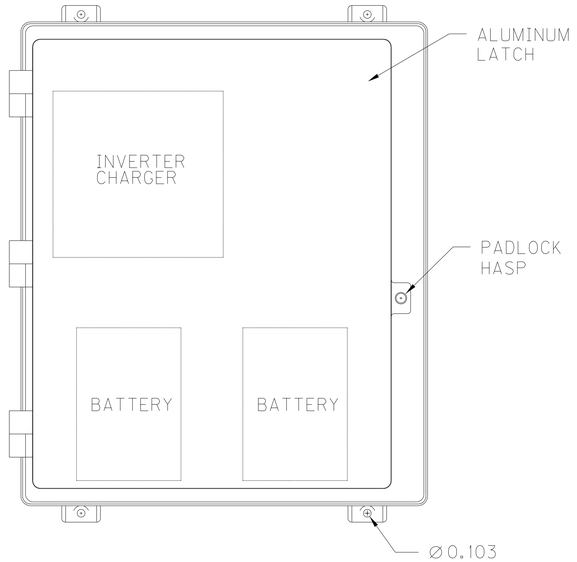
ITEM NUMBER
01-180.70

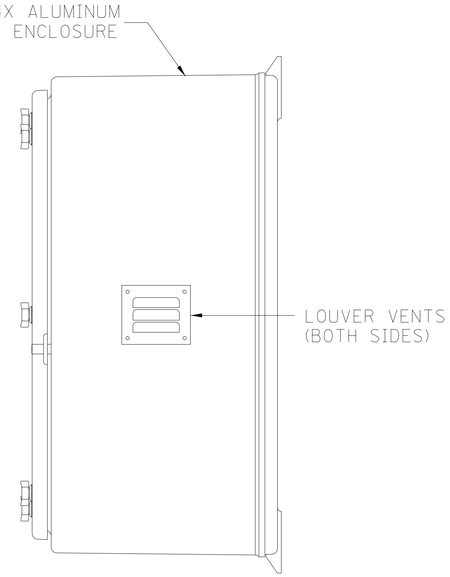
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

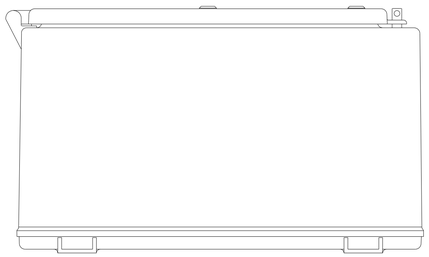
SHEET NO. S273
DRAWING NO. 24686

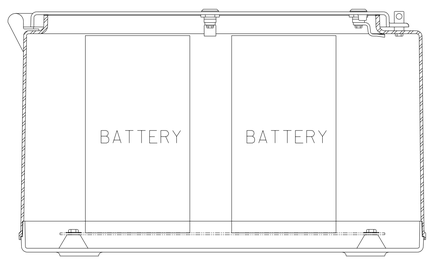
MicroStation v8.11.9.357
E-SHEET NAME: _____
USER: ltito
DATE PLOTTED: December 12, 2013
FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S271 S274 DETAILS.DGN

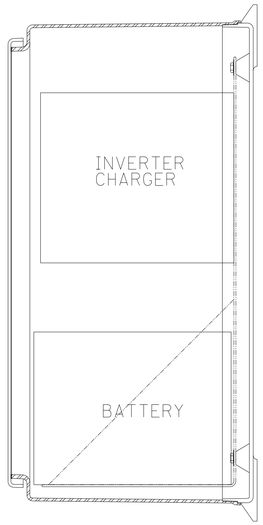
REVISED 12/12/13

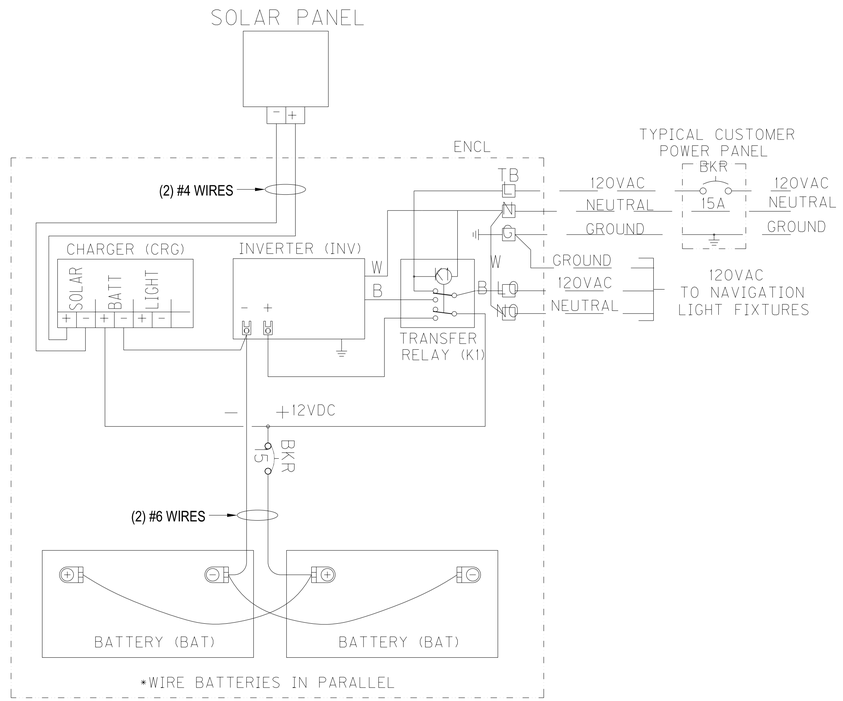












NOTES:
1. ENCLOSURE TO BE NEMA 4X ALUMINUM
2. ALL COMPONENTS ARRANGED FOR WALL MOUNTING.
3. CABINET DIMENSIONS SHALL BE DETERMINED BASED ON MANUFACTURER DESIGN

REVISION	DATE
1 ADDENDUM 1	11/25/13
2 ADDENDUM 2	12/5/13
3 ADDENDUM 3	12/12/13

DATE: NOVEMBER, 2013 | CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MARSHALL / TRIGG**

ROUTE: **US68** | CROSSING: **KENTUCKY LAKE**

SOLAR POWERED BATTERY BACKUP DETAILS

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER: **01-180.70**

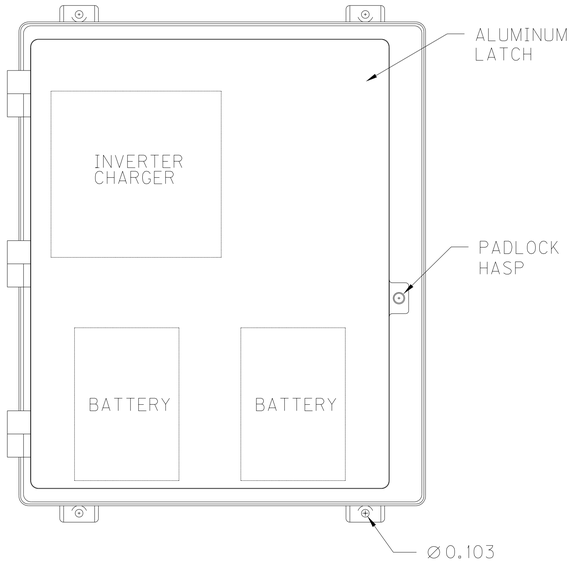
PREPARED BY: BARR & PREVOST ENGINEERING | TESTING | SURVEYING

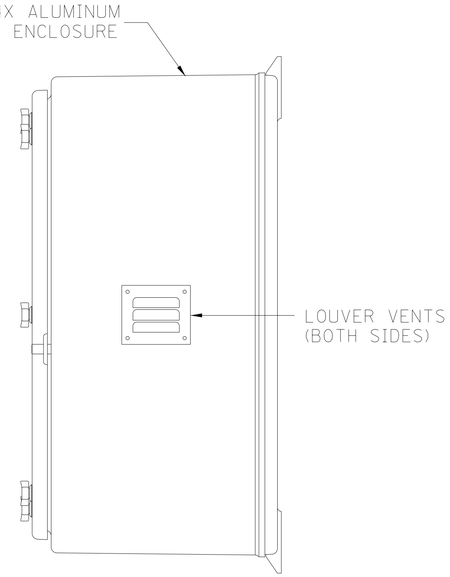
SHEET NO.: S274

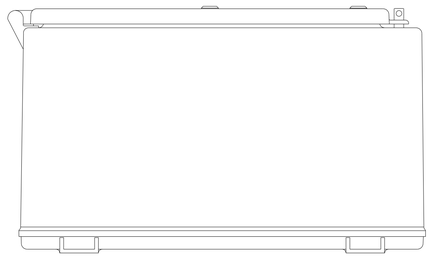
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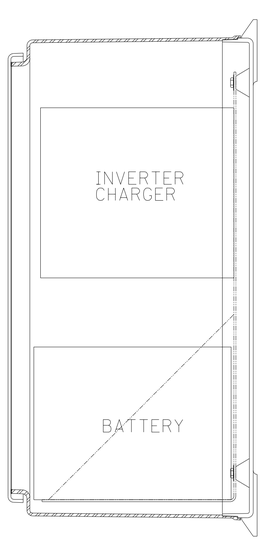
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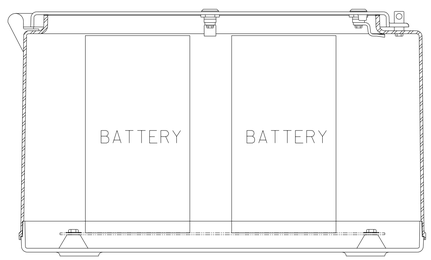
REVISED 12/12/13

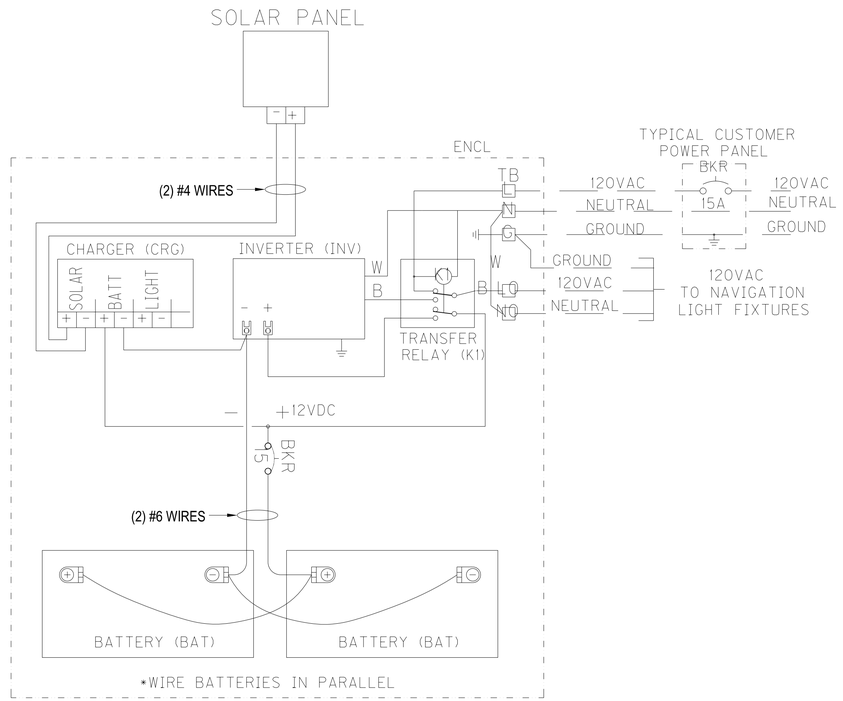












NOTES:

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REVISION	DATE
1 ADDENDUM 1	11/25/13
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DATE: NOVEMBER, 2013 CHECKED BY: CFD
DESIGNED BY: LAT
DETAILED BY: LAT

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE: US68
CROSSING: KENTUCKY LAKE

SOLAR POWERED BATTERY BACKUP DETAILS

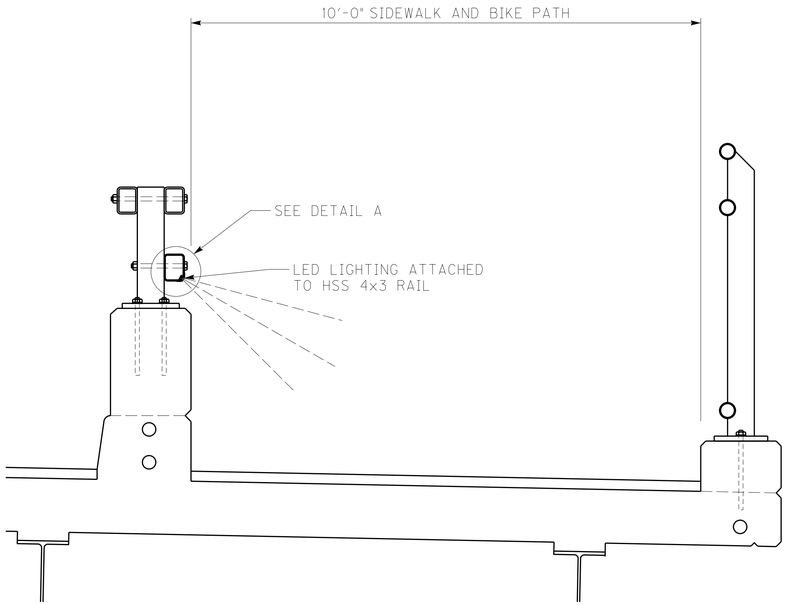
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

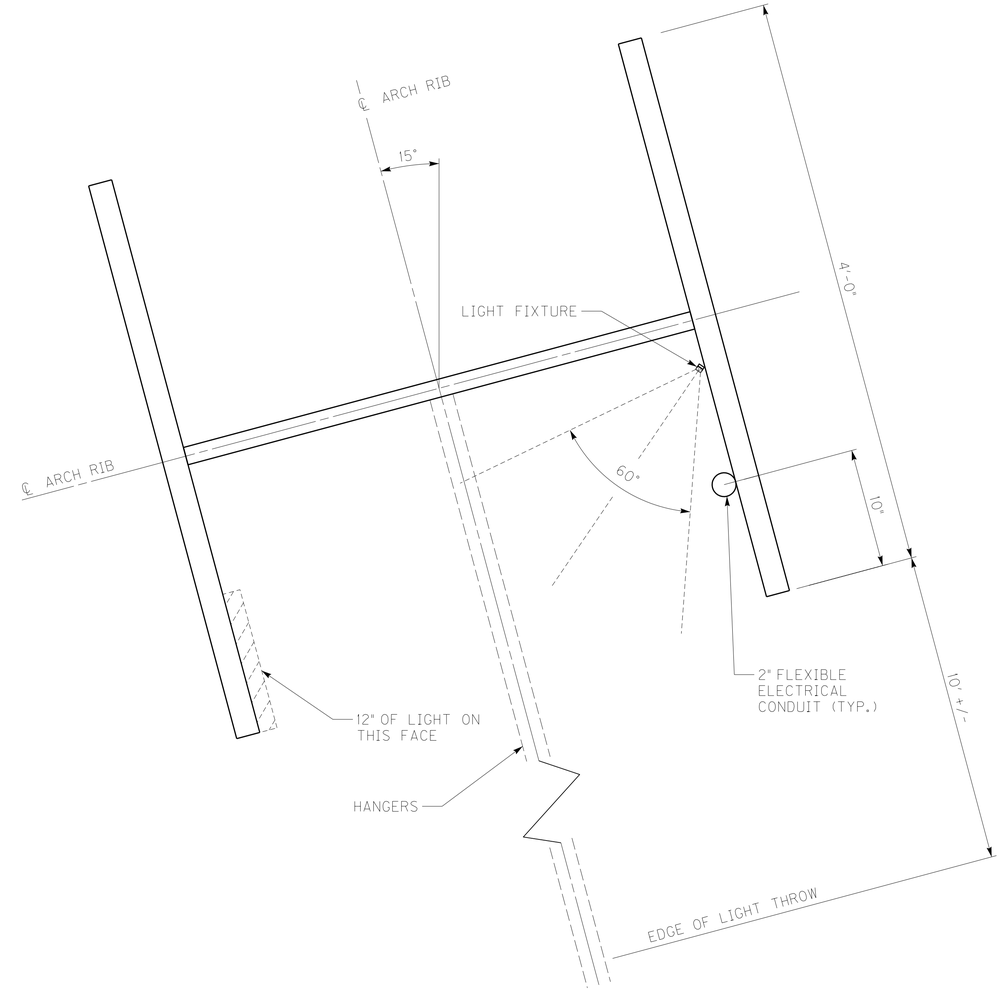
PREPARED BY
BARR & PREVOST
ENGINEERING | TESTING | SURVEYING

SHEET NO. S274
DRAWING NO. 24686

MicroStation v8.11.9.357
E-SHEET NAME:
USER: ittito
DATE PLOTTED: December 12, 2013
FILE NAME: F:\KYTC\LAND BETWEEN THE LAKES\LIGHTING\SHEETS\S274 DETAILS.DGN

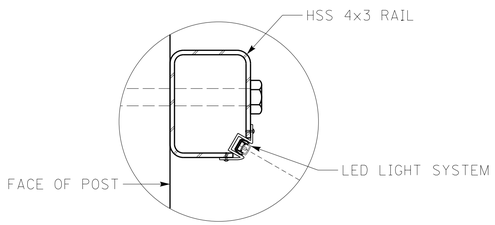


SECTION THRU MULTI-USE PATH



SECTION THRU ARCH RIB

SOUTH RIB SHOWN, NORTH RIB SIMILAR



DETAIL A

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: GDS	ACK
DETAILED BY: MWB	ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

LED LIGHT FIX. ATTACH. DTLS.

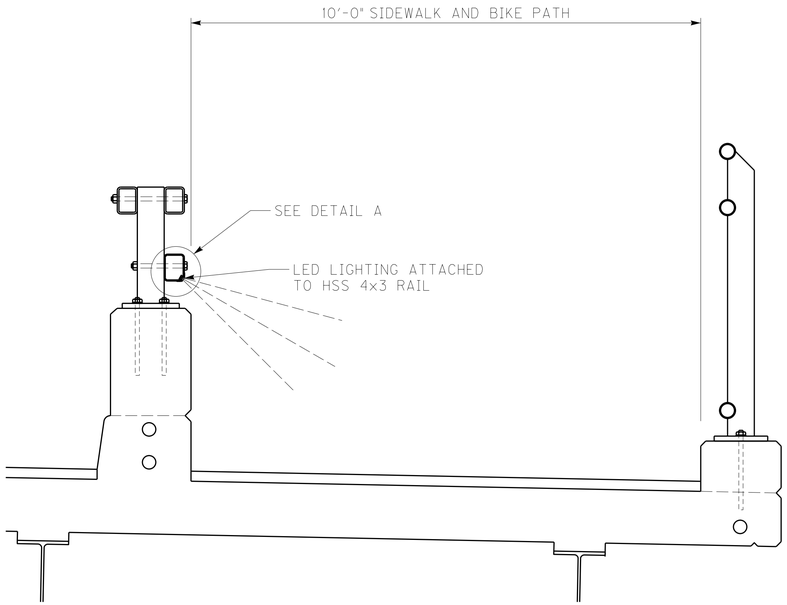
LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

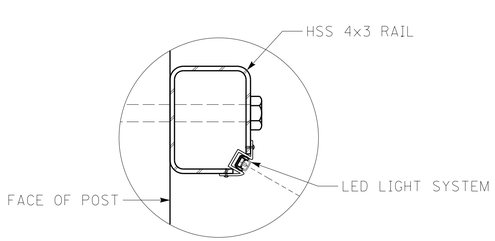
PREPARED BY
MICHAEL BAKER JR, INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO.
S275A
DRAWING NO.
24686

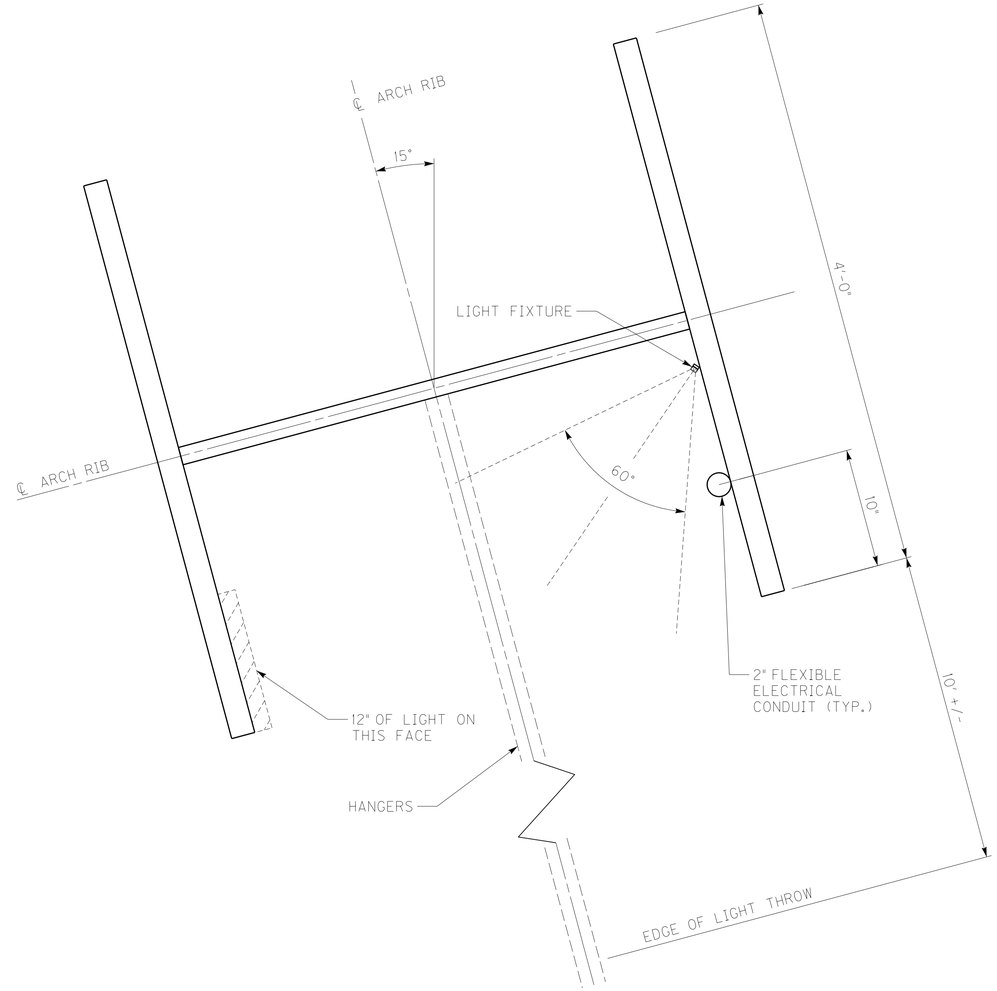
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SECTION THRU MULTI-USE PATH



DETAIL A



SECTION THRU ARCH RIB

SOUTH RIB SHOWN, NORTH RIB SIMILAR

⚠ ADDENDUM 3	12/11/13
REVISION	DATE

DATE: NOVEMBER 15, 2013	CHECKED BY
DESIGNED BY: GDS	ACK
DETAILED BY: MWB	ACK

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY
MARSHALL / TRIGG

ROUTE	CROSSING
US68	KENTUCKY LAKE

LED LIGHT FIX. ATTACH. DTLS.

LAKE BRIDGES
Over Kentucky Lake & Lake Barkley

ITEM NUMBER
01-180.70

PREPARED BY
Baker
MICHAEL BAKER JR, INC.
9750 ORMSBY STATION ROAD
SUITE 210
LOUISVILLE, KY 40223

SHEET NO. S275A
DRAWING NO. 24686

MicroStation v8.11.9.397 E-SHEET NAME: S24686 275A USER: CWethington DATE PLOTTED: November 21, 2013 FILE NAME: C:\PW\81-LOCAL\BAKER_PROJECTS\CWETHINGTON\D0141582\S24686 L103.DGN