STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	298	1055

PROJ. 54-87 KA-2382-01
NHPP-A238(201)

GRADING
SURFACING
CONCRETE PAVEMENT
STORM SEWER
SANITARY SEWER
WATERLINE
WALLS
BRIDGES
SEEDING
SODDING
ROADSIDE IMPROVEMENT
LIGHTING
TRAFFIC SIGNALIZATION
ITS
SIGNING
PAVEMENT MARKING

INDEX OF SHEETS

VOLUME 1 - ROADWAY
VOLUME 2 - DRAINAGE, SEWER, WATER
VOLUME 3 - RETAINING WALLS, BRIDGES
VOLUME 4 - SUMMARY OF QUANTITIES, POLLUTION CONTROL LANDSCAPING, LIGHTING, SIGNAL, ITS
VOLUME 5 - PAVEMENT MARKING, SIGNING, CONSTRUCTION SEQUENCE, TRAFFIC CONTROL, RIGHT-OF-WAY
VOLUME 6 - CROSS SECTIONS
SEE SHEET NO. 299 FOR INDEX SHEET

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF PROPOSED

STATE HIGHWAY

FEDERAL AID PROJECT

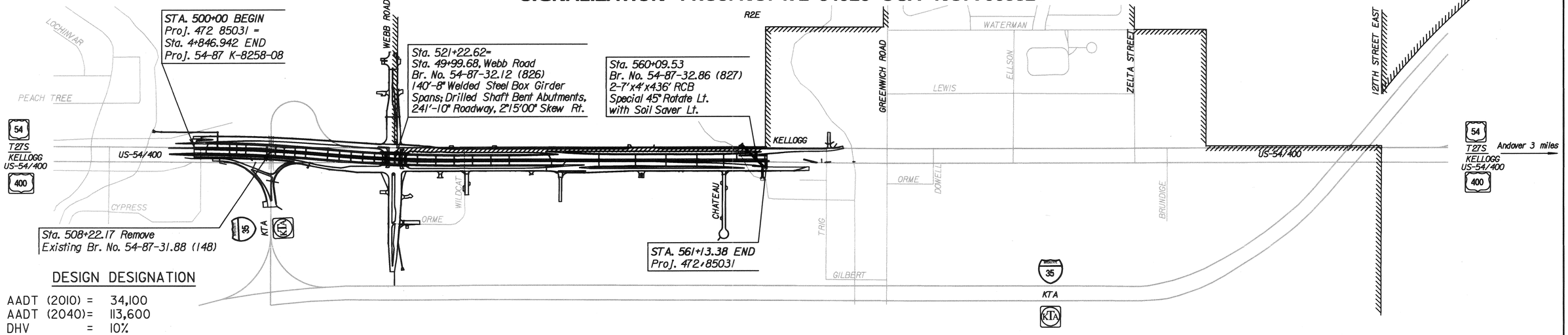
CITY OF WICHITA

SEDGWICK COUNTY

EAST KELLOGG (US-54/400) - WEBB/KTA INTERCHANGE

PAVING PROJ. NO. 472-85031 OCA NO. 705011
SEWER PROJ. NO. 468-84876 OCA NO. 624107
WATER PROJ. NO. 448-90591 OCA NO. 635815
SIGNALIZATION PROJ. NO. 472-84926 OCA NO. 766332

SCALE
500' 0 500' 1000'

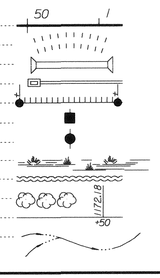


DESIGN DESIGNATION

AADT (2010) = 34,100
AADT (2040) = 113,600
DHV = 10%
D = 0.5 (EB)
T = 7%
V = 70 MPH (US54)
V = 40 MPH (FR. RDS. & SIDEROADS)
C of A = FULL
Clear Zone = 6' FROM BACK OF CURB (FR. RDS. & SIDEROADS)
Clear Zone = 34' (US-54)

CONVENTIONAL SIGNS

COUNTY LINE		CENTER LINE OF PROJECT	
CITY LIMITS		TERRACE	
STATE OR NATIONAL LINE		CULVERTS	
TOWNSHIP, SECTION or GRANT LINE		DROP INLET & STORM SEWER	
PROPERTY LINE		ACCESS CONTROL	
HIGHWAY FENCE		POWER POLE	
EXISTING FENCE		TELEPHONE POLE	
GUARD FENCE		MARSH	
CONSTRUCTION LIMITS		HEDGE	
RIGHT OF WAY LINE		TREES	
TRAVELED WAY		PROFILE ELEVATION	
RAILROADS		STREAM or CREEK	



CITY OF WICHITA
POPULATION 366,046

GROSS LENGTH OF PROJECT	6,113.38 FT.		
EXCEPTIONS	0.00		
ADDITIONS	0.00		
NET LENGTH OF PROJECT	6,113.38 FT.	1.158	MILES
NET LENGTH OF BRIDGES	0.00 FT.	0.00	MILES
NET LENGTH OF ROAD	6,113.38 FT.	1.158	MILES

NOTE:
Traffic for US-54 to be carried through construction.
See Sheet No's. 724- 826 for Construction Sequence.

RONALD HUERSTA LICENSED 13738 04-16-15 KANSAS PROFESSIONAL ENGINEER

ABDEL HAMADA LICENSED 14148 04-16-2015 KANSAS PROFESSIONAL ENGINEER

PLANS PREPARED BY :
PARSONS BRINCKERHOFF
Baughman
TranSystems
SRF Consulting Group, Inc. ENGINEERS PLANNERS DESIGNERS
VICKI SCURI SITEWORKS

APPROVED - DATE
04/16/15
GARY JANZEN, P.E. CITY ENGINEER
CITY OF WICHITA, KANSAS

DATE | BY
SURVEY
CADD TECHNICIAN
DESIGNERS
SQUAD

Drawn By :- Plotted :4/15/2015
File : T:\35765A\Cadd\Sheets\Package\General\EK1WLTSHOBA.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	299	1055

VOLUME 1

1	Title Sheet
2	Index Sheet
3	General Notes
4-21	Typical Sections
22	Foundation Treatment & Compaction of Earthwork
23-33	Plan & Profile (Mainline)
34-53	Plan & Profile (Frontage Road)
54-64	Plan & Profile (Sideroad)
65-75	Plan & Profile (Ramp)
76-77	Plan & Profile (Permanent Crossover)
78-87	Plan & Profile (Temporary Road)
88- 99	Benchmarks & Survey Coordinates
100-118	Intersection Details
119-140	Paving Details
141-158	Pavement Details

VOLUME 2

159	Title Sheet
160	Index Sheet
161-175	Inlet and Manhole Details
176-178	RCB Details
179-200	Storm Sewer Plan & Profile (Mainline)
201-227	Strom Sewer Plan & Profile (Frontage Road)
228-234	Storm Sewer Plan & Profile (Sideroad)
235-237	Storm Sewer Plan & Profile (Ramp)
238-242	Schedule of Storm Sewer Conduits
243-246	Schedule of Inlets and Manholes
247	Ditch Lining
248-250	Underdrains
251-252	Sanitary Sewer Manhole Details
253-256	Sanitary Sewer Plan & Profile
257	Sanitary Sewer Summary
258-262	Water Line Details
263- 271	Water Line Plan & Profile (Mainline)
272-274	Water Line Plan & Profile (Sideroad)
275	Water Line Summary
276-290	Concrete Safety Barrier
291	Impact Attenuator
292-294	End Sections
295	Miscellaneous Pipe Culvert Details
296	Summary of Pipe Culverts
297	Drainage Data Sheet

VOLUME 3

298	Title Sheet
299	Index Sheet
300-338	Retaining Walls
339-368	Pattern Mapping
369-375	Bridge No. 54-87-32.86 (827)
376-452	Bridge No. 54-87-32.12 (826)
453	Standard Pile Details
454	Bridge Excavation
455	Supports and Spacers for Reinforcing Steel

VOLUME 4

456	Title Sheet
457	Index Sheet
458-463	Summary of Quantities
464-481	Temporary Erosion and Pollution Control Plan
482-486	Erosion Control Details
487	Sidewalk Plan and Profile
488-490	Roadside Improvement
491- 516	Landscaping
517-537	Lighting
538	Traffic Volumes
539-558	Traffic Signal
559-565	Communication Duct Bank
566- 614	ITS

VOLUME 5

615	Title Sheet
616	Index Sheet
617-629	Pavement Marking
630- 721	Signing
723	Project Surfacing
724-826	Construction Sequence
827-848	Traffic Control
849-853	Concrete Safety Barrier (Temporary)
854	Impact Attenuator (Temporary)
855	Inertial Barrier
856	Type III Barricades
857-867	Right-of-Way
868	Drainage Map

VOLUME 6

869	Title Sheet
870	Index Sheet
871-872	Earthwork Computations
873- 910	Cross Sections (Mainline)
911- 972	Cross Sections (Frontage Road)
973-1001	Cross Sections (Sideroad)
1002-1035	Cross Sections (Ramp)
1036-1039	Cross Sections (Permanent Crossover)
1040-1055	Cross Sections (Temporary Road)

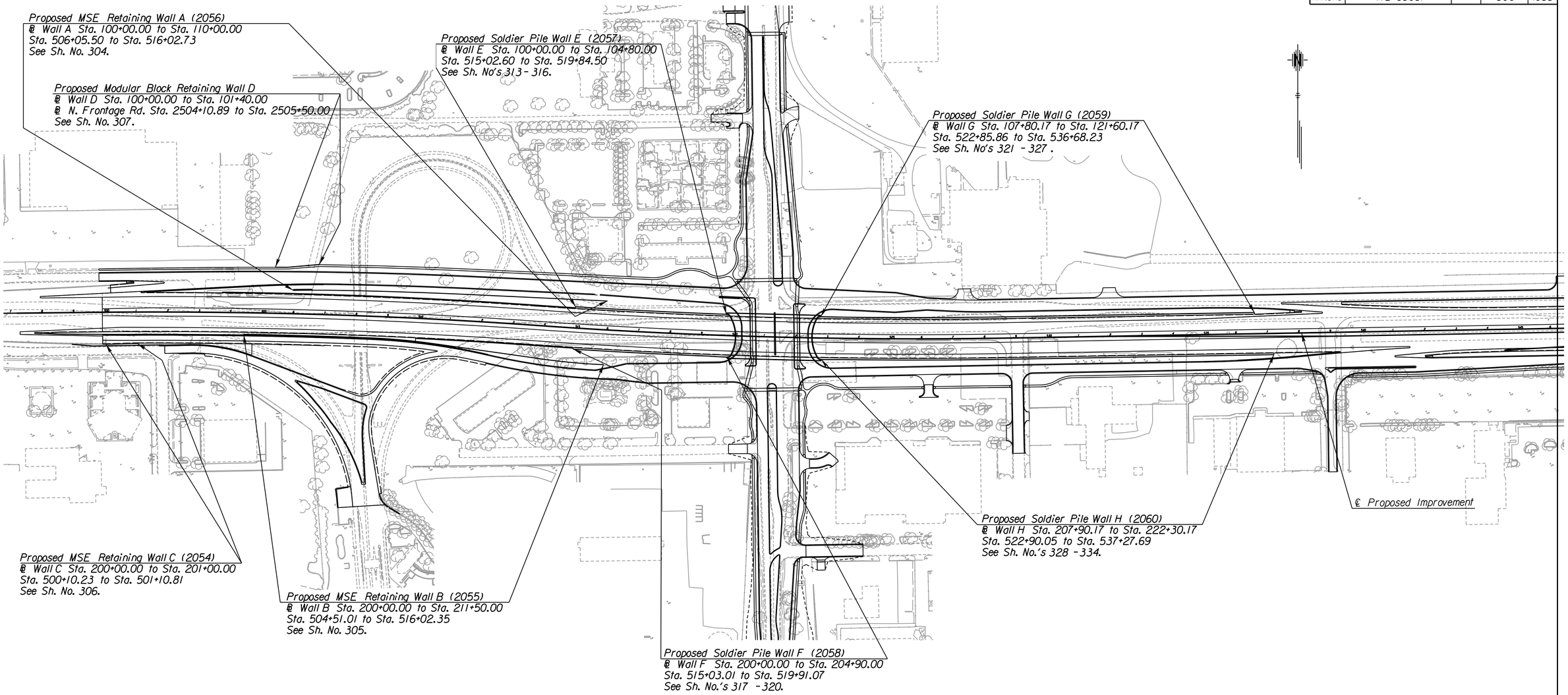
CITY OF WICHITA

INDEX SHEET

SURV.	PLOT	CADD	DES.	DR.	TR.	CKD.	APP.
-	-		-	-		-	-

9:42:16 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\General\EKINDEX03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	300	1055



SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	-

9:42:20 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIKDWAD01A.dgn

CITY OF WICHITA

RETAINING WALLS LOCATION MAP

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	301	1055

RETAINING WALL SUMMARY								
Wall Label	Serial Number	Structure Type	Baseline	Begin Wall		End Wall		Wall Length (Ft.)
				Station	Offset	Station	Offset	
Wall A	(2056)	YMLX (Precast Panel)	℄ Proposed Improvement	506+05.50	74.32' Lt.	516+02.73	92.32' Lt.	1,000.0
Wall B	(2055)	YMLX (Precast Panel)	℄ Proposed Improvement	504+51.01	69.17' Rt.	516+02.35	111.39' Rt.	1,150.0
Wall C	(2054)	YMLX (Precast Panel)	℄ Proposed Improvement	500+10.23	101.92' Rt.	501+10.81	99.75' Rt.	100.0
Wall D	----	YMBX (Segmental Block)	℄ N. Frontage Rd.	2504+10.89	38.50' Lt.	2505+50.00	48.50' Lt.	140.0
Wall E	(2057)	RATX (Soldier Pile)	℄ Proposed Improvement	515+02.60	67.00' Lt.	519+84.50	67.10' Lt.	480.0
Wall F	(2058)	RATX (Soldier Pile)	℄ Proposed Improvement	515+03.01	67.00' Rt.	519+91.07	67.91' Rt.	490.0
Wall G	(2059)	RATX (Soldier Pile)	℄ Proposed Improvement	522+85.86	67.31' Lt.	536+68.23	67.00' Lt.	1,380.0
Wall H	(2060)	RATX (Soldier Pile)	℄ Proposed Improvement	522+90.05	67.79' Rt.	537+27.69	67.00' Rt.	1,440.0

NOTE:
The bridge abutment walls between Soldier Pile Walls E & G and F & H are considered "Drilled Shaft Walls" and are detailed and paid for on the bridge sheets.

See Sh. No's. 339-368 for Wall Patterning.

Index of Retaining Wall Sheets	
Sheet No.	Sheets
300	Retaining Walls Location Map
301	Retaining Walls Summary and Index of Drawings
302	Retaining Walls Quantities
303	MSE Retaining Walls General Notes
304	MSE Retaining Wall A (2056) Plan and Profile
305	MSE Retaining Wall B (2055) Plan and Profile
306	MSE Retaining Wall C (2054) Plan and Profile
307	MSE Retaining Wall D Plan and Profile
308	MSE Retaining Wall Details I
309	MSE Retaining Wall Details II
310	MSE Retaining Wall Details III
311	MSE Retaining Wall Details IV
312	Soldier Pile Retaining Walls General Notes
313	Soldier Pile Retaining Wall E (2057) Plan and Profile
314	Soldier Pile Retaining Wall E (2057) Geometric Layout
315	Soldier Pile Retaining Wall E (2057) Pile Schedule
316	Soldier Pile Retaining Wall E (2057) Ground Anchor Schedule
317	Soldier Pile Retaining Wall F (2058) Plan and Profile
318	Soldier Pile Retaining Wall F (2058) Geometric Layout
319	Soldier Pile Retaining Wall F (2058) Pile Schedule
320	Soldier Pile Retaining Wall F (2058) Ground Anchor Schedule
321	Soldier Pile Retaining Wall G (2059) Plan and Profile
322	Soldier Pile Retaining Wall G (2059) Geometric Layout I
323	Soldier Pile Retaining Wall G (2059) Geometric Layout II
324	Soldier Pile Retaining Wall G (2059) Geometric Layout III
325	Soldier Pile Retaining Wall G (2059) Geometric Layout IV
326	Soldier Pile Retaining Wall G (2059) Pile Schedule
327	Soldier Pile Retaining Wall G (2059) Ground Anchor Schedule
328	Soldier Pile Retaining Wall H (2060) Plan and Profile
329	Soldier Pile Retaining Wall H (2060) Geometric Layout I
330	Soldier Pile Retaining Wall H (2060) Geometric Layout II
331	Soldier Pile Retaining Wall H (2060) Geometric Layout III
332	Soldier Pile Retaining Wall H (2060) Geometric Layout IV
333	Soldier Pile Retaining Wall H (2060) Pile Schedule
334	Soldier Pile Retaining Wall H (2060) Ground Anchor Schedule
335	Soldier Pile Retaining Wall Details I
336	Soldier Pile Retaining Wall Details II
337	Soldier Pile Retaining Wall Details III
338	Soldier Pile Retaining Wall Details IV

CITY OF WICHITA

RETAINING WALLS
SUMMARY AND INDEX OF DRAWINGS

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:42:24 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIAWGN001A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	302	1055

SUMMARY OF QUANTITIES - PRECAST PANEL "RETAINING WALL (MSEW)"					
Wall	Baseline	Wall Sta. Location	Retaining Wall (MSEW) (S.F.)	Concrete Masonry Surface Treatment (S.Y.)	Handrail (Metal) (3'-6") (L.F.)
Wall A (2056)	℄ Wall A	Sta. 100+00.00 to Sta. 110+00.00	14,045	1,480	996
Wall B (2055)	℄ Wall B	Sta. 200+00.00 to Sta. 211+50.00	14,690	1,476	508
Wall C (2054)	℄ Wall C	Sta. 200+00.00 to Sta. 201+00.00	595	50	-

SUMMARY OF QUANTITIES - MODULAR BLOCK "RETAINING WALL (MBW)"				
Wall	Baseline	Wall Sta. Location	Retaining Wall (MSEW) (S.F.)	Concrete Masonry Surface Treatment (S.Y.)
Wall D	℄ Wall D	Sta. 100+00.00 to Sta. 101+40.00	508	-

◔ Quantity does not include the portion on the bridge drilled shaft abutment walls. See Bridge Plans for this quantity.

SUMMARY OF QUANTITIES - "RETAINING WALL (SOLDIER PILE)"				
Wall	Baseline	Wall Sta. Location	Retaining Wall (Soldier Pile) (S.F.)	◔ Concrete Masonry Surface Treatment (S.Y.)
Wall E (2057)	℄ Wall E	Sta. 100+00.00 to Sta. 104+80.00	11,209	1,326
Wall F (2058)	℄ Wall F	Sta. 200+00.00 to Sta. 204+90.00	11,298	1,337
Wall G (2059)	℄ Wall G	Sta. 107+80.17 to Sta. 121+60.17	24,199	2,913
Wall H (2060)	℄ Wall H	Sta. 207+90.17 to Sta. 222+30.17	25,366	3,055

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:42:27 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIAWGN002A.dgn

CITY OF WICHITA

RETAINING WALLS QUANTITIES

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	303	1055

GENERAL NOTES FOR MSE PRECAST PANEL AND SEGMENTAL BLOCK RETAINING WALLS

TEMPORARY STABILITY: Stability of temporary construction shall be the responsibility of the Contractor. The Contractor shall follow OSHA standards and regulations for all construction activities.

SELECT BACKFILL: See KDOT Specifications for requirements for Select Granular Backfill.

SURVEY REQUIREMENTS: The Contractor is required to have a registered land surveyor lay out all Retaining Walls geometry to a construction tolerance not to exceed 1 inch. Submit to the Engineer, proposed geometric (survey) layouts for all retaining walls. A pre-construction meeting will be required prior to the field layout. Survey information will be reviewed by the Engineer.

CONCRETE: Use Concrete (Grade 4.0)(AE) except in the sockets below the Soldier Pile walls which may be Concrete (Grade 4.0). Bevel all exposed edges of all concrete with a ¾" triangular molding, except as otherwise noted on the plans. Place construction joints only at locations shown, or at locations approved by the Engineer.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or A82.

Epoxy coat all reinforcing steel in the walls except as noted.

CONCRETE MASONRY SURFACE TREATMENT: Coat all exposed surfaces of the Precast Panel and Soldier Pile walls with an approved pigmented sealer (uniform color), including coping and barrier surfaces. All surfaces to be coated shall be prepared with a light brush sandblast prior to application. The form release agent used on concrete surfaces to be coated, shall be compatible with the color stain product to be applied to the surface. Use of curing compound on surfaces to be coated is prohibited. See Project Special Provisions for process for Color selection.

Payment for "Concrete Masonry Surface Treatment" is based on wall, coping and barrier areas calculated from the top of proposed ground in front of the wall.

GEOLOGY REPORTS: See Geotechnical Reports for soil information and requirements. Geotechnical Reports are considered part of the contract documents.

FORM LINER: The form liner used shall be shown on the Shop Drawings.

DRILLING AND GROUTING: Drilling and Grouting shall consist of grouting reinforcing steel, into the concrete, where required by the Engineer, with an epoxy grout. Follow KDOT Specifications and any associated Special Provisions. Follow the manufacturer's directions for mixing, application and curing. Drilling and Grouting is included in the Retaining Wall bid item.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

UNDERDRAIN SYSTEM: Perforated Underdrains, Aggregate for underdrains, Geo-textile fabric, Concrete outlet flume, and all other materials and labor required for installation shall be subsidiary to "Retaining Wall (**)" or "Retaining Wall (Soldier Pile)". Non-perforated outfall pipes for MSE walls and Soldier Pile walls are paid for directly as their respective bid items. See drainage plans.

On the shop drawings, show plan and profile details of the underdrain and outlet pipe, including stations and offsets for horizontal alignment and pipe slopes.

UTILITY LOCATION: It is the Contractor's responsibility to verify the location of all utilities and avoid conflicts before commencing retaining wall work.

EXCAVATION: Excavation required to construct the earth retaining system shall not be paid for directly but shall be considered subsidiary to the bid item "Retaining Wall (**)". All excavated material shall be removed from the site unless, in the opinion of the Engineer, the material is suitable for use in the construction of roadway embankments. Earthwork quantities shown in the plans do not include this excavation.

COPING: Concrete coping of the top of precast panel retaining walls shall be cast-in-place. Exposed surfaces of the coping shall be given a rubbed finish and coated. There shall be a bond breaker between the cast-in-place coping and the retaining wall and concrete safety barrier. All labor, materials, equipment, and incidentals required to complete this work shall be subsidiary to the bid item "Retaining Wall (**)".

PRECAST PANEL SIZES: Basic panels for MSEW retaining walls shall match the sizes shown on these plans. The panel size is directly related to the formliner pattern designed for this project.

SHOP DRAWINGS: Actual retaining wall construction shall conform to the detail drawings as submitted by the Contractor and approved by the Engineer. Submit 6 sets of detail drawings and design calculations for the MBW and MSEW system 60 days prior to construction, for review and approval by the Engineer. Design calculations and detail drawings shall bear the seal of a Kansas Professional Engineer. If computer programs are used to prepare the design, the output and an example hand calculation of one of the wall design sections shall be furnished. The wall company shall furnish as part of their plan submittal, quantities for the following:

Item	Unit
Wall Panels (MSEW)	Sq. Ft.
Wall Blocks (MBW)	Sq. Ft.
Select Granular Backfill	Cu. Yard
Soil Reinforcement Elements	As Applicable
Leveling Pad	Ft.
Coping (MSEW)	Ft.
Coping Reinforcing Steel (Grade 60)	Lbs.
Cap (MBW)	Ft.
Geomembrane	Sq. Yard

SELECT GRANULAR BACKFILL: The entire retained earth volume shall be backfilled with select granular material in accordance with the KDOT Specifications unless otherwise directed by the Engineer. Where fill slopes are shown to wrap around the end of the earth retaining system, the fill shall contain a zone of granular material adjacent to the wall system to facilitate drainage of the contained material unless otherwise directed by the Engineer. Granular backfill material shall meet the requirements as described in the KDOT Specifications. Select granular backfill material shall not be paid for separately but shall be considered subsidiary to the bid item "Retaining Wall (**)". Estimated quantities of select granular material are shown in the plans for the Contractor's information only.

QUANTITIES FOR INFORMATION ONLY: The following quantities are shown for information only and may vary based on the Manufacturer's requirements:

Item	Quantity *
Select Granular Backfill	15,948 Cu. Yard
Soil Reinforcing Elements	As applicable
Leveling Pad	2,390 Feet
Coping	2,251 Feet
Coping Reinforcing Steel (Grade 60)	As required
Cap	140 Feet
Geomembrane	5,526 Sq. Yard
Drilling & Grouting	450 Each

*Based on minimum reinforcement length required. See Geology Report for lengths. Additional quantities of these items will be necessary if the Reinforcement Length is increased above the minimum length.

PAYMENT: Payment for "Retaining Wall (**)" will be based on the nominal wall areas listed in the Summary of Quantities table on Sheet #302. The nominal wall areas are calculated based on the height from the top of wall to the top of leveling pad as detailed on these plans.

Wall elevations shown on Sheet #304 thru 307 are presented to establish limits of pay quantities (without coping). Top of wall and top of footing elevations will vary to accommodate the specific requirements of the various wall systems. No additional payment will be made for such variations.

The bid price per square feet for the approved MSE system as outlined in the Special Provisions shall include all costs for wall panels, form liner, geomembrane, FA-A, select granular backfill material, soil reinforcing elements, leveling pad, coping, coping reinforcing steel (Grade 60), joint protection, excavation, trench drain and outlet pipe, dewatering, backfilling and all incidentals necessary to construct the wall, except for Concrete Masonry Surface Treatment. All labor, materials, equipment, and incidentals required to construct the retaining wall system shall be paid for at the contract unit price per square feet of "Retaining Wall (**)" based on the Nominal Wall Area as shown in the plans.

PREQUALIFIED SYSTEMS: For a list of prequalified Wall Systems by KDOT for the construction of the Mechanically Stabilized Earth Wall (MSEW) and Modular Block Wall (MBW), refer to KDOT "List of Prequalified Retaining Wall Systems PQL-40.4."

The MSE walls shall be constructed as described in the Special Provisions.

FORM LINER FOR PRECAST PANEL WALLS: See Project Special Provisions for Form Liner requirements. Form Liners to match patterning shown on these plans. Form Liner is subsidiary to bid item "Retaining Wall (MSEW)".

MSEW AND MBW WALL: Design guidelines for these walls shall meet requirements provided in Section 11.10 of AASHTO LRFD 7th Edition 2014 with 2015 Interims. MSE wall quantities shown on these plans are based on soil reinforcement lengths having a minimum length of 8.0 ft or 1.0 H, whichever is greater. Designer of MSE wall system may optimize the reinforcement lengths as per the geotechnical report for the MSE walls. Wall height is equal to the distance from the top of the leveling pad to the finished grade at the back of the wall face, including the thickness of the pavement.

Load Factors and Resistance Factors shall be as per the latest AASHTO LRFD and the project geotechnical report for the MSE Walls. The minimum design life of the structure shall be 75 years.

Standard wall design shall be based on the following parameters:

1. Select Granular Fill
   a. Moist unit weight = 120 pcf
   b. Drained friction angle Phi = 34°
2. Foundation Soils
   Soils through the area of concern in Sedgwick County, Kansas are clays overlaying the Wellington Shale Formation. Borrow from the site shall meet the following effective strength parameters, when compacted in accordance with KDOT Specifications:

   c' = 150 psf
   Phi' = 24°
3. Maximum total and differential settlement shall be limited such that wall aesthetics and serviceability are not adversely affected.
4. Foundation soils found to be unsuitable, as determined by the Engineer, shall be removed and replaced with suitable material. All pavement and base materials behind and below the retaining wall system must be removed completely. Remove top 12 in of superficial soils to eliminate organic material and debris. The existing soils shall be scarified and re-compacted to Type AA, MR-5-5 standards.
5. a. The minimum required leveling pad embedment for all retaining walls is 3 ft below the finished grade (top of pad).
   b. Settlements are estimated to be on the order of 1 inch or less. Based on the estimate of 1 inch or less, no settlement monitoring or contractually required waiting period following MSE wall completion and prior to paving is considered necessary.
   c. Foundation bearing pressures shall not exceed the values listed in the Geotechnical Reports.

PROPOSED SEQUENCE OF MSEW CONSTRUCTION:

1. Install MSEW panels, including reinforcing, select granular fill, and drainage system.
2. Mark proposed top of wall. See "Survey Requirements" note, this sheet.
3. Saw cut proposed top of wall.
4. Epoxy touch rebar exposed from the saw cut process.
5. Place cement backerboard and Type B Expansion Joint material as per plan details.
6. Drill and Grout dowels at 5' ctrs. max. to connect top of wall to coping.
7. Form coping.
8. Pour coping.

The MSE construction sequence shown is suggested and optional for the Contractor. Payment for all steps is included in various bid items shown in the Contract documents. Contractor may revise sequence of MSE construction with approval of the Engineer, at no increase in cost to the Owner.

DESIGN SPECIFICATIONS (ALL WALLS):
AASHTO LRFD Spec., 7th Edition with 2015 Interims.

DESIGN LOADING:

Live Load	Surcharge load of 2.0 ft of earth added to the vertical stress.
Dead Load	Components of wall structure.
Other Loads	As specified by AASHTO. Seismic design need not be considered.

UNIT STRESSES:

Concrete	f'c = 4.0 ksi
Reinforcing Steel (Grade 60)	fy = 60 ksi
Structural Steel ASTM A572 (Grade 50)	Fy = 50 ksi
Concrete Leveling Pad	f'c = 3.0 ksi

** = Type: (MSEW) or (MBW)

CITY OF WICHITA

MSE RETAINING WALLS
GENERAL NOTES

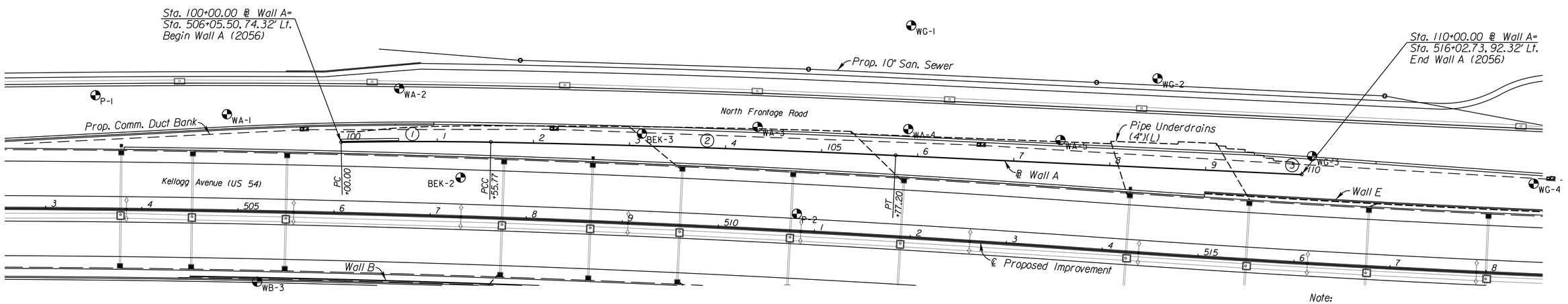
SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EK1AWGN003A.dgn
4/17/2015
9:42:31 AM

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	304	1055

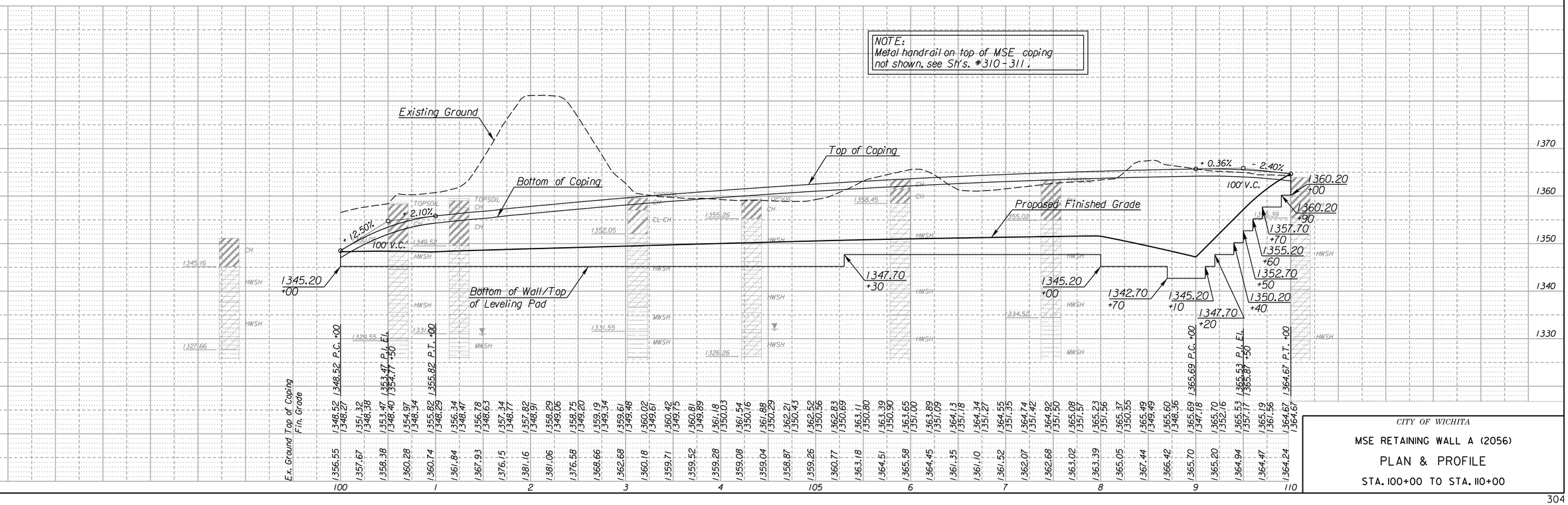
WALL A ALIGNMENT DATA

CURVE NO.	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	100+77.90	100+77.87	1683841.0254	1679731.6403	02°15'05.47" Rt.	3964.00	77.90	155.77	0.77	100+00.00	1683839.4349	1679653.7610	101+55.77	1683839.5550	1679809.5219
2	103+66.50	103+66.47	1683835.5773	1680020.2140	01°36'47.49" Rt.	14968.00	210.73	421.43	1.48	101+55.77	1683839.5550	1679809.5219	105+77.20	1683825.6698	1680230.7105
3	110+00.00		1683805.7920	1680653.0406											



See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Back Face of Wall



CITY OF WICHITA

MSE RETAINING WALL A (2056)

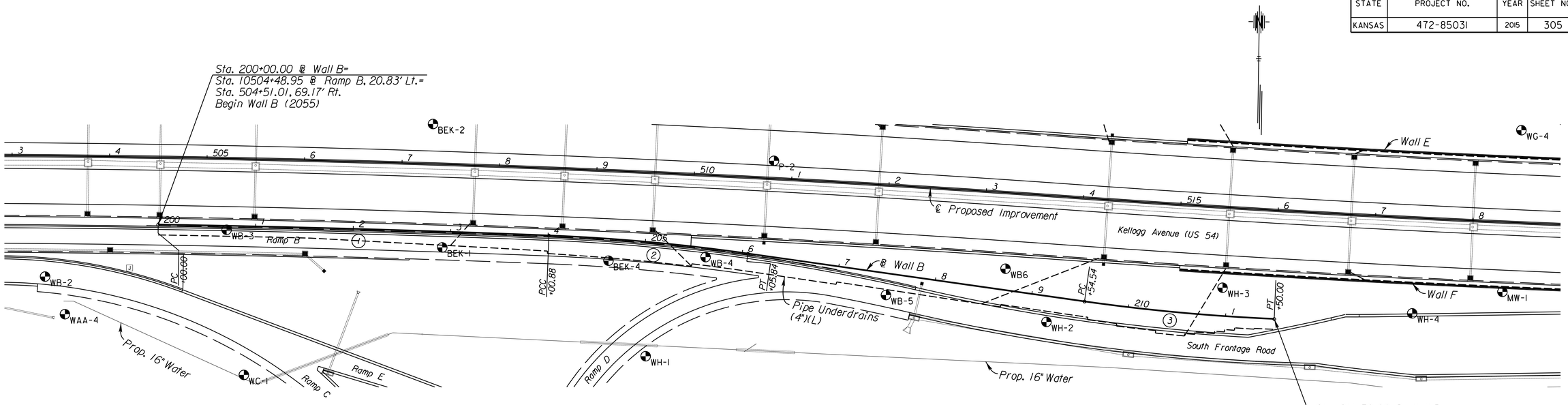
PLAN & PROFILE

STA. 100+00 TO STA. 110+00

9:42:38 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packagel\Structures\Walls\EKIAWAPP01A.dgn

SURV. | PLOT | CADD | DES. | DR. | TR. | CKD. | APP.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	305	1055

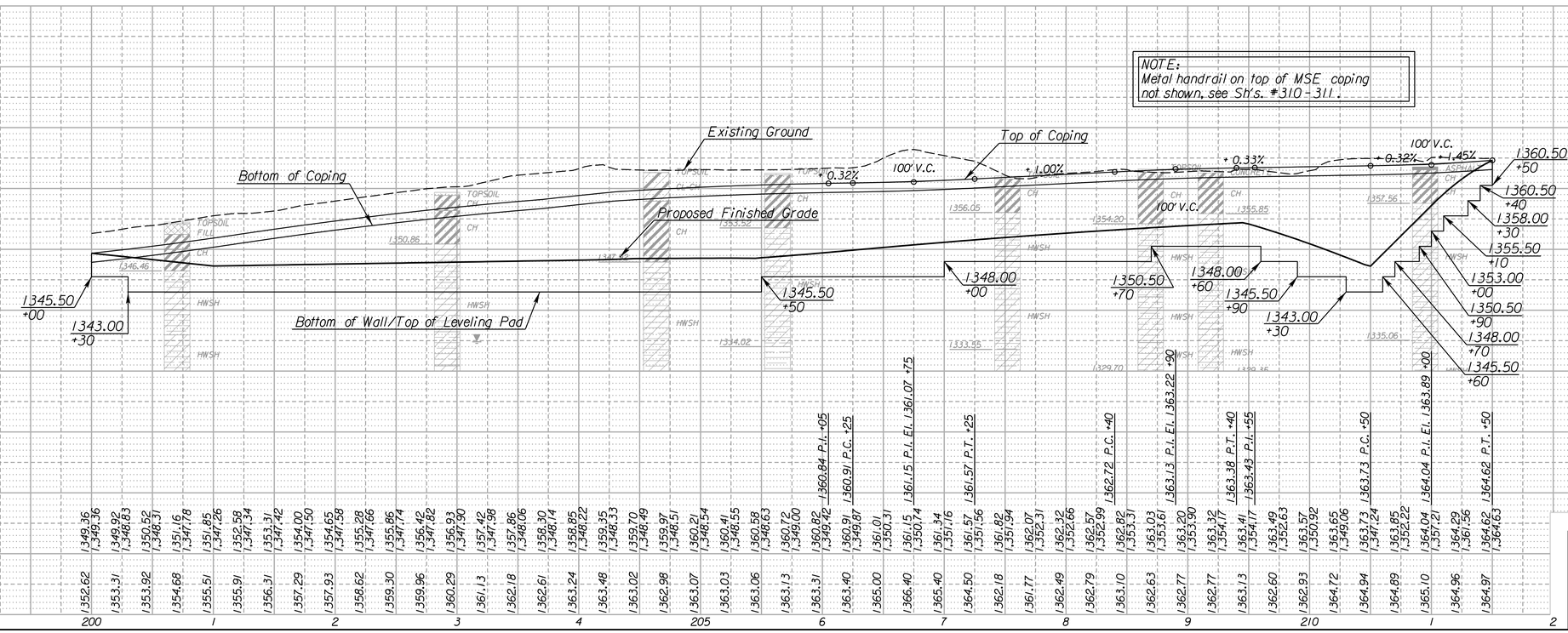


WALL B ALIGNMENT DATA

CURVE/PT. NO. ◯	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	202+00.45	202+00.43	1683695.9403	1679696.7389	01°21'23.83" Rt.	16930.83	200.45	400.88	1.19	200+00.00	1683699.1699	1679496.3157	204+00.88	1683687.9665	1679897.0294
2	205+03.45	205+03.27	1683683.8864	1679999.5166	05°48'40.19" Rt.	2020.83	102.57	204.96	2.60	204+00.88	1683687.9665	1679897.0294	206+05.84	1683669.4505	1680101.0640
3	210+52.35	210+52.19	1683606.6069	1680543.1264	05°39'22.28" Lt.	1980.00	97.81	195.46	2.41	209+54.54	1683620.3733	1680446.2887	211+50.00	1683602.4516	1680640.8495

See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Back Face of Wall



CITY OF WICHITA

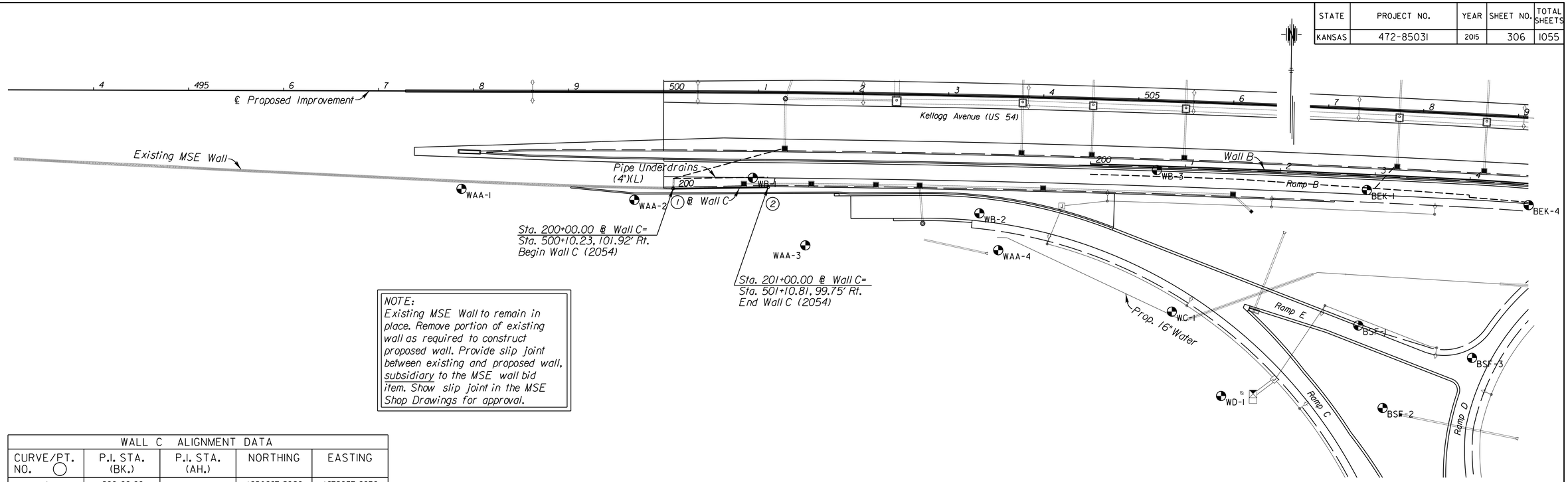
MSE RETAINING WALL B (2055)

PLAN & PROFILE

STA. 200+00 TO STA. 211+50

9:42:42 AM
4/17/2015
I:\351765A\Cadd\Sheets\Packagel\Structures\Walls\EKIBWAPP01A.dgn
PLOT - CADD - DES. - DR. - TR. - CKD. - APP. - SURV. -

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	306	1055

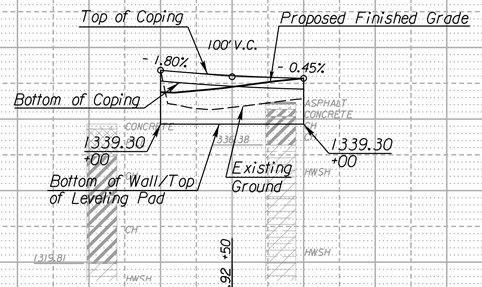


NOTE:
Existing MSE Wall to remain in place. Remove portion of existing wall as required to construct proposed wall. Provide slip joint between existing and proposed wall, subsidiary to the MSE wall bid item. Show slip joint in the MSE Shop Drawings for approval.

WALL C ALIGNMENT DATA				
CURVE/PT. NO. ◯	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING
1	200+00.00		1683667.8020	1679057.6650
2	201+00.00		1683670.6557	1679157.6243

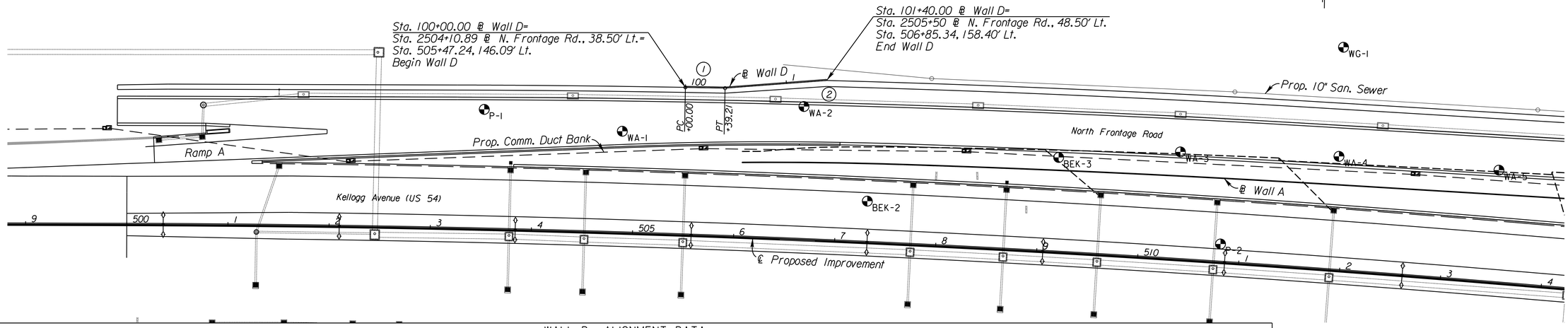
See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Back Face of Wall



| | 200 | | | |

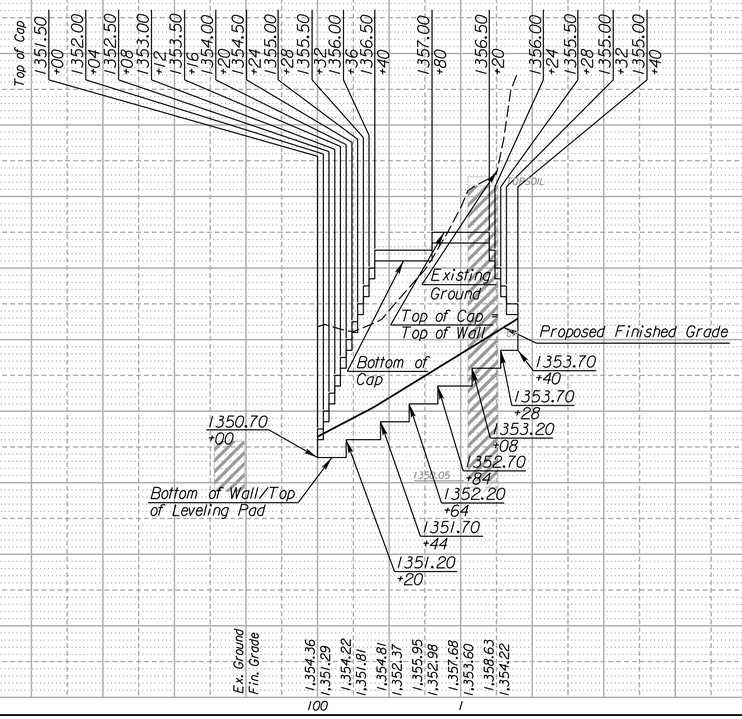
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	307	1055



WALL D ALIGNMENT DATA															
CURVE/PT. NO. ◯	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	100+19.61	100+19.60	1683912.4686	1679616.4285	00°08'57.84" Rt.	15038.50	19.61	39.21	0.01	100+00.00	1683912.5596	1679596.8222	100+39.21	1683912.3264	1679636.0344
2	101+40.00		1683921.2643	1679736.4244											

See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Front Face of Wall



CITY OF WICHITA

MODULAR BLOCK RETAINING WALL D

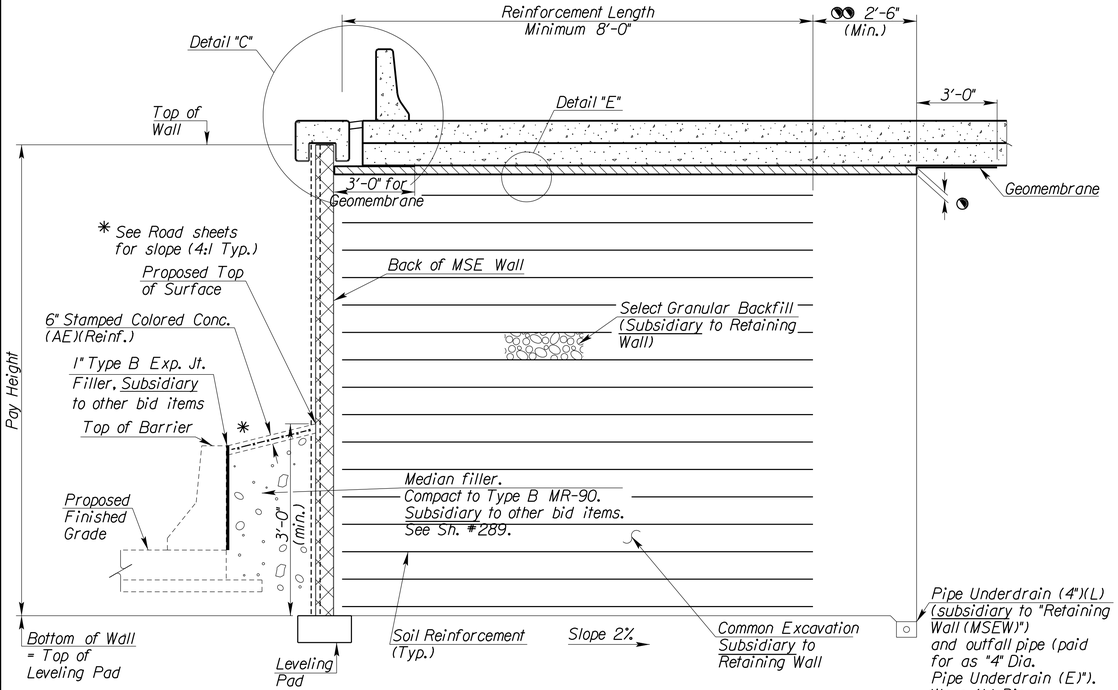
PLAN & PROFILE

STA. 100+00 TO STA. 101+40

9:42:50 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIDWAPP01A.dgn

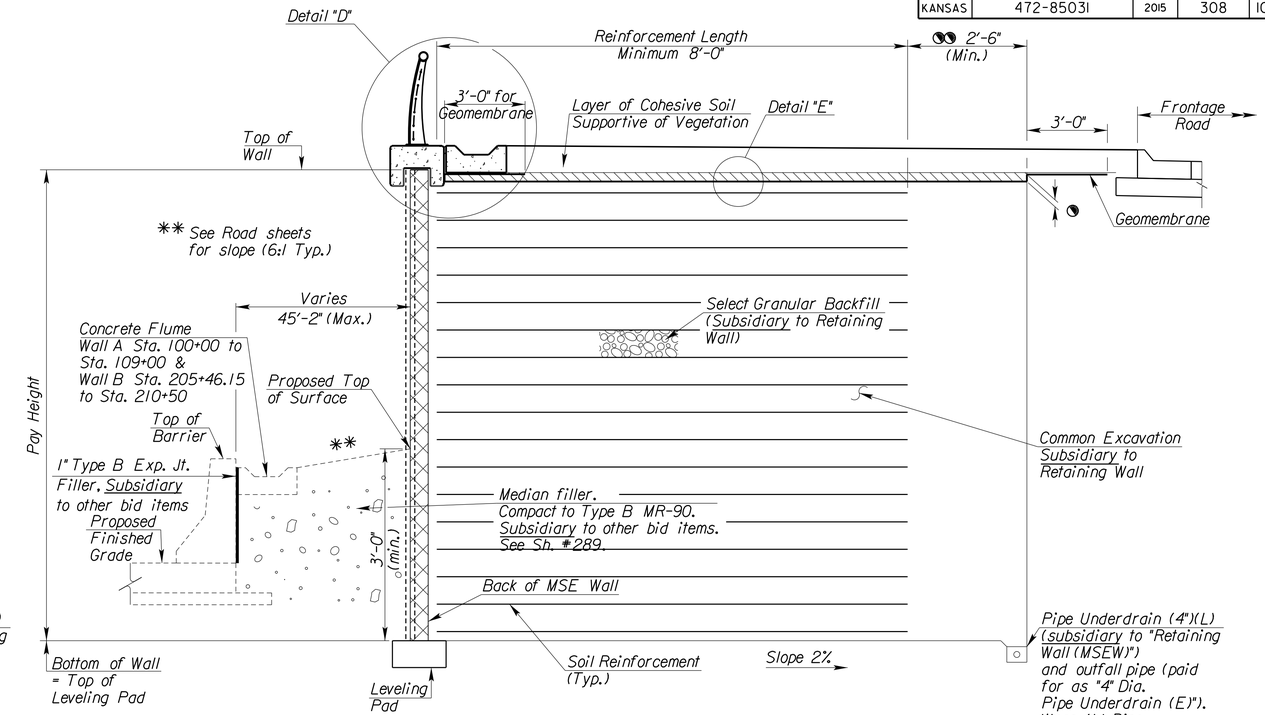
PLOT - CADD - DES. - DR. - TR. - CKD. - APP. - SURV. -

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	308	1055



TYPICAL SECTION

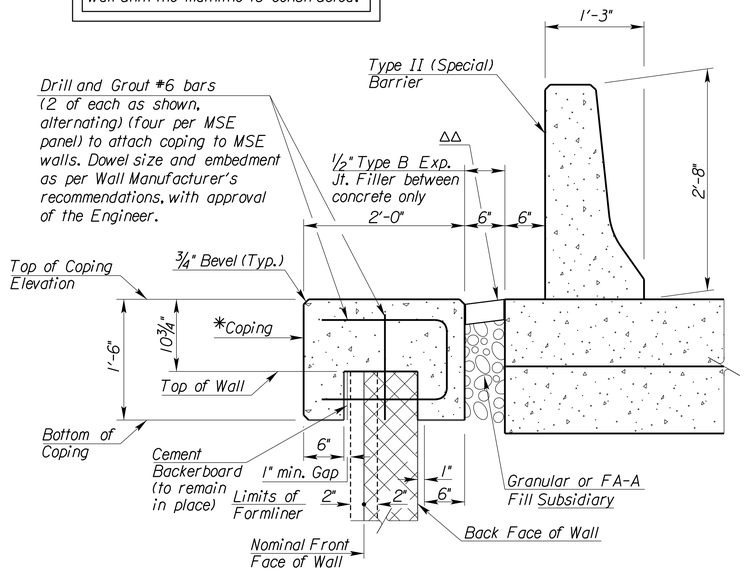
MSE Wall adjacent to Barrier; Walls C & Portion of B (Sta. 200+00.00 to 205+46.15)



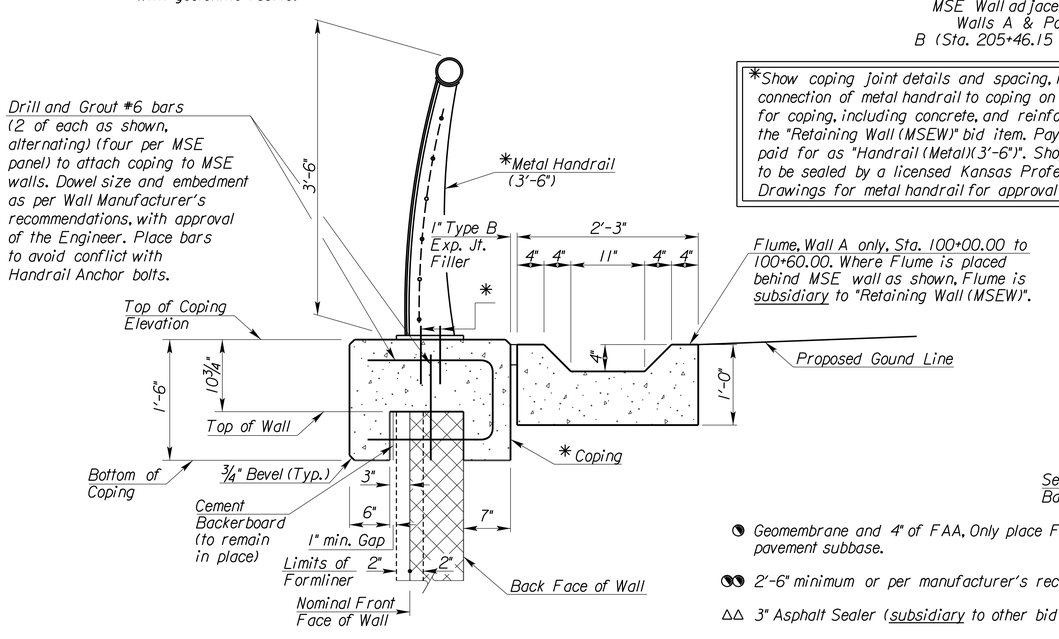
TYPICAL SECTION

MSE Wall adjacent to Flume; Walls A & Portion of B (Sta. 205+46.15 to 211+50.00)

For MSE walls "A" & "B", daylight underdrain outlet pipe in front of the wall until the mainline is constructed.

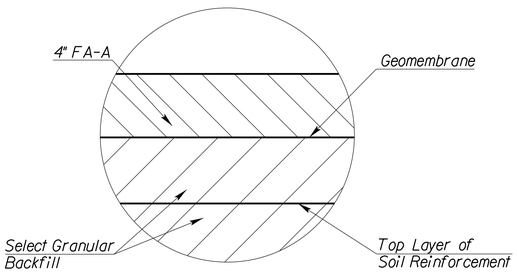


DETAIL "C"



DETAIL "D"

*Show coping joint details and spacing, reinforcing for coping and connection of metal handrail to coping on MSE shop drawings. Payment for coping, including concrete, and reinforcing steel is subsidiary to the "Retaining Wall (MSEW)" bid item. Payment for the metal handrail is paid for as "Handrail (Metal)(3'-6")". Shop Drawings for MSE system to be sealed by a licensed Kansas Professional Engineer. Submit Shop Drawings for metal handrail for approval also.



DETAIL "E"

Geomembrane and 4" of FAA. Only place FA-A under pavement subbase.

2'-6" minimum or per manufacturer's recommendation

ΔΔ 3" Asphalt Sealer (subsidiary to other bid items)

See Sh. #289 for Concrete Safety Barrier.
See Sh. #303 for General Notes.

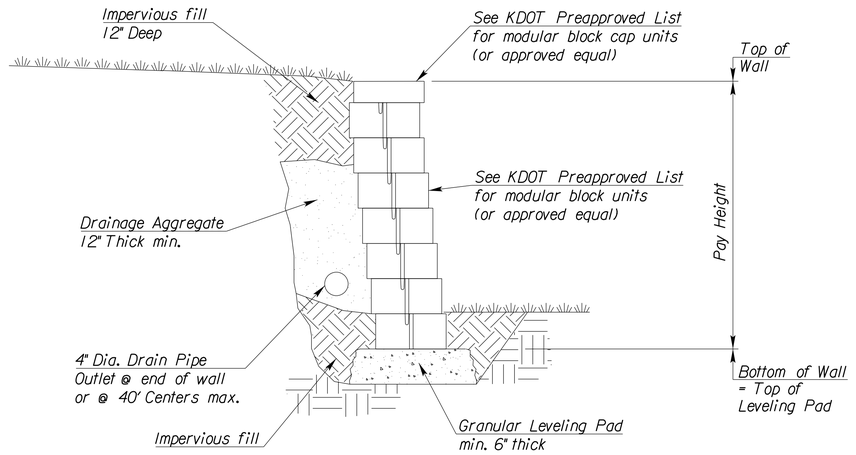
CITY OF WICHITA

MSE RETAINING WALL DETAILS I

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:42:55 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIMSWADOIA.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	309	1055



TYPICAL SECTION-MODULAR BLOCK RETAINING WALL

Walls D

See Sh. #303 for General Notes.

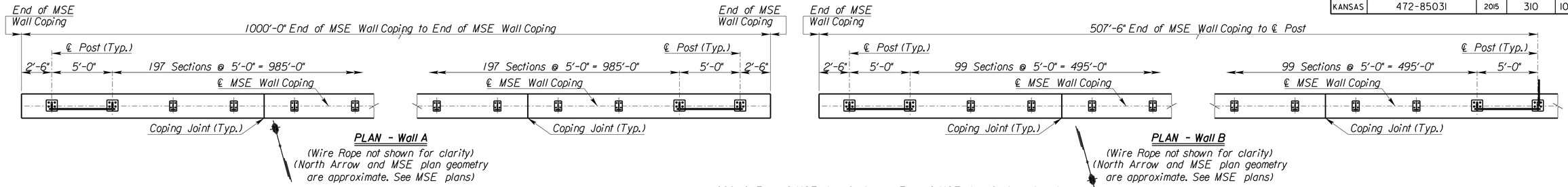
CITY OF WICHITA

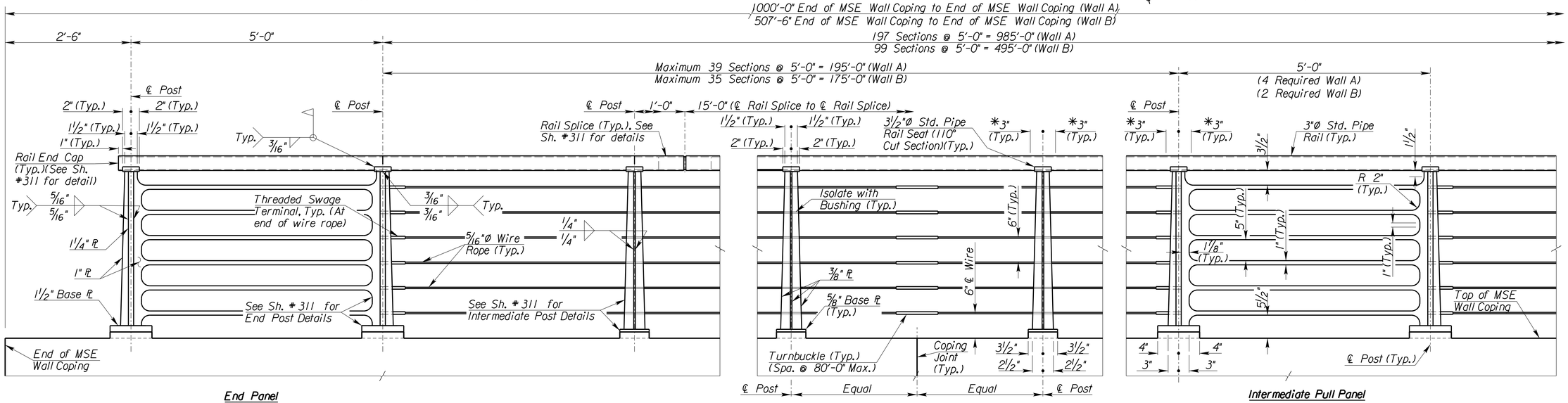
MSE RETAINING WALL DETAILS II

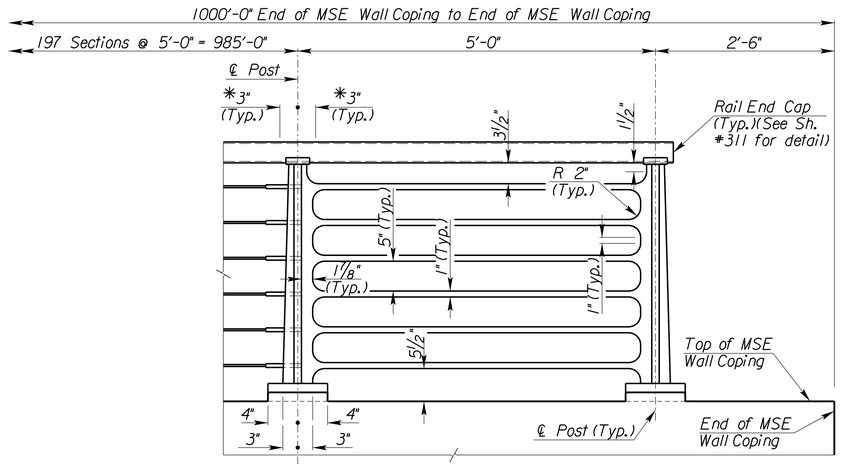
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

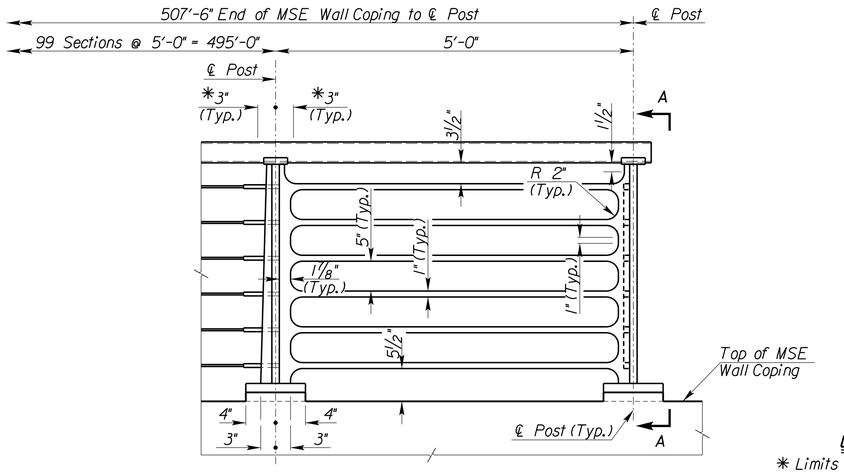
9:42:59 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIMSWAD002A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	310	1055









See Sh's. # 304-305 for MSE Retaining Wall Geometry

See Sh. #311 for Sections, Details and General Notes.

Horizontal dimensions measured along Back Face of Wall.

LEGEND

* Limits of Rail to receive surface treatment after field-welded to post.

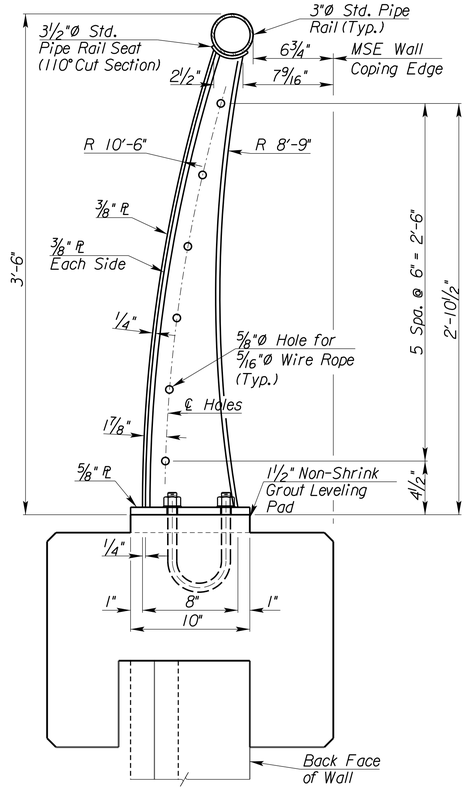
CITY OF WICHITA

MSE RETAINING WALL DETAILS III
HANDRAIL DETAILS

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

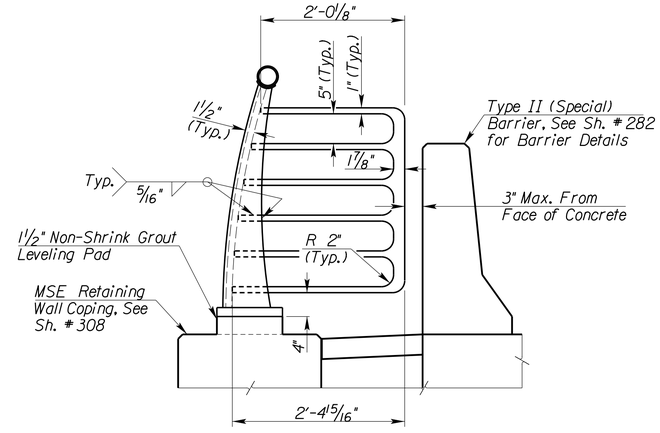
9:43:27 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIMSWAD03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	311	1055



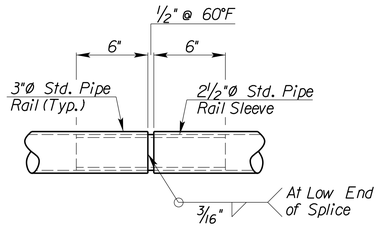
Intermediate Post Typical Section

ELEVATION

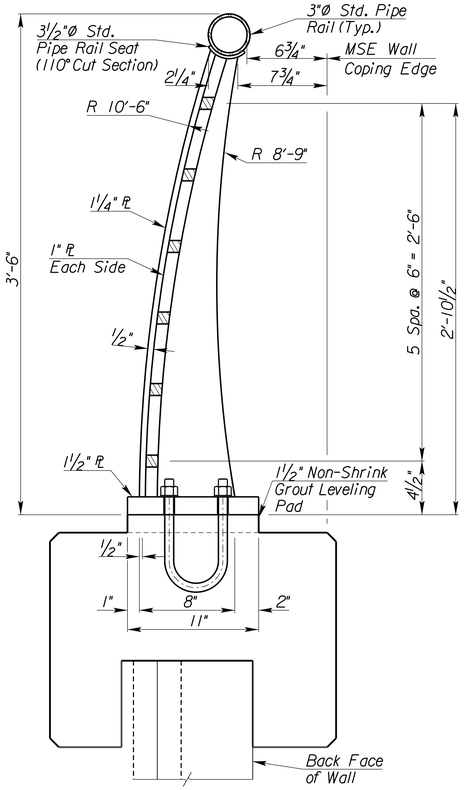


SECTION A-A

See Sh. # 310 for Section location



RAIL SPLICE DETAIL



End Post Typical Section

ELEVATION

(2 End Posts required at each End Panel and 2 End Posts required for each Intermediate Pull Panel)

Material Specifications:
Plates & Shapes: A709 Grade 36
Pipe: A-500 Grade B
U-bolts: Grade 36 (Galv.)(including nuts & washers)
Wire Rope: (Stainless Steel)

Posts to be set vertical. 1"x1" steel ℄ rails in End Panel and Intermediate Pull Panels and all Base Plates to be fabricated parallel to top of coping. Show angle of inclination (unique to each panel) in Shop Drawings. In order to facilitate this, Contractor to survey top of coping prior to preparation of Shop Drawings, subsidiary to "Handrail (Metal)(3'-6")". All cut edges shall be true and smooth, free of burrs, ragged breaks, and sharp edges.

Miscellaneous plates, bars, and shapes shall conform to ASTM A36.

All Metal handrail components, except U-Bolt assemblies and wire rope, shall be sandblasted and powder coat painted per KDOT std. spec. and latest special provisions. See Project Special Provisions for color selection process for handrail.

U-Bolt assemblies shall be hot dip galvanized after fabrication. All bolts, nuts, and washers shall be zinc or cadmium plated, conforming to KDOT Standard Specifications. U-Bolt assemblies, bolts, nuts and washers shall be furnished and installed by the Contractor.

Embed U-Bolts in the concrete. Take care to protect U-Bolts from damage during construction.

Cost for intermediate posts, end posts, pipe rail, rail seats, wire rope, turnbuckles, U-Bolts, and all components required for the installation, including labor and incidentals, for the handrail shall be included in the price bid for "Handrail (Metal)(3'-6") Linear Ft." measured from end to end of rail.

All fillet welds shall be ¼" unless otherwise noted.

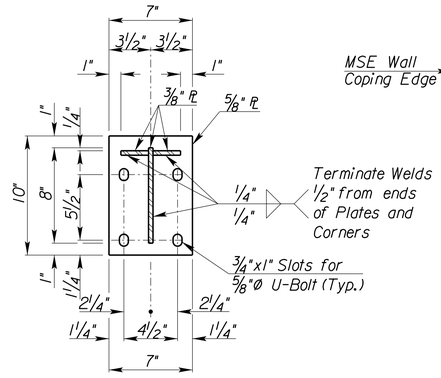
Additional details may be required for the installation of the handrail in the field in order to fit within the actual geometry of the rail. Any extra detailing required to install the handrail shall be included in the bid item "Handrail (Metal)(3'-6") Linear Ft."

Wire rope manufacturer shall supply additional hardware necessary to erect wire rope, including turnbuckles and bushes in post holes to allow continuation of wire rope. Bushings to isolate stainless steel wire from painted steel.

Shop drawings must be submitted for approval by the Engineer prior to fabrication.

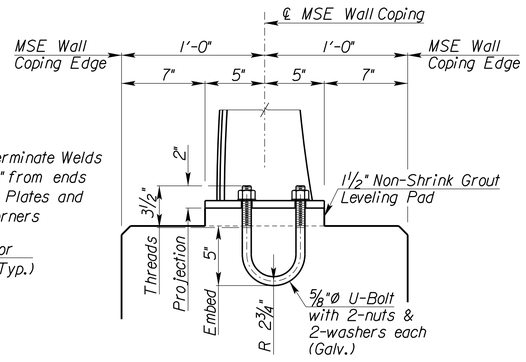
See KDOT Specifications and Project Special Provisions.

Handrail (Metal)(3'-6")	1.503 L.F.



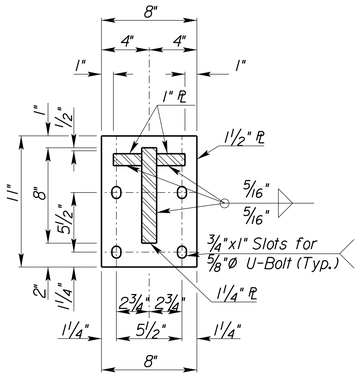
Base Plate at Intermediate Post

PLAN



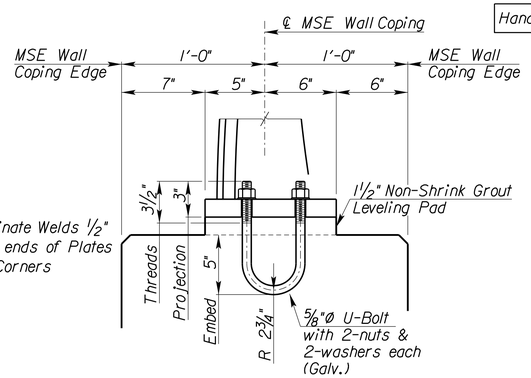
Intermediate Post

U-BOLT DETAIL



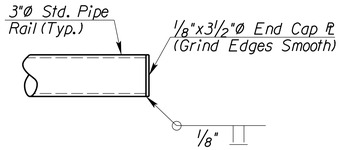
Base Plate at End Post

PLAN



End Post

U-BOLT DETAIL



RAIL END CAP DETAIL

CITY OF WICHITA

MSE RETAINING WALL DETAILS IV
HANDRAIL DETAILS

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:43:38 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIMSWAD04A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	312	1055

SPECIFIC GENERAL NOTES FOR SOLDIER PILE WALLS

TEMPORARY STABILITY: Stability of temporary construction shall be the responsibility of the Contractor. The Contractor shall follow OSHA standards and regulations for all construction activities.

SURVEY REQUIREMENTS: The Contractor is required to have a registered land surveyor lay out all Retaining Walls geometry to a construction tolerance not to exceed 1 inch. Submit to the Engineer, proposed geometric (survey) layouts for all retaining walls. A pre-construction meeting will be required prior to the field layout. Survey information will be reviewed by the Engineer.

CONCRETE: Use Concrete (Grade 4.0)(AE) except in the sockets below the Soldier Pile walls which may be Concrete (Grade 4.0). Bevel all exposed edges of all concrete with a ¾" triangular molding, except as otherwise noted on the plans. Place construction joints only at locations shown, or at locations approved by the Engineer.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or A82.

Epoxy coat all reinforcing steel in the walls except as noted.

CONCRETE MASONRY SURFACE TREATMENT: Coat all exposed surfaces of the walls with an approved pigmented sealer (uniform color), including coping and barrier surfaces. All surfaces to be coated shall be prepared with a light brush sandblast prior to application. The form release agent used on concrete surfaces to be coated, shall be compatible with the color stain product to be applied to the surface. Use of curing compound on surfaces to be coated is prohibited. See Project Special Provisions for process for Color selection.

Payment for "Concrete Masonry Surface Treatment" is based on wall, coping and barrier areas calculated from the top of proposed ground in front of the wall.

GEOLOGY REPORTS: See Geotechnical Reports for soil information and requirements. Geotechnical Reports are considered part of the contract documents.

FORM LINER: The form liner used shall be shown on the Shop Drawings.

DRILLING AND GROUTING: Drilling and Grouting shall consist of grouting reinforcing steel, into the concrete, where required by the Engineer, with an epoxy grout. Follow KDOT Specifications and any associated Special Provisions. Follow the manufacturer's directions for mixing, application and curing. Drilling and Grouting is included in the Retaining Wall bid item.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

UNDERDRAIN SYSTEM: Perforated Underdrains, Aggregate for underdrains, Geo-textile fabric, Concrete outlet flume, and all other materials and labor required for installation shall be subsidiary to "Retaining Wall (MSEW)" or "Retaining Wall (Soldier Pile)". Non-perforated outfall pipes for MSE walls and Soldier Pile walls are paid for directly as their respective bid items. See drainage plans.

On the shop drawings, show plan and profile details of the underdrain and outlet pipe, including stations and offsets for horizontal alignment and pipe slopes.

UTILITY LOCATIONS: It is the Contractor's responsibility to verify the location of all utilities and avoid conflicts before commencing retaining wall work.

EXCAVATION: Excavation in front of the Soldier Pile wall, from the top of existing ground to the bottom of proposed pavement, is included in other bid items. All other necessary excavation to construct the Soldier Pile Wall shall be included in the bid item "Retaining Wall (Soldier Pile)."

CONCRETE SOCKET: See Project Special Provisions for construction of concrete sockets and Low Strength Flowable Fill. All excavation, concrete, reinforcing steel, temporary casings, labor, and incidentals necessary to complete the sockets as shown on the details and as directed by KDOT Specifications shall be included in the bid item "Retaining Wall (Soldier Pile)". In no case shall the bottom of the concrete socket be placed higher than the elevation shown unless otherwise directed by the Engineer.

Temporary casing may be required to maintain stability of the concrete socket shaft hole and/or to allow for inspection. Conditions requiring the use of permanent casing are not anticipated. The temporary casing, if used, shall be included in the bid item, "Retaining Walls (Soldier Pile)". No direct payment shall be made for casing.

Low Strength Flowable Fill to be approved by the Engineer.

TIEBACKS: All Tiebacks shall be installed with an encapsulated double corrosion protection system. See Special Provisions. The Contractor is responsible for all installation and testing of Tiebacks.

UTILITY LOCATION: It shall be Contractor's responsibility to verify the location of all utilities before commencing work. Contact Kansas One Call.

EXCAVATION FOR LAGGING SYSTEM: The excavation and installation of lagging excavation support system shall be performed in such a manner as to prevent movement or caving of the excavation between the concrete sockets, and to limit the void space behind the temporary excavation support. Any movement or caving of the excavation between the concrete sockets shall be immediately supported by positive bracing. Any void space behind temporary excavation support shall be immediately backfilled with material meeting the KDOT Requirements for structural backfill.

REINFORCING STEEL: Epoxy coat all reinforcing in Cast-In-Place Reinforced Concrete Wall/Facing including beam at Mast Arm locations. Reinforcing steel in socket below the bottom of wall does not require epoxy coating.

PAINTING OF STRUCTURAL STEEL: All new structural steel including soldier piles shall be shop painted with 6 mils inorganic zinc rich primer per KDOT Specifications for shop painted structural steel.

STRUCTURAL STEEL: All Soldier Piles shall conform to AASHTO M270, Grade 50. All structural steel channels and miscellaneous plates shall conform to ASTM A709 (Grade 50).

DRAINAGE SYSTEM: Drainage system shall be applied to the entire back of the cast-in-place facing. Show these limits in the Shop Drawings for the Soldier Pile Walls.

PAYMENT: Payment for "Retaining Wall (Soldier Pile)" will be based on the nominal wall areas listed in the Summary of Quantities table on Sheet #302. The nominal wall areas are calculated based on the height from the top of wall to the bottom of wall as detailed on these plans.

The bid price per square feet for the approved Soldier Pile Retaining Wall as shown on the plans shall include all costs for formliner, tiebacks, structural steel, drilling, back filling with Flowable Fill, reinforcing steel (Grade 60) & epoxy coated reinforcing steel, concrete (Grade 4.0)(AE), joints and joint protection, excavation, strip drains, geotextile fabric, pipes, anchors, grouting, testing and all incidentals necessary to construct the wall as shown on the plans, except Concrete Masonry Surface Treatment which is paid for as a separate bid item. Note that there will be excavation in rock and no additional payment will be made for rock excavation except that which is already shown on the plans.

SHOP DRAWINGS: Shop drawings are required. Submit 6 sets of detail drawings for the soldier pile wall system 60 days prior to construction, for review and approval by the Engineer. Details shall include intended means for excavation, construction, and stressing operations.

SPECIAL PROVISIONS: See Special Provisions for Retaining Wall (Soldier Pile).

FORM LINER: Form liner shall be per architectural plans and project Special Provisions (subsidiary to bid item "Retaining Wall (Soldier Pile)").

COPING: Concrete coping of the top of all retaining walls shall be cast-in-place. Exposed surfaces of the coping shall be given a rubbed finish and coated. There shall be a bond breaker between the cast-in-place coping and the retaining wall and concrete safety barrier. All labor, materials, equipment, and incidentals required to complete this work shall be subsidiary to the bid item "Retaining Wall (Soldier Pile)".

TIEBACK STRESSING RECORDS: After completion of all tieback stressing operations, Contractor to submit tieback stress records in an approved electronic spreadsheet format to the Engineer & KDOT.

QUANTITIES:
(The following quantities are shown for information only.)
(Note: stud quantities are not shown.)

Steel Pile (AASHTO M270)(Grade 50)	526.2 tons
Steel Channels (ASTM A709)(Grade 50)	20.1 tons
Miscellaneous Plates (ASTM A709)(Grade 50)	67.5 tons
Concrete (Grade 4.0) (AE)	3,959.4 C.Y.
Concrete (Grade 4.0)	1,533.1 C.Y.
Reinforcing Steel (Grade 60)(Epoxy Coated)	316.4 tons

DESIGN SPECIFICATIONS (ALL WALLS):

AASHTO LRFD Spec., 7th Edition with 2015 Interims.

DESIGN LOADING:

Live Load	Surcharge load of 2.0 ft of earth added to the vertical stress.
Dead Load	Components of wall structure.
Other Loads	As specified by AASHTO. Seismic design need not be considered.

UNIT STRESSES:

Concrete (Grade 4.0)(AE)	f'c = 4.0 ksi
Reinforcing Steel (Grade 60)	fy = 60 ksi
Structural Steel (Grade 50)	Fy = 50 ksi
Concrete Leveling Pad	f'c = 3.0 ksi

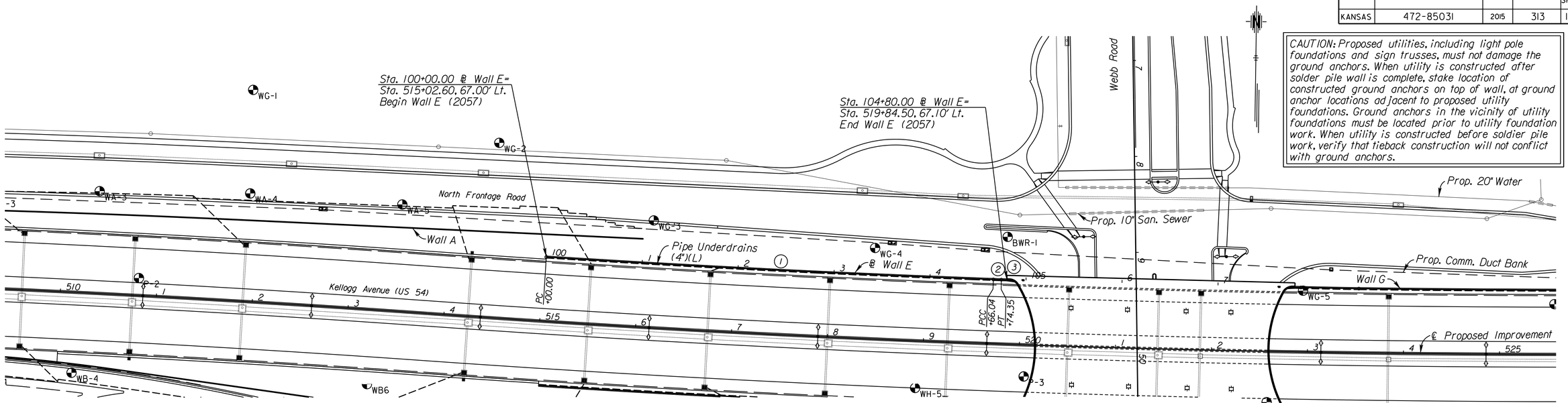
CITY OF WICHITA

SOLDIER PILE RETAINING WALLS
GENERAL NOTES

SURV.	--	PLOT	--	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:43:41 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EK1AWGN004A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	313	1055



CAUTION: Proposed utilities, including light pole foundations and sign trusses, must not damage the ground anchors. When utility is constructed after solder pile wall is complete, stake location of constructed ground anchors on top of wall, at ground anchor locations adjacent to proposed utility foundations. Ground anchors in the vicinity of utility foundations must be located prior to utility foundation work. When utility is constructed before soldier pile work, verify that tieback construction will not conflict with ground anchors.

WALL E ALIGNMENT DATA

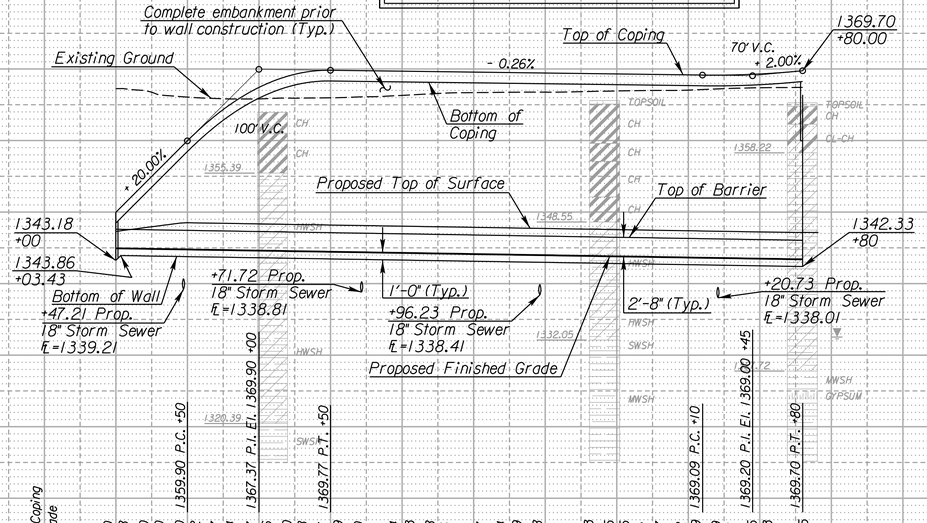
CURVE/PT. NO. ◯	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	102+33.03	102+33.01	1683771.7114	1680784.5849	01°34'36.93" Lt.	16933.00	233.03	466.04	1.60	100+00.00	1683786.5894	1680552.0261	104+66.04	1683763.2389	1681017.4650
2	104+70.20	104+70.19	1683763.0877	1681021.6201	0°35'44.03" Lt.	800.00	4.16	8.31	0.01	104+66.04	1683763.2389	1681017.4650	104+74.35	1683762.9798	1681025.7765
3	104+80.00		1683762.8332	1681031.4201											

See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Front Face of Wall

NOTE:
Metal handrail on top of wall coping not shown.
See Sh's. #440-442.

Place lighting underneath coping from Sta's. 104+40.09 to 104+80. See Lighting Plans.



Note:
Elevation of finished ground at Front Face of Wall shown on Geometric Layout sheets.

Sta.	Ex. Ground	Top of Coping / Fin. Grade
100	1367.20	1369.90
	1366.71	1369.88
	1366.02	1369.90
	1365.78	1369.72
	1365.77	1369.64
1	1365.87	1369.56
	1365.92	1369.48
	1366.06	1369.39
	1366.26	1369.31
2	1366.52	1369.23
	1366.65	1369.15
	1366.69	1369.07
	1366.71	1369.00
3	1366.78	1368.92
	1366.87	1368.83
	1366.95	1368.75
	1367.00	1368.67
4	1367.20	1368.59
	1367.33	1368.51
	1367.37	1368.43
105		1368.35
6		1368.27
7		1368.19

1359.90 P.C. +50
1367.37 P.I. El. 1369.90 +00
1369.77 P.T. +50
1369.09 P.C. +10
1369.20 P.I. El. 1369.00 +45
1369.70 P.T. +80

CITY OF WICHITA

SOLDIER PILE RETAINING WALL E (2057)

PLAN & PROFILE

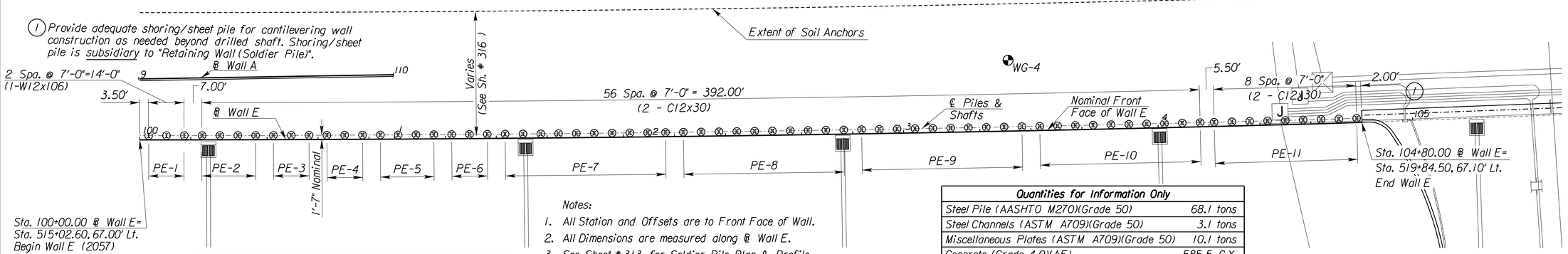
STA. 100+00 TO STA. 104+80

9:43:48 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIEWAPP01A.dgn

APP. | CKD. | TR. | DR. | DES. | CADD | PLOT | SURV.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	314	1055

(1) Provide adequate shoring/sheet pile for cantilevering wall construction as needed beyond drilled shaft. Shoring/sheet pile is subsidiary to "Retaining Wall (Soldier Pile)".



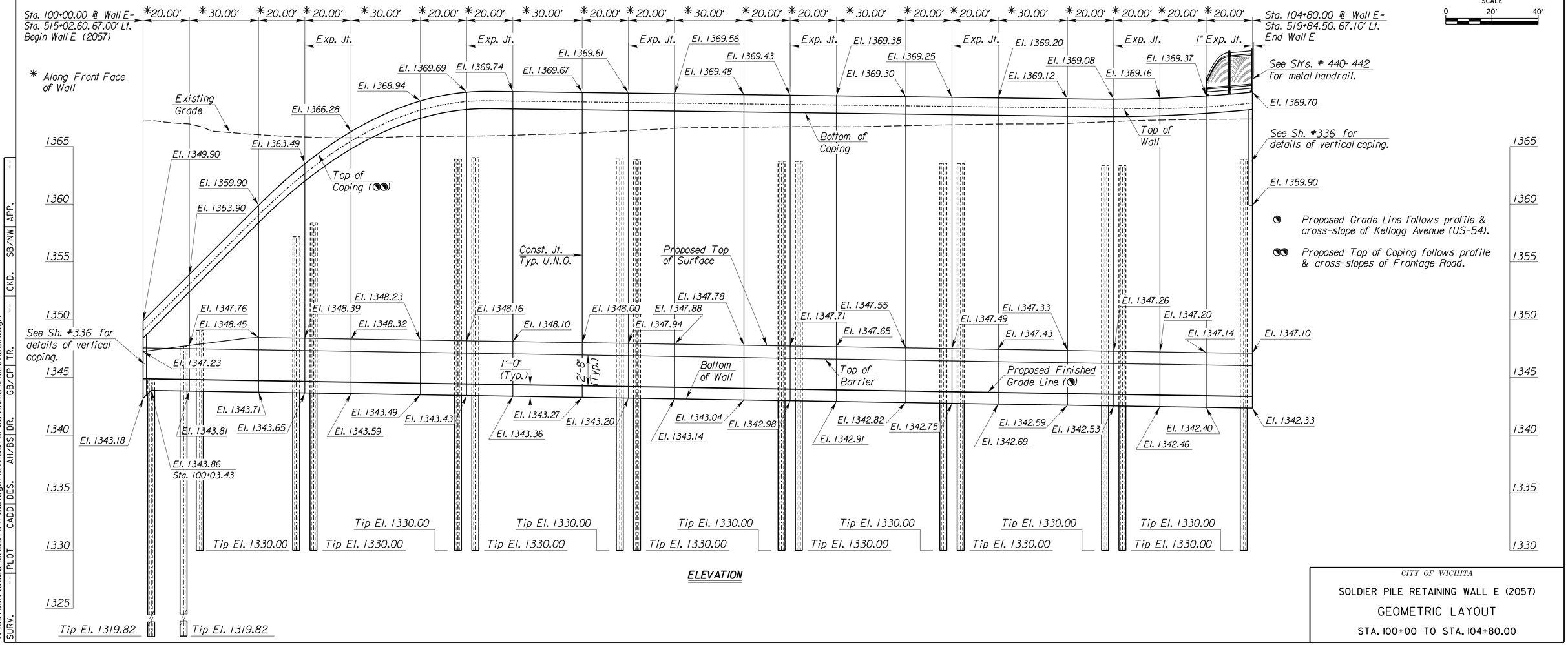
PLAN

SUMMARY OF QUANTITIES	
Retaining Wall (Soldier Pile)	11,209 S.F.
Concrete Masonry Surface Treatment	1,326 S.Y.

Notes:
1. All Station and Offsets are to Front Face of Wall.
2. All Dimensions are measured along ℄ Wall E.
3. See Sheet # 313 for Soldier Pile Plan & Profile.
4. See Sheet # 335- 338 for Soldier Pile Wall Details.
5. See Sheet # 315 for Soldier Pile Wall Schedule.
6. See Sheet # 316 for Ground Anchor Summary.

Quantities for Information Only	
Steel Pile (AASHTO M270)(Grade 50)	68.1 tons
Steel Channels (ASTM A709)(Grade 50)	3.1 tons
Miscellaneous Plates (ASTM A709)(Grade 50)	10.1 tons
Concrete (Grade 4.0)(AE)	585.5 C.Y.
Concrete (Grade 4.0)	169.9 C.Y.
Reinforcing Steel (Grade 60)(Epoxy Coated)	46.5 tons

SCALE
0 20' 40'



ELEVATION

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:43:59 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packagel\Structures\Walls\EKIEWADOIA.dgn

CITY OF WICHITA

SOLDIER PILE RETAINING WALL E (2057)

GEOMETRIC LAYOUT

STA. 100+00 TO STA. 104+80.00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	315	1055

PILE SCHEDULE - FROM STA. 100+00.00 TO 104+80.00

	SHAFT LABEL	SECTION	NO. OF SHAFTS	NO. OF TIEBACKS PER SHAFT	TOP PILE ELEV. (FIRST)	TOP PILE ELEV. (LAST)	TOP SOCKET ELEV. (FIRST)	TOP SOCKET ELEV. (LAST)	SOCKET TIP ELEV.	PILE LENGTH (FIRST) (ft)	PILE LENGTH (LAST) (ft)	PILE LENGTH INCREMENT (Inch)	NO. OF STUDS PER SHAFT (FIRST)	NO. OF STUDS PER SHAFT (LAST)
Wall E (2057)	PE-1	(1) W12x106	3	0	1344.88	1347.68	1343.86	1343.82	1319.82	25.06	27.86	16.80	1	3
	PE-2	(2) C12x30	4	1	1349.08	1353.28	1343.80	1343.73	1330.00	19.08	23.28	16.80	10	18
	PE-3	(2) C12x30	3	2	1354.67	1357.20	1343.71	1343.66	1330.00	24.67	27.20	15.18	22	26
	PE-4	(2) C12x30	3	2	1358.32	1360.25	1343.64	1343.59	1330.00	28.32	30.25	11.61	28	32
	PE-5	(2) C12x30	4	2	1361.07	1362.93	1343.57	1343.50	1330.00	31.07	32.93	7.44	34	38
	PE-6	(2) C12x30	3	2	1363.35	1363.90	1343.48	1343.44	1330.00	33.35	33.90	3.27	38	40
	PE-7	(2) C12x30	10	2	1364.02	1363.90	1343.41	1343.21	1330.00	34.02	33.90	-0.16	40	40
	PE-8	(2) C12x30	10	2	1363.88	1363.72	1343.19	1342.99	1330.00	33.88	33.72	-0.22	40	40
	PE-9	(2) C12x30	10	2	1363.70	1363.54	1342.96	1342.76	1330.00	33.70	33.54	-0.22	40	40
	PE-10	(2) C12x30	10	2	1363.52	1363.36	1342.74	1342.54	1330.00	33.52	33.36	-0.21	40	40
	PE-11	(2) C12x30	9	2	1363.36	1363.94	1342.52	1342.34	1330.00	33.36	33.94	0.87	40	42

Notes:

1. See "Soldier Pile Wall Details I, II, III, and IV" sheets for additional details.
2. The first and the last pile in each pile label are arranged in moving upstation direction.
3. Stitch plates (see Soldier Pile Wall Details) are not scheduled. Stitch plates are subsidiary to the bid item "Retaining Wall (Soldier Pile)".
4. Bottom steel pile tip elevation is equal to the socket tip elevation.

See Sh's. #335-338 for Soldier Pile Wall Details I-IV.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL E (2057)

PILE SCHEDULE

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.
--	--										

9:44:03 AM
4/17/2015
T:\35765A\Cadd\Sheets\Packagel\Structures\Walls\EKIEWAD02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	316	1055

Revised Plans

PERMANENT GROUND ANCHOR SUMMARY - FROM STA. 100+00.00 TO 104+80.00

		FIRST ANCHOR										SECOND ANCHOR										
SHAFT LABEL	NO. OF TIEBACKS PER SHAFT	DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) ③ (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)	DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	RELATIVE ELEV. ◔◔ X2 (ft)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) ③ (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)
PE-1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PE-2	1	62	1.375	1346.08	1350.28	59	67	15	74	82	30	-	-	-	-	-	-	-	-	-	-	-
PE-3	2	73	1.375	1351.67	1354.20	70	75	15	85	90	30	39	1.375	7	1344.67	1347.20	55	60	15	70	75	30
PE-4	2	86	1.375	1355.32	1357.25	77	79	20	97	99	30	81	1.375	10	1345.32	1347.25	57	59	20	77	79	30
PE-5	2	86	1.375	1358.07	1359.93	81	84	20	101	104	30	81	1.375	10	1348.07	1349.93	61	64	20	81	84	30
PE-6	2	86	1.375	1360.35	1360.90	86	88	20	106	108	30	81	1.375	10	1350.35	1350.90	66	68	20	86	88	30
PE-7	2	86	1.375	1361.02	1360.90	89	82	20	109	102	30	81	1.375	10	1351.02	1350.90	69	62	20	89	82	30
PE-8	2	86	1.375	1360.88	1360.72	82	75	20	102	95	30	81	1.375	10	1350.88	1350.72	62	55	20	82	75	30
PE-9	2	86	1.375	1360.70	1360.54	75	68	20	95	88	30	81	1.375	10	1350.70	1350.54	55	48	20	75	68	30
PE-10	2	86	1.375	1360.52	1360.36	68	68	20	88	88	30	81	1.375	10	1350.52	1350.36	48	48	20	68	68	30
PE-11	2	86	1.375	1360.36	1360.94	68	68	20	88	88	30	81	1.375	10	1350.36	1350.94	48	48	20	68	68	30

Wall E (2057)

(Δ) Anchor design load is equal to the anchor strength design load divided by the Load Factor for the apparent pressure diagram. Load Factor = 1.35

◔ Top anchor is set at 3.00 ft below top of pile and is measured at pile centerline.

◔◔ Relative elevation is measured from first anchor work point.

Notes:

1. Bonded length is only an estimate. The Contractor shall determine the bonded length necessary to satisfy the load requirements. Bonded length shall not be less than 10 ft.

③ *6/08/15 Revised Quantity Label*

CITY OF WICHITA

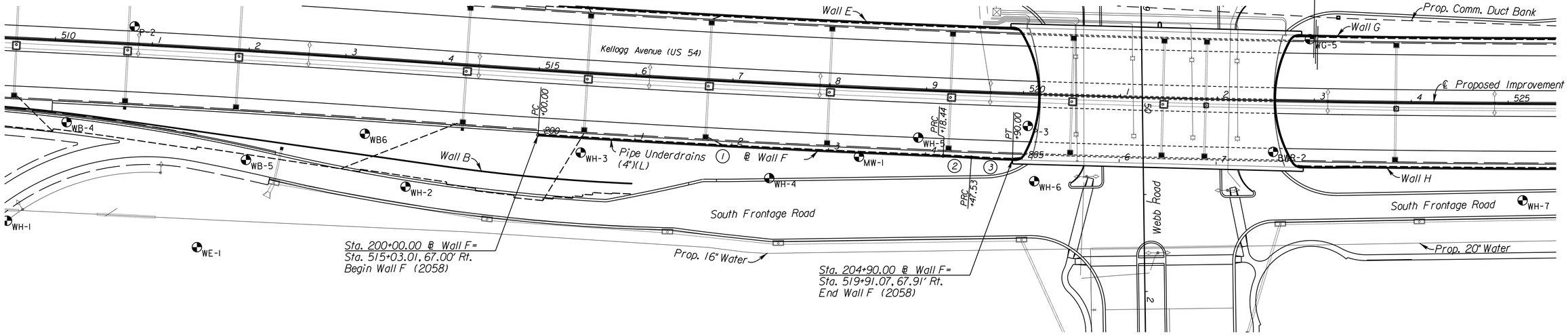
SOLDIER PILE RETAINING WALL E (2057)

GROUND ANCHOR SCHEDULE

SURV.	--	PLOT	--	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

6:43:38 PM
6/5/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIEWAD03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	317	1055

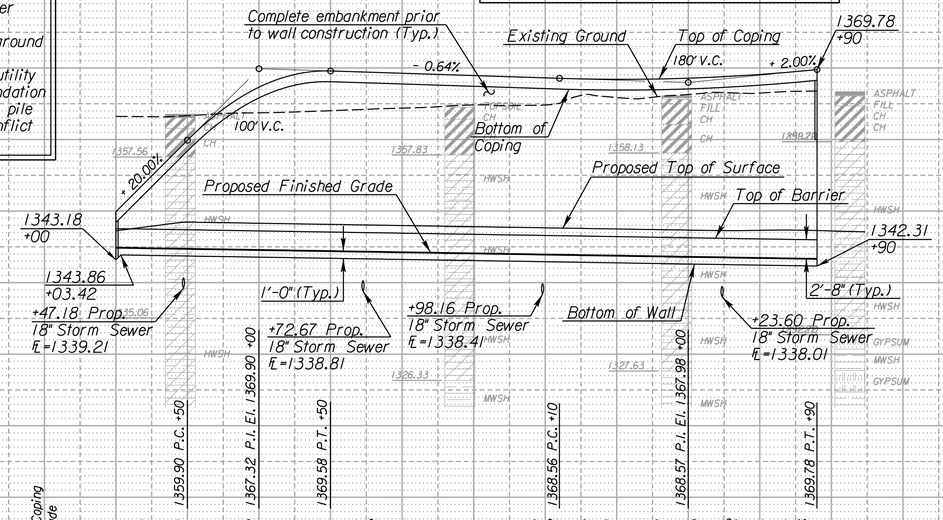


WALL F ALIGNMENT DATA															
CURVE NO. ◯	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	202+09.23	202+09.21	1683639.4835	1680752.6815	01°24'17.07" Lt.	17067.00	209.23	418.44	1.28	200+00.00	1683652.8367	1680543.8788	204+18.44	1683631.2532	1680961.7488
2	204+32.99	204+32.98	1683630.6809	1680976.2853	01°40'00.94" Rt.	1000.00	14.55	29.09	0.11	204+18.44	1683631.2532	1680961.7488	204+47.53	1683629.6861	1680990.7989
3	204+68.77	204+68.76	1683628.2337	1681011.9870	02°25'59.88" Lt.	1000.00	21.24	42.47	0.23	204+47.53	1683629.6861	1680990.7989	204+90.00	1683627.6822	1681033.2175

See Sh's. #248-250 for Underdrain Details.
Note:
All Station and Offsets are to Front Face of Wall

CAUTION: Proposed utilities, including light pole foundations and sign trusses, must not damage the ground anchors. When utility is constructed after solder pile wall is complete, stake location of constructed ground anchors on top of wall, at ground anchor locations adjacent to proposed utility foundations. Ground anchors in the vicinity of utility foundations must be located prior to utility foundation work. When utility is constructed before soldier pile work, verify that tieback construction will not conflict with ground anchors.

NOTE:
Metal handrail on top of wall coping not shown.
See Sh's. #440-442.



Place lighting underneath coping from Sta's. 204+50.08 to 204+90. See Lighting Plans.

Note:
Elevation of finished ground at Front Face of Wall shown on Geometric Layout sheets.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL F (2058)

PLAN & PROFILE

STA. 200+00 TO STA. 204+90.00

9:44:13 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIFWAPP01A.dgn

SURV. - PLOT - CADD - DES. - DR. - TR. - CKD. - APP.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	318	1055

(1) Provide adequate shoring/sheet pile for cantilevering wall construction as needed beyond drilled shaft. Shoring/sheet pile is subsidiary to "Retaining Wall (Soldier Pile)".

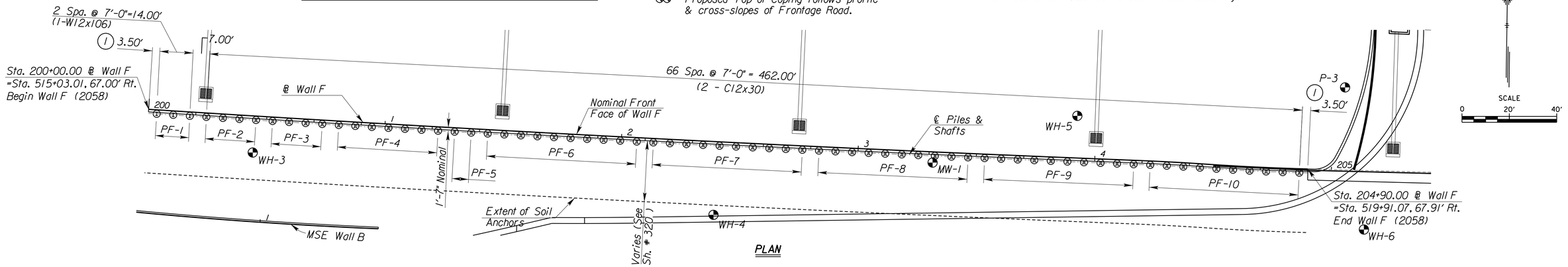
Quantities for Information Only	
Steel Pile (AASHTO M270)(Grade 50)	68.4 tons
Steel Channels (ASTM A709)(Grade 50)	3.1 tons
Miscellaneous Plates (ASTM A709)(Grade 50)	10.3 tons
Concrete (Grade 4.0)(AE)	591.9 C.Y.
Concrete (Grade 4.0)	172.2 C.Y.
Reinforcing Steel (Grade 60)(Epoxy Coated)	47.0 tons

SUMMARY OF QUANTITIES	
Retaining Wall (Soldier Pile)	11,298 S.F.
Concrete Masonry Surface Treatment	1,337 S.Y.

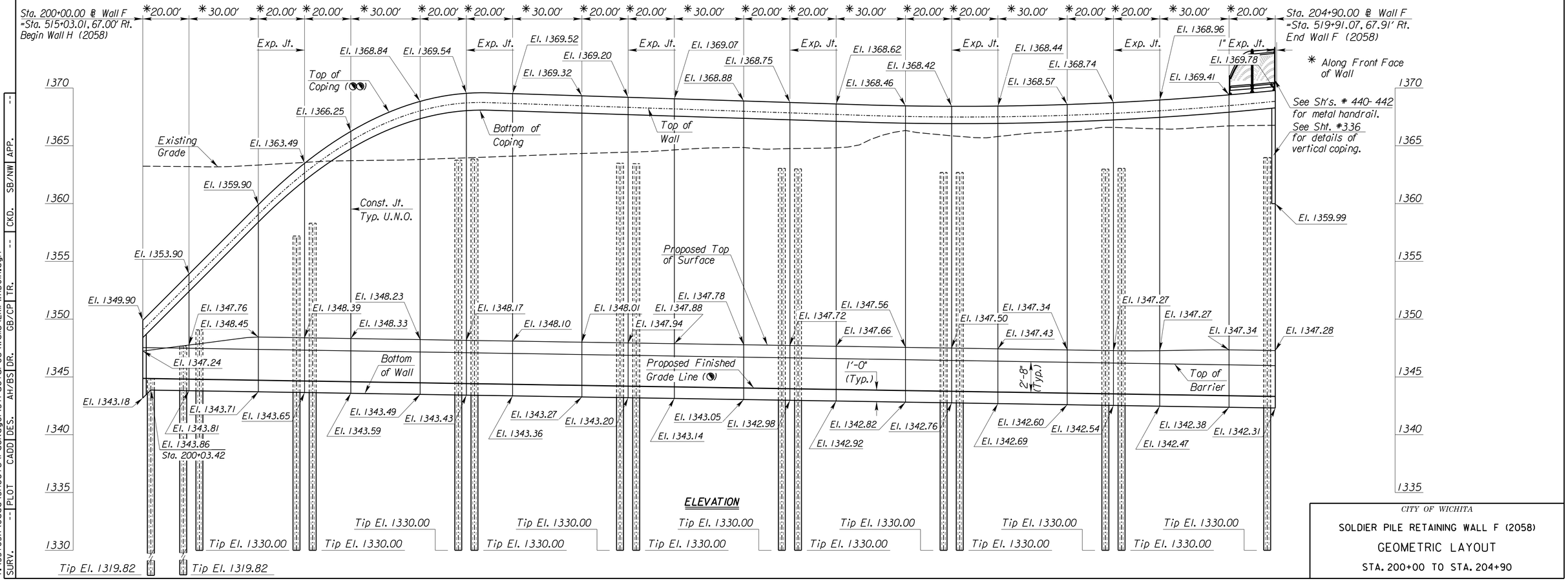
Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

Proposed Top of Coping follows profile & cross-slopes of Frontage Road.

Notes:
1. All Station and Offsets are to Front Face of Wall.
2. All Dimensions are measured along ℄ Wall F.
3. See Sheet #317 for Soldier Pile Plan & Profile.
4. See Sheet #335 - 338 for Soldier Pile Wall Details.
5. See Sheet #319 for Soldier Pile Wall Schedule.
6. See Sheet #320 for Ground Anchor Summary.



PLAN



ELEVATION

CITY OF WICHITA

SOLDIER PILE RETAINING WALL F (2058)

GEOMETRIC LAYOUT

STA. 200+00 TO STA. 204+90

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:44:17 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIFWAD01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	319	1055

PILE SCHEDULE - FROM STA. 200+00.00 TO 204+90.00

	SHAFT LABEL	SECTION	NO. OF SHAFTS	NO. OF TIEBACKS PER SHAFT	TOP PILE ELEV. (FIRST)	TOP PILE ELEV. (LAST)	TOP SOCKET ELEV. (FIRST)	TOP SOCKET ELEV. (LAST)	SOCKET TIP ELEV.	PILE LENGTH (FIRST) (ft)	PILE LENGTH (LAST) (ft)	PILE LENGTH INCREMENT (Inch)	NO. OF STUDS PER SHAFT (FIRST)	NO. OF STUDS PER SHAFT (LAST)
Wall F (2058)	PF-1	(1) W12x106	3	0	1344.88	1347.68	1343.86	1343.82	1319.82	25.06	27.86	16.80	1	3
	PF-2	(2) C12x30	4	1	1349.08	1353.28	1343.80	1343.73	1330.00	19.08	23.28	16.80	10	18
	PF-3	(2) C12x30	4	2	1354.67	1358.31	1343.71	1343.64	1330.00	24.67	28.31	14.54	22	28
	PF-4	(2) C12x30	7	2	1359.32	1363.25	1343.62	1343.48	1330.00	29.32	33.25	7.87	30	38
	PF-5	(2) C12x30	2	2	1363.56	1363.76	1343.46	1343.44	1330.00	33.56	33.76	2.41	40	40
	PF-6	(2) C12x30	10	2	1363.86	1363.50	1343.42	1343.22	1330.00	33.86	33.50	-0.48	40	40
	PF-7	(2) C12x30	10	2	1363.45	1363.05	1343.19	1342.99	1330.00	33.45	33.05	-0.54	40	40
	PF-8	(2) C12x30	10	2	1363.00	1362.70	1342.97	1342.77	1330.00	33.00	32.70	-0.41	40	40
	PF-9	(2) C12x30	10	2	1362.69	1362.98	1342.75	1342.55	1330.00	32.69	32.98	0.39	40	40
	PF-10	(2) C12x30	10	2	1363.05	1363.99	1342.52	1342.32	1330.00	33.05	33.99	1.25	40	42

Notes:

1. See "Soldier Pile Wall Details I, II, III, and IV" sheets for additional details.
2. The first and the last pile in each pile label are arranged in moving upstation direction.
3. Stitch plates (see Soldier Pile Wall Details) are not scheduled. Stitch plates are subsidiary to the bid item "Retaining Wall (Soldier Pile)".
4. Bottom steel pile tip elevation is equal to the socket tip elevation.

See Sh's. #335-338 for Soldier Pile Wall Details I-IV.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL F (2058)

PILE SCHEDULE

9:44:21 AM
4/17/2015
I:\357654\Cadd\Sheets\Package\Structures\Walls\EKIFWAD02A.dgn

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	320	1055

Revised Plans

PERMANENT GROUND ANCHOR SUMMARY - FROM STA. 200+00.00 TO 204+90.00

	SHAFT LABEL	NO. OF TIEBACKS PER SHAFT	FIRST ANCHOR										SECOND ANCHOR										
			DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) ③ (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)	DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	RELATIVE ELEV. ◔◔ X2 (ft)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) ③ (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)
Wall F (2058)	PF-1	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PF-2	1	62	1.375	1346.08	1350.28	59	67	15	74	82	30	-	-	-	-	-	-	-	-	-	-	-
	PF-3	2	73	1.375	1351.67	1355.31	70	77	15	85	92	30	39	1.375	7	1344.67	1348.31	55	62	15	70	77	30
	PF-4	2	86	1.375	1356.32	1360.25	79	87	20	99	107	30	81	1.375	10	1346.32	1350.25	58	67	20	78	87	30
	PF-5	2	86	1.375	1360.56	1360.76	89	89	20	109	109	30	81	1.375	10	1350.56	1350.76	69	69	20	89	89	30
	PF-6	2	86	1.375	1360.86	1360.50	89	89	20	109	109	30	81	1.375	10	1350.86	1350.50	69	69	20	89	89	30
	PF-7	2	86	1.375	1360.45	1360.05	89	89	20	109	109	30	81	1.375	10	1350.45	1350.05	69	69	20	89	89	30
	PF-8	2	86	1.375	1360.00	1359.70	89	89	20	109	109	30	81	1.375	10	1350.00	1349.70	69	69	20	89	89	30
	PF-9	2	86	1.375	1359.69	1359.98	89	89	20	109	109	30	81	1.375	10	1349.69	1349.98	69	69	20	89	89	30
	PF-10	2	86	1.375	1360.05	1360.99	89	89	20	109	109	30	81	1.375	10	1350.05	1350.99	69	69	20	89	89	30

(Δ) Anchor design load is equal to the anchor strength design load divided by the Load Factor for the apparent pressure diagram. Load Factor = 1.35

◔ Top anchor is set at 3.00 ft below top of pile and is measured at pile centerline.

◔◔ Relative elevation is measured from first anchor work point.

Notes:

1. *Bonded length is only an estimate. The Contractor shall determine the bonded length necessary to satisfy the load requirements. Bonded length shall not be less than 10 ft.*

③ *6/08/15 Revised Quantity Label*

CITY OF WICHITA

SOLDIER PILE RETAINING WALL F (2058)

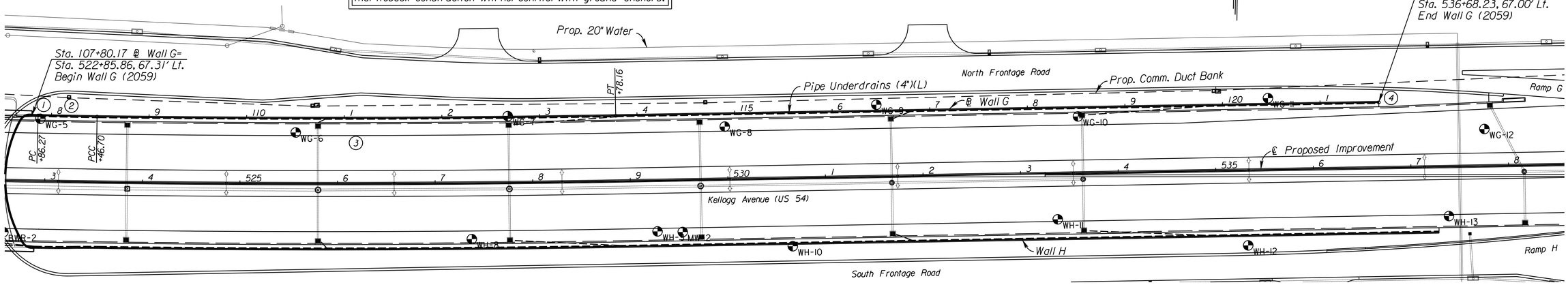
GROUND ANCHOR SCHEDULE

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

6:43:39 PM
6/5/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIFWAD03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	321	1055

CAUTION: Proposed utilities, including light pole foundations and sign trusses, must not damage the ground anchors. When utility is constructed after solder pile wall is complete, stake location of constructed ground anchors on top of wall, at ground anchor locations adjacent to proposed utility foundations. Ground anchors in the vicinity of utility foundations must be located prior to utility foundation work. When utility is constructed before soldier pile work, verify that tieback construction will not conflict with ground anchors.



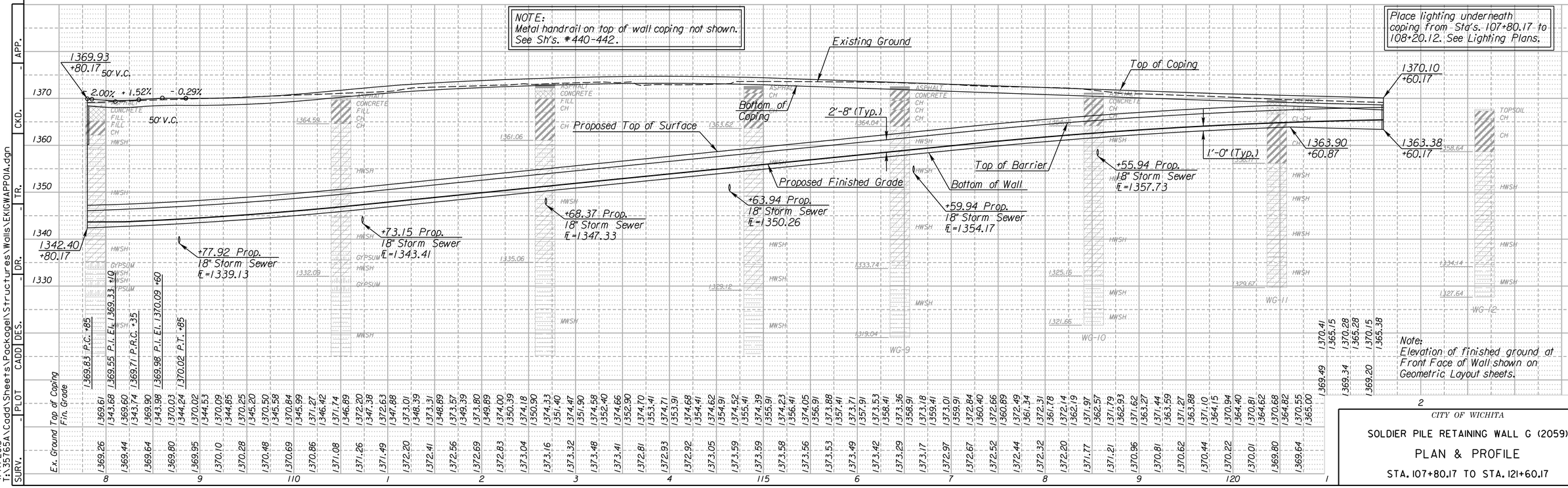
WALL G ALIGNMENT DATA

CURVE/PT. NO. ◯	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	107+80.17		1683755.0385	1681331.4855											
2	108+16.48	108+16.49	1683754.0954	1681367.7893	0°41'32.95" Lt.	5000.00	30.21	60.43	0.09	107+86.27	1683754.8800	1681337.5838	108+46.70	1683753.6759	1681398.0022
3	111+12.45	111+12.42	1683749.9860	1681663.7317	01°47'53.92" Lt.	16933.00	265.75	531.46	2.09	108+46.70	1683753.6759	1681398.0022	113+78.16	1683754.6370	1681929.4462
4	121+60.17		1683768.3226	1682711.3286											

See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Front Face of Wall

NOTE:
Metal handrail on top of wall coping not shown.
See Sh's. #440-442.



APP. | CKD. | DR. | DES. | CADD | PLOT | TR. | SURV.

9:44:31 AM
4/17/2015
I:\357654\Cadd\Sheets\Packagel\Structures\Walls\EKIGWAPP01A.dgn

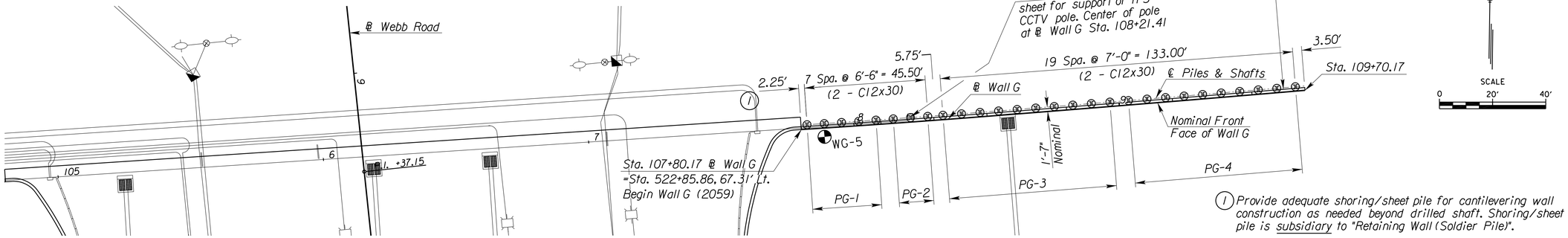
CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

PLAN & PROFILE

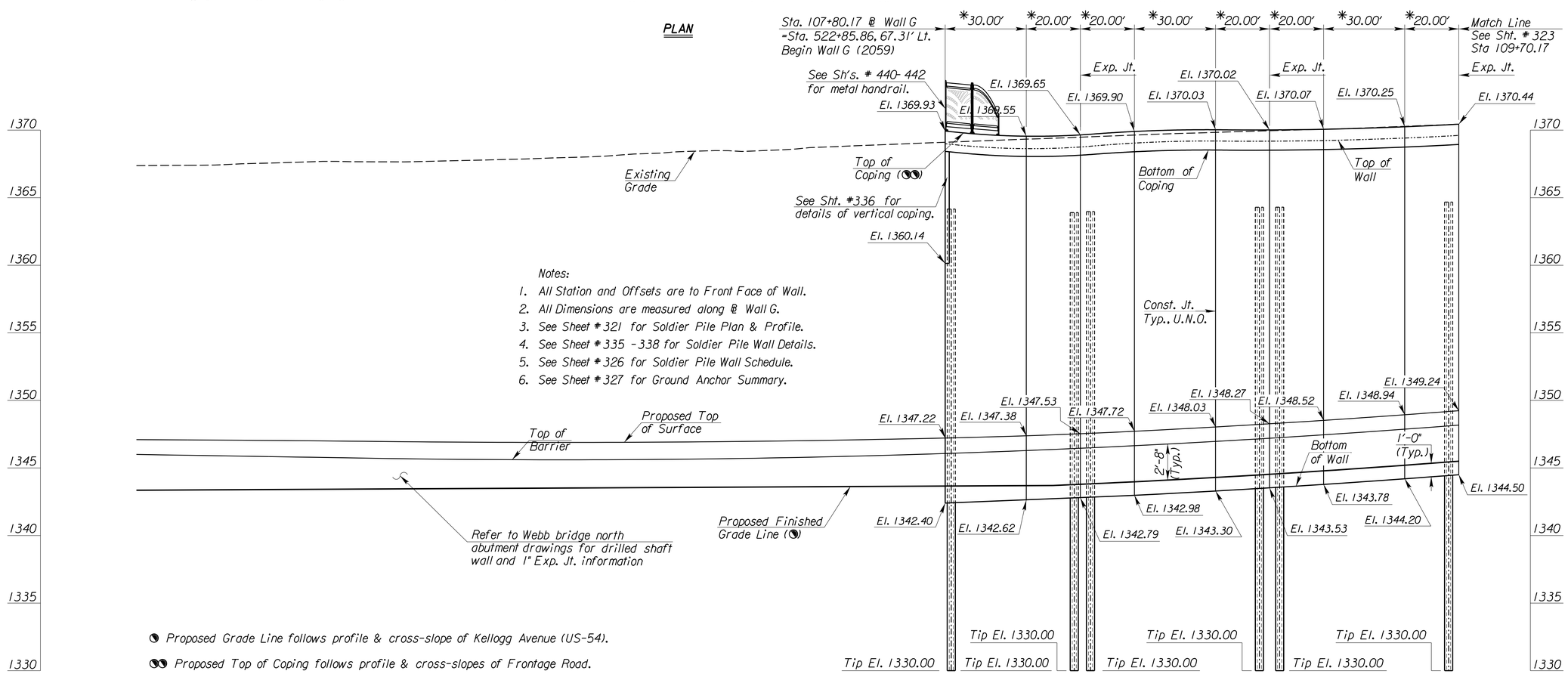
STA. 107+80.17 TO STA. 121+60.17

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	322	1055



① Provide adequate shoring/sheet pile for cantilevering wall construction as needed beyond drilled shaft. Shoring/sheet pile is subsidiary to "Retaining Wall (Soldier Pile)".

PLAN



* Along Front Face of Wall

Notes:

1. All Station and Offsets are to Front Face of Wall.
2. All Dimensions are measured along ℄ Wall G.
3. See Sheet # 321 for Soldier Pile Plan & Profile.
4. See Sheet # 335 -338 for Soldier Pile Wall Details.
5. See Sheet # 326 for Soldier Pile Wall Schedule.
6. See Sheet # 327 for Ground Anchor Summary.

◔ Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

◔◔ Proposed Top of Coping follows profile & cross-slopes of Frontage Road.

ELEVATION

See Sh. #325 for Geometric Layout IV.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

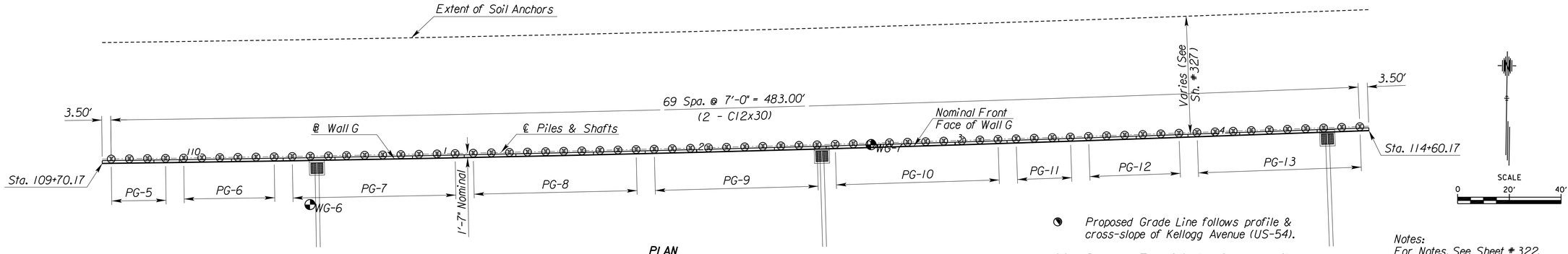
GEOMETRIC LAYOUT I

STA 107+80.17 TO STA. 109+70.17

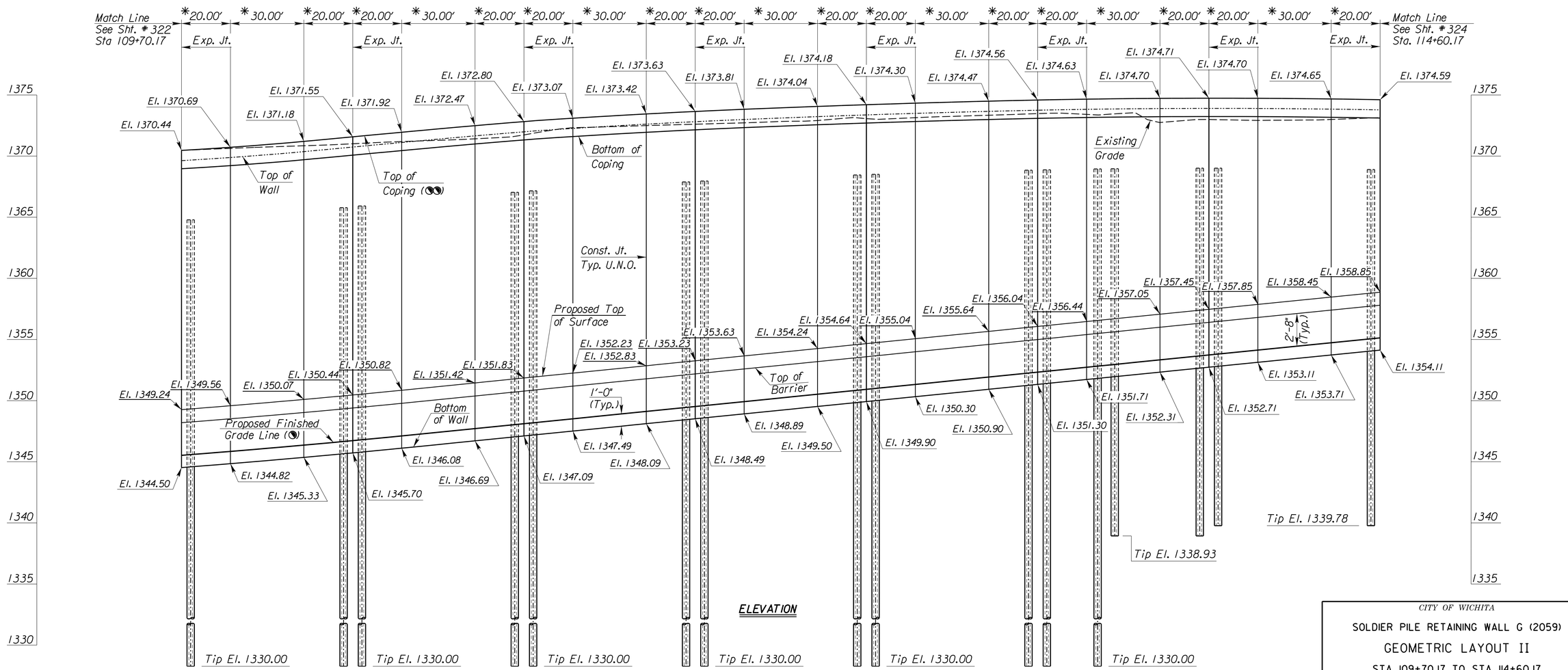
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:44:36 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIGWADD1A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	323	1055



PLAN



ELEVATION

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

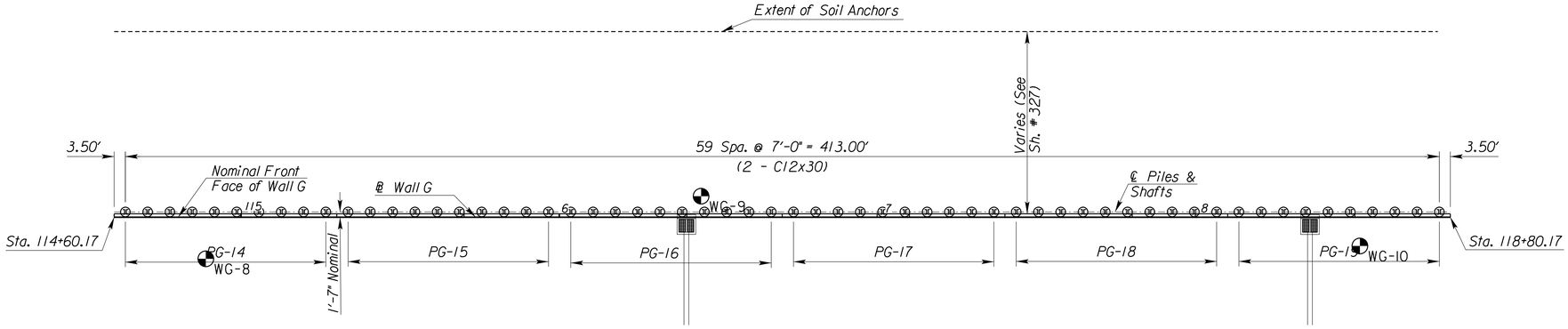
GEOMETRIC LAYOUT II

STA. 109+70.17 TO STA. 114+60.17

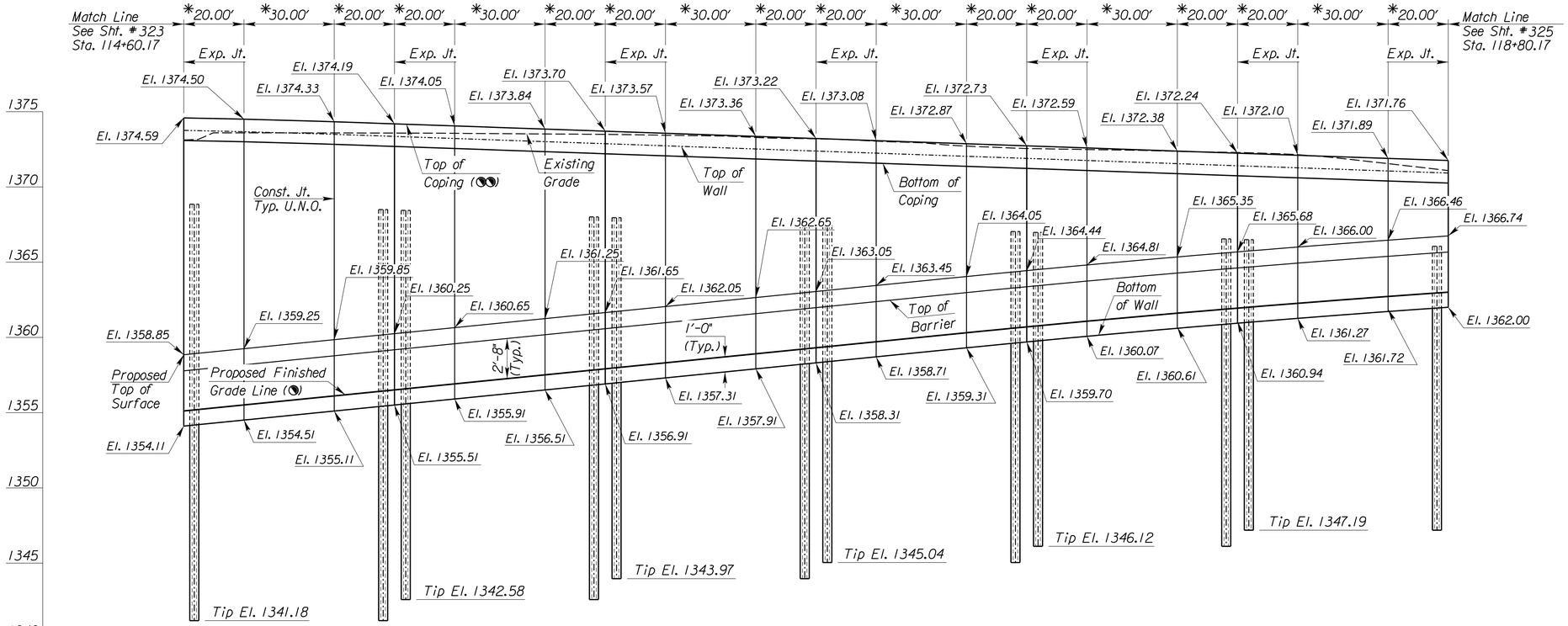
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:44:39 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIGWAD02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	324	1055



PLAN

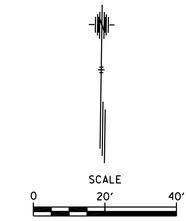


ELEVATION

℄ Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

℄℄ Proposed Top of Coping follows profile & cross-slopes of Frontage Road.

* Along Front Face of Wall



Notes:
For Notes, See Sheet # 322 .

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

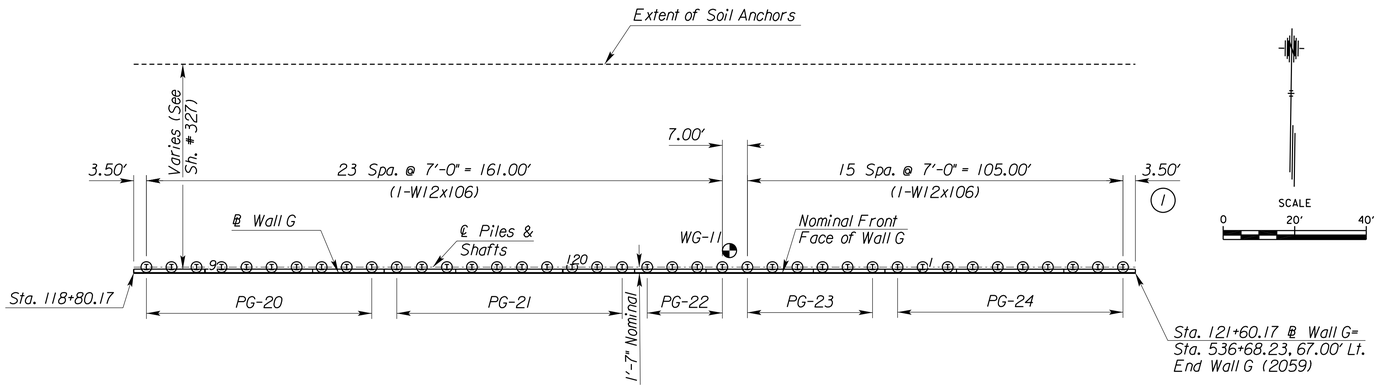
GEOMETRIC LAYOUT III

STA. 114+60.17 TO STA. 118+80.17

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:44:43 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIGWAD03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	325	1055



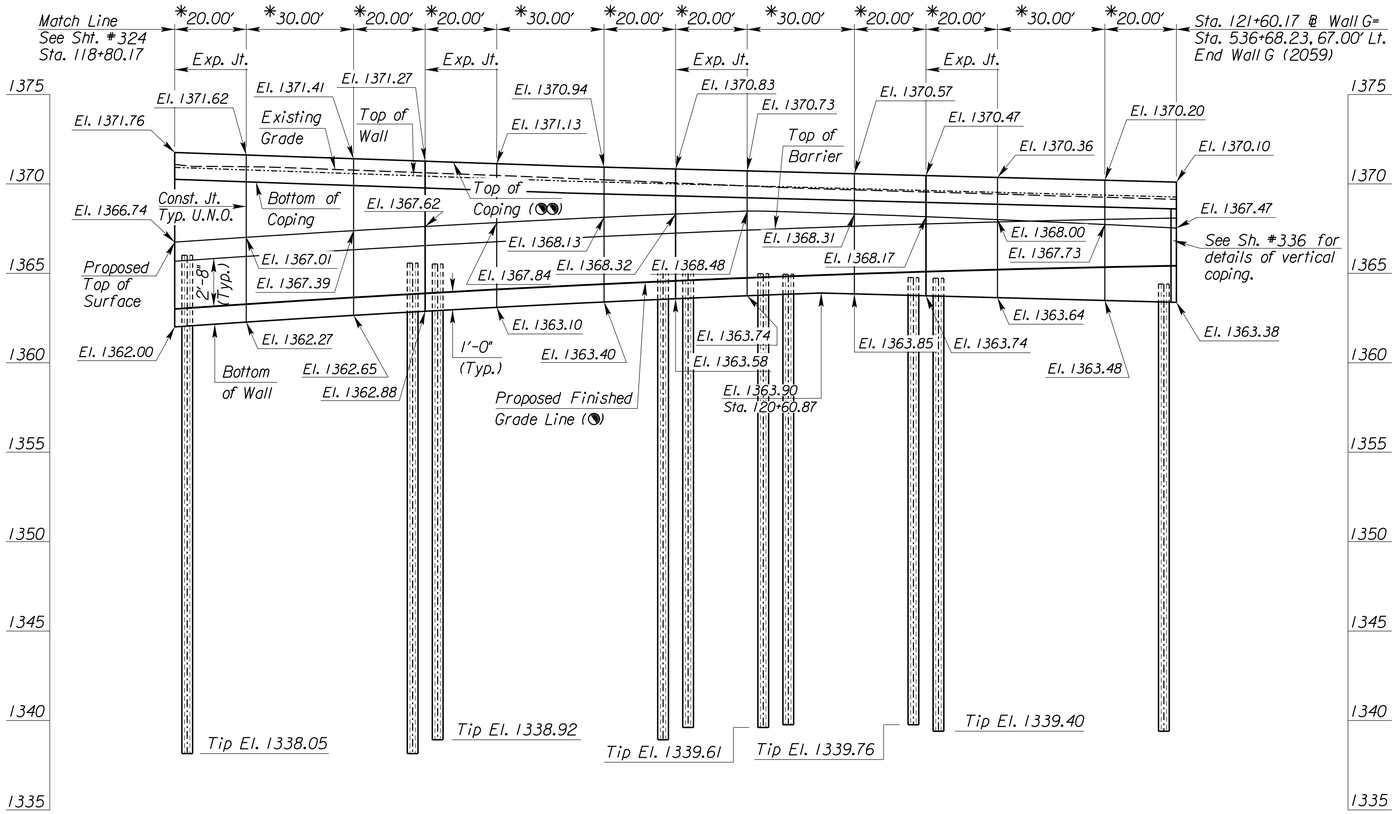
PLAN

(1) Provide adequate shoring/sheet pile for cantilevering wall construction as needed beyond drilled shaft. Shoring/sheet pile is subsidiary to "Retaining Wall (Soldier Pile)".

* Along Front Face of Wall

Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

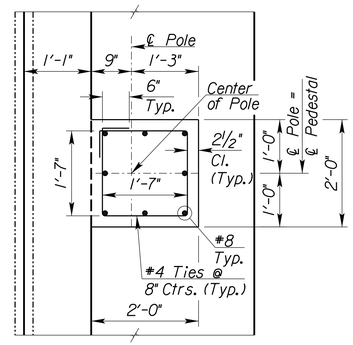
Proposed Top of Coping follows profile & cross-slopes of Frontage Road.



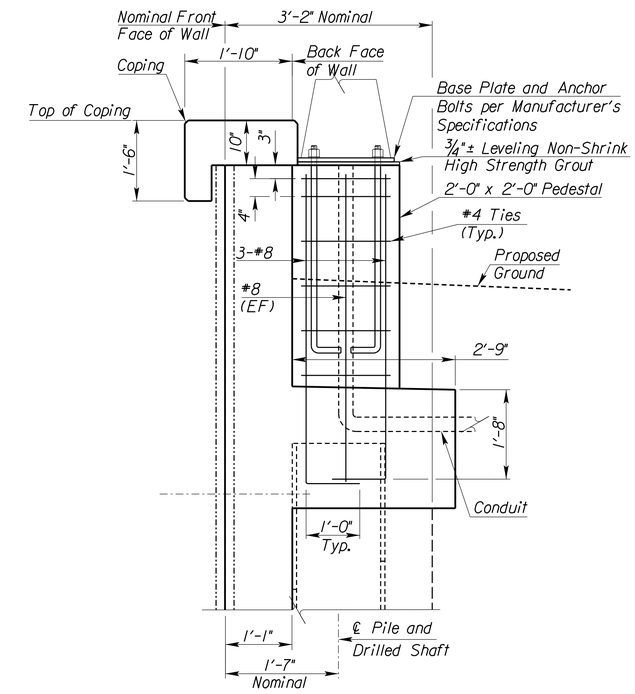
ELEVATION

LEGEND

EF = Each Face



PLAN OF ITS CCTV SUPPORT



ELEVATION OF ITS CCTV SUPPORT

@ Wall G Sta. 108+21.41

NOTE: Install conduits to center of pole location per ITS plans.

Notes:
For Notes, See Sheet #322 .

SUMMARY OF QUANTITIES	
Retaining Wall (Soldier Pile)	24,199 S.F.
Concrete Masonry Surface Treatment	2,913 S.Y.

Quantities for Information Only	
Steel Pile (AASHTO M270)(Grade 50)	200.4 tons
Steel Channels (ASTM A709)(Grade 50)	6.6 tons
Miscellaneous Plates (ASTM A709)(Grade 50)	22.7 tons
Concrete (Grade 4.0)(AE)	1,359.5 C.Y.
Concrete (Grade 4.0)	612.4 C.Y.
Reinforcing Steel (Grade 60)(Epoxy Coated)	108.9 tons

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

GEOMETRIC LAYOUT IV

STA. 118+80.17 TO STA 121+60.17

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:44:47 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIGWAD04A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	326	1055

Wall G (2059)

PILE SCHEDULE - FROM STA. 107+80.17 TO 121+60.17

SHAFT LABEL	SECTION	NO. OF SHAFTS	NO. OF TIEBACKS PER SHAFT	TOP PILE ELEV. (FIRST)	TOP PILE ELEV. (LAST)	TOP SOCKET ELEV. (FIRST)	TOP SOCKET ELEV. (LAST)	SOCKET TIP ELEV.	PILE LENGTH (FIRST) (ft)	PILE LENGTH (LAST) (ft)	PILE LENGTH INCREMENT (Inch)	NO. OF STUDS PER SHAFT (FIRST)	NO. OF STUDS PER SHAFT (LAST)
PG-1	(2) C12x30	5	2	1364.16	1363.84	1342.42	1342.61	1330.00	34.16	33.84	-0.98	42	42
PG-2	(2) C12x30	3	2	1363.83	1363.90	1342.66	1342.77	1330.00	33.83	33.90	0.44	42	42
PG-3	(2) C12x30	10	2	1363.97	1364.29	1342.82	1343.49	1330.00	33.97	34.29	0.43	42	40
PG-4	(2) C12x30	10	2	1364.30	1364.68	1343.57	1344.45	1330.00	34.30	34.68	0.51	40	40
PG-5	(2) C12x30	4	2	1364.76	1365.04	1344.56	1344.89	1330.00	34.76	35.04	1.11	40	40
PG-6	(2) C12x30	6	2	1365.15	1365.76	1345.01	1345.63	1330.00	35.15	35.76	1.49	40	40
PG-7	(2) C12x30	10	2	1365.90	1367.02	1345.77	1347.02	1330.00	35.90	37.02	1.50	40	40
PG-8	(2) C12x30	10	2	1367.13	1367.87	1347.16	1348.42	1330.00	37.13	37.87	0.98	40	38
PG-9	(2) C12x30	10	2	1367.94	1368.43	1348.56	1349.83	1330.00	37.94	38.43	0.66	38	36
PG-10	(2) C12x30	10	2	1368.48	1368.82	1349.97	1351.23	1330.00	38.48	38.82	0.46	36	34
PG-11	(2) C12x30	4	2	1368.85	1368.92	1351.37	1351.80	1330.00	38.85	38.92	0.28	34	34
PG-12	(2) C12x30	6	2	1368.94	1368.99	1351.94	1352.64	1338.93	30.01	30.06	0.11	34	32
PG-13	(2) C12x30	10	2	1368.99	1368.88	1352.78	1354.04	1339.78	29.21	29.10	-0.15	32	28
PG-14	(2) C12x30	10	2	1368.85	1368.49	1354.18	1355.44	1341.18	27.67	27.32	-0.47	28	26
PG-15	(2) C12x30	10	2	1368.45	1368.01	1355.58	1356.84	1342.58	25.87	25.43	-0.58	24	22
PG-16	(2) C12x30	10	1	1367.96	1367.52	1356.98	1358.24	1343.97	23.99	23.55	-0.58	22	18
PG-17	(2) C12x30	10	1	1367.47	1367.03	1358.38	1359.63	1345.04	22.43	21.99	-0.58	18	14
PG-18	(2) C12x30	10	1	1366.98	1366.55	1359.76	1360.89	1346.12	20.87	20.43	-0.58	14	10
PG-19	(2) C12x30	10	1	1366.50	1366.06	1361.00	1361.96	1347.19	19.31	18.87	-0.58	10	8
PG-20	(1) W12x106	10	0	1366.01	1365.57	1362.05	1362.84	1338.05	27.96	27.52	-0.58	4	2
PG-21	(1) W12x106	10	0	1365.52	1365.13	1362.92	1363.55	1338.92	26.60	26.21	-0.52	2	1
PG-22	(1) W12x106	4	0	1365.09	1364.98	1363.61	1363.78	1339.61	25.49	25.38	-0.44	1	1
PG-23	(1) W12x106	6	0	1364.95	1364.76	1363.83	1363.76	1339.76	25.18	25.00	-0.44	1	1
PG-24	(1) W12x106	10	0	1364.73	1364.40	1363.73	1363.40	1339.40	25.33	25.00	-0.44	1	1

Notes:

1. See "Soldier Pile Wall Details I, II, III, and IV" sheets for additional details.
2. The first and the last pile in each pile label are arranged in moving upstation direction.
3. Stitch plates (see Soldier Pile Wall Details) are not scheduled. Stitch plates are subsidiary to the bid item "Retaining Wall (Soldier Pile)".
4. Bottom steel pile tip elevation is equal to the socket tip elevation.

See Sh's. #335-338 for Soldier Pile Wall Details I-IV.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

PILE SCHEDULE

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:44:51 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIGWAD05A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	327	1055

Revised Plans

PERMANENT GROUND ANCHOR SUMMARY - FROM STA. 107+80.17 TO 121+60.17

SHAFT LABEL	NO. OF TIEBACKS PER SHAFT	FIRST ANCHOR										SECOND ANCHOR										
		DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) (3) (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)	DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	RELATIVE ELEV. ◔◔ X2 (ft)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) (3) (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)
PG-1	2	86	1.375	1361.16	1360.84	65	65	20	85	85	30	81	1.375	10	1351.16	1350.84	45	45	20	65	65	30
PG-2	2	86	1.375	1360.83	1360.90	65	65	20	85	85	30	81	1.375	10	1350.83	1350.90	45	45	20	65	65	30
PG-3	2	86	1.375	1360.97	1361.29	65	65	20	85	85	30	81	1.375	10	1350.97	1351.29	45	45	20	65	65	30
PG-4	2	86	1.375	1361.30	1361.68	65	65	20	85	85	30	81	1.375	10	1351.30	1351.68	45	45	20	65	65	30
PG-5	2	86	1.375	1361.76	1362.04	65	66	20	85	86	30	81	1.375	10	1351.76	1352.04	45	45	20	65	65	30
PG-6	2	86	1.375	1362.15	1362.76	65	66	20	85	86	30	81	1.375	10	1352.15	1352.76	45	46	20	65	66	30
PG-7	2	86	1.375	1362.90	1364.02	66	67	20	86	87	30	81	1.375	10	1352.90	1354.02	46	47	20	66	67	30
PG-8	2	86	1.375	1364.13	1364.87	67	69	20	87	89	30	81	1.375	10	1354.13	1354.87	47	49	20	67	69	30
PG-9	2	86	1.375	1364.94	1365.43	69	70	20	89	90	30	81	1.375	10	1354.94	1355.43	49	50	20	69	70	30
PG-10	2	86	1.375	1365.48	1365.82	70	71	20	90	91	30	81	1.375	10	1355.48	1355.82	50	51	20	70	71	30
PG-11	2	86	1.375	1365.85	1365.92	78	72	20	98	92	30	81	1.375	10	1355.85	1355.92	51	52	20	71	72	30
PG-12	2	73	1.375	1365.94	1365.99	72	73	15	87	88	30	39	1.375	7	1358.94	1358.99	57	58	15	72	73	30
PG-13	2	73	1.375	1365.99	1365.88	73	74	15	88	89	30	39	1.375	7	1358.99	1358.88	58	59	15	73	74	30
PG-14	2	73	1.375	1365.85	1365.49	74	75	15	89	90	30	39	1.375	7	1358.85	1358.49	59	60	15	74	75	30
PG-15	2	73	1.375	1365.45	1365.01	75	76	15	90	91	30	39	1.375	7	1358.45	1358.01	60	61	15	75	76	30
PG-16	1	62	1.375	1364.96	1364.52	76	75	15	91	90	30	-	1.375	-	-	-	-	-	-	-	-	-
PG-17	1	62	1.375	1364.47	1364.03	75	74	15	90	89	30	-	1.375	-	-	-	-	-	-	-	-	-
PG-18	1	62	1.375	1363.98	1363.55	74	73	15	89	88	30	-	1.375	-	-	-	-	-	-	-	-	-
PG-19	1	62	1.375	1363.50	1363.06	73	72	15	88	87	30	-	1.375	-	-	-	-	-	-	-	-	-
PG-20	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PG-21	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PG-22	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PG-23	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PG-24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Wall G (2059)

(Δ) *Anchor design load is equal to the anchor strength design load divided by the Load Factor for the apparent pressure diagram. Load Factor = 1.35*

◔ *Top anchor is set at 3.00 ft below top of pile and is measured at pile centerline.*

◔◔ *Relative elevation is measured from first anchor work point.*

Notes:

1. *Bonded length is only an estimate. The Contractor shall determine the bonded length necessary to satisfy the load requirements. Bonded length shall not be less than 10 ft.*

3 *6/08/15 Revised Quantity Label*

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

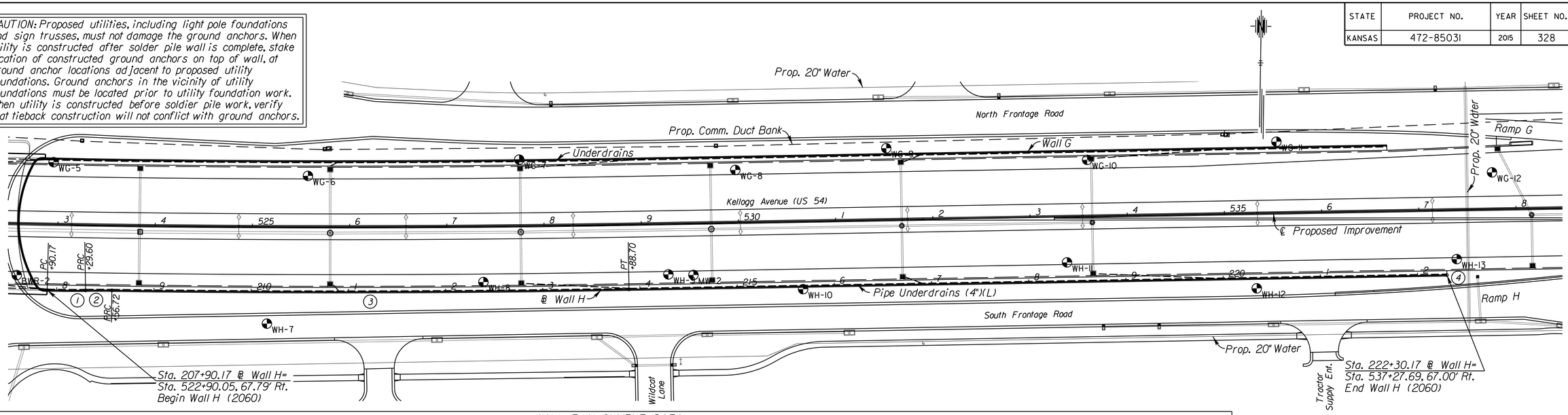
GROUND ANCHOR SCHEDULE

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

6:43:41 PM
6/5/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIGWAD06A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	328	1055

CAUTION: Proposed utilities, including light pole foundations and sign trusses, must not damage the ground anchors. When utility is constructed after solder pile wall is complete, stake location of constructed ground anchors on top of wall, at ground anchor locations adjacent to proposed utility foundations. Ground anchors in the vicinity of utility foundations must be located prior to utility foundation work. When utility is constructed before soldier pile work, verify that tieback construction will not conflict with ground anchors.

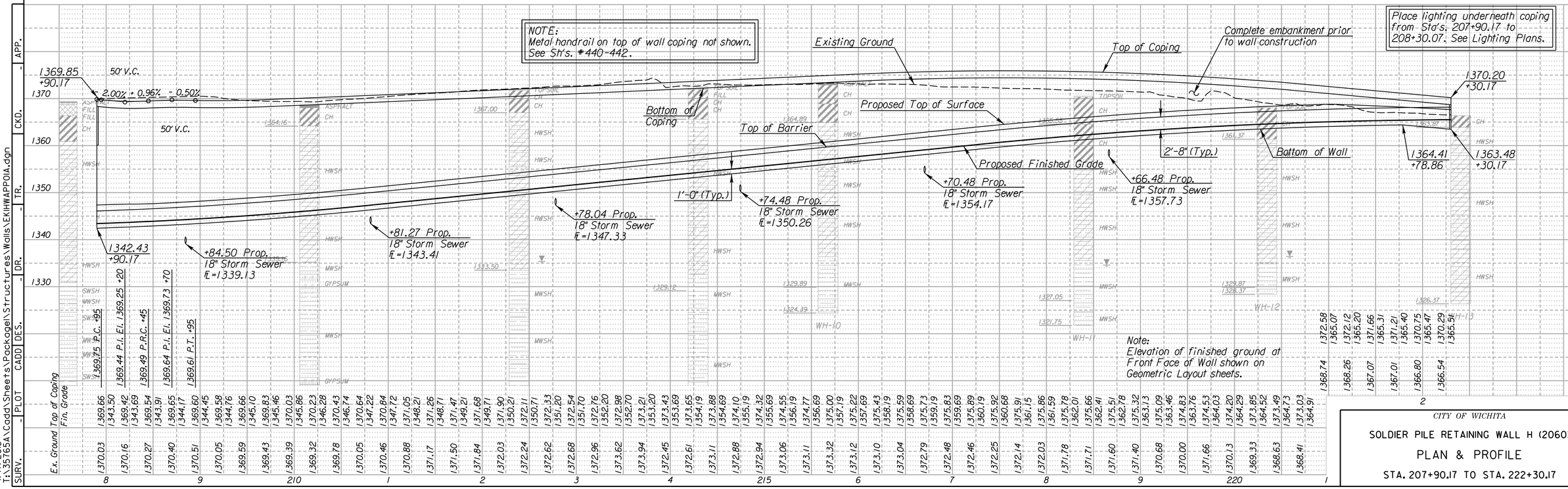


WALL F ALIGNMENT DATA

CURVE NO. ○	P.I. STA. (BK.)	P.I. STA. (AH.)	NORTHING	EASTING	DELTA (DMS)	RADIUS (ft)	TANGENT (ft)	LENGTH (ft)	EXTERNAL (ft)	PC			PT		
										STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
1	208+09.88	208+09.89	1683619.3755	1681352.9931	02°15'32.69" Lt.	1000.00	19.71	39.43	0.19	207+90.17	1683619.8875	1681333.2830	208+29.60	1683619.6408	1681372.7080
2	208+43.16	208+43.16	1683619.8233	1681386.2706	01°33'15.12" Rt.	1000.00	13.56	27.12	0.09	208+29.60	1683619.6408	1681372.7080	208+56.72	1683619.6379	1681399.8331
3	211+22.73	211+22.69	1683616.0021	1681665.8202	01°47'09.30" Lt.	17067.00	266.01	531.98	2.07	208+56.72	1683619.6379	1681399.8331	213+88.70	1683620.6575	1681931.7913
4	222+30.17		1683635.3838	1682773.1274											

See Sh's. #248-250 for Underdrain Details.

Note:
All Station and Offsets are to Front Face of Wall



9:45:01 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packagel\Structures\Walls\EKIHWAPP01A.dgn

CITY OF WICHITA

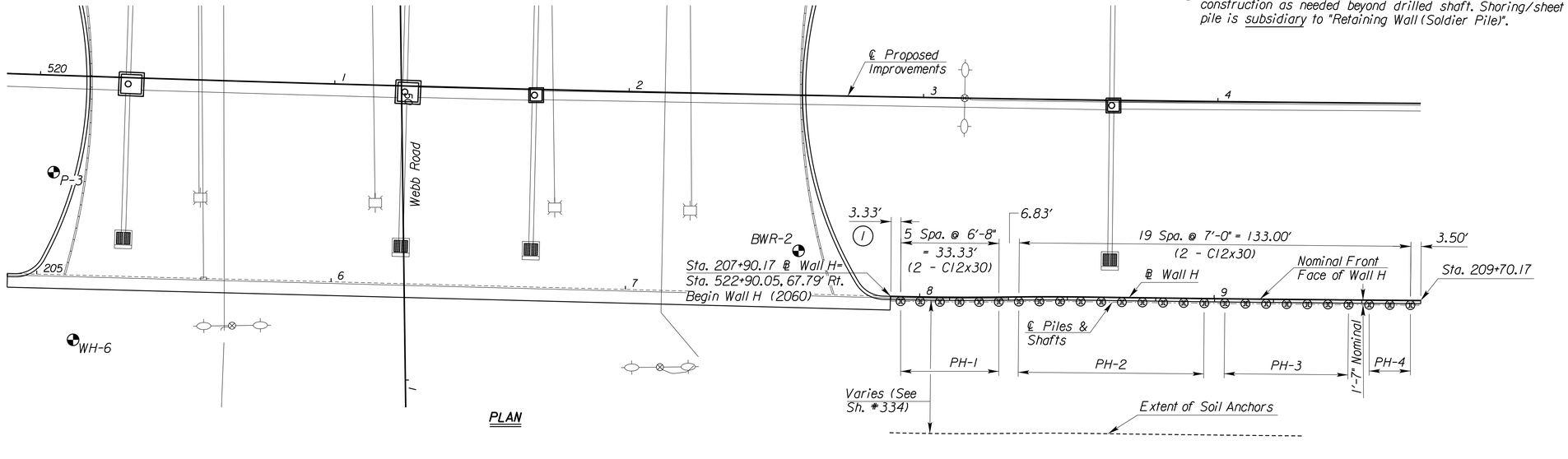
SOLDIER PILE RETAINING WALL H (2060)

PLAN & PROFILE

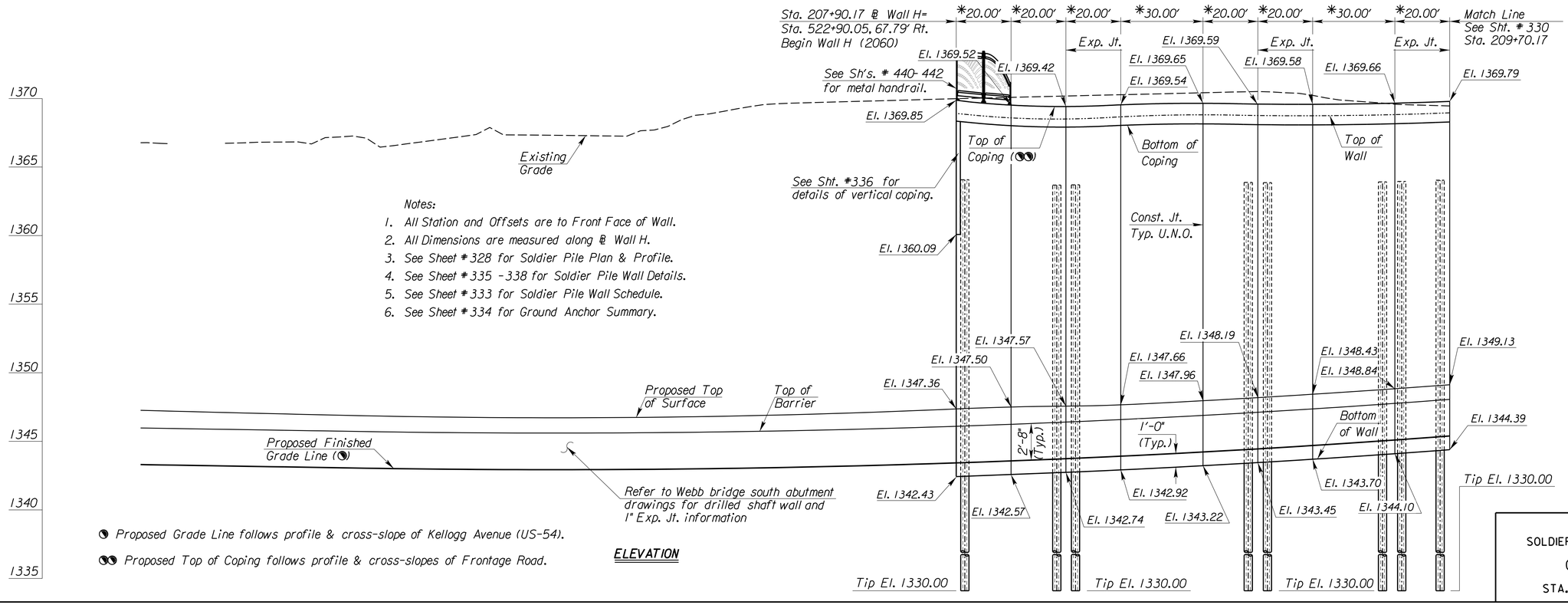
STA. 207+90.17 TO STA. 222+30.17

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	329	1055

(1) Provide adequate shoring/sheet pile for cantilevering wall construction as needed beyond drilled shaft. Shoring/sheet pile is subsidiary to "Retaining Wall (Soldier Pile)".



PLAN



ELEVATION

Notes:

1. All Station and Offsets are to Front Face of Wall.
2. All Dimensions are measured along ℄ Wall H.
3. See Sheet # 328 for Soldier Pile Plan & Profile.
4. See Sheet # 335 - 338 for Soldier Pile Wall Details.
5. See Sheet # 333 for Soldier Pile Wall Schedule.
6. See Sheet # 334 for Ground Anchor Summary.

◔ Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

◔◔ Proposed Top of Coping follows profile & cross-slopes of Frontage Road.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

GEOMETRIC LAYOUT I

STA. 207+90.17 TO STA. 209+70.17

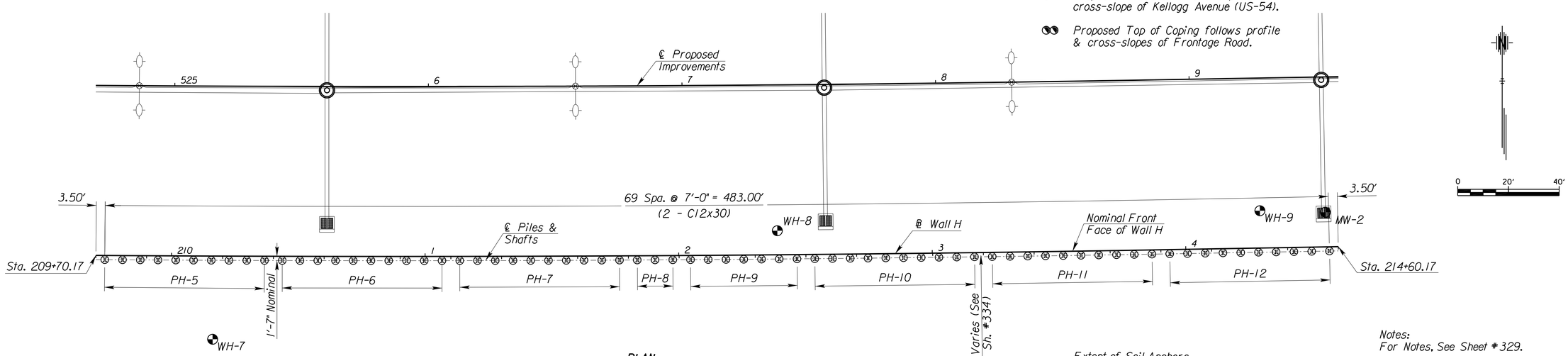
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:05 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIHWA01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	330	1055

Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

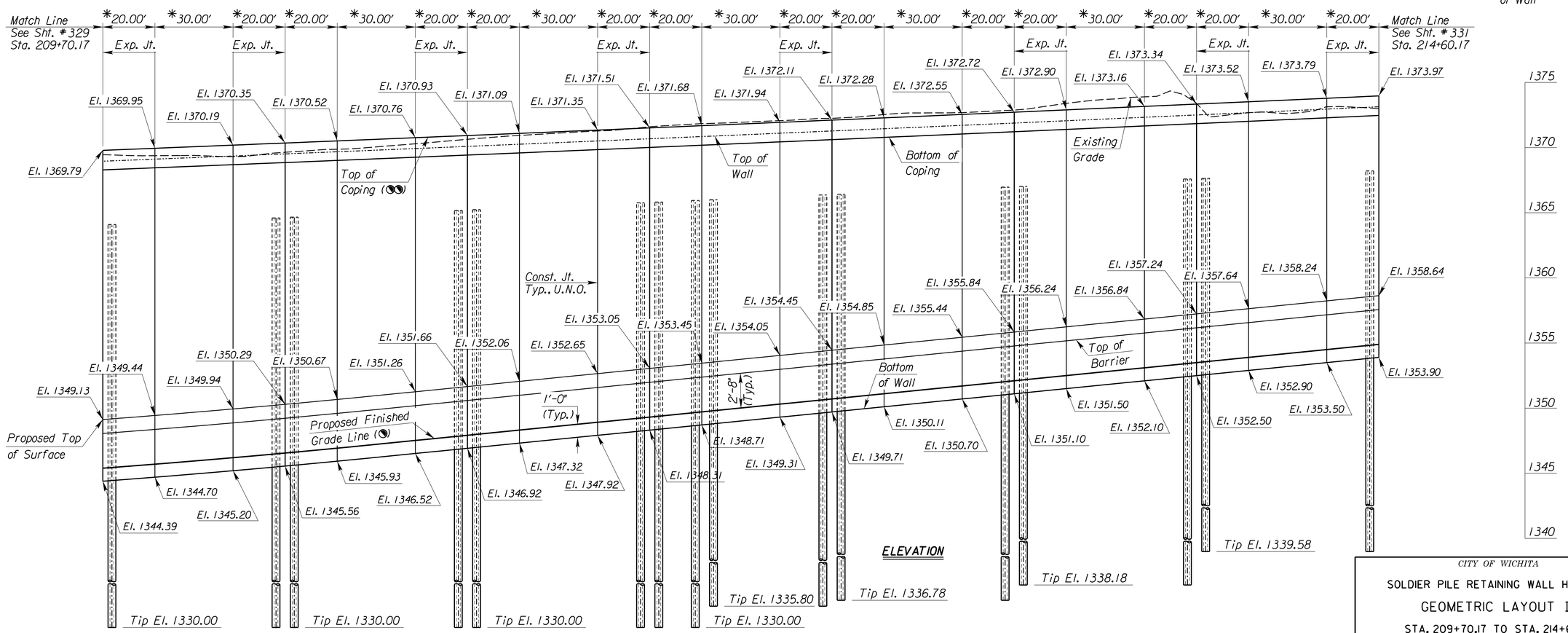
Proposed Top of Coping follows profile & cross-slopes of Frontage Road.



PLAN

Notes:
For Notes, See Sheet #329.

* Along Front Face of Wall



ELEVATION

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

GEOMETRIC LAYOUT II

STA. 209+70.17 TO STA. 214+60.17

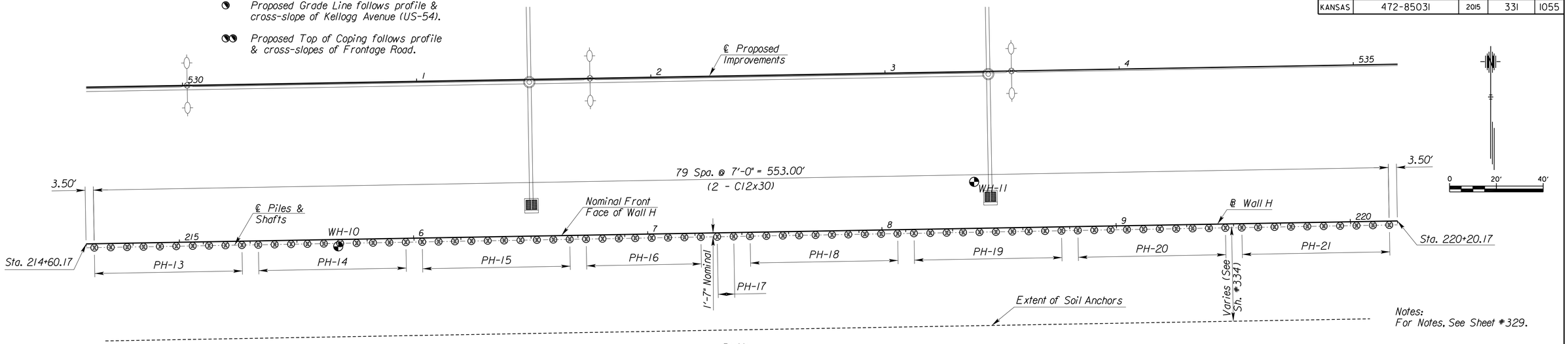
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:10 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIHWAD02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	331	1055

Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).

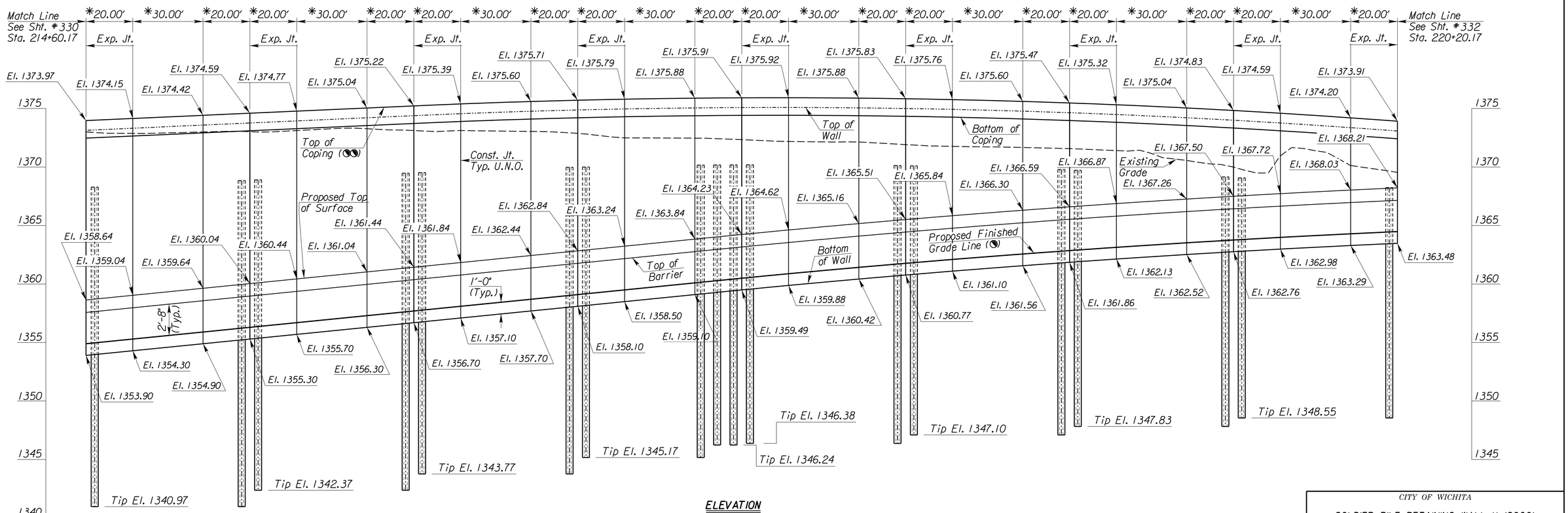
Proposed Top of Coping follows profile & cross-slopes of Frontage Road.



Notes:
For Notes, See Sheet #329.

PLAN

* Along Front Face of Wall



ELEVATION

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

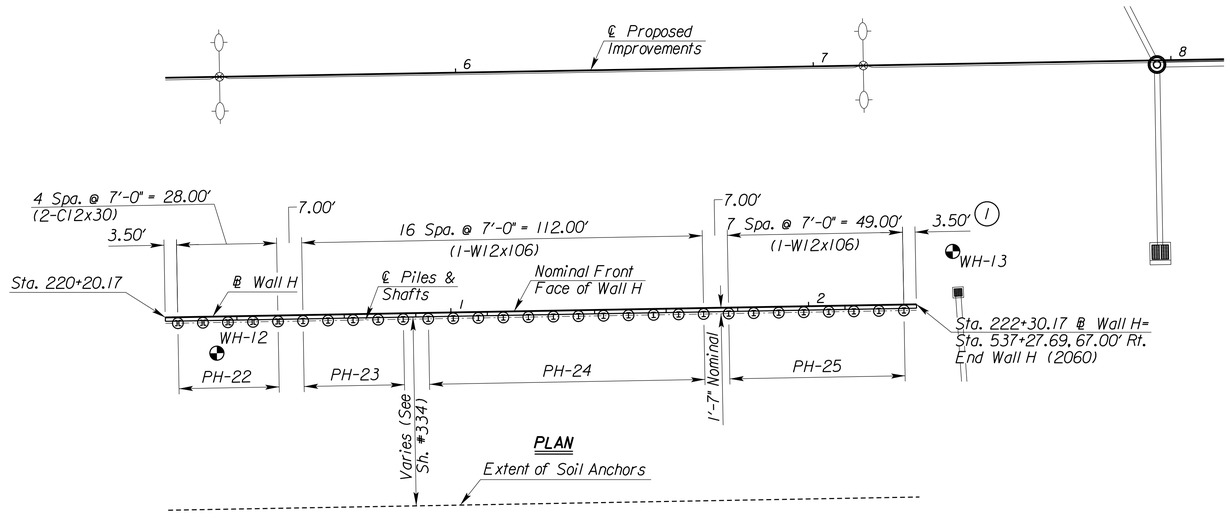
GEOMETRIC LAYOUT III

STA. 214+60.17 TO STA. 220+20.17

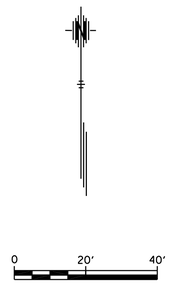
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

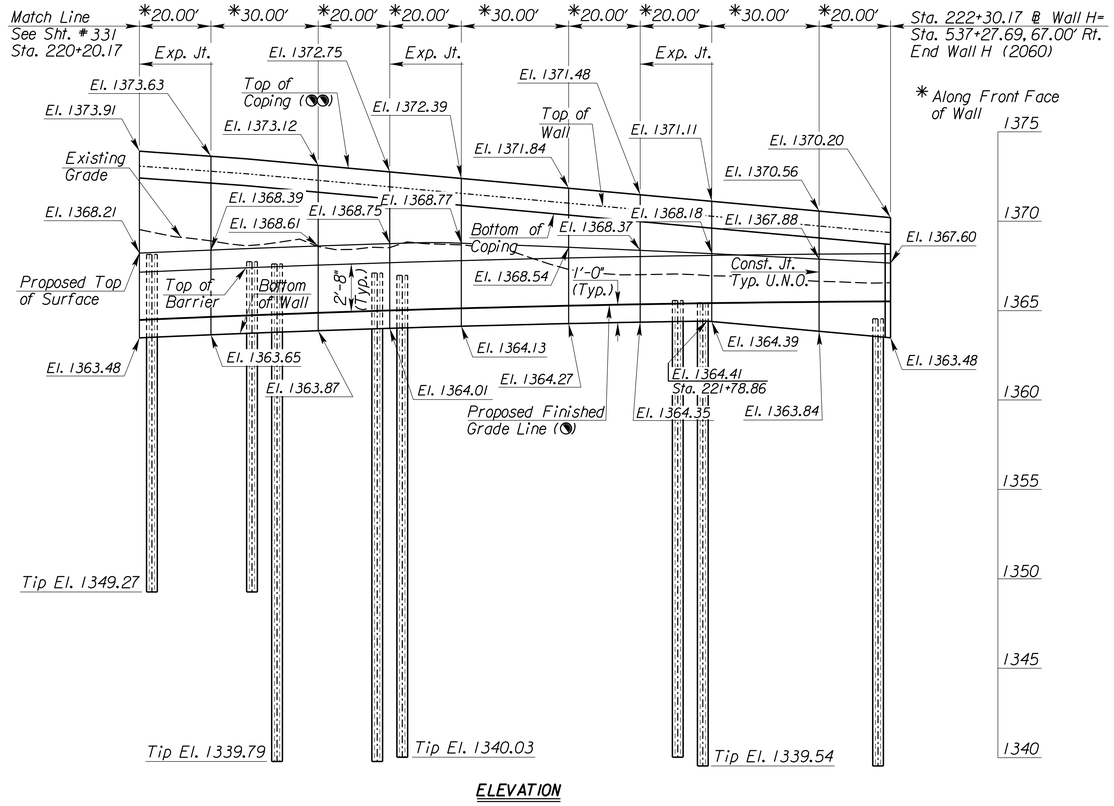
9:45:14 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packages\Structures\Walls\EKIHWAD03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	332	1055



(1) *Provide adequate shoring/sheet pile for cantilevering wall construction as needed beyond drilled shaft. Shoring/sheet pile is subsidiary to "Retaining Wall (Soldier Pile)".*





ELEVATION

SUMMARY OF QUANTITIES	
Retaining Wall (Soldier Pile)	25,366 S.F.
Concrete Masonry Surface Treatment	3,055 S.Y.

Quantities for Information Only	
Steel Pile (AASHTO M270)(Grade 50)	189.3 tons
Steel Channels (ASTM A709)(Grade 50)	7.3 tons
Miscellaneous Plates (ASTM A709)(Grade 50)	24.5 tons
Concrete (Grade 4.0)(AE)	1,422.5 C.Y.
Concrete (Grade 4.0)	578.7 C.Y.
Reinforcing Steel (Grade 60)(Epoxy Coated)	114.0 tons

⬔ *Proposed Grade Line follows profile & cross-slope of Kellogg Avenue (US-54).*

⬔⬔ *Proposed Top of Coping follows profile & cross-slopes of Frontage Road.*

Notes:
For Notes, See Sheet #329 .

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

GEOMETRIC LAYOUT IV

STA. 220+20.17 TO STA. 222+30.17

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:18 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Walls\EKIHWAD04A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	333	1055

Revised Plans

PILE SCHEDULE - FROM STA. 207+90.17 TO 222+30.17

SHAFT LABEL	SECTION	NO. OF SHAFTS	NO. OF TIEBACKS PER SHAFT	TOP PILE ELEV. (FIRST)	TOP PILE ELEV. (LAST)	TOP SOCKET ELEV. (FIRST)	TOP SOCKET ELEV. (LAST)	SOCKET TIP ELEV.	PILE LENGTH (FIRST) (ft)	PILE LENGTH (LAST) (ft)	PILE LENGTH INCREMENT (Inch)	NO. OF STUDS PER SHAFT (FIRST)	NO. OF STUDS PER SHAFT (LAST)
PH-1	(2) C12x30	6	2	1364.07	1363.70	1342.45	1342.71	1330.00	34.07	33.70	-0.90	42	42
PH-2	(2) C12x30	10	2	1363.70	1363.88	1342.77	1343.41	1330.00	33.70	33.88	0.24	42	40
PH-3	(2) C12x30	7	2	1363.87	1363.92	1343.49	1344.04	1330.00	33.87	33.92	0.11	40	38
PH-4	(2) C12x30	3	2	1363.95	1364.04	1344.13	1344.34	1330.00	33.95	34.04	0.54	38	38
PH-5	(2) C12x30	10	2	1364.10	1364.60	1344.44	1345.49	1330.00	34.10	34.60	0.94	38	38
PH-6	(2) C12x30	10	2	1364.66	1365.18	1345.62	1346.85	1330.00	34.66	35.18	0.69	38	36
PH-7	(2) C12x30	10	2	1365.24	1365.76	1346.99	1348.24	1330.00	35.24	35.76	0.70	36	34
PH-8	(2) C12x30	3	2	1365.82	1365.94	1348.38	1348.66	1330.00	35.82	35.94	0.71	34	34
PH-9	(2) C12x30	7	2	1366.00	1366.36	1348.80	1349.64	1335.80	30.20	30.56	0.72	34	32
PH-10	(2) C12x30	10	2	1366.42	1366.97	1349.78	1351.03	1336.78	29.64	30.19	0.73	32	32
PH-11	(2) C12x30	10	2	1367.03	1367.59	1351.17	1352.43	1338.18	28.85	29.41	0.74	30	30
PH-12	(2) C12x30	10	2	1367.65	1368.21	1352.57	1353.83	1339.58	28.08	28.64	0.75	30	28
PH-13	(2) C12x30	10	2	1368.28	1368.84	1353.97	1355.23	1340.97	27.30	27.87	0.75	28	26
PH-14	(2) C12x30	10	2	1368.90	1369.47	1355.37	1356.63	1342.37	26.53	27.10	0.75	26	24
PH-15	(2) C12x30	10	2	1369.53	1369.97	1356.77	1358.03	1343.77	25.76	26.20	0.58	24	24
PH-16	(2) C12x30	8	3 2	1370.00	1370.16	1358.17	1359.15	1345.17	24.84	25.00	0.28	22	22
PH-17	(2) C12x30	2	1	1370.18	1370.18	1359.29	1359.43	1346.24	23.94	23.95	0.10	20	20
PH-18	(2) C12x30	10	1	1370.19	1370.12	1359.56	1360.71	1346.38	23.81	23.74	-0.09	20	18
PH-19	(2) C12x30	10	1	1370.10	1369.77	1360.83	1361.81	1347.10	22.99	22.67	-0.43	18	16
PH-20	(2) C12x30	10	1	1369.72	1369.15	1361.91	1362.72	1347.83	21.90	21.32	-0.77	14	12
PH-21	(2) C12x30	10	1	1369.07	1368.24	1362.80	1363.44	1348.55	20.52	19.69	-1.10	12	8
PH-22	(2) C12x30	5	1	1368.14	1367.74	1363.51	1363.74	1349.27	18.87	18.47	-1.22	8	8
PH-23	(1) W12x106	5	0	1367.61	1367.10	1363.79	1363.99	1339.79	27.82	27.31	-1.53	3	3
PH-24	(1) W12x106	12	0	1366.97	1365.56	1364.03	1364.39	1340.03	26.94	25.53	-1.53	3	1
PH-25	(1) W12x106	8	0	1365.44	1364.54	1364.41	1363.54	1339.54	25.89	25.00	-1.53	1	1

Wall H (2060)

Notes:

1. *See "Soldier Pile Wall Details I, II, III, and IV" sheets for additional details.*
2. *The first and the last pile in each pile label are arranged in moving upstation direction.*
3. *Stitch plates (see Soldier Pile Wall Details) are not scheduled. Stitch plates are subsidiary to the bid item "Retaining Wall (Soldier Pile)".*
4. *Bottom steel pile tip elevation is equal to the socket tip elevation.*

3 6/08/15 Revised Quantity

See Sh's. #335-338 for Soldier Pile Wall Details I-IV.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

PILE SCHEDULE

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

6:43:42 PM
6/5/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKHWAD05A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	334	1055

Revised Plans

Wall H (2060)

PERMANENT GROUND ANCHOR SUMMARY - FROM STA. 207+90.17 TO 222+30.17

SHAFT LABEL	NO. OF TIEBACKS PER SHAFT	FIRST ANCHOR										SECOND ANCHOR										
		DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) (3) (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)	DESIGN LOAD (k) (Δ)	ANCHOR DIAM. (Inch)	RELATIVE ELEV. ◔◔ X2 (ft)	ELEV. ◔ (FIRST)	ELEV. ◔ (LAST)	UNBONDED Lu (FIRST) (MIN) (ft)	UNBONDED Lu (LAST) (MIN) (3) (ft)	BONDED Lb (MIN) (ft)	ANCHOR LENGTH (FIRST) (ft)	ANCHOR LENGTH (LAST) (ft)	ANGLE (Degree)
PH-1	2	86	1.375	1361.07	1360.70	63	63	20	83	83	30	81	1.375	10	1351.07	1350.70	43	43	20	63	63	30
PH-2	2	86	1.375	1360.70	1360.88	63	63	20	83	83	30	81	1.375	10	1350.70	1350.88	43	43	20	63	63	30
PH-3	2	86	1.375	1360.87	1360.92	63	63	20	83	83	30	81	1.375	10	1350.87	1350.92	43	43	20	63	63	30
PH-4	2	86	1.375	1360.95	1361.04	63	65	20	83	85	30	81	1.375	10	1350.95	1351.04	43	45	20	63	65	30
PH-5	2	86	1.375	1360.90	1361.60	65	71	20	85	91	30	81	1.375	10	1350.90	1351.60	45	51	20	65	71	30
PH-6	2	86	1.375	1361.66	1362.18	72	77	20	92	97	30	81	1.375	10	1351.66	1352.18	52	57	20	72	77	30
PH-7	2	86	1.375	1362.24	1362.76	78	84	20	98	104	30	81	1.375	10	1352.24	1352.76	58	64	20	78	84	30
PH-8	2	86	1.375	1362.82	1362.94	84	86	20	104	106	30	81	1.375	10	1352.82	1352.94	64	66	20	84	86	30
PH-9	2	73	1.375	1363.00	1363.36	86	87	15	101	102	30	39	1.375	7	1356.00	1356.36	71	72	15	86	87	30
PH-10	2	73	1.375	1363.42	1363.97	87	88	15	102	103	30	39	1.375	7	1356.42	1356.97	72	73	15	87	88	30
PH-11	2	73	1.375	1364.03	1364.59	88	89	15	103	104	30	39	1.375	7	1357.03	1357.59	73	74	15	88	89	30
PH-12	2	73	1.375	1364.65	1365.21	89	90	15	104	105	30	39	1.375	7	1357.65	1358.21	74	75	15	89	90	30
PH-13	2	73	1.375	1365.28	1365.84	91	92	15	106	107	30	39	1.375	7	1358.28	1358.84	76	77	15	91	92	30
PH-14	2	73	1.375	1365.90	1366.47	92	93	15	107	108	30	39	1.375	7	1358.90	1359.47	77	78	15	92	93	30
PH-15	2	73	1.375	1366.53	1366.97	93	94	15	108	109	30	39	1.375	7	1359.53	1359.97	78	79	15	93	94	30
PH-16	(3) 2	73	1.375	1367.00	1367.16	94	95	15	109	110	30	39	1.375	7	1360.00	1360.16	79	80	15	94	95	30
PH-17	1	62	1.375	1367.18	1367.18	95	95	15	110	110	30	-	-	-	-	-	-	-	-	-	-	-
PH-18	1	62	1.375	1367.19	1367.12	95	93	15	110	108	30	-	-	-	-	-	-	-	-	-	-	-
PH-19	1	62	1.375	1367.10	1366.77	93	92	15	108	107	30	-	-	-	-	-	-	-	-	-	-	-
PH-20	1	62	1.375	1366.72	1366.15	92	91	15	107	106	30	-	-	-	-	-	-	-	-	-	-	-
PH-21	1	62	1.375	1366.07	1365.24	90	89	15	105	104	30	-	-	-	-	-	-	-	-	-	-	-
PH-22	1	62	1.375	1365.14	1364.74	89	88	15	104	103	30	-	-	-	-	-	-	-	-	-	-	-
PH-23	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PH-24	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PH-25	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(Δ) Anchor design load is equal to the anchor strength design load divided by the Load Factor for the apparent pressure diagram. Load Factor = 1.35

◔ Top anchor is set at 3.00 ft below top of pile and is measured at pile centerline.

◔◔ Relative elevation is measured from first anchor work point.

Notes:

1. Bonded length is only an estimate. The Contractor shall determine the bonded length necessary to satisfy the load requirements. Bonded length shall not be less than 10 ft.

(3) 6/08/15 Revised Quantity & Quantity Label

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

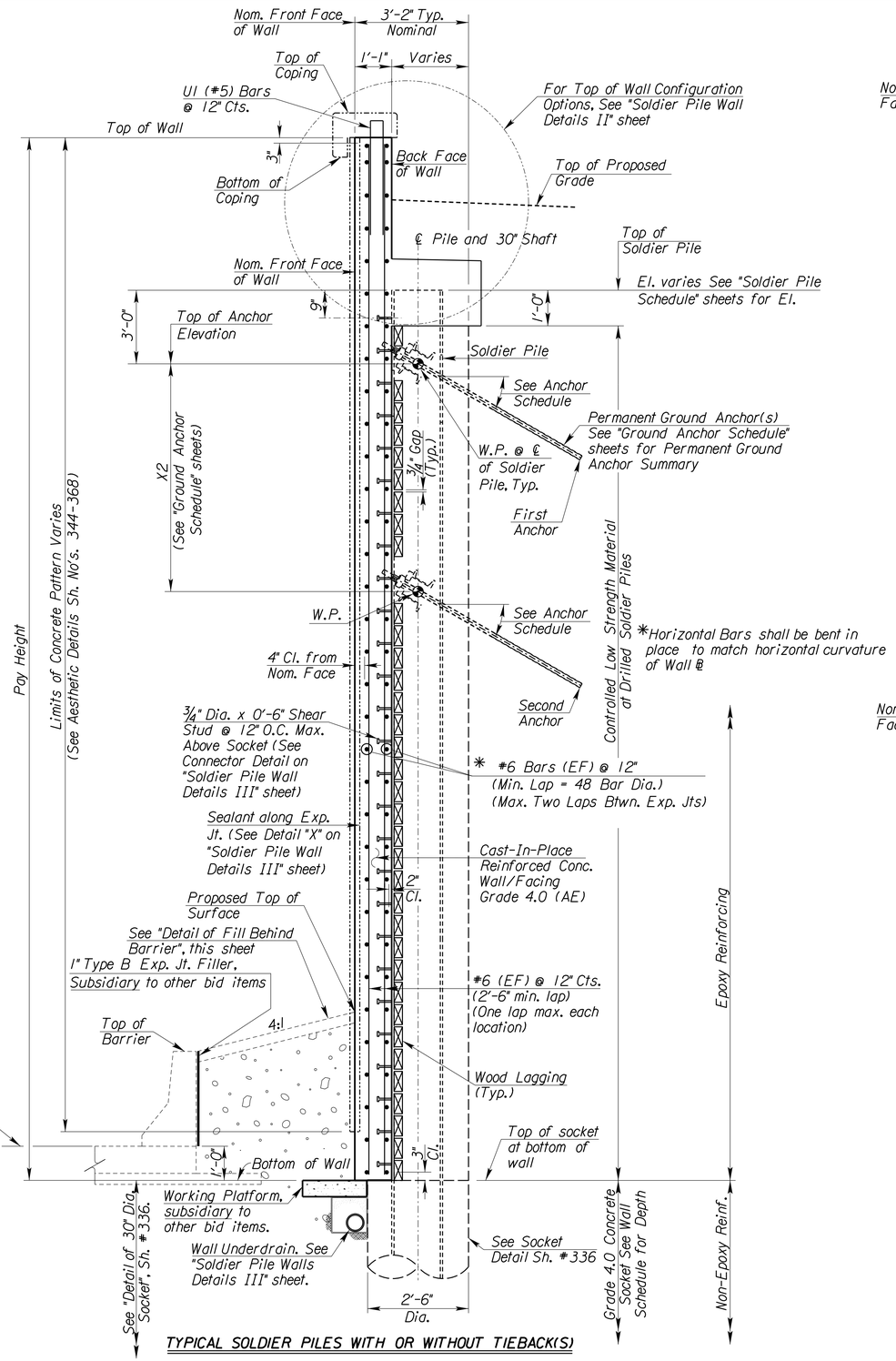
GROUND ANCHOR SCHEDULE

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

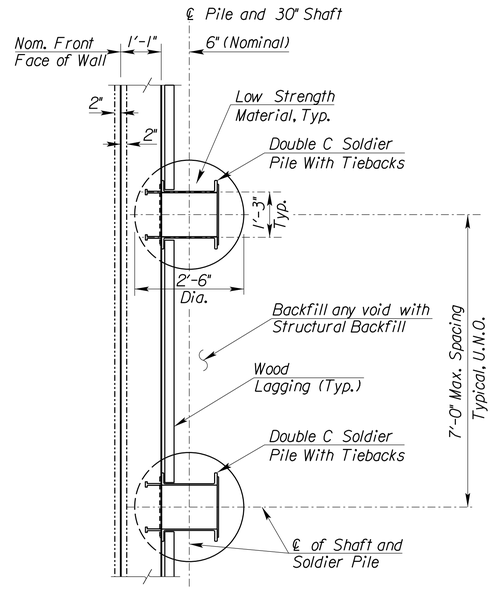
6:43:44 PM
6/5/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIHWAD06A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	335	1055

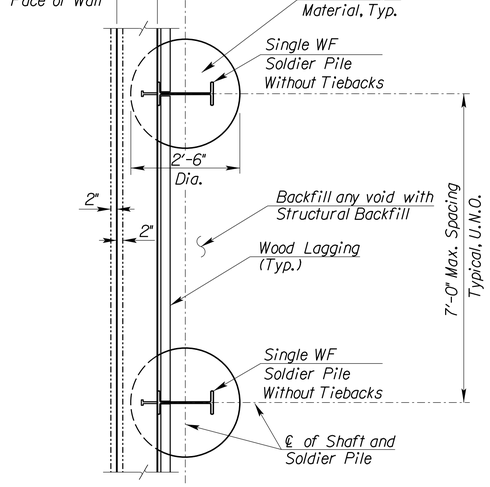
LEGEND
W.P. = Working Point



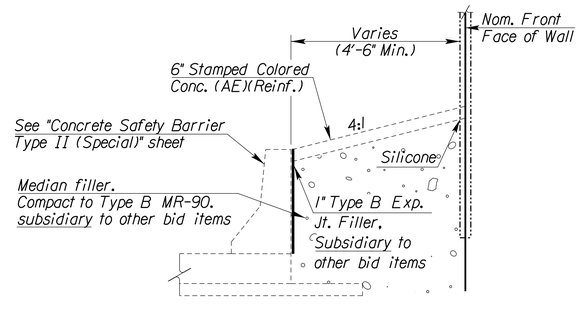
TYPICAL SOLDIER PILES WITH OR WITHOUT TIEBACK(S)



PLAN DETAIL OF DOUBLE C TYPE SOLDIER PILE WITH TIEBACKS



PLAN DETAIL OF SINGLE WF SOLDIER PILE WITHOUT TIEBACKS



DETAIL OF FILL BEHIND BARRIER
All labor and materials for fill, including Type B Filler, sand, and silicone, are subsidiary to the Concrete Safety Barrier bid item.

At end limits of median filler (where stamped colored concrete ends) place filter fabric material to separate median filler from adjacent soil.

See Sh. #289 for Concrete Safety Barrier Type II (Special).
See Sh's. #315, 319, 326 & 333 for Pile Schedules.
See Sh's. #316, 320, 327 & 334 for Ground Anchor Schedules.
See Sh. #336 for Soldier Pile Wall Details II.
See Sh. #337 for Soldier Pile Wall Details III.

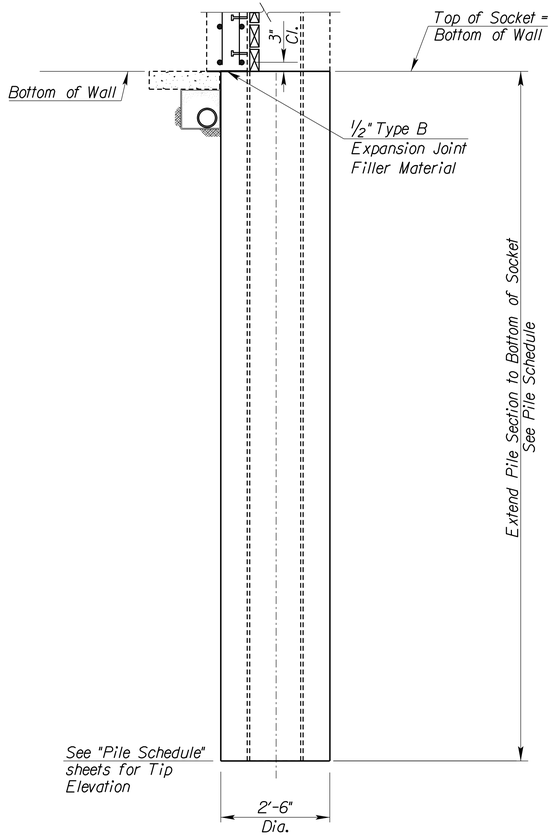
CITY OF WICHITA

SOLDIER PILE
RETAINING WALL DETAILS I

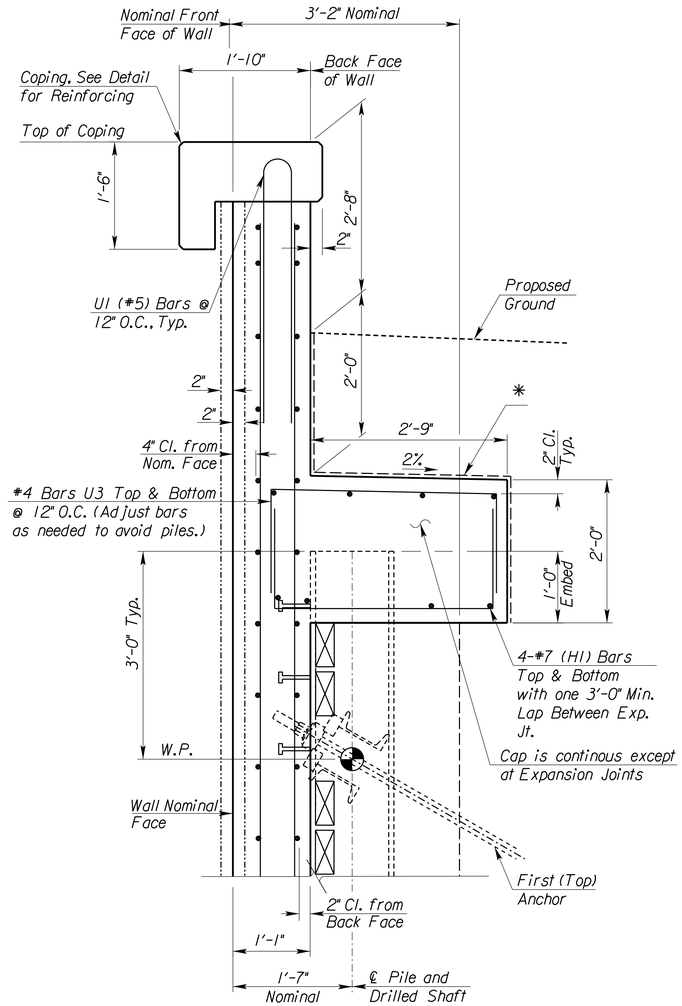
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:45:29 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Structures\Walls\EK1AWAD10A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	336	1055

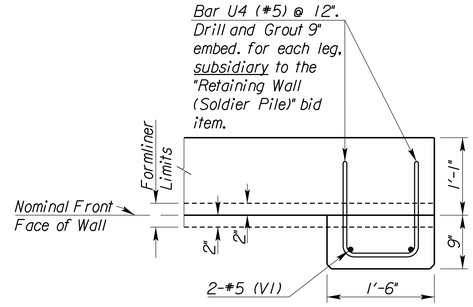


DETAIL OF 30" DIA. SOCKET

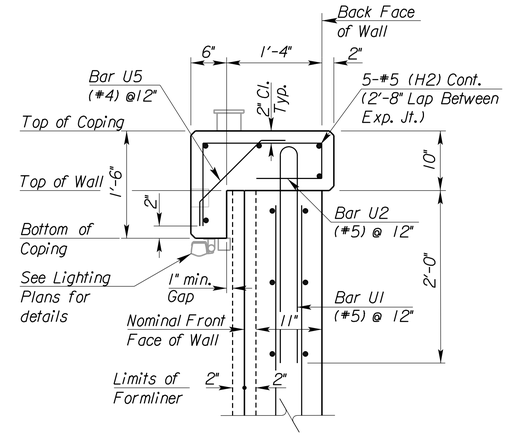


SOLDIER PILE WALL DETAIL
(Walls E, F, G and H)

LEGEND
W.P. = Working Point



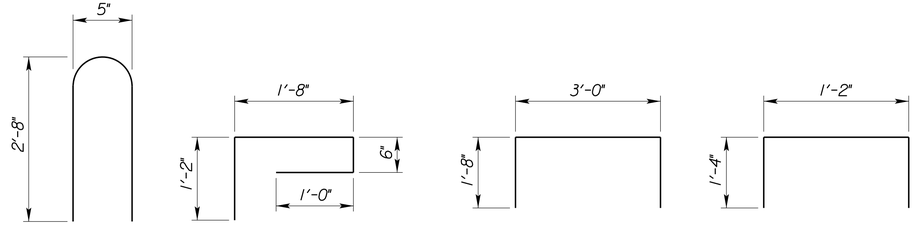
SECTION THRU VERTICAL COPING
(Provide vertical coping at both ends of each soldier pile retaining wall)(8 Required)



WALL COPING DETAIL

* Apply approved KDOT concrete seal to limits shown, subsidary to "Retaining Wall (Soldier Pile)" bid item.

NOTE: See Sh's. # 440-442 for details of metal handrail on top of soldier pile wall coping near the Webb Road bridge.



BAR U1 (#5) **BAR U2 (#5)** **BAR U3 (#4)** **BAR U4 (#5)** **BAR U5 (#4)**

BENDING DIAGRAMS
All dimensions are out to out of bars unless otherwise noted.

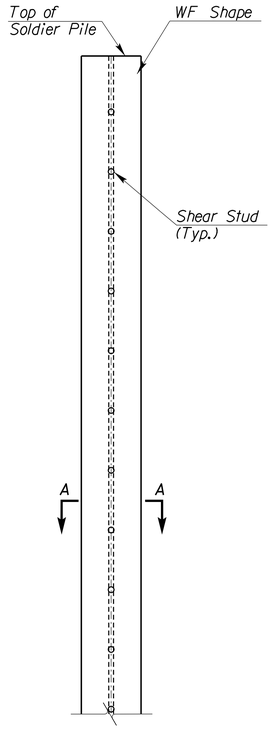
CITY OF WICHITA

SOLDIER PILE
RETAINING WALL DETAILS II

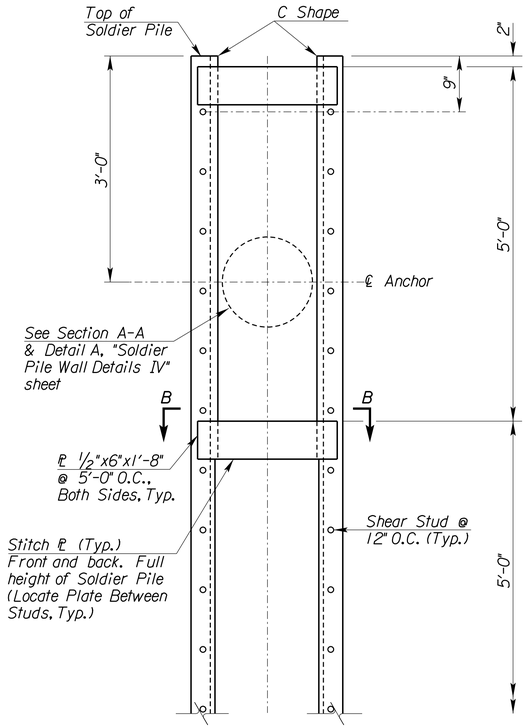
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:32 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIAWADIIA.dgn

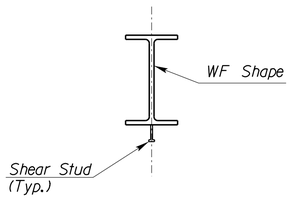
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	337	1055



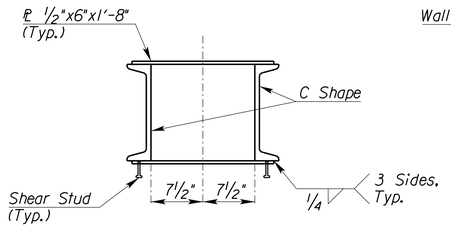
FRONT VIEW SINGLE WIDE FLANGE SOLDIER PILE



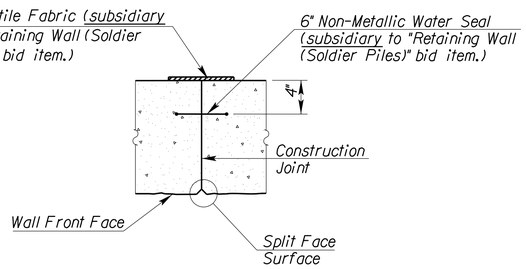
ELEVATION DOUBLE C SOLDIER PILE



SECTION A-A

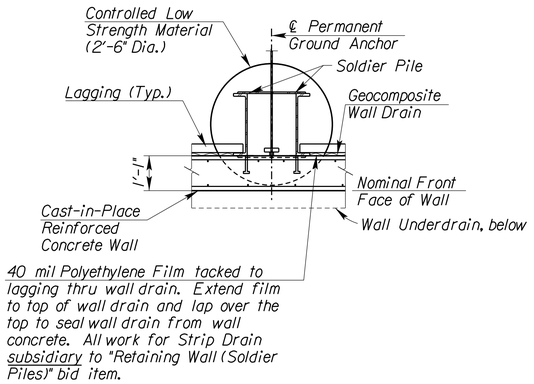


SECTION B-B



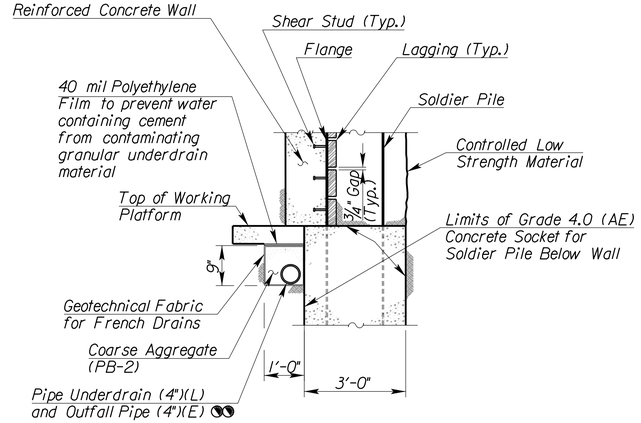
WALL AND COPING CONSTRUCTION JOINT DETAIL

Carry horizontal reinforcing thru Construction Joint.



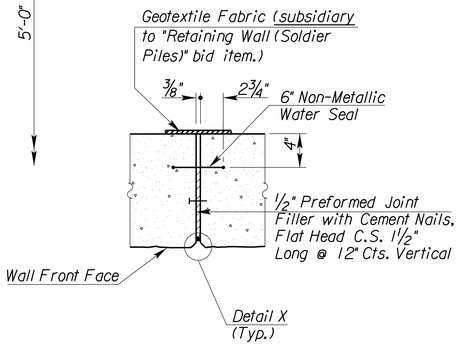
PLAN SECTION THRU SOLDIER PILE

(Above Bottom of Wall)



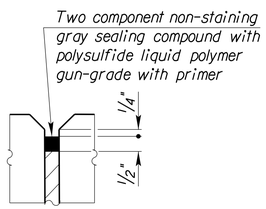
WALL UNDERDRAIN AT SOLDIER PILE DETAIL

(See Strip Drain project Special Provisions)



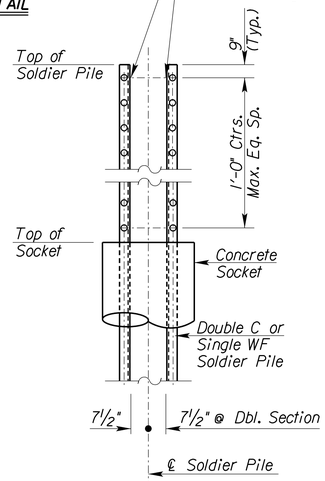
WALL AND COPING EXPANSION JOINT DETAIL

Provide 2" Cl. Min. to Horiz. Bars at Expansion Joint. See Sh. #388 and 392 for expansion between Soldier Pile Walls and Bridge Abutments.

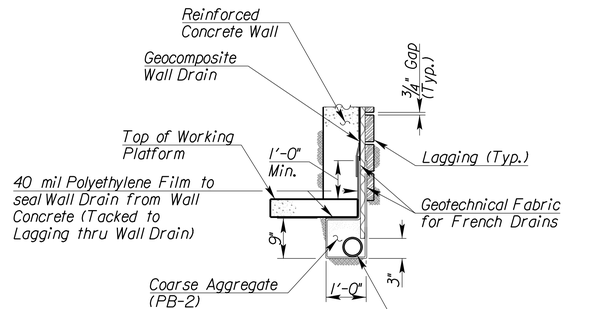


DETAIL X

Applies to front face of retaining wall as shown.



SHEAR STUD CONNECTOR DETAIL



WALL UNDERDRAIN BETWEEN SOLDIER PILE DETAIL

(See Strip Drain project Special Provisions)

See drainage plan sheets for additional details of construction of Outfall non-perforated pipe (E), paid for as "4" Dia. Pipe Underdrain (E)".

LEGEND

EF = Each Face
NF = Near Face
FF = Far Face
WF = Wide Flange

See Sh. #335 for Soldier Pile Wall Details I.
See Sh. #338 for Soldier Pile Wall Details IV.

CITY OF WICHITA

SOLDIER PILE
RETAINING WALL DETAILS III

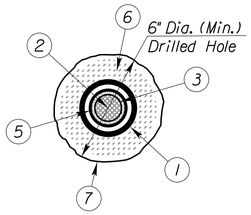
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:36 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Walls\EK1AWAD12A.dgn

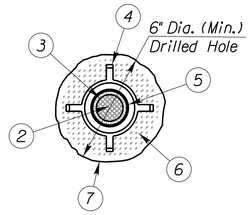
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	338	1055

NOTES:

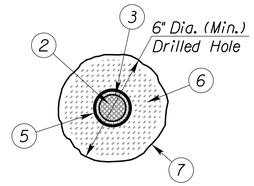
1. The geocomposite wall drain will be constructed according to project special provisions and the Contractor shall ensure that the bottom sides and top edges are protected from either wet concrete or soil entering or sealing the drain while placing the pervious fabric side on the drain toward the soil. The drain shall be attached to and completely cover the exposed face of all of the lagging. Ensure the sides, top and back are covered with non-pervious material to protect it from wet concrete intrusion.
2. The Contractor is responsible for designing the lagging according to Section 11 of the 7th Edition with 2015 Interims of the AASHTO LRFD Bridge Design Specifications using no less than a 6" Lagging width. The design, sealed by a Kansas licensed professional engineer, shall be submitted to the Engineer for approval prior to fabrication.
3. Stud shear connectors shall be 3/4" dia. granular or solid flux filled headed studs automatically end welded to the front flange of the soldier piles.
4. A 4" dia. perforated pipe underdrain shall be situated within a 12" x 9" block of coarse aggregate (PB-2). The 12" x 9" block of course aggregate shall be wrapped completely in geotechnical fabric for French drains as shown and shall be subsidiary to the soldier pile retaining wall.
5. Place geocomposite wall drain so that fabric side is adjacent to lagging.
6. Painting: The structural steel shall recieve a 6 mil coating of inorganic zinc primer in the shop.
7. Touch-up damaged paint with organic zinc in the field.
8. Backfill any void between the lagging and the excavation with material meeting the KDOT Requirements for structural backfill.



SECTION B-B
(N.T.S.)



SECTION C-C
(N.T.S.)

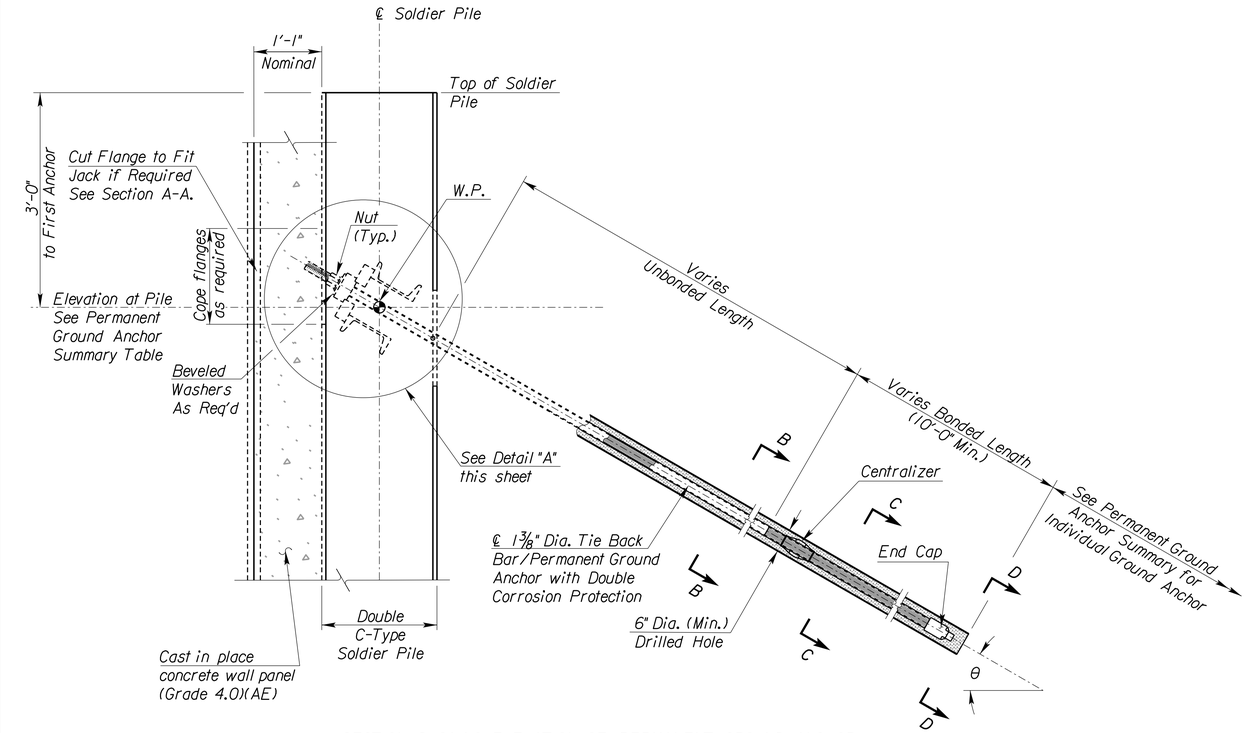


SECTION D-D
(N.T.S.)

LEGEND

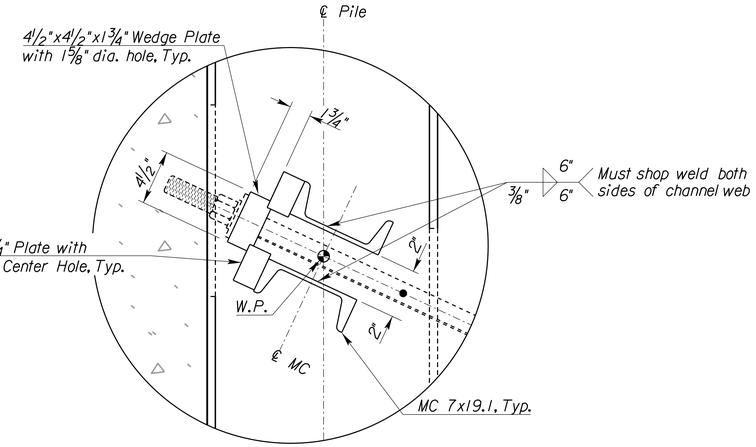
1. P.V.C. Bond Breaker (Smooth Sheeting) *
2. Bar or Prestressing Steel Tendon *
3. Encapsulated Grout *
4. Centralizer *
5. Corrugated P.V.C. *
6. Anchor Grout *
7. Drilled Hole *

Contractor shall furnish and install Permanent Ground Anchors meeting the requirements for design load and unbonded length shown in the Permanent Ground Anchor Summary table shown on the "Ground Anchor Schedule" sheets. Items indicated with an asterisk (*) shall be designed or selected by the Contractor.
All materials and work shall be in compliance with the performance specification for Tiebacks (See Special Provisions).
Cost of bearing plate and other steel required for the Tieback pile connection shall be subsidiary to "Retaining Wall (Soldier Pile)".



SECTION SHOWING ELEVATION OF PERMANENT GROUND ANCHOR USING HIGH STRENGTH BAR
(N.T.S.)
(Details may differ depending on type of approved tieback used)

θ See Permanent Ground Anchor Summary.



DETAIL A
(Double C See Schedule)

See "Ground Anchor Schedule" sheets for Permanent Ground Anchor Summary.

See Sh's. #316, 320, 327 & 334 for Ground Anchor Schedules.
See Sh. #335 for Soldier Pile Wall Details I.

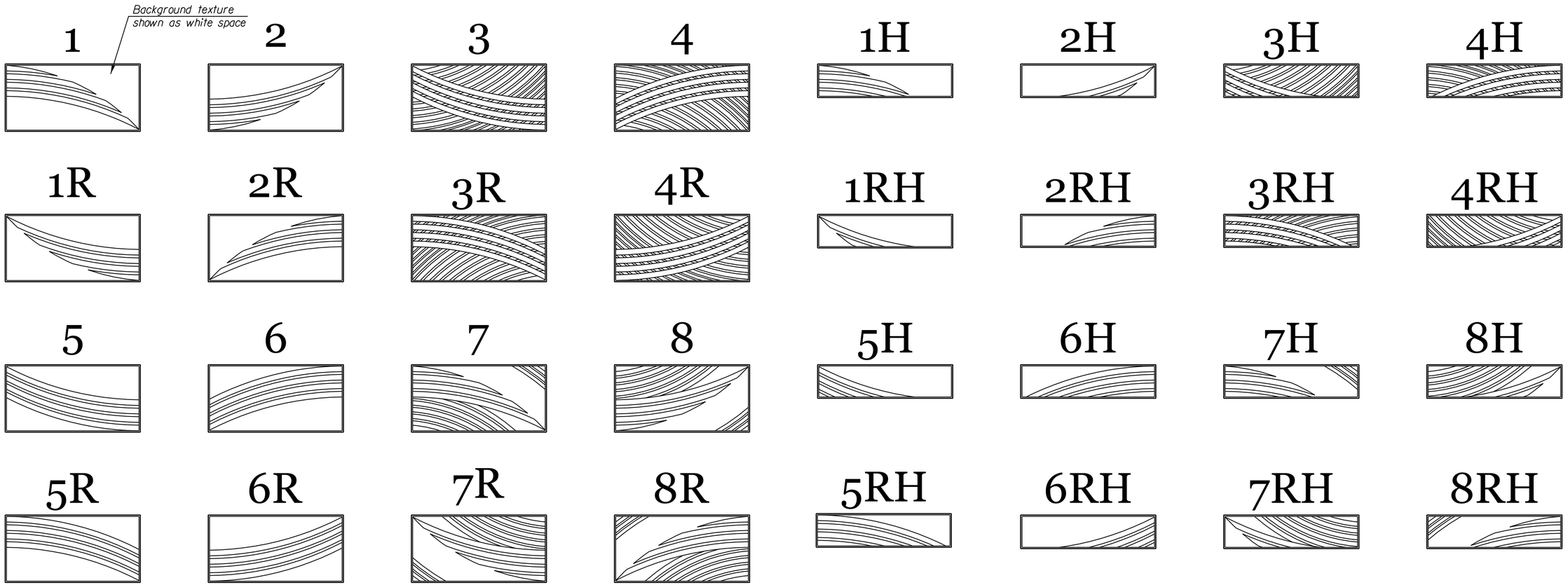
CITY OF WICHITA

SOLDIER PILE
RETAINING WALL DETAILS IV

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:40 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Walls\EKIAWAD13A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	339	1055



See Project Special Provisions for special casting notes and details, painting procedures, mock-up requirements, etc.

This key applies to MSE, Soldier Pile Walls, Drilled Shaft Abutment Walls, Bridge Barriers, and Disc Walls.

Note:
1. Background texture to be determined during CNC cutting process.
2. Half units as needed.
3. MSE and CIP are separate mold systems.
4. CIP units are true 5'x10'.
5. MSE units are nominal 5'x10', exact size to be determined with approved MSE fabricator.

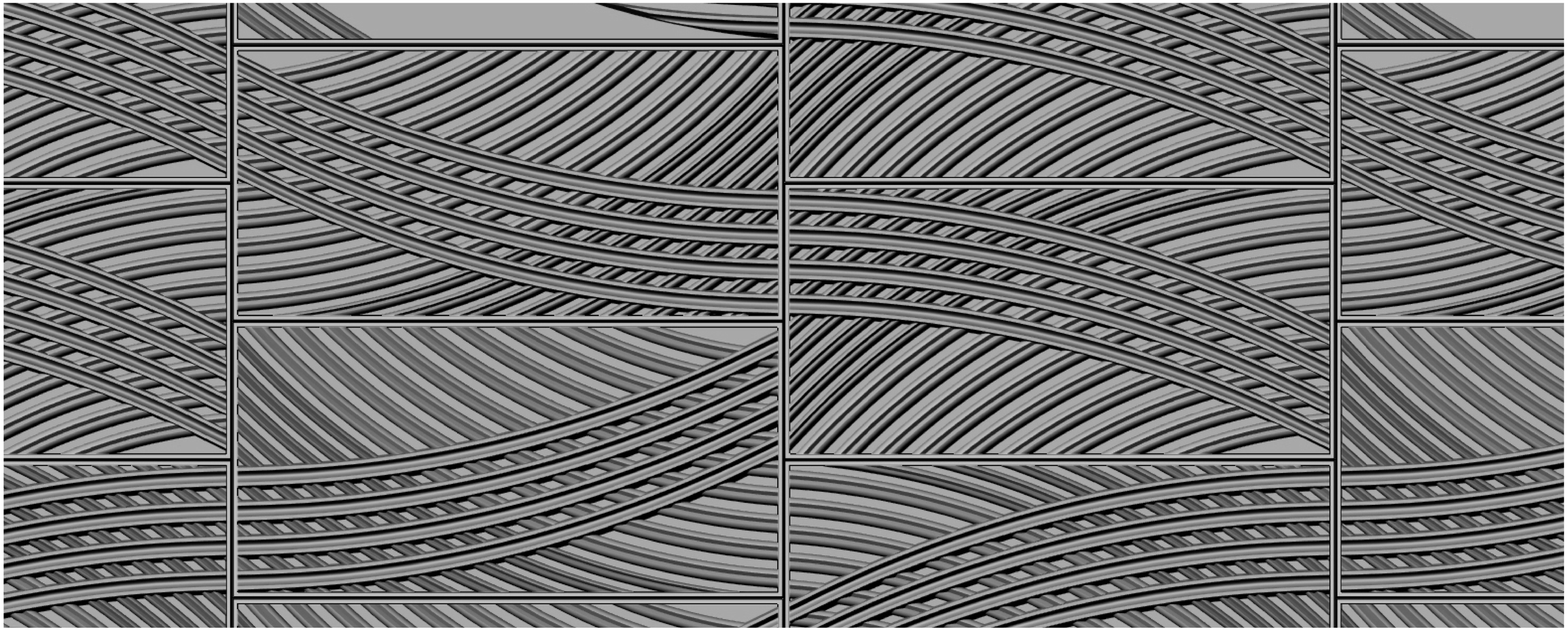
CITY OF WICHITA

WALL PANEL KEY

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:45:44 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIMSEKEY01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	340	1055



This rendered image is provided to illustrate the wall aesthetic concept. See Project Special Provisions.

CITY OF WICHITA

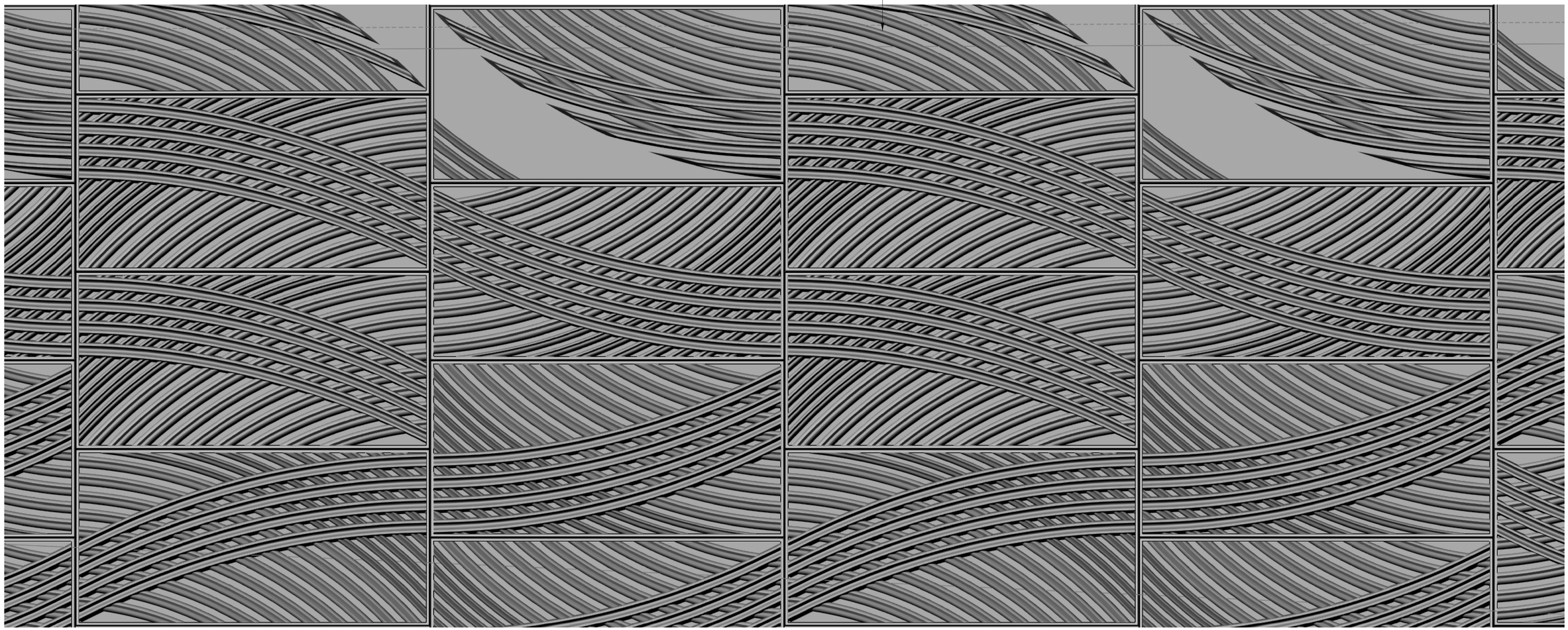
WALL RENDERING I

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

10:22:07 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIMSEJPG01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	341	1055

Texture to be determined during 3D development. Maximum relief is 3", not including 1" bevel. MSE panel nominal size is 10' wide x 5' high.



This rendered image is provided to illustrate the wall aesthetic concept. See Project Special Provisions.

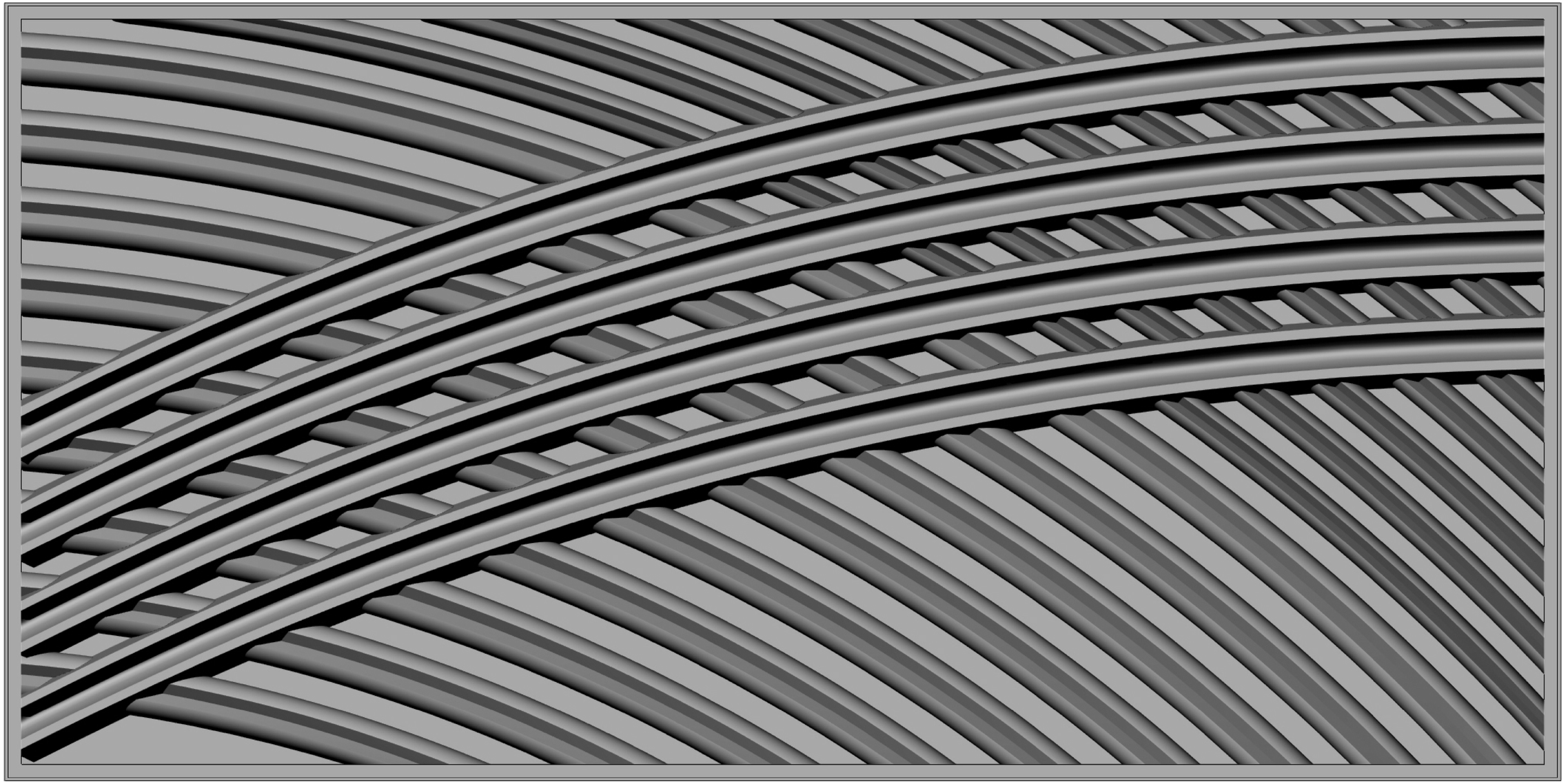
CITY OF WICHITA

WALL RENDERING II

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

T:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIMSEJPG02A.dgn
4/17/2015
10:22:45 AM

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	342	1055



This rendered image is provided to illustrate the wall aesthetic concept. See Project Special Provisions.

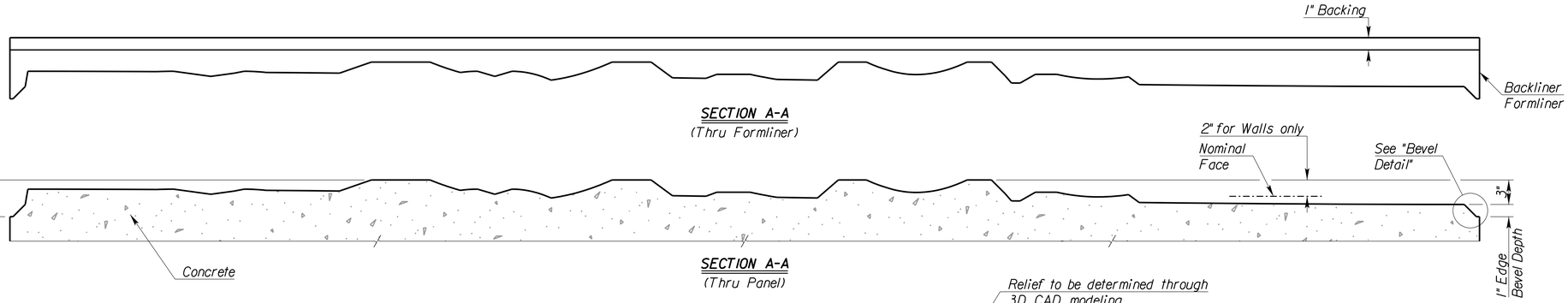
CITY OF WICHITA

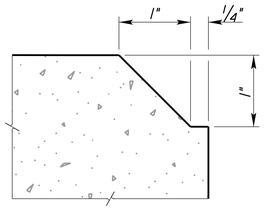
WALL RENDERING III

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

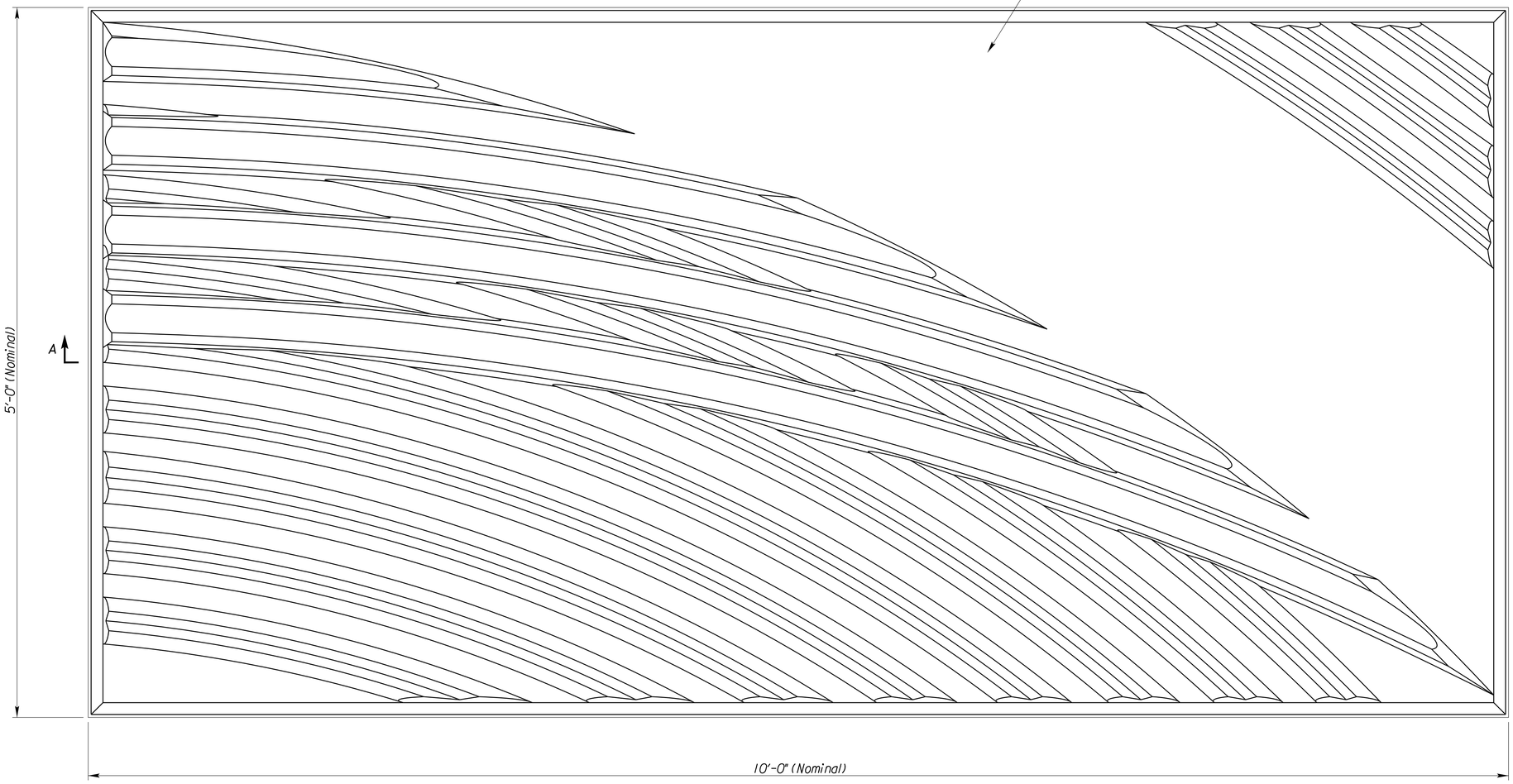
10:23:05 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIMSEJPG03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	343	1055





BEVEL DETAIL



ELEVATION OF REPRESENTATIVE PANEL

All sculptural forms to be CNC CAD CAM cut at Artist's direction; background texture yet to be determined. Final layout to be created at Formliner Manufacturer's site, with Artist's supervision of all aesthetic elements.

Final layouts may vary from pictorial diagrams illustrating conceptual layout.

MSE panels are nominal 10' wide x 5' high. MSE Manufacturer to make adjustments (shown on Shop Drawings) to achieve proper fit-up, jointing, etc.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

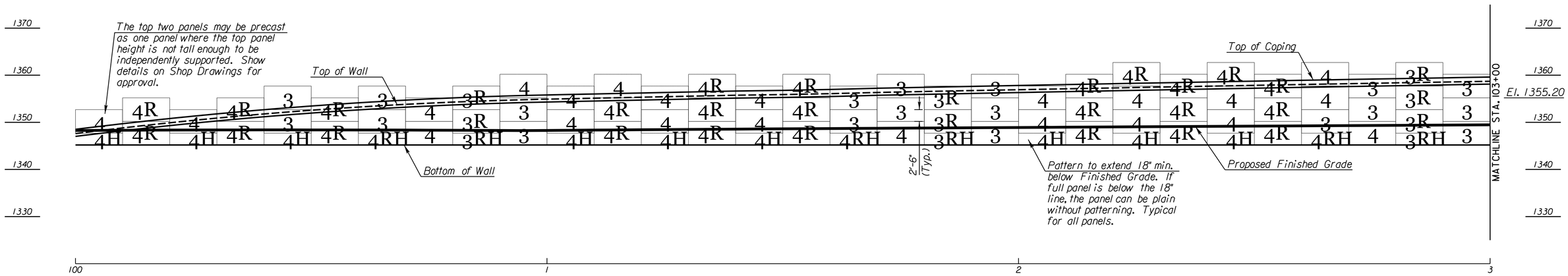
9:46:13 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIWALSEC01A.dgn

CITY OF WICHITA

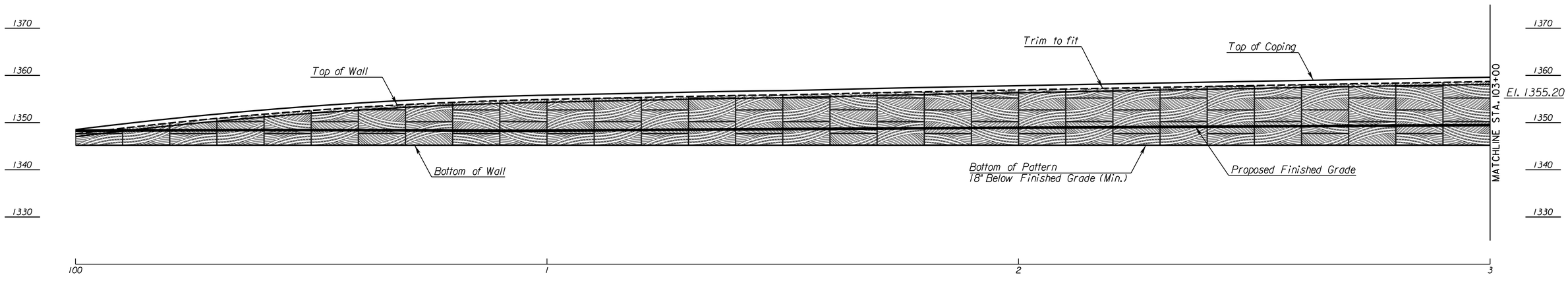
FORMLINER DETAILS

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	344	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Only MSE Precast Panels that require a formliner are shown. Some MSE Precast Panels may be required (ie. above the bottom of coping) which do not require formliner.

CITY OF WICHITA

MSE RETAINING WALL A (2056)

AESTHETIC DETAILS

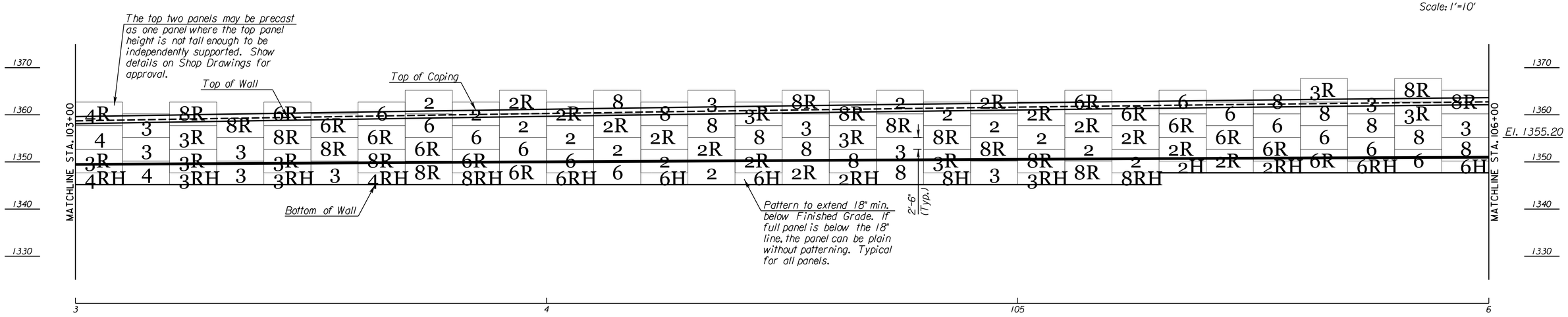
STA. 100+00 TO STA. 103+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

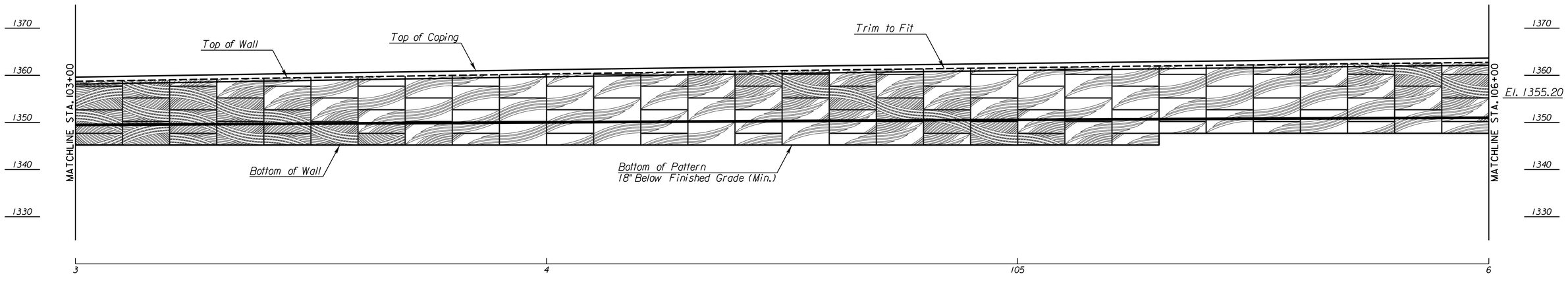
9:46:22 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packages\Aesthetics\Walls\EK(A)WAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	345	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT
CADD		DES.
AH/BS		DR.
GB/CP		TR.
--		CKD.
SB/NW		APP.

9:46:30 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EK1AWAP02A.dgn

CITY OF WICHITA

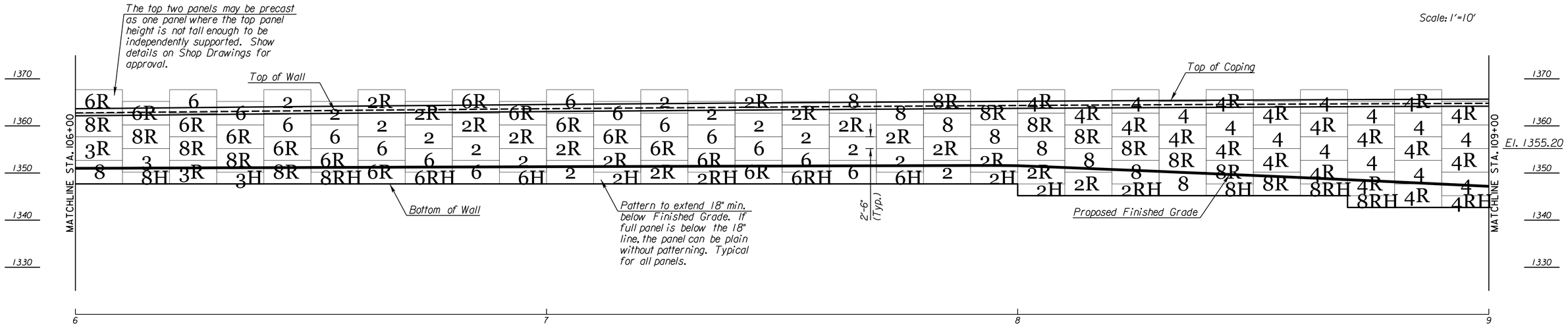
MSE RETAINING WALL A (2056)

AESTHETIC DETAILS

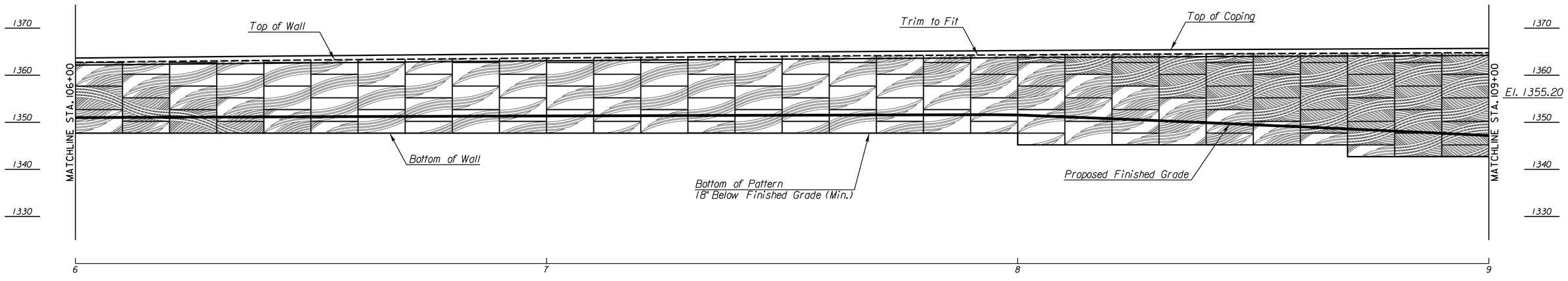
STA. 103+00 TO STA. 106+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	346	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:46:37 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EK1AWAP03A.dgn

CITY OF WICHITA

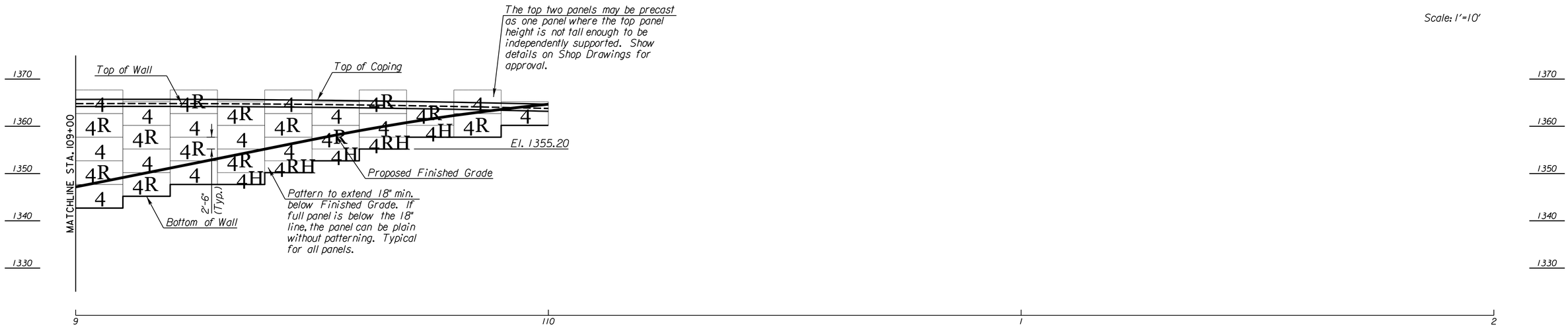
MSE RETAINING WALL A (2056)

AESTHETIC DETAILS

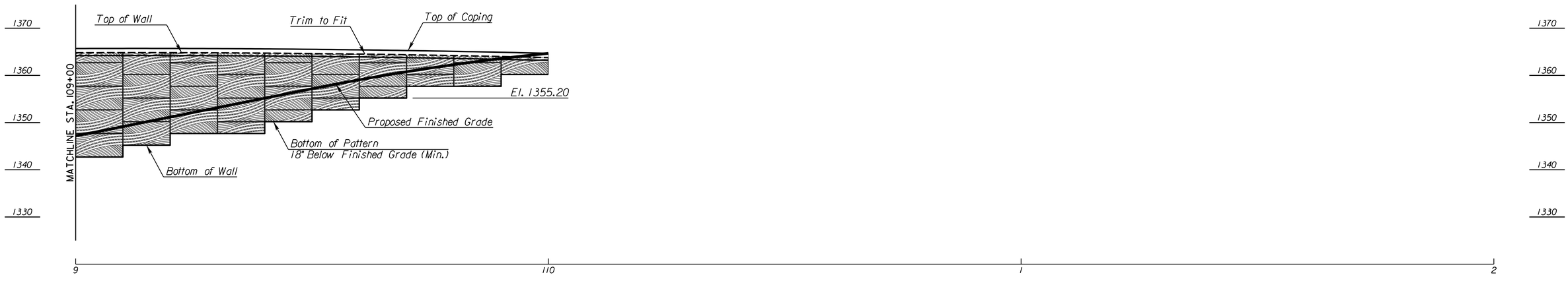
STA. 106+00 TO STA. 109+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	347	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT
CADD		DES.
AH/BS		DR.
GB/CP		TR.
--		CKD.
SB/NW		APP.

9:46:43 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EK1AWAP04A.dgn

CITY OF WICHITA

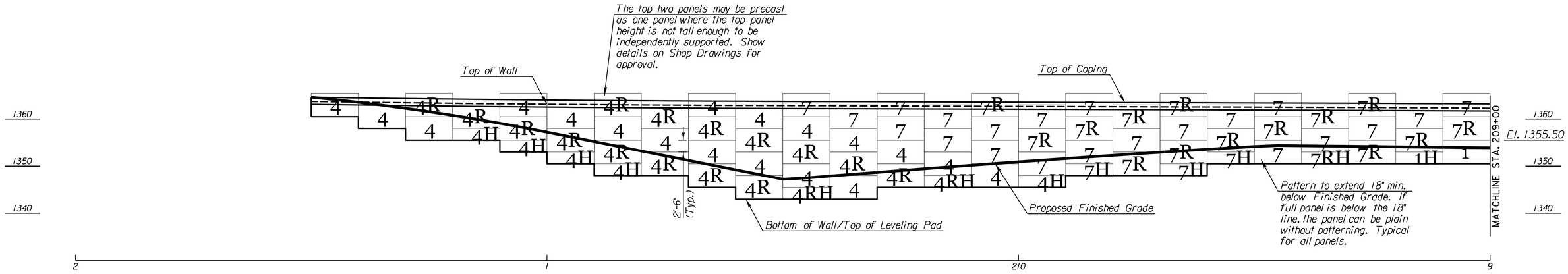
MSE RETAINING WALL A (2056)

AESTHETIC DETAILS

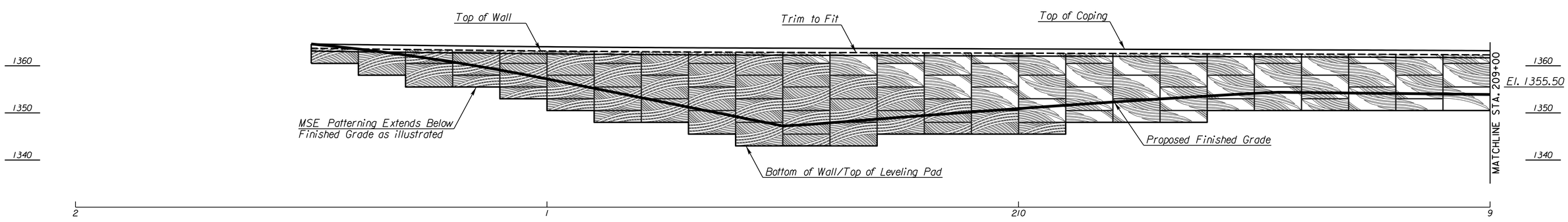
STA. 109+00 TO STA. 110+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	348	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Only MSE Precast Panels that require a formliner are shown. Some MSE Precast Panels may be required (ie. above the bottom of coping) which do not require formliner.

CITY OF WICHITA

MSE RETAINING WALL B (2055)

AESTHETIC DETAILS

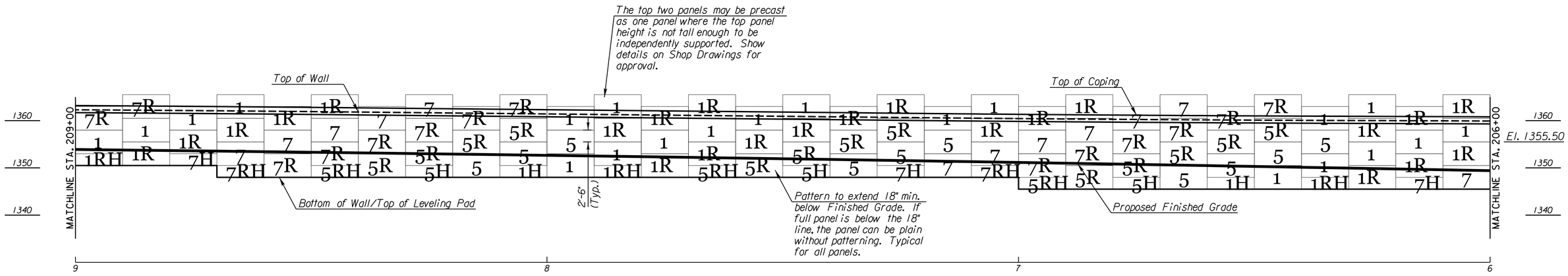
STA. 209+00 TO STA. 211+50

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

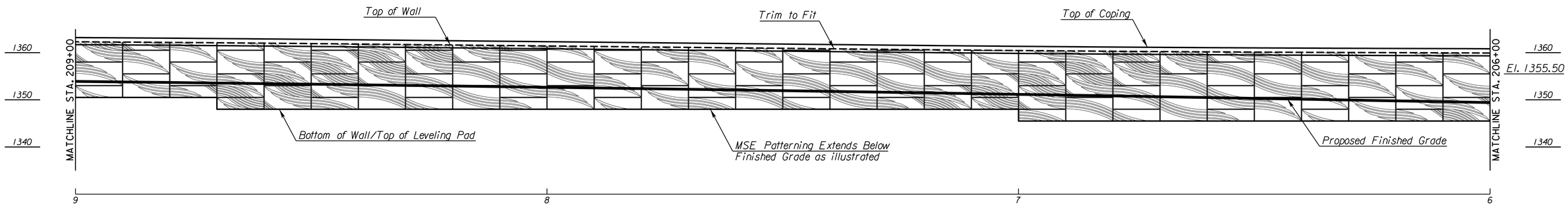
9:46:50 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIBWAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	349	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

MSE RETAINING WALL B (2055)

AESTHETIC DETAILS

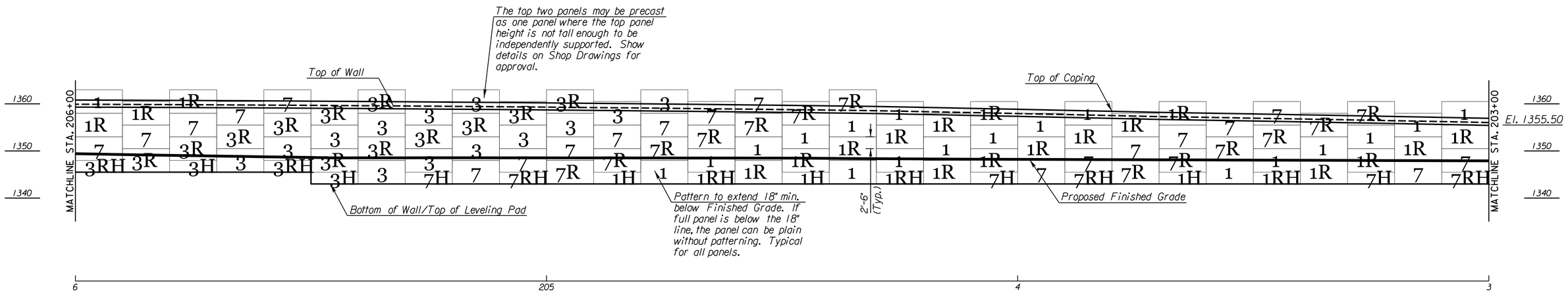
STA. 206+00 TO STA. 209+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

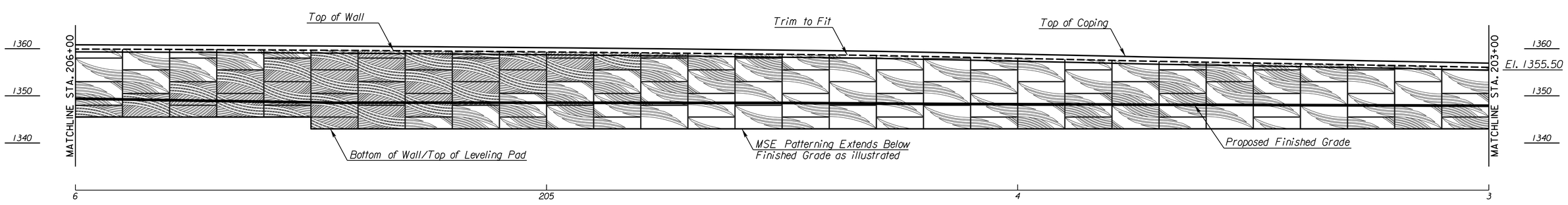
9:46:57 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EXIBWAP02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	350	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

MSE RETAINING WALL B (2055)

AESTHETIC DETAILS

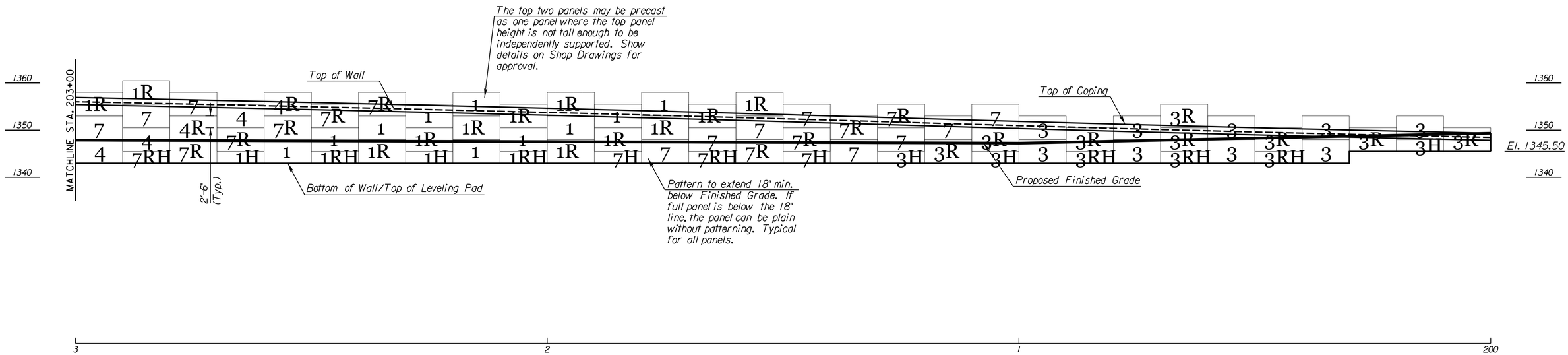
STA. 203+00 TO STA. 206+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

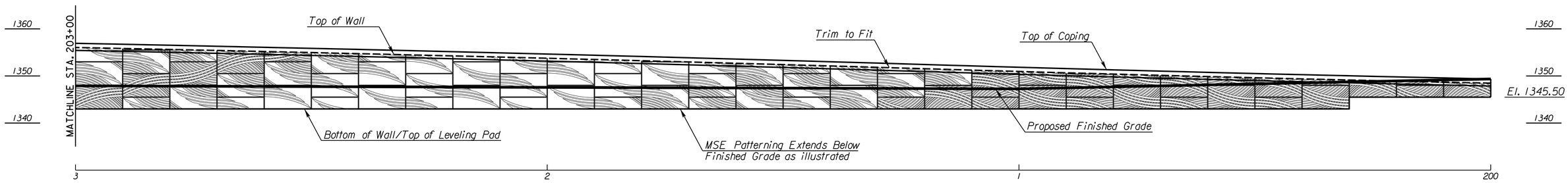
9:47:03 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIBWAP03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	351	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

MSE RETAINING WALL B (2055)

AESTHETIC DETAILS

STA. 200+00 TO STA. 203+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:47:09 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIBWAP04A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	352	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Formliner to match adjacent existing wall formliner, submit match to Engineer for approval.

CITY OF WICHITA

MSE RETAINING WALL C (2054)

AESTHETIC DETAILS

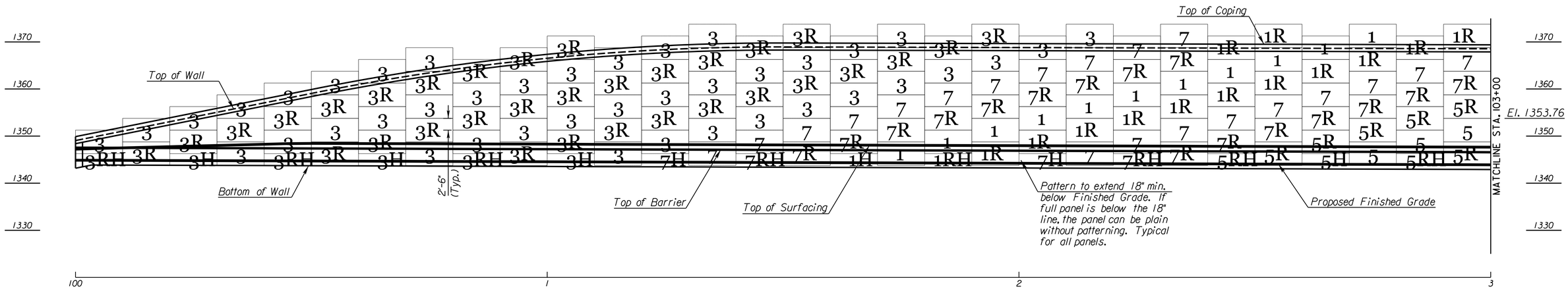
STA. 200+00 TO STA. 201+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

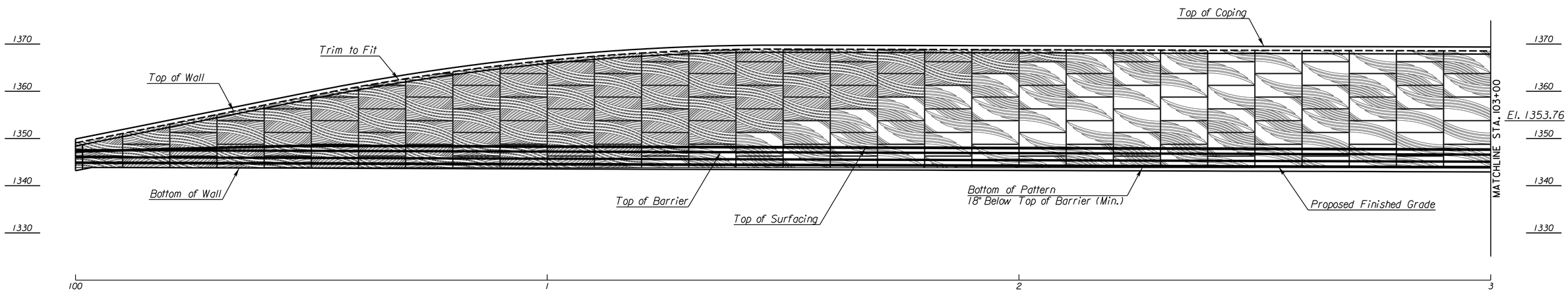
10:23:29 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKICWAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	353	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Only portions of the Soldier Pile walls that require patterning have a formliner shown. Some wall portions are required (ie, above the bottom of coping) which do not require formliner.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL E (2057)

AESTHETIC DETAILS

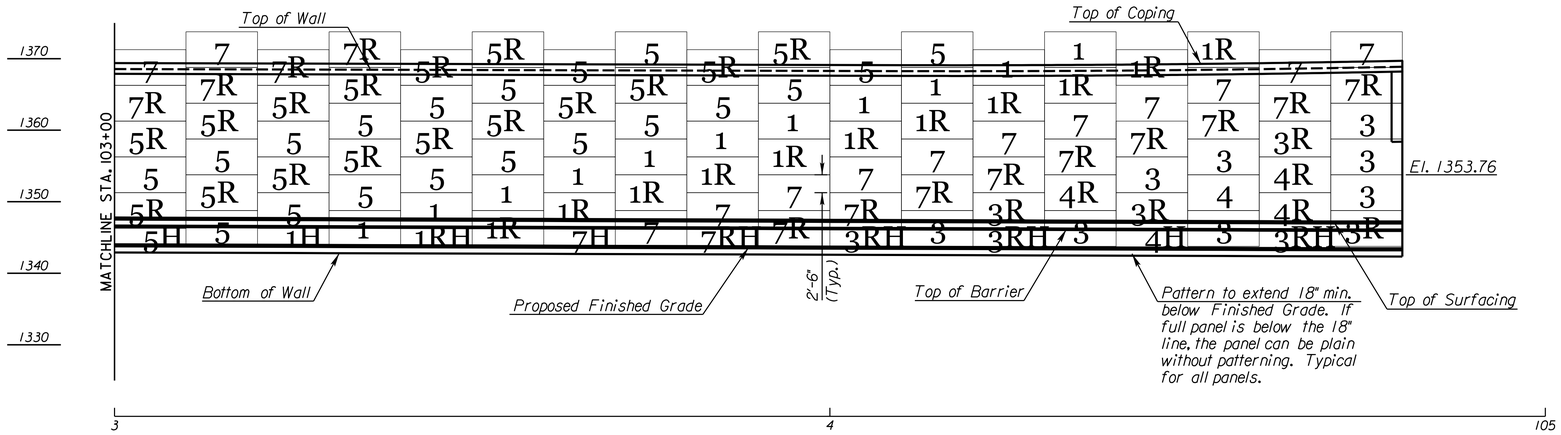
STA. 100+00 TO STA. 103+00

SURV.	--	PLOT
CADD	DES.	AH/BS
--	CKD.	SB/NW
--	TR.	GB/CP
--	DR.	APP.

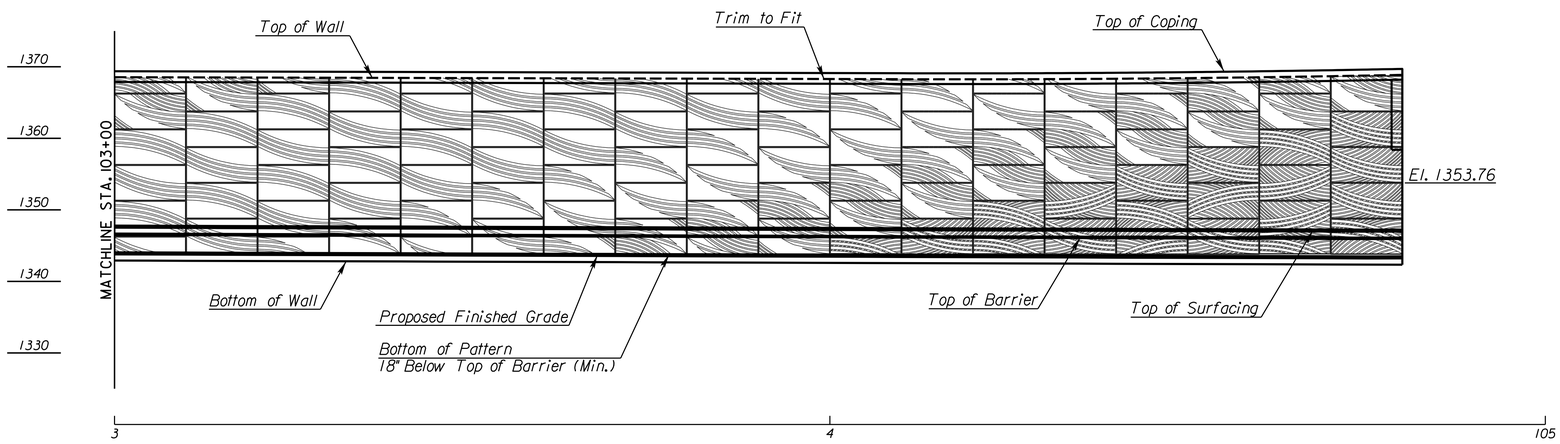
9:47:22 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIEWAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	354	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:47:30 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIEWAP02A.dgn

CITY OF WICHITA

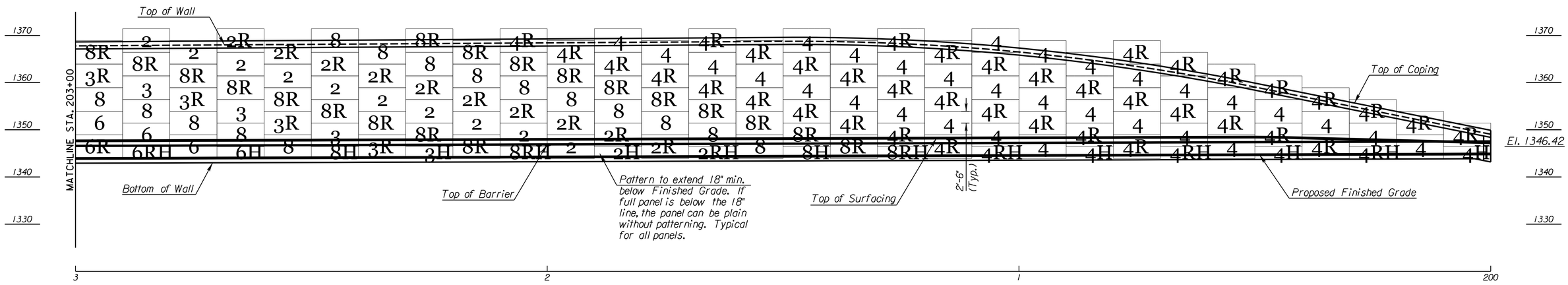
SOLDIER PILE RETAINING WALL E (2057)

AESTHETIC DETAILS

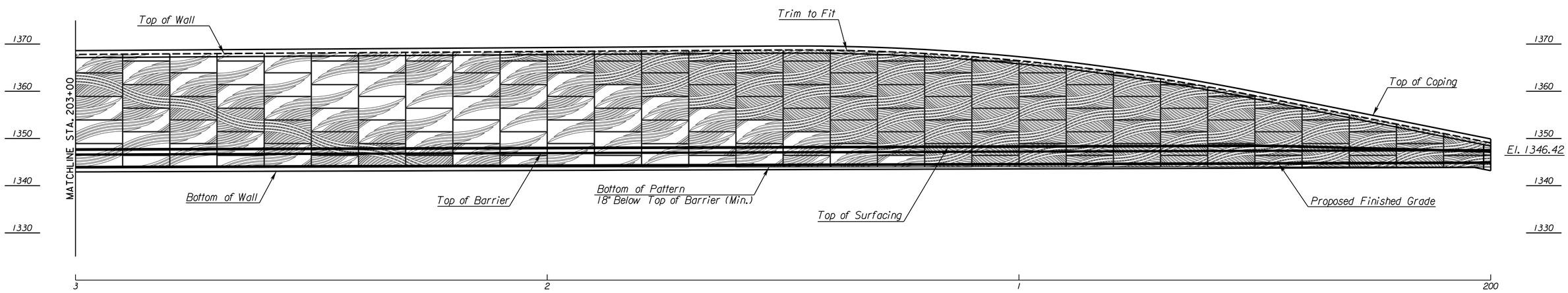
STA. 103+00 TO STA. 104+80

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	355	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Only portions of the Soldier Pile walls that require patterning have a formliner shown. Some wall portions are required (ie, above the bottom of coping) which do not require formliner.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL F (2058)

AESTHETIC DETAILS

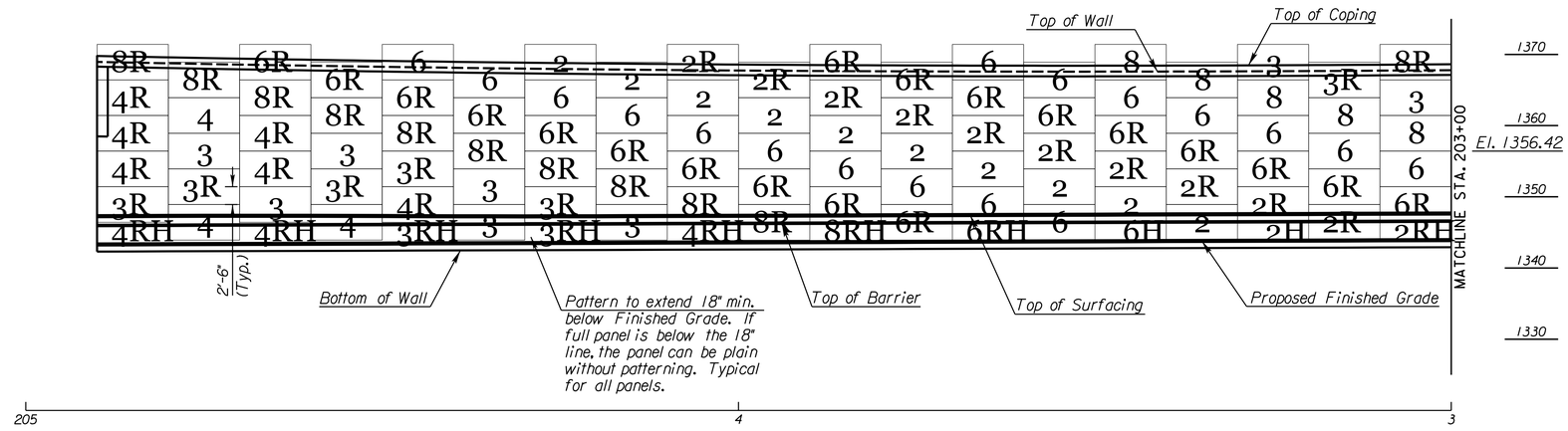
STA. 200+00 TO STA. 203+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

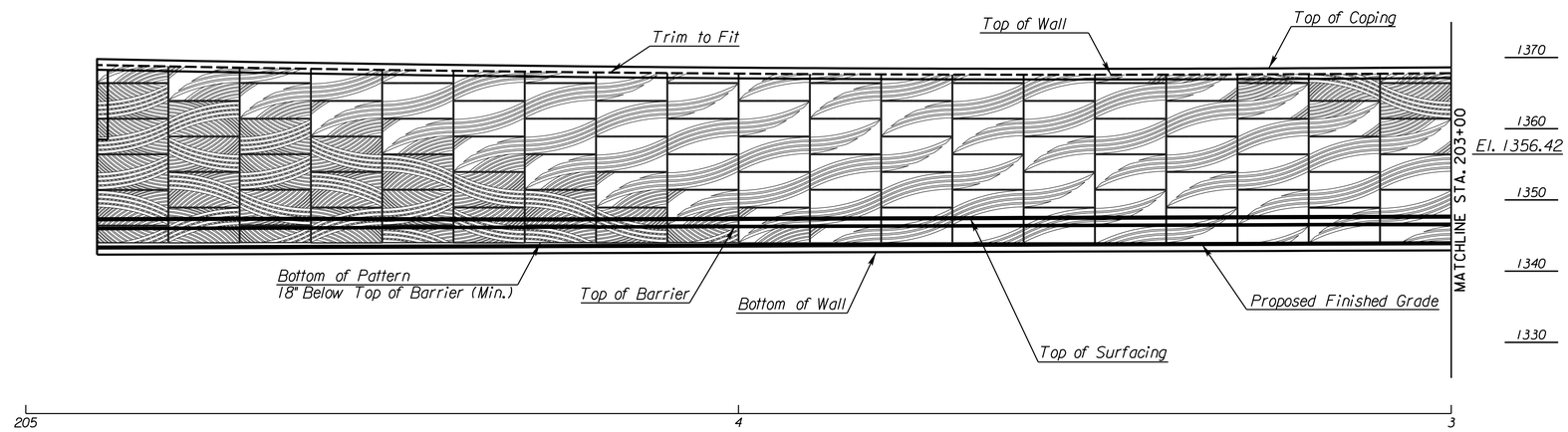
9:47:39 AM
4/17/2015
I:\357654\Cadd\Sheets\Package\Aesthetics\Walls\EKIFWAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	356	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

SOLDIER PILE RETAINING WALL F (2058)

AESTHETIC DETAILS

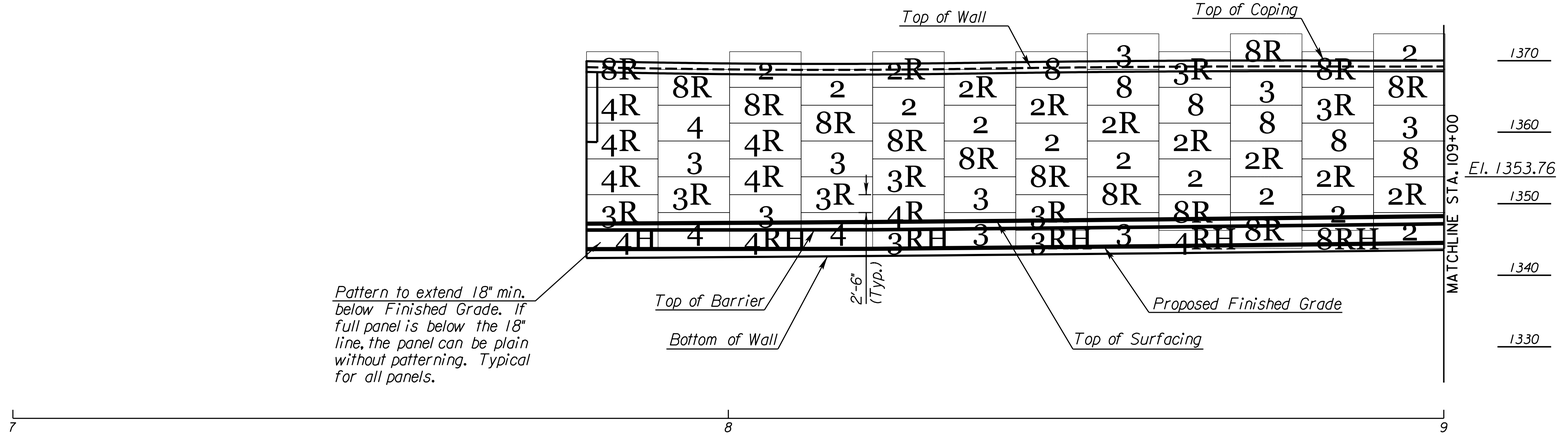
STA. 203+00 TO STA. 204+90

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

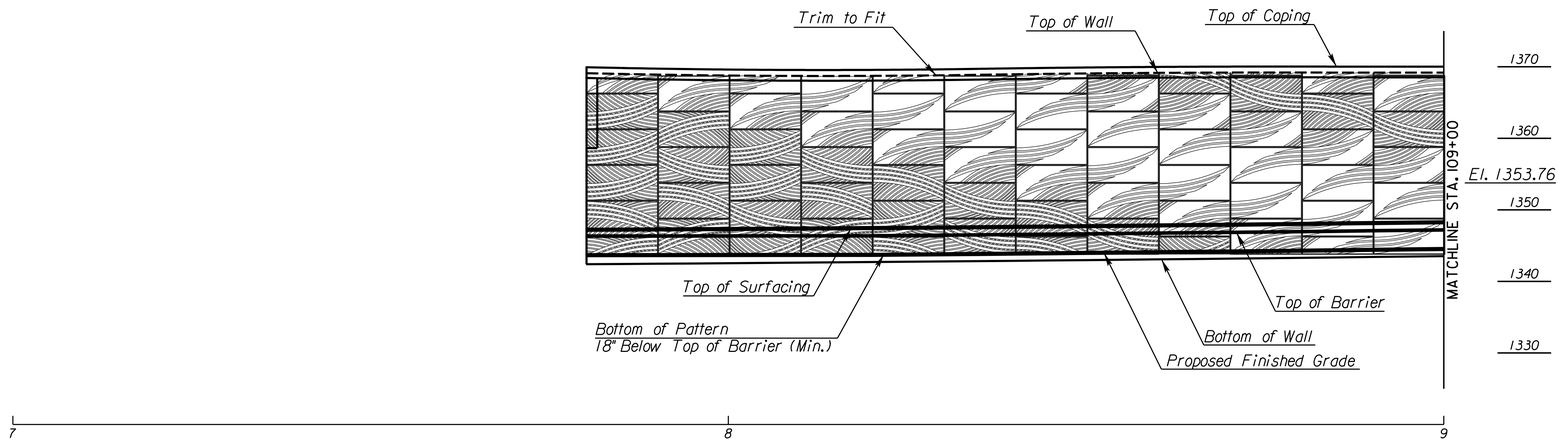
9:47:47 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIFWAP02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	357	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Only portions of the Soldier Pile walls that require patterning have a formliner shown. Some wall portions are required (ie, above the bottom of coping) which do not require formliner.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

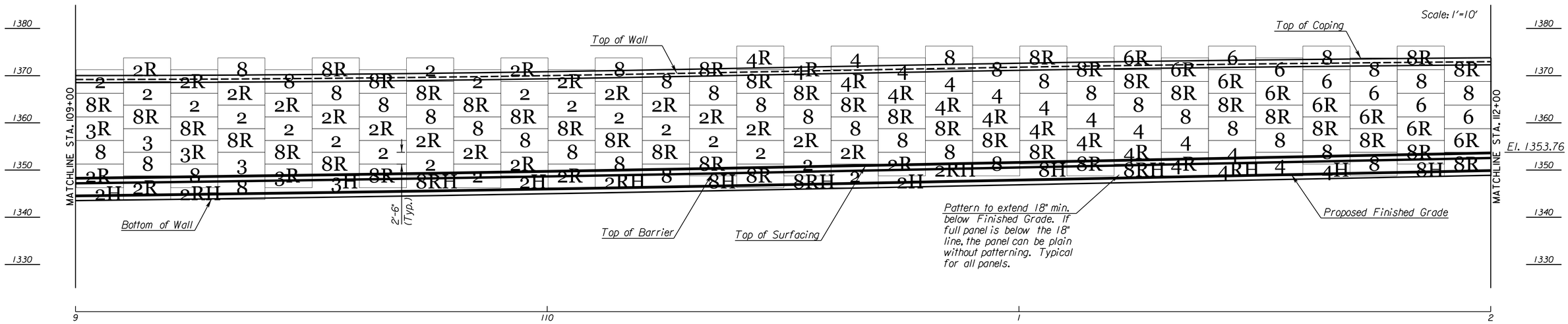
AESTHETIC DETAILS

STA. 107+80.17 TO STA. 109+00

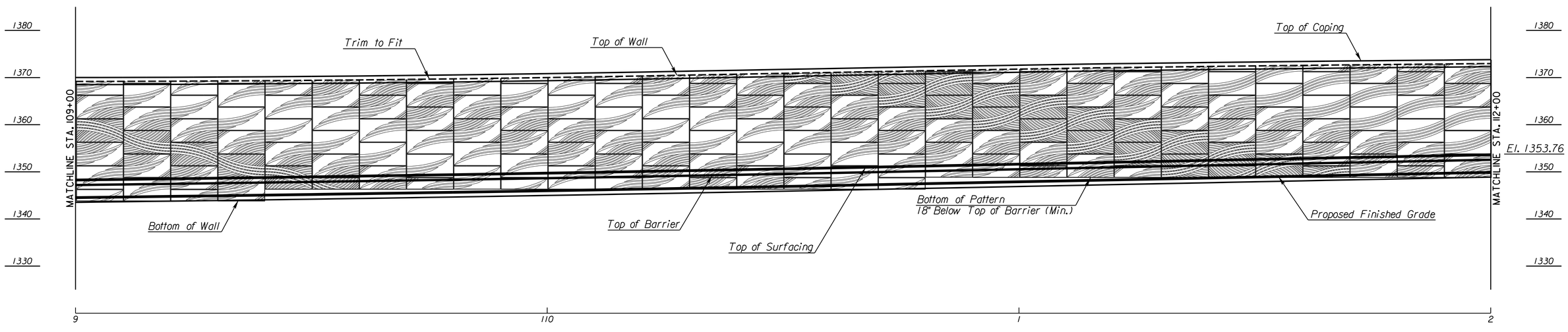
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:47:56 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIGWAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	358	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:48:03 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIGWAP02A.dgn

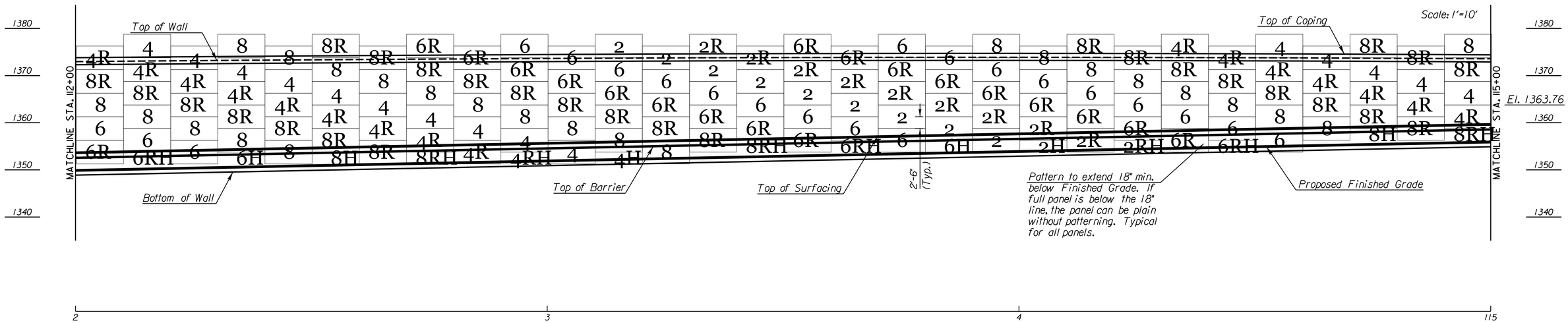
CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

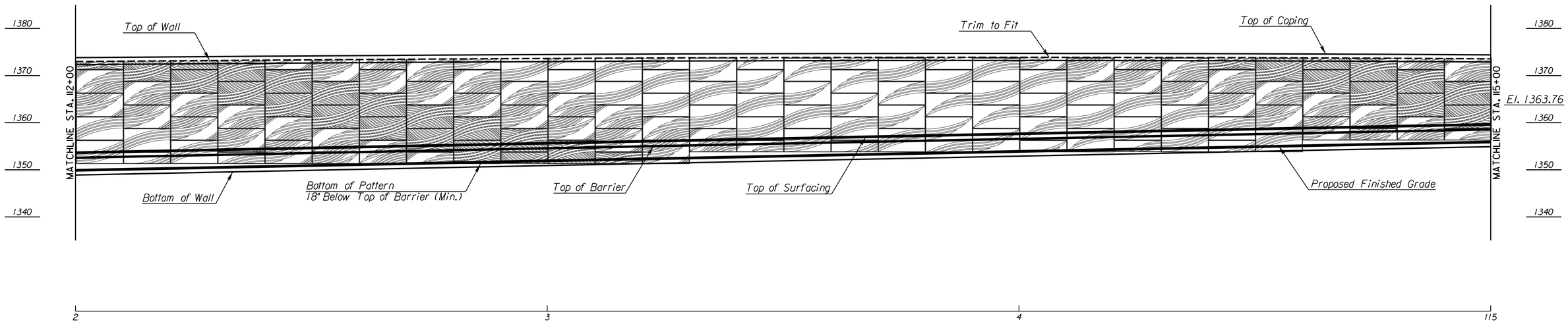
AESTHETIC DETAILS

STA. 109+00 TO STA. 112+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	359	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

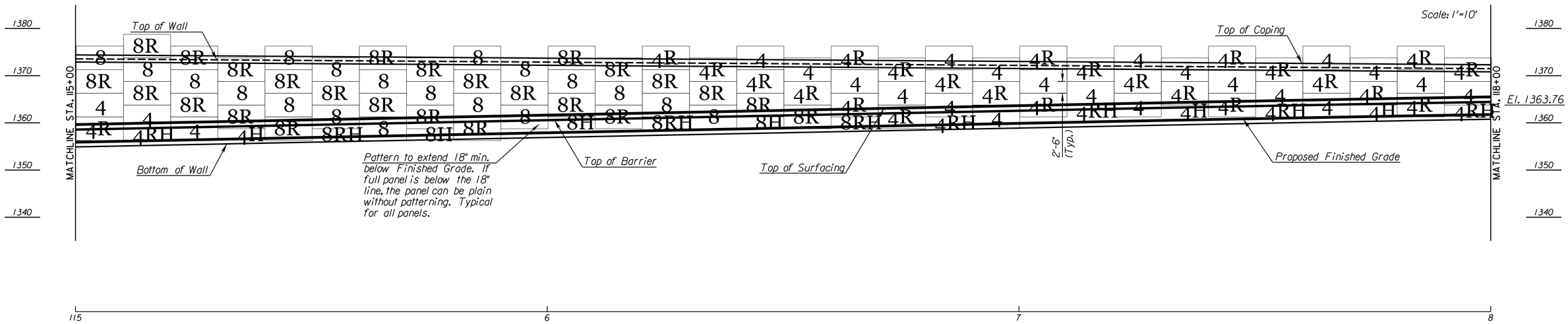
AESTHETIC DETAILS

STA. 112+00 TO STA. 115+00

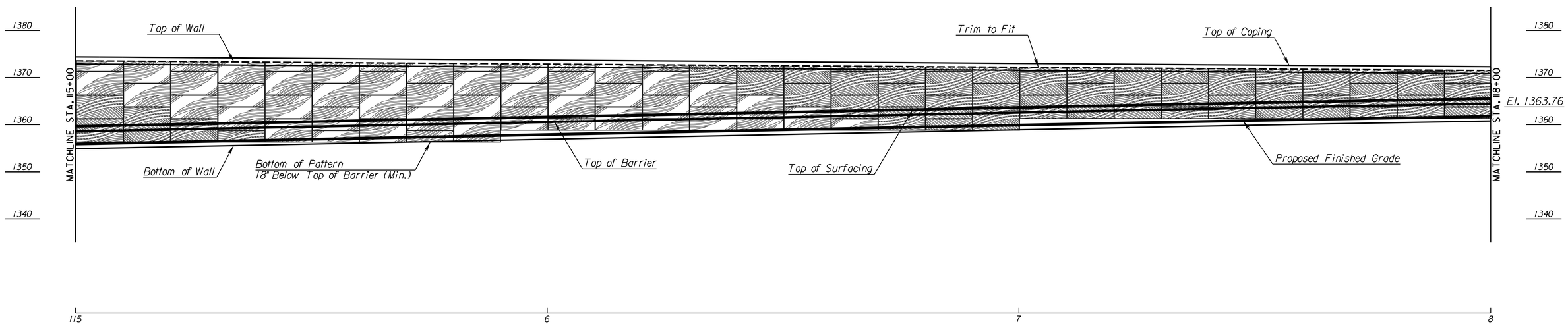
	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.
SURV.	--										

9:48:10 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIGWAP03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	360	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:48:17 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIGWAP04A.dgn

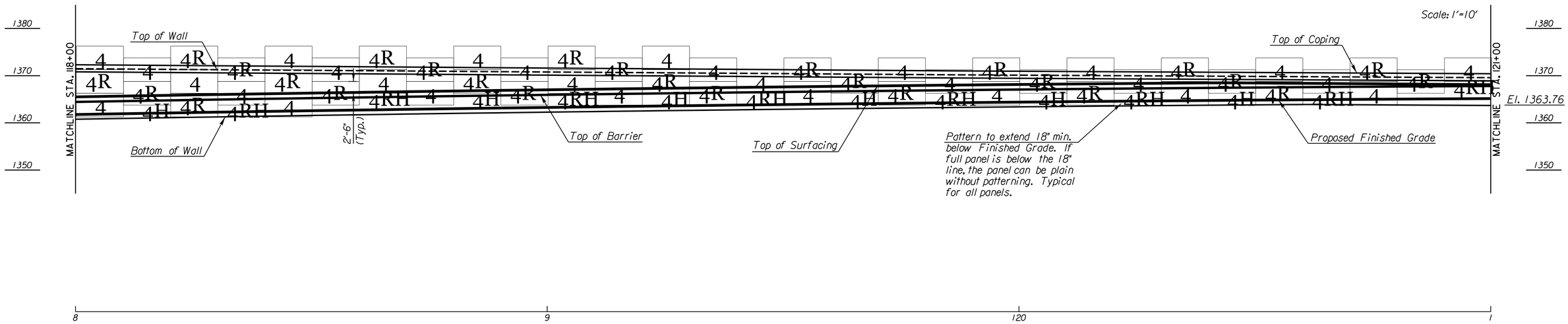
CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

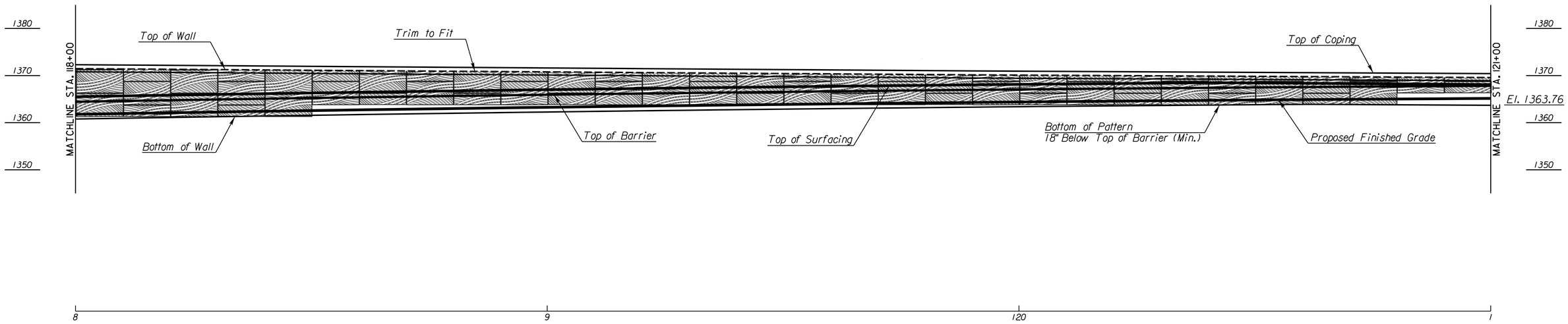
AESTHETIC DETAILS

STA. 115+00 TO STA. 118+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	361	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT
CADD	DES.	AH/BS
DR.	GB/CP	TR.
--	CKD.	SB/NW
APP.	--	

9:48:24 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIGWAP05A.dgn

CITY OF WICHITA

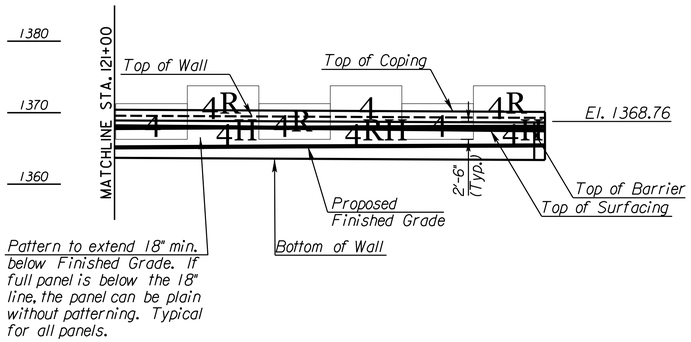
SOLDIER PILE RETAINING WALL G (2059)

AESTHETIC DETAILS

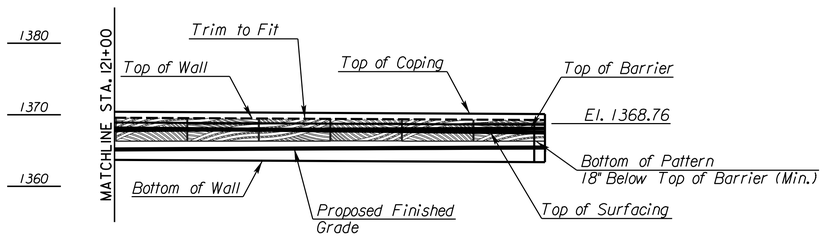
STA. 118+00 TO STA. 121+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	362	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

SOLDIER PILE RETAINING WALL G (2059)

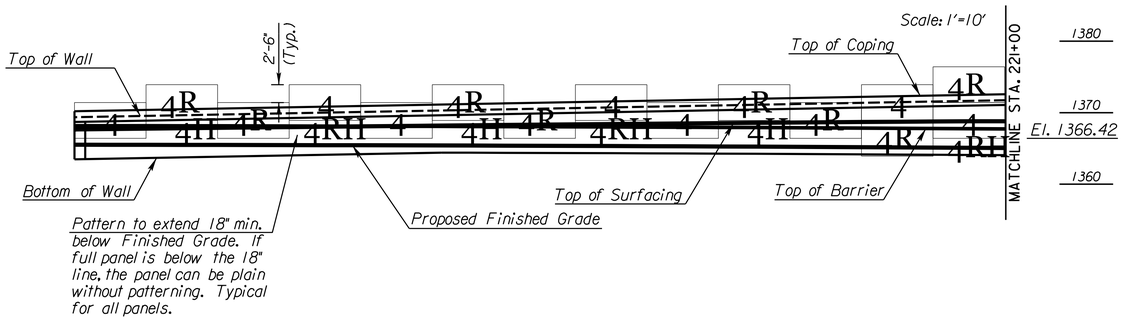
AESTHETIC DETAILS

STA. 121+00 TO STA. 121+60.17

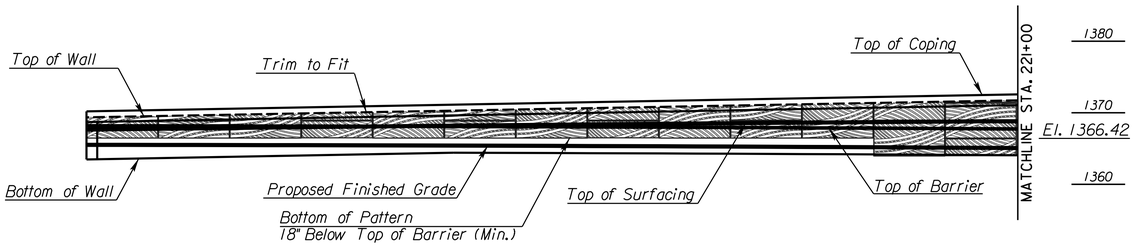
SURV.	--	PLOT
CADD	DES.	AH/BS
DR.	--	GB/CP
TR.	--	CKD.
SB/NW	APP.	--

9:48:28 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKICWAP06A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	363	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

NOTE:
Only portions of the Soldier Pile walls that require patterning have a formliner shown. Some wall portions are required (ie, above the bottom of coping) which do not require formliner.

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

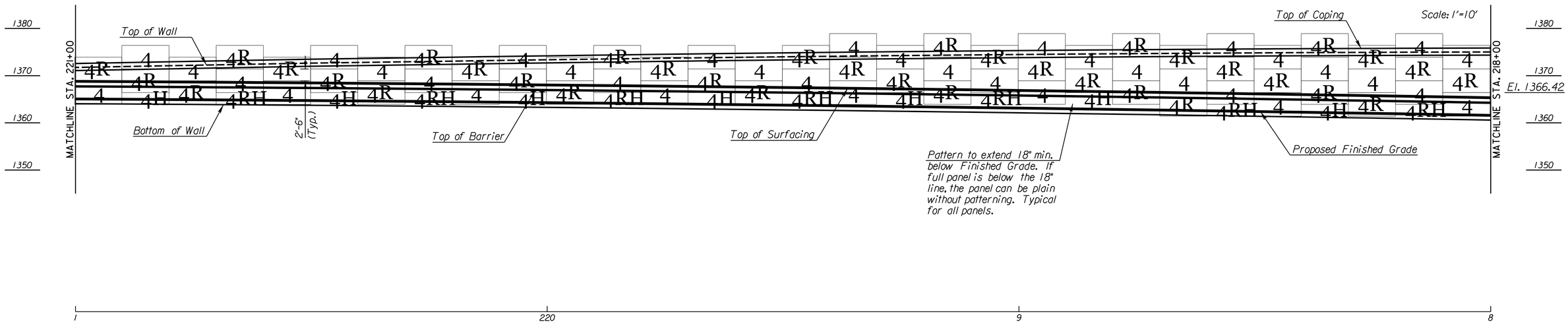
AESTHETIC DETAILS

STA. 221+00 TO STA. 222+30.17

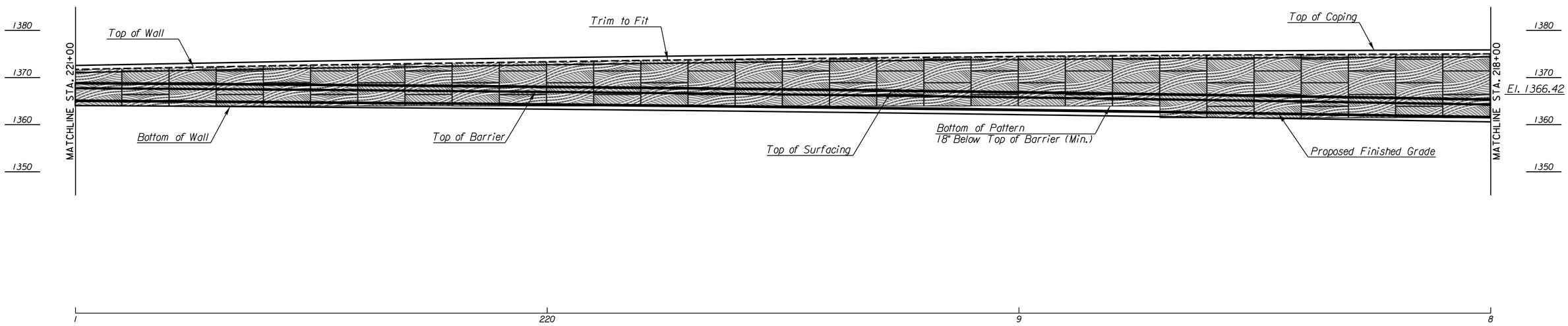
SURV.	--	PLOT
CADD		DES.
AH/BS		DR.
GB/CP		TR.
--		CKD.
SB/NW		APP.
--		

9:48:33 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIHWAP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	364	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:48:39 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Aesthetics\Walls\EKIHWAP02A.dgn

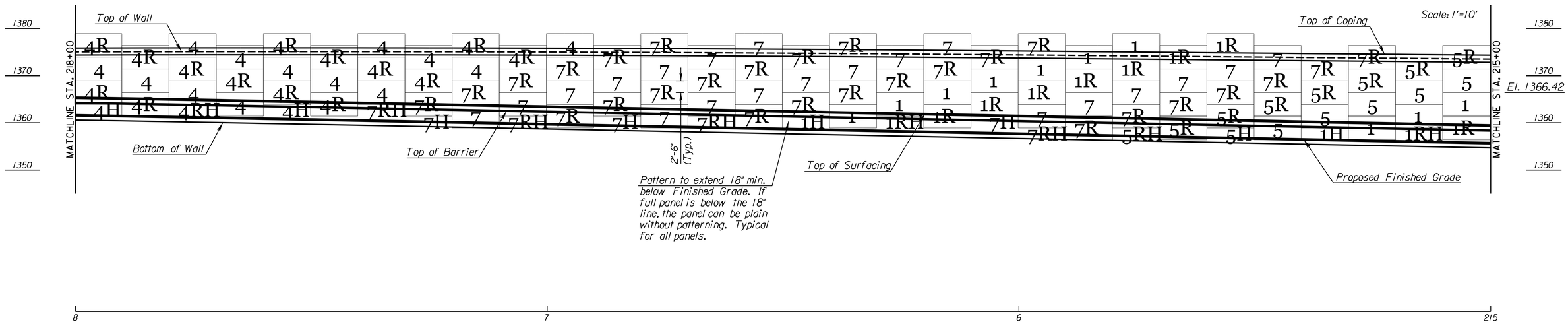
CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

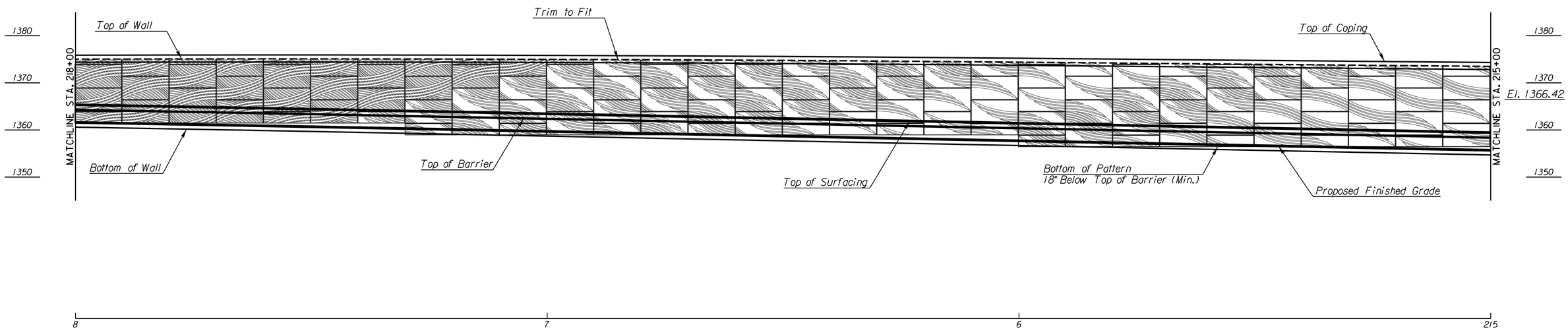
AESTHETIC DETAILS

STA. 218+00 TO STA. 221+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	365	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:48:46 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIHWAP03A.dgn

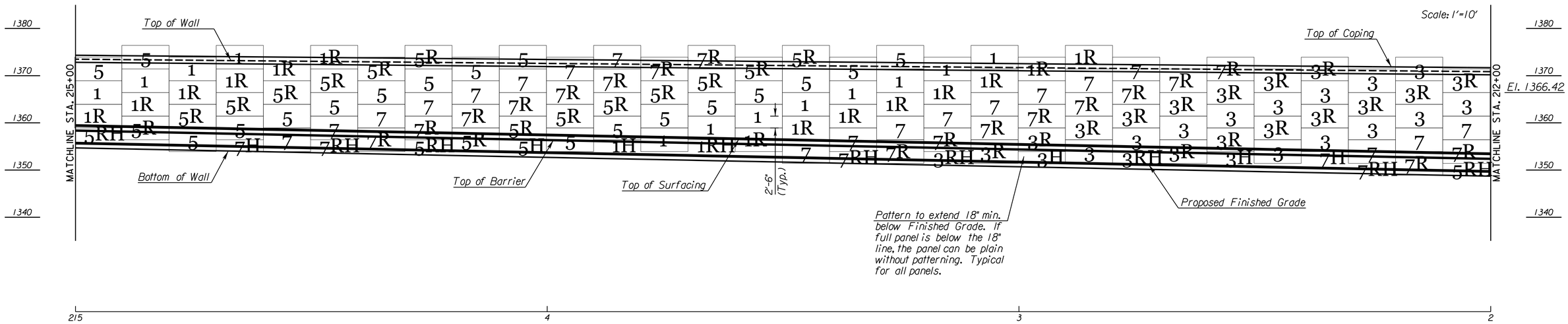
CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

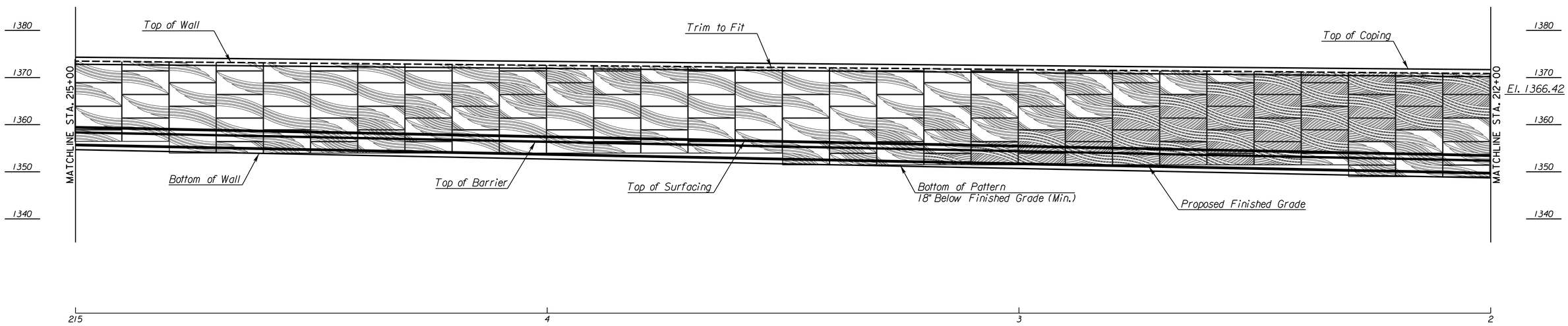
AESTHETIC DETAILS

STA. 215+00 TO STA. 218+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	366	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

SURV.	--	PLOT
CADD	DES.	AH/BS
--	DR.	GB/CP
--	TR.	CKD.
SB/NW	APP.	

9:48:53 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIHWAP04A.dgn

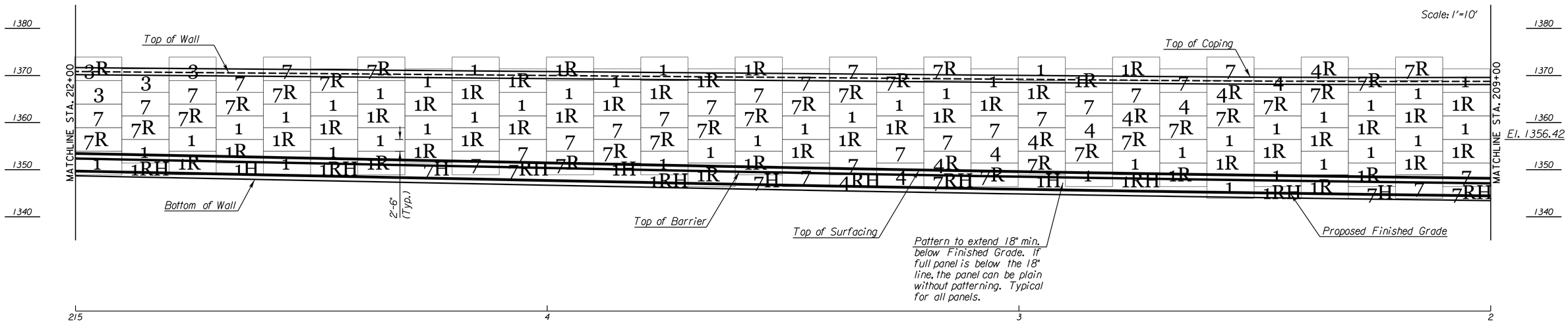
CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

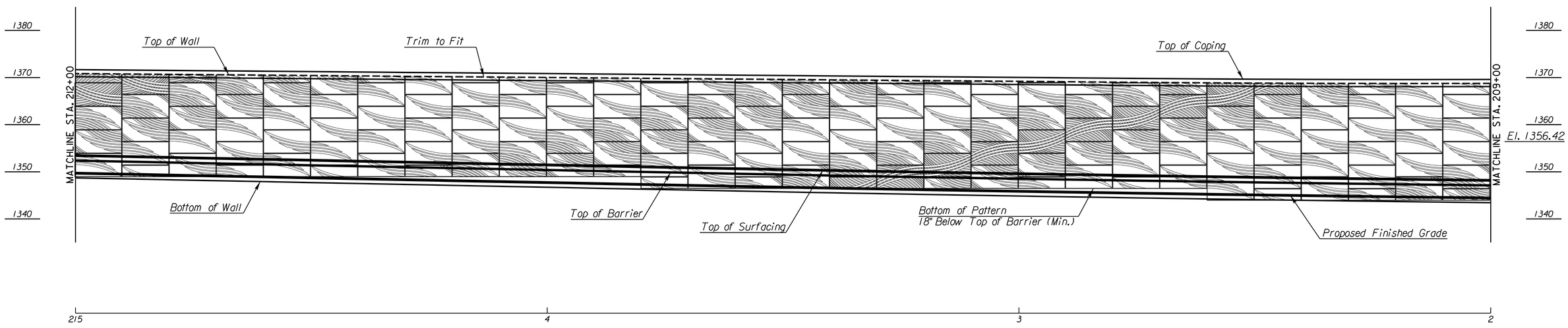
AESTHETIC DETAILS

STA. 212+00 TO STA. 215+00

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	367	1055



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

AESTHETIC DETAILS

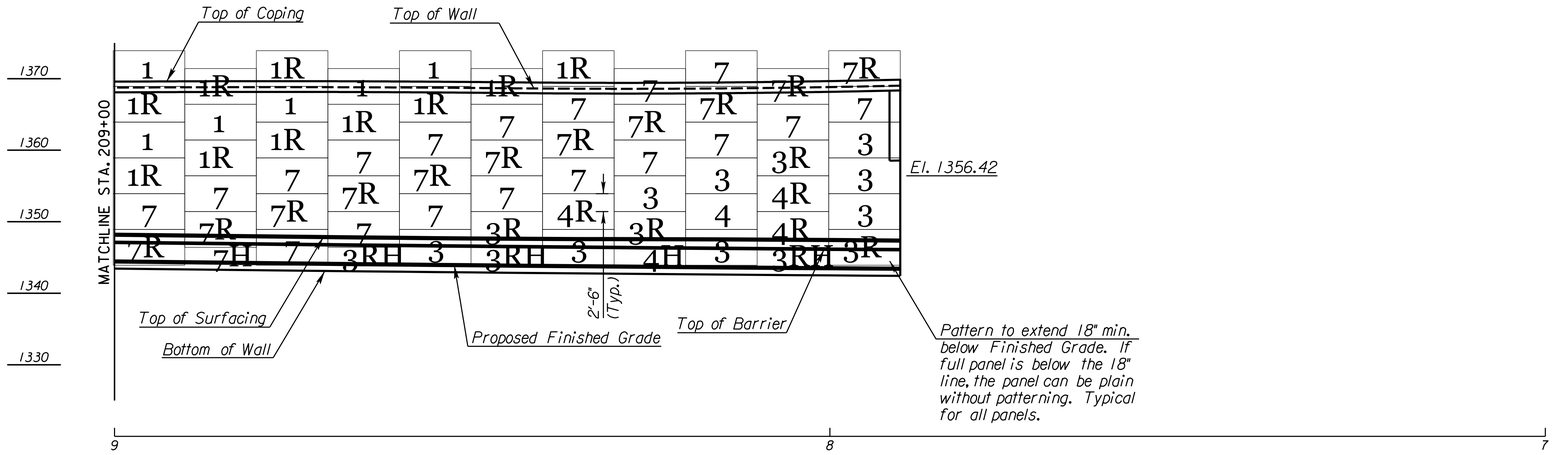
STA. 209+00 TO STA. 212+00

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

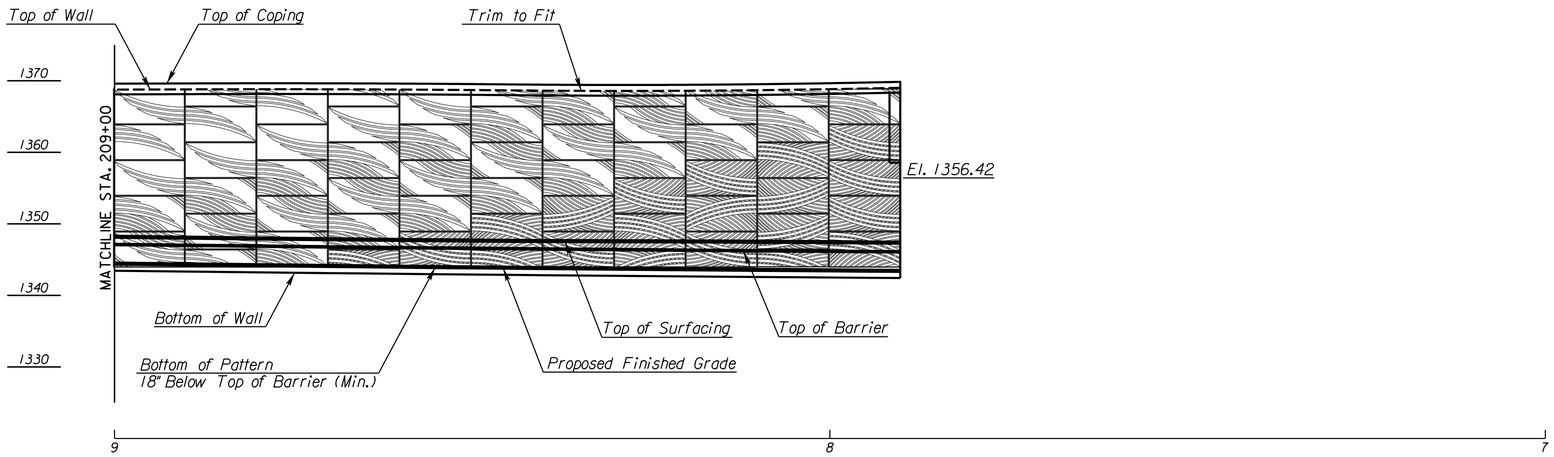
9:49:00 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIHWAP05A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	368	1055

Scale: 1"=10'



ELEVATION
(FRONT FACE)
(SHOWING PATTERN MAP)



ELEVATION
(FRONT FACE)
(SHOWING PATTERN)

CITY OF WICHITA

SOLDIER PILE RETAINING WALL H (2060)

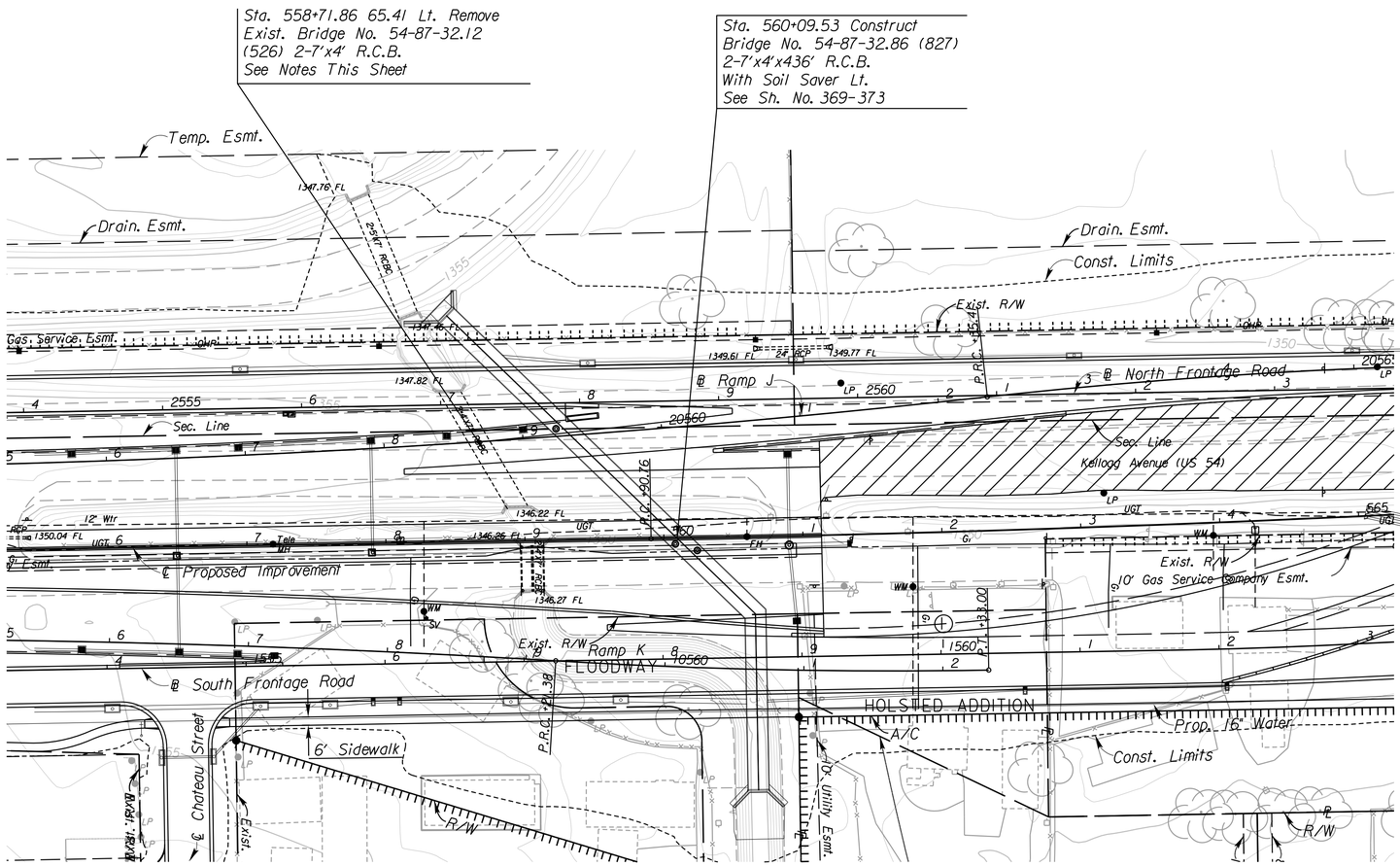
AESTHETIC DETAILS

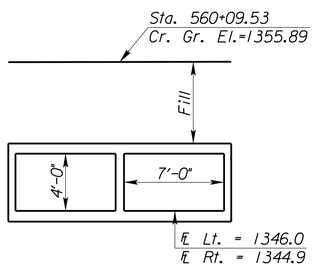
STA. 207+90.17 TO STA. 209+00

SURV.	--	PLOT
		CADD
		DES.
		AH/BS
		DR.
		GB/CP
		TR.
		--
		CKD.
		SB/NW
		APP.

9:49:08 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Aesthetics\Walls\EKIHWAP06A.dgn

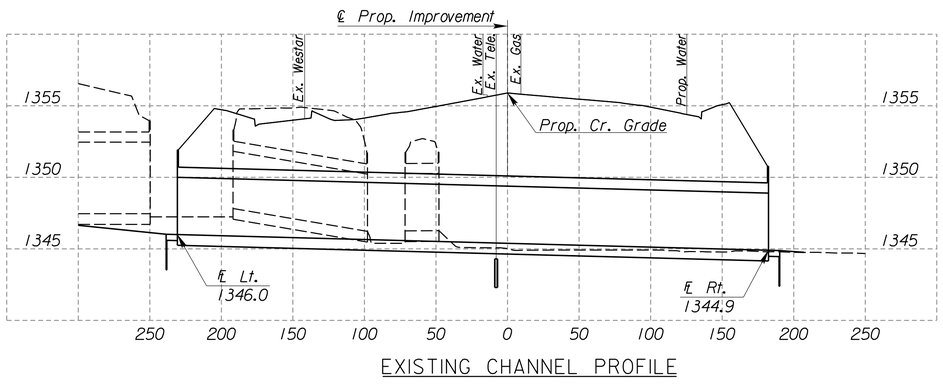
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	369	1055





PROPOSED RCB WATERWAY

Waterway opening = 56.0 Sq.Ft.



EXISTING CHANNEL PROFILE

HYDRAULIC DATA

Drainage Area----------417 Acres
Design Frequency----------50 Years
Design Discharge----------421 cfs
Design Highwater Elevation----------1351.4 Ft.

Overtopping Elevation (Sta. 558+88.46)---1354.64 Ft.
Overtopping Discharge----------640 cfs
Overtopping Frequency----------\>500 Years
Historic Highwater Elevation----------Unknown

REMOVAL OF EXISTING STRUCTURE

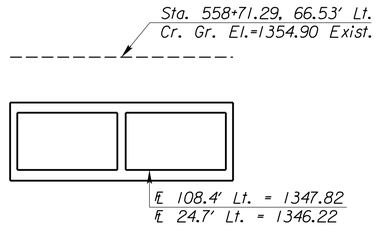
The Contractor shall remove the existing bridge (K.D.O.T. No. 54-87-32.12 (526)), consisting of 2-7'x4' R.C.B, 85' roadway. The Contractor shall take this into consideration in the proper disposal of material. All portions of the structure below ground shall be removed. All material removed shall become the property of the Contractor and shall be removed from the site by the Contractor. All of this work shall be part of the bid item "Removal of Existing Structures," Lump Sum.

Construction must occur in phases.

Demolition plans are required as stated in notes on the "General Notes" sheet for Removal of Existing Structure.

STRUCTURAL STEEL GRATE

Provide a steel grate at the north entrance of the box to prevent pedestrian movement through the box. Submit Shop Drawings for the grate, include material properties, dimensions of grate, and proposed method for attachment to the box entrance, to the Engineer for approval prior to fabrication. All labor and work required for the Steel Grate is included in the "Pipe, SWS, RCBC (2-7'x4')" bid item.



EXISTING RCB WATERWAY

Waterway opening = 56.0 Sq.Ft.

All stations and offsets are back of curb unless otherwise shown.

UTILITIES

Gas,	*Kansas Gas Service*
Power	*Westar*
Telephone	*AT&T*
Water	*Wichita Water & Sewer*

CITY OF WICHITA

EAST KELLOGG

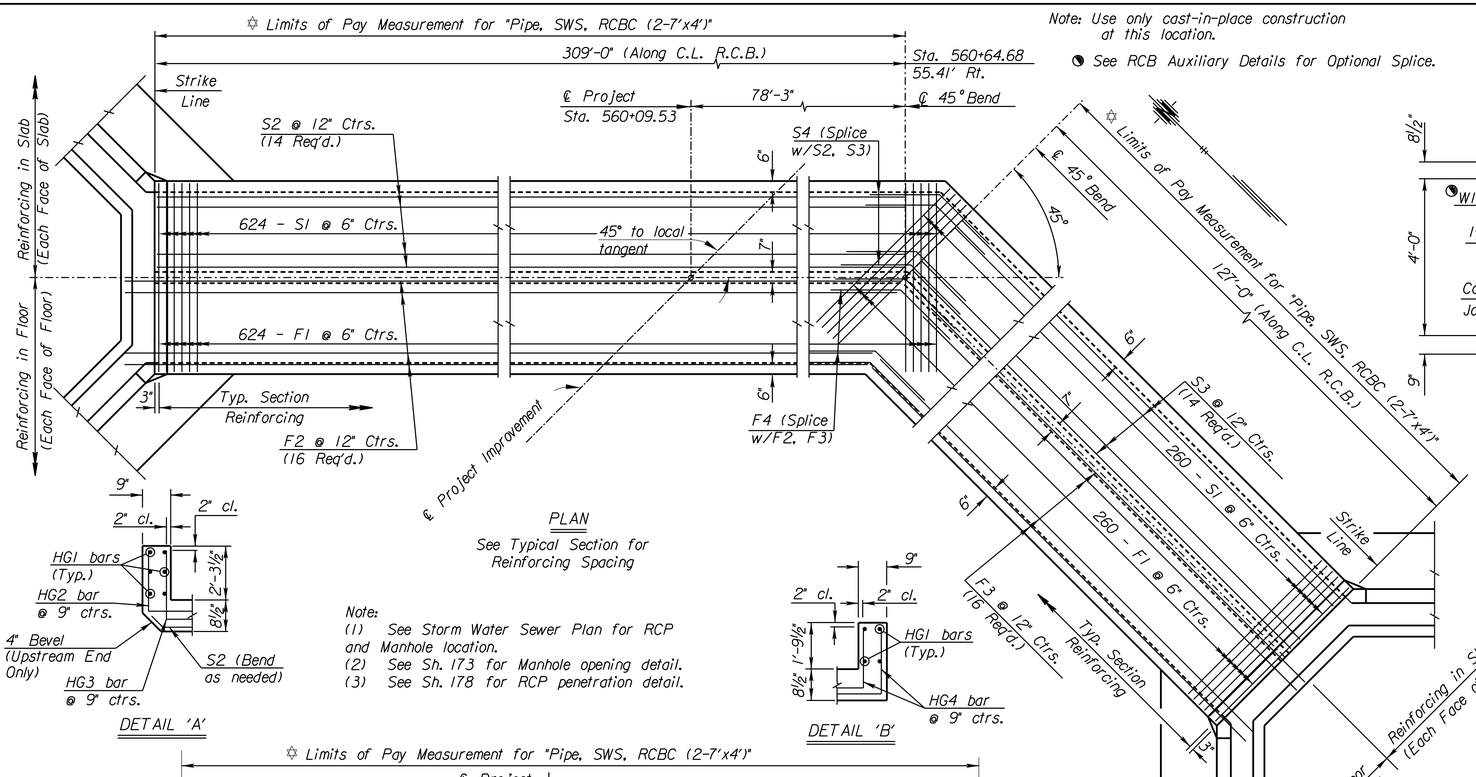
CONTOUR MAP

BR. NO. 54-87-32.86 (827) STA. 560+09.53

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:49:16 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Culverts\EKIKBCTMOIA.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	370	1055



PLAN

See Typical Section for Reinforcing Spacing

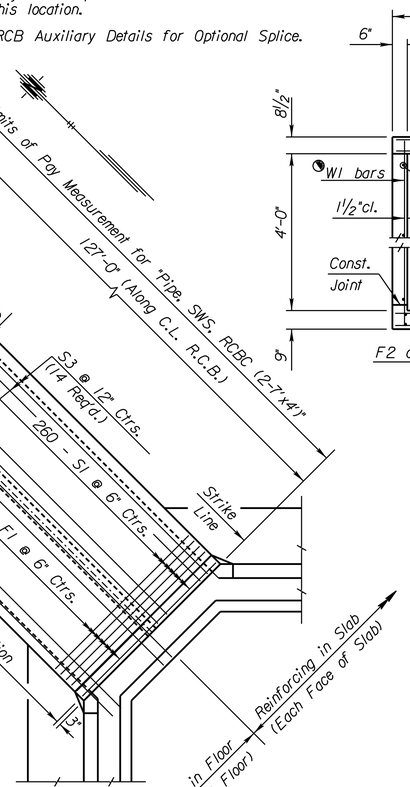
Note: Use only cast-in-place construction at this location.

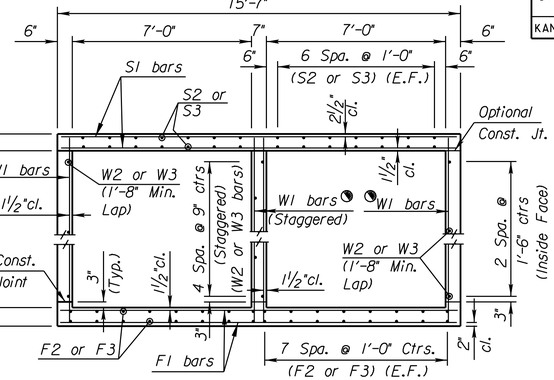
◔ See RCB Auxiliary Details for Optional Splice.

Note:
(1) See Storm Water Sewer Plan for RCP and Manhole location.
(2) See Sh. 173 for Manhole opening detail.
(3) See Sh. 178 for RCP penetration detail.

DETAIL 'A'

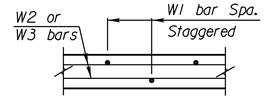
DETAIL 'B'





TYPICAL SECTION

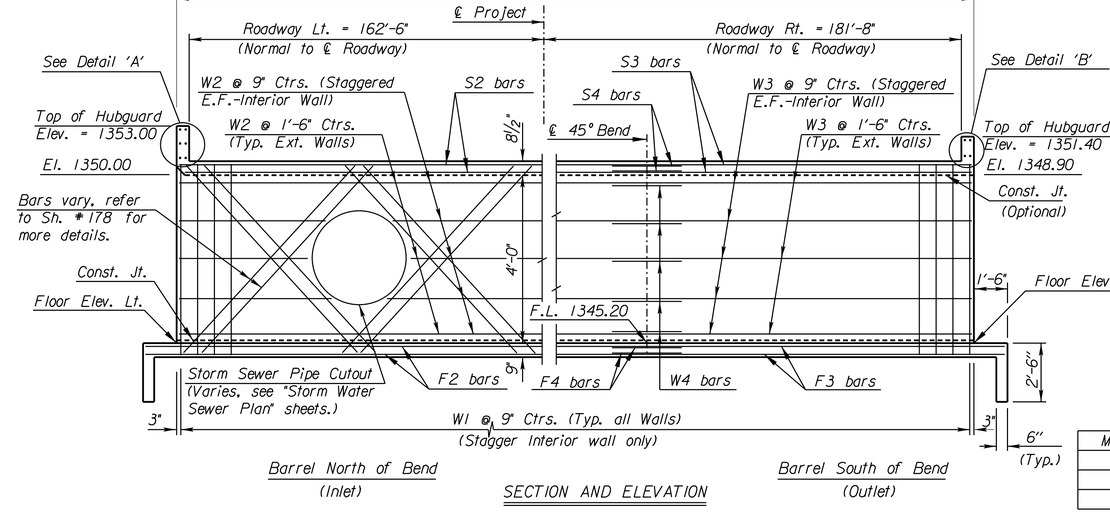
NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint



PLAN OF INTERIOR WALL

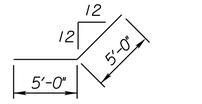
GENERAL NOTES

LOADING: AASHTO LRFD Spec., 7th Edition with 2015 Interims.
UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.
CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾ inch triangular moulding. Where Grade 4.0 Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.
SEAL COURSE: A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer.
FOUNDATION STABILIZATION: The Foundation Stabilization quantity has been calculated to the limits shown on the "RCB Auxiliary Details" sheet. The depth may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.
QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans.
GRANULAR BACKFILL (WINGWALLS): Special backfill procedures may be required at the direction of the Engineer. See Auxiliary Details Sheet.
STRIKE LINE: Wingwalls and that portion of the RCB outside the Strike Line shall be constructed level. Footing for wingwalls shall be constructed with the culvert floor. See wingwall detail sheet.

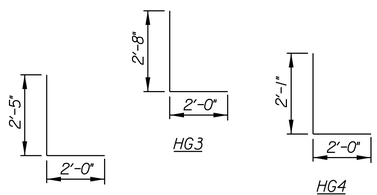


SECTION AND ELEVATION

Minimum Splice Lengths	
#4	1'-4"
#5	1'-8"
#6	2'-0"



S4, F4, W4



BENDING DIAGRAM

(All dimensions are out to out of bars.)

✡ The bid item "Pipe, SWS, RCBC (2-7'x4')" shall include all labor and material as shown on the plans. The wingwalls, soil saver, and apron shall be part of this bid item. Quantities shown are for information only.

SUMMARY OF QUANTITIES (For Information Only)		
Concrete (Grade 4.0)	507.4	C.Y.
Reinforcing Steel (Gr. 60)	104,000	Lbs.
Foundation Stabilization	170	C.Y.
Class III Excavation	372	C.Y.
Concrete for Seal Course	84	C.Y.
Granular Backfill (Wingwalls)	46	C.Y.

⧗ For design purposes ONLY. Do NOT use for Construction — CULVERT SUMMARY — ◔ includes any apron welded wire fabric

Floor El. Lt.-Upstream	Floor El. Bend	Floor El. Rt.-Downstream	Crown Gr. Elev.	⧗ Design Fill Ht.	Skew	North End Wingwalls	South End Wingwalls	Scour Apron	Soil Saver	Concrete Barrel (Cu.Yds.)	Concrete Wings (Cu.Yds.)	Concrete Total (Cu.Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	Reinf. Steel (Gr. 60) ◔ Wings (Lbs.)	Reinf. Steel (Gr. 60) Total (Lbs.)
1346.00	1345.20	1344.90	1355.89	0	0	FLARED	FLARED	North End	YES	470.99	36.45	507.43	100,226	3,772	103,999

BAR SCHEDULE

F1 Size	F1 Spa.	F1 No.	F1 Length	F2 Size	F2 Spa.	F2 No.	F2 Length	F3 Size	F3 Spa.	F3 No.	F3 Length	F4 △ Size	F4 △ Spa.	F4 △ No.	F4 △ Length
5	6"	1768	15'-3"	5	12"	192	53'-0"	5	12"	96	43'-6"	5	12"	32	10'-0"

BAR SCHEDULE — △ See Bending Diagram

S1 Size	S1 Spa.	S1 No.	S1 Length	S2 Size	S2 Spa.	S2 No.	S2 Length	S3 Size	S3 Spa.	S3 No.	S3 Length	S4 △ Size	S4 △ Spa.	S4 △ No.	S4 △ Length	W1 Size	W1 Spa.	W1 No.	W1 Length	W2 Size	W2 No.	W2 Length	W3 Size	W3 No.	W3 Length	W4 △ Size	W4 △ No.	W4 △ Length	HG1 Size	HG1 No.	HG1 Length	HG2 △ Size	HG2 △ Spa.	HG2 △ No.	HG2 △ Length	HG3 △ Size	HG3 △ Spa.	HG3 △ No.	HG3 △ Length	HG4 △ Size	HG4 △ Spa.	HG4 △ No.	HG4 △ Length
5	6"	1768	15'-3"	5	12"	168	53'-0"	5	12"	84	43'-6"	5	12"	28	10'-0"	5	9"	1746	5'-1"	5	66	53'-0"	5	33	43'-6"	5	11	10'-0"	6	10	15'-3"	6	9"	21	4'-5"	6	9"	21	4'-8"	6	9"	42	4'-1"

CITY OF WICHITA

EAST KELLOGG
R.C.B. BARREL DETAIL
4 FT. RISE
BR. NO. 54-87-32.86 (827) STA. 560+09.53

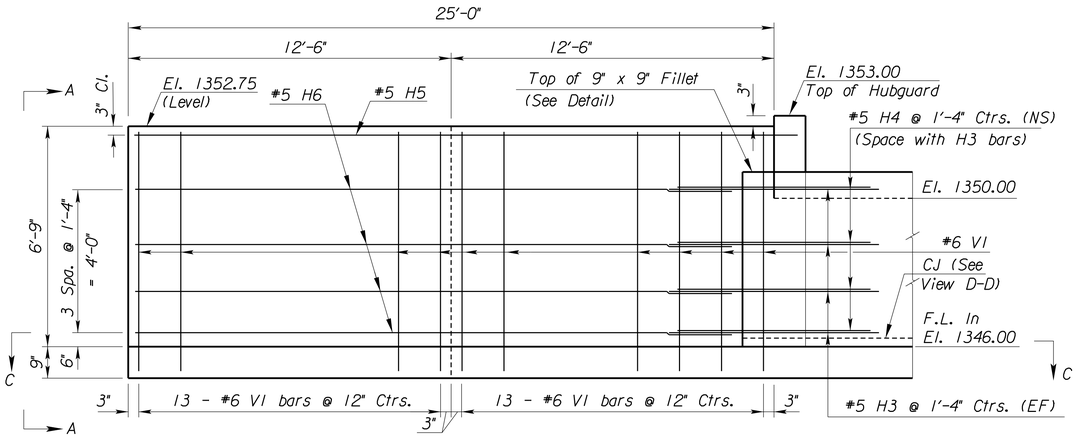
370

9:49:21 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Culverts\EK1KBB01A.dgn

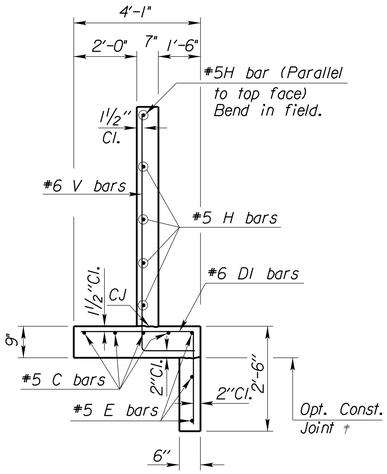
SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	371	1055

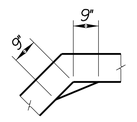
NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint

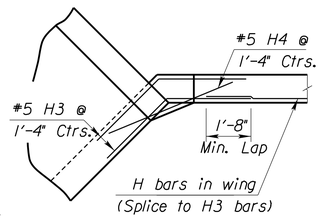


ELEVATION OF LONG WINGWALL
(Backface shown. Use C2 & E2 bars in this wingwall.)

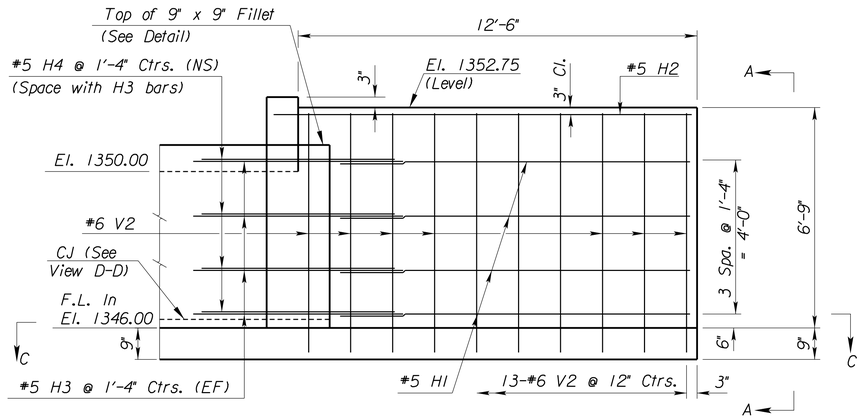


SECTION A-A

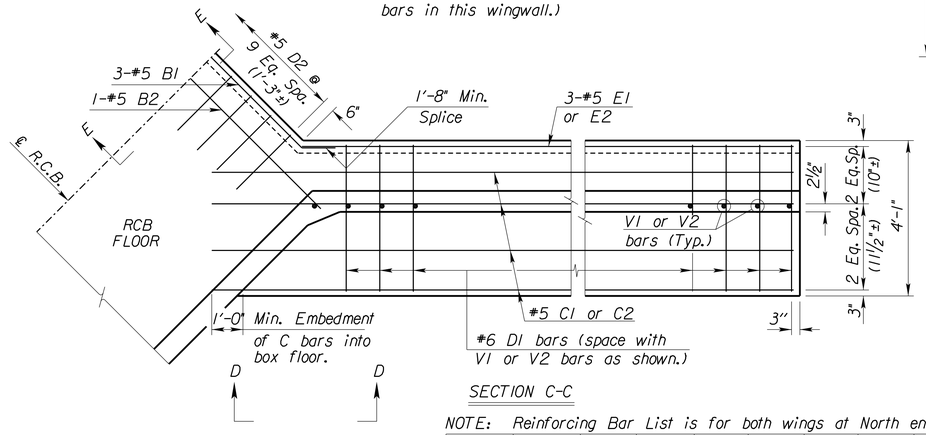




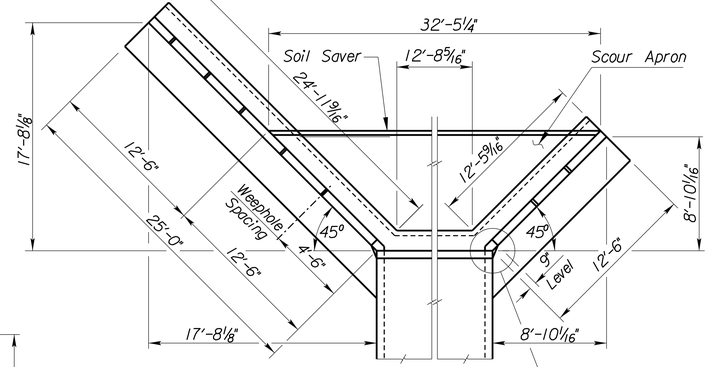
DETAIL OF 9" x 9" FILLET
(Plan View)



ELEVATION OF SHORT WINGWALL
(Backface shown. Use C1 & E1 bars in this wingwall.)

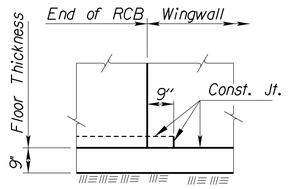


SECTION C-C

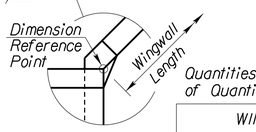


NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

See "RCB Aux. Details" sheet for requirements of Wingwall Subbase.



VIEW D-D



WING DIMENSIONS FOR NORTH END
FLARED WINGWALLS
4 FT. RISE, 45° ROTATE, LT.

NOTE:
The work outlined on this sheet shall be part of the bid item "Pipe, SWS, RCBC (2-7'x4').

GENERAL NOTES

UNIT STRESSES: Grade 4.0 Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.

CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾ inch triangular moulding.

REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted.

QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.

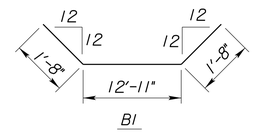
APRON: A 5" concrete slab shall be constructed between the downstream wings in locations subject to scour only when specified on the plans or by the Engineer. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6x6-W6xW6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)

BACKFILL MATERIAL: Soils judged as high plasticity clays, fat clays, expansive clays, or organic clays are unsuitable for backfill material for wingwalls and will not be used. Where these conditions exist, use Granular Backfill (Wingwalls).

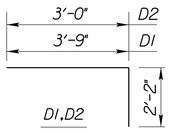
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

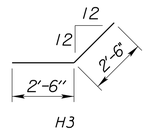
† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. DI bars or mesh may be spliced thus: ⌐ Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

SECTION E-E

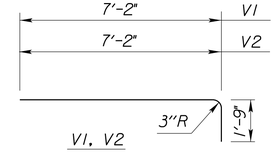


B1





H3



V1, V2

NOTE: Reinforcing Bar List is for both wings at North end of box. * See Bending Diagram

0° Skew		#5B1	#5B2	#5C1	#5C2	#6D1	#5D2	#5E1	#5E2	#6V1	#6V2	#5H1	#5H2	#5H3	#5H4	#5H5	#5H6
	No.	3 *	1	4	4	37 *	10 *	3	3	26 *	13 *	4	1	16 *	8	1	4
	Length	16'-3"	15'-5"	15'-3"	27'-9"	5'-11"	5'-2"	12'-5"	24'-11"	8'-11"	8'-11"	11'-4"	13'-0"	5'-0"	3'-0"	25'-6"	23'-10"

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES - NORTH END (For Information Only)		
	Foundation Stabilization (C.Y.)	Concrete (Gr. 4.0) (C.Y.)
Wingwalls	4.51	12.19
Apron	2.68	4.24
Soil Saver	-	9.07
Reinforcing Steel (Gr. 60)		2,285 Lbs.
Welded Wire Fabric		129 Lbs.
Structural Steel Grate		1 EA.
Granular Backfill (Wingwalls)		26 C.Y.

BENDING DIAGRAM
(All dimensions are out to out of bars.)

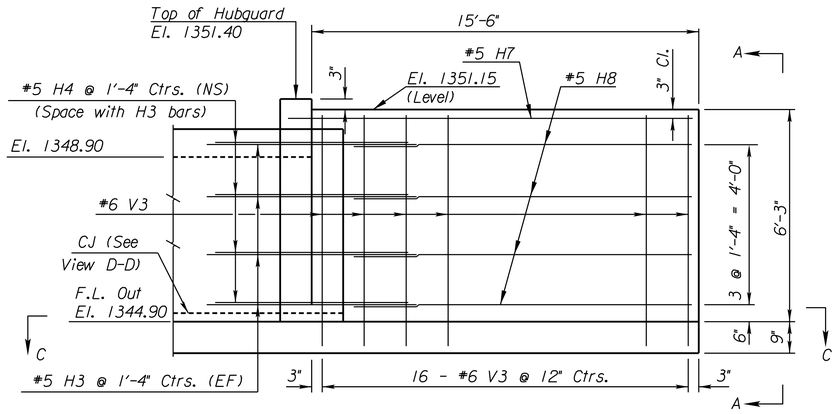
CITY OF WICHITA
EAST KELLOGG
FLARED WINGWALLS
4 FT. RISE, 45° ROTATE, LT.
STA. 560+09.53, LT.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

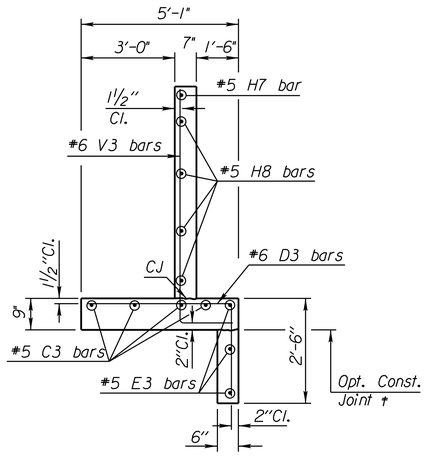
9:49:24 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Culverts\EKIKBW01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	372	1055

NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint

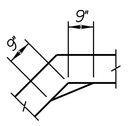


ELEVATION OF WINGWALL
(Backface Shown)

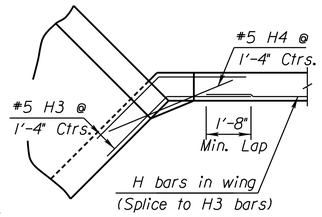


SECTION A-A

See "RCB Aux. Details" sheet for requirements of Wingwall Subbase.



Fillet Detail



DETAIL OF 9" x 9" FILLET
(Plan View)

GENERAL NOTES

UNIT STRESSES: Grade 4.0 Concrete: f'c = 4,000 p.s.i.
Reinforcing Steel: fy = 60,000 p.s.i.

CONCRETE: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a ¾ inch triangular moulding.

REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted.

QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.

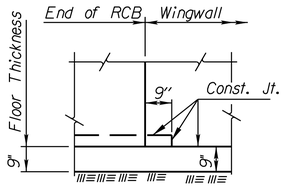
APRON: A 5" concrete slab shall be constructed between the downstream wings in locations subject to scour only when specified on the plans or by the Engineer. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6x6-W6xW6 welded wire fabric and shall be classified as pounds of reinforcing and included in the total quantity for the bid item Reinforcing Steel (Gr. 60)

BACKFILL MATERIAL: Soils judged as high plasticity clays, fat clays, expansive clays, or organic clays are unsuitable for backfill material for wingwalls and will not be used. Where these conditions exist, use Granular Backfill (Wingwalls).

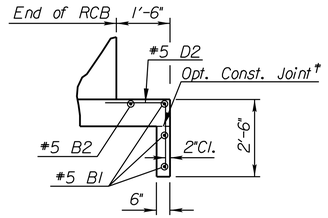
FOUNDATION STABILIZATION: Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. DI bars or mesh may be spliced thus: ⌐¬ Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

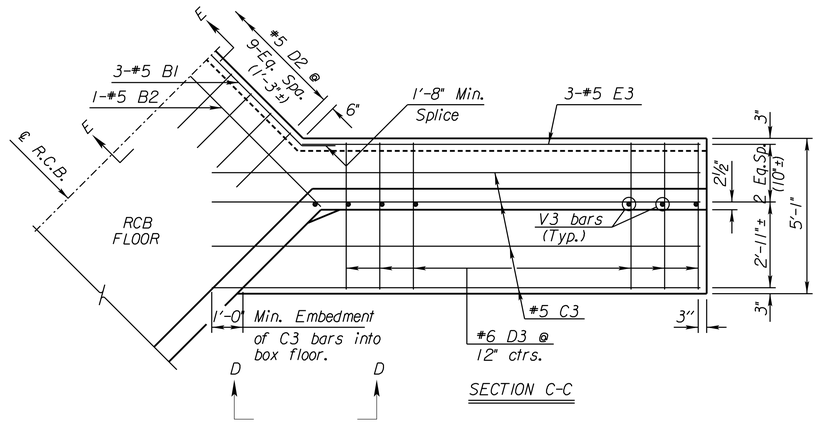
NOTE:
The work outlined on this sheet shall be part of the bid item "Pipe, SWS, RCBC (2-7'x4').



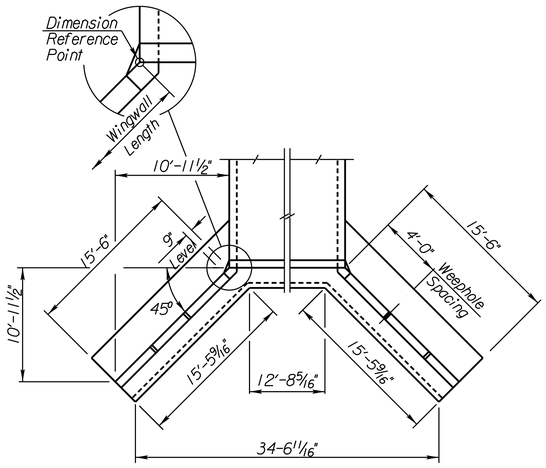
VIEW D-D



SECTION E-E

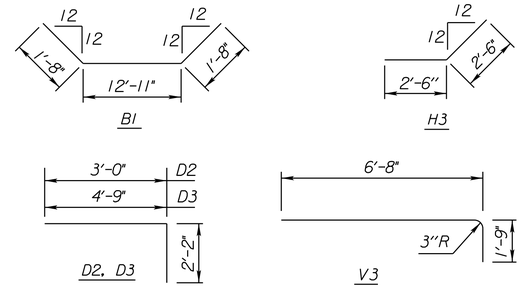


SECTION C-C



WING DIMENSIONS FOR SOUTH END

NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.



BENDING DIAGRAM
(All dimensions are out to out of bars.)

NOTE: Reinforcing Bar List is for both wings at South end of box. * See Bending Diagram

	Bar	#5BI	#5B2	#5C3	#5D2	#6D3	#5E3	#6V3	#5H3	#5H4	#5H7	#5H8
0° Skew	No.	3 *	1	8	10 *	30 *	6	32 *	16 *	8	2	8
	Length	16'-3"	15'-3"	19'-6"	5'-2"	6'-11"	15'-5"	8'-5"	5'-0"	3'-0"	15'-11"	14'-6"

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

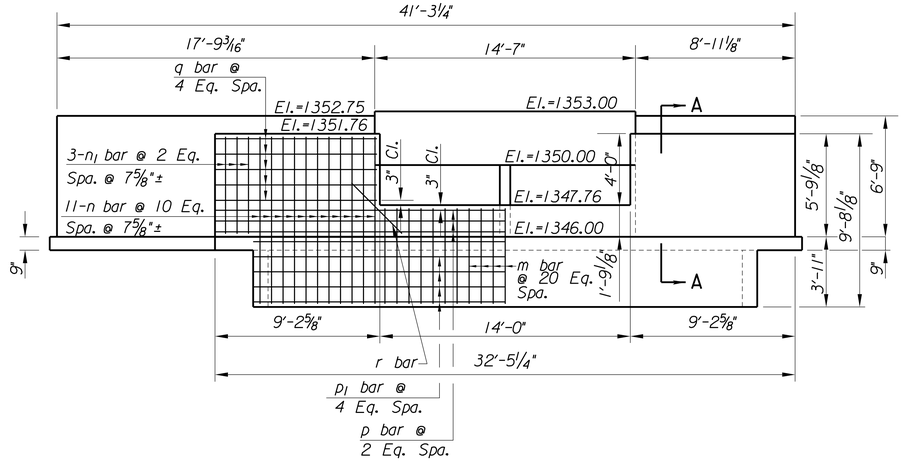
WINGWALL QUANTITIES - SOUTH END (For Information Only)		
	Foundation Stabilization (C.Y.)	Concrete (Gr. 4.0) (C.Y.)
Wingwalls	4.55	10.95
Reinforcing Steel (Gr. 60)		1359 Lbs.
Granular Backfill (Wingwalls)		20 C.Y.

CITY OF WICHITA
EAST KELLOGG
FLARED WINGWALLS
4 FT. RISE
STA. 560+09.53, RT.

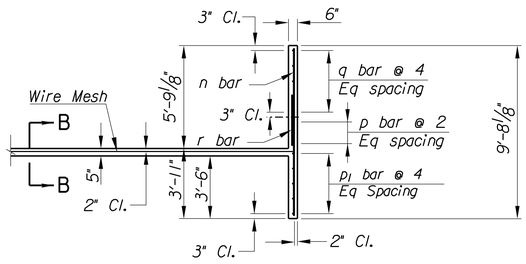
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:49:28 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Culverts\EKIKBW02A.dgn

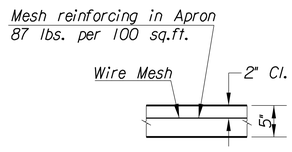
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	373	1055



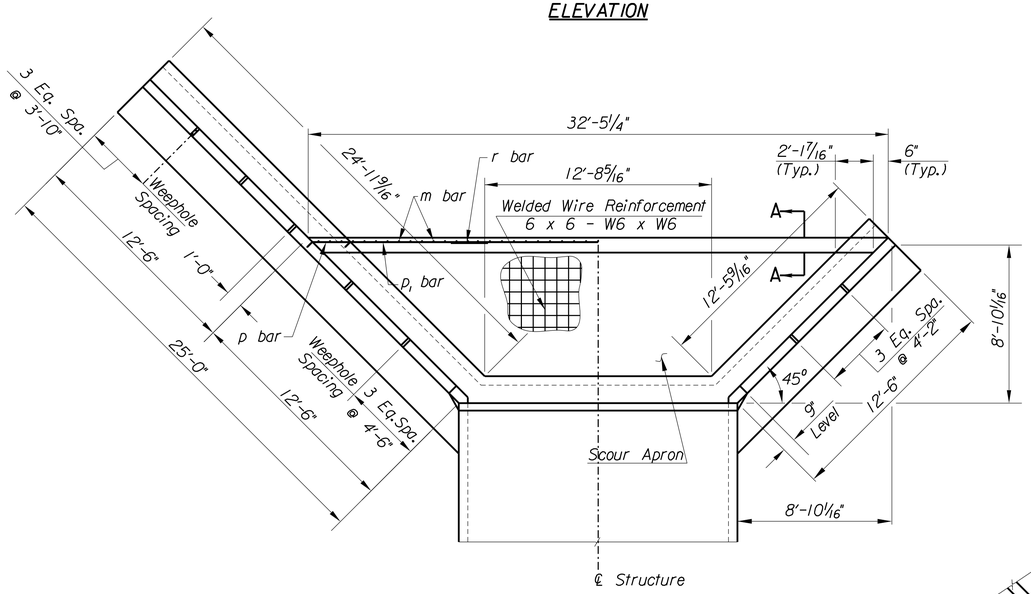
ELEVATION



SECTION A-A



SECTION B-B



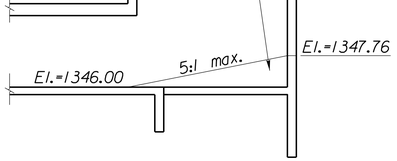
PLAN OF WING DIMENSIONS

Quantities listed below are included in the Summary of Quantities shown on the wingwall Quantities - North End.

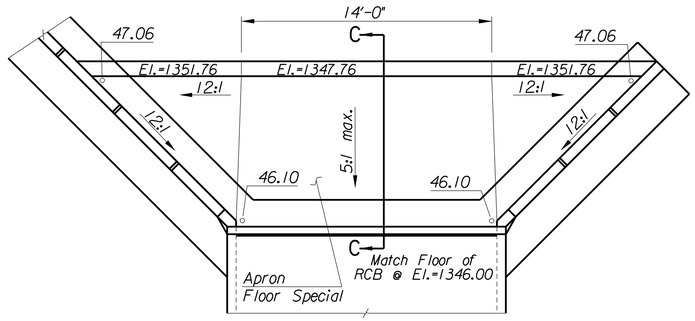
SOIL SAVER AND APRON QUANTITIES - NORTH END
(For Information Only)

STATION				SIDE						
Bar	m	n	n_1	p	p_1	q	r	Sq. Ft. WWR	148.1	Sq.Ft.
Number	21	22	6	3	5	10	2	Grade 4.0 Conc.	9.1 *	Cu.Yd.
Length	5'-4"	9'-4"	5'-5"	32'-9"	28'-7"	9'-3"	4'-0"	Reinf. steel	721 *	Lbs.

* Soil saver quantities only.



SECTION C-C



PLAN OF APRON FLOOR SPECIAL

Ø Angle varies according to skew of RCB. Bars shall be field bent.

BENDING DIAGRAMS

GENERAL NOTE

CONCRETE: Concrete Grade 4.0 shall be used throughout. All exposed edges shall be finished with an edging tool.

REINFORCING: All dimensions are to CL of bar except where noted. All reinforcing bars are No. 5. Reinforcing bars shall be Grade 60 billet steel.

- Minimum clearance on all reinforcement shall be 2".
- Welded wire reinforcement shall be paid as pounds of reinforcing steel.
- When holes in the apron are warranted by drainage conditions they shall be constructed as directed by the Engineer.

APRON FLOOR SPECIAL: Shape apron floor with 8 sack sand mix concrete to create flow channel and to increase hydraulic efficiency such that structure will be self cleaning. Top of invert to match top of wall opening at 1347.76, and slope at max. grade of 5 to 1.

▲Drill and grout p and q bars into wingwalls and p_1 bar into wing footings when the soil saver end wall is constructed separately from the wingwalls. Drilling and grouting shall be Subsidiary to the bid item "Reinforcing Steel".

NOTE:
The work outlined on this sheet shall be part of the bid item "Pipe, SWS, RCBC (2-7'x4').

SUMMARY OF SOIL SAVERS				
Station	Culvert Size	Side	Z	Skew
560+09.53	2-7x4	Lt.	1.76	0

NOTE:
1. In areas of "Slope to Drain" slopes will vary.
2. Adjust weep hole to clear proposed apron floor special.

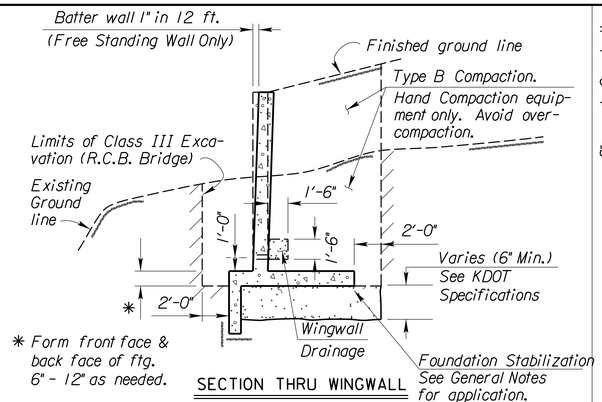
CITY OF WICHITA

EAST KELLOGG
SOIL SAVER
FOR R.C. CULVERTS
STA. 560+09.53, RT.

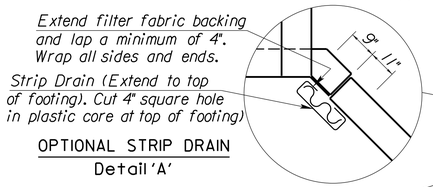
SURV.	--	PLOT	--	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:49:32 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Culverts\EKIKBSTR01A.dgn

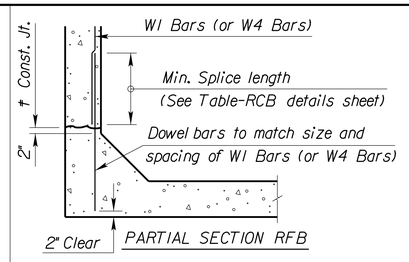
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	374	1055



SECTION THRU WINGWALL



OPTIONAL STRIP DRAIN
Detail 'A'



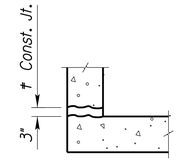
PARTIAL SECTION RFB

OPTIONAL BAR DETAIL

The Contractor shall have the option of using Dowel Bars to match vertical wall bars as shown, however no allowance will be made for additional steel required for bar laps.

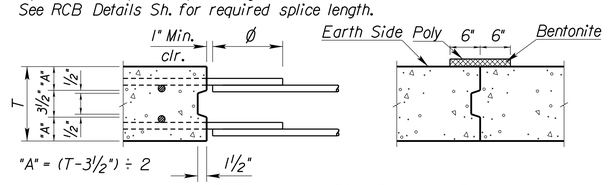
† OPTIONAL COLD JOINT

The Contractor has the option of placing the Lower Horizontal Construction Joint at the top of the slab for RCB's or at the top of the fillet for RFB's



PARTIAL SECTION RCB

Ø Longitudinal bars shall extend through the joint to provide a minimum lap equal to the required splice length. See RCB Details Sh. for required splice length.

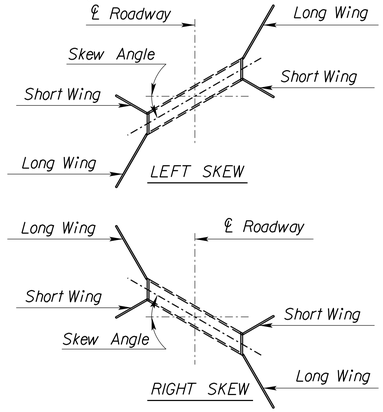


VERTICAL CONSTRUCTION JOINTS

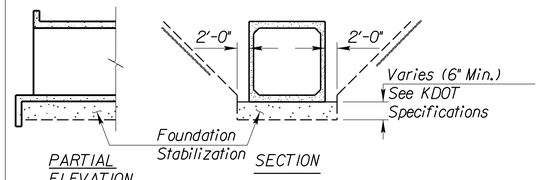
NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

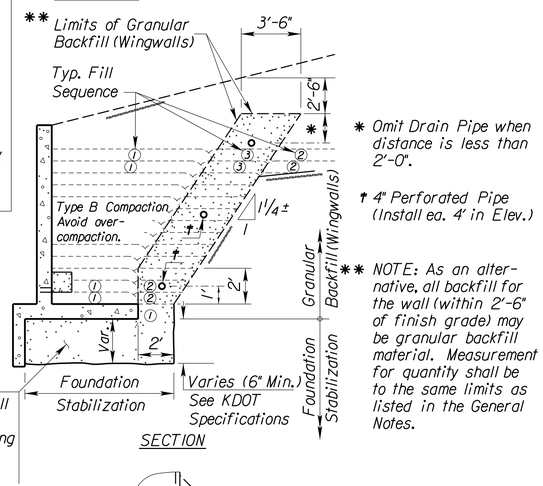
NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls and top slab. See requirements for bentonite in the KDOT Specifications for "Bridge Backwall Protection System". Material and installation of the bentonite system shall be subsidiary to the bid item "Grade 4.0 Concrete".



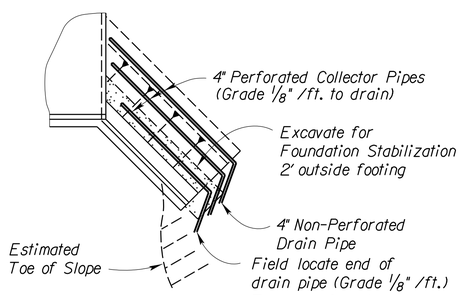
PLAN VIEW SKEWED R.C.B.



PARTIAL ELEVATION — SECTION

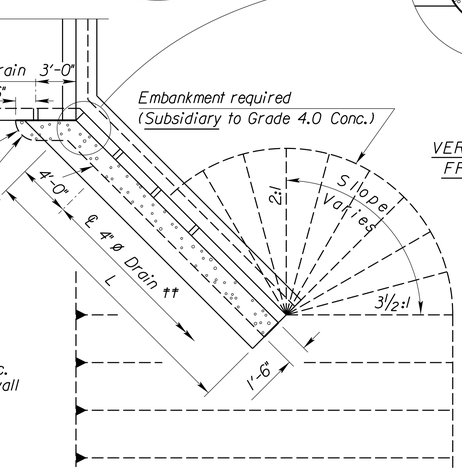


SECTION



PLAN

GRANULAR BACKFILL AND FOUNDATION STABILIZATION

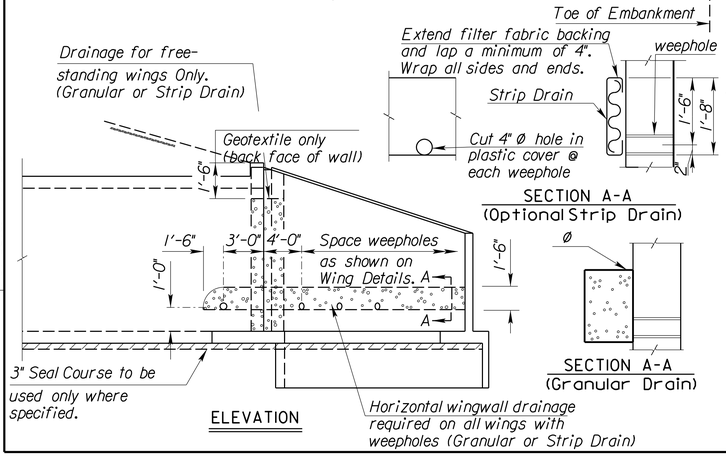


WINGWALL PLAN

†† See wingwall detail sheet for drain spacing.

Ø Completely wrap granular material with geotextile fabric. Extend Geotextile to top of wall along back face of wall.

VERTICAL WINGWALL DRAINAGE FOR FREE-STANDING WINGWALLS ONLY



SECTION A-A (Optional Strip Drain)

SECTION A-A (Granular Drain)

ELEVATION

GENERAL NOTES

Wingwall Drainage:

1. All wingwalls with weepholes shall have horizontal wingwall drainage as shown. Free-standing wingwalls shall also have the vertical wingwall drainage. Strip drains may be used in lieu of aggregate. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.
2. Construction and materials for wingwall drainage, including weepholes, geotextile fabric, granular material, and strip drain shall be subsidiary to the bid item, "Grade 4.0 Concrete". Granular material for wingwall drainage shall conform to the requirements of UD-1. Weepholes may be a formed opening or corrugated polyethylene tubing.

Wingwall Foundation Stabilization:

The Foundation Stabilization quantity has been calculated to the limits shown in the Section Thru Wingwall. The depth may be increased by the Engineer. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Seal Course:

1. Seal Course consisting of 3" min. of Commercial Grade Concrete shall be constructed to the limits directed by the Engineer. No reinforcing in the floor of the slab or wall footing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.

GENERAL NOTES

Foundation Stabilization:

The depth of Foundation Stabilization may be increased by the Engineer. The Contractor may underrun Foundation Stabilization under the barrel if founded on firm material and with the Engineer's approval. Use Foundation Stabilization on all wingwalls unless founded on rock or granular material.

Granular Backfill (Wingwalls):

1. In locations where the material behind the wingwall consist of soils judged as high plasticity clays, fat clays, expansive clays or organic clays, Granular Backfill (Wingwalls) shall be used. Granular Backfill construction may be used separately or combined with Foundation Stabilization as directed by the Engineer.
2. Measurement for the bid item, "Granular Backfill (Wingwalls)", shall be measured in Cubic Yards to the theoretical limits as shown. Drainage pipe, rodent screens, and excavation shall be subsidiary to the bid item, "Granular Backfill (Wingwalls)".
3. Material for Granular Backfill (Wingwalls) shall conform to the requirements of UD-1 or BD-1. Drainage Pipe shall be corrugated polyethylene tubing conforming to KDOT Specifications.

Note: The information shown on this sheet is for information only. All labor and materials required to construct the RCB's shall be included in their corresponding bid item.

NO.	DATE	REVISIONS	BY	APP'D
3	7/14/08	Change Type 'C' Compaction to 'B'	JPJ	KFH
2	10/16/06	Add Found. Stab. Details and Notes	JPJ	KFH
1	3/2/06	Optional Construction Joint	JPJ	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

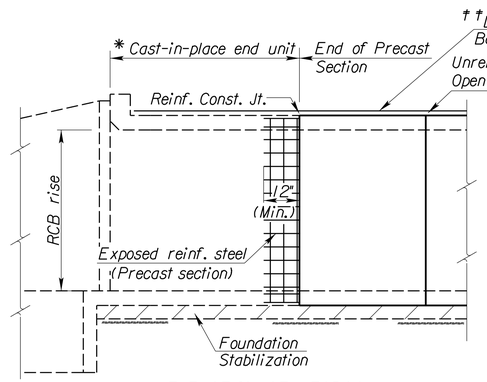
RCB AUXILIARY DETAILS (LFD)

BR020A

FHWA APPROVAL		11/01/06	APP'D	KENNETH F. HURST	
DESIGNED	RAM	DETAILED	RDR	QUANTITIES	TRACED
DESIGN CK.	RRR	DETAIL CK.	RRR	QUAN.CK.	TRACE CK.

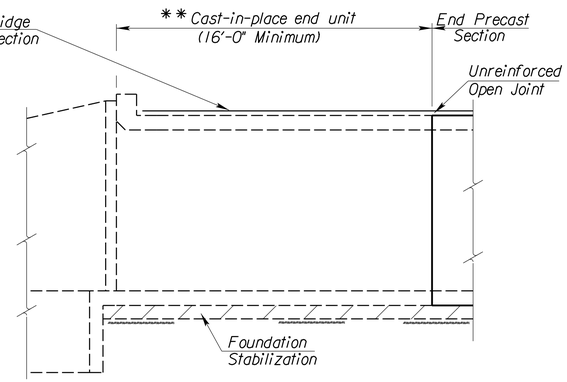
Std. Base File: br020.dgn | Plot Location: $UNIT$ | Plotted By: --- | File: T:\357654\Cadd\Sheets\Package\Standards\KDOT\EKISTDBR020A.dgn | Plot Date: 4/17/2015

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	375	1055



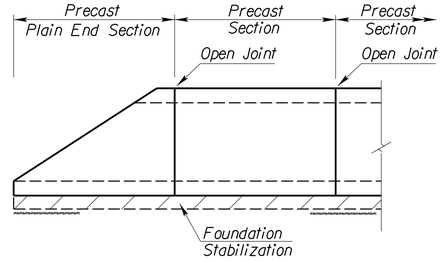
ELEVATION AT HEADWALL

* Minimum barrel length of cast-in-place end unit shall equal the RCB rise or 8'-0", whichever is less. This length can be used when the joint between the cast-in-place end unit and the pre-cast section is reinforced as shown.



ELEVATION AT HEADWALL

** Minimum barrel length of cast-in-place end unit shall be 16'-0" when using an unreinforced open joint at the end of the precast section.



ELEVATION AT PRECAST END SECTION

(Precast End Sections are permitted where straight wings are shown in the plans or at the downstream end for single cell RCB with a rise of six feet or less.)

NOTE: See "Bridge Excavation" sheet, (Std. No. BR100), for excavation details and basis of payment.

NOTE: Minimum length of precast section shall be 4'-0".

NOTE: A single cell box of equivalent area may be substituted for a double cell box with cell spans less than or equal to 6'-0". Any revision in the cell height from that shown on the plans will not be permitted, unless approved by the Engineer. Two single cell boxes may be substituted for a double cell box, when approved by the Engineer.

NOTE: See respective RCB Standard Sheets for cast-in-place details.

NOTE: When the fill height is 2'-0" or less "Bridge Backwall Protection" is required.

GENERAL NOTES

(All Items on this sheet are subsidiary)

PRECAST BOX CULVERTS: If precast boxes are specified, construct them at the locations shown in the plans and according to the requirement shown on this sheet. When approved by the Engineer, precast box culverts may be used in lieu of cast-in-place box culverts. If the Contractor chooses the precast option, use the cast-in-place quantities as the cost basis. This cost includes all labor equipment, material and incidentals necessary to complete the installation.

Unless otherwise approved by the Engineer, use cast-in-place collars at horizontal and vertical changes in RCB alignment. Use cast-in-place end sections and wingwalls except as noted on this sheet. The Engineer may require cast-in-place sections at junctions of drainage structures.

Cast-in-place concrete work shall conform to the requirements of the KDOT Specifications and KDOT's "Guidelines for Structural Design and Detail of Reinforced Concrete Box Culverts". Use Grade 4.0 concrete and Grade 60 reinforcing steel conforming to ASTM A615 for cast-in-place construction.

Cast-in-place box sections shall have member thicknesses and reinforcement not less than the RCB Standard from the original design. Connections between the cast-in-place and precast members shall be drilled and grouted according to details shown on this sheet. When the wall thicknesses differ between the cast-in-place and precast, transition at a 4:1 without reducing the box opening size. See KDOT Specifications for further requirements.

SPECIFICATIONS: Single-cell Precast Concrete Box Culverts shall conform to the requirements of the following specifications except as noted in the KDOT Specifications. Design multiple-cell precast boxes in accordance with the criteria used to develop the single-cell precast boxes. (See Appendix of ASTM Specification C 1577-08, Table 2 and the latest AASHTO LRFD Specifications.)

DISTRIBUTION SLAB: Fill heights less than 2 feet require a distribution slab. Construct the distribution slab over the width of the exterior walls of the barrel to the outside edges of the roadway shoulders. Terminate the slab a minimum of 2 feet from the edge of a barrel segment.

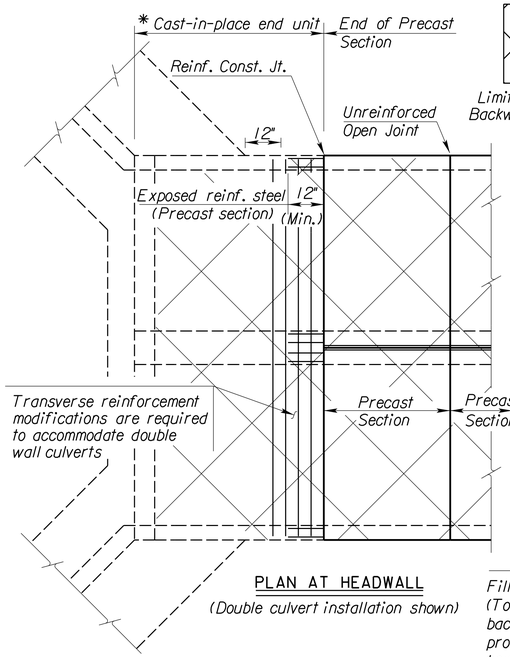
If the fill height is less than or equal to one foot then:

A distribution slab shall be a minimum of 6 inches thick, reinforced with #4 bars spaced at 18 inches, placed perpendicular to centerline of the box and with #5 bars spaced at 12 inches, placed parallel to centerline of the box. Substitution of an equivalent welded wire fabric is acceptable. Place a min. of 3" of granular material between the box and slab.

If the fill height is greater than one foot then:
(Use one of the following options)

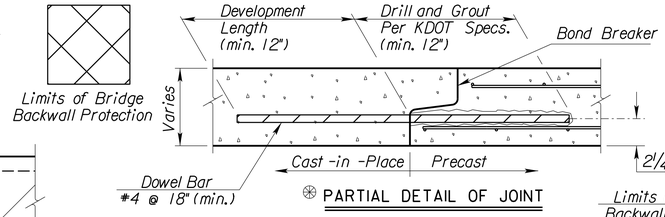
1) Use the cast-in-place criteria above.
2) Use precast distribution slabs with same criteria as the cast-in-place above. Center the joints in slabs over the box segments. Provide a minimum of 3 inches of granular material between the box and the slabs.
3) Reinforced concrete pavement (min. 6 inches thick) will meet the requirements of a distribution slab. Reinforce as noted above. Provide a minimum of 3 inches of granular material between the concrete pavement and the precast boxes.
4) Asphalt pavement (min. 6 inches thick) will meet the requirements of a distribution slab. Provide a minimum of 6 inches of granular material between the asphalt and the precast boxes. Also provide geogrid with 4" of cover to the asphalt within the granular material.

A special design will be required when the above options are not geometrically possible.

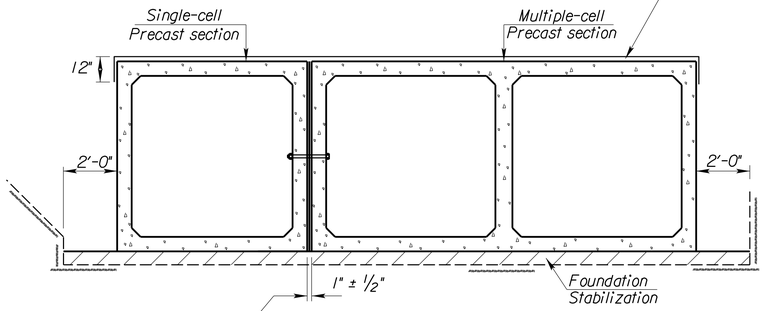


PLAN AT HEADWALL

(Double culvert installation shown)



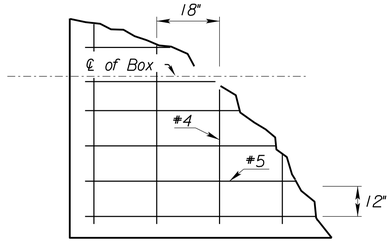
⊛ PARTIAL DETAIL OF JOINT



TYPICAL INSTALLATION DETAILS

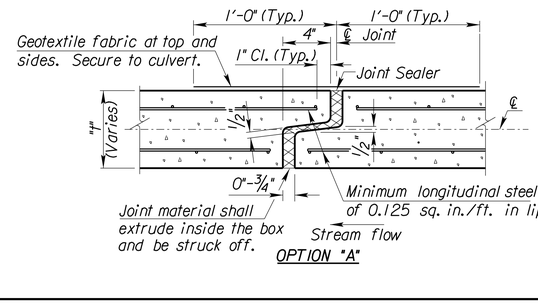
⊛ Bridge Backwall Protection not shown for clarity

Fill space between boxes with grout. (To maintain proper joint gap, partially backfill boxes prior to grouting or provide a mechanical connection between boxes.)

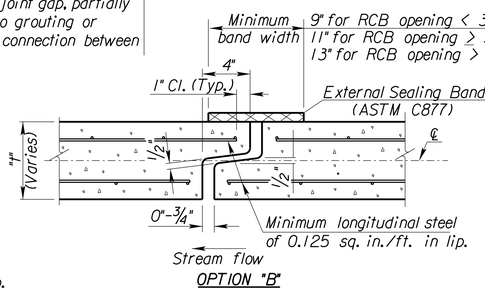


CAST IN PLACE DISTRIBUTION SLAB

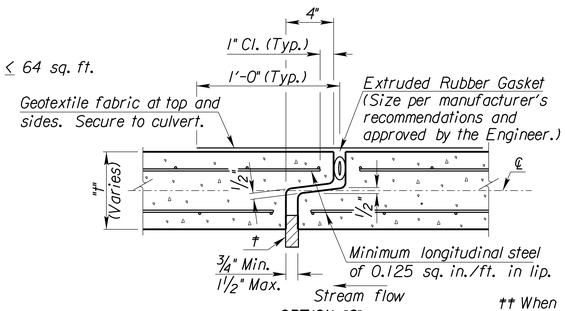
(Partial plan of reinforcement)



OPTION "A"



OPTION "B"



OPTION "C"

† Insert temporary, 3/4"-1" wide, hardwood wedges to prevent over-compressing gasket.

⊛ OPEN JOINT DETAIL

†† When shown on the shop details use a Bridge Backwall Protection conforming to Section 1700 of the KDOT Specifications.

NO.	DATE	REVISIONS	BY	APP'D
5	08-19-13	Edit Geogrid Placement	JPJ	TLF
4	07-28-11	Added Bridge Backwall Protection	JPJ	KFH
3	03-10-10	Clarification of Extension	JPJ	KFH
2	12-03-09	Revised ASTM / Added Note	JPJ	LRR
1	4-07-09	Clarified Distribution Slab	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT DETAILS

BR031

FHWA APPROVAL		9-20-11	APP'D	KENNETH F. HURST
DESIGNED	DETAILED PF		QUANTITIES	CADD
DESIGN CK.	DETAIL CK. RAM		QUAN.CK.	CADD CK.

Std. Base File: br031.dgn
Plotted By: --
Plot Location: $UNIT$
File: T:35765A\Cadd\Sheets\Packages\Standards\KDOT\EK\STDBR031A
Plot Date: 4/17/2015

Revised Plans

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	376	1055

SUMMARY OF QUANTITIES

Item / Location	Excavation Class III (C.Y.)	Concrete Grade 4.0 (AE) (C.Y.)	Concrete Grade 4.0 (AE)(SA) (C.Y.)	Reinforcing Steel (Grade 60) (Epoxy Coated) (Lbs.)	Structural Steel ◔ASTM A709 (Gr. 50) (Lbs.)	Structural Steel AASHTO M270 (Gr. 50 T3) (Lbs.)	Welded Stud Shear Connectors (Each)	Bearing (Steel Reinforcing Elastomeric) (Each)	Drilled Shaft (42") (Cased) (L.F.)	Sonic Test (Drilled Shaft) (Set Price) (Each)	Core Hole (Investigative) (L.F.)	Portland Cement Concrete Overlay (1.50") (S.Y.)	Bridge Backwall Protection System (S.Y.)	Abutment Strip Drain (S.Y.)	Substructure Waterproofing Membrane (S.Y.)	Bridge Deck Grooving (S.Y.)	Falsework Inspection (Lump Sum)	Drilling and Grouting (Each)	Concrete Masonry Surface Treatment (S.Y.)	Tiebacks (Each)	9½" Curb (L.F.)	Colored Stamped Conc. (4" Unif.) (AE)(Plain) (S.Y.)	Colored Stamped Conc. (9½" Unif.) (AE)(Reinf.) (S.Y.)	Concrete Sidewalk (9½") (Reinf.) (S.F.)	Bridge Handrail (Metal) (3'-6") (L.F.)	Temporary Shoring (Lump Sum)
Abutment #1	1,421	572.0	-	60,391	-	-	-	34	1,728.7	1	57.2	-	316.3	548.6	63.9	-	-	-	514.1	90	-	-	-	-	-	-
Abutment #2	1,421	572.1	-	58,677	-	-	-	34	1,728.6	1	-	-	316.3	548.7	63.9	-	-	-	515.9	90	-	-	-	-	-	-
Substr. Total	2,842	1,144.1	-	119,068	-	-	-	68	3,457.3	2	57.2	-	632.6	1,097.3	127.8	-	-	-	1,837	180	-	-	-	-	-	1
Superstr. Total	-	-	1,819.3	465,436	2,137	~~1,833,595~~ 1,851,886 ⚠	13,890	-	-	-	-	2,950	-	-	-	2,886	1	554	-	-	289.0	35.9	315.3	1,794.2	397.8	-
Total	2,842	1,144.1	1,819.3	584,500	2,137	~~1,833,595~~ 1,851,886 ⚠	13,890	68	3,457	2	57	2,950	633	1,097	128	2,886	1	554	1,837	180	289	36	315	1,794.2	398	1

◔ AASHTO M270 (Gr. 50 T3) may be substituted for all structural steel, at no increased cost to the Owner.

TRAFFIC DATA	
ADT (2010)	19,000
ADT (2040)	32,500
DHV	10%
D	60/40
T	8%

CONTRACTOR CONSTRUCTION STAKING: Contractor Construction Staking for clear span bridges requires two independent surveys. See KDOT Specifications.

NOTE:
Bridge is designed for lane configuration shown on these plans. Revisions to lane configuration, especially increasing from 1 to 2 lanes in the exterior U-Turns, must be structurally evaluated by an Engineer.

Special permit trucks shall not use U-Turns without prior permit from KDOT.

DESIGN DATA

DESIGN SPECIFICATIONS:
AASHTO Specifications, 7th Edition and 2015 Interim Specifications, Load and Resistance Factor Design.

DESIGN LOADING:
HL-93
Design Dead Load includes an allowance of 15 psf for a future wearing surface.

UNIT STRESSES:

Concrete (Grade 4.0)	f'c = 4.0	ksi
Concrete (Grade 4.0)(AE)	f'c = 4.0	ksi
Concrete (Grade 4.0)(AE)(SA)	f'c = 4.0	ksi
Reinforcing Steel (Grade 60)	fy = 60	ksi
Structural Steel (Grade 50)	Fy = 50	ksi

LRFD DESIGN DRILLED SHAFT LOAD:

Design Loading (tons/shaft)	Strength I	Service I		Strength Phi	Service Phi
Abutment 1	183	134	End Bearing	0.4	1.0
			Side Friction	0.4	1.0
Abutment 2	183	134	End Bearing	0.4	1.0
			Side Friction	0.4	1.0

Loads include vertical component of tieback stressing.

Index of Bridge Sheets	
Sheet No.	Sheets
376	Index of Sheets & Quantities
377	General Notes I
378	General Notes II
379	Contour Map
380	Construction Layout I
381	Construction Layout II
382	Engineering Geology I
383	Engineering Geology II
384	Abutment #1 Details I
385	Abutment #1 Details II
386	Abutment #1 Details III
387	Abutment #1 Auxiliary Details
388	Abutment #2 Details I
389	Abutment #2 Details II
390	Abutment #2 Details III
391	Abutment #2 Auxiliary Details
392	Abutment Sections
393	Miscellaneous Abutment Details
394	Drilled Shaft Details
395	Tieback Details
396	Anchor Schedule
397	Abutment Strip Drain
398	Abutment #1 Wall Patterning
399	Abutment #2 Wall Patterning
400	Bearing Details I
401	Bearing Details II
402	Girder & Support Geometric Layout I
403	Girder & Support Geometric Layout II
404	Framing Plan I
405	Framing Plan II
406	Superstructure Section I
407	Superstructure Section II
408	Girder Elevations and Details I
409	Girder Elevations and Details II
410	Girder Elevations and Details III
411	Cross Frame Details I
412	Cross Frame Details II
413	Bracing Details
414	Girder Splice Details
415	Access Manhole Door Details
416	Bearing Screen Details

Index of Bridge Sheets	
Sheet No.	Sheets
417	Abutment #1 Diaphragm Details I
418	Abutment #1 Diaphragm Details II
419	Abutment #1 Diaphragm Details III
420	Abutment #2 Diaphragm Details I
421	Abutment #2 Diaphragm Details II
422	Abutment #2 Diaphragm Details III
423	Abutment Diaphragm Sections
424	Deck Details I
425	Deck Details II
426	Deck Details III
427	Deck Details IV
428	Deck Details V
429	Deck Details VI
430	Deck Details VII
431	Deck Details VIII
432	Deck Details IX
433	Deck Details X
434	Deck Details XI
435	Deck Details XII
436	Deck Details XIII
437	Deck Details XIV
438	Utility Details I
439	Utility Details II
440	Special Bridge Rail Details I
441	Special Bridge Rail Details II
442	Special Bridge Rail Details III
443	Barrier Details I
444	Barrier Details II
445	Barrier Details III
446	Barrier Details IV
447	Barrier Patterning I
448	Barrier Patterning II
449	Barrier Patterning III
450	Bar List I
451	Bar List II
452	Bending Diagrams
	Standards
453	Standard Pile Details
454	Bridge Excavation
455	Supports and Spacers for Reinforcing Steel

⚠ 5/26/2015 Revised structural steel quantity.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

INDEX OF SHEETS & QUANTITIES

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:04:39 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKGN001A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	377	1055

GENERAL NOTES

TEMPERATURE: The design temperature for all dimensions is 60° F.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

EXCAVATION SUPPORT: The temporary support of excavation and the connection of the temporary support to the Abutment Drilled Shafts shall become the responsibility of the Contractor. Timber lagging, shotcrete, or other approved temporary support methods shall be used between the Abutment Drilled Shafts as conditions require or as directed by the Engineer. The temporary excavation support system shall be free-draining. The Contractor shall submit shop drawings for the temporary support system, sealed by a Kansas licensed professional engineer, to the Engineer for review.

The excavation and installation of the temporary excavation support system shall be performed in such a manner as to prevent any movement or caving of the excavation between the Abutment Drilled Shafts and to limit the void space behind the temporary excavation support. Any movement or caving of the excavation between the Drilled Shafts shall be immediately backfilled with a granular material. All work for the temporary excavation support system is part of the "Drilled Shaft (42")(Cased)" bid item.

BRIDGE EXCAVATION: All excavation shall be Class III. See the "Bridge Excavation" sheet for the limits of pay excavation, which will be used for the portion above the bottom of abutment cap. For quantity purposes, the Berm Elevation is considered to be 1'-0" below the Webb Road grade elevation. Excavation below the bottom of the abutment cap and in front of the nominal face of wall is included with other bid items.

BACKFILL COMPACTION: Compact backfill at the abutments. Do not compact backfill at the abutments until 7 days after superstructure concrete has been placed. If construction of superstructure deck requires compaction of the soil at the abutments, shop drawings for temporary bracing of the abutment walls is required.

DRILLED SHAFTS: Construct the drilled shafts using the cased method. A permanent casing is required. All excavation, concrete, reinforcing steel, pipes for Sonic Testing, casings, labor, and incidentals necessary to complete the shaft as shown on the details and as directed by KDOT Specifications and Project Special Provisions shall be included in the bid item "Drilled Shaft (42")(Cased)". Use Grade 4.0 Concrete in the drilled shaft. In no case shall the bottom of the drilled shaft be placed higher than the elevation shown unless otherwise directed by the Engineer.

Drill an Investigative Core Hole at the location(s) shown on the plans. See KDOT Specifications.

If the location of the top of the shaft is such that the casing cannot be overtopped to remove concrete impurities, provide extra casing length to over-pour the concrete in the shaft and chip back to the plan elevation of the top of the shaft.

The measured item for Drilled Shaft (42")(Cased) is from bottom of drilled shaft concrete to bottom of abutment cap. The casing must meet the plan requirements and is integral to the stressing operations of the tiebacks.

GEOTECHNICAL REPORT: See "Geotechnical Report Bridge at Webb Road over East Kellogg" for additional requirements and information. Report is considered part of the contract documents.

CONCRETE: Superstructure concrete is bid as Concrete (Grade 4.0)(AE)(SA). Substructure concrete is bid as Concrete (Grade 4.0)(AE). If desired, the Contractor may use Concrete (Grade 4.0) in the drilled shafts. Bevel all exposed edges of all concrete with a ¾" triangular molding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

Stamp and color the raised deck overhang adjacent to the exterior barriers as detailed on the plans and see Project Special Provisions for color selection and other details, subsidiary to the "Concrete (Grade 4.0)(AE)(SA)" bid item. See Sh's. #433-434 for limits of coloring.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or A82, and, except for the Drilled Shafts, are included in the bid item "Reinforcing Steel (Gr. 60)(Epoxy Coated)".

Where non-coated bars come in contact with epoxy coated bars, they need not be coated.

FALSEWORK PLANS: A licensed Professional Engineer shall design the falsework details. Details shall bear the seal of a licensed Professional Engineer. See the Bridge Design Manual, Section 16.1 "Review and Approval of Falsework Plans", for a listing of items to be included on the falsework plan. Submit electronic plans conforming to Section 105 of the Standard Specification with details in compliance with KDOT Specifications to the Field Engineer for review.

NOTE: Bridge span may not be supported on falsework during deck pour. Simple span steel girder bridges constructed on falsework have a history of not achieving composite action.

BRIDGE HANDRAIL (METAL)(3'-6"): Construct Bridge Handrail (Metal)(3'-6") in conformance with the plans. The pay item shown on the bridge plans includes the portion of the handrail on top of the soldier pile wall immediately adjacent to the bridge.

9½" COLORED STAMPED CONCRETE: Stamp and color the raised concrete next to the sidewalk as detailed on the plans and see Project Special Provisions for color selection and other details. 9½" Sidewalk shall be paid for as Sq. Yd. of "Colored Stamped Concrete (9½" Unif.)(AE)(Reinf.)" and includes all work and materials (including reinforcing steel and Type B Expansion Joint) required to construct the stamped colored concrete as shown on these plans. Use Concrete (Grade 4.0)(AE)(SA).

9½" CURB: 9½" Curb shall be paid for as Lin. Ft. of 9½" Curb and includes all work and materials (including reinforcing steel and Type B Expansion Joint) required to construct the curb as shown on these plans. Use Concrete (Grade 4.0)(AE)(SA) in Curb.

SIDEWALK: 9½" Sidewalk shall be paid for as Sq. Ft. of "Concrete Sidewalk (9½")(Reinf.)" and includes all work and materials (including reinforcing steel and Type B Expansion Joint) required to construct the sidewalk as shown on these plans. Use Concrete (Grade 4.0)(AE)(SA) in the sidewalk.

PERMANENT CASING: A permanent 5/16" min. thick-walled casing is required. See bridge plans and KDOT Specifications. Do not use permanent casing in the Drilled Shaft socket.

ERECTION ELEVATION CHECKS: After the abutment concrete has cured and before setting any structural steel, present verification to the Engineer that the elevations at the bearings match plan elevation (±¼"). See Abutment sheets for additonal notes regarding verification of bearing locations. Present verification to the Engineer that the elevations at all field splice locations match the elevations (±½") in the plans before any connection is fully tightened or welded. (For steel girders that are blocked on the ground, fully tighten the bolted connections prior to erection.)

BRIDGE BACKWALL PROTECTION SYSTEM: See the General Notes on the "Abutment Strip Drain" Sheet.

ABUTMENT STRIP DRAIN: See the General Notes on the "Abutment Strip Drain" sheet.

SUBSTRUCTURE WATERPROOFING MEMBRANE: Apply a Substructure Waterproofing Membrane, in accordance with KDOT Specifications, to the abutment bridge seats after the bearings are set and before the girders are erected. Apply the membrane within the limits shown on the plans to drain the bridge seat and the areas around the bearings. Repair any damage done to the membrane while the bridge is under construction. All work shall be as directed and approved by the Engineer.

BRIDGE DECK GROOVING: After the bridge overlay has cured, transversely groove the overlay in accordance with KDOT Specifications. For phased construction groove each completed phase before opening to traffic. Align the grooves from each adjacent phase across the bridge overlay without jogs or discontinuities. For skewed bridges all grooving will be perpendicular to the centerline of the bridge.

TIEBACKS: The bid item, Tiebacks, includes all material and labor for the stressing of tendons for the drilled shaft wall. Structural steel, tendons, grouting, and stressing operations are all included in this bid item. See Soldier Pile Retaining Wall Sh. #312 for additional Tieback notes.

SONIC TESTING: Equip all drilled shafts with piping to allow sonic testing to be done. Install pipes at locations shown on the plans. All wet pours and locations indicated will be tested. Also, the Engineer has the option to require sonic, non-destructive, integrity testing at any location of concern. Sonic testing shall be paid for at the unit price set for "Sonic Test" (Drilled Shaft) (Set Price). If the sonic testing indicates defective concrete in the shaft, the Engineer will measure the first sonic test for payment, and the Contractor is responsible for subsequent sonic testing of that shaft. Report test results directly to the Engineer. No work will be done above the top of drilled shaft without the approval of the Engineer.

FALSEWORK INSPECTION: This project has falsework plan requirements which are considered "Category I" by KDOT specifications. The falsework designer of record will conduct an inspection of the as-built falsework. The bid item, "Falsework Inspection" is full compensation for all materials, labor and equipment. See KDOT specifications.

UTILITY SUPPORTS: Accessories (conduits, hangers and incidentals) needed to support and carry electric systems (Westar, lighting, traffic & ITS) through the bridge are subsidiary to their respective bid items. See Lighting plans, Traffic plans, and ITS plans for specific bid items.

Accessories (conduits, hangers, and incidentals) needed to support and carry Cable electric systems through the bridge are subsidiary to the Concrete (Gr. 4.0)(AE)(SA) bid item.

The Contractor shall coordinate with the electrical subcontractor (Westar, lighting, traffic, ITS & Cable) prior to installing the conduits to allow for scheduling the installation of the items. The Contractor shall provide access to the hangers and girders, including any platform necessary for their access. All other equipment, materials and labor to install the utilities shall be provided by the electrical subcontractor.

Submit proposed utility attachment details to Engineer for review and approval prior to installation.

BEARING (STEEL REINFORCED ELASTOMERIC): Elastomeric Bearing Device shall be factory bonded to the steel sole plate by a vulcanization process. The steel sole plate is subsidiary to the bid item, "Bearing (Steel Reinforced Elastomeric)" and shall be furnished by the bearing device fabricator.

BEARING (Bearing Type Steel Reinforced Elastomeric)(Method A): Bearing devices at abutments 1 & 2 shall be fabricated with an elastomer satisfying:

- Shore A Durometer Hardness of 60
- Low Temperature Grade 3 requirements
- Type A certification for elastomeric bearing device acceptance is required
- Include design method and all material properties on shop details.

TEMPORARY SHORING: The bid item "Temporary Shoring" includes all labor and material necessary to furnish shoring at the location shown on the plans for the temporary bracing of the embankment during excavation and for the staged construction of the bridge. Maintain the temporary shoring until the Engineer authorizes its removal. The temporary shoring plans are to be designed and sealed by a registered Professional Engineer. Submit design calculations and shoring plans to the Field Engineer for review 6 weeks before work is scheduled to begin. Work shall not begin until the Engineer grants approval.

WALL FORMLINER: See Project Special Provisions for details and payment of Abutment wall and Bridge barrier aesthetic treatment.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:49:44 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKGN002A.DGN

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

GENERAL NOTES I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	378	1055

GENERAL NOTES CONTINUED

STRUCTURAL STEEL: Girder flange plates, web plates, cross frames, lateral bracing, and abutment bearing stiffeners shall meet AASHTO M270 (Grade 50 T3) requirements except as noted. All other structural steel, including channels and plates for tiebacks, shall meet ASTM A709 (Grade 50), unless noted otherwise. Contractor has the option to use AASHTO M270 (Grade 50 T3), at no additional cost to the Owner, for all structural steel members. Shop and Field Splices shall be made only where shown on the Contract Plans as a "splice" or as an "optional splice." Elimination of any "splice" may be requested. Also, the substitution of shop welded splices in lieu of the field splices shown on the plans may be requested.

PREFABRICATION MEETING: A prefabrication meeting with the Engineer, Regional Material Engineer, and Structural Material Engineer is required before any fabrication begins. Contact Curt Niehaus at (785) 296-3096 or the current KDOT material Engineer.

SHOP DETAILS: Reference blocking diagrams on the shop details to a level line running the entire length of the girder.

FABRICATION OF FIELD SPLICES: Prepare joints for the field splices in accordance with KDOT Specifications. Use Type "A" shop laydown.

FABRICATION OF WELDED SPLICES: See Figure 6.4.1-2 "Flange and Web Welded Splice Configurations" of the Bridge Design Manual. All flange splices shall be full penetration welds. Field splice welds shall be performed by someone prequalified for such work by KDOT.

WELDING: Material, Fabrication and Construction shall conform to KDOT Specifications. On the shop drawings, show a code or symbol in the tail of the weld symbol that refers to an approved, pre-qualified weld procedure.

WELDED STUD SHEAR CONNECTORS: Weld Shear Stud Connectors with automatically timed stud welding equipment connected to a suitable power source. All stud welding shall conform to KDOT Specifications. For bridges with skewed reinforcing steel, the contractor has the option to place the welded shear stud connectors parallel to the skew angle.

BOLTS: All bolts, nuts and hardened flat washers shall conform to the heavy hex structural requirements of ASTM A325, Type 1, and KDOT Specifications unless otherwise noted. Direct Tension Indicators (DTIs) are to comply with the requirements of the latest edition of ASTM F959. No allowance will be made for high strength bolts used for permanent or temporary connections. This work is subsidiary to the bid item, "Structural Steel". The number of bolts is shown for the convenience of the Contractor.

BOLTED CONNECTIONS: Secondary Member Connections: Use $\frac{3}{4}$" diameter heavy hex structural bolts for the secondary member connections where indicated. Use $\frac{13}{16}$" diameter bolt holes. Oversized and/or slotted holes, as specified in the KDOT Specifications, may be used in only one of the two members connected and must be shown in the approved shop drawings. Oversized and/or slotted holes may require additional standard hardened washers or plate washers. Report to the Engineer prior to any required field reaming that will remove more than $\frac{1}{4}$" of material from one ply of the connected parts.

Use Direct Tension Indicators (DTIs) on all high strength bolts. Place the DTI under the bolt head and turn the nut to tighten. This method is preferred whenever possible. Face the protrusions on the DTI to the underside of the bolt head. Place a hardened flat washer under the nut. See KDOT Specifications.

TEMPORARY CONNECTIONS: Provide temporary bolts in the cross frames and diagonal bracing for erection purposes. Show such proposals on the shop details. This work is subsidiary to the bid item "Structural Steel".

GIRDER FIELD SPLICES: All girder field splices shall be welded connections. No field splice bolted connections will be allowed. Welder of field splices must be KDOT prequalified. Welded field splices will be inspected by NDE methods per KDOT Specifications for welding found in Section 705, Structural Steel Fabrication.

FILLETS: Camber the steel girders for the total dead load deflection and the vertical curvature. The ordinates shown for concrete dead load deflection represent the amount of camber that should be in the girders after they are erected and bolted but prior to placing the floor forms. After the structural steel is completely erected and the falsework bents are removed, measure the camber in the field by taking a profile of each girder. Correct any variation between the actual camber and the concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the girders so that the finished floor is constructed to the theoretical grade. The minimum depth of the deck over the girder shall be $7\frac{1}{4}$" inches @ ℄ top flange, not including the fillet or overlay.

The theoretical amount of concrete required for the fillets is 60.67 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

DRILLING AND GROUTING: This item shall consist of grouting reinforcing steel, anchor bolts, tie bars, or dowel bars into the concrete, where required by the Engineer, with an epoxy grout. Follow KDOT Specifications 842 and any associated Special Provisions. Follow the manufacturer's directions for mixing, application and curing. The tools, materials, labor and incidentals necessary to complete the work shall be paid for per each by the bid item "Drilling and Grouting".

ERECTION: Bring each line of girders to the correct line, grade (or relative grade) and camber, and secure in place prior to connection of the girder field splices. Provide falsework bents as necessary to maintain the correct line and elevation. Leave the falsework bents in place until all girder splice connections are completed. Submit information which clearly shows the proposed layout and use of falsework bents. The Engineer shall approve such information prior to erection of structural steel.

ERECTION PLANS: This is a Category C Structure. Submit detailed Erection Plans to the Engineer at least 4 weeks before beginning the erection process. Portions of the submitted details shall bear the seal of a licensed Professional Engineer. Identify, on the Erection Plans, the Erection Supervisor required by KDOT Specifications. The Erection Supervisor will attend the required pre-erection meeting before these operations begin as described in KDOT Specifications. No structural erection work will begin without approved erection plans. All girders and cross bracing for the phase of construction must be fully connected prior to removal of any falsework.

DEBRIS REMOVAL: The interior of all box girders shall be cleaned of all material prior to final acceptance, subsidiary to other bid items.

PAINTING: The shop and field coats applied to Structural Steel shall conform to an inorganic zinc primer with a waterborne acrylic finish coat.

Touch-Up: Prepare and paint all bolts, nuts, studs, and other small areas of damaged paint (1 yd^2 or less), requiring touchup, with an approved organic zinc primer.

Box Girder Inside Surfaces: The inside surfaces of the box girders shall be painted with a 6 mil total (2 coats) zinc coating. One shop coat of inorganic zinc and a shop or field coat of waterborne acrylic shall be provided. The final coat shall provide a white surface for the inside of the Box Girder.

Apply the exterior finish coat to all girders as shown on Sh. #378. See Project Special Provisions for process for Color selection and additional details.

All labor and material for painting of the structural steel and concrete surface will be subsidiary to other bid items.

See KDOT Specifications for Bridge Painting.

CONTACT SURFACES: Blast clean the contact surfaces of the field splices to SSPC-SP10 and apply a 3 mil prime coat of inorganic zinc primer.

PAINTING TOP FLANGES: (Studs applied in the shop) Apply a 3 mil primer coat of an approved inorganic zinc primer to the tops of the top flanges and to the studs.

(Studs applied in the field) Shop Work - Blast clean the tops of the top flanges to SSPC-SP10 Specifications (latest Revision). Apply a minimum 1.5 mil prime coat of inorganic zinc primer to the tops of the top flanges.

Field Work - Blast clean the tops of the top flanges to SSPC-SP6 Specifications (latest Revision) before the studs are applied. After the studs are applied, blast clean the tops of the top flanges and the studs to SSPC-SP6 Specifications and paint with an approved organic zinc primer to a minimum dry film thickness of 3 mils.

4" COLORED STAMPED CONCRETE: Stamp and color the raised median as detailed on the plans and see Project Special Provisions for color selection and other details. 4" Colored Stamped Concrete shall be paid for as Sq. Yd. of "Colored Stamped Concrete (4" Unif.)(AE)(Reinf.)" and includes all work and materials required to construct the colored stamped concrete as shown on these plans. Use Concrete (Grade 4.0)(AE)(SA).

CONSTRUCTION LOADS: Limited traffic is permitted on the new sub-deck, one-course deck or any concrete overlay during the curing period; keep any exposed deck wet during the curing period. See KDOT Specifications Section 710 Tables 710-1 & 710-2 for additional information.

CONCRETE MASONRY SURFACE TREATMENT: Apply concrete masonry surface treatment to exposed portions of the abutment wall and diaphragm, including the front and bottom of abutment coping. Apply to the edge of deck and all faces of interior and exterior barriers as shown on Sh. #378. See Project Special Provisions.

PERMANENT STEEL DECK FORMS: Use Type I steel deck forms conforming to ASTM A653. Support hangers shall be a non-welded system. Do not weld to any flange. Compute the pay quantity of the concrete deck based on nominal deck dimension with no allowance for corrugations. No direct payment will be made for deck forms or any additional concrete. These items will be considered subsidiary to "Concrete (Grade 4.0)(AE)(SA)". Use permanent steel deck forms inside the girders (non-exposed area) only.

CONCRETE PLACING SEQUENCE: The sequence of placing concrete in the deck and curbs shall be as shown, or the Contractor may submit an alternate placing sequence for review. Submit the alternate placing sequence to the Engineer at the Preconstruction Conference. Include the proposed rate of concrete placement in C.Y./h, the plant capacity, placement direction, construction joint location, a description of the equipment used in placing the concrete, proposed admixtures, and the quantity of concrete in each placing segment. Any additional cost for the Contractor's alternate plan of placing concrete, including admixtures, shall be at the Contractor's expense and shall be considered subsidiary to the bid item, "Concrete (Grade 4.0)(AE)(SA)". Approval of the Contractor's alternate sequence is required prior to placement of concrete in the deck.

CONCRETE PLACING: At the Contractor's option, the finishing machine may be set normal to the centerline of the structure; however, the concrete must be placed along the skew. This requires placing concrete ahead of the finishing machine; consequently, a set retarder may be advisable. Note both requirements on any alternate placing sequence.

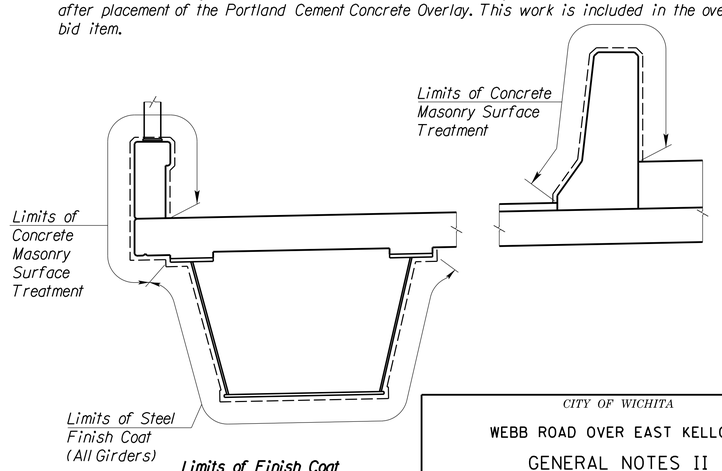
CONCRETE PLACING: Place and hand vibrate all concrete for the abutments above the construction joint to the bottom of deck elevation just prior to the normal paving train operations. Do this work in a manner to avoid cold joints in either the deck or in the abutment.

CONSTRUCTION JOINTS: Construction joints shown are required, but may be relocated with approval of the Engineer. Place the construction joints only at locations shown or at locations approved by the Engineer.

PROTECTIVE SYSTEM: Epoxy coat all reinforcing steel in the deck, sidewalks, colored stamped concrete, abutment diaphragms, caps, walls, and rails. Drilled shaft reinforcing may be non-epoxy. Place a $1\frac{1}{2}$" Portland Cement Concrete Overlay over the deck as shown on the plans.

PORTLAND CEMENT CONCRETE OVERLAY: Place a $1\frac{1}{2}$" Portland Cement Concrete Overlay over the entire deck surface except elevated overhangs, closure pour median, and under the sidewalk, stamped concrete, barriers, and curb as shown on the plans. Survey the top of the subdeck before placement of Portland Cement Concrete Overlay. Adjustments to Portland Cement Concrete Overlay thickness may be required to produce the needed cross-drainage slopes (transverse and longitudinal). The minimum depth of overlay is $\frac{3}{4}$". In some cases, grinding of the subdeck and/or overlay may be required to achieve required profiles. All such "profile grinding", including survey & additional concrete and portland cement concrete overlay, will be included in the respective Concrete and Portland Cement Concrete Overlay bid items (no extra payment will be made).

PORTLAND CEMENT CONCRETE OVERLAY CONSTRUCTION JOINTS: Clean all vertical construction joints in the overlay and the vertical joint between the overlay and the curbs by sandblasting, and then paint the joints with an approved Concrete Masonry Surface Treatment 72 hours after placement of the Portland Cement Concrete Overlay. This work is included in the overlay bid item.



CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

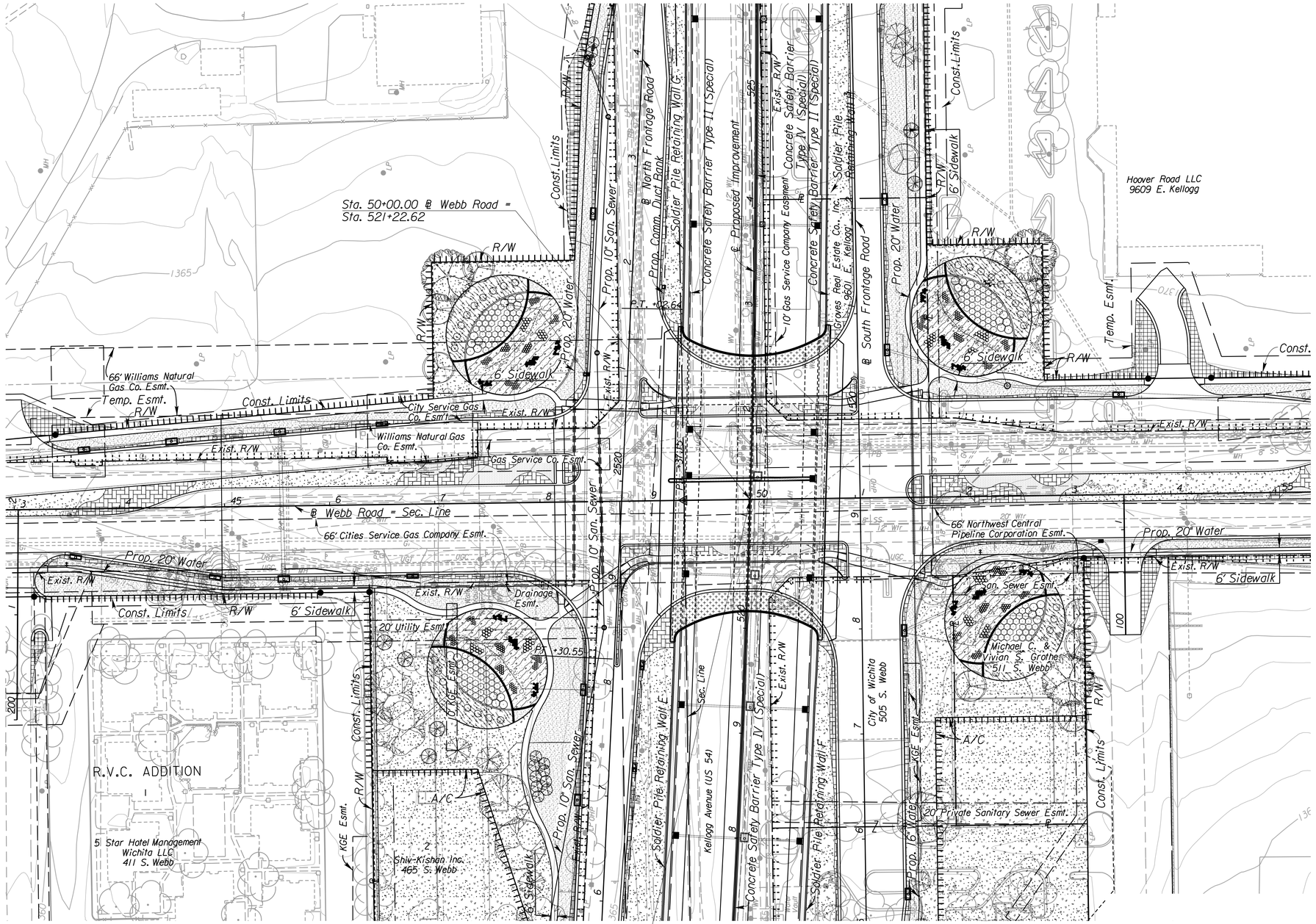
GENERAL NOTES II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:49:49 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKGN003A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	379	1055



Sta. 49+99.68
Sta. 521+22.62 Construct
Br. No. 54-87-32.12 (826)
140'-8" Welded Steel Box Girder
Spans: Drilled Shaft Bent Abutments.
241'-10" Roadway, 2°15'00" Skew Rt.

PLAN

SCALE
50' 0 50' 100'
1' Contours

℄ CURVE DATA
P.I. Sta. 521+35.05 Bk. = 521+34.08 Ahd
Δ = 5°04'00.20" (Lt.) L = 1503.33'
R = 17000.00' E = 16.63'
T = 752.15'

℄ Webb Road
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.

UTILITIES

Cable	Cox Communications
Gas1	Kansas Gas Service
Gas2	Southern Star Pipeline
Gas3	Hawker Beechcraft
Power	Westar
Sanitary Sewer	Wichita Water & Sewer
Storm Water Sewer	Wichita Water & Sewer
Telephone	AT&T
Traffic Signal	City of Wichita
Water	Wichita Water & Sewer

See Sh. No's. 179-237 for SWS Plans.
See Sh. No's. 253-256 for San. Sewer Plans.
See Sh. No's. 263-274 for Water Plans.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

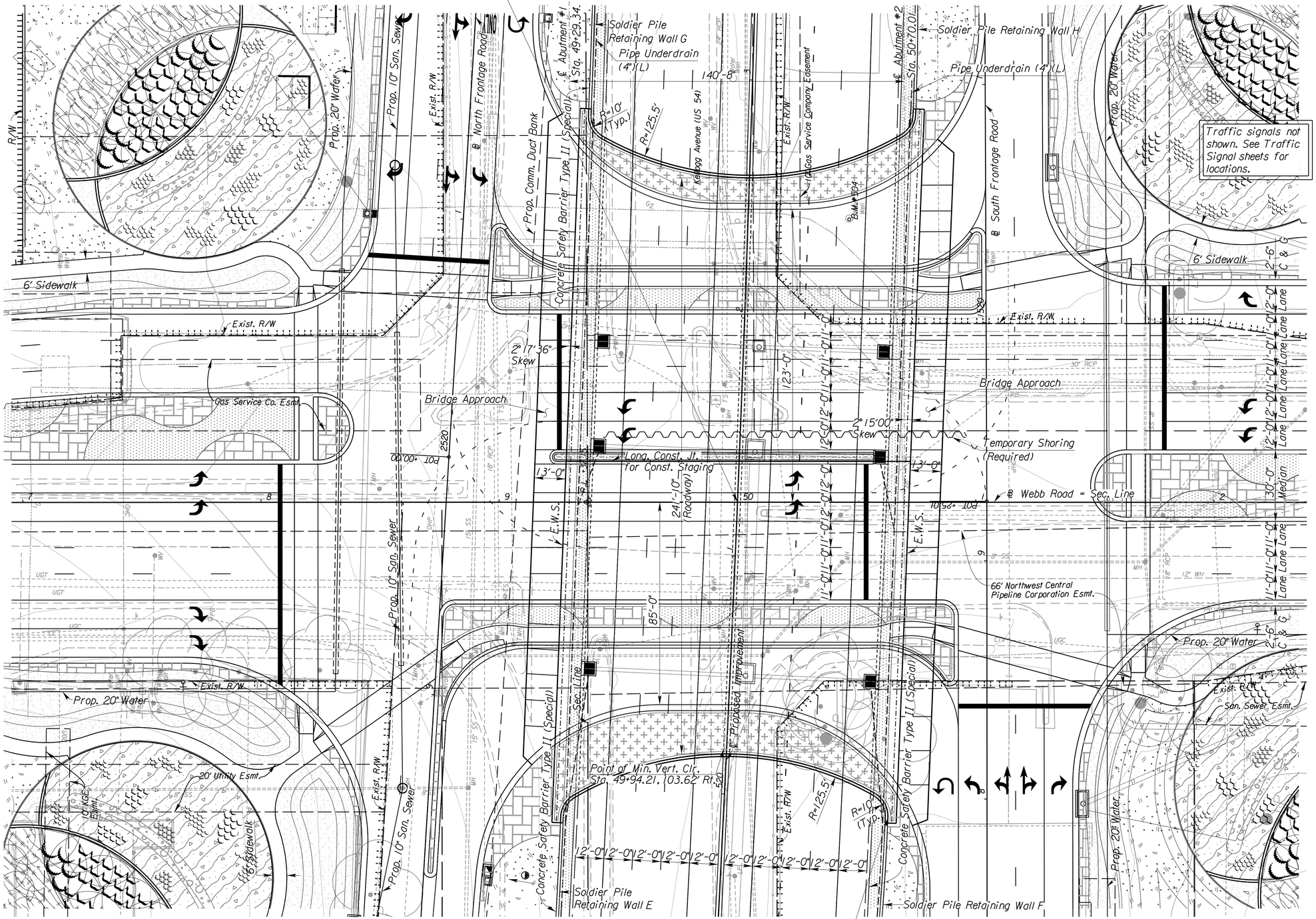
CONTOUR MAP

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:50:21 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKCTMOIA.dgn

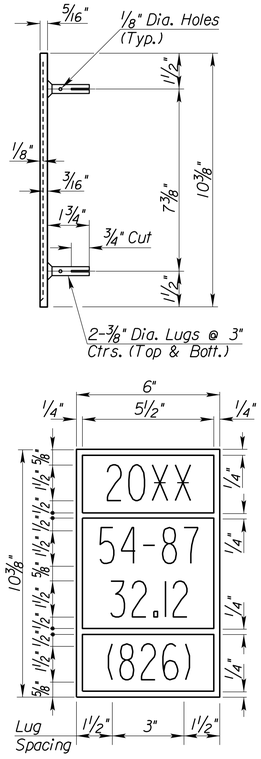
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	380	1055



SCALE
20' 0 20' 40'
1' Contours

℄ CURVE DATA
P.I. Sta. 521+35.05 Bk. = 521+34.08 Ahd
Δ = 5°04'00.20" (Lt.) L = 1503.33'
R = 17000.00' E = 16.63'
T = 752.15'

℄ Webb Road
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.



** Year Bridge is Completed

BRIDGE NUMBER PLATE
(1 Required)
(See this sheet for Location)
Place top of plate 5" below top of barrier on traffic face, centered at ℄ Sta. 520+00.

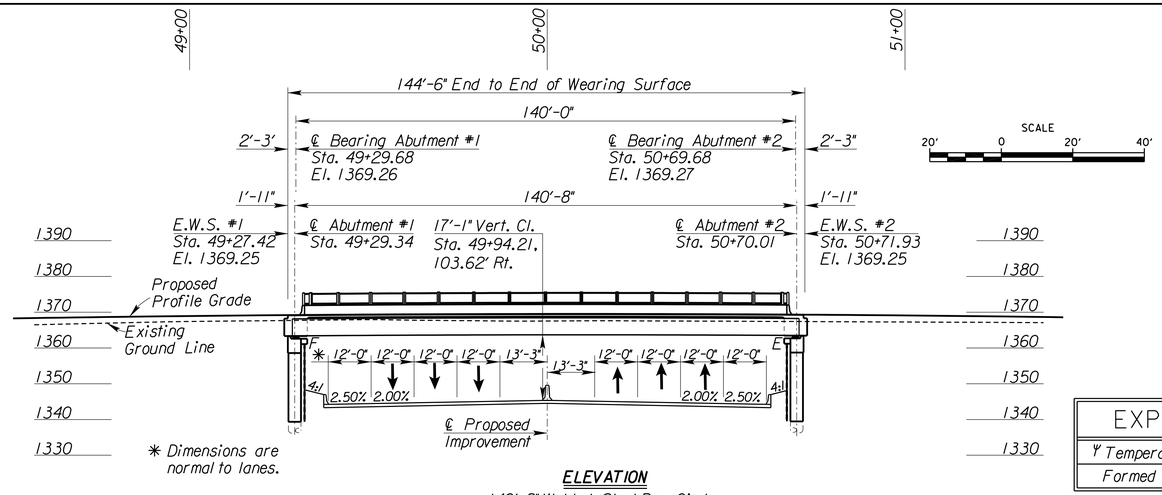
See Sh. No's. 144-147 for Appr. Pavement Details.

CITY OF WICHITA
WEBB ROAD OVER EAST KELLOGG
CONSTRUCTION LAYOUT I
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:50:41 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge Webb\EKIWKCLYOIA.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	381	1055



ELEVATION

140'-8" Welded Steel Box Girder
Spans: Drilled Shaft Bent Abutments,
241'-10" Roadway, 2°15'00" Skew Rt.

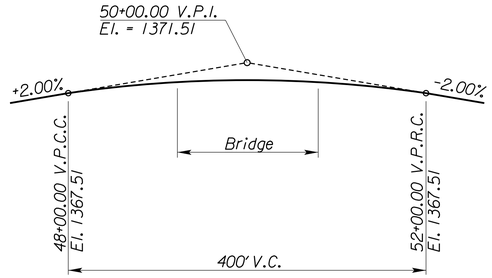
SCALE
20' 0 20' 40'

NOTE: Use Temporary bolted connection for ALL temporary barriers. For holes through new deck, use low impact drill only to minimize damage to the concrete deck or reinforcing steel. All work & material required will be subsidiary to the bid item "Removal of Existing Structure".

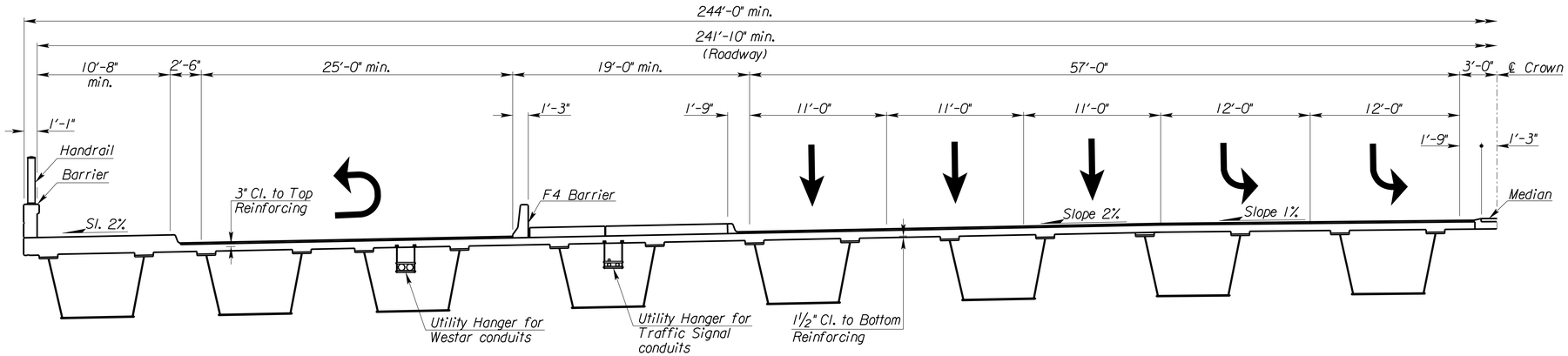
NOTE: Webb Road bridge to be constructed in phases. West half of bridge will be constructed first. See "Superstructure Section I" & "Superstructure Section II" and "Construction Sequence" sheets.

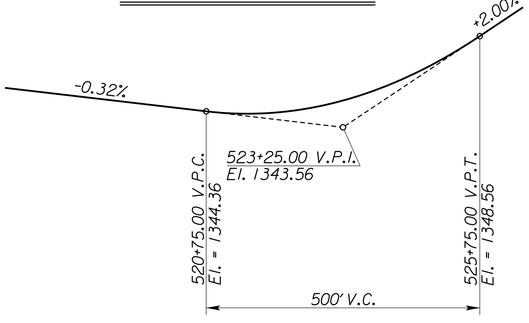
EXPANSION JOINT WIDTH DETAILS (W_2)						
Ψ Temperature (F°)	40°	50°	60°	70°	80°	90°
Formed Concrete Opening Size	2 3/8"	2 3/8"	2 1/4"	2 1/8"	2.0"	1 7/8"

Ψ Average Ambient Temperature over previous 24 hours.

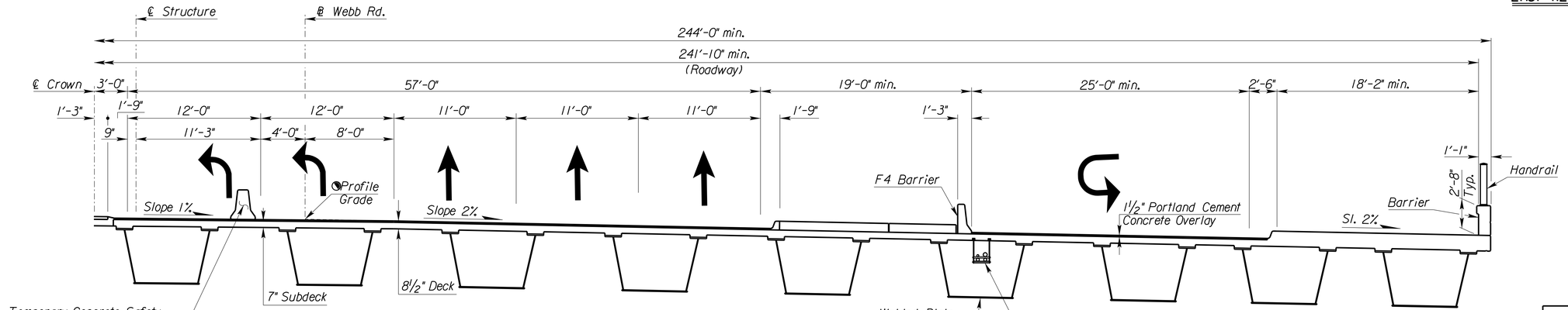


WEBB ROAD VERTICAL PROFILE





EAST KELLOGG VERTICAL PROFILE



Temporary Concrete Safety Barrier (Type IV) for staged construction. See "Construction Sequence" sheets for details and payment.

Profile Grade is 0.08' above top of overlay at this location.

WEBB OVER KELLOGG
Proposed Section
(Looking Upstation)

See Sh. No's. 406 & 407 for Superstructure Section I & II
See Sh. No's. 724 - 856 for Construction Sequence.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

CONSTRUCTION LAYOUT II

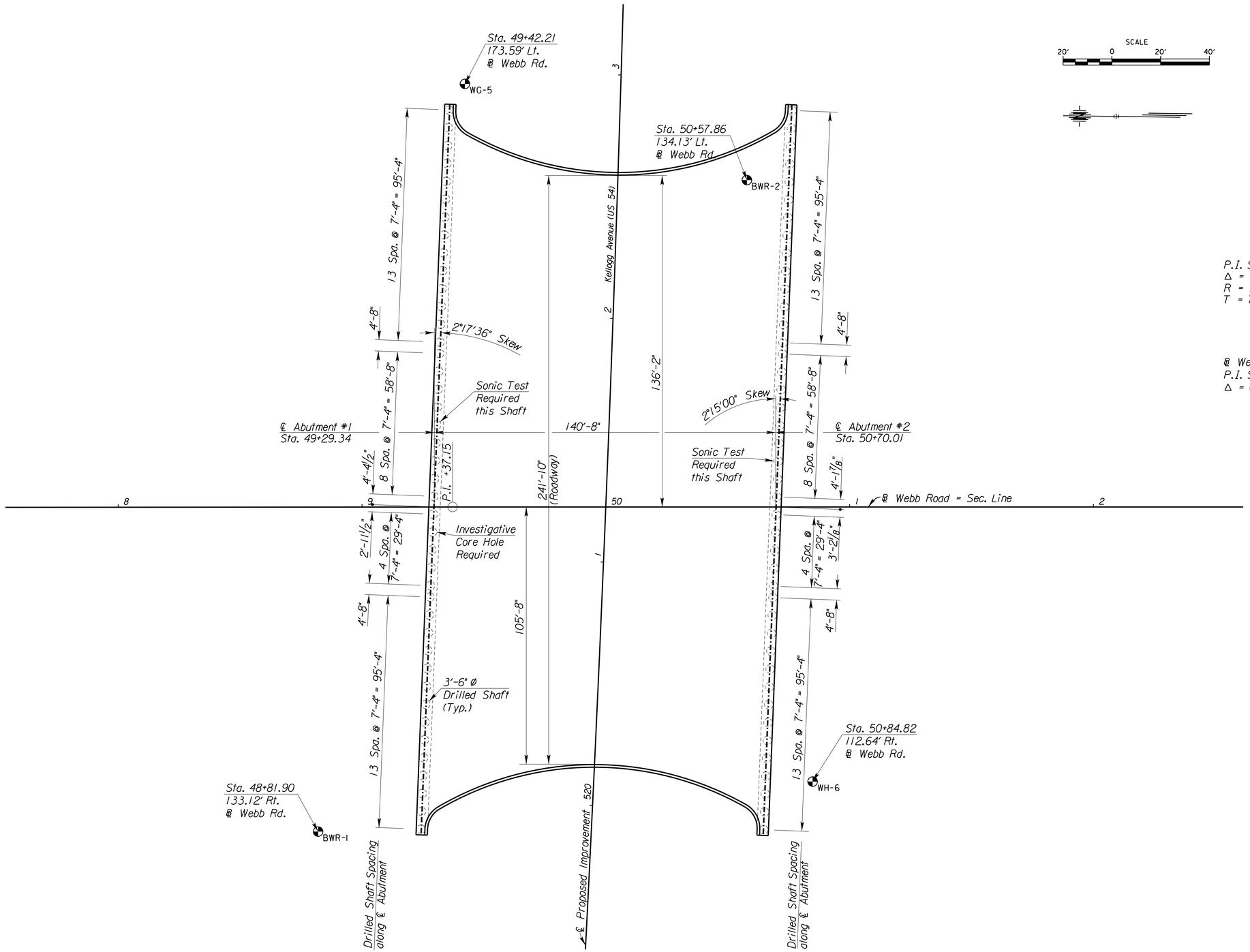
BR. NO. 54-87-32.12 (826) STA. 49+99.68

381

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:50:50 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKCLY02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	382	1055



PLAN

℄ CURVE DATA
P.I. Sta. 521+35.05 Bk. = 521+34.08 Ahd
Δ = 5°04'00.20" (Lt.) L = 1503.33'
R = 17000.00' E = 16.63'
T = 752.15'

℄ Webb Road
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKGE001A.dgn
4/17/2015
9:50:55 AM

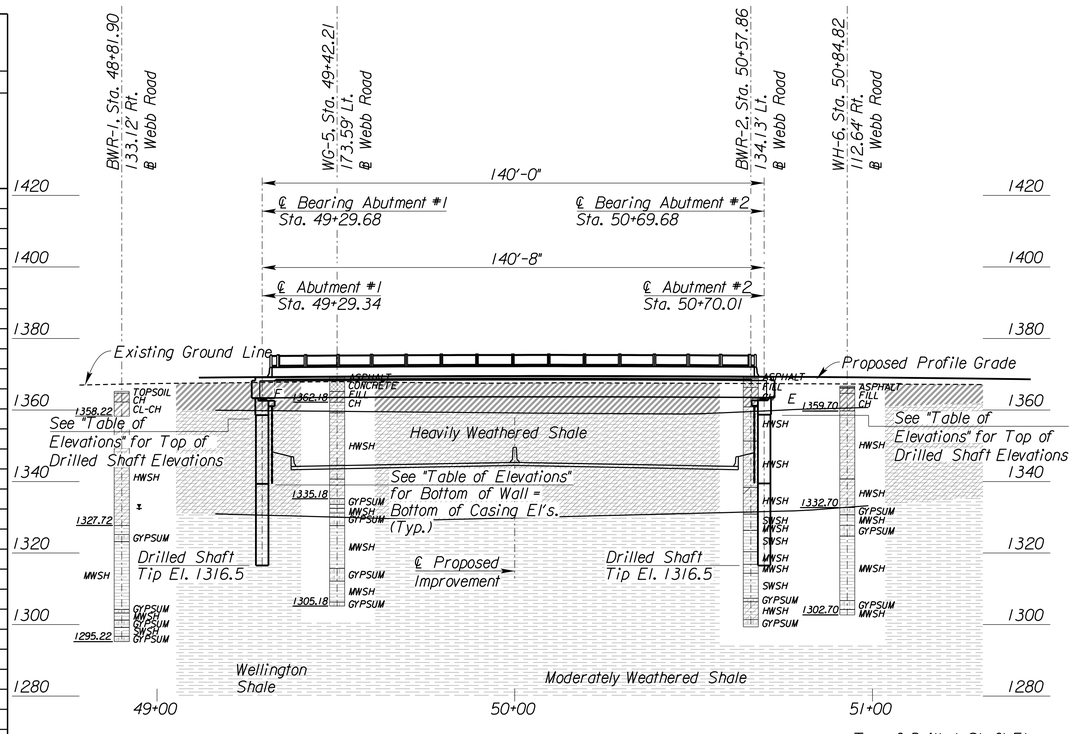
CITY OF WICHITA
WEBB ROAD OVER EAST KELLOGG
ENGINEERING GEOLOGY I
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	383	1055

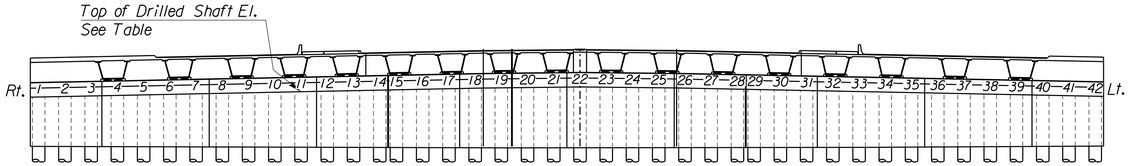
SCALE
20' 0 20' 40'

TABLE OF ELEVATIONS
(Top of Drilled Shaft Elevations @ ℄ Abutment = ℄ Drilled Shaft)

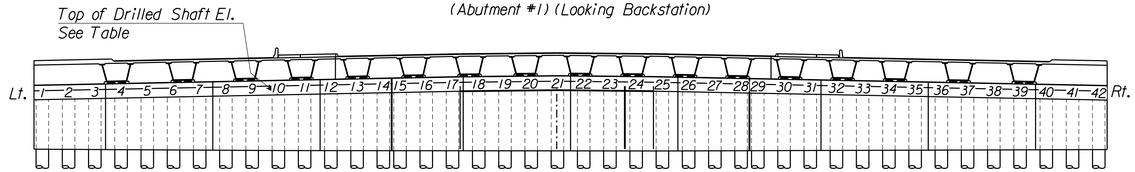
Pile Loc.	Abutment #1 Top of Shaft El.	Abutment #1 Shaft Length (ft)	Abutment #1 Bottom of Permanent Casing El.	Abutment #2 Top of Shaft El.	Abutment #2 Shaft Length (ft)	Abutment #2 Bottom of Permanent Casing El.
1	1356.12	39.62	1342.33	1356.26	39.76	1342.41
2	1356.27	39.77	1342.30	1356.41	39.91	1342.37
3	1356.42	39.92	1342.28	1356.56	40.06	1342.33
4	1356.56	40.06	1342.25	1356.71	40.21	1342.29
5	1356.71	40.21	1342.23	1356.86	40.36	1342.25
6	1356.86	40.36	1342.21	1357.01	40.51	1342.20
7	1357.01	40.51	1342.18	1357.16	40.66	1342.16
8	1357.16	40.66	1342.16	1357.31	40.81	1342.12
9	1357.31	40.81	1342.14	1357.45	40.95	1342.08
10	1357.46	40.96	1342.11	1357.60	41.10	1342.04
11	1357.61	41.11	1342.09	1357.75	41.25	1342.02
12	1357.75	41.25	1342.07	1357.90	41.40	1342.02
13	1357.90	41.40	1342.04	1358.05	41.55	1342.01
14	1358.05	41.55	1342.02	1358.20	41.70	1342.00
15	1358.15	41.65	1342.00	1358.29	41.79	1341.99
16	1358.30	41.80	1341.98	1358.44	41.94	1341.99
17	1358.44	41.94	1341.96	1358.59	42.09	1341.98
18	1358.59	42.09	1341.93	1358.69	42.19	1341.97
19	1358.69	42.19	1341.91	1358.76	42.26	1341.96
20	1358.77	42.27	1341.91	1358.84	42.34	1341.96
21	1358.84	42.34	1341.92	1358.91	42.41	1341.95
22	1358.92	42.42	1341.94	1358.84	42.34	1341.94
23	1358.85	42.35	1341.95	1358.77	42.27	1341.93
24	1358.77	42.27	1341.96	1358.70	42.20	1341.92
25	1358.70	42.20	1341.97	1358.60	42.10	1341.92
26	1358.61	42.11	1341.98	1358.45	41.95	1341.93
27	1358.46	41.96	1341.99	1358.31	41.81	1341.96
28	1358.32	41.82	1342.00	1358.16	41.66	1341.98
29	1358.23	41.73	1342.01	1358.07	41.57	1342.00
30	1358.08	41.58	1342.02	1357.93	41.43	1342.02
31	1357.94	41.44	1342.03	1357.78	41.28	1342.04
32	1357.79	41.29	1342.04	1357.64	41.14	1342.07
33	1357.65	41.15	1342.05	1357.49	40.99	1342.09
34	1357.50	41.00	1342.08	1357.35	40.85	1342.11
35	1357.36	40.86	1342.12	1357.21	40.71	1342.14
36	1357.21	40.71	1342.16	1357.06	40.56	1342.16
37	1357.07	40.57	1342.20	1356.92	40.42	1342.19
38	1356.93	40.43	1342.24	1356.77	40.27	1342.21
39	1356.78	40.28	1342.27	1356.63	40.13	1342.23
40	1356.64	40.14	1342.31	1356.48	39.98	1342.26
41	1356.49	39.99	1342.35	1356.34	39.84	1342.28
42	1356.35	39.85	1342.39	1356.19	39.69	1342.30



ELEVATION
(Along @ Webb Road)



Elevation Looking North
(Abutment #1) (Looking Backstation)



Elevation Looking South
(Abutment #2) (Looking Upstation)

STANDARD SYMBOLS

- Clay or Underclay
- Silty Clay
- Silt
- Sand
- Gravel
- Boulders
- Caliche
- Silty Clayey Shale
- Limy Shale
- Black or Fissile Shale
- Sandy Shale
- Gypsiferous Shale
- Weathered Shale
- Sandstone
- Shaly Sandstone
- Gypsum bed
- Dolomite
- Cross-bed

GEOLOGIC SYMBOLS

- Limestone
- Cherty Limestone
- Shaly Limestone
- Sandy Limestone
- Weathered or Broken Limestone
- Loess
- Mortar bed
- Coal
- Siltstone
- Chalk
- Wavy limestone
- Chalky limestone

SOUNDINGS

- Coredrill
- Power auger
- Hand tools
- Air hammer
- Cone (CPT) penetrometer
- Shelby tube
- Water level 7/07

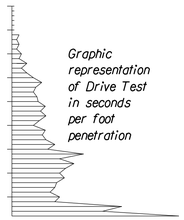
GEOLOGIC PROFILE

- 000.0 Elevation interpolated or from adjacent soundings
- 000.0 Actual sounding elevation
- 000.0 Drive started
- 000.0 Refusal

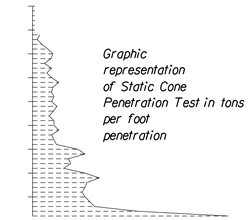
CASING DRIVE TEST

Elevation / Tons/sq. ft.
000.0 00
000.0 00
UNCONFINED COMPRESSION TEST

Elevation / Blows/ft.
000.0 00
000.0 00
STANDARD PENETRATION TEST



AIR HAMMER DRIVE TEST
Scale: 1"= 100 Seconds Horiz. 1"= 10' Vert.



CONE (CPT) PENETROMETER TEST
Scale: 1"= 100 Tons/sq.ft. Horiz. 1"= 10' Vert.

NOTE: Soundings shown on these plans are taken from notes obtained in the field and represent the best information available. Logs of these soundings are in the files of the Kansas Department of Transportation and are available at their offices at Topeka, Kansas for inspection by interested and qualified bidders.

SCALE: 1"= 10' Horiz. 1"= 10' Vert.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ENGINEERING GEOLOGY II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

383

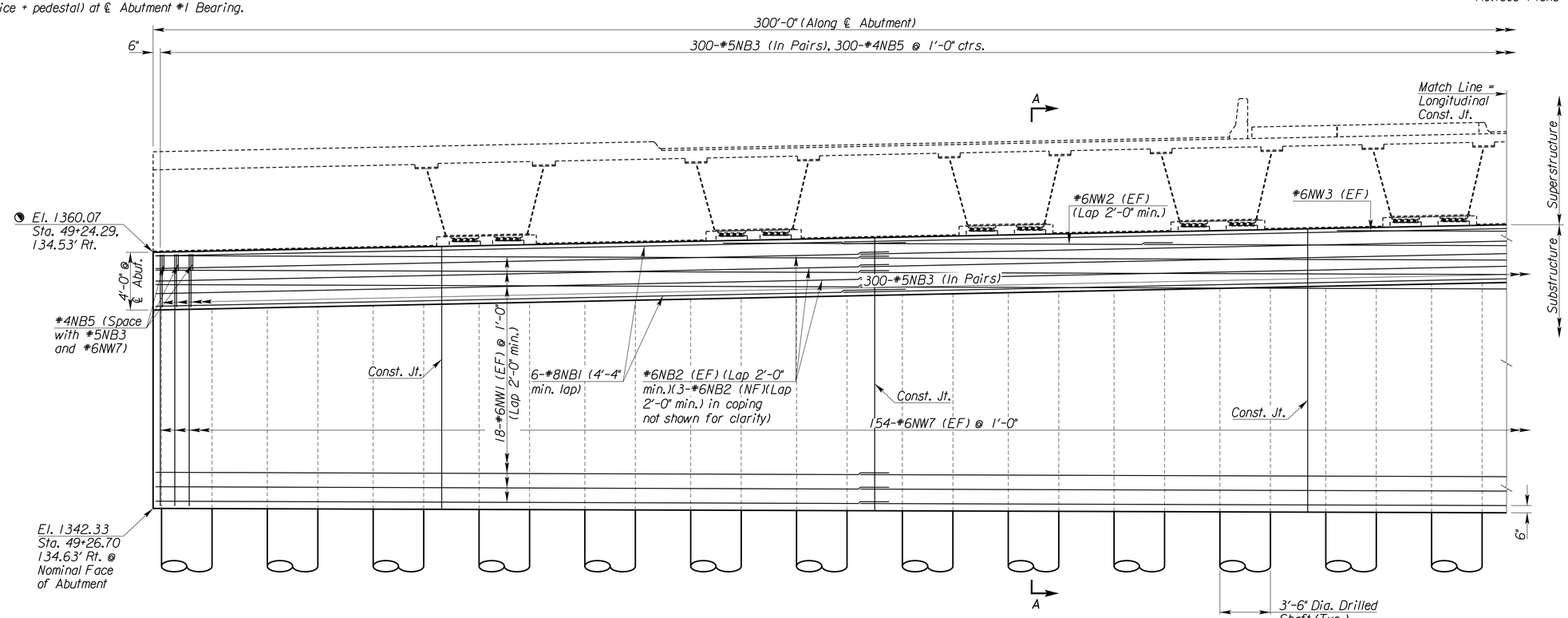
9:51:00 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKGE002A.dgn

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	384	1055

Revised Plans

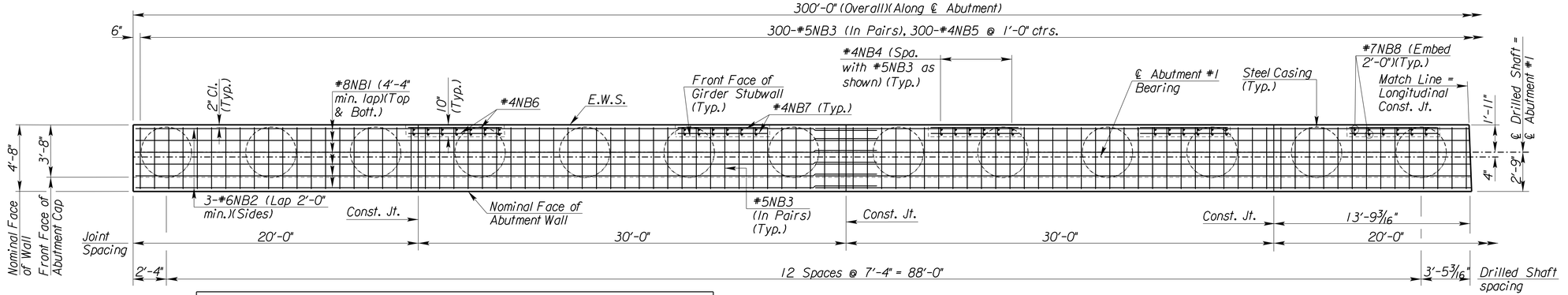
⚠◔ The elevations shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #1 Bearing.



NOTE:
Match Line is a Construction Joint only in the superstructure.

FRONT ELEVATION OF ABUTMENT

Looking Back Station (North)
(Coping, Tiebacks, and associated structural steel not shown for clarity)
NB bars designated EF are on each face of the cap.
NW bars designated EF are on each face of the wall.



NOTE:
All horizontal Dimensions along ℄ Abutment #1 unless otherwise noted.

Intent of design is for location of ℄ of Abutment Bearing at top of Abutment Cap to vary minimally after the effects of horizontal lateral earth pressure and the opposing effects of tieback stressing. After construction of Abutment below the top of Cap, including all tieback stressing, verify ℄ Abutment Bearing location is in the correct location prior to placement of steel girders, accounting for anticipated movement from construction still to be performed. See Geotech Report. Adjustments to bearing pedestal locations may be required and will be made with the approval of the Engineer and at no cost to the Owner. Perform this work for both abutments.

PLAN VIEW OF ABUTMENT CAP

(Coping and Superstructure not shown)

LEGEND

EF = Each Face

⚠ 5/26/2015 Revised basis of elevations.
See Sh. #392 for Section A-A and other details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 DETAILS I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	-

2:06:03 PM
5/26/2015
T:\35765A\Cadd\Sheets\Packagel\Structures\Bridge\Webb\EKIWKABTOIA.DGN

Revised Plans

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	385	1055

300'-0" (Along ℄ Abutment)

300-#5NB3 (In Pairs), 300-#4NB5 @ 1'-0" ctrs.

Match Line = Longitudinal Const. Jt.

El. 1362.64
Sta. 49+29.35
8.00' Rt.

@ Webb

℄ Crown

El. 1362.92
Sta. 49+30.44
19.00' Lt.

A

El. 1362.66
Sta. 49+31.52
46.00' Lt.

#6NW5 (EF)

Match Line = Longitudinal Const. Jt.

6-#8NW2 (EF) (Lap 2'-0" min.)

6-#8NB1 (Lap 4'-4" min.)

#6NW3 (EF)

#6NW4 (EF) (Project 2'-2" min.)

#6NW4 (EF) (Lap 2'-0" min.)

6-#8NB10 (Lap 4'-4" min. to #8NB9)

6-#8NB1 (Lap 4'-4" min.)

Superstructure

Substructure

4'-0" @ ℄ Abut.

300-#5NB3 (In Pairs)

Cap Const. Jt. = Staged Const. Line

#6NB2 (EF) (Lap 2'-0" min.)(3-#6NB2 (NF)(Lap 2'-0" min.) in coping not shown for clarity)

18-#6NW1 (EF) @ 1'-0" (Lap 2'-0" min.)

Exp. Jt.

20-#6NW9 (EF) @ 1'-0" (Project 2'-2" min.)

6-#8NB9 (Project 4'-6" min.)

Const. Jt.

#6NB11 (EF) (Project 2'-2" min.)(3-#6NB11 (NF)(Project 2'-2" min.) in coping not shown for clarity)

#4NB5 (Space with #5NB3 and #6NW7)

Wall & Coping Const. Jt.

#4NB5 (Space with #5NB3 and #6NW8)

#6NB12 (EF)(Lap 2'-0" min. with #6NB11)(3-#6NB12 (NF) (Lap 2'-0" min. with #6NB11) in coping not shown for clarity)

Const. Jt.

20-#6NW10 (EF) @ 1'-0" (Lap 2'-0" min. with #6NW9)

Exp. Jt.

#6NW6 (EF) (Lap 2'-0" min.)

18-#6NW1 (EF) @ 1'-0" (Lap 2'-0" min.)

#6NB2 (EF) (Lap 2'-0" min.)(3-#6NB2 (NF)(Lap 2'-0" min.) in coping not shown for clarity)

154-#6NW7 (EF) @ 1'-0"

146-#6NW8 (EF) @ 1'-0"

6"

El. 1341.90
Sta. 49+32.04
1.38' Rt. @
Nominal Face
of Abutment

3'-6" Dia. Drilled Shaft (Typ.)

NOTE:
Match Line is a Construction Joint only in the superstructure.

⚠ ◔ The elevations shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #1 Bearing.

FRONT ELEVATION OF ABUTMENT

Looking Back Station (North)
(Coping, Tiebacks, and associated structural steel not shown for clarity)
NB bars designated EF are on each face of the cap.
NW bars designated EF are on each face of the wall.

300'-0" (Overall)(Along ℄ Abutment)

300-#5NB3 (In Pairs), 300-#4NB5 @ 1'-0" ctrs.

3-#6NB2 (Lap 2'-0" min.)(Sides)

#8NB1 (4'-4" min. lap) (Top & Bott.)

#7NB8 (Embed 2'-0")(Typ.)

@ Webb

#4NB4 (Spa. with #5NB3 as shown) (Typ.) ℄ Abutment #1 @ @ Webb

This Drilled Shaft constructed with first stage (west half)

℄ Abutment #1 Bearing

Steel Casing (Typ.)

#8NB10 (4'-4" min. Lap to #8NB9) (Top & Bott.)

3-#6NB2 (Lap 2'-0" min.)(Sides)

#8NB1 (Lap 4'-4" min.) (Top & Bott.)

Match Line = Longitudinal Const. Jt.

Match Line = Longitudinal Const. Jt.

2" Cl. (Typ.)

10" (Typ.)

#4NB7 (Typ.)

E.W.S.

Front Face of Girder Stubwall (Typ.)

#8NB9 (Project 4'-6" min.) (Top & Bott.)

1'-11" ℄ Drilled Shaft = ℄ Abutment #1

4'-8"

3'-8"

4"

2'-9"

Nominal Face of Wall

Front Face of Abutment Cap

3-#6NB11 (Project 2'-2" min.)(Sides)

#5NB3 (In Pairs) (Typ.)

2'-11½"

4'-4½"

87°42'24"

Wall & Coping Const. Jt.

6'-6"

Cap Const. Jt. = Staged Const. Line

3-#6NB12 (2'-0" min. Lap to #6NB11)(Sides)

Const. Jt.

Nominal Face of Abutment Wall

Exp. Jt.

6'-2 13/16"

Exp. Jt.

Const. Jt.

15'-6 5/16"

20'-0"

20'-0"

30'-0"

30'-0"

20'-0"

20'-0"

Joint Spacing Drilled Shaft spacing

3'-10 13/16"

4'-8"

13 Spaces @ 7'-4" = 95'-4"

4'-8"

7'-4"

5'-10 5/16"

2'-4"

2'-4"

2'-4"

2'-4"

NOTE:
All horizontal Dimensions along ℄ Abutment #1 unless otherwise noted.

PLAN VIEW OF ABUTMENT CAP

(Coping and Superstructure not shown)

LEGEND

EF = Each Face

⚠ 5/26/2015 Revised basis of elevations.
See Sh. #392 for Section A-A and other details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 DETAILS II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

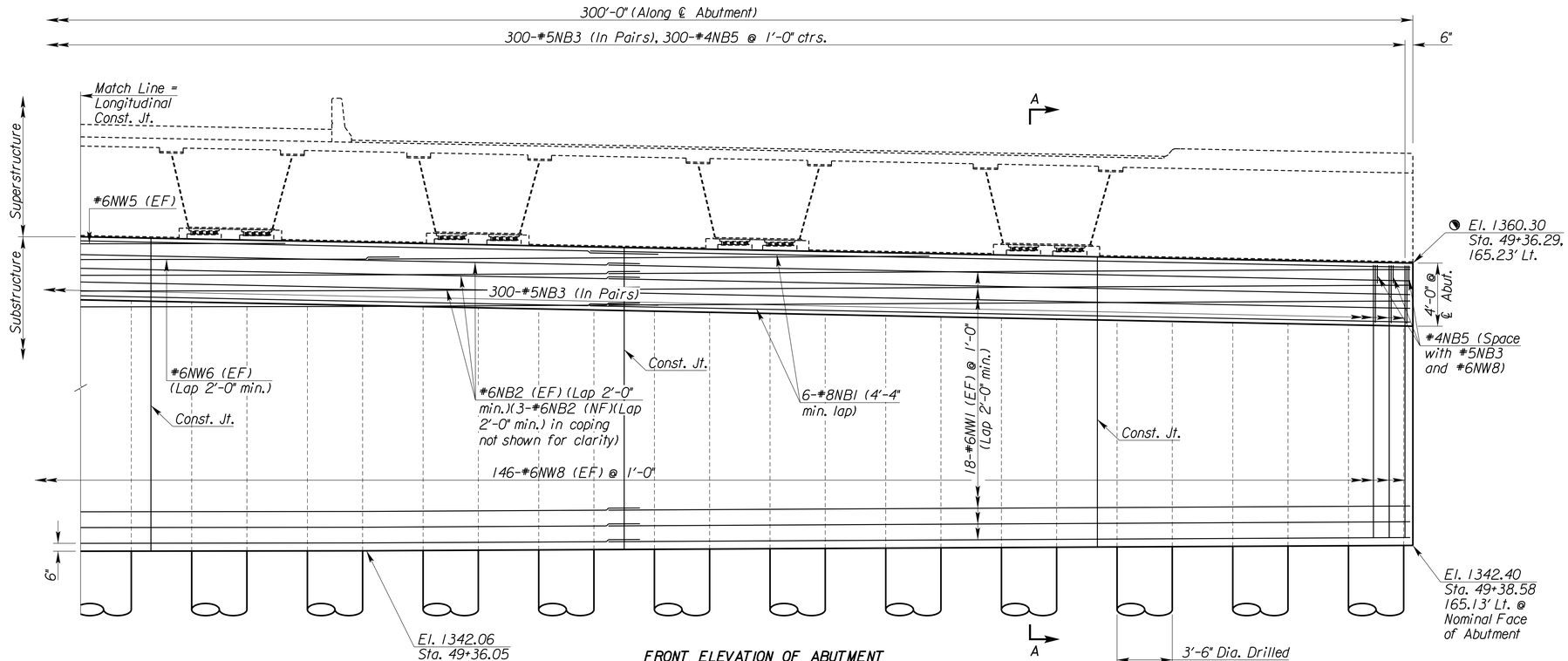
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:05 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABT02A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	386	1055

Revised Plans

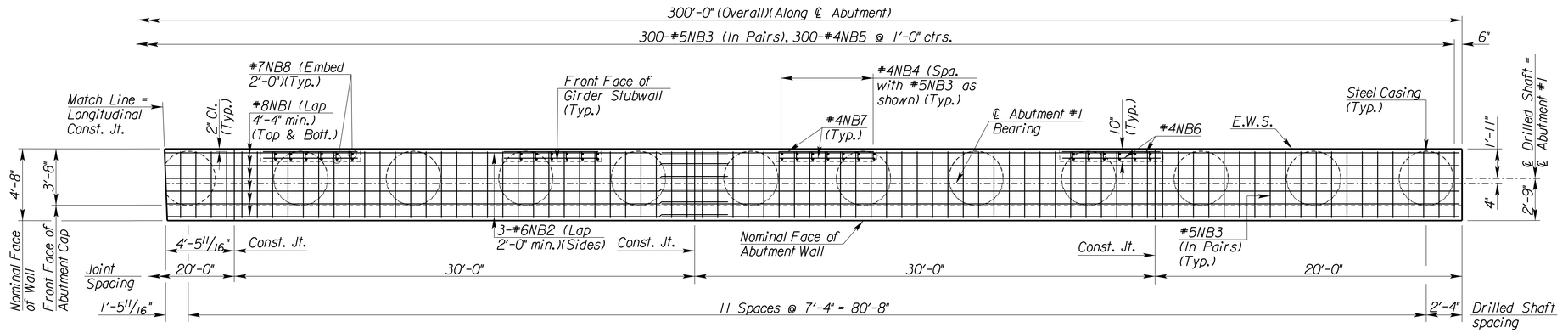
⚠◔ The elevations shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #1 Bearing.



FRONT ELEVATION OF ABUTMENT

Looking Back Station (North)
(Coping, Tiebacks, and associated structural steel not shown for clarity)
NB bars designated EF are on each face of the cap.
NW bars designated EF are on each face of the wall.

NOTE:
Match Line is a Construction Joint only in the superstructure.



PLAN VIEW OF ABUTMENT CAP

(Coping and Superstructure not shown)

NOTE:
All horizontal Dimensions along ℄ Abutment #1 unless otherwise noted.

LEGEND

EF = Each Face

⚠ 5/26/2015 Revised basis of elevations.
See Sh. #392 for Section A-A and other details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 DETAILS III

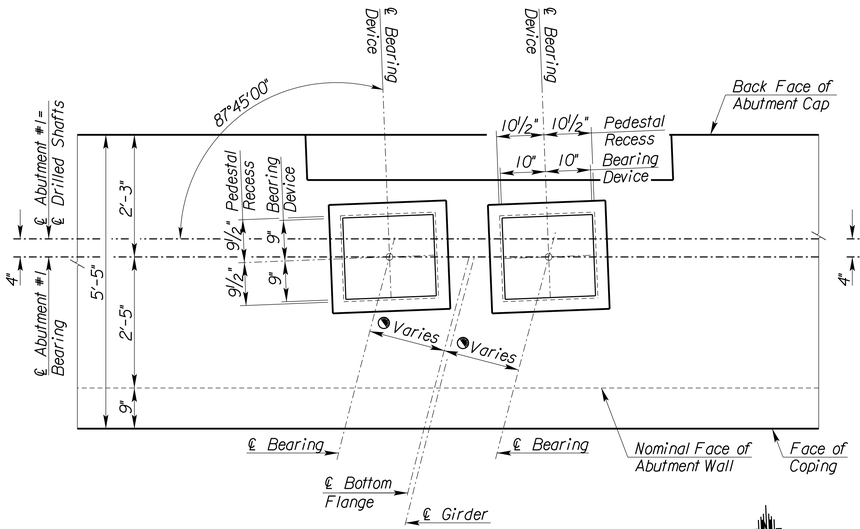
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

2:06:07 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKABT03A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	387	1055

Revised Plans



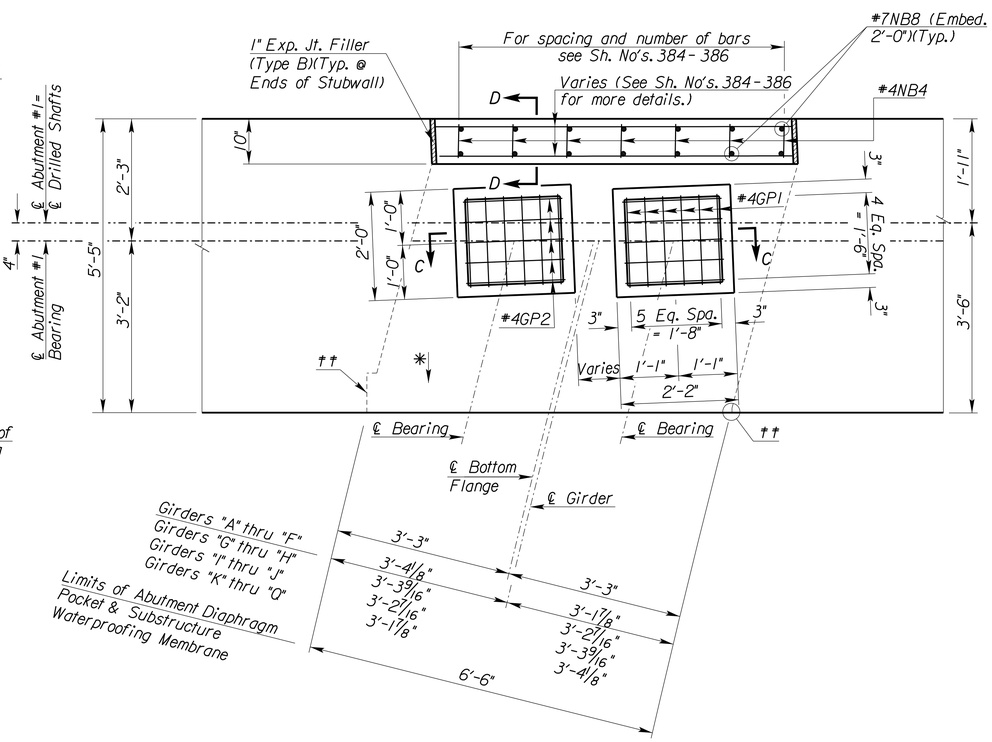
SECTION A-A

(Girder "A" shown, other Girders similar.)

†† See Sh. #416 for additional Abutment Diaphragm blockout details.

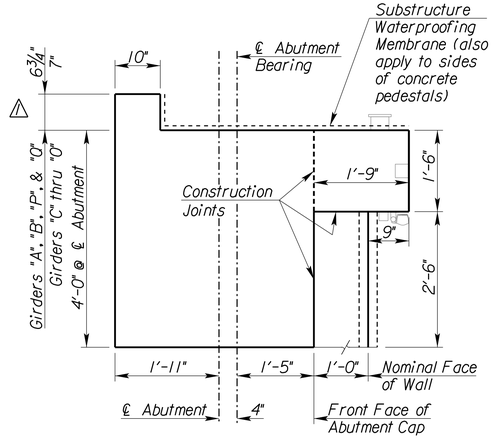
◔ Dimension varies girder to girder. Refer to Sh. #400 for more details and design loads.

✳ Provide positive drainage (min. 0.5%) to top of abutment concrete within limits of Abutment Diaphragm Pocket.



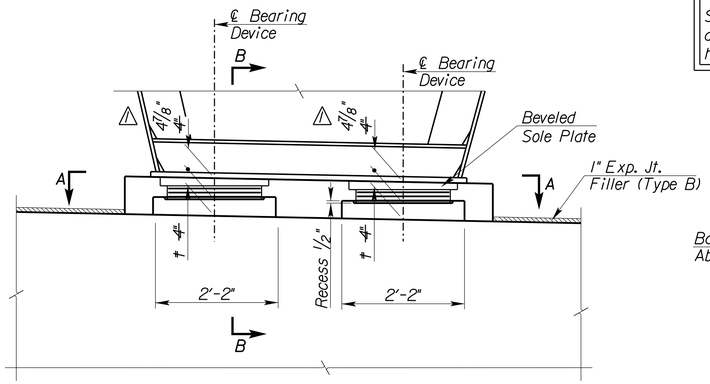
PEDESTAL & STUBWALL DETAIL (PLAN)

(Girder "A" shown, other Girders similar.)
(For each Girder, the ℄ Bottom Flange is closer to the Crown Grade than the ℄ Girder.)



ABUTMENT CAP SECTION

(At Girders)

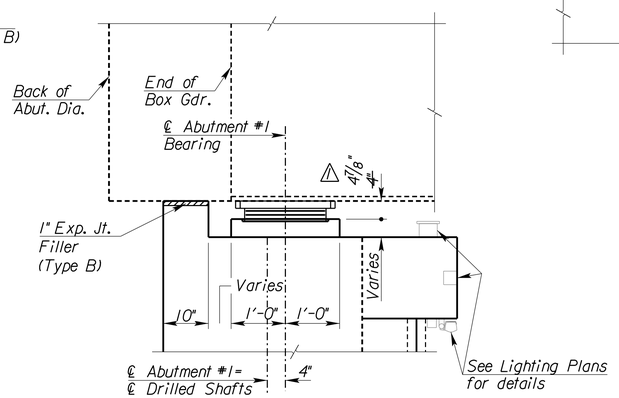


TYPICAL SECTION AT BEARING

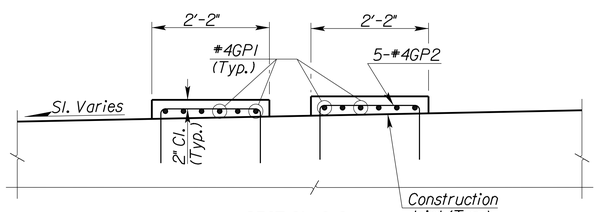
⚠ † 2⅞" for Girders "A", "B", "P" & "O" and 3⅛" for Girders "C" thru "O" at ℄ Abutment #1 Bearing and ℄ Bearing Device (Working Point)

See Sh. #400 for Bearing Seat Elevations and Working Point locations.

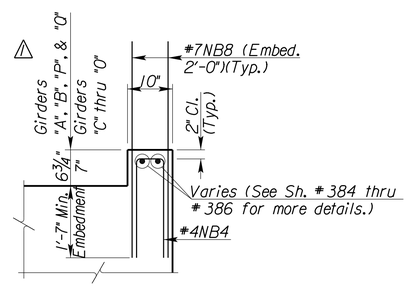
See Sh. #384 for note about adjusting bearing location for horizontal movement in the wall.



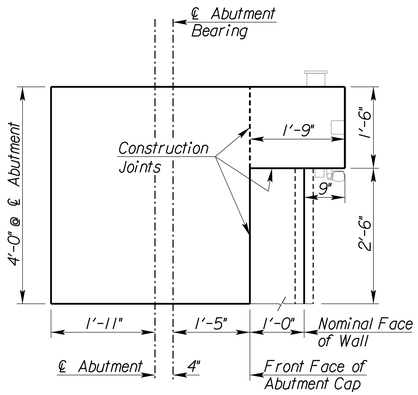
SECTION B-B



SECTION C-C



SECTION D-D



ABUTMENT CAP SECTION

(Between Girders)

⚠ 5/26/2015 Revised pedestal & bearing heights.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 AUXILIARY DETAILS

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:09 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKABT04A.DGN

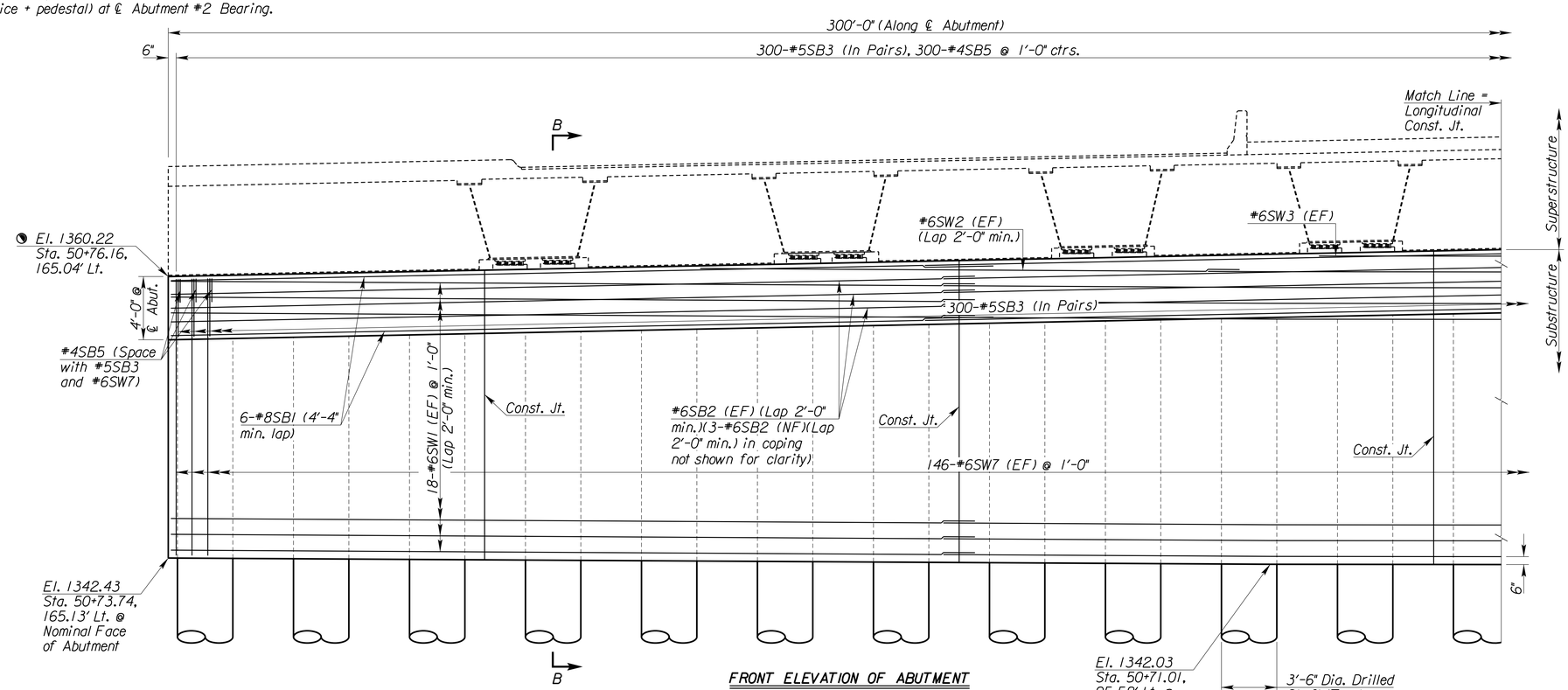
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	388	1055

Revised Plans

⚠ The elevations shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #2 Bearing.

LEGEND

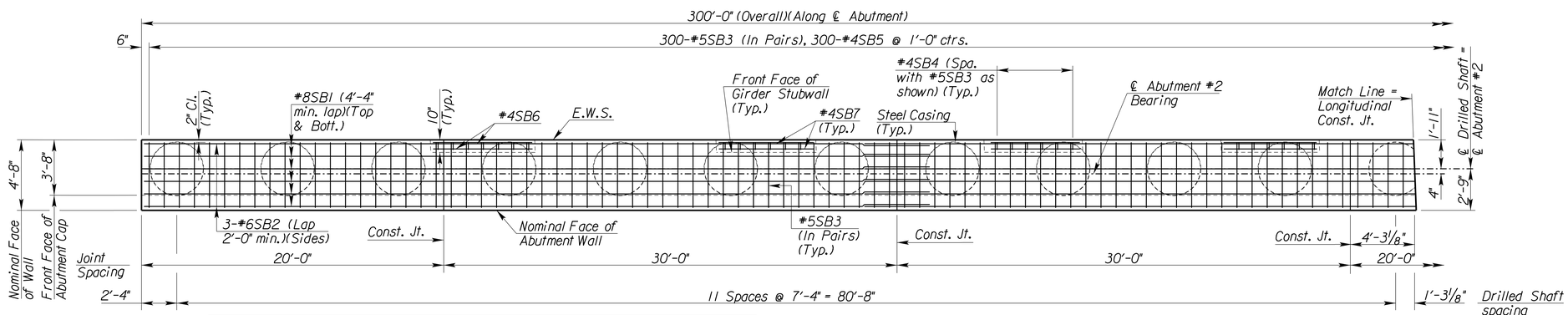
EF = Each Face



FRONT ELEVATION OF ABUTMENT

Looking Up Station (South)
(Coping, Tiebacks, and associated structural steel not shown for clarity)
SB bars designated EF are on each face of the cap.
SW bars designated EF are on each face of the wall.

NOTE:
Match Line is a Construction Joint only in the superstructure.



NOTE:
All horizontal Dimensions along ℄ Abutment #2 unless otherwise noted.

Intent of design is for location of ℄ of Abutment Bearing at top of Abutment Cap to vary minimally after the effects of horizontal lateral earth pressure and the opposing effects of tieback stressing. After construction of Abutment below the top of Cap, including all tieback stressing, verify ℄ Abutment Bearing location is in the correct location prior to placement of steel girders, accounting for anticipated movement from construction still to be performed. See Geotech Report. Adjustments to bearing pedestal locations may be required and will be made with the approval of the Engineer and at no cost to the Owner. Perform this work for both abutments.

PLAN VIEW OF ABUTMENT CAP

(Coping and Superstructure not shown)

⚠ 5/26/2015 Revised basis of elevations.
See Sh. #392 for Section B-B and other details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 DETAILS I

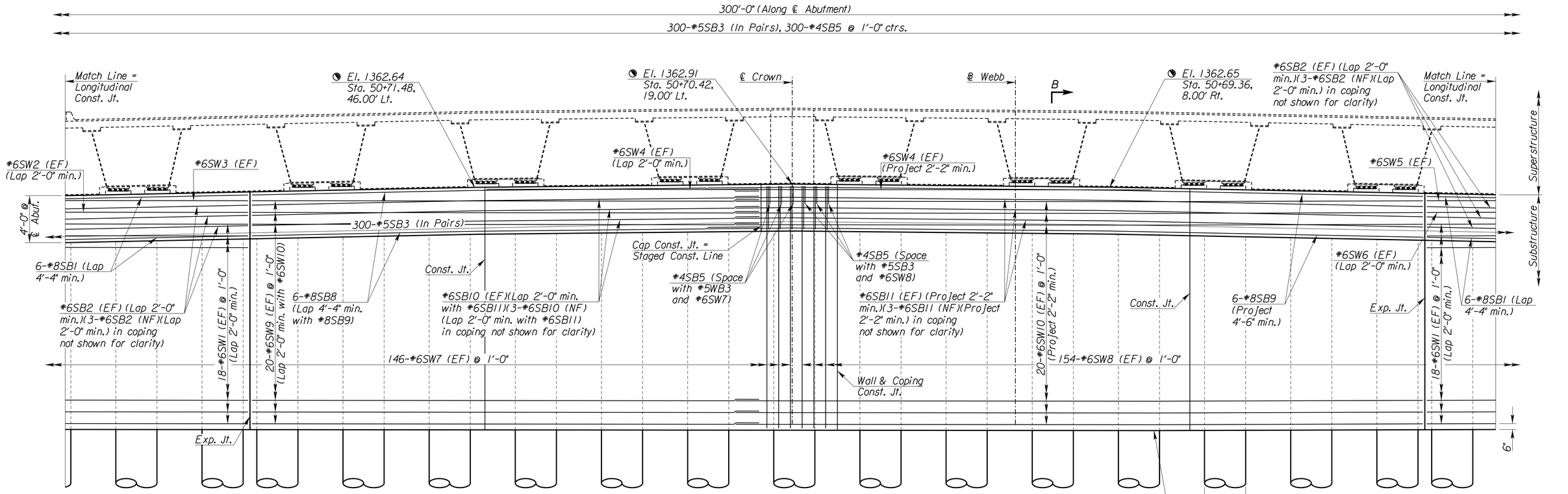
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:11 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABT05A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	389	1055

Revised Plans



⚠ The elevations shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #2 Bearing.

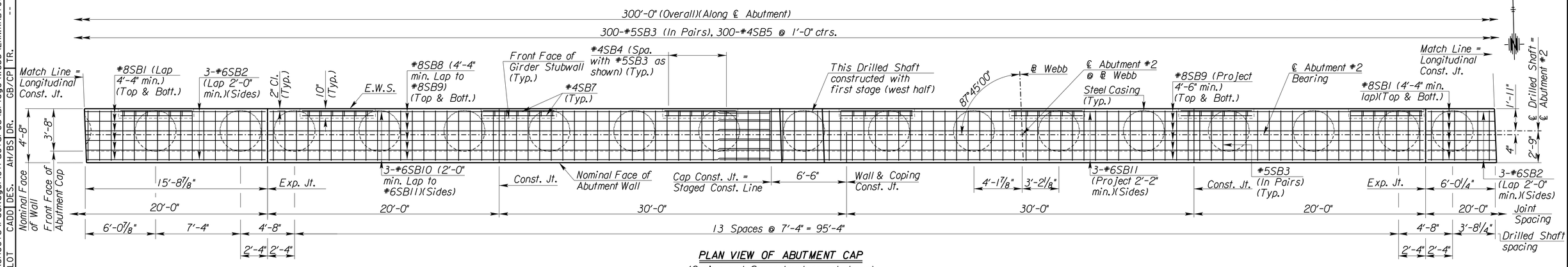
FRONT ELEVATION OF ABUTMENT

Looking Up Station (South)
(Coping, Tiebacks, and associated structural steel not shown for clarity)
SB bars designated EF are on each face of the cap.
SW bars designated EF are on each face of the wall.

El. 1341.91 Sta. 50+66.80, 11.67' Rt. @ Nominal Face of Abutment

3'-6" Dia. Drilled Shaft (Typ.)

NOTE:
Match Line is a Construction Joint only in the superstructure.



PLAN VIEW OF ABUTMENT CAP

(Coping and Superstructure not shown)

NOTE:
All horizontal Dimensions along ℄ Abutment #2 unless otherwise noted.

LEGEND

EF = Each Face

⚠ 5/26/2015 Revised basis of elevations.
See Sh. #392 for Section B-B and other details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 DETAILS II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

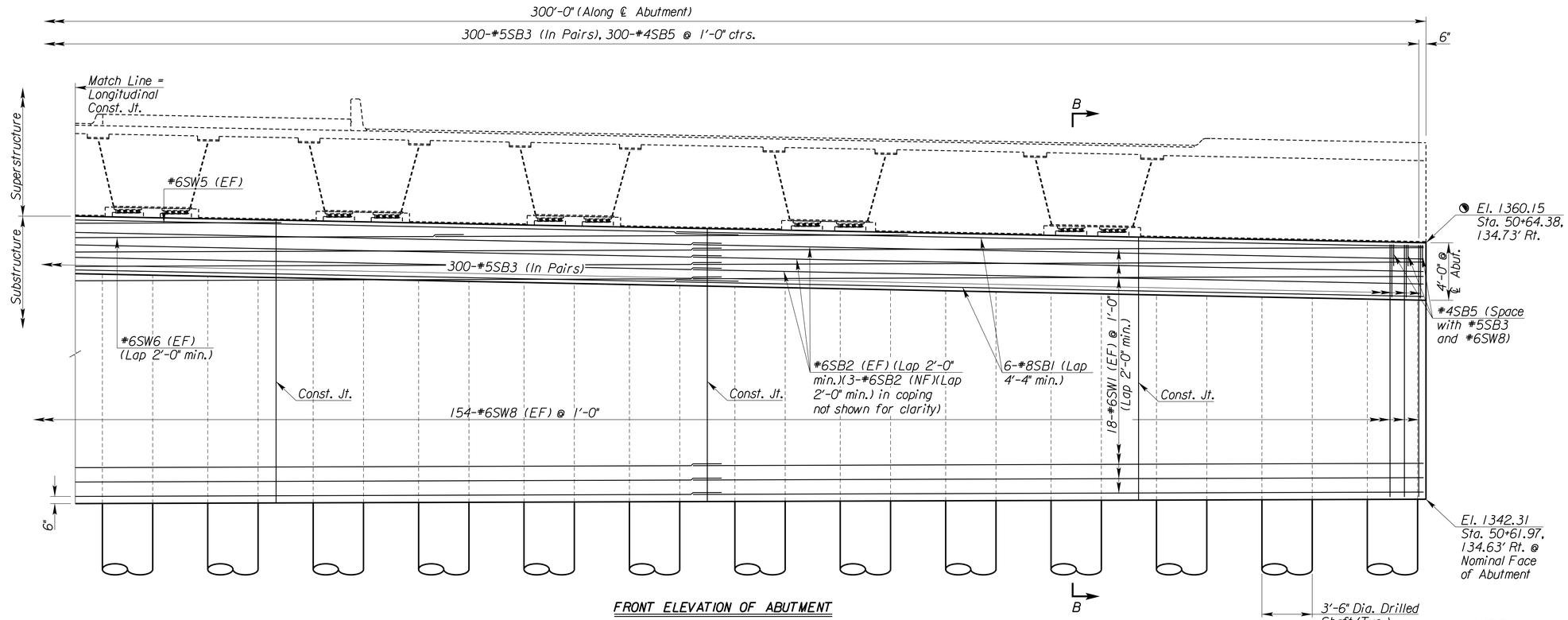
SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:13 PM
5/26/2015
T:\35765A\Cadd\Sheets\Packages\Structures\Bridge\Webb\EK1WKABT06A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	390	1055

Revised Plans

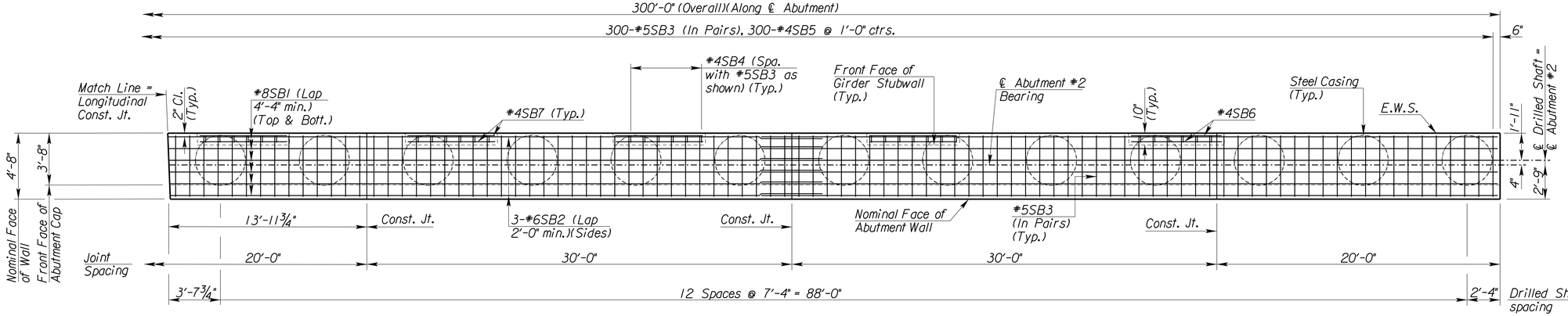
⚠ The elevations shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #2 Bearing.



FRONT ELEVATION OF ABUTMENT

Looking Up Station (South)
(Coping, Tiebacks, and associated structural steel not shown for clarity)
SB bars designated EF are on each face of the cap.
SW bars designated EF are on each face of the wall.

NOTE:
Match Line is a Construction Joint only in the superstructure.



PLAN VIEW OF ABUTMENT CAP

(Coping and Superstructure not shown)

LEGEND

EF = Each Face

NOTE:
All horizontal Dimensions along ℄ Abutment #2 unless otherwise noted.

⚠ 5/26/2015 Revised basis of elevations.
See Sh. #392 for Section B-B and other details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 DETAILS III

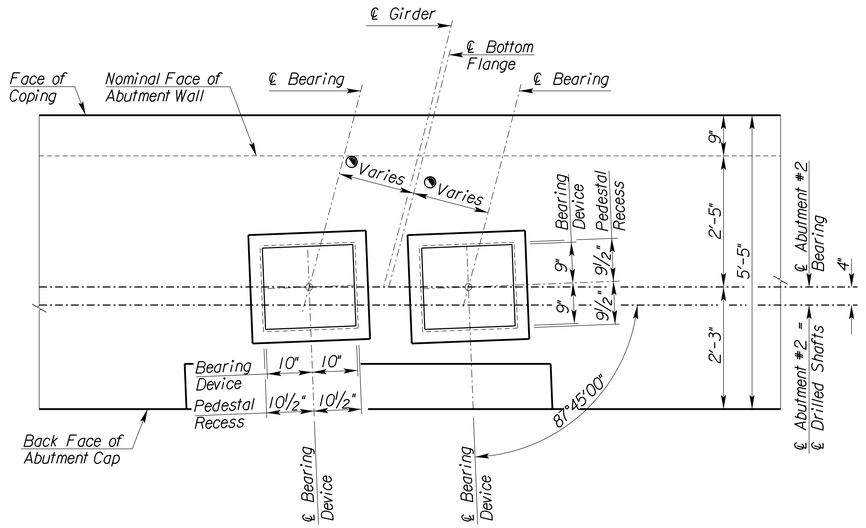
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:15 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABT07A.DGN

Revised Plans

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	391	1055



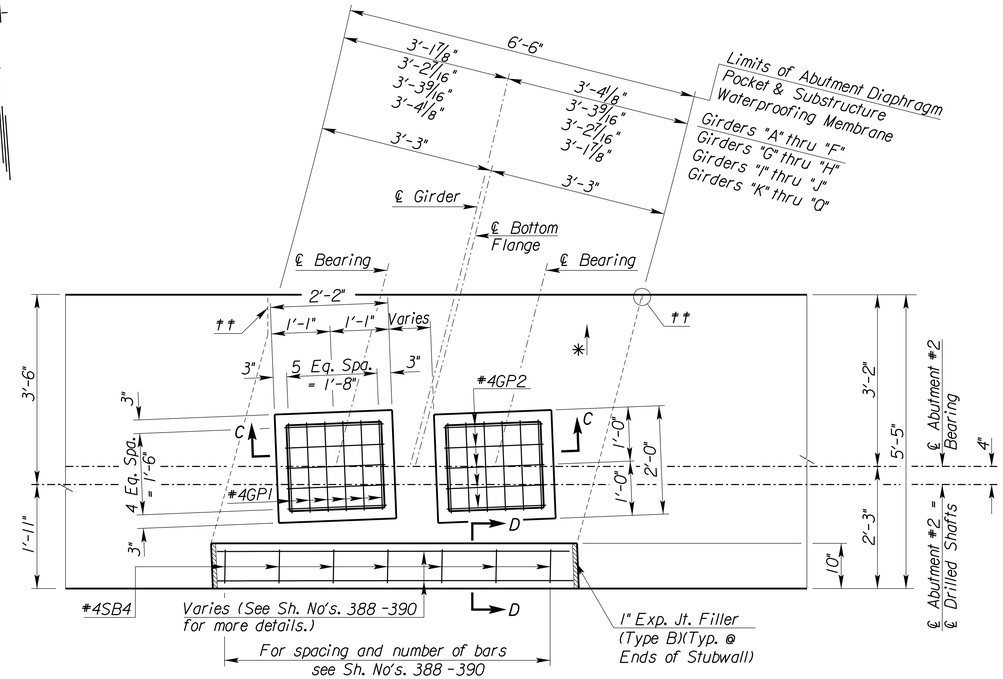
SECTION A-A

(Girder "O" shown. Other Girders similar.)

†† See Sh. # 416 for additional Abutment Diaphragm blockout details.

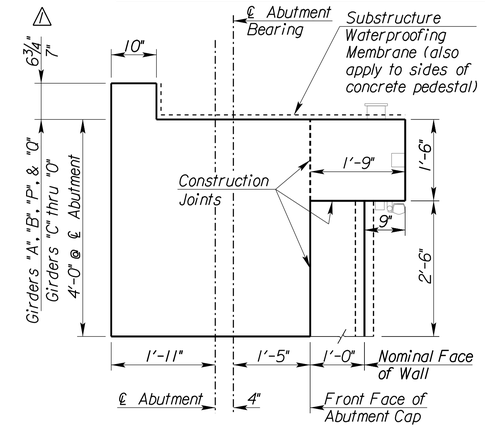
◔ Dimension varies girder to girder. Refer to Sh. # 401 for more details and design loads.

✱ Provide positive drainage (min. 0.5%) to top of abutment concrete within limits of Abutment Diaphragm Pocket.



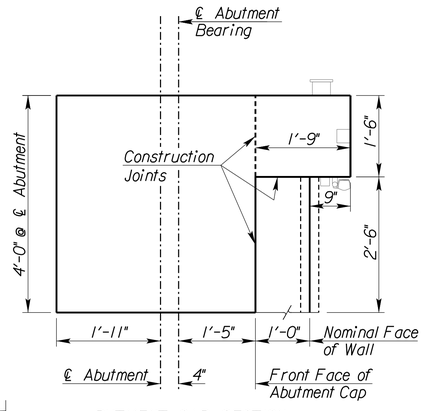
PEDESTAL & STUBWALL DETAIL (PLAN)

(Girder "O" shown, other Girders similar.)
(For each Girder, the ℄ Bottom Flange is closer to the Crown Grade than the ℄ Girder.)



ABUTMENT CAP SECTION

(At Girders)

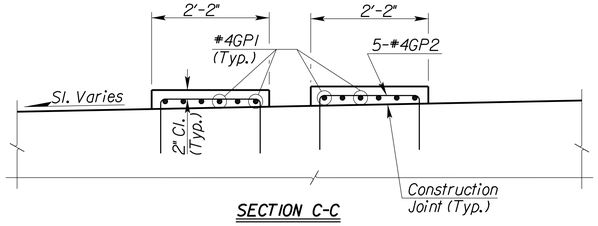


ABUTMENT CAP SECTION

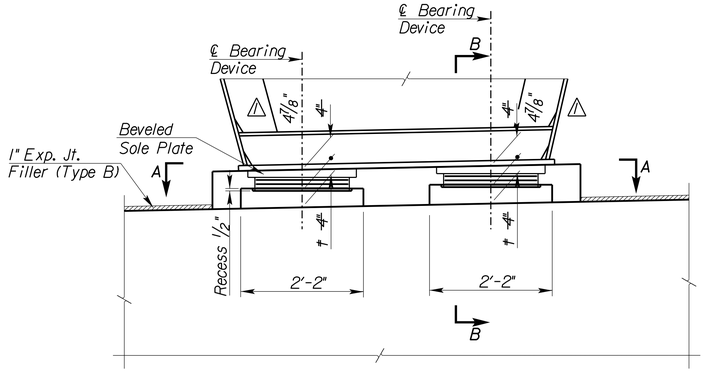
(Between Girders)

See Sh. #401 for Bearing Seat Elevations and Working Point locations.

See Sh. #388 for note about adjusting bearing location for horizontal movement in the wall.

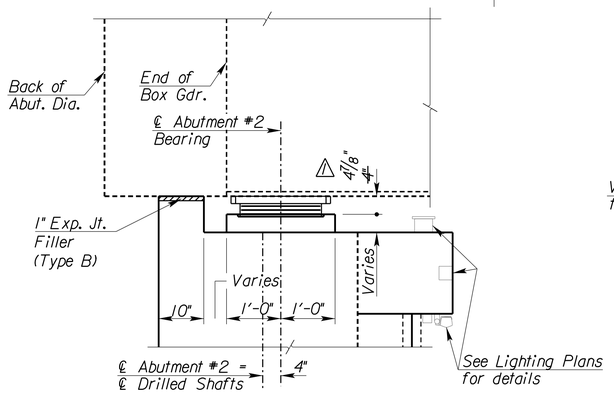


SECTION C-C

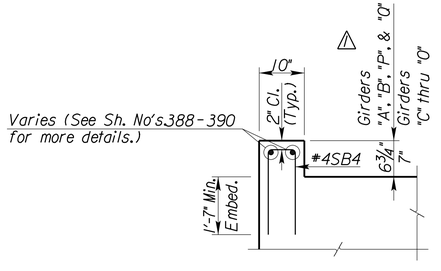


TYPICAL SECTION AT BEARING

△ † 2⅞" for Girders "A", "B", "P" & "O" and 3⅛" for Girders "C" thru "O" at ℄ Abutment #2 Bearing and ℄ Bearing Device (Working Point)



SECTION B-B



SECTION D-D

△ 5/26/2015 Revised pedestal & bearing heights.
See Sh. #390 for Abutment #2 Details III.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 AUXILIARY DETAILS

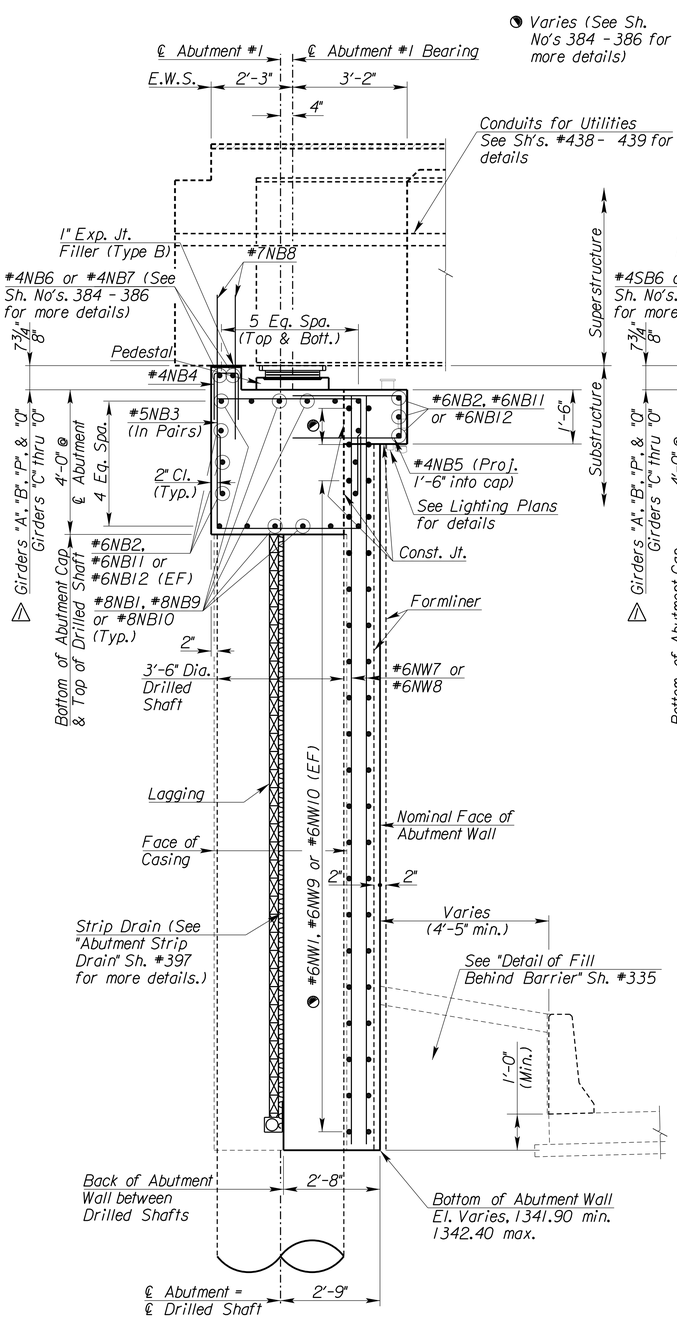
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

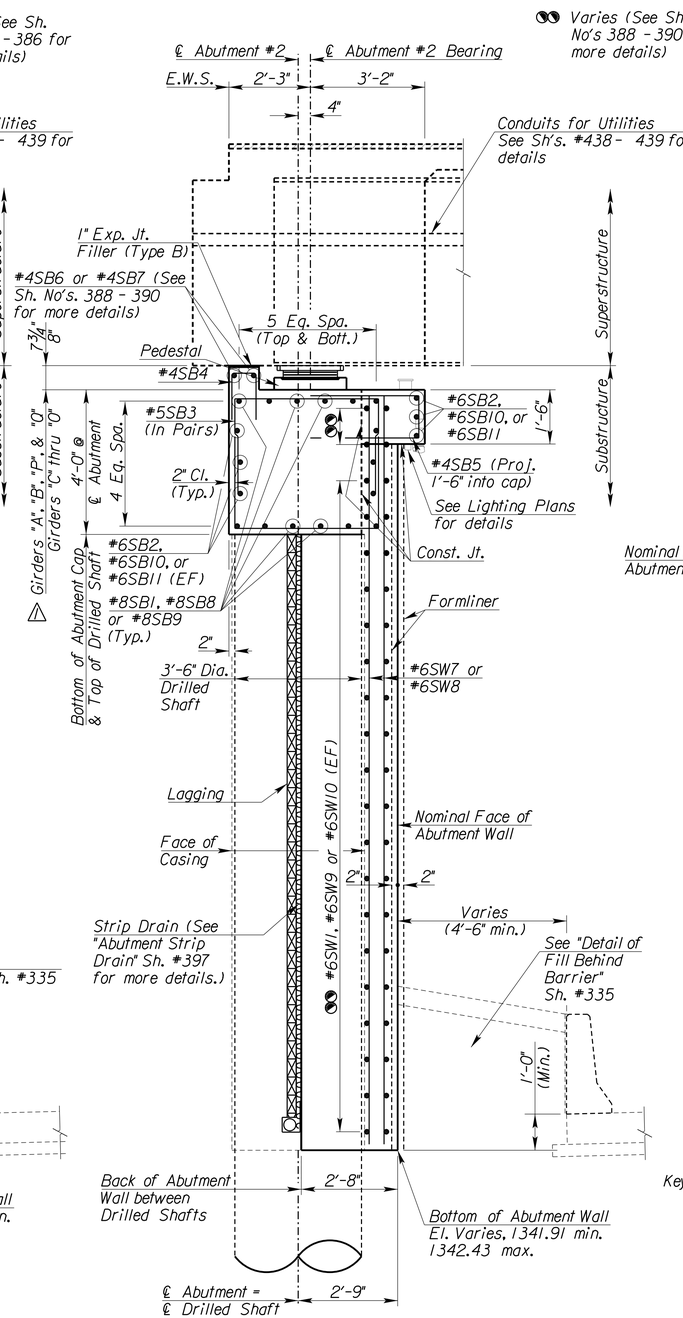
2:06:17 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKABT08A.DGN

Revised Plans

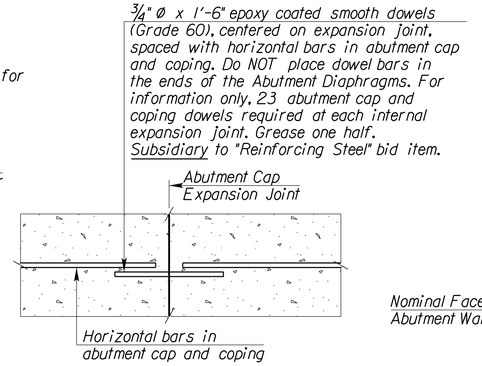
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	392	1055



SECTION A-A

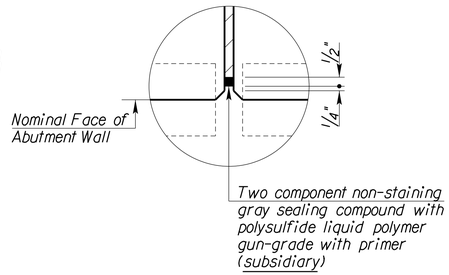


SECTION B-B

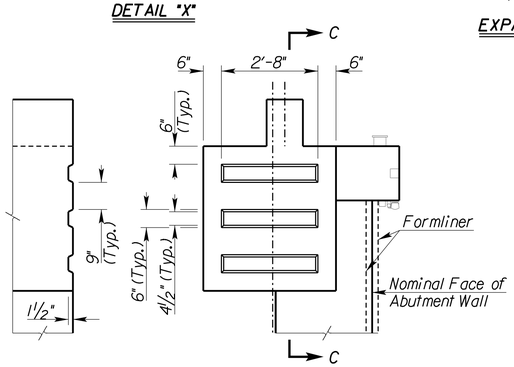


DOWEL BARS IN ABUTMENT CAP AT EXPANSION JOINTS

(At ends of abutments, only place those dowels which will penetrate soldier pile wall concrete with 2" clearance.)



DETAIL "X"



Section C-C

Section Thru Abutment Cap

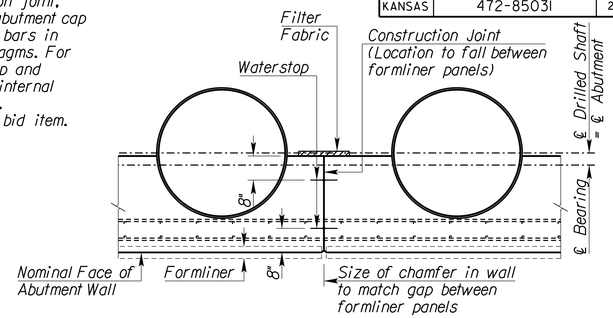
ABUTMENT CAP KEYED JOINT DETAIL

At both Construction and Expansion Joints.
Do not provide keyed joints at ends of abutments.
Keyed joints are paid for as part of the concrete bid item.

ANTICIPATED SEQUENCE OF CONSTRUCTION:

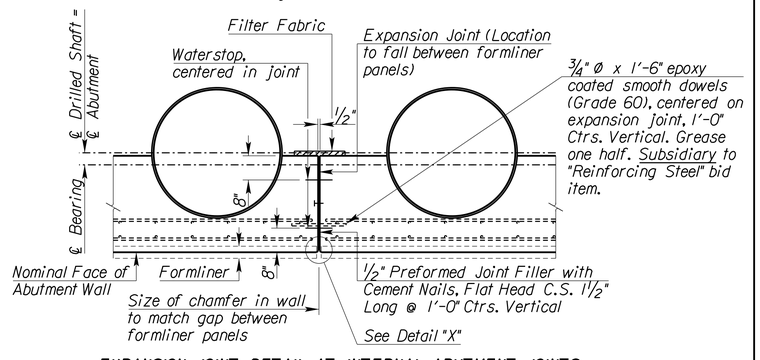
1. Drilled Shafts
2. Tiebacks, including structural steel and grouting
3. Abutment Cap (Seat)
4. Wall with Formliner
5. Coping

See "Geotechnical Report Bridge at Webb Road over East Kellogg" for additional Sequence of Construction details. The Contractor may propose a different sequence of construction, which may combine or separate certain portions of the sequencing shown above. Any change to the anticipated construction sequence must be approved by the Engineer. A sequence different than the one shown may result in detail and quantity changes. Any such changes will be at no additional cost to the Owner.



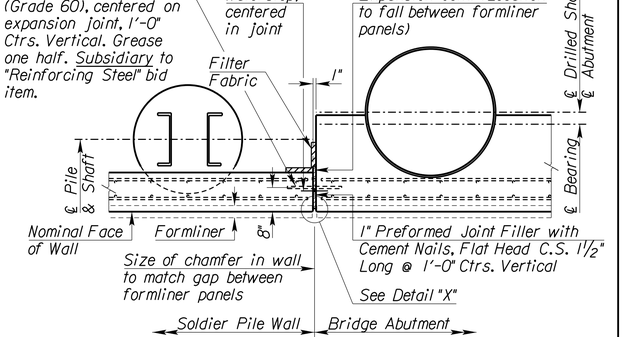
CONSTRUCTION JOINT DETAIL

(Carry horizontal wall & cap reinforcing thru Construction Joint)



EXPANSION JOINT DETAIL AT INTERNAL ABUTMENT JOINTS

(Provide 2" clearance minimum to horizontal wall and cap reinforcing at Expansion Joint.)
(DO NOT place the 1/2" Preformed Joint Filler in the Abutment Cap or Coping.)



EXPANSION JOINT DETAIL AT ENDS OF ABUTMENT

(Provide 2" clearance minimum to horizontal wall and cap reinforcing at Expansion Joint.)
(PLACE the 1" Preformed Joint Filler in the Abutment Cap and Coping.)

⚠ 5/26/2015 Revised pedestal heights.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

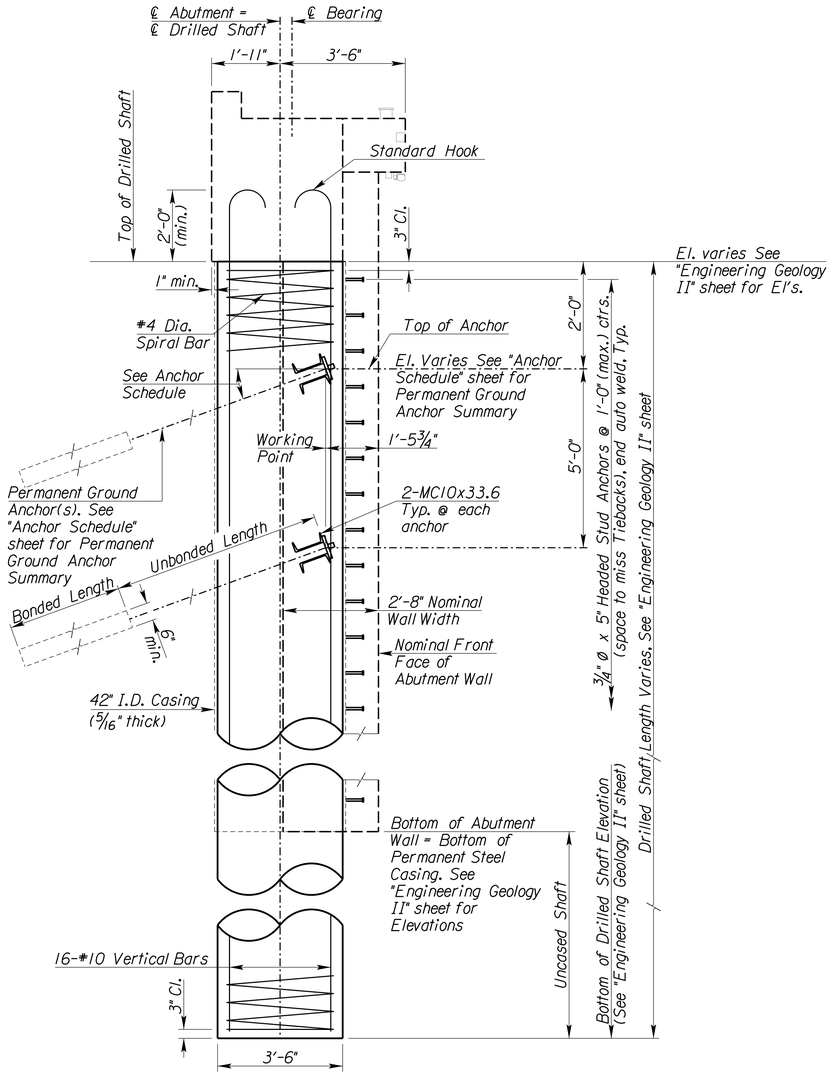
ABUTMENT SECTIONS

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

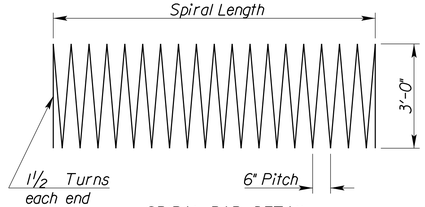
2:06:20 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABT09A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	393	1055



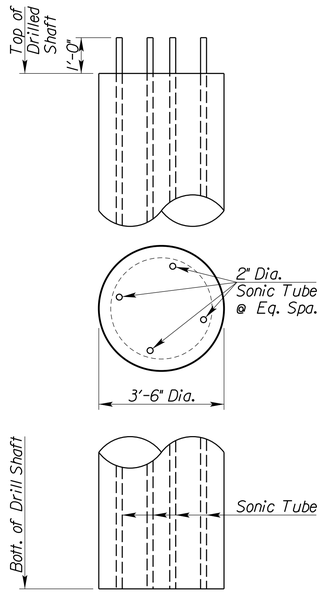
DRILLED SHAFT ELEVATION

NOTE: Drilled shaft spirals shall extend the entire length of the drilled shaft. Drilled shaft reinforcing quantities for information only are calculated assuming spirals extend the entire length of the drilled shafts. The Contractor shall submit integrated shop drawings for the drilled shafts, showing placement and method of securing tieback sleeves, stressing anchorages, and reinforcing steel for the drilled shaft and the selected tieback system.



SPIRAL BAR DETAIL

(1½" Ø smooth bar)



SONIC TUBE DETAIL

DRILLED SHAFT NOTES:

The Contractor shall be responsible for the design, installation, stressing, grouting and testing of all tiebacks including, but not limited to, tieback sleeves, blockouts, and stressing anchorages. The Contractor shall coordinate the tieback sleeve and blockout dimensions with the tieback system supplier.

Tieback sleeves shall be galvanized steel pipe conforming to ASTM A53, Grade B, and shall be included in the price bid for "Drilled Shaft (42")(Cased)". The location, inclination, and alignment of the tieback sleeves shall be as shown on the plans. Inclination and alignment shall be within plus or minus 3 degrees of the planned angle at the face of the drilled shaft, and within plus or minus 3" of the planned location at the face of the drilled shaft.

The suggested detail of the connection of the wall panel to the Drilled Shafts is shown in Section Thru Abutment Wall. The stud anchors and structural steel shall not be paid for directly but shall be included in the unit price bid for "Drilled Shaft (42")(Cased)". The Contractor may submit on alternate method to the Engineer for review and approval. The use of adhesive or expansion anchors shall not be permitted.

Drilled shaft quantities for information only:

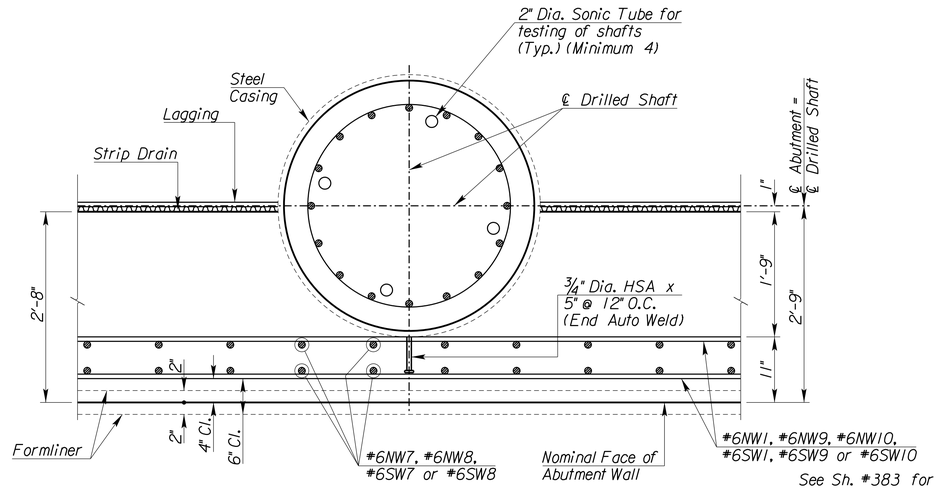
Concrete	=	9.6211 ft³/ft
Reinforcing Steel	=	84.48 lb/ft
1½ turns top and bott.	=	18.63 lb

Mass of the reinforcing steel (84.48 lb/ft) does not include 1½ additional turns top and bottom of spiral. Add the mass shown to each spiral.

Weld Headed Stud Anchors with automatically timed stud welding equipment connected to a suitable power source. All stud welding shall conform to KDOT Specifications. Fillet welding of Headed Stud Anchors shall not be allowed.

LEGEND

O.C. = On Center
HSA = Headed Stud Anchor



SECTION THRU ABUTMENT WALL

See Sh. #383 for Engineering Geology II.
See Sh. #396 for Anchor Schedule.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

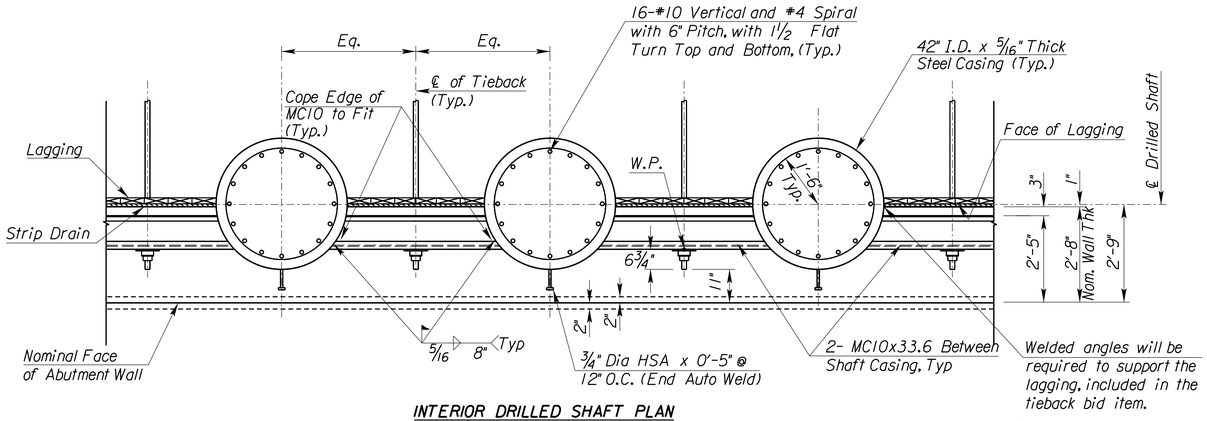
MISCELLANEOUS ABUTMENT DETAILS

BR. NO. 54-87-32.12 (826) STA. 49+99.68

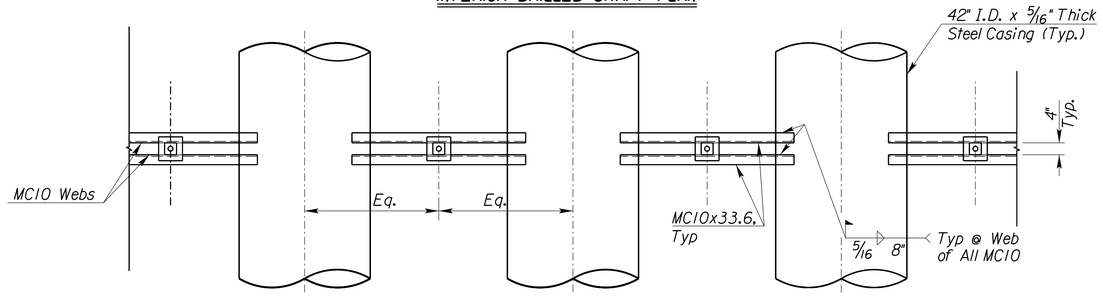
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:51:53 AM
4/17/2015
I:\357165A\Cadd\Sheets\Packagel\Structures\Bridge\Webb\EKIWKABT10A.dgn

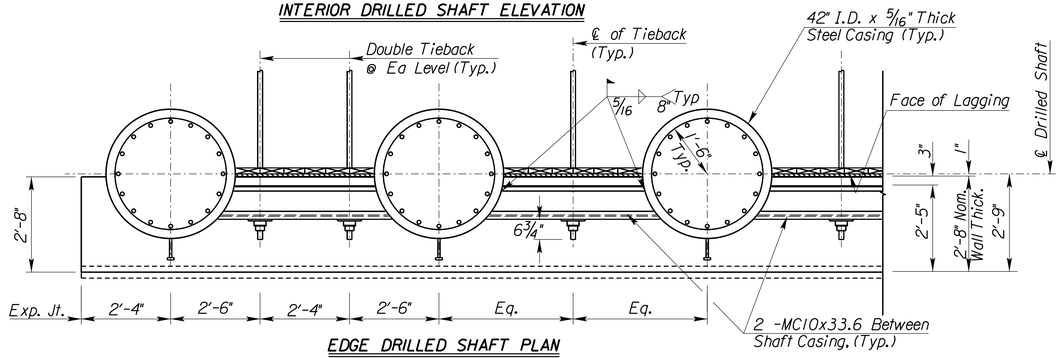
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	394	1055



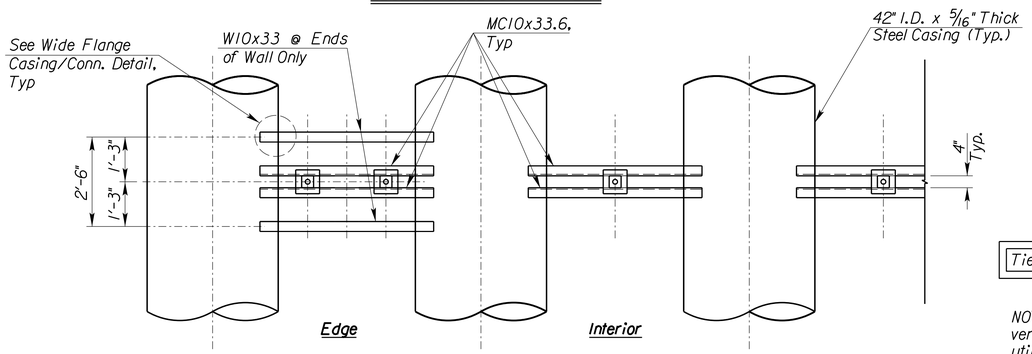
INTERIOR DRILLED SHAFT PLAN



INTERIOR DRILLED SHAFT ELEVATION



EDGE DRILLED SHAFT PLAN

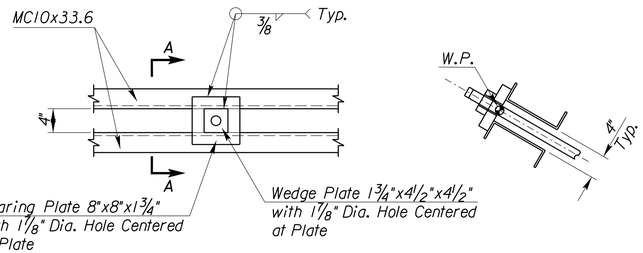


Edge Interior

EDGE DRILLED SHAFT ELEVATION

Tieback Structural Steel (Grade 50) Fy = 50 ksi

NOTE: It shall be the Contractor's responsibility to verify that the tiebacks will not interfere with utilities, drainage structures, sign and traffic signal foundations, and other obstructions.

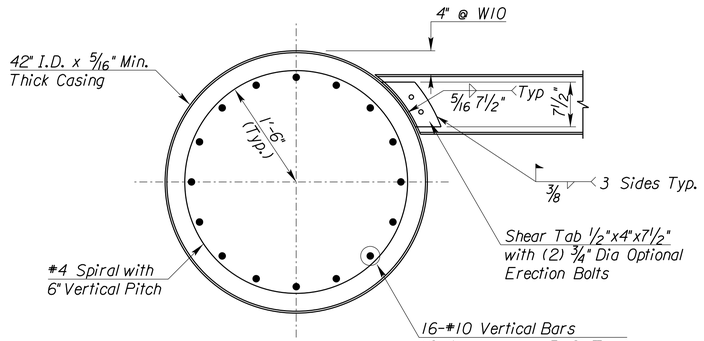


ELEVATION

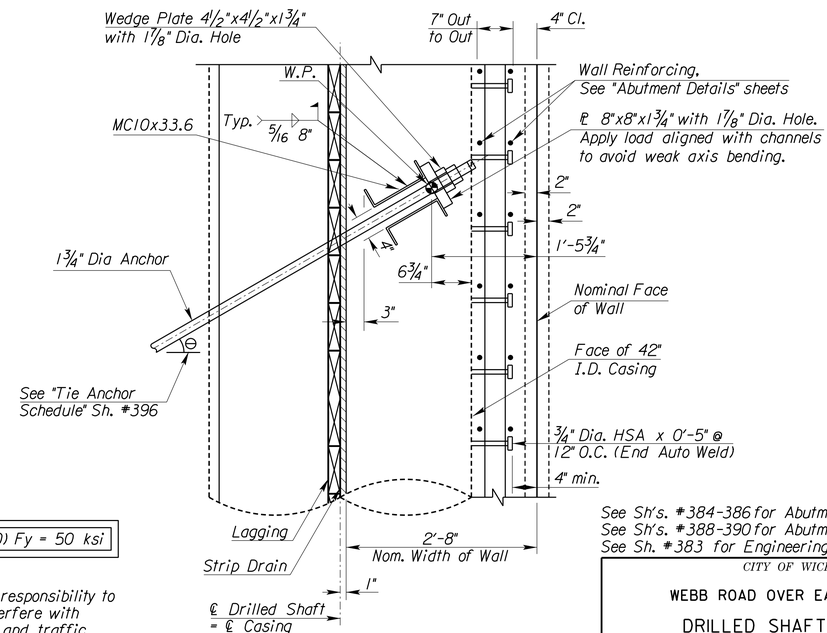
SECTION A-A

LEGEND

O.C. = On Center
I.D. = Inside Diameter
HSA = Headed Stud Anchor



PLAN WIDE FLANGE/CASING CONN. DETAIL



DRILLED SHAFT WALL SECTION

See Sh's. #384-386 for Abutment #1 Details.
See Sh's. #388-390 for Abutment #2 Details.
See Sh. #383 for Engineering Geology.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

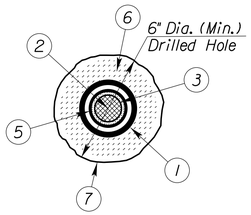
DRILLED SHAFT DETAILS

BR. NO. 54-87-32.12 (826) STA. 49+99.68

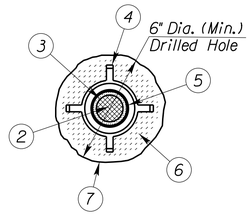
9:51:57 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKABT1IA.dgn

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

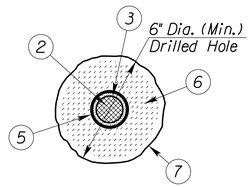
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	395	1055



SECTION A-A
(N.T.S.)

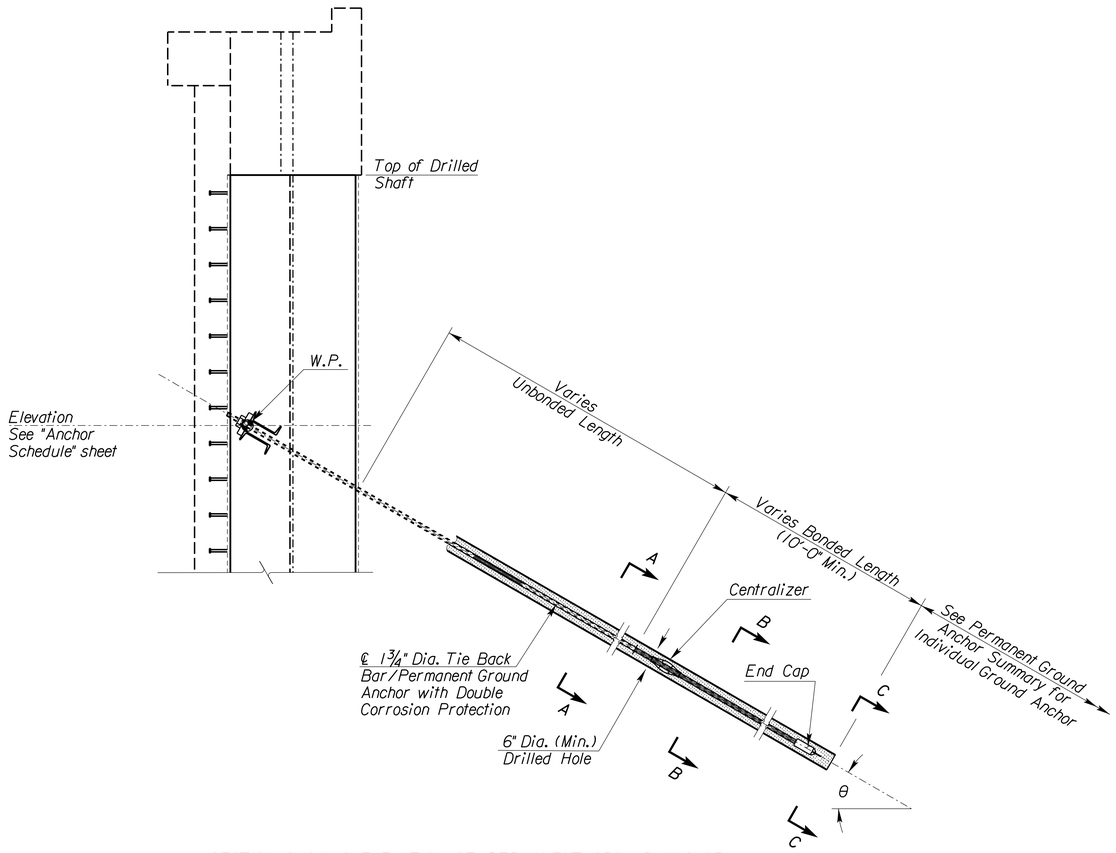


SECTION B-B
(N.T.S.)



SECTION C-C
(N.T.S.)

Contractor shall furnish and install Permanent Ground Anchors meeting the requirements for design load and unbonded length shown in the Permanent Ground Anchor Summary table shown on the "Anchor Schedule" sheet. Items indicated with an asterisk (*) shall be designed or selected by the Contractor.
All materials and work shall be in compliance with the performance specification for Tiebacks (See Special Provisions).
Cost of bearing plate and other steel required for the Tieback pile connection shall be subsidiary to "Tiebacks".



SECTION SHOWING ELEVATION OF PERMANENT GROUND ANCHOR USING HIGH STRENGTH BAR
(N.T.S.)
(Details may differ depending on type of approved tieback used)

θ See Permanent Ground Anchor Summary.

See "Anchor Schedule" sheet for Permanent Ground Anchor Summary.

See "General Notes" sheet for Soldier Pile General Notes and other information.

NOTES:

1. The geocomposite wall drain will be constructed according to project special provisions and the contractor shall ensure that the bottom sides and top edges are protected from either wet concrete or soil entering or sealing the drain while placing the pervious fabric side on the drain toward the soil. The drain shall be attached to and completely cover the exposed face of all of the lagging. Ensure the sides, top and back are covered with non-pervious material to protect it from wet concrete intrusion.
2. The Contractor is responsible for designing the lagging according to Section 11 of the 7th Edition with 2015 Interims of the AASHTO LRFD Bridge Design Specifications using no less than a 6" Lagging width. The design, sealed by a Kansas licensed professional engineer, shall be submitted to the Engineer for approval prior to fabrication.
3. Stud shear connectors shall be ¾" dia. x 5" granular or solid flux filled headed studs automatically end welded to the front of the steel casing of the drilled shaft.
4. A 4" dia. perforated pipe underdrain shall be situated within a 12" x 9" block of coarse aggregate (PB-2). The 12" x 9" block of course aggregate shall be wrapped completely in geotechnical fabric for French drains as shown and shall be subsidiary to the drilled shaft retaining wall.
5. Place geocomposite wall drain so that fabric side is adjacent to lagging.
6. Painting: The structural steel shall recieve a 6 mil coating of inorganic zinc primer in the shop.
7. Touch-up damaged paint with organic zinc in the field.
8. Backfill any void between the lagging and the excavation with material meeting the KDOT Requirements for structural backfill.

LEGEND

1. P.V.C. Bond Breaker (Smooth Sheeting) *
2. Bar or Prestressing Steel Tendon *
3. Encapsulated Grout *
4. Centralizer *
5. Corrugated P.V.C. *
6. Anchor Grout *
7. Drilled Hole *

See Sh. #396 for Anchor Schedule.
See Sh. #312 for General Notes.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

TIEBACK DETAILS

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

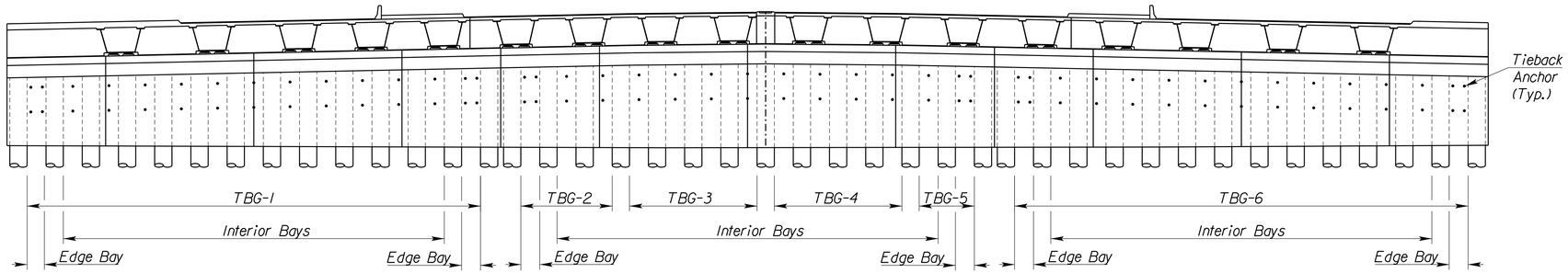
9:52:01 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK(WK)ABT12A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	396	1055

ABUTMENT #1 PERMANENT GROUND ANCHOR SUMMARY

Tieback Label	Top Anchor								Lower Anchor								No. of Edge Bays	No. of Interior Bays	Anchors Per Edge Bay	Anchors Per Interior Bay
	◔Design Load (k)	Bar Diam. (in)	Unbonded Lu (min.) (ft)	Bonded Lb (min.) (ft)	Anchor Length (ft)	Angle (degree)	El. (First)	El. (Last)	◔Design Load (k)	Bar Diam. (in)	Unbonded Lu (min.) (ft)	Bonded Lb (min.) (ft)	Anchor Length (ft)	Angle (degree)	El. (First)	El. (Last)				
TBG-1	141	1.75	60	29	89	30	1354.19	1355.98	47	1.75	50	15	65	30	1349.19	1350.98	2	11	4	2
TBG-2	141	1.75	60	29	89	30	1356.22	1356.52	47	1.75	50	15	65	30	1351.22	1351.52	1	2	4	2
TBG-3	141	1.75	60	29	89	30	1356.64	1356.88	47	1.75	50	15	65	30	1351.64	1351.88	0	4	4	2
TBG-4	141	1.75	60	29	89	30	1356.88	1356.66	47	1.75	50	15	65	30	1351.88	1351.66	0	4	4	2
TBG-5	141	1.75	60	29	89	30	1356.54	1356.39	47	1.75	50	15	65	30	1351.54	1351.39	1	1	4	2
TBG-6	141	1.75	60	29	89	30	1356.15	1354.42	47	1.75	50	15	65	30	1351.15	1349.42	2	11	4	2

◔ Anchor Design Load is equal to the Anchor Strength Load divided by the Load Factor for the apparent pressure diagram. Load Factor = 1.35.

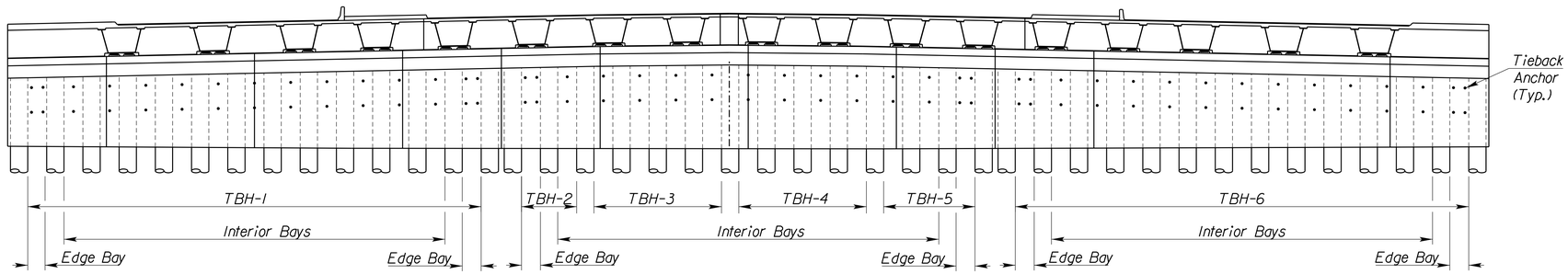


ELEVATION OF ABUTMENT #1 WALL

Looking North (Downstation). Showing arrangement of Tiebacks.

ABUTMENT #2 PERMANENT GROUND ANCHOR SUMMARY

Tieback Label	Top Anchor								Lower Anchor								No. of Edge Bays	No. of Interior Bays	Anchors Per Edge Bay	Anchors Per Interior Bay
	◔Design Load (k)	Bar Diam. (in)	Unbonded Lu (min.) (ft)	Bonded Lb (min.) (ft)	Anchor Length (ft)	Angle (degree)	El. (First)	El. (Last)	◔Design Load (k)	Bar Diam. (in)	Unbonded Lu (min.) (ft)	Bonded Lb (min.) (ft)	Anchor Length (ft)	Angle (degree)	El. (First)	El. (Last)				
TBH-1	141	1.75	60	29	89	30	1354.34	1356.12	47	1.75	50	15	65	30	1349.34	1351.12	2	11	4	2
TBH-2	141	1.75	60	29	89	30	1356.37	1356.52	47	1.75	50	15	65	30	1351.37	1351.52	1	1	4	2
TBH-3	141	1.75	60	29	89	30	1356.64	1356.87	47	1.75	50	15	65	30	1351.64	1351.87	0	4	4	2
TBH-4	141	1.75	60	29	89	30	1356.87	1356.65	47	1.75	50	15	65	30	1351.87	1351.65	0	4	4	2
TBH-5	141	1.75	60	29	89	30	1356.53	1356.24	47	1.75	50	15	65	30	1351.53	1351.24	1	2	4	2
TBH-6	141	1.75	60	29	89	30	1356.00	1354.26	47	1.75	50	15	65	30	1351.00	1349.26	2	11	4	2



ELEVATION OF ABUTMENT #2 WALL

Looking South (Upstation). Showing arrangement of Tiebacks.

SURV. -- | PLOT -- | CADD DES. AH/BS | DR. GB/CP | TR. -- | CKD. SB/NW | APP. --

9:52:58 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABT13A.dgn

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ANCHOR SCHEDULE

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	397	1055

GENERAL NOTES

ABUTMENT STRIP DRAIN: The Bridge Contractor shall place the Strip Drain against the lagging excavation support system to drain the soil mass behind the lagging, and place the perforated pipe and the outlet pipe. The drainage system behind the wall shall be paid for as "Abutment Strip Drain".

The Bridge Contractor shall excavate to the limits shown on the Bridge Excavation sheet for the Abutment Cap and Diaphragm, grade the bottom of the backfill area, place the strip drain, and place the perforated pipe, the outlet pipe, and the backfill. Connect the abutment drainage system above to the wall system below.

BRIDGE BACKWALL PROTECTION SYSTEM: Apply a Bridge Backwall Protective System to the approach side of the abutments and the wings in accordance with KDOT Specifications and the manufacturer's recommendations. Cover the abutments and wings to the limits shown on the details. Prior to backfilling, repair any damage done to the system at no charge to the state.

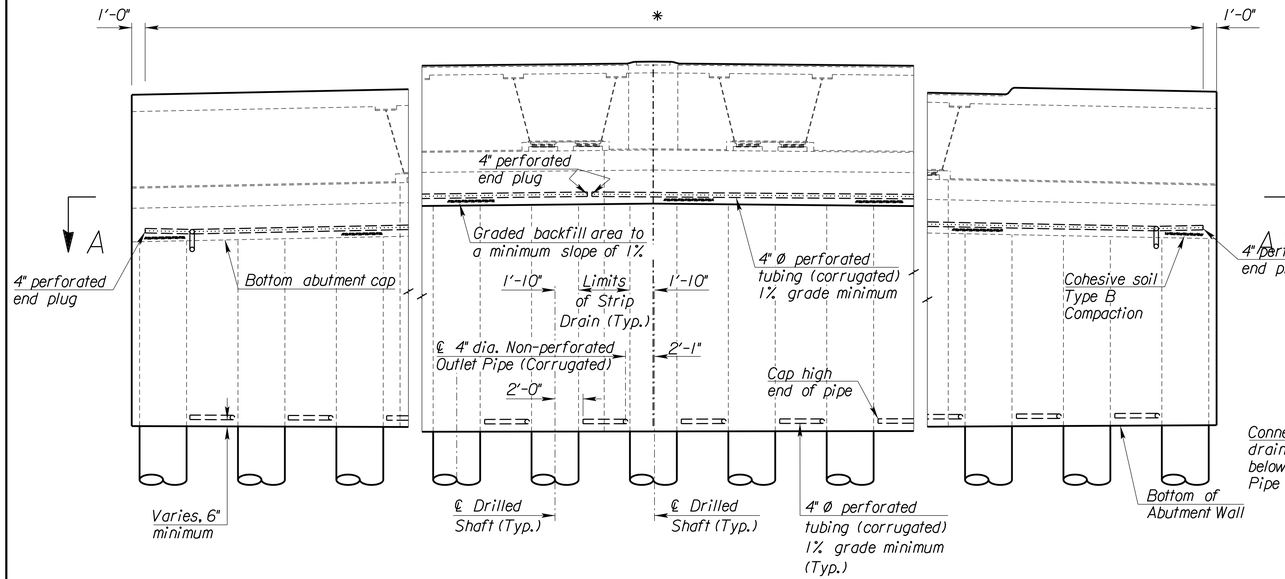
Place perforated pipe next to the strip drain. Use non-perforated pipe outside the limits of the strip drain. Enclose the perforated pipe with the extension of the filter fabric.

Compact the abutment backfill. See the KDOT Specifications.

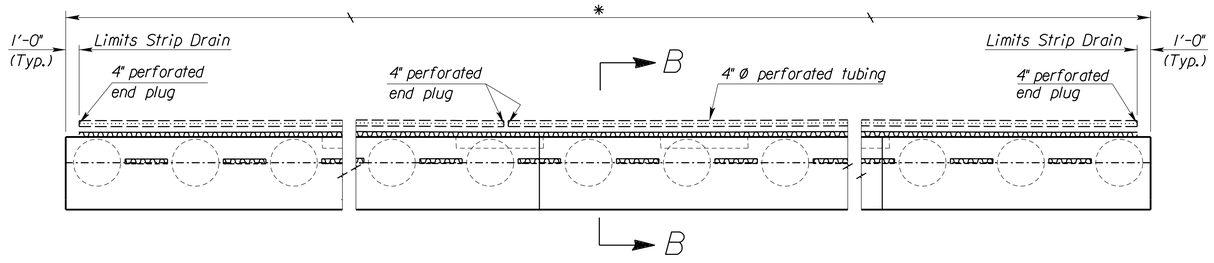
Perforated pipe and non-perforated outlet pipe shall be corrugated polyethylene tubing conforming to the KDOT Specifications.

Grade the bottom surface of the excavated Abutment Cap area to drain. Backfill this area with a cohesive type soil. The soil should be a silty clay or clay under the Kansas Classification System with a minimum plasticity index of 13. Compact the material to Type B standards.

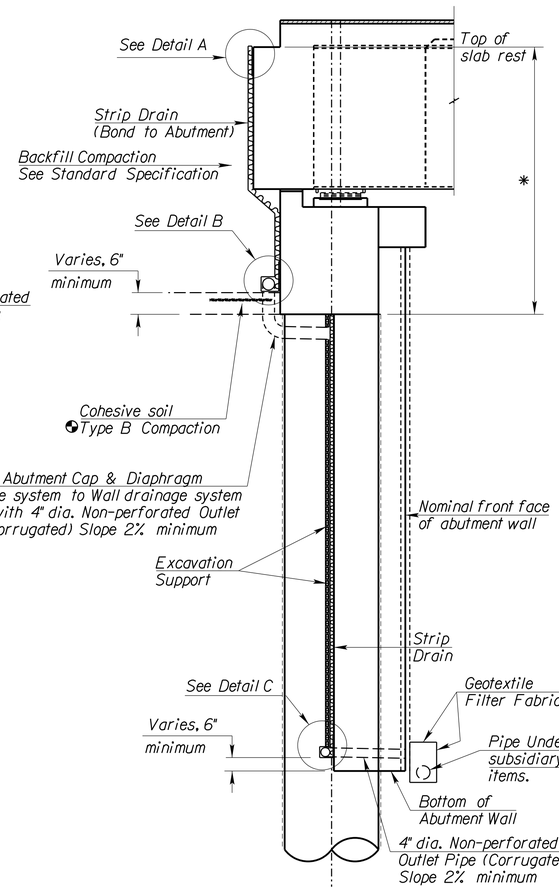
Place the outlet pipe as shown or noted on other sheets (See the "Construction Layout" sheet and drainage plans).



ELEVATION

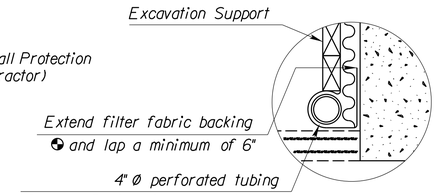


SECTION A-A

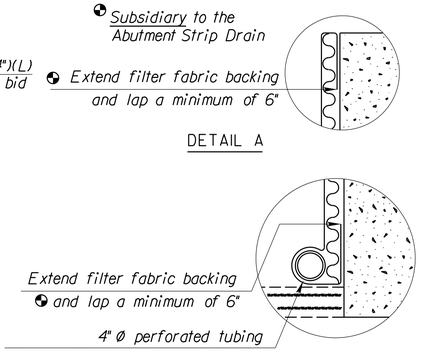


SECTION B-B

* Limits of Bridge Backwall Protection System (by Bridge Contractor)



DETAIL C



DETAIL A

DETAIL B

Quantities listed for BOTH abutments.

SUMMARY OF QUANTITIES	
Abutment Strip Drain	1,097.3 Sq. Yds.
Bridge Backwall Protection System	632.6 Sq. Yds.
Items Subsidiary to Strip Drain	
4" Ø Perforated Pipe	950 Lin. Ft.
4" Ø Outlet Pipe	350 Lin. Ft.
6" Ø CMP	-
Guide Post	-

See "Construction Layout" sheet for connection of Abutment Strip Drain to draining system in front of abutment wall.

See Sh. #380 for Construction Layout.

NO.	DATE	REVISIONS	BY	APP'D
3				
2	7/14/08	Change Type 'C' Compaction to 'B'	JPJ	KFH
1	4-01-04	Current release		

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 54-87-32.12 (826) Sta. 49+99.68

ABUTMENT
STRIP DRAIN

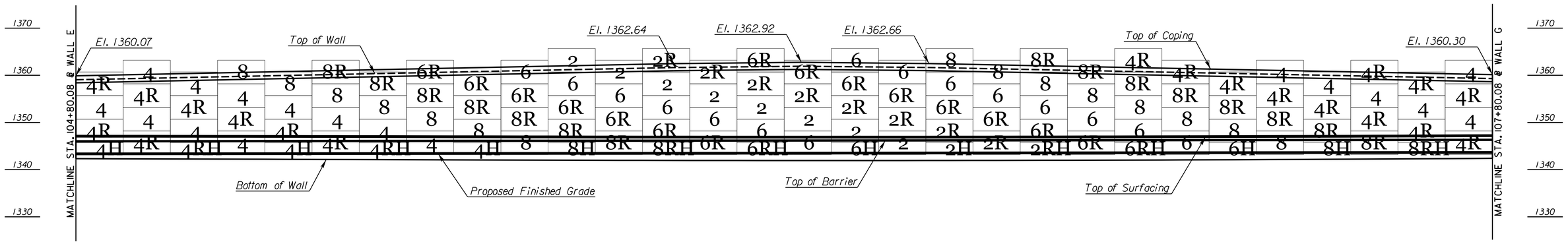
Proj. No. 472 85031 Sedgwick Co.

SHEET NO. OF	DATE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

Std. Base File: br102a.dgn
Plotted By: --
Plot Location: $UNIT$
File: T:\35765A\Cadd\Sheets\Package1\Structures\BridgeWebb\EK1WKBR102A01A.dgn
Plot Date: 4/17/2015

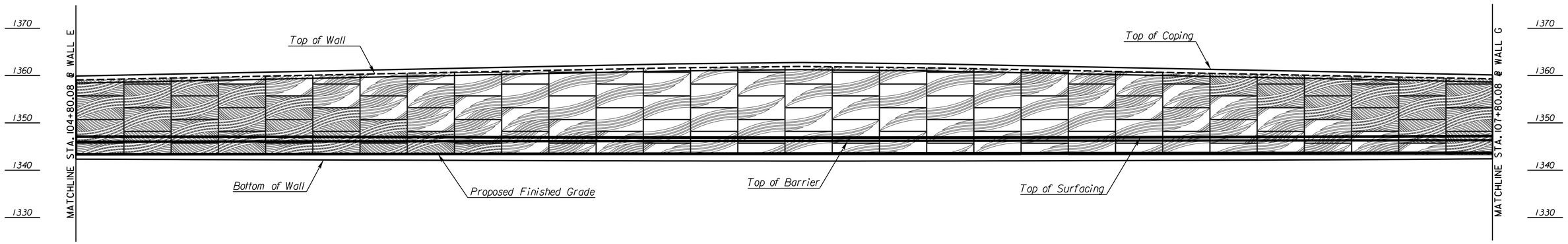
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	398	1055

Scale: 1"=10'



ELEVATION
(Front Face)
(Showing Pattern Map)
Looking Back Station (North)

NOTE:
Elevations shown are at cross-slope transition points and at ℄ Abutment #1 Bearing.



ELEVATION
(Front Face)
(Showing Pattern)
Looking Back Station (North)

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:53:10 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKABUTWAP01A.dgn

CITY OF WICHITA

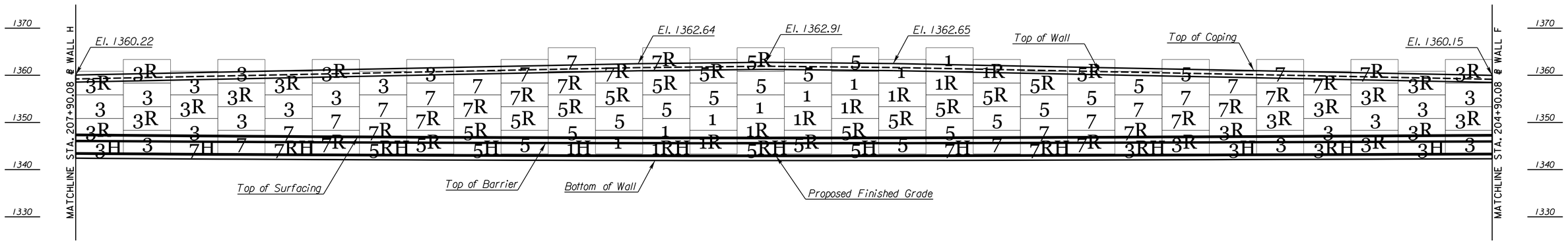
WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 WALL PATTERNING

BR. NO. 54-87-32.12 (826) STA. 49+99.68

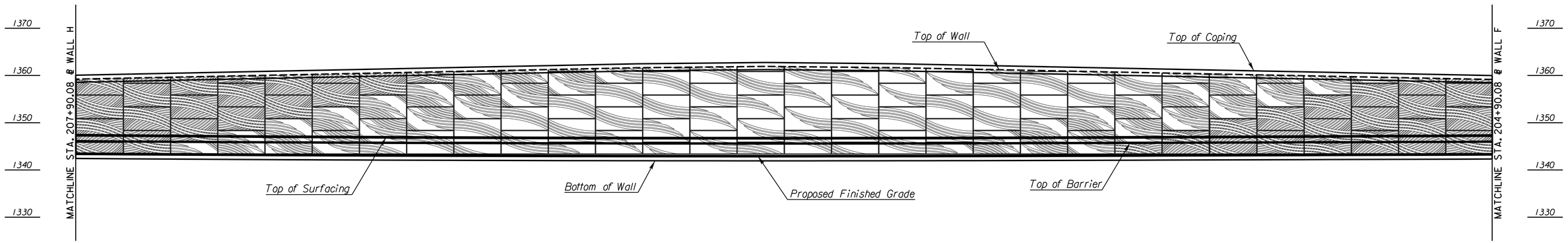
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	399	1055

Scale: 1"=10'



ELEVATION
(Front Face)
(Showing Pattern Map)
Looking Up Station (South)

NOTE:
Elevations shown are at cross-slope transition points and at ℄ Abutment #2 Bearing.



ELEVATION
(Front Face)
(Showing Pattern)
Looking Up Station (South)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:53:17 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKABUTWAP02A.dgn

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 WALL PATTERNING

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	400	1055

Revised Plans

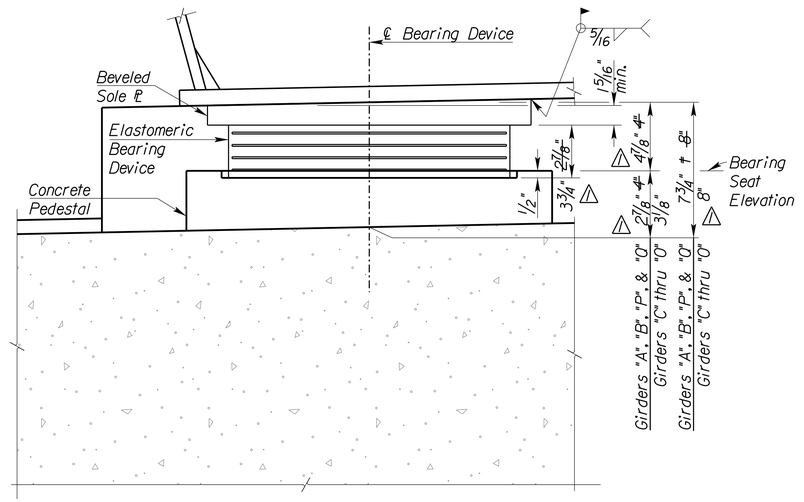
***TABLE OF BEARING SEAT ELEVATIONS AND STATIONS & OFFSETS TO ABUTMENT #1 BEARING DEVICE WORKING POINTS

Description	Sta.	Offset	Bearing Seat Elevation ⚠
Girder "A" Left	49+35.42	143.50 Lt.	~~1361.07~~ 1360.97
Girder "A" Right	49+35.30	140.56 Lt.	~~1361.12~~ 1361.03
Girder "B" Left	49+34.69	125.21 Lt.	~~1361.43~~ 1361.33
Girder "B" Right	49+34.57	122.20 Lt.	~~1361.49~~ 1361.39
Girder "C" Left	49+33.92	107.66 Lt.	~~1361.77~~ 1361.70
Girder "C" Right	49+33.92	104.33 Lt.	~~1361.84~~ 1361.77
Girder "D" Left	49+33.30	91.99 Lt.	~~1362.08~~ 1362.01
Girder "D" Right	49+33.29	88.66 Lt.	~~1362.15~~ 1362.08
Girder "E" Left	49+32.67	76.33 Lt.	~~1362.39~~ 1362.32
Girder "E" Right	49+32.67	72.99 Lt.	~~1362.46~~ 1362.38
Girder "F" Left	49+32.04	60.66 Lt.	~~1362.70~~ 1362.63
Girder "F" Right	49+32.04	57.33 Lt.	~~1362.77~~ 1362.69
Girder "G" Left	49+31.42	45.04 Lt.	~~1363.00~~ 1362.93
Girder "G" Right	49+31.41	41.71 Lt.	~~1363.03~~ 1362.96
Girder "H" Left	49+30.79	29.37 Lt.	~~1363.15~~ 1363.08
Girder "H" Right	49+30.79	26.04 Lt.	~~1363.18~~ 1363.11
Girder "I" Left	49+30.17	14.14 Lt.	~~1363.20~~ 1363.13
Girder "I" Right	49+30.17	10.80 Lt.	~~1363.17~~ 1363.10
Girder "J" Left	49+29.59	0.53 Rt.	~~1363.05~~ 1362.98
Girder "J" Right	49+29.58	3.86 Rt.	~~1363.02~~ 1362.95
Girder "K" Left	49+29.00	15.15 Rt.	~~1362.83~~ 1362.76
Girder "K" Right	49+29.00	18.48 Rt.	~~1362.76~~ 1362.69
Girder "L" Left	49+28.41	29.82 Rt.	~~1362.53~~ 1362.46
Girder "L" Right	49+28.41	33.15 Rt.	~~1362.46~~ 1362.39
Girder "M" Left	49+27.82	44.48 Rt.	~~1362.23~~ 1362.16
Girder "M" Right	49+27.82	47.82 Rt.	~~1362.17~~ 1362.09
Girder "N" Left	49+27.24	59.15 Rt.	~~1361.94~~ 1361.86
Girder "N" Right	49+27.23	62.48 Rt.	~~1361.87~~ 1361.80
Girder "O" Left	49+26.65	73.82 Rt.	~~1361.64~~ 1361.57
Girder "O" Right	49+26.65	77.15 Rt.	~~1361.57~~ 1361.50
Girder "P" Left	49+26.01	91.43 Rt.	~~1361.28~~ 1361.19
Girder "P" Right	49+25.89	94.47 Rt.	~~1361.22~~ 1361.13
Girder "Q" Left	49+25.27	109.94 Rt.	~~1360.91~~ 1360.81
Girder "Q" Right	49+25.15	112.94 Rt.	~~1360.85~~ 1360.75

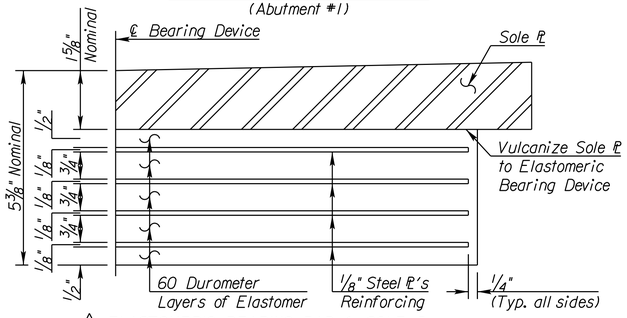
*** Stations and Offsets for location of Working Point of Bearing Device include the effects of superelevation upon the location of the bottom flange.

ABUTMENT #1 SOLE ℄ HEIGHTS AT CORNERS (inches)

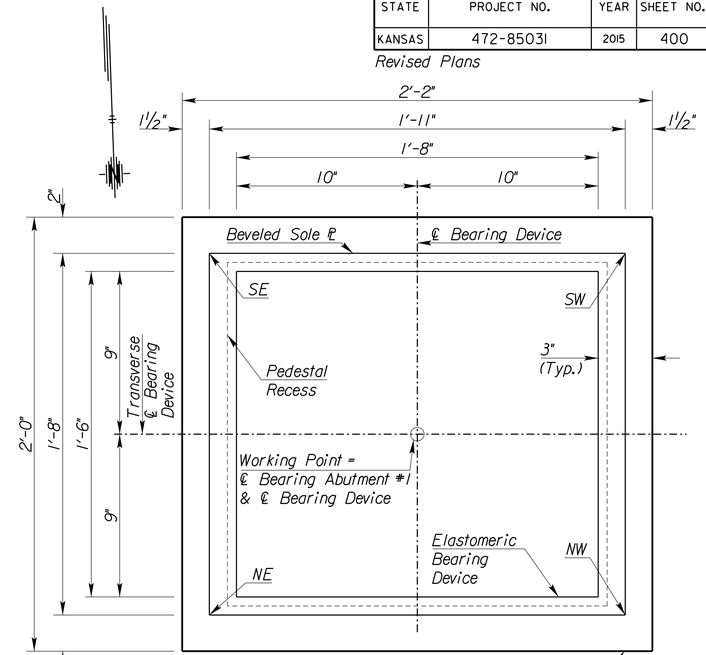
Description	SE	NE	SW	NW
Girder "A" Left	1 7/16	1 5/16	1 15/16	1 13/16
Girder "A" Right	1 7/16	1 5/16	1 15/16	1 13/16
Girder "B" Left	1 7/16	1 5/16	1 15/16	1 13/16
Girder "B" Right	1 7/16	1 5/16	1 15/16	1 13/16
Girder "C" Left	1 7/16	1 5/16	1 15/16	1 13/16
Girder "C" Right	1 7/16	1 5/16	1 15/16	1 13/16
Girder "D" Left	1 7/16	1 5/16	1 15/16	1 13/16
Girder "D" Right	1 7/16	1 5/16	1 15/16	1 13/16
Girder "E" Left	1 7/16	1 5/16	1 15/16	1 13/16
Girder "E" Right	1 7/16	1 5/16	1 15/16	1 13/16
Girder "F" Left	1 7/16	1 5/16	1 15/16	1 13/16
Girder "F" Right	1 7/16	1 5/16	1 15/16	1 13/16
Girder "G" Left	1 9/16	1 7/16	1 13/16	1 11/16
Girder "G" Right	1 9/16	1 7/16	1 13/16	1 11/16
Girder "H" Left	1 9/16	1 7/16	1 13/16	1 11/16
Girder "H" Right	1 9/16	1 7/16	1 13/16	1 11/16
Girder "I" Left	1 13/16	1 11/16	1 9/16	1 7/16
Girder "I" Right	1 13/16	1 11/16	1 9/16	1 7/16
Girder "J" Left	1 13/16	1 11/16	1 9/16	1 7/16
Girder "J" Right	1 13/16	1 11/16	1 9/16	1 7/16
Girder "K" Left	1 15/16	1 13/16	1 7/16	1 5/16
Girder "K" Right	1 15/16	1 13/16	1 7/16	1 5/16
Girder "L" Left	1 15/16	1 13/16	1 7/16	1 5/16
Girder "L" Right	1 15/16	1 13/16	1 7/16	1 5/16
Girder "M" Left	1 15/16	1 13/16	1 7/16	1 5/16
Girder "M" Right	1 15/16	1 13/16	1 7/16	1 5/16
Girder "N" Left	1 15/16	1 13/16	1 7/16	1 5/16
Girder "N" Right	1 15/16	1 13/16	1 7/16	1 5/16
Girder "O" Left	1 15/16	1 13/16	1 7/16	1 5/16
Girder "O" Right	1 15/16	1 13/16	1 7/16	1 5/16
Girder "P" Left	1 15/16	1 3/4	1 7/16	1 5/16
Girder "P" Right	1 15/16	1 3/4	1 7/16	1 5/16
Girder "Q" Left	1 15/16	1 3/4	1 1/2	1 5/16
Girder "Q" Right	1 15/16	1 3/4	1 1/2	1 5/16



ELEVATION OF BEARING DEVICE
(Abutment #1)



⚠ ELASTOMERIC BEARING PAD & SOLE ℄



PLAN OF BEARING DEVICE
(Abutment #1)(34 Required)

◔ TABLE OF BEARING OFFSETS TO ABUTMENT #1 BEARING DEVICE WORKING POINTS

Description	Bearing Offset
Girder "A"	1'-5"
Girder "B"	1'-6"
Girder "C"	1'-8"
Girder "D"	1'-8"
Girder "E"	1'-8"
Girder "F"	1'-8"
Girder "G"	1'-8"
Girder "H"	1'-8"
Girder "I"	1'-8"
Girder "J"	1'-8"
Girder "K"	1'-8"
Girder "L"	1'-8"
Girder "M"	1'-8"
Girder "N"	1'-8"
Girder "O"	1'-8"
Girder "P"	1'-6"
Girder "Q"	1'-5"

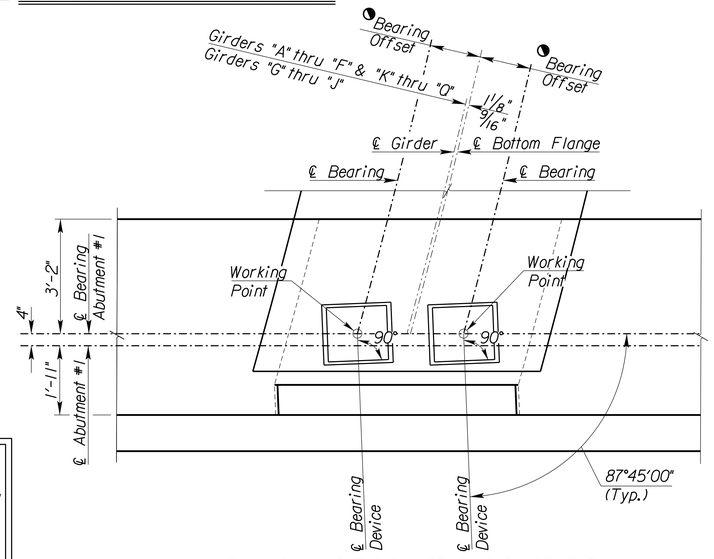
ABUTMENT #1 REQUIRED BEARING DEVICE LOADS AND MOVEMENTS

* LRFD Service I Max. Vertical Load per Bearing (k)	340
Longitudinal Movement (in)	NA
Transverse Movement (in)	NA

* Includes Dead Load & Live Load.

WORKING POINT NOTE:
For the curved girders "A", "B", "P" & "Q", the ℄ Abutment Cross Frame is coincident with the ℄ Bearing Abutment. Working Point is at the intersection of Bearing Offset and ℄ Bearing Abutment = ℄ Abutment Cross Frame.

For straight girders "C" thru "O", the ℄ Abutment Cross Frame is normal to ℄ Girder and not coincident with ℄ Bearing Abutment. Working Point is at the intersection of Bearing Offset and ℄ Abutment Cross Frame (not = to ℄ Bearing Abutment.)



PLAN SHOWING TYPICAL BEARING PLACEMENT
(Girder "A" shown. Other Girders similar.)
(For each Girder, the ℄ Bottom Flange is closer to the Crown Grade than the ℄ Girder.)

NOTES:
Bond the Bearing Pad to the concrete, at top of the pedestal, by the use of an approved epoxy or bonding agent recommended by the manufacturer of the pad.

The bid item "Elastomeric Bearing" includes the Sole ℄, and reinforced elastomeric bearing pad. Sandblast and paint all steel as per K.D.O.T. Specifications and latest special provisions for primer and polyurethane finish coat. All steel shall be ASTM A36.

All welds shall be 5/16" unless otherwise shown.

† Dimensions shown are nominal dimensions at Working Point = ℄ Bearing Abutment and ℄ Bearing Device. Bearing device height does not include service load vertical compression. Submit Shop Drawings of Bearing Device assemblies for approval prior to fabrication.

LEGEND
NE = Northeast
NW = Northwest
SE = Southeast
SW = Southwest

⚠ 5/26/2015 Revised bearing.

CITY OF WICHITA
WEBB ROAD OVER EAST KELLOGG
BEARING DETAILS I
BR. NO. 54-87-32.12 (826) STA. 49+99.68

2:06:22 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKBRG01A.DGN

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.
--	--	--	--	--	--	--	--	--	--	--	--

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	401	1055

Revised Plans

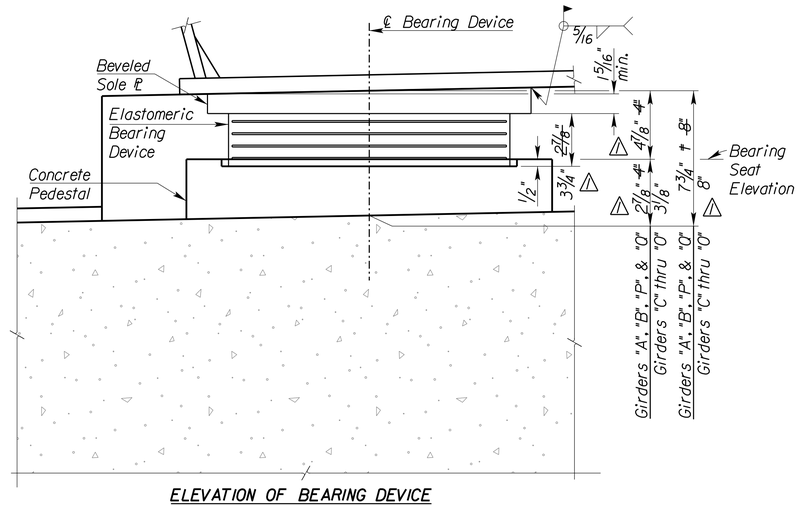
*** TABLE OF BEARING SEAT ELEVATIONS AND STATIONS & OFFSETS TO ABUTMENT #2 BEARING DEVICE WORKING POINTS

Description	Sta.	Offset	Bearing Seat Elevation	⚠
Girder "A" Left	50+75.31	143.45 Lt.	~~1360.99~~	1360.90
Girder "A" Right	50+75.19	140.45 Lt.	~~1361.05~~	1360.96
Girder "B" Left	50+74.59	124.98 Lt.	~~1361.37~~	1361.27
Girder "B" Right	50+74.47	121.94 Lt.	~~1361.43~~	1361.33
Girder "C" Left	50+73.84	107.66 Lt.	~~1361.72~~	1361.65
Girder "C" Right	50+73.84	104.32 Lt.	~~1361.78~~	1361.71
Girder "D" Left	50+73.23	91.99 Lt.	~~1362.04~~	1361.96
Girder "D" Right	50+73.23	88.66 Lt.	~~1362.10~~	1362.03
Girder "E" Left	50+72.61	76.32 Lt.	~~1362.35~~	1362.28
Girder "E" Right	50+72.61	72.99 Lt.	~~1362.42~~	1362.35
Girder "F" Left	50+72.00	60.66 Lt.	~~1362.67~~	1362.60
Girder "F" Right	50+72.00	57.32 Lt.	~~1362.74~~	1362.67
Girder "G" Left	50+71.38	45.04 Lt.	~~1362.98~~	1362.91
Girder "G" Right	50+71.38	41.70 Lt.	~~1363.01~~	1362.94
Girder "H" Left	50+70.77	29.37 Lt.	~~1363.14~~	1363.07
Girder "H" Right	50+70.77	26.04 Lt.	~~1363.17~~	1363.10
Girder "I" Left	50+70.16	14.13 Lt.	~~1363.20~~	1363.13
Girder "I" Right	50+70.16	10.80 Lt.	~~1363.17~~	1363.09
Girder "J" Left	50+69.59	0.54 Rt.	~~1363.06~~	1362.98
Girder "J" Right	50+69.59	3.87 Rt.	~~1363.02~~	1362.95
Girder "K" Left	50+69.01	15.16 Rt.	~~1362.84~~	1362.77
Girder "K" Right	50+69.01	18.49 Rt.	~~1362.78~~	1362.70
Girder "L" Left	50+68.43	29.82 Rt.	~~1362.55~~	1362.48
Girder "L" Right	50+68.43	33.16 Rt.	~~1362.49~~	1362.41
Girder "M" Left	50+67.86	44.49 Rt.	~~1362.26~~	1362.19
Girder "M" Right	50+67.86	47.82 Rt.	~~1362.20~~	1362.12
Girder "N" Left	50+67.28	59.16 Rt.	~~1361.97~~	1361.90
Girder "N" Right	50+67.28	62.49 Rt.	~~1361.91~~	1361.83
Girder "O" Left	50+66.71	73.82 Rt.	~~1361.69~~	1361.61
Girder "O" Right	50+66.71	77.16 Rt.	~~1361.62~~	1361.55
Girder "P" Left	50+66.07	91.69 Rt.	~~1361.33~~	1361.24
Girder "P" Right	50+65.95	94.71 Rt.	~~1361.27~~	1361.18
Girder "Q" Left	50+65.35	110.06 Rt.	~~1360.97~~	1360.88
Girder "Q" Right	50+65.24	112.99 Rt.	~~1360.91~~	1360.82

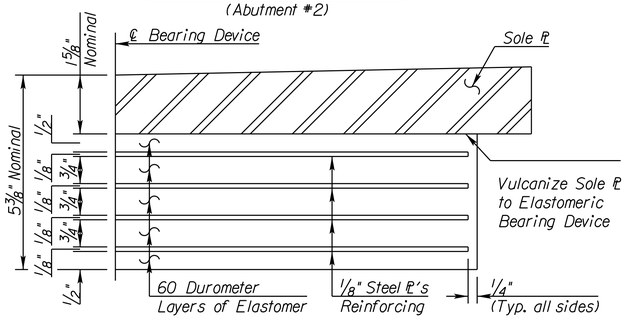
*** Stations and Offsets for location of Working Point of Bearing Device include the effects of superelevation upon the location of the bottom flange.

ABUTMENT #2 SOLE ℄ HEIGHTS AT CORNERS (inches)

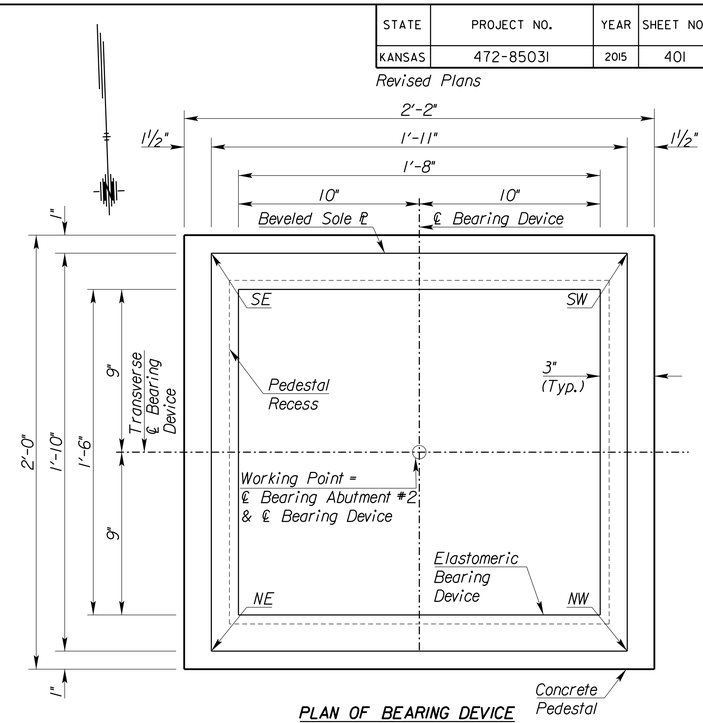
Description	SE	NE	SW	NW
Girder "A" Left	1 5/16	1 1/2	1 3/4	1 15/16
Girder "A" Right	1 5/16	1 1/2	1 3/4	1 15/16
Girder "B" Left	1 5/16	1 1/2	1 3/4	1 15/16
Girder "B" Right	1 5/16	1 1/2	1 3/4	1 15/16
Girder "C" Left	1 5/16	1 1/2	1 3/4	1 15/16
Girder "C" Right	1 5/16	1 1/2	1 3/4	1 15/16
Girder "D" Left	1 5/16	1 1/2	1 3/4	1 15/16
Girder "D" Right	1 5/16	1 1/2	1 3/4	1 15/16
Girder "E" Left	1 5/16	1 1/2	1 3/4	1 15/16
Girder "E" Right	1 5/16	1 1/2	1 3/4	1 15/16
Girder "F" Left	1 5/16	1 1/2	1 3/4	1 15/16
Girder "F" Right	1 5/16	1 1/2	1 3/4	1 15/16
Girder "G" Left	1 7/16	1 9/16	1 11/16	1 13/16
Girder "G" Right	1 7/16	1 9/16	1 11/16	1 13/16
Girder "H" Left	1 7/16	1 9/16	1 11/16	1 13/16
Girder "H" Right	1 7/16	1 9/16	1 11/16	1 13/16
Girder "I" Left	1 11/16	1 13/16	1 7/16	1 9/16
Girder "I" Right	1 11/16	1 13/16	1 7/16	1 9/16
Girder "J" Left	1 11/16	1 13/16	1 7/16	1 9/16
Girder "J" Right	1 11/16	1 13/16	1 7/16	1 9/16
Girder "K" Left	1 3/4	1 15/16	1 5/16	1 1/2
Girder "K" Right	1 3/4	1 15/16	1 5/16	1 1/2
Girder "L" Left	1 3/4	1 15/16	1 5/16	1 1/2
Girder "L" Right	1 3/4	1 15/16	1 5/16	1 1/2
Girder "M" Left	1 3/4	1 15/16	1 5/16	1 1/2
Girder "M" Right	1 3/4	1 15/16	1 5/16	1 1/2
Girder "N" Left	1 3/4	1 15/16	1 5/16	1 7/16
Girder "N" Right	1 3/4	1 15/16	1 5/16	1 7/16
Girder "O" Left	1 3/4	1 15/16	1 5/16	1 7/16
Girder "O" Right	1 3/4	1 15/16	1 5/16	1 7/16
Girder "P" Left	1 13/16	1 15/16	1 5/16	1 7/16
Girder "P" Right	1 13/16	1 15/16	1 5/16	1 7/16
Girder "Q" Left	1 13/16	1 15/16	1 5/16	1 7/16
Girder "Q" Right	1 13/16	1 15/16	1 5/16	1 7/16



ELEVATION OF BEARING DEVICE
(Abutment #2)



⚠ ELASTOMERIC BEARING PAD & SOLE ℄



PLAN OF BEARING DEVICE
(Abutment #2)(34 Required)

◔ TABLE OF BEARING OFFSETS TO ABUTMENT #2 BEARING DEVICE WORKING POINTS

Description	Offset
Girder "A"	1'-5"
Girder "B"	1'-6"
Girder "C"	1'-8"
Girder "D"	1'-8"
Girder "E"	1'-8"
Girder "F"	1'-8"
Girder "G"	1'-8"
Girder "H"	1'-8"
Girder "I"	1'-8"
Girder "J"	1'-8"
Girder "K"	1'-8"
Girder "L"	1'-8"
Girder "M"	1'-8"
Girder "N"	1'-8"
Girder "O"	1'-8"
Girder "P"	1'-6"
Girder "Q"	1'-5"

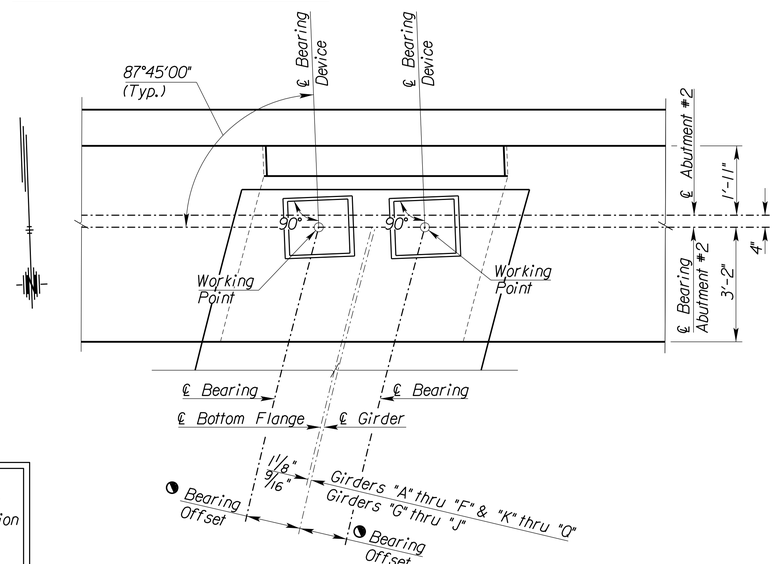
ABUTMENT #2 REQUIRED BEARING DEVICE LOADS AND MOVEMENTS

* LRFD Service I Max. Vertical Load per Bearing (k)	340
Longitudinal Movement (One-way)(in)	0.77
Transverse Movement (in)	NA

* Includes Dead Load & Live Load.

WORKING POINT NOTE:
For the curved girders "A", "B", "P" & "Q", the ℄ Abutment Cross Frame is coincident with the ℄ Bearing Abutment. Working Point is at the intersection of Bearing Offset and ℄ Bearing Abutment = ℄ Abutment Cross Frame.

For straight girders "C" thru "O", the ℄ Abutment Cross Frame is normal to ℄ Girder and not coincident with ℄ Bearing Abutment. Working Point is at the intersection of Bearing Offset and ℄ Abutment Cross Frame (not = to ℄ Bearing Abutment.)



PLAN SHOWING TYPICAL BEARING PLACEMENT
(Girder "Q" shown. Other Girders similar.)
(For each Girder, the ℄ Bottom Flange is closer to the Crown Grade than the ℄ Girder.)

NOTES:
Bond the Bearing Pad to the concrete, at top of the pedestal, by the use of an approved epoxy or bonding agent recommended by the manufacturer of the pad.

The bid item "Elastomeric Bearing" includes the Sole ℄, and reinforced elastomeric bearing pad. Sandblast and paint all steel as per K.D.O.T. Specifications and latest special provisions for primer and polyurethane finish coat. All steel shall be ASTM A36.

All welds shall be 5/16" unless otherwise shown.

† Dimensions shown are nominal dimensions at Working Point = ℄ Bearing Abutment and ℄ Bearing Device. Bearing device height does not include service load vertical compression. Submit Shop Drawings of Bearing Device assemblies for approval prior to fabrication.

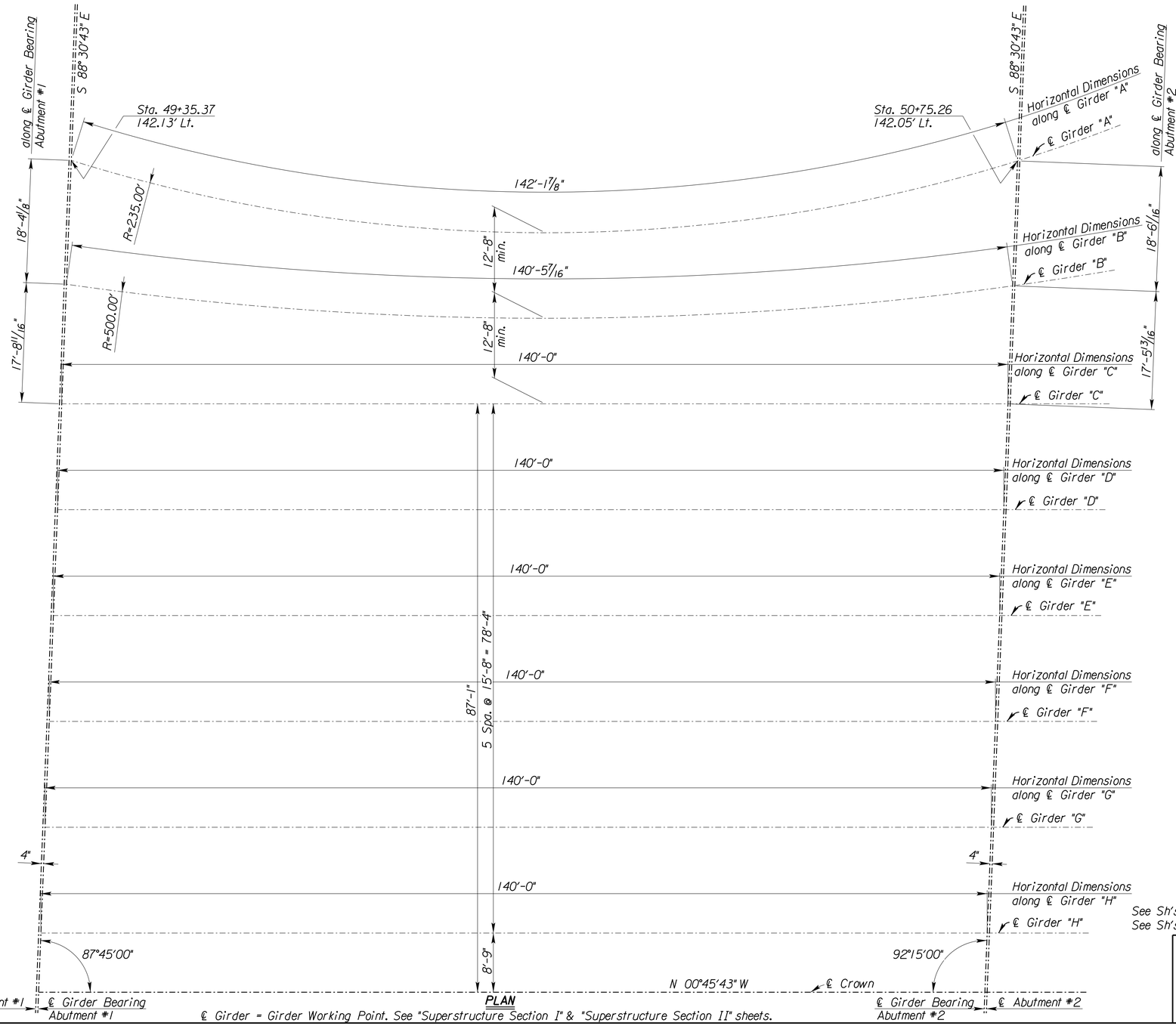
LEGEND
NE = Northeast
NW = Northwest
SE = Southeast
SW = Southwest

⚠ 5/26/2015 Revised bearing.

CITY OF WICHITA
WEBB ROAD OVER EAST KELLOGG
BEARING DETAILS II
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV. -- | PLOT -- | CADD DES. | AH/BS DR. | GB/CP TR. | -- CKD. | SB/NW APP. --
2:06:24 PM
5/26/2015
T:\35765A\Cadd\Sheets\Packagel\Structures\Bridge\Webb\EKIWKBRG02A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	402	1055



See "Deck Details" sheets for deck geometric information.

℄ Girder = Girder Working Point. See "Superstructure Section I" & "Superstructure Section II" sheets.

See Sh's. #406 &407 for Superstructure Section I & II.
See Sh's. #424 - 426 for Deck Details.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

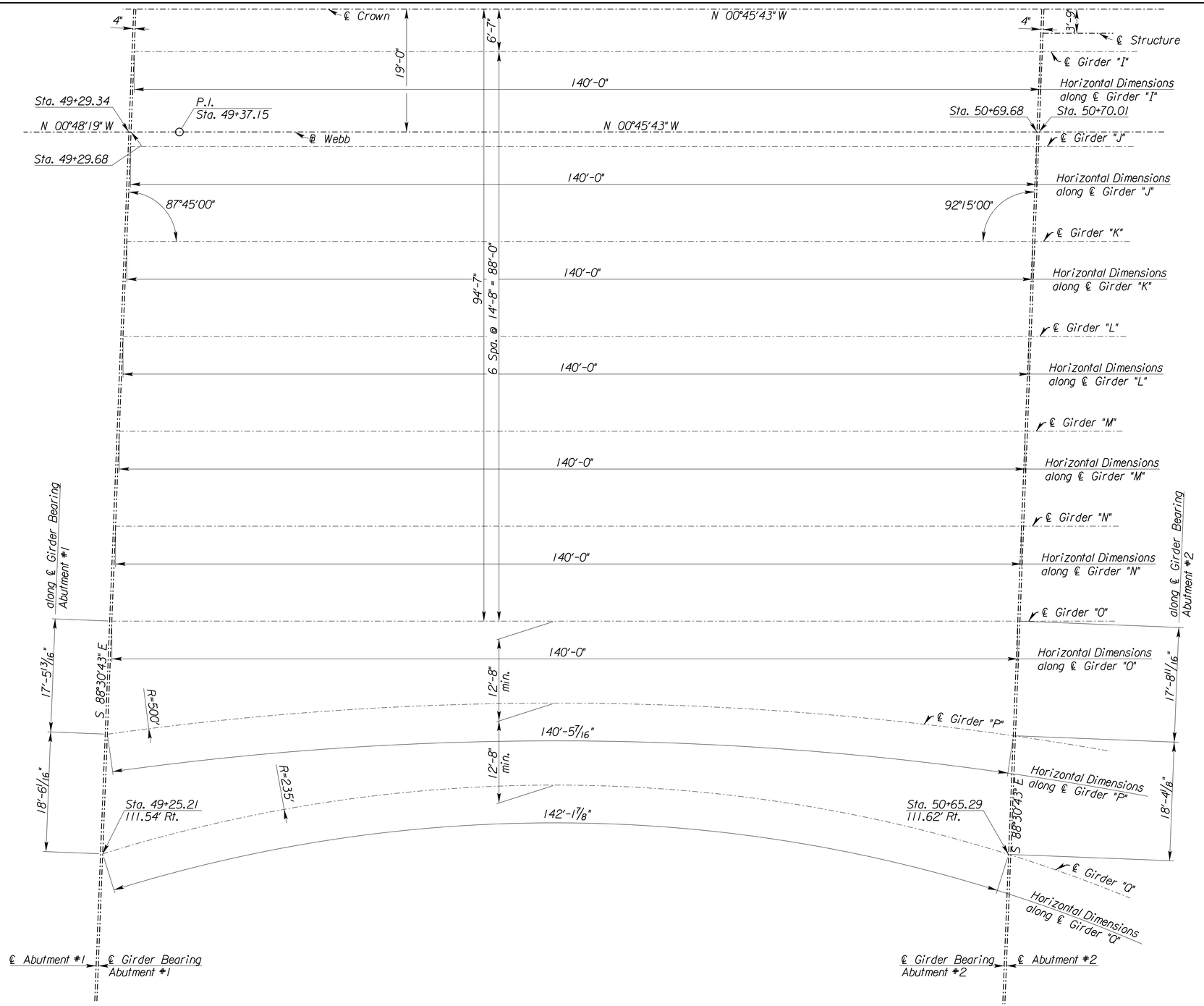
9:53:38 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK\WKMSC01A.dgn

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG
GIRDER & SUPPORT
GEOMETRIC LAYOUT I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	403	1055



℄ Webb Road
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.

PLAN

℄ Girder = Girder Working Point. See "Superstructure Section I" & "Superstructure Section II" sheets.

See Sh's. #406 &407 for Superstructure Section I & II.

CITY OF WICHITA

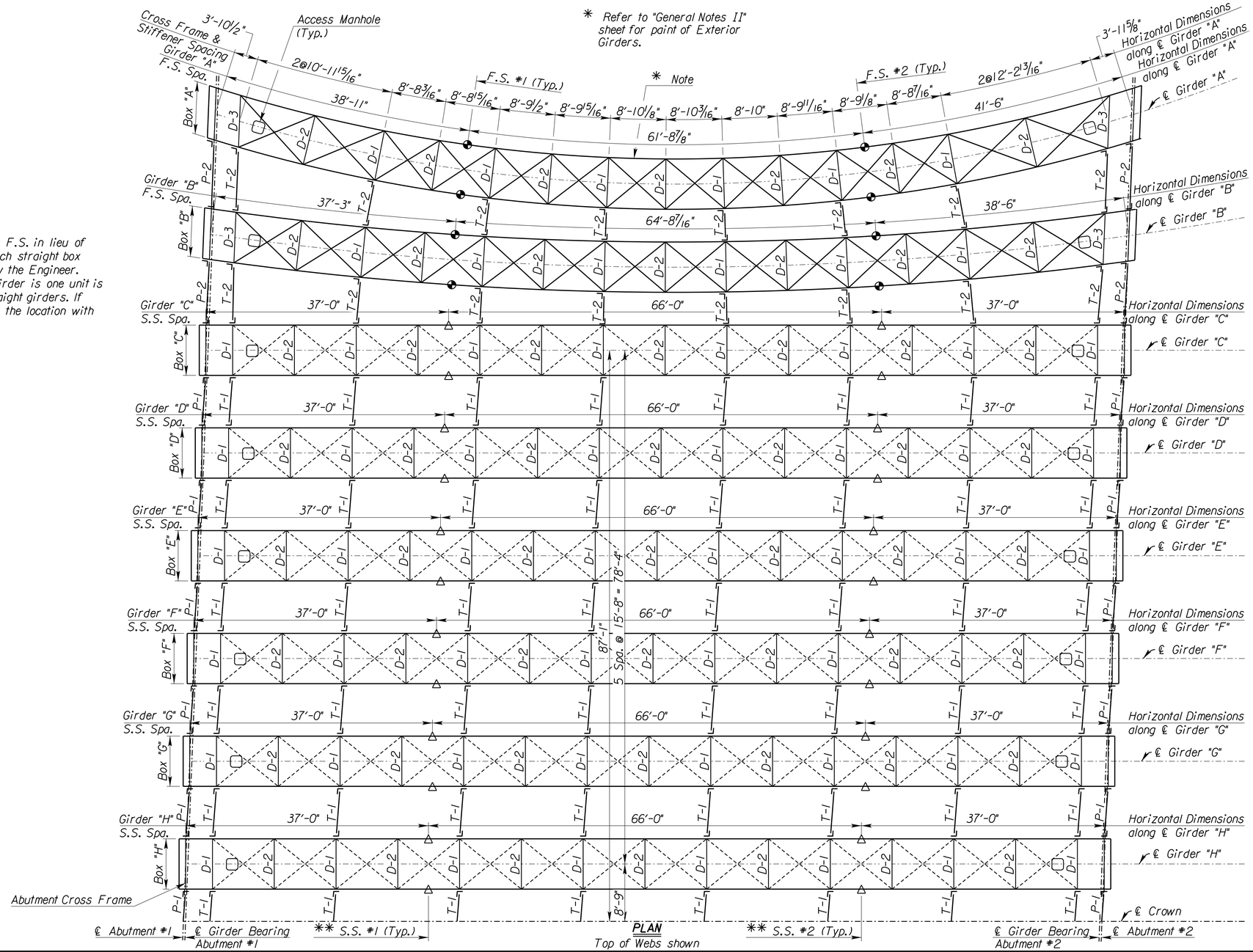
WEBB ROAD OVER EAST KELLOGG
GIRDER & SUPPORT
GEOMETRIC LAYOUT II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:53:41 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKMSC02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	404	1055



PLAN
Top of Webs shown

** Contractor may use a F.S. in lieu of one of the S.S. in each straight box girder if approved by the Engineer. Shipping the whole girder is one unit is preferred for all straight girders. If F.S. is used, stagger the location with adjacent girders.

LEGEND

◕ F.S. = Field Splice
△ S.S. = Shop Splice

LATERAL BRACING KEY

Type 1

Type 2

NOTE:
℄ Girder = Girder Working Point. See Sh's. #406 - 407.

Cross Frame, Stiffener and F.S. spacing begin and end at ℄ Girder = ℄ Girder Bearing Abutment.

Field Splices are normal to ℄ Girder. D-1 and D-2 internal Cross Frames and Abutment Cross Frames for Girders "C" thru "O" are normal to ℄ Girder. D-3 internal Cross Frames and Abutment Cross Frames for Girders "A", "B", "P" & "O" are skewed. External Erection Cross Frames connect to internal Cross Frame locations at webs as shown.

Difficulties with bracing can be anticipated in horizontally curved tub girders, including "locked in" loads after deck concrete is poured.

A prefabrication meeting is required between the Owner, owner's Engineer, Contractor and Fabricator prior to fabrication. A preconstruction meeting of the same members is required prior to erection in the field. See note on Sh. #378 for contact information.

Temporary external cross bracing at ℄ Crown under closure pour only to be provided during the placement of the closure pour.

Do not remove temporary external bracing under or adjacent to the closure pour (3 bays total) until the closure pour is complete.

See Girder Elevations Sh's. #408 - 410 for individual girder Cross Frame and Stiffener spacings.

See Sh. #378 for General Notes II.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

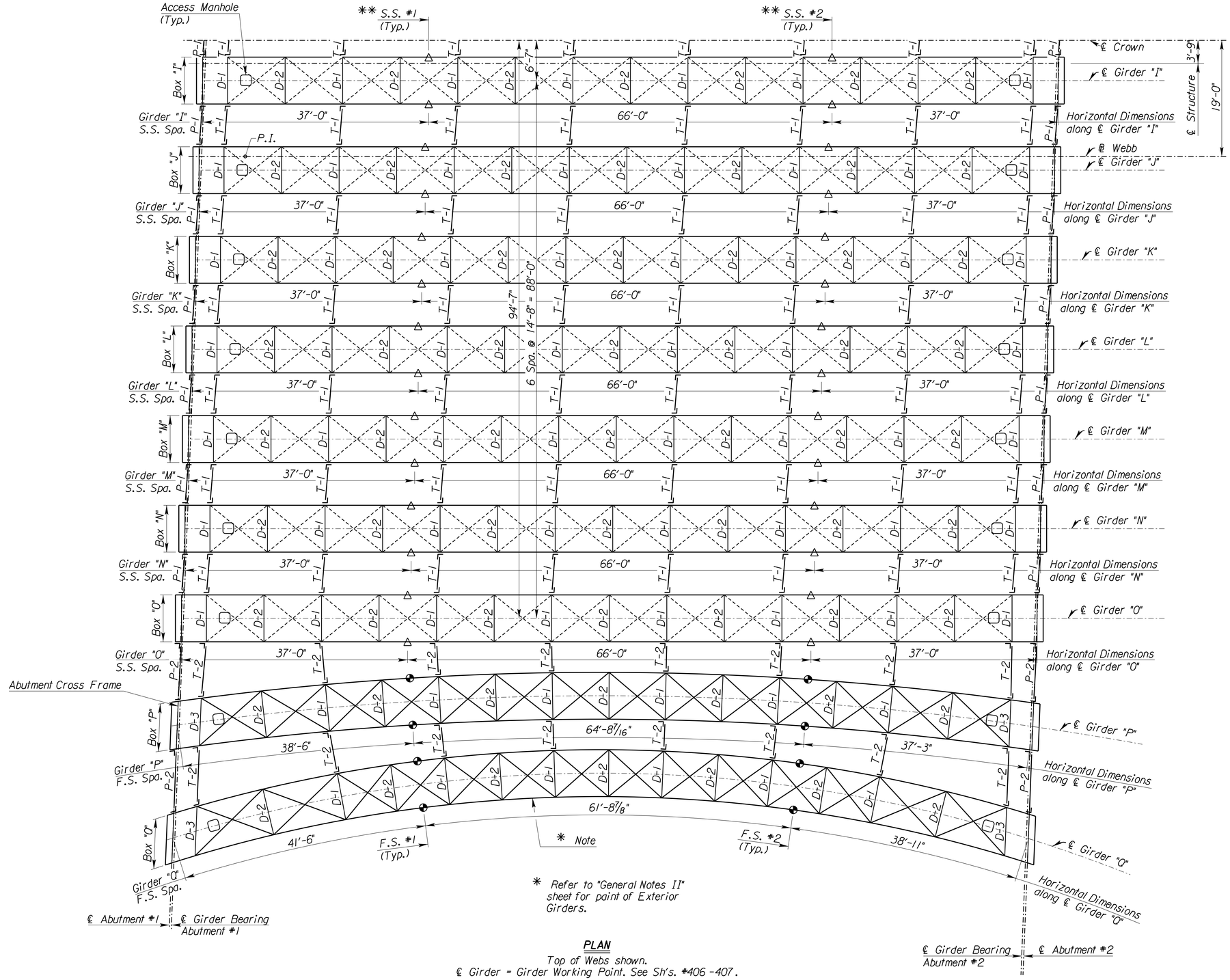
FRAMING PLAN I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:53:45 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKFRP01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	405	1055



* Refer to "General Notes II" sheet for paint of Exterior Girders.

PLAN

Top of Webs shown.
℄ Girder = Girder Working Point. See Sh's. #406 - 407.

℄ Webb Rd.
P.I. Sta. 49+37.15
Δ = 0°02'35.75"

LEGEND

● F.S. = Field Splice
△ S.S. = Shop Splice

LATERAL BRACING KEY

Type 1

Type 2

** Contractor may use a F.S. in lieu of one of the S.S. in each straight box girder if approved by the Engineer. Shipping the whole girder is one unit is preferred for all straight girders. If F.S. is used, stagger the location with adjacent girders.

See Girder Elevations Sh's. #408 - 410 for individual girder Cross Frame and Stiffener spacings.

See Sh. #378 for General Notes II.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

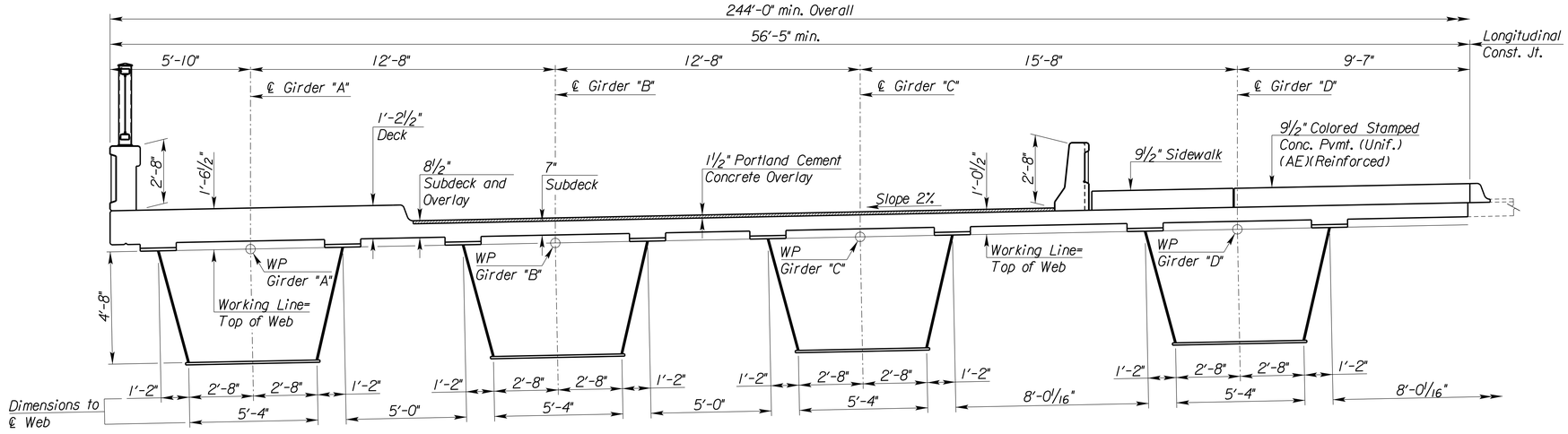
FRAMING PLAN II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:53:49 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKFRP02A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	406	1055



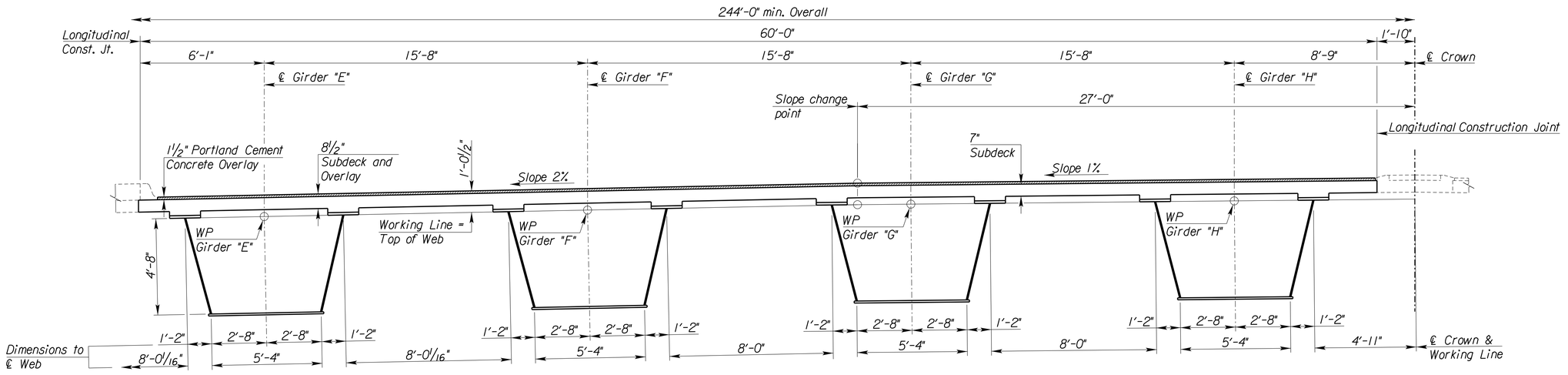
PART CROSS-SECTION SHOWING GIRDER DIMENSIONS

Normal to ℄ Webb.
Section near Sta. 50+00 (Min. deck width).
Looking upstation (south)

LEGEND

WP = Working Point

See Sh. #409 for section of Typical Box Girder.



PART CROSS-SECTION SHOWING GIRDER DIMENSIONS

Normal to ℄ Webb.
Section near Sta. 50+00 (Min. deck width).
Looking upstation (south)

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

SUPERSTRUCTURE SECTION I

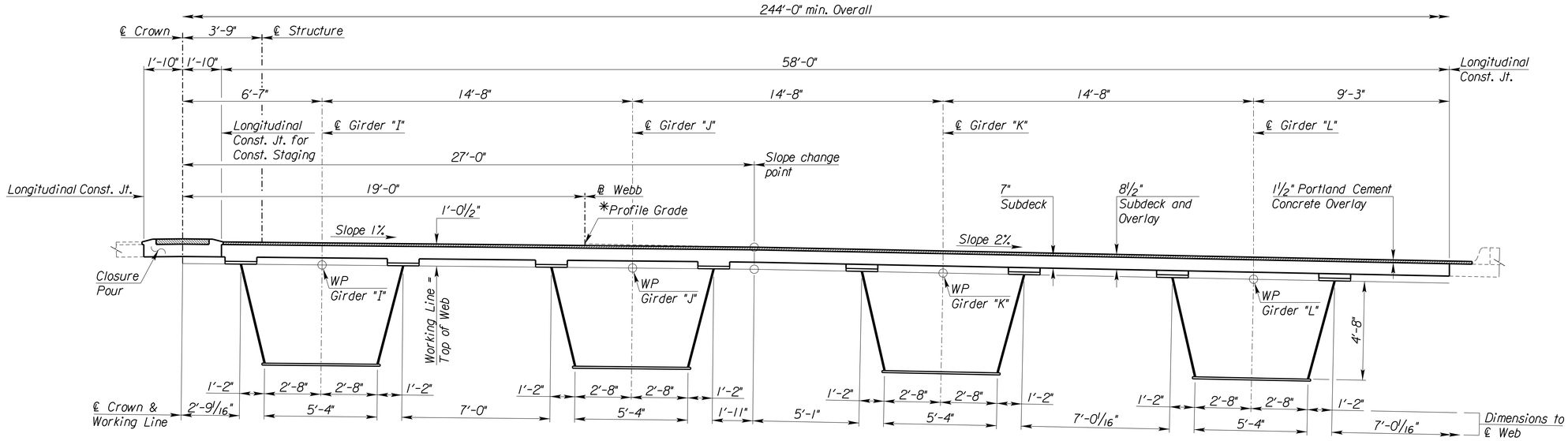
BR. NO. 54-87-32.12 (826) STA. 49+99.68

406

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:54:24 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packages\Structures\Bridge\Webb\EKIWKFRP03A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	407	1055



PART CROSS-SECTION SHOWING GIRDER DIMENSIONS

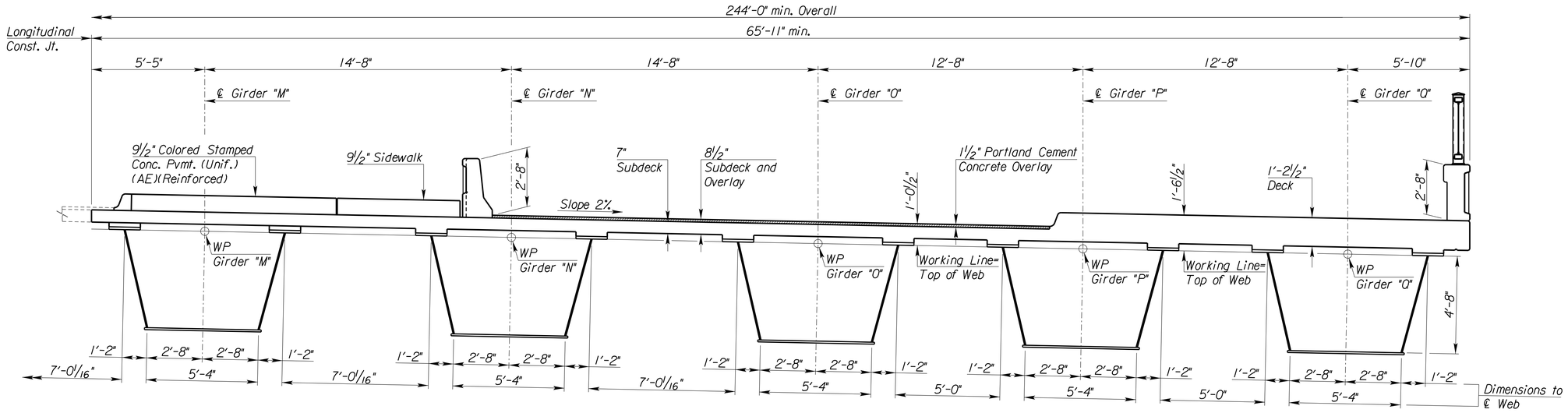
Normal to ℄ Webb.
Section near Sta. 50+00 (Min. deck width).
Looking upstation (south)

*Profile Grade is 0.08' above top of Portland Cement Concrete Overlay at this location.

LEGEND

WP = Working Point

See Sh. #409 for section of Typical Box Girder.



PART CROSS-SECTION SHOWING GIRDER DIMENSIONS

Normal to ℄ Webb.
Section near Sta. 50+00 (Min. deck width).
Looking upstation (south)

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

SUPERSTRUCTURE SECTION II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

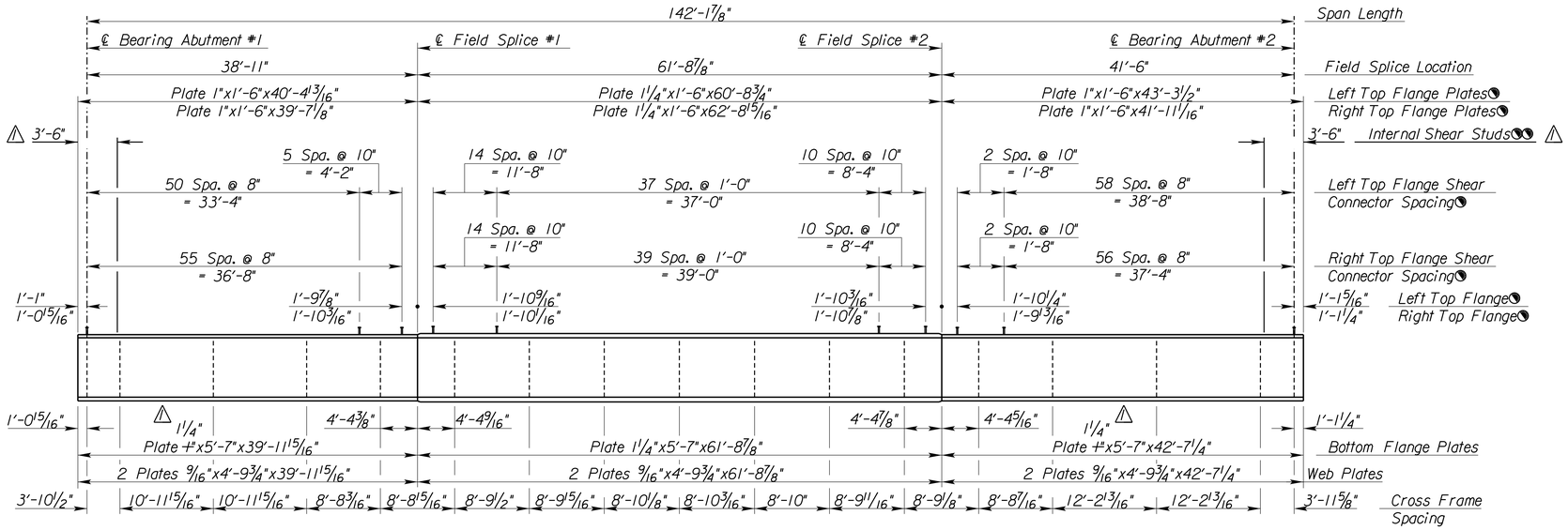
407

SURV. -- | PLOT | CADD | DES. | AH/BS | DR. | GB/CP | TR. | -- | CKD. | SB/NW | APP. | --

9:54:27 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKFRP04A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	408	1055

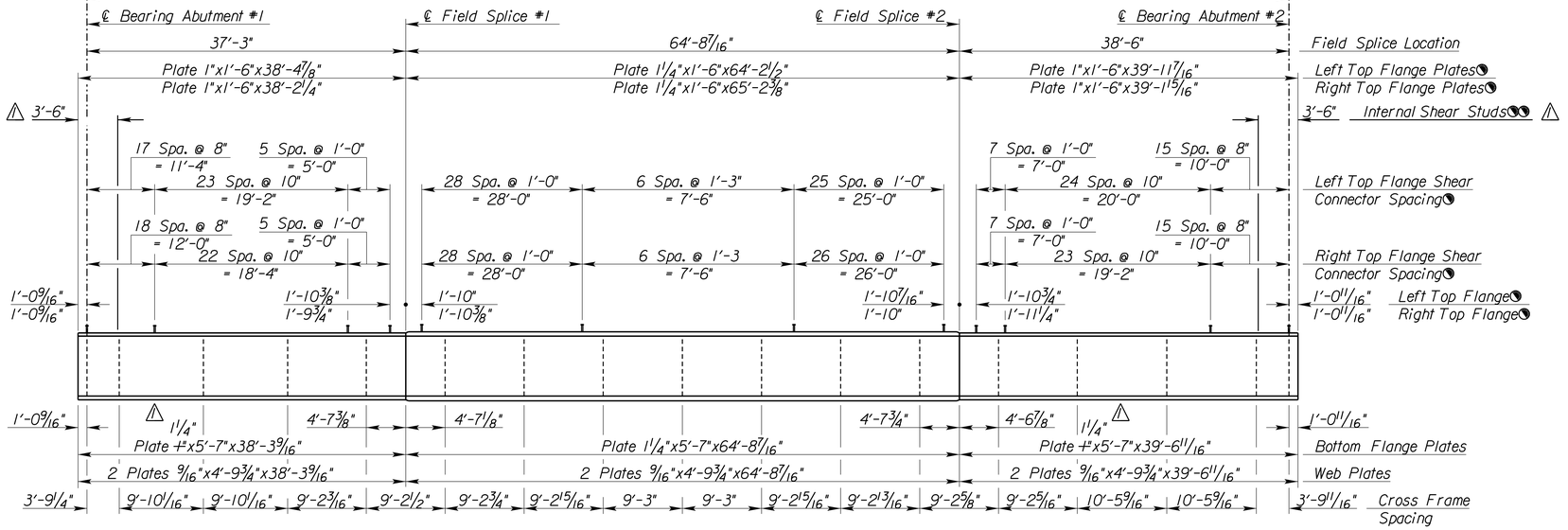
Revised Plans



ELEVATION OF GIRDER "A"

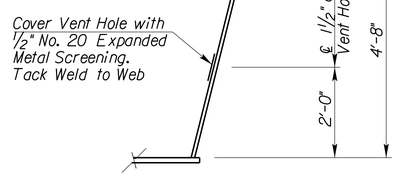
Horizontal dimensions denoted ◔ along respective ℄ Top Flange. All other horizontal dimensions along ℄ Girder. Left & Right looking upstation.

△ ◔◔ Place shear studs @ 12" centers along inside of box girder webs, 3'-6" from end of top flange. Place shear studs @ 12" centers between these two lines, along the top of bottom flange. See "Internal Shear Stud Section" on Sh. 409.



ELEVATION OF GIRDER "B"

Horizontal dimensions denoted ◔ along respective ℄ Top Flange. All other horizontal dimensions along ℄ Girder. Left & Right looking upstation.



WEB VENT HOLE

Place Vent Holes in Each Web at 50' Maximum Spacing. 25' Minimum from ℄ Abutment. Vent Holes and Metal Screens are subsidiary to the "Stretched Steel" bid items.

△ 5/26/2015 Revised bottom flange thickness & added shear studs.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

GIRDER ELEVATIONS AND DETAILS I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

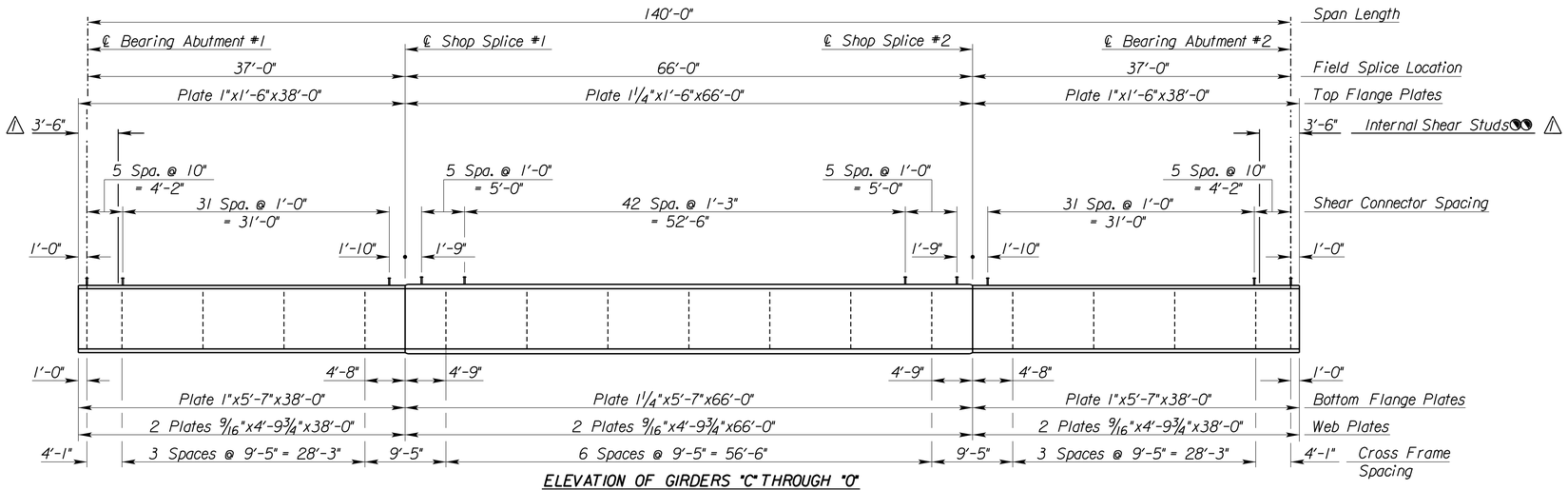
408

2:06:26 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKBEL01A.DGN

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

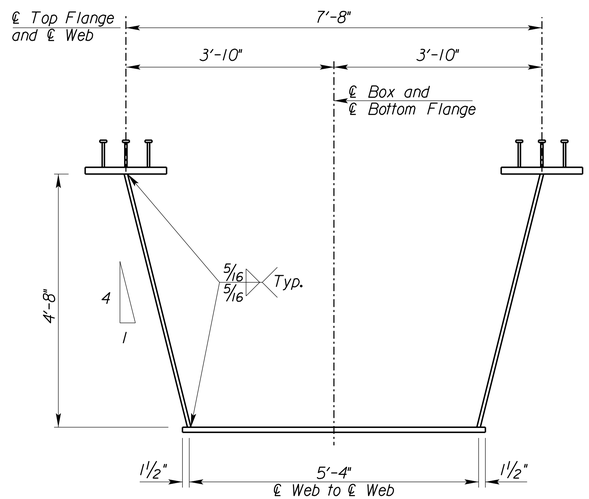
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	409	1055

Revised Plans

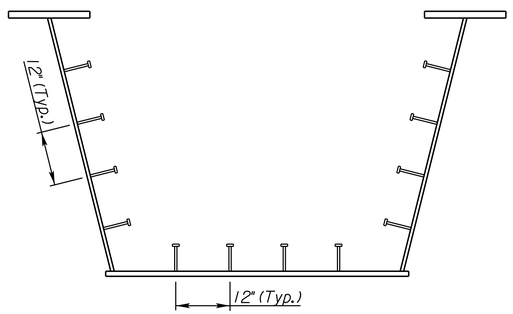


ELEVATION OF GIRDERS "C" THROUGH "O"

All horizontal dimensions along ℄ Girder.



TYPICAL BOX GIRDER

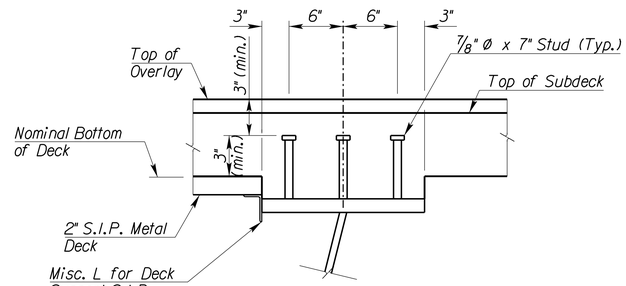


⚠ *INTERNAL SHEAR STUD SECTION*

Place shear studs @ 12" centers along inside of box girder webs, 3'-6" from end of top flange. Place shear studs @ 12" centers between these two lines, along the top of bottom flange. 12 studs required at ends of each girder, as shown. Shear studs will not be paid for separately but are subsidiary to the Structural Steel (AASHTO M270) bid item.

Notes:
Unless otherwise noted, all longitudinal dimensions shown on these plans are measured horizontally along girder centerlines.
Length of flanges and web plates shall be corrected as required for grade, vertical curvature, skewed ends and shrinkage caused by welding.
Abutment and field splice centerlines are shown at centerline of Box.
Bearing stiffeners shall be placed vertical after all dead loads.
Cross Frame connection plates and intermediate stiffeners shall be placed on the side of the web indicated in the Framing Plan and Cross Frame Details Sheets.
All intermediate stiffeners and Cross Frame connection plates shall be placed normal to flange.

All holes are 15/16" unless otherwise noted.
Fasteners shall be 7/8" diameter high strength steel bolts, ASTM A325 Type 3.



SHEAR CONNECTOR DETAIL

Note:
Length shown for studs is proposed. The actual length shall satisfy stud penetration requirements after beam erection.

FORM DECK NOTES

1. *Stay-In-Place Deck Forms (S.I.P): As a minimum, S.I.P. and support steel frames must be designed for the dead load of the form, reinforcement and concrete plus 50 psf for construction loads. Maximum stress in the form should not exceed 75% of the yield strength of the steel. Maximum deflection of the deck under total dead load should not exceed 0.40 inch.*
2. *S.I.P. shall be 2 inch galvanized deck conforming to ASTM A653. Support steel frames should conform to ASTM A653 with coating designation G165. Do not weld support frames to any girder flanges. Submit forming plans of S.I.P and support frames to Engineer. Plans must be designed, signed and sealed by a Kansas licensed professional engineer.*
3. *Pay quantity of concrete based on nominal deck dimension with no allowance for corrugations. No direct payment will be made for deck forms or any additional concrete. These items are considered subsidiary to "Concrete (Grade 4.0)(AE)(SA)".*

⚠ 5/26/2015 Added shear studs and section.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

GIRDER ELEVATIONS AND DETAILS II

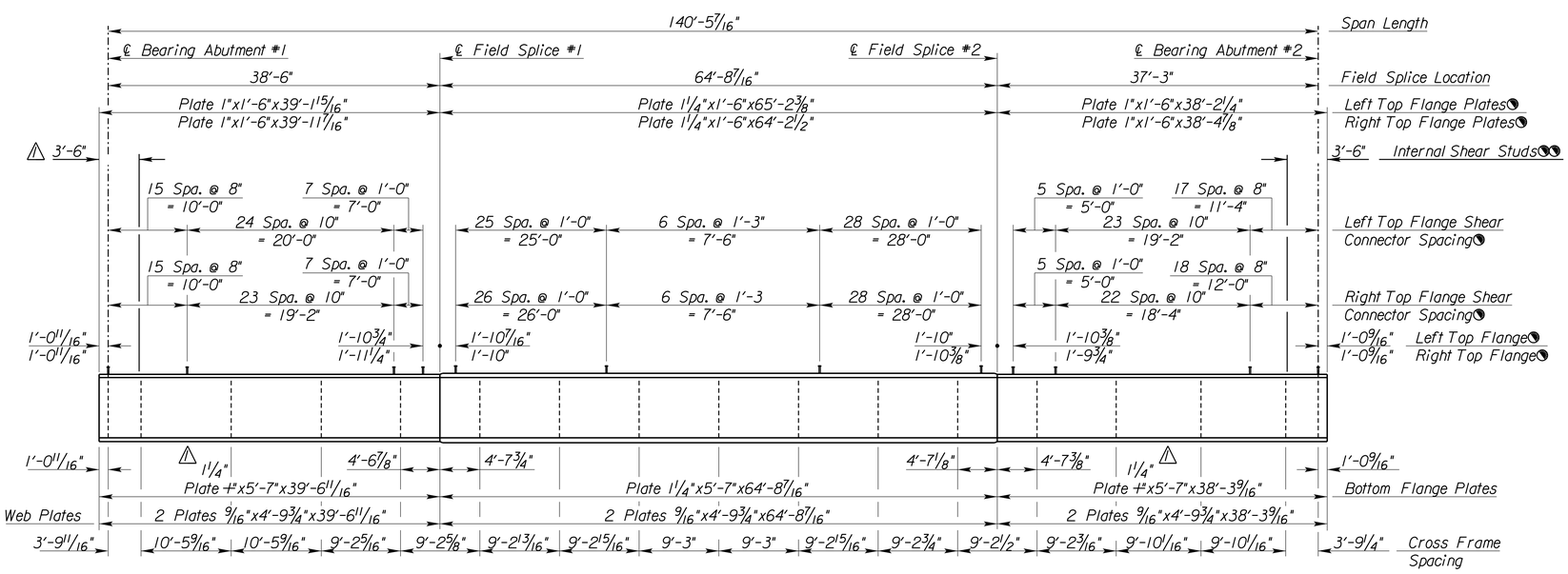
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:30:32 PM
5/26/2015
T:\35765A\Cadd\Sheets\Packagel\Structures\Bridge\Webb\EK\WKBEL02A.DGN

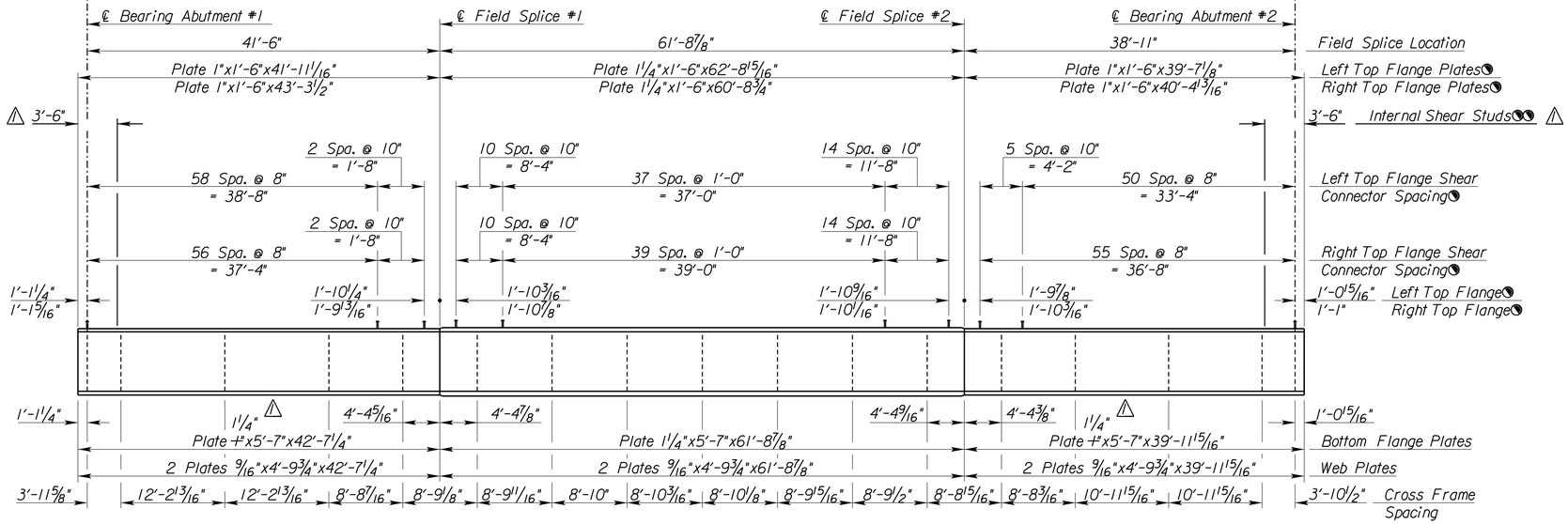
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	410	1055

Revised Plans



ELEVATION OF GIRDER "P"

Horizontal dimensions denoted ◔ along respective ℄ Top Flange. All other horizontal dimensions along ℄ Girder. Left & Right looking upstation.



ELEVATION OF GIRDER "Q"

Horizontal dimensions denoted ◔ along respective ℄ Top Flange. All other horizontal dimensions along ℄ Girder. Left & Right looking upstation.

⚠ ◔◔ *Place shear studs @ 12" centers along inside of box girder webs, 3'-6" from end of top flange. Place shear studs @ 12" centers between these two lines, along the top of bottom flange. See "Internal Shear Stud Section" on Sh. 409.*

STRUCTURAL STEEL SUMMARY

Girder Components	AASHTO M270 Gr. 50 T3, Lbs.	ASTM A709 Gr. 50, Lbs.
Top Flange Plates	330,446	-
Bottom Flange Plates	~~614,997~~ 633,289 ⚠	-
Web Plates	534,937	-
Abutment Bearing Stiffeners **	27,542	-
Cross Frame Connection Plates ***	26,725	-
Abutment Cross Frames	5,226	-
Permanent Abutment Erection Cross Frames	33,316	-
Type D-1 Cross Frames	50,703	-
Type D-2 Cross Frames	18,075	-
Type D-3 Cross Frames	3,319	-
Lateral Bracing	188,308	-
Miscellaneous Structural Steel ****	-	2,137
Total Structural Steel	~~1,833,595~~ 1,851,886 ⚠	2,137

* *Quantities for Abutment Cross Frames, Permanent Abutment Erection Cross Frames and Type D-3 Cross Frames may vary slightly from the values shown depending on the method used to achieve the skew. Pay quantity shall not deviate from the values shown for the approved method of achieving the skew.*

** *Includes WT's and Jacking Stiffeners.*

*** *Includes tab plates.*

**** *Miscellaneous Structural Steel includes Access Manhole Plate Frames and Bent Guide Plates for Drainage. S.I.P. Deck, Support Frames and Bearing Cover Plates not included and are considered subsidiary to the "Structural Steel" bid items. Structural Steel and Casing for Tiebacks are not included and are considered subsidiary to the "Tie Backs" bid item.*

⚠ *5/26/2015 Revised bottom flange thickness. Added shear studs. Revised structural steel summary.*

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

GIRDER ELEVATIONS AND DETAILS III

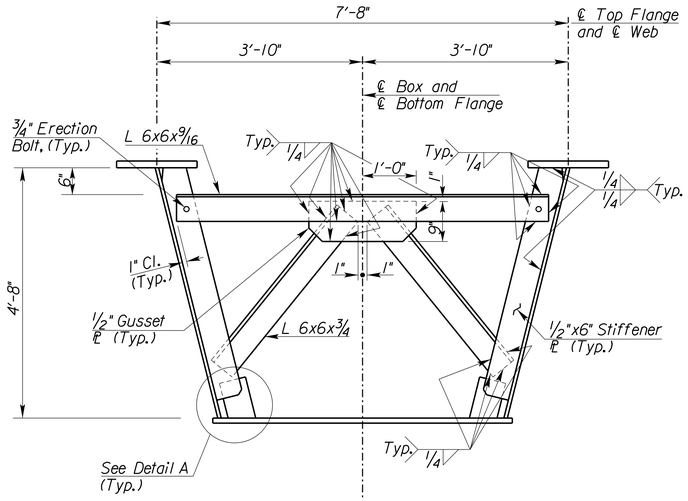
BR. NO. 54-87-32.12 (826) STA. 49+99.68

410

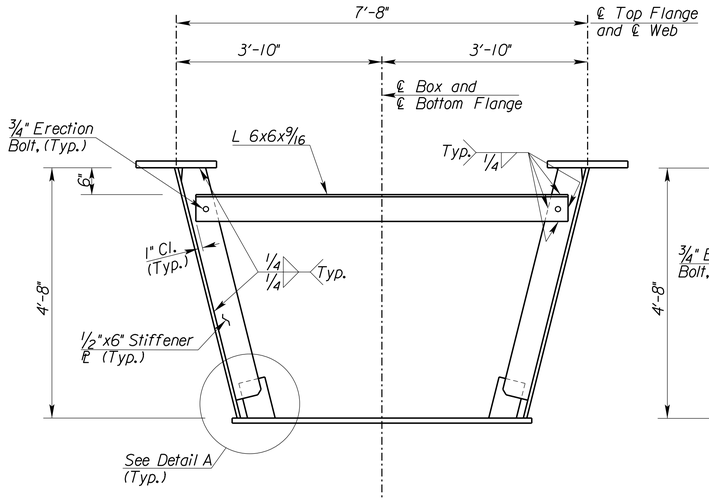
SURV.	--	PLOT
CADD	DES.	AH/BS
DR.	GB/CP	TR.
--	CKD.	SB/NW
APP.		

2:06:30 PM
5/26/2015
I:\357654\Cadd\Sheets\Package\Structures\Bridge\Webb\EK\WKBEL03A.DGN

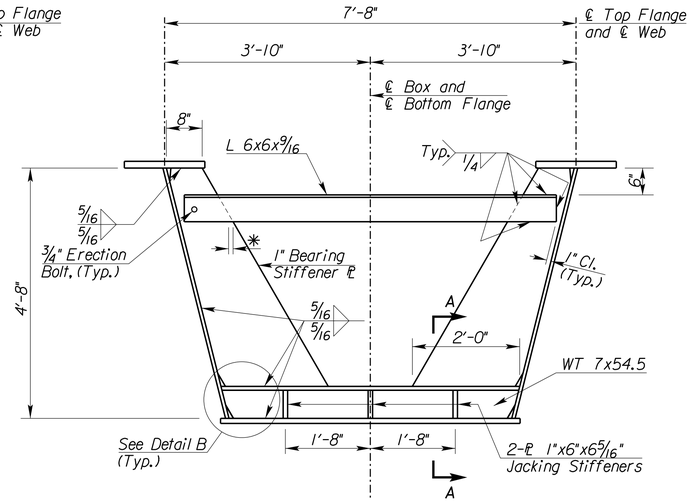
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	411	1055



TYPE D-1 CROSS FRAME
(128 D-1 Req'd per Bridge)

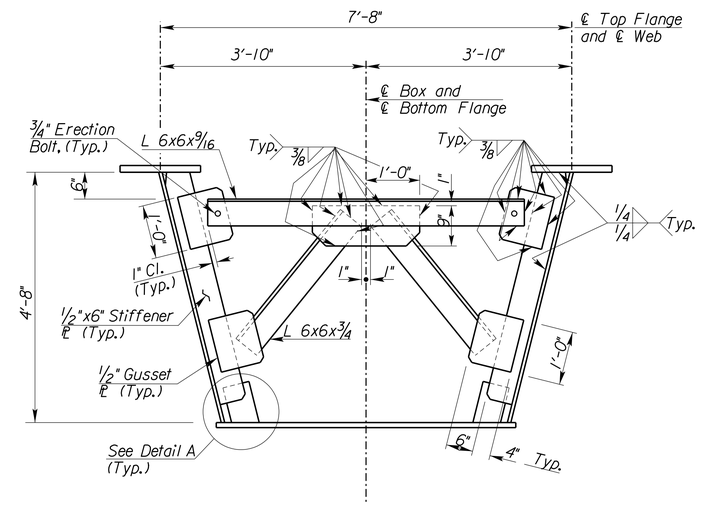


TYPE D-2 CROSS FRAME
(119 Req'd per Bridge)

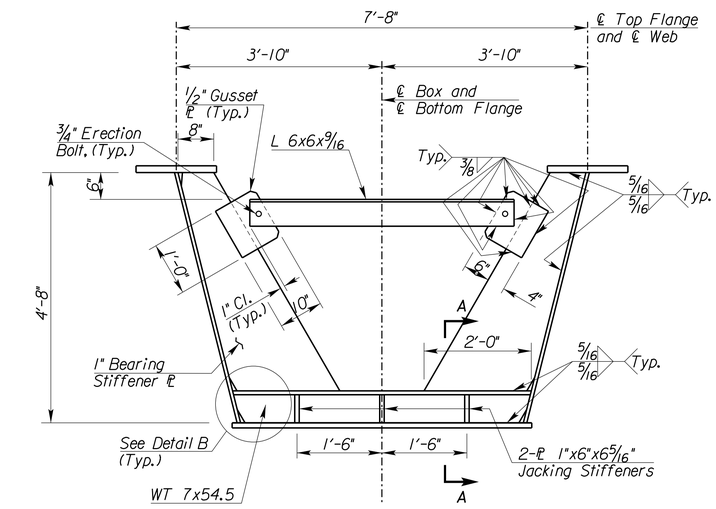


ABUTMENT CROSS FRAME (GIRDERS "C" THRU "O")
(26 Req'd per Bridge)

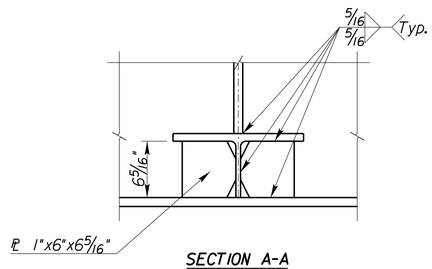
*Terminate welds 1/2" short of edges (Typ. all bracing)



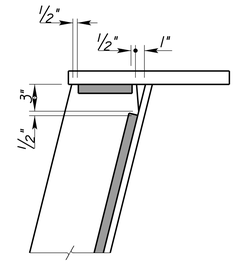
TYPE D-3 CROSS FRAME
(8 D-3 Req'd per Bridge)
Shop Drawings to account for skew of the D-3 bracing assembly.
Section shown normal to ℄ Girder.



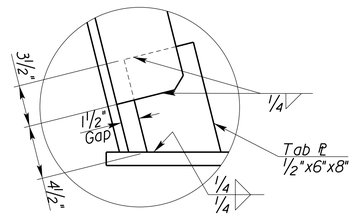
ABUTMENT CROSS FRAME (GIRDERS "A", "B", "P" & "O")
(8 Req'd per Bridge)
Shop Drawings to account for skew of this bracing assembly.
Section shown normal to ℄ Girder.



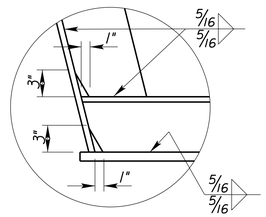
SECTION A-A



WELD TERMINATION DETAIL



DETAIL A



DETAIL B

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

CROSS FRAME DETAILS I

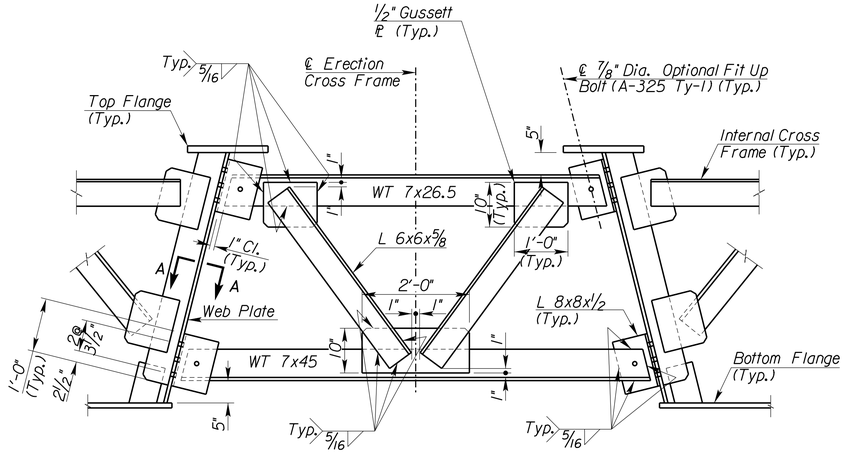
BR. NO. 54-87-32.12 (826) STA. 49+99.68

411

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

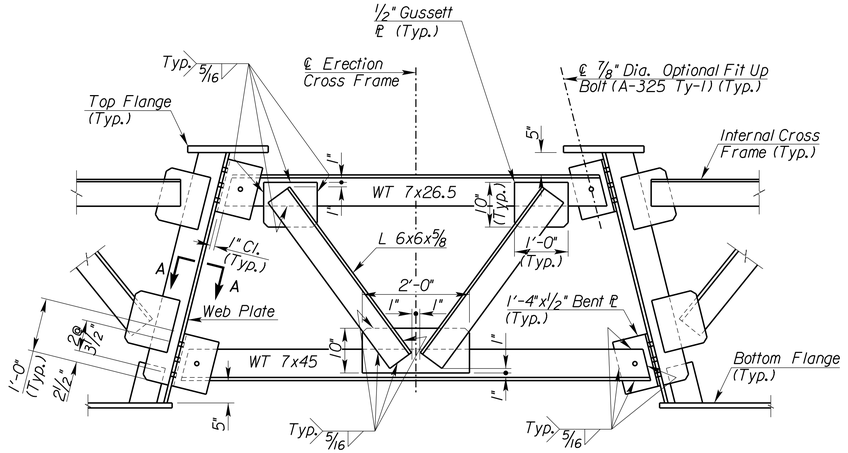
9:55:19 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKCRF01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	412	1055



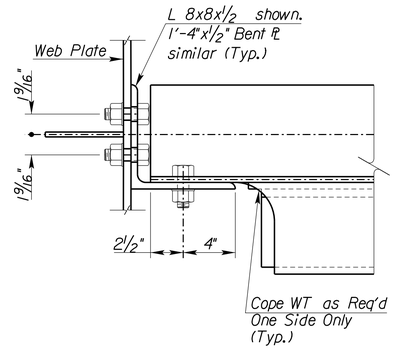
TYPE T-1 TEMPORARY ERECTION CROSS FRAME AND TYPE P-1 PERMANENT ERECTION CROSS FRAME

(96 Type T-1 Temporary Erection Cross Frames and 24 Type P-1 Permanent Erection Cross Frames Required per Bridge)
Type P-1 Cross Frames to remain in place (not temporary).



TYPE T-2 TEMPORARY ERECTION CROSS FRAME AND TYPE P-2 PERMANENT ERECTION CROSS FRAME

(32 Type T-2 Temporary Erection Cross Frames and 8 Type P-2 Permanent Erection Cross Frames Required per Bridge)
Type P-2 Cross Frames to remain in place (not temporary).
Shop Drawings to account for skew of T-2 & P-2 bracing assemblies.



SECTION A-A

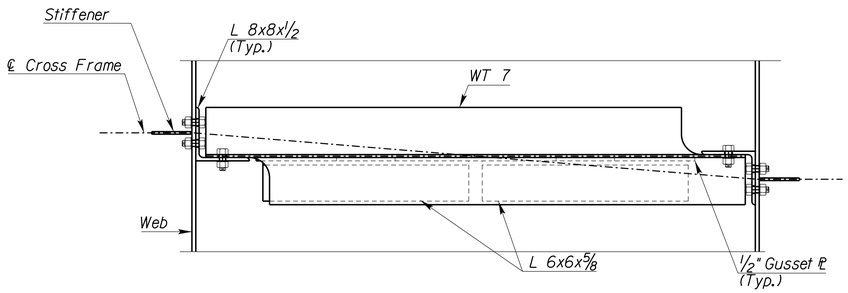
Note:

The Temporary Erection Cross Frames shall be in place during placement and curing of the deck, after which they shall be removed with the exception of the 7/8" Dia. A325 H.S. Bolts through the Web, which shall be reinserted in the holes and tightened. Temporary Erection Cross Frames must be removed prior to any vehicular live load being allowed on to the deck.

Temporary Erection Cross Frames, WT Shapes, L Shapes, Bent ℄'s, Gusset ℄'s and Bolts shall not be paid for directly, but shall be subsidiary to the bid item "Structural Steel AASHTO M270 (Gr. 50)". After removal they shall become the property of the Contractor.

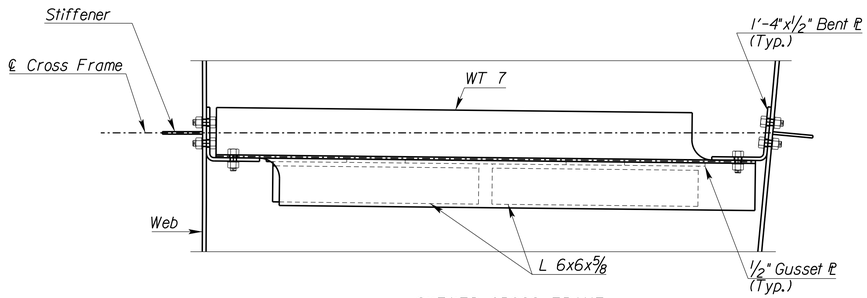
For information only, the Structural Steel weight of the T-1 Temporary Erection Cross Frames is 93,893 Lbs., the Structural Steel weight of the T-2 Temporary Erection Cross Frames is 29,960 Lbs.

The Permanent Erection Cross Frames are to remain in place and be encased in the Abutment Diaphragm concrete. Permanent Erection Cross Frames are included and paid for in the bid item, "Structural Steel AASHTO M270 (Grade 50)".



NON-SKEWED CROSS FRAME

(Plan)



SKEWED CROSS FRAME

(Plan)

NOTE:
The T-1 and P-1 external bracing shown is conceptual and developed to eliminate the skew effects for this bracing (elimination of bent plates) between straight box girders. Contractor and Fabricator may, to provide more flexibility in bolt tightening and bolt hole size (i.e., increase the use of short- and even long-slotted holes; increased bolt hole spacing from stiffener, etc.), propose alternate cross-framing details for T-1, T-2, P-1 & P-2 in the Shop Drawings, for review by the Engineer, and at no increased cost to the Owner. Size of primary structural members may not be reduced. Fabrication of bracing may not proceed until Shop Drawings are approved.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:55:23 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKCRF02A.dgn

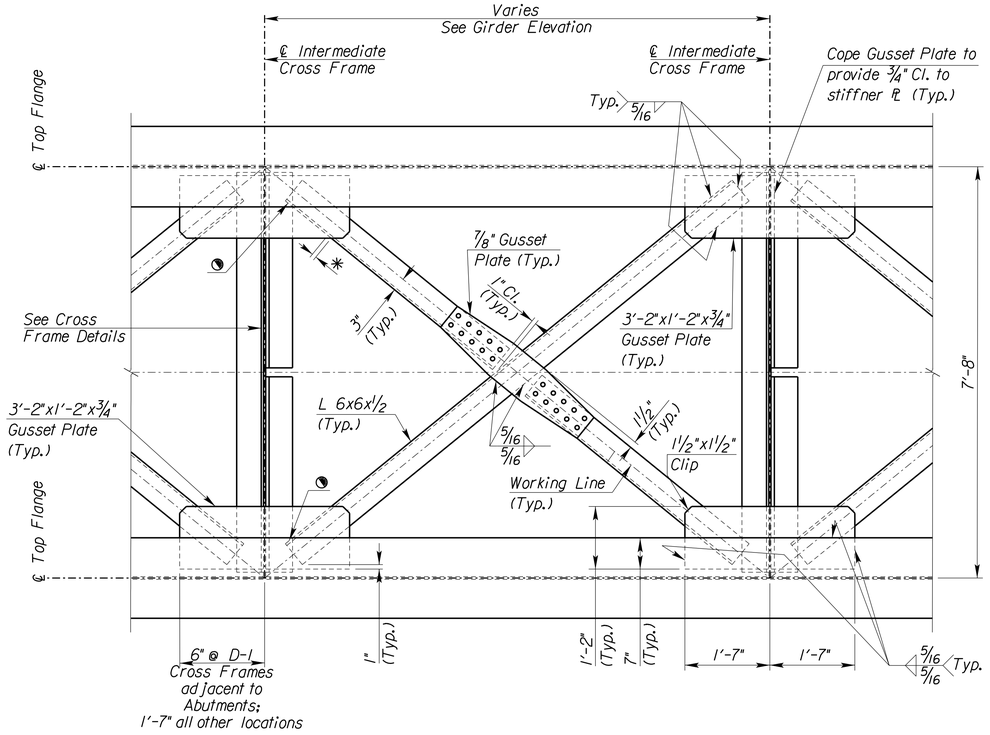
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

CROSS FRAME DETAILS II

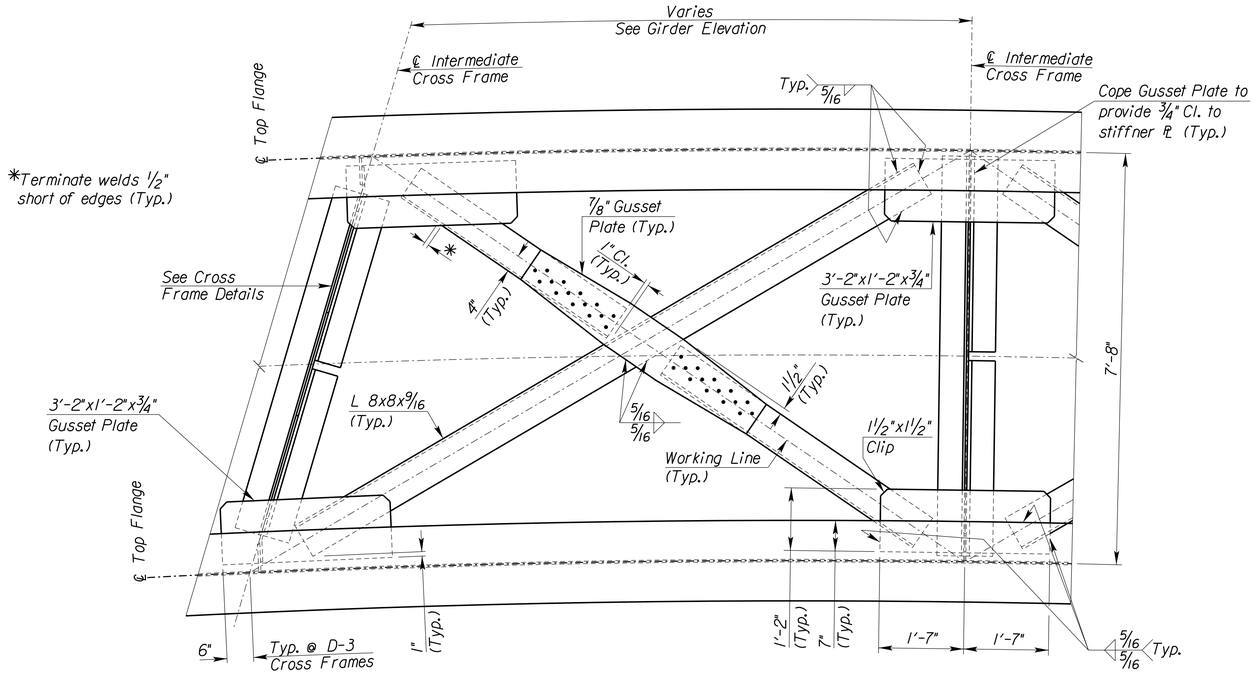
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	413	1055



PLAN - TYPE 1 LATERAL BRACING

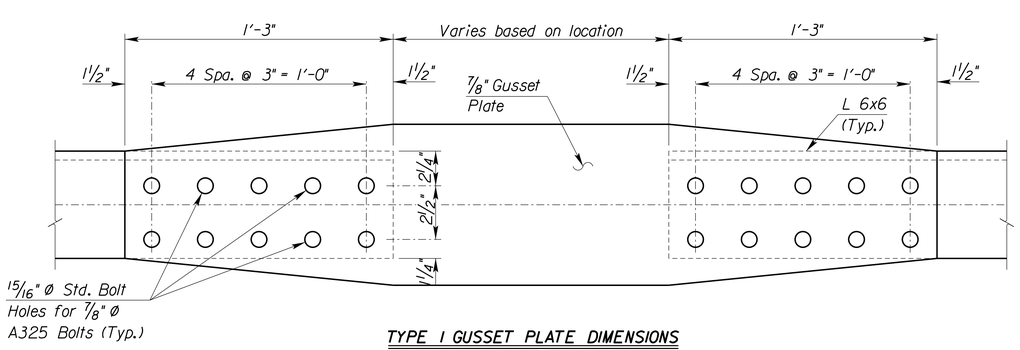
Showing representative arrangement.
External bracing not shown for clarity.



PLAN - TYPE 2 LATERAL BRACING

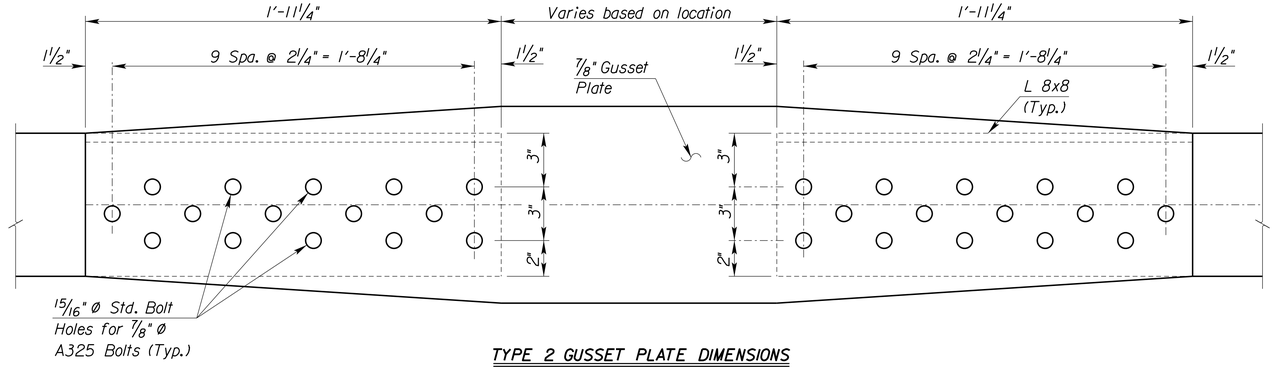
Showing representative arrangement.
External bracing not shown for clarity.
(Field welds may be required at Field Splice locations.
Note such locations in the Shop Drawings.)

◔ *Notch vertical leg of top horizontal lateral bracing angle to avoid conflict with top strut of internal bracing. Show extent of notch in Shop Drawings.*



TYPE 1 GUSSET PLATE DIMENSIONS

For information only, 3,640 7/8" Ø A325 bolts required.



TYPE 2 GUSSET PLATE DIMENSIONS

For information only, 1,680 7/8" Ø A325 bolts required.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BRACING DETAILS

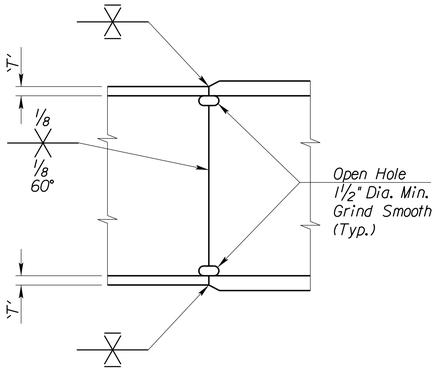
BR. NO. 54-87-32.12 (826) STA. 49+99.68

413

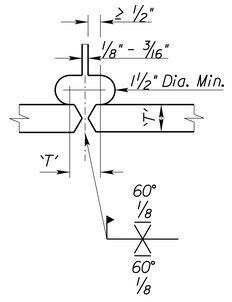
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:55:27 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKCRF03A.dgn

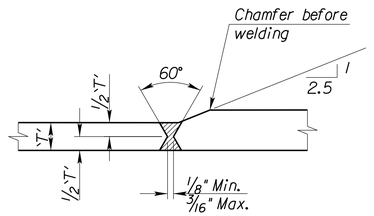
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	414	1055



ELEVATION



COPE DETAIL AT
WELDED FIELD SPLICE



UNEQUAL FLANGE
THICKNESS

WELDED FIELD SPLICE DETAILS

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:55:31 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKBSP01A.dgn

CITY OF WICHITA

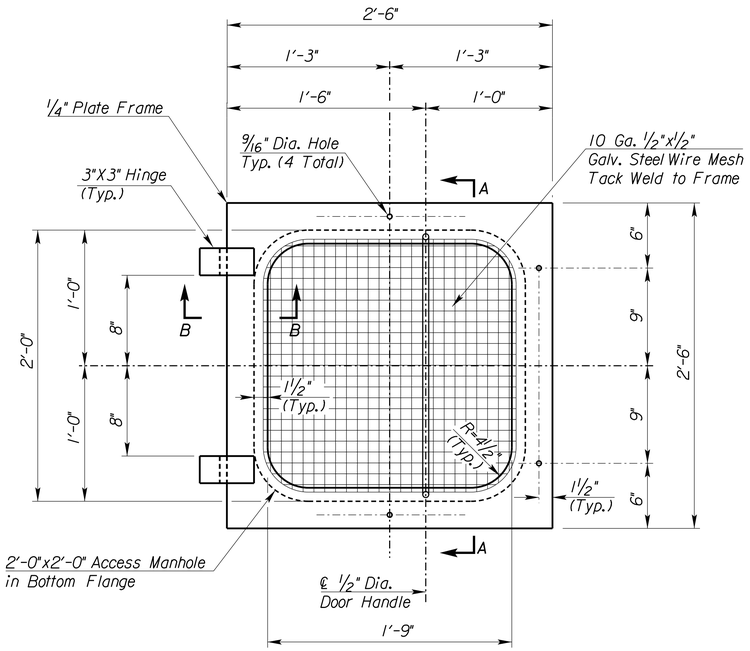
WEBB ROAD OVER EAST KELLOGG

GIRDER SPLICE DETAILS

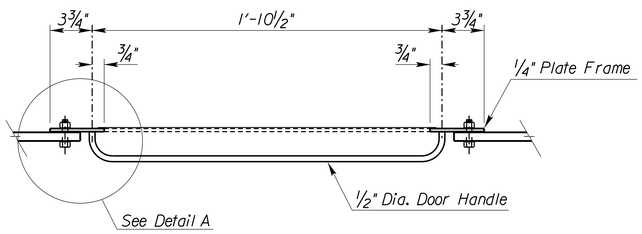
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	415	1055

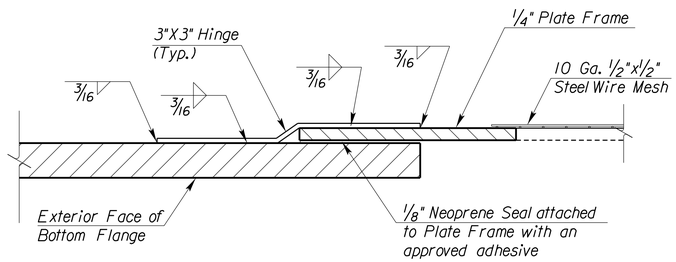
Revised Plans



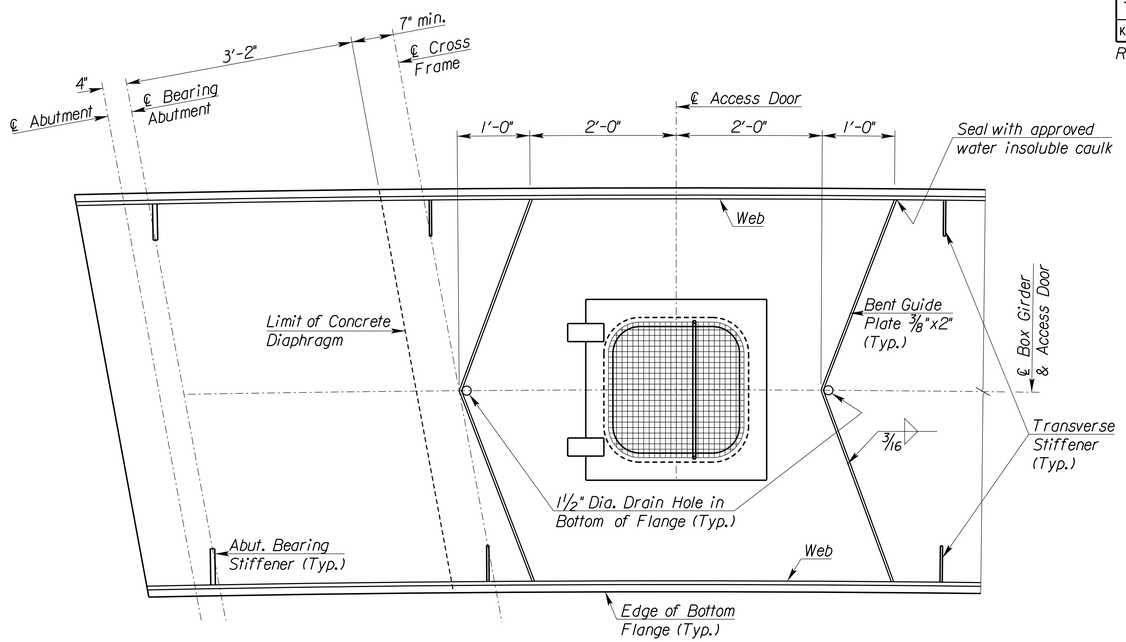
ACCESS MANHOLE DOOR PLAN



SECTION A-A

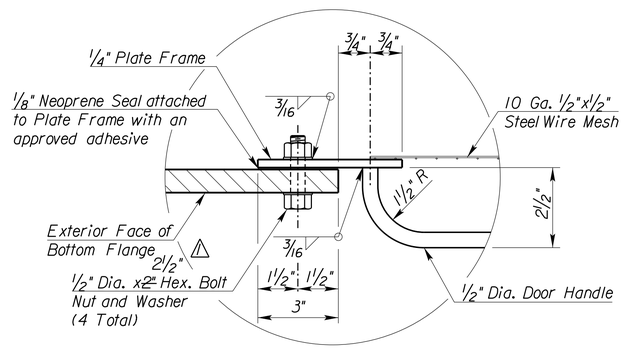


SECTION B-B



BOTTOM FLANGE AT END OF BOX

Abutment #1 shown; Abutment #2 similar.
Note: Two Drain Holes and Two Bent Guide Plates are Required at each end of each Box.
Stop weld for Bend Guide Plate 1 1/2" short of web.



DETAIL A

Note:
The Access Manhole Plate Frames and Bent Guide Plates shall be A709 Gr. 50 and paid for as "Structural Steel, A709 (Gr. 50)". Hinges, Door Handle, Steel Wire Mesh, Neoprene Seal, Hex Bolts, Nuts & Washers shall be subsidiary to "Structural Steel, M270 (Gr. 50)".

⚠ Revised bolt size.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ACCESS MANHOLE DOOR DETAILS

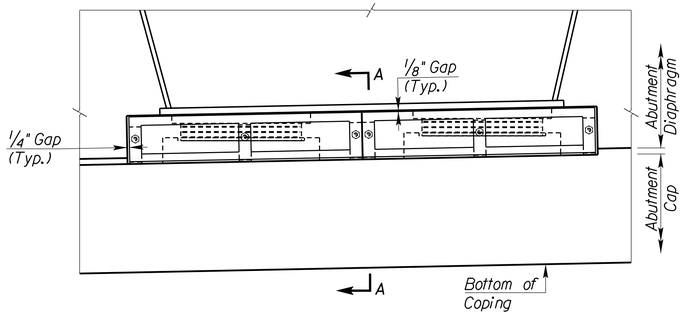
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:31 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKAUX01A.dgn

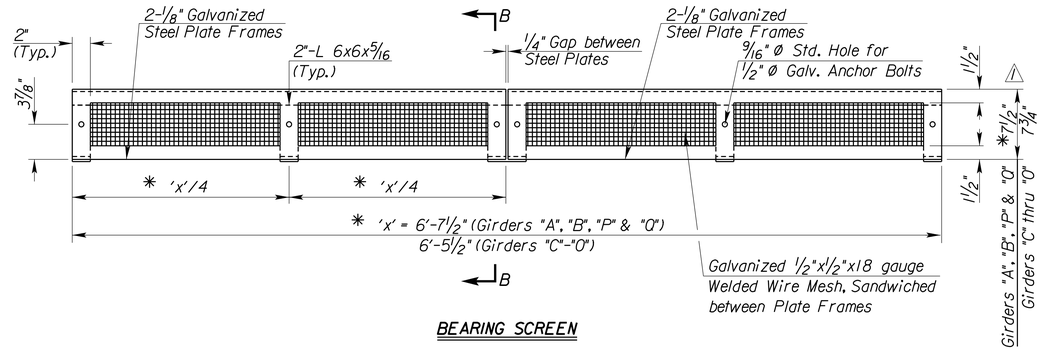
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	416	1055

Revised Plans

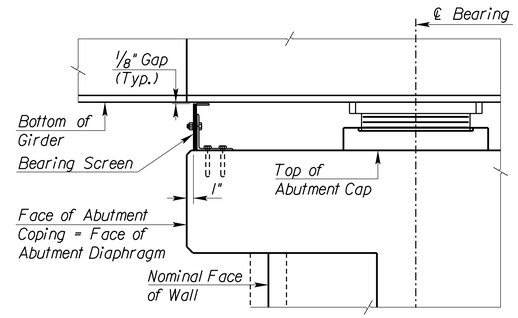


BEARING SCREEN ELEVATION

Dimensions and sizes are tentative; sketch is conceptual. After abutment diaphragm concrete is poured, Contractor to take dimensions of actual constructed opening and provide these dimensions, along with Shop Drawings, to the Engineer for approval. Fabrication of Bearing Screen may not proceed until Shop Drawings are approved. Intent of Bearing Screen is to allow inspection of bearing devices while leaving no gap greater than 1/2" for access by a pigeon.



BEARING SCREEN



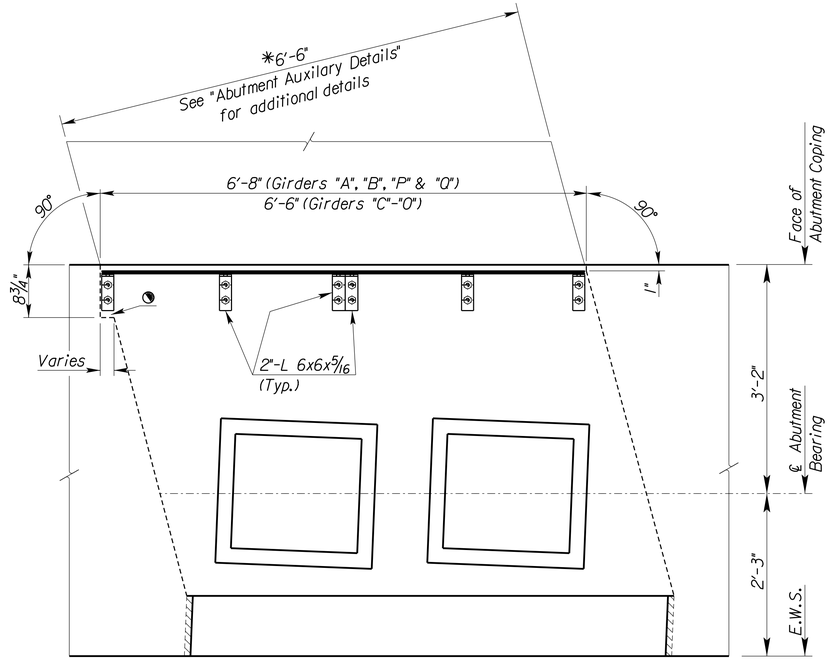
SECTION A-A

All steel plates shall meet ASTM A36 requirements and shall be galvanized after fabrication. Submit Shop Drawings for approval prior to fabrication.

All labor and material necessary for the preparation, construction and installation of the Steel Plates, Wire Mesh and Anchor Bolts (including field dimension verifications) is subsidiary to the "Structural Steel, ASTM A709 (Gr. 50)" bid item.

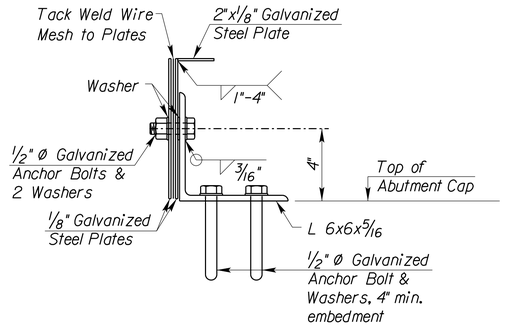
Embedded Anchor Bolts shall be placed prior to the pouring of the Abutment Cap.

Bearing Screens are required at each box girder bearing opening in the abutment diaphragm (34 total required). Each Bearing Screen consists of two separate removable plate assemblies.

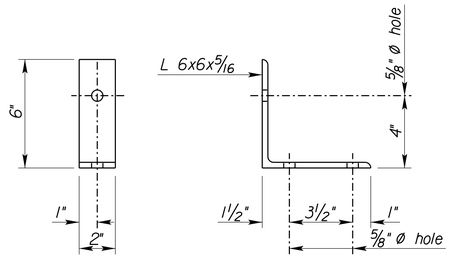


◔ *Block out Abutment Diaphragm as shown to allow for longitudinal movement of superstructure.*

PLAN



SECTION B-B



ANGLE DIMENSIONS
(6 angles per Bearing Screen)

* *NOTE:*
Measure in field before fabrication.

⚠ *Revised bearing screen.*
See Sh's. #387 & 391 for Abutment Auxilary Details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BEARING SCREEN DETAILS

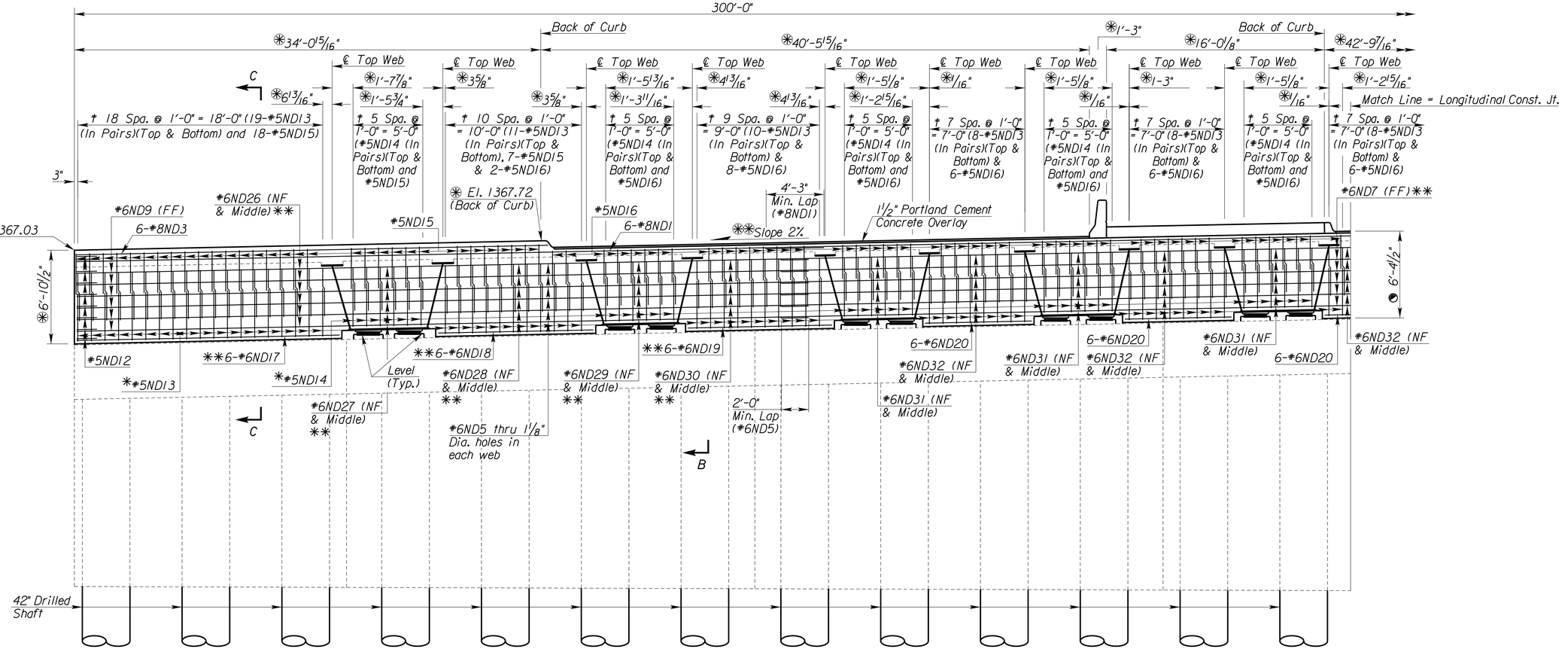
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:33 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKAUX02A.dgn

Revised Plans

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	417	1055



✳ In Pairs, Top & Bottom

** Lap 2'-0" min.

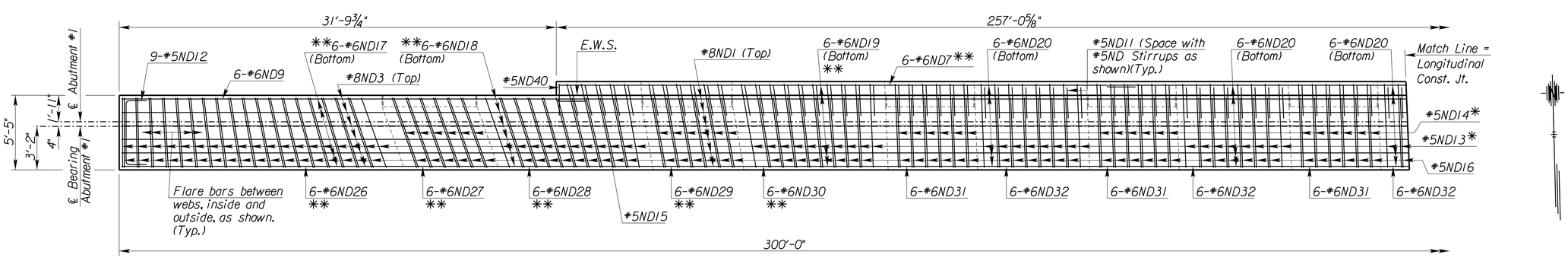
† Space all bars along ℄ Abutment #1.

✳ Dimensions and Elevations are along ℄ Abutment #1.

✳✳ Slopes are normal to ℄ Crown. Refer to Sh. No's. 433-434 for more details.

⚠ ◔ The dimensions shown are theoretical, based on 1 1/2" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #1 Bearing.

ELEVATION
Looking Back Station (North)



PLAN

⚠ 5/26/2015 Revised basis of elevations. See Sh. #423 for Sections.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 DIAPHRAGM DETAILS I

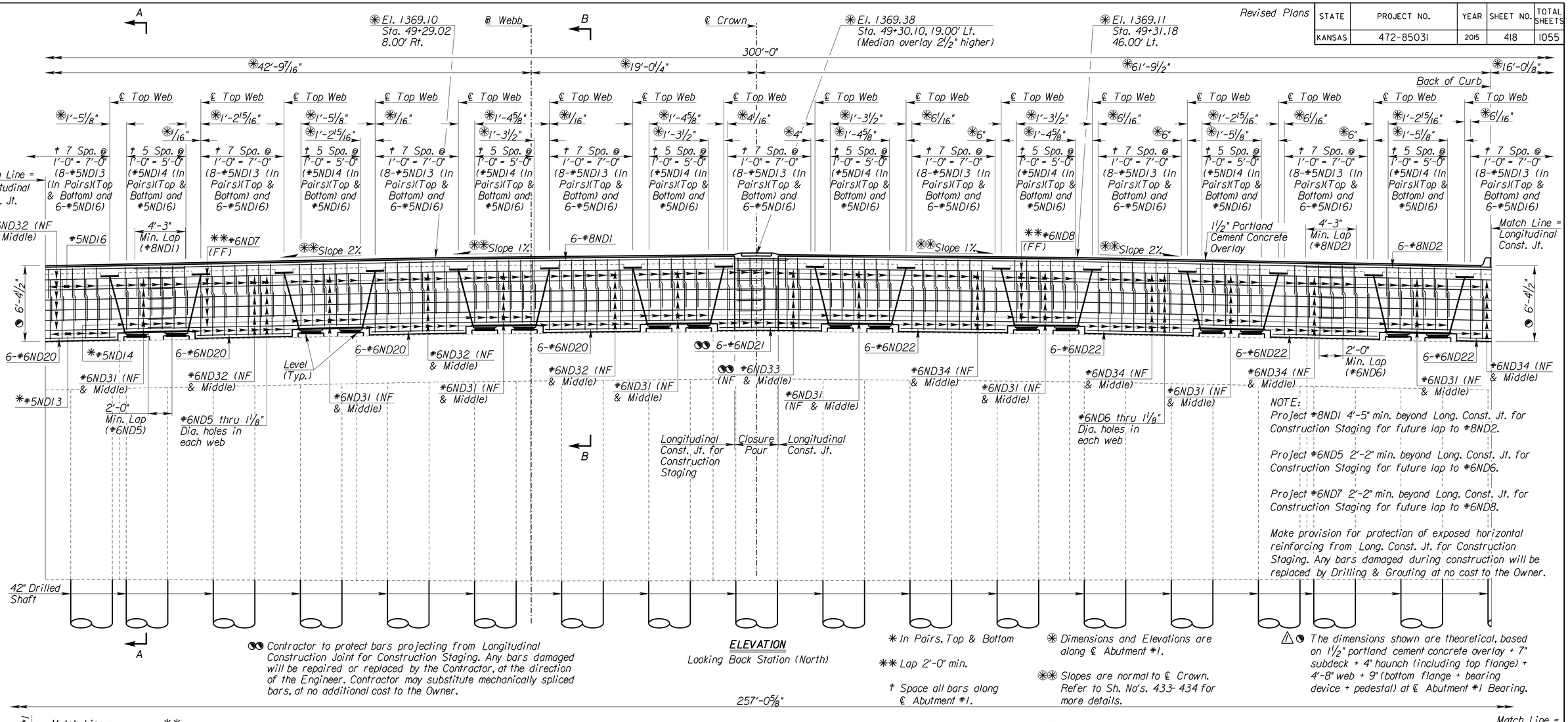
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:35 PM
5/26/2015
I:\357654\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKABD01A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	418	1055

Revised Plans



NOTE:
Project #8ND1 4'-5" min. beyond Long. Const. Jt. for Construction Staging for future lap to #8ND2.

Project #6ND5 2'-2" min. beyond Long. Const. Jt. for Construction Staging for future lap to #6ND6.

Project #6ND7 2'-2" min. beyond Long. Const. Jt. for Construction Staging for future lap to #6ND8.

Make provision for protection of exposed horizontal reinforcing from Long. Const. Jt. for Construction Staging. Any bars damaged during construction will be replaced by Drilling & Grouting at no cost to the Owner.

✻✻ Contractor to protect bars projecting from Longitudinal Construction Joint for Construction Staging. Any bars damaged will be repaired or replaced by the Contractor, at the direction of the Engineer. Contractor may substitute mechanically spliced bars, at no additional cost to the Owner.

ELEVATION
Looking Back Station (North)

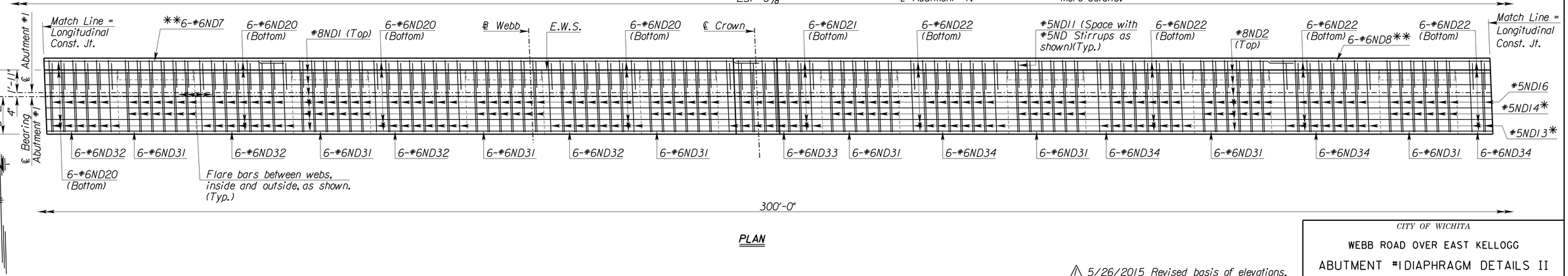
✻ In Pairs, Top & Bottom

✻✻ Lap 2'-0" min.

† Space all bars along ℄ Abutment #1.

✻✻✻ Slopes are normal to ℄ Crown. Refer to Sh. No's. 433-434 for more details.

△◔ The dimensions shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #1 Bearing.



PLAN

△ 5/26/2015 Revised basis of elevations.
See Sh. #423 for Sections.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 DIAPHRAGM DETAILS II

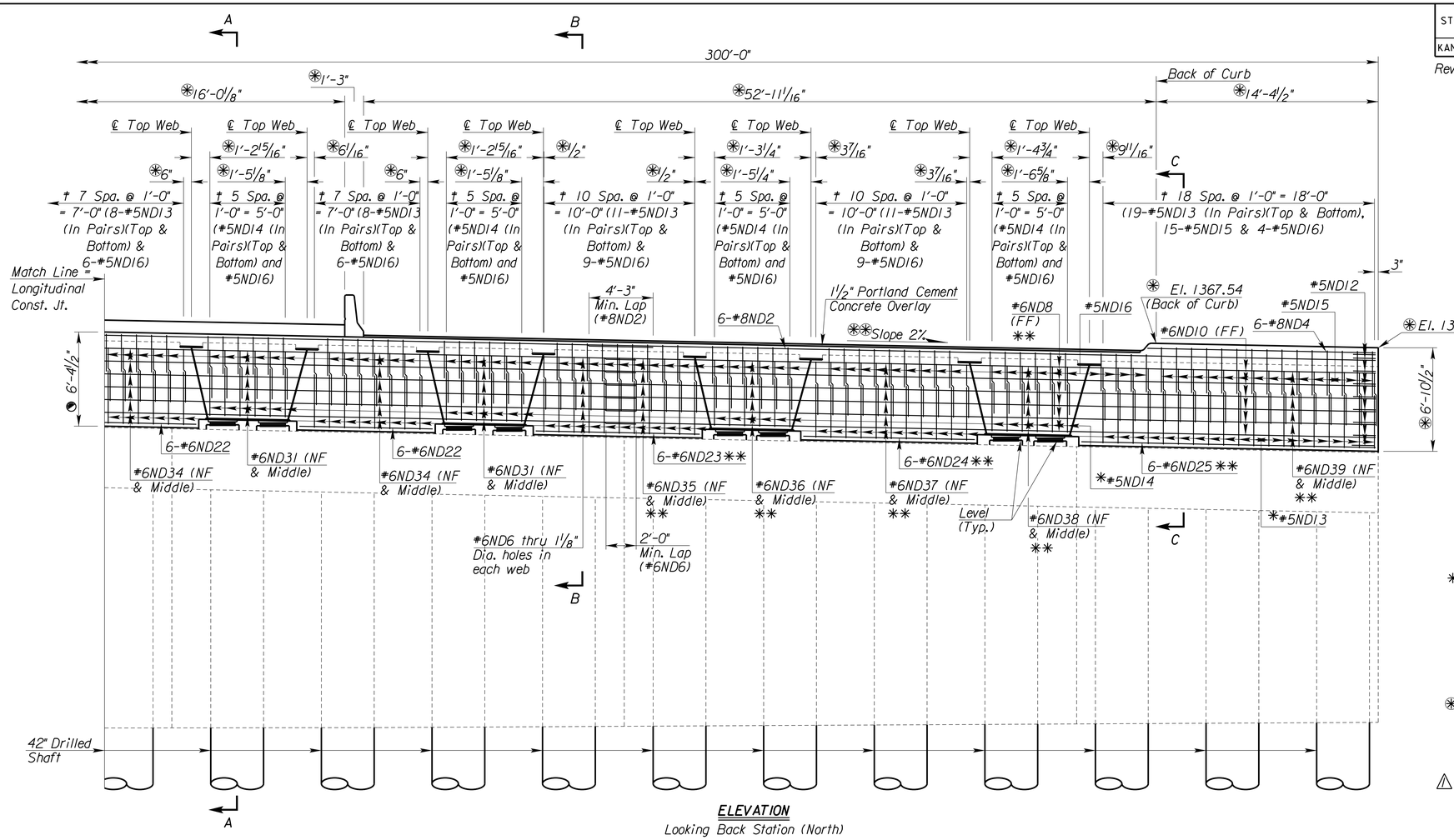
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

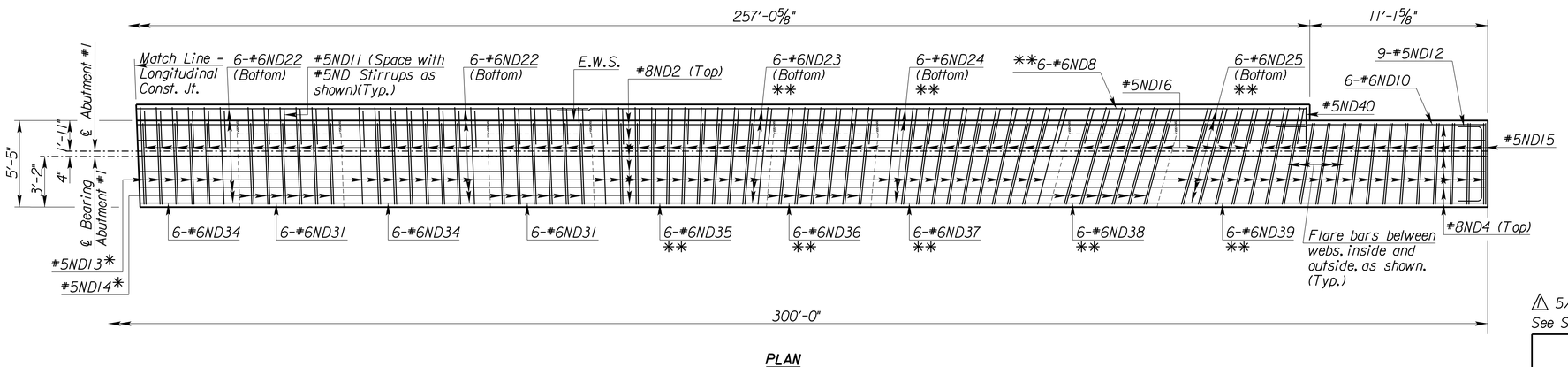
2:06:37 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKABD02A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	419	1055

Revised Plans



ELEVATION
Looking Back Station (North)



PLAN

✱ In Pairs, Top & Bottom

✱✱ Lap 2'-0" min.

† Space all bars along ℄ Abutment #1.

✱ Dimensions and Elevations are along ℄ Abutment #1.

✱✱ Slopes are normal to ℄ Crown. Refer to Sh. No's. 433-434 for more details.

⚠◔ The dimensions shown are theoretical, based on 1 1/2" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #1 Bearing.

⚠ 5/26/2015 Revised basis of elevations. See Sh. #423 for Sections.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #1 DIAPHRAGM DETAILS III

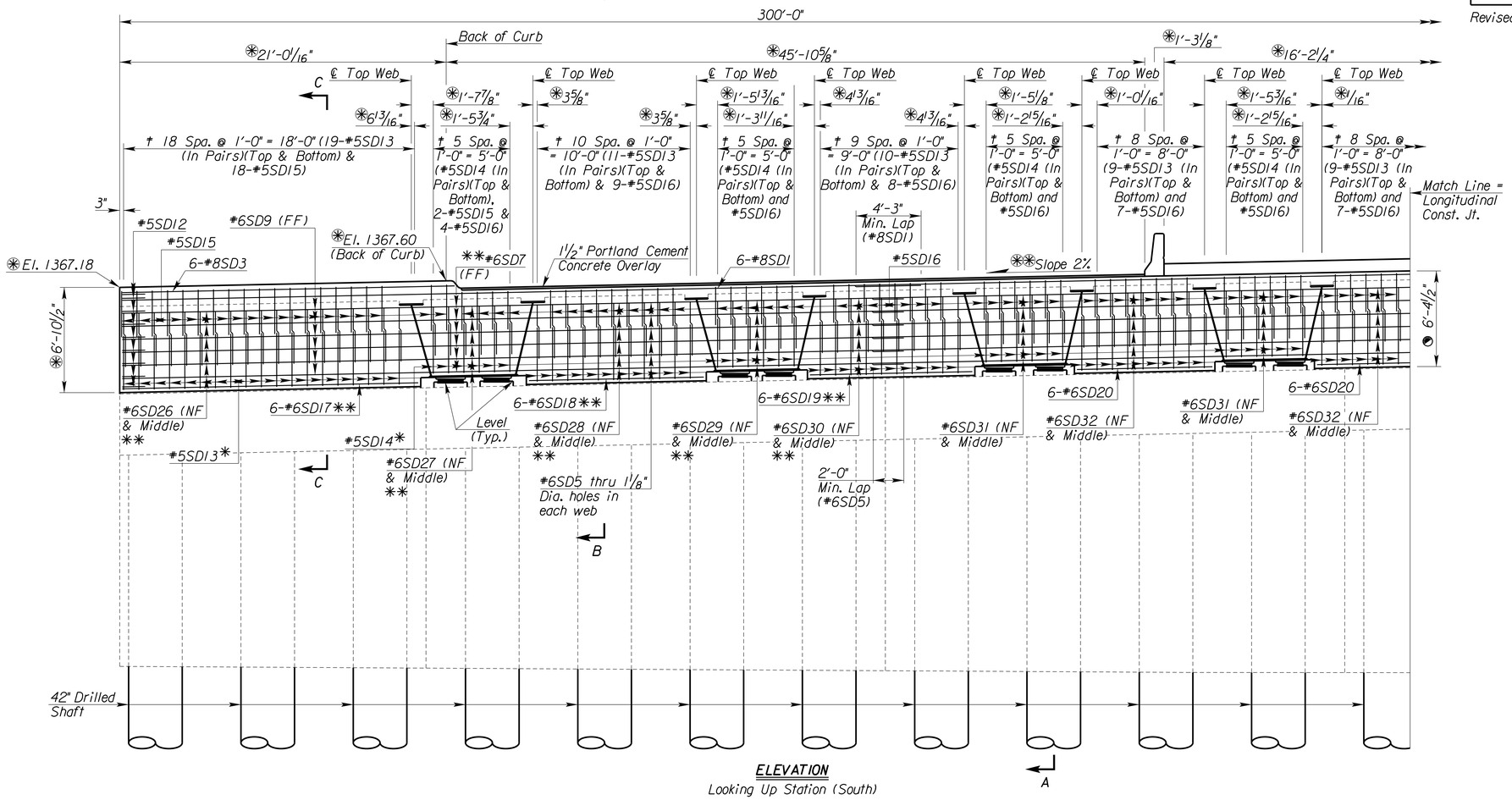
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:39 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKABD03A.DGN

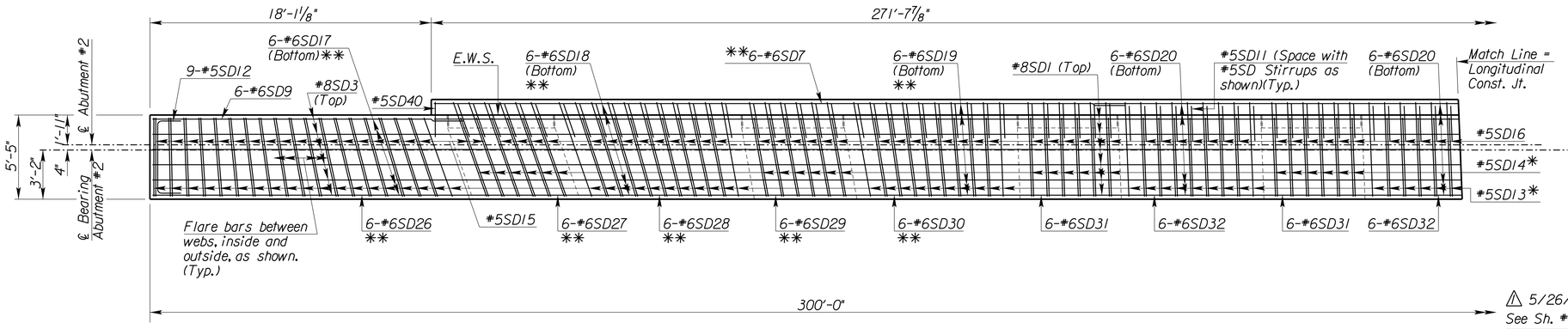
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	420	1055

Revised Plans



ELEVATION

Looking Up Station (South)



PLAN

* In Pairs, Top & Bottom

** Lap 2'-0" min.

† Space all bars along ℄ Abutment #2.

✻ Dimensions and Elevations are along ℄ Abutment #2.

✻✻ Slopes are normal to ℄ Crown. Refer to Sh. No's. 433-434 for more details.

⚠◔ The dimensions shown are theoretical, based on 1 1/2" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #2 Bearing.

⚠ 5/26/2015 Revised basis of elevations. See Sh. #423 for Sections.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 DIAPHRAGM DETAILS I

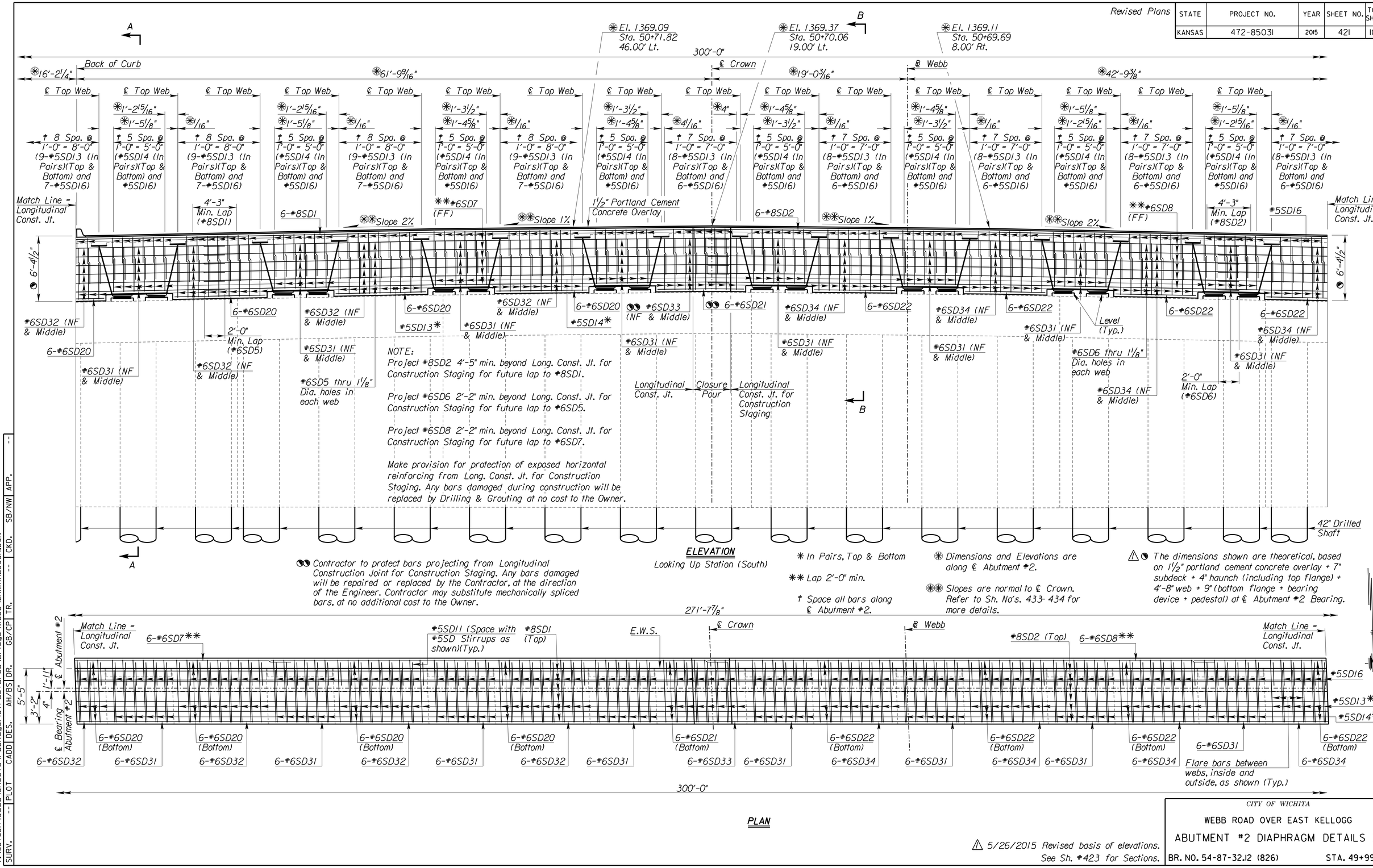
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:41 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABD04A.DGN

Revised Plans

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	421	1055



⚠ 5/26/2015 Revised basis of elevations.
See Sh. #423 for Sections.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 DIAPHRAGM DETAILS II

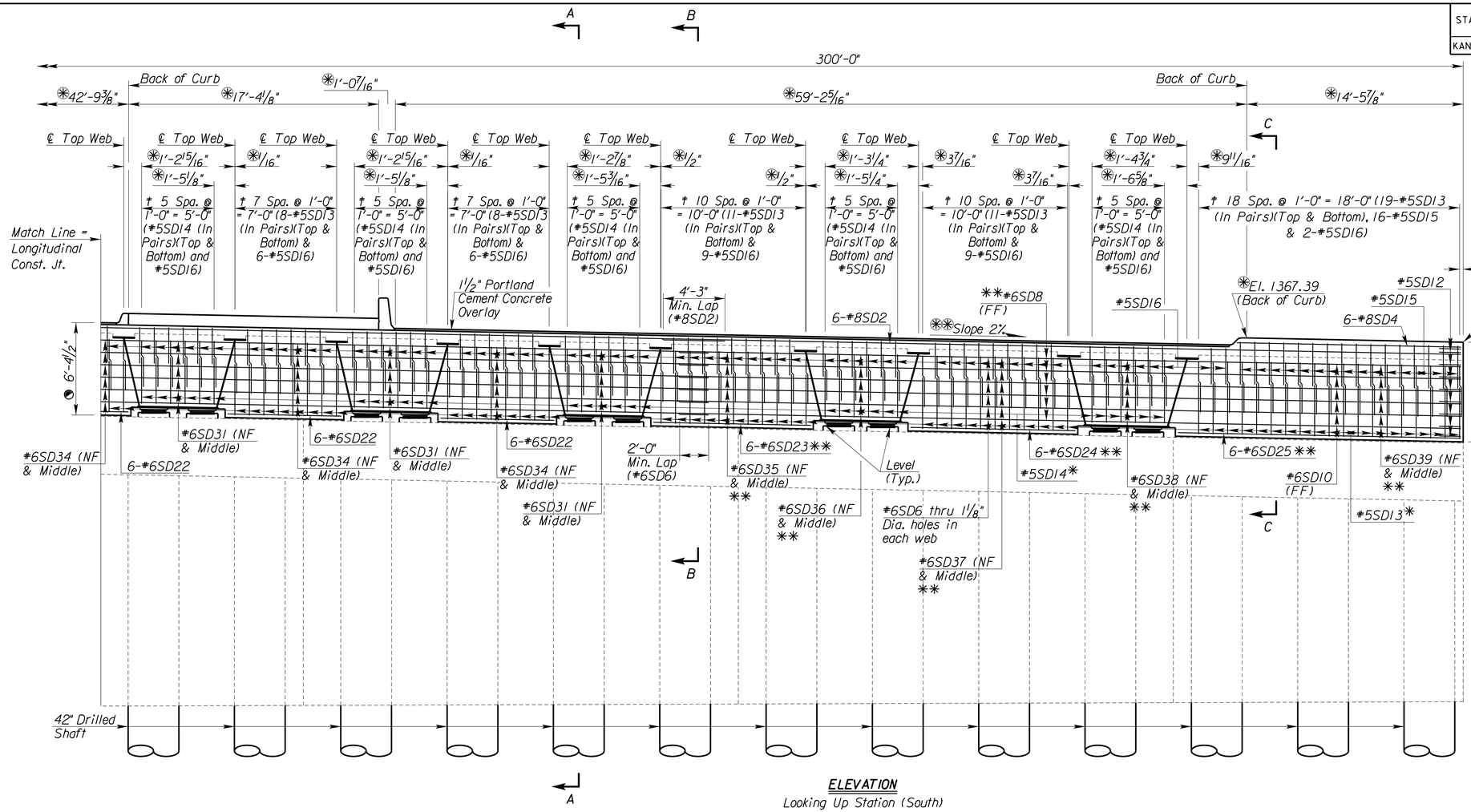
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

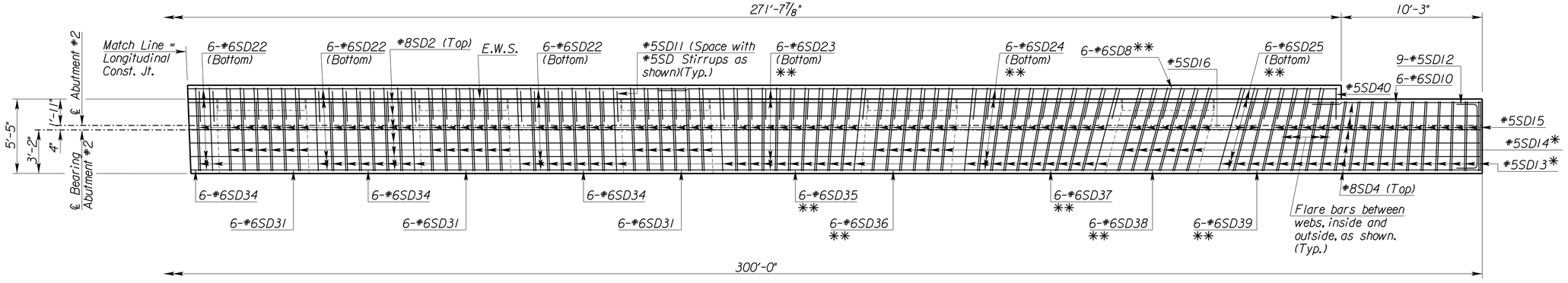
2:06:43 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKABD05A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	422	1055

Revised Plans



ELEVATION
Looking Up Station (South)



PLAN

✱ In Pairs, Top & Bottom

✱✱ Lap 2'-0" min.

† Space all bars along ℄ Abutment #2.

✱ Dimensions and Elevations are along ℄ Abutment #2.

✱✱ Slopes are normal to ℄ Crown. Refer to Sh. No's. 433-434 for more details.

◔ The dimensions shown are theoretical, based on 1 1/2" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment #2 Bearing.

⚠ 5/26/2015 Revised basis of elevations. See Sh. #423 for Sections.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

ABUTMENT #2 DIAPHRAGM DETAILS III

BR. NO. 54-87-32.12 (826) STA. 49+99.68

422

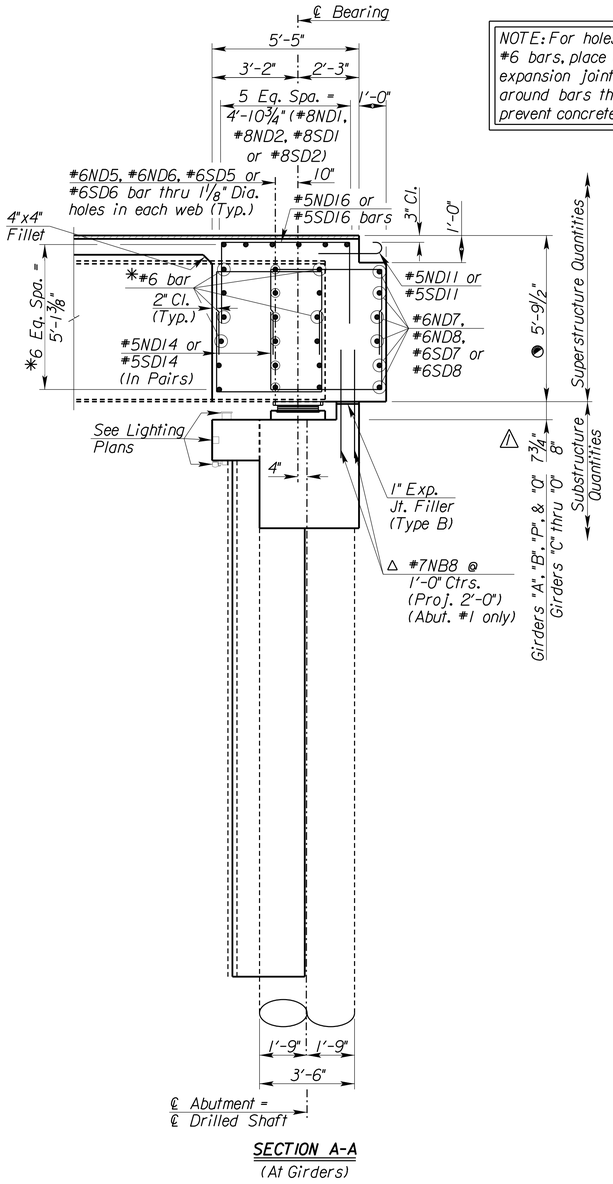
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:45 PM
5/26/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKABD06A.DGN

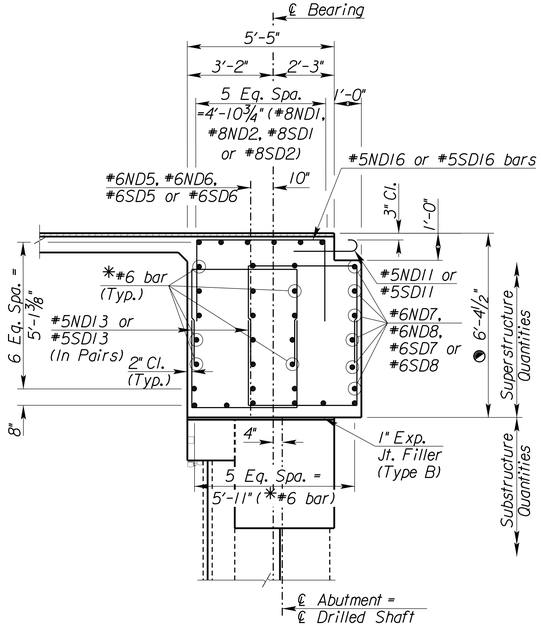
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	423	1055

Revised Plans

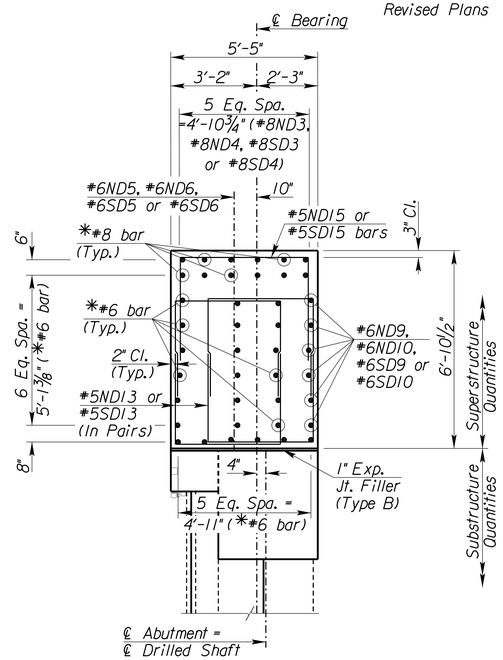
NOTE: For holes thru web for #6 bars, place black mastic or expansion joint material around bars through webs to prevent concrete intrusion.



SECTION A-A
(At Girders)

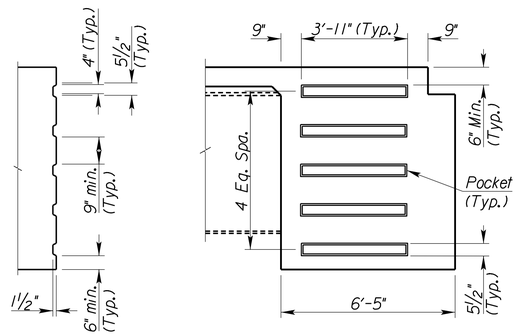


SECTION B-B
(Between Girders)



SECTION C-C

See Sh's. #438-439 for detail of PVC conduit holes thru Abutment Diaphragm, including additional reinforcing steel required.



KEYED CONSTRUCTION JOINT (REQUIRED)

(The Keyed Construction Joint for the abutment diaphragms will be subsidiary to other bid items. The location of the longitudinal joints for the abutment diaphragms, subdeck, and portland cement concrete overlay may be relocated with the approval of the Engineer. Also, addiitonal longitudinal construction joints may be utilized, with the approval of the Engineer, to accomodate concrete pouring operations. Relocation of joints and additional joints will be at no additional cost to the Owner.)

Note:
1" Expansion Joint Filler (Type B) between Abutment substructure and superstructure is subsidiary to other bid items.

△ ◔ The dimensions shown are theoretical, based on 1½" portland cement concrete overlay + 7" subdeck + 4" haunch (including top flange) + 4'-8" web + 9" (bottom flange + bearing device + pedestal) at ℄ Abutment Bearing.

△ See Sh. #387 for details of #7NB8 bars.

* Refer to Sh. No.'s 417 -422 for individual bar numbers and locations.

△ 5/26/2015 Revised pedestal height & basis of elevations.
See Sh. No.'s 417 -422 for Sections A-A, B-B & C-C locations.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

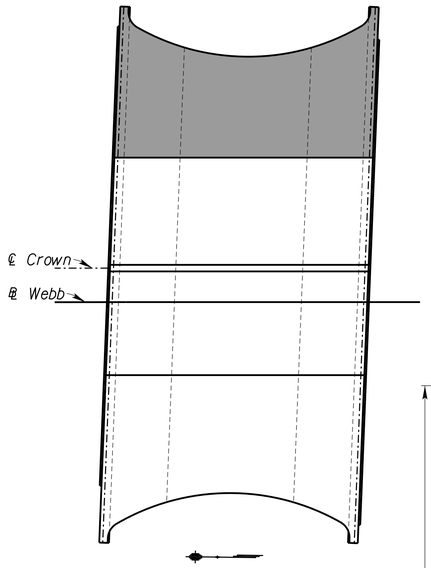
ABUTMENT DIAPHRAGM SECTIONS

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

2:06:48 PM
5/26/2015
T:\35765A\Cadd\Sheets\Packagel\Structures\Bridge\Webb\EKIWKABD07A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	424	1055



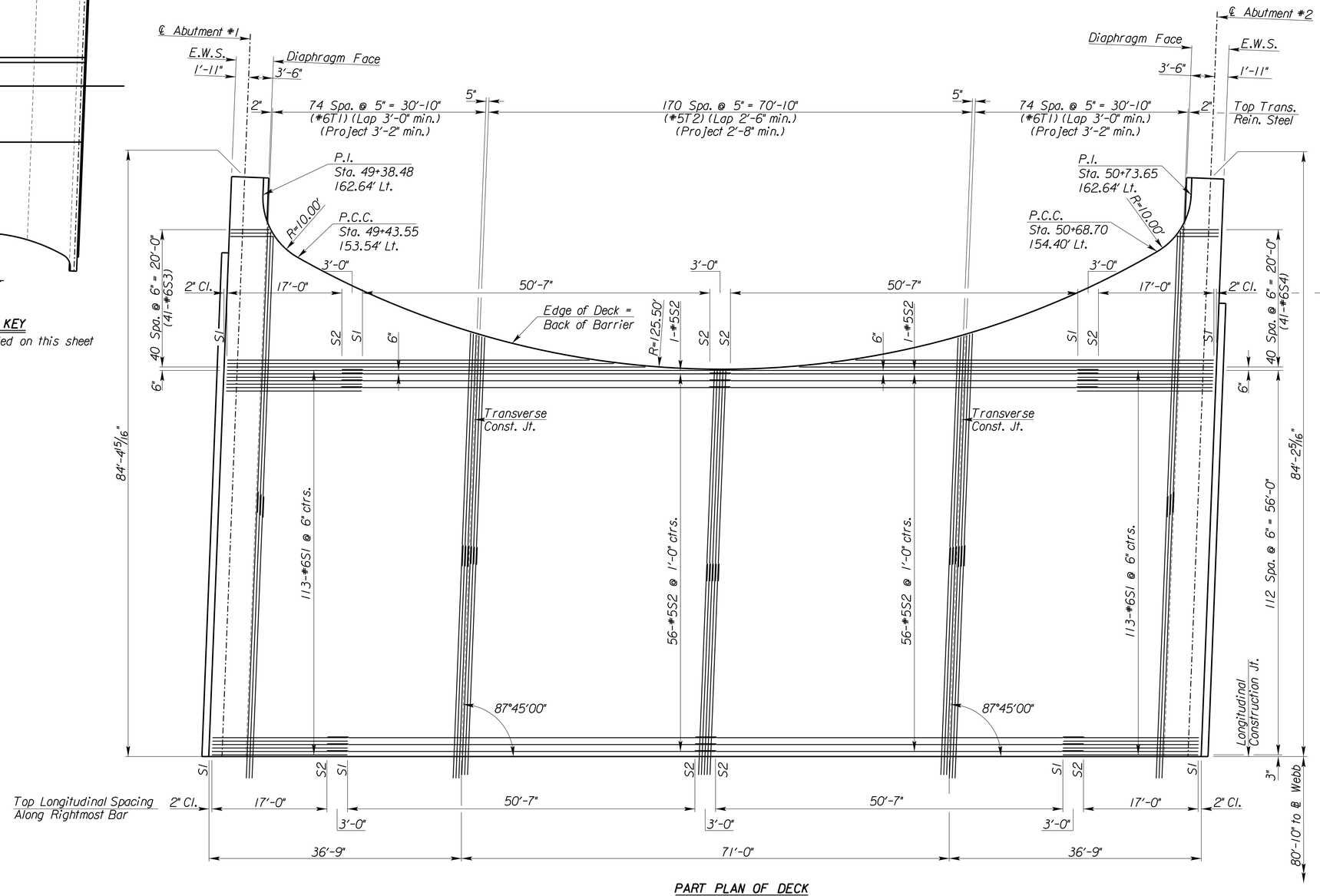
LOCATION KEY

Represents area detailed on this sheet

LEGEND

P.I. = Point of Intersection
P.C.C = Point of Compound Curvature

NOTES:
1. See Sh. # 430 for additional top deck reinforcing in overhangs.
2. Spacing for longitudinal reinforcement is normal to ℄ Structure.
3. Spacing for transverse reinforcement is parallel to ℄ Structure. Place transverse reinforcing steel parallel with ℄ Abutment.



PART PLAN OF DECK

Showing Reinforcing Steel in Top of Deck

Longitudinal Construction Joints are required. At the Contractor's option, and with the approval of the Engineer, the location of the Longitudinal Construction Joints may be adjusted and additional longitudinal Joints may also be provided. Any relocation of the Joints and use of additional Joints, including any required reinforcing changes, will be at no additional cost to the Owner.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

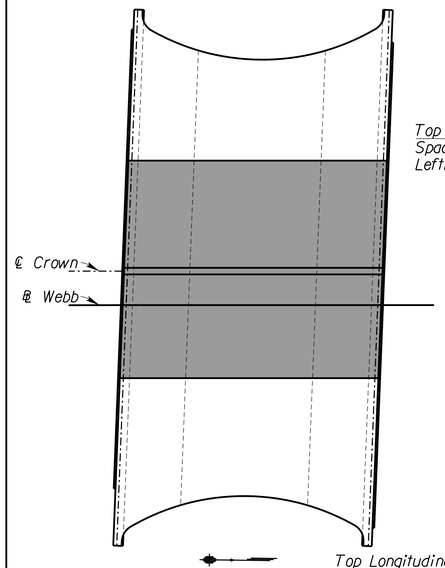
DECK DETAILS I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

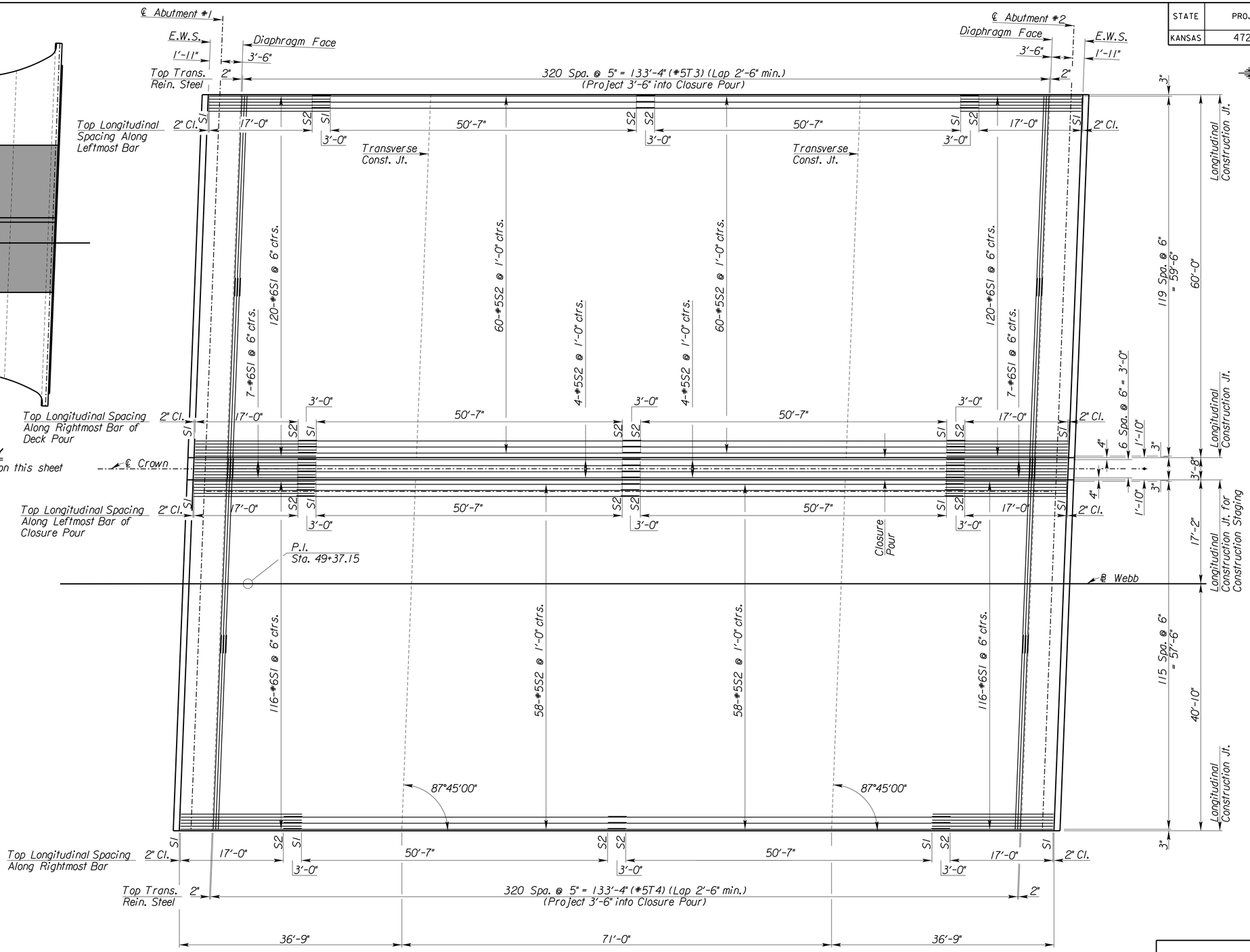
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKSSD01A.dgn
4/17/2015
9:56:14 AM

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	425	1055



LOCATION KEY

Represents area detailed on this sheet



PART PLAN OF DECK

Showing Reinforcing Steel in Top of Deck

LEGEND

P.I. = Point of Intersection

℄ Webb Rd.
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

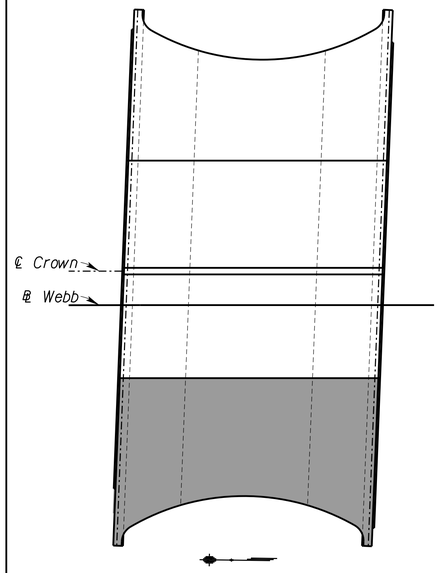
DECK DETAILS II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

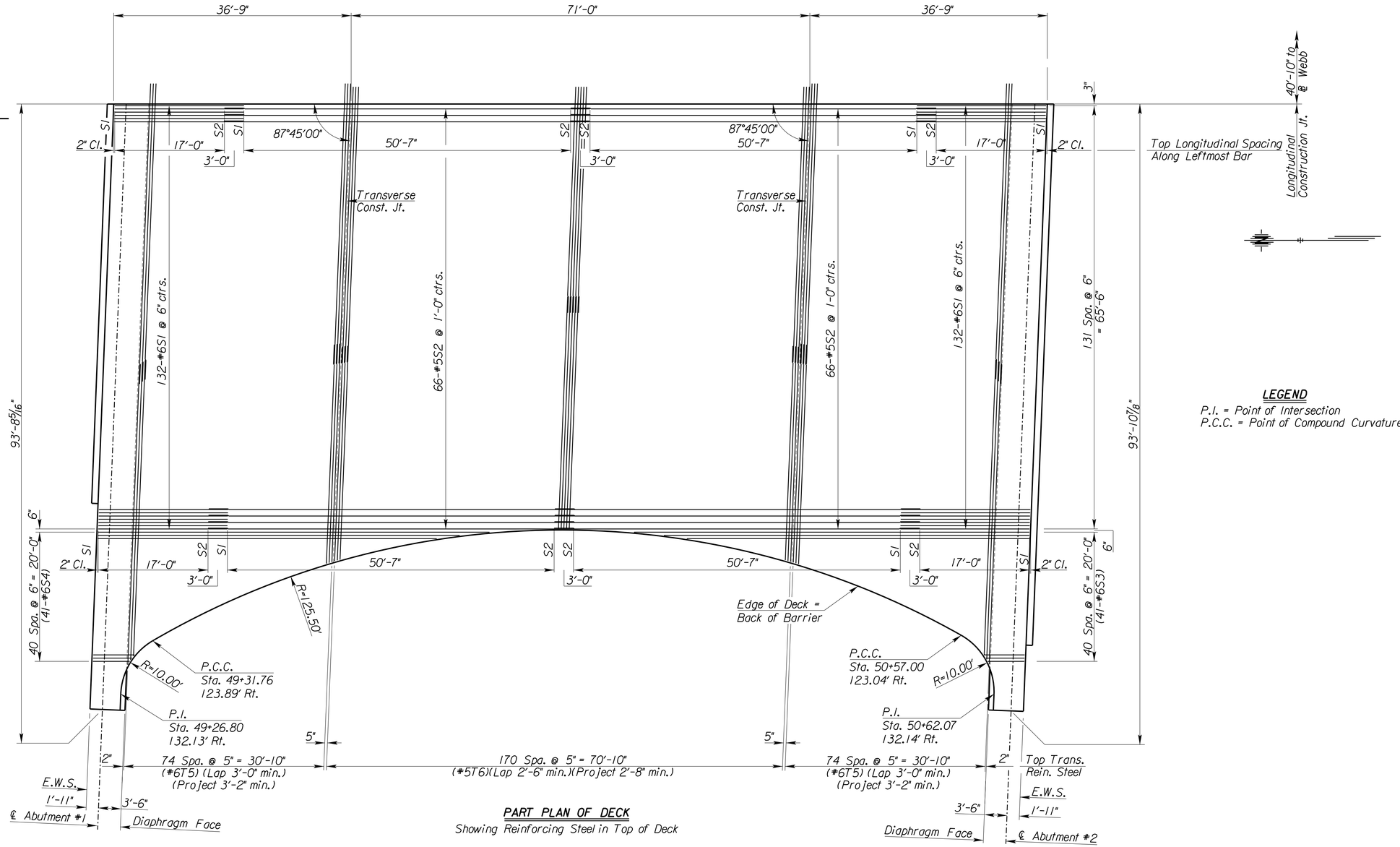
9:56:17 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKSSD02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	426	1055



LOCATION KEY

Represents area detailed on this sheet



PART PLAN OF DECK

Showing Reinforcing Steel in Top of Deck

LEGEND

P.I. = Point of Intersection
P.C.C. = Point of Compound Curvature

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:56:20 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKSSD03A.dgn

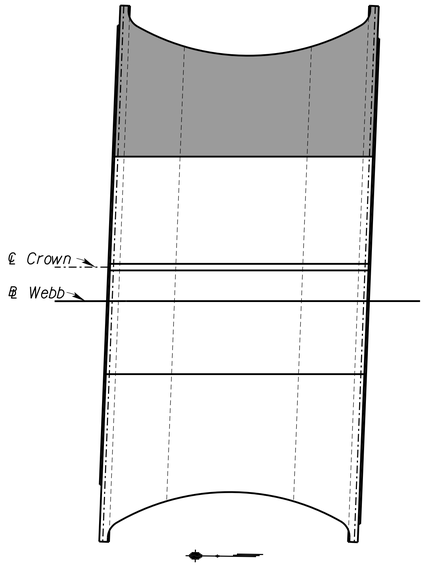
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

DECK DETAILS III

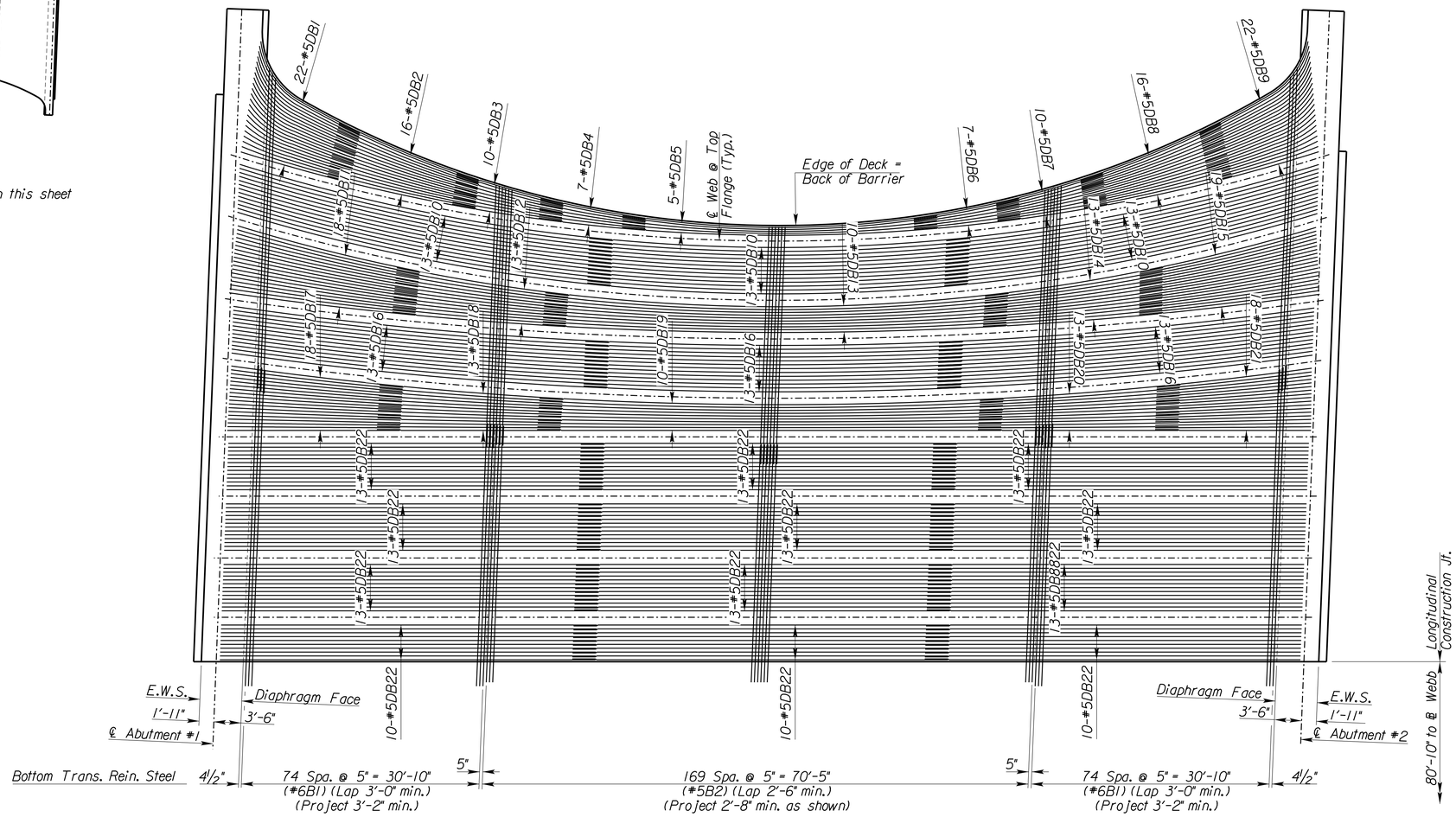
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	427	1055



LOCATION KEY

Represents area detailed on this sheet



PART PLAN OF DECK

Showing Reinforcing Steel in Bottom of Deck

NOTES:
1. Minimum lap for #5DB longitudinal bar is 3'-0".
2. Project #5DB bars 3'-0" minimum beyond face of Abutment Diaphragm.
3. Flare bars evenly between ℄ Top Flanges as shown. See Overhang Sections on Sh. #435.
4. Place #5DB bars as shown.
5. Field bend #5DB bars to achieve curve.
6. Spacing for transverse reinforcement is parallel to ℄ Structure. Place transverse reinforcing steel parallel with ℄ Abutment.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

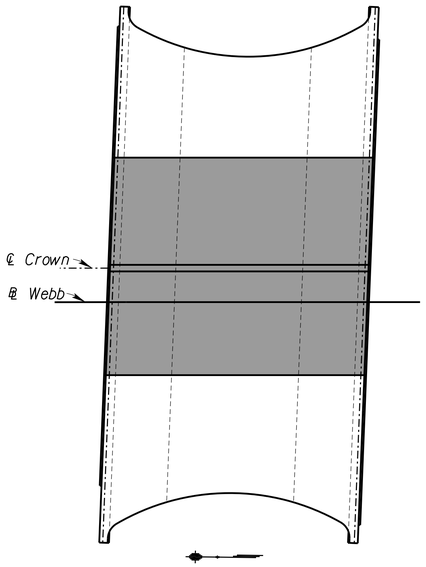
DECK DETAILS IV

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

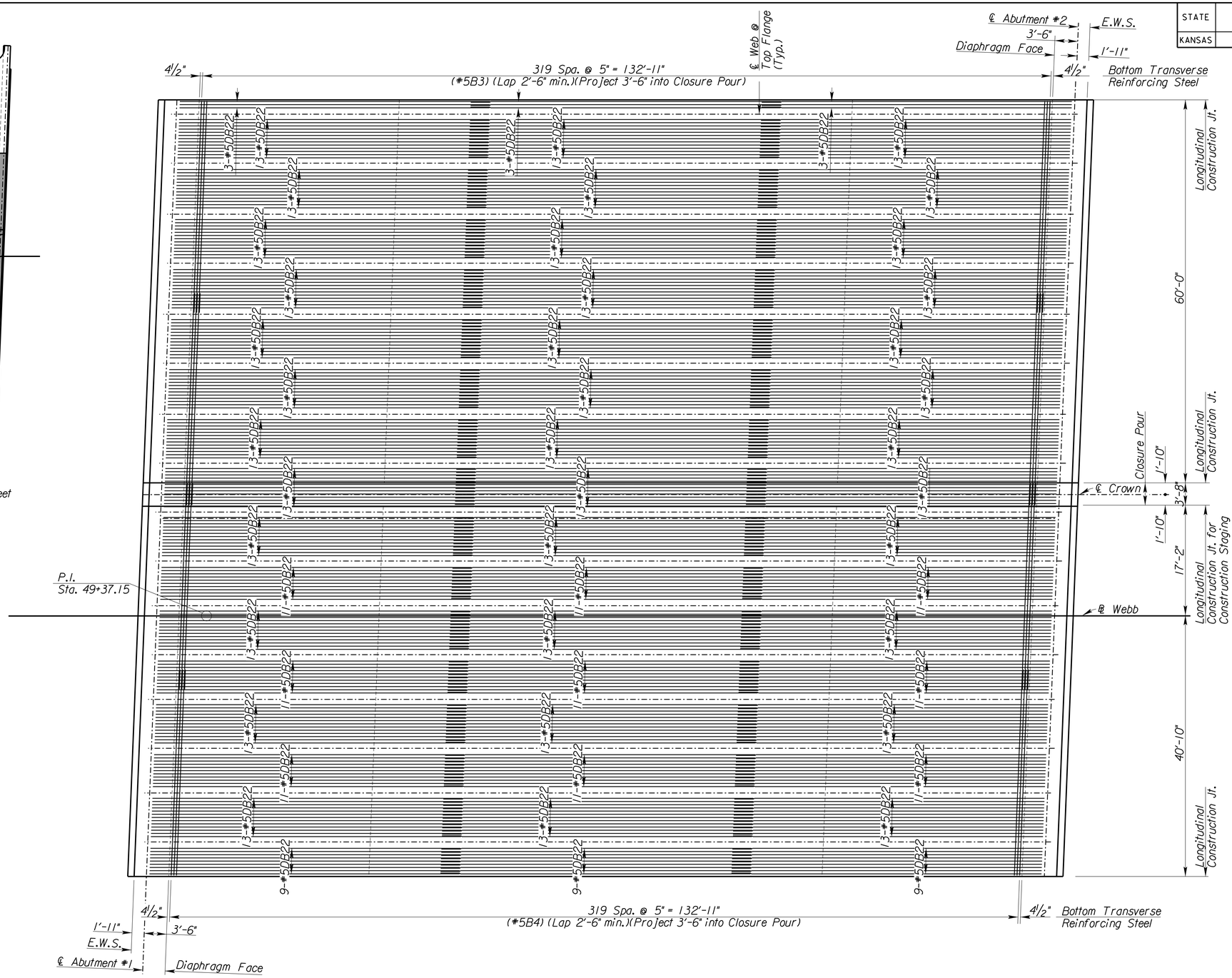
9:56:24 AM
4/17/2015
T:\351765A\Cadd\Sheets\Packages\Structures\Bridge\Webb\EK\WKSSD04A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	428	1055



LOCATION KEY

Represents area detailed on this sheet



LEGEND

P.I. = Point of Intersection

℄ Webb Rd.
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.

PART PLAN OF DECK

Showing Reinforcing Steel in Bottom of Deck

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

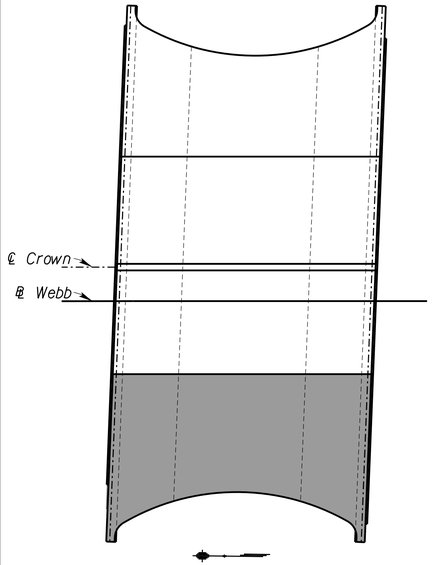
DECK DETAILS V

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

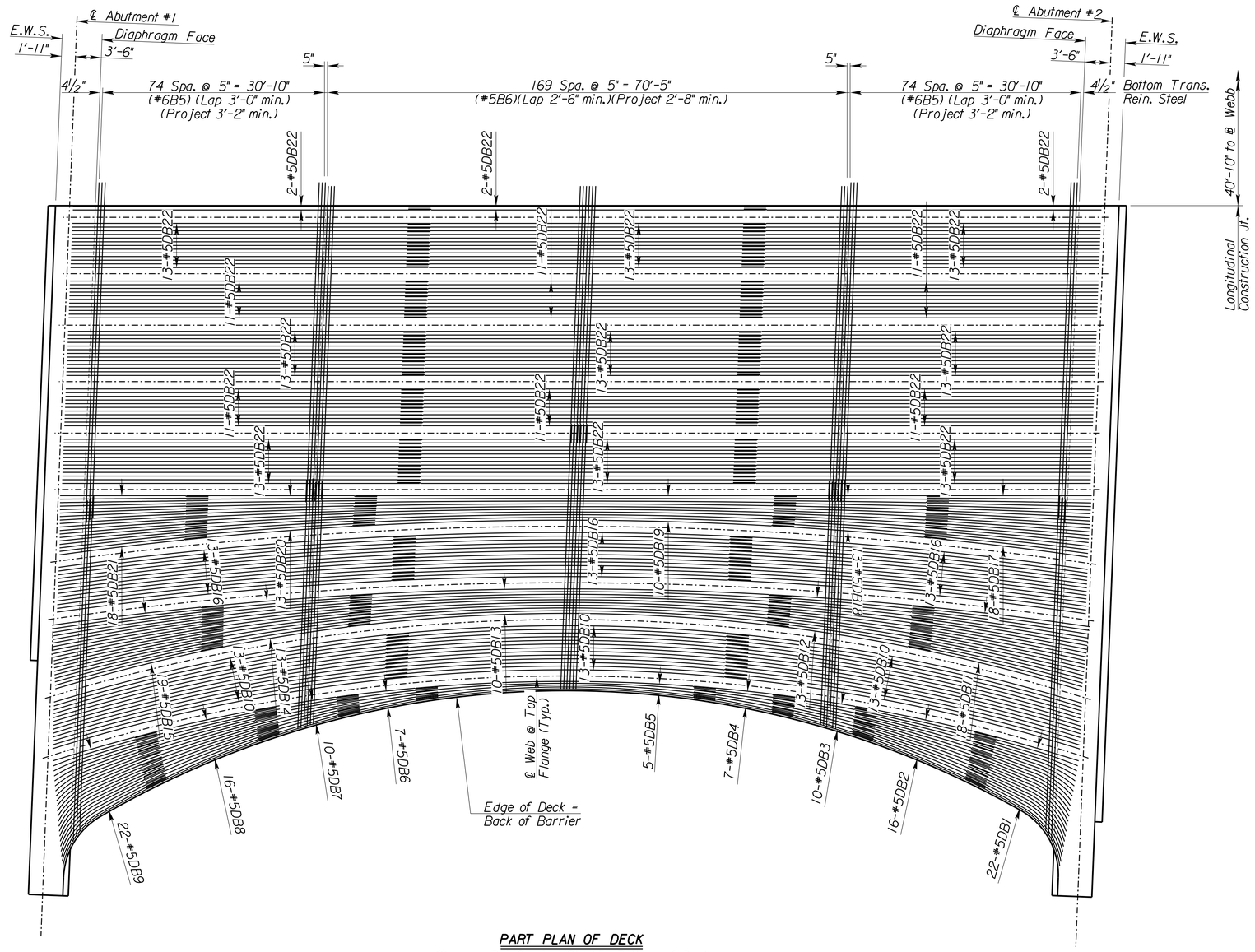
9:56:27 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKSSD05A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	429	1055



LOCATION KEY

Represents area detailed on this sheet



PART PLAN OF DECK

Showing Reinforcing Steel in Bottom of Deck

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:56:31 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKSSD06A.dgn

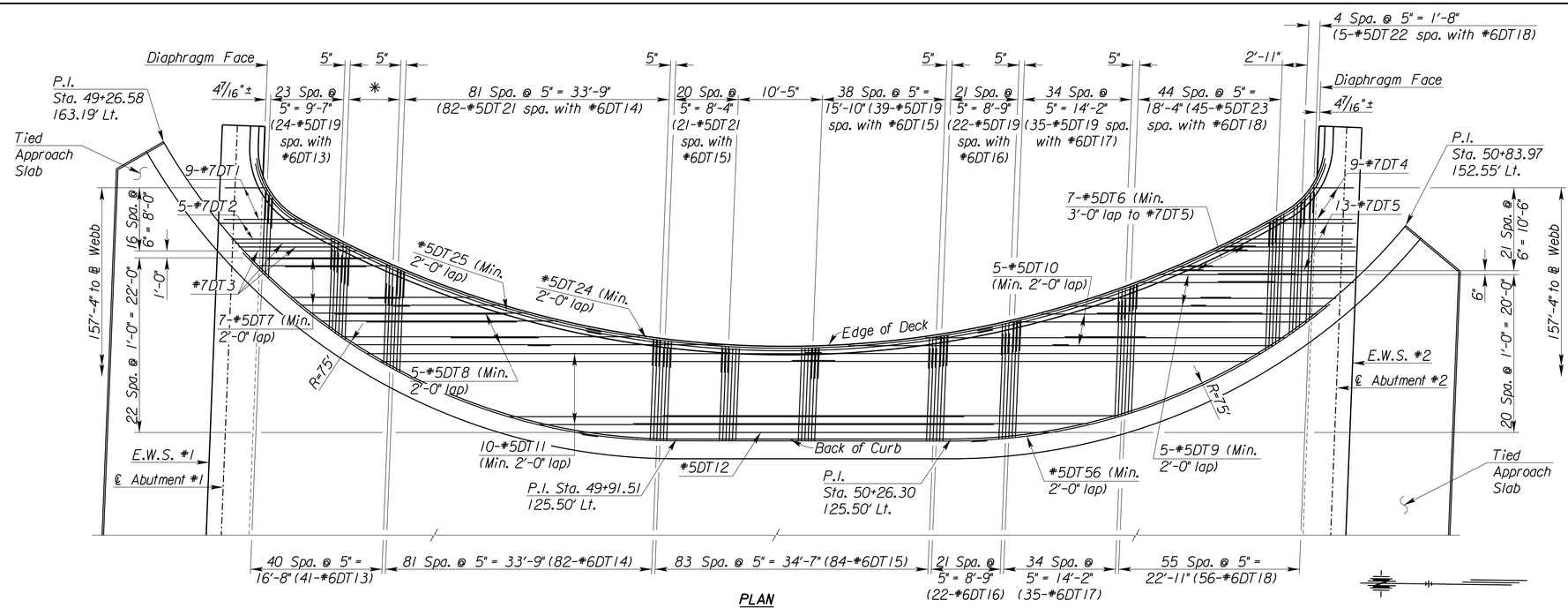
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

DECK DETAILS VI

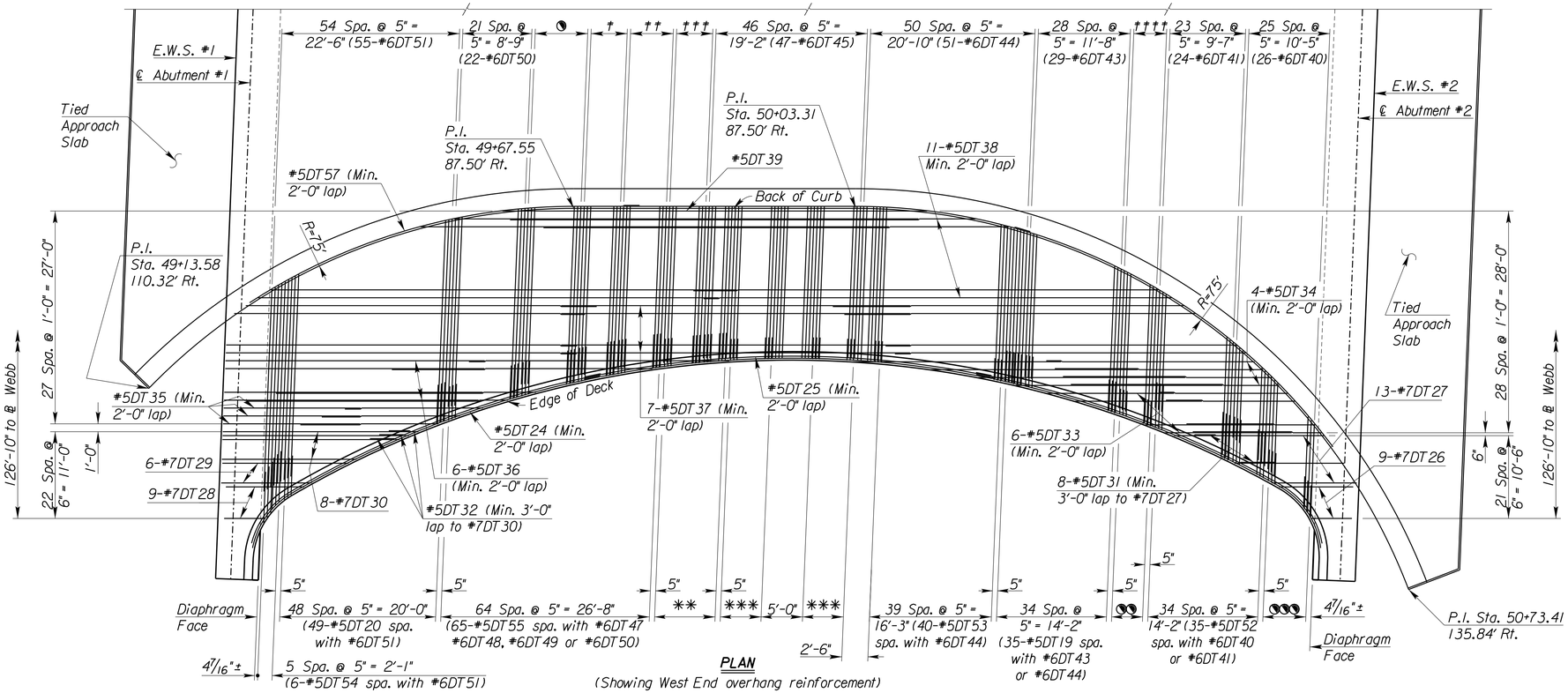
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	430	1055



PLAN

(Showing East End overhang reinforcement)



PLAN

(Showing West End overhang reinforcement)

NOTES:

1. Project #5DT24, #5DT25, #5DT56 & #5DT57 bars 3'-0" minimum beyond face of Abutment Diaphragm.
2. Field bend #5DT24, #5DT25, #5DT56 & #5DT57 bars to achieve curve.
3. Place transverse reinforcing steel, including #6 hooked bars, parallel with ℄ Abutments. Spacing of transverse bars is along ℄ Structure.
4. #6 hooked transverse bar is placed at back of curb. See the "Overhang Section" on Sh. #435.
5. Lap transverse #5DT bars 2'-5" min. to #6DT hooked bars.
6. Space #5T7 bars, not shown for clarity, with transverse #6DT hooked bars.
7. Spacing for longitudinal reinforcement is normal to ℄ Structure.

* 16 Spa. @ 5" = 6'-8" (17-#5DT20 spa. with #6DT13)

** 19 Spa. @ 5" = 7'-11" (20-#5DT22 spa. with #6DT45 or #6DT46)

*** 13 Spa. @ 5" = 5'-5" (14-#5DT53 spa. with #6DT45)

◔ 16 Spa. @ 5" = 6'-8" (17-#6DT49)

◔◔ 10 Spa. @ 5" = 4'-2" (11-#5DT21 spa. with #6DT42)

◔◔◔ 14 Spa. @ 5" = 5'-10" (15-#5DT19 spa. with #6DT40)

† 11 Spa. @ 5" = 4'-7" (12-#6DT48)

†† 13 Spa. @ 5" = 5'-5" (14-#6DT47)

††† 11 Spa. @ 5" = 4'-7" (12-#6DT46)

†††† 10 Spa. @ 5" = 4'-2" (11-#6DT42)

See Sh's. #424-426 for additional deck geometrics.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

DECK DETAILS VII

BR. NO. 54-87-32.12 (826) STA. 49+99.68

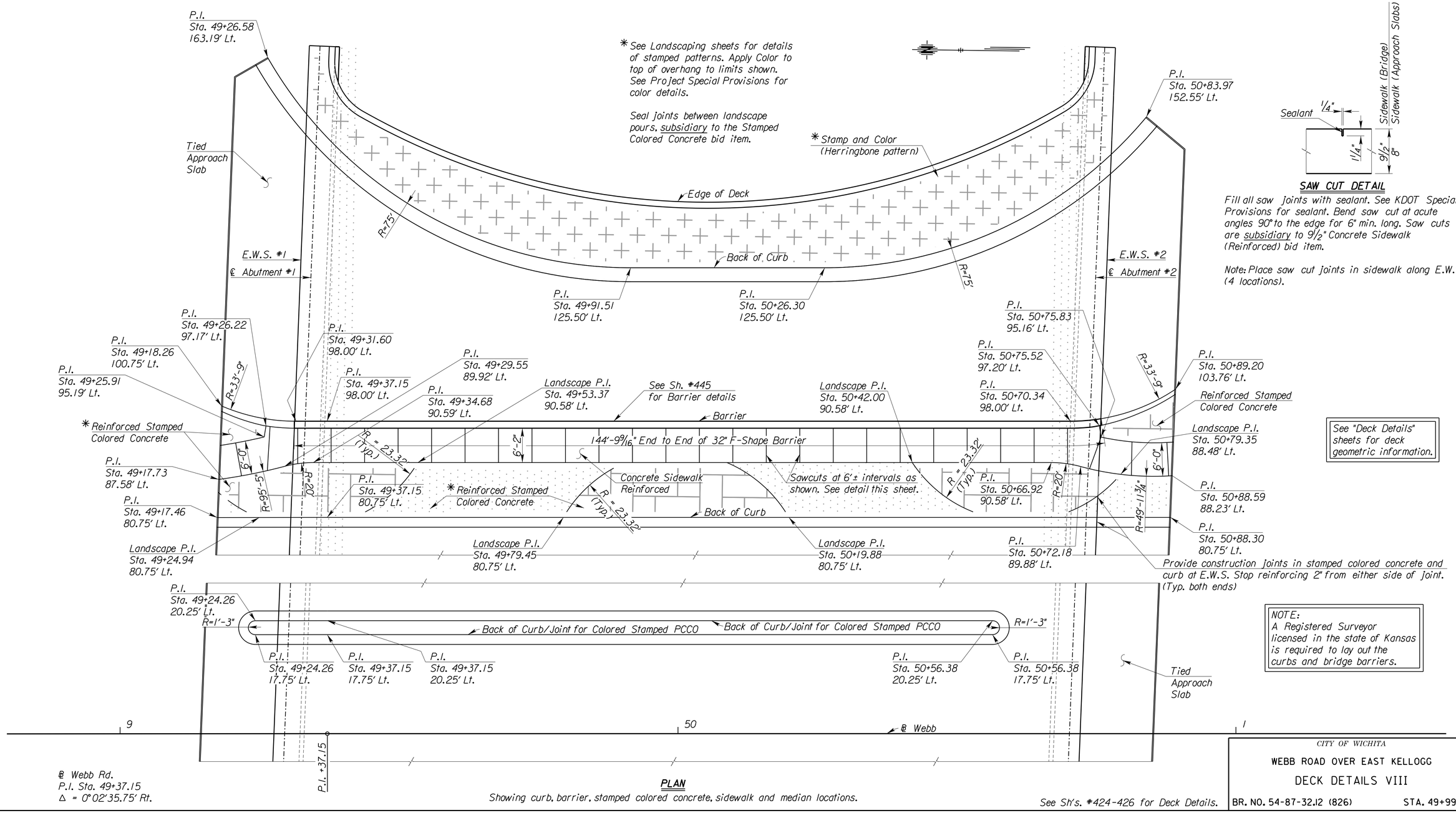
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:56:43 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKSSD07A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	431	1055

LEGEND

PCCO = Portland Cement Concrete Overlay



SAW CUT DETAIL

Fill all saw joints with sealant. See KDOT Special Provisions for sealant. Bend saw cut at acute angles 90° to the edge for 6" min. long. Saw cuts are subsidiary to 9 1/2" Concrete Sidewalk (Reinforced) bid item.

Note: Place saw cut joints in sidewalk along E.W.S. (4 locations).

See "Deck Details" sheets for deck geometric information.

NOTE:
A Registered Surveyor licensed in the state of Kansas is required to lay out the curbs and bridge barriers.

@ Webb Rd.
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.

PLAN

Showing curb, barrier, stamped colored concrete, sidewalk and median locations.

See Sh's. #424-426 for Deck Details.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

DECK DETAILS VIII

BR. NO. 54-87-32.12 (826) STA. 49+99.68

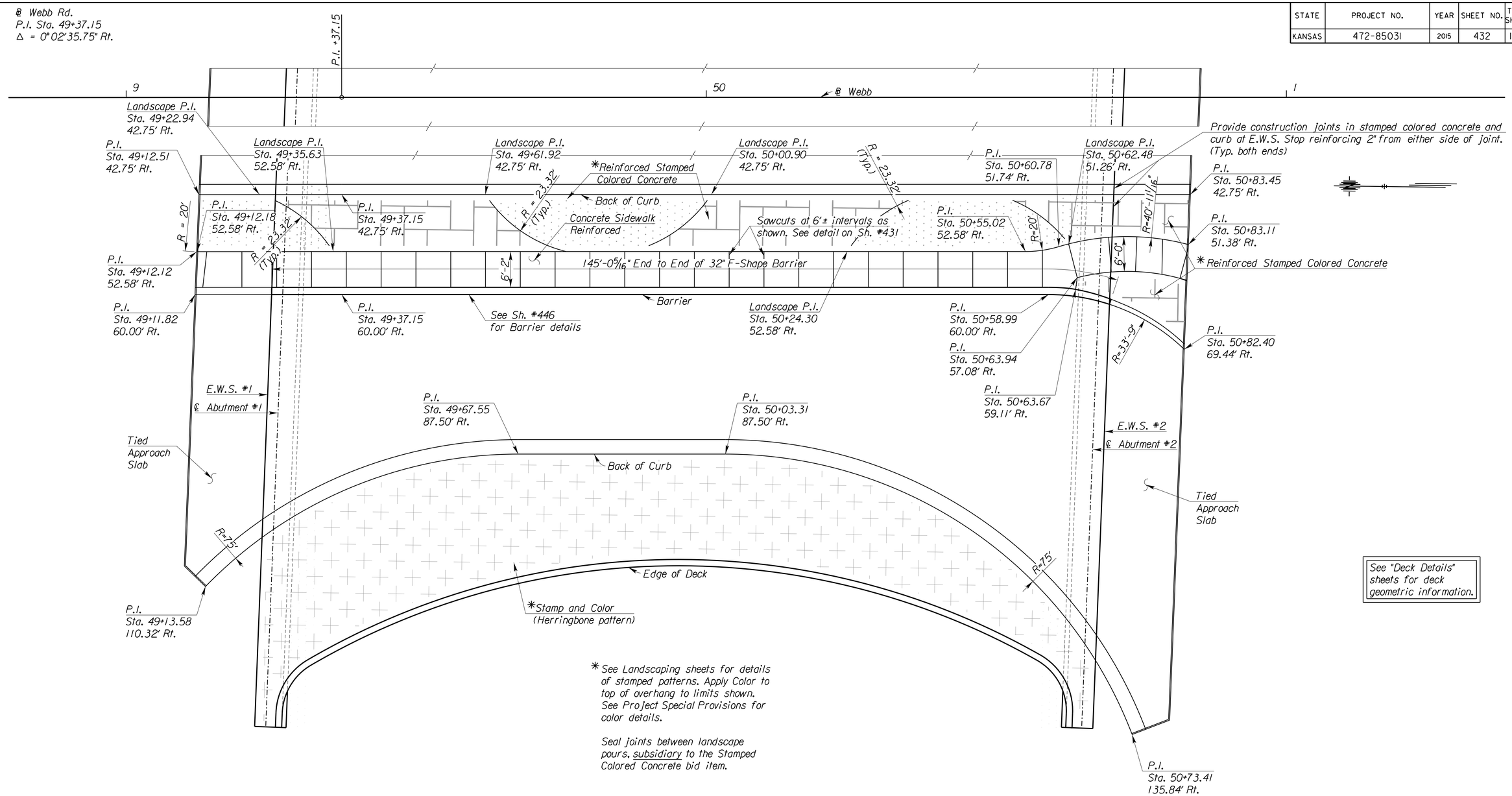
431

9:57:04 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKSSD08A.dgn

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	432	1055

℄ Webb Rd.
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.



See "Deck Details" sheets for deck geometric information.

*See Landscaping sheets for details of stamped patterns. Apply Color to top of overhang to limits shown. See Project Special Provisions for color details.

Seal joints between landscape pours, subsidiary to the Stamped Colored Concrete bid item.

PLAN
Showing curb, barrier, stamped colored concrete, sidewalk and median locations.

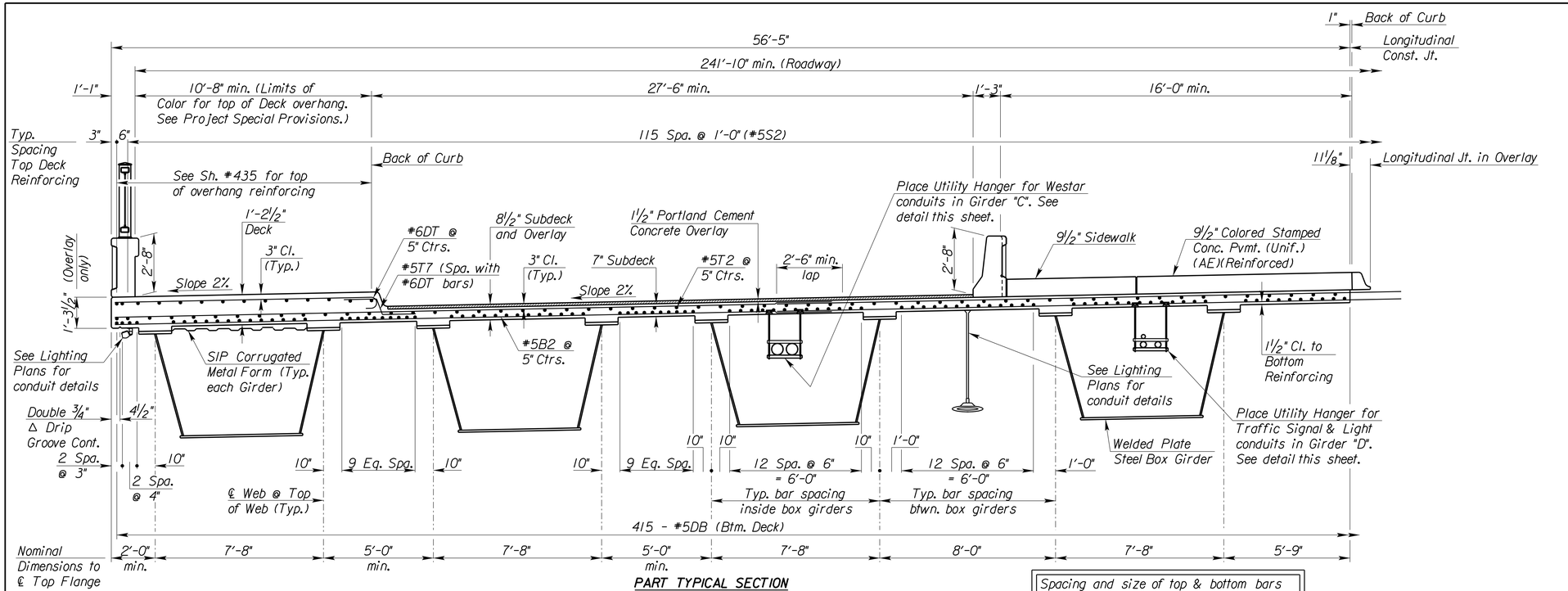
See Sh's. #424-426 for Deck Details.

CITY OF WICHITA
WEBB ROAD OVER EAST KELLOGG
DECK DETAILS IX
BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:57:21 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKSSD09A.dgn

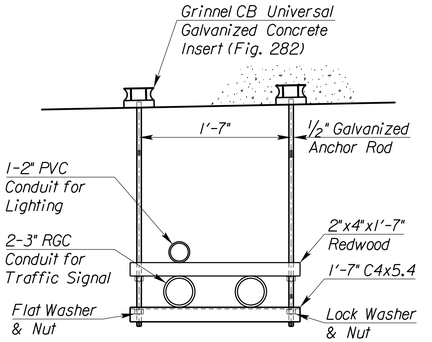
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	433	1055



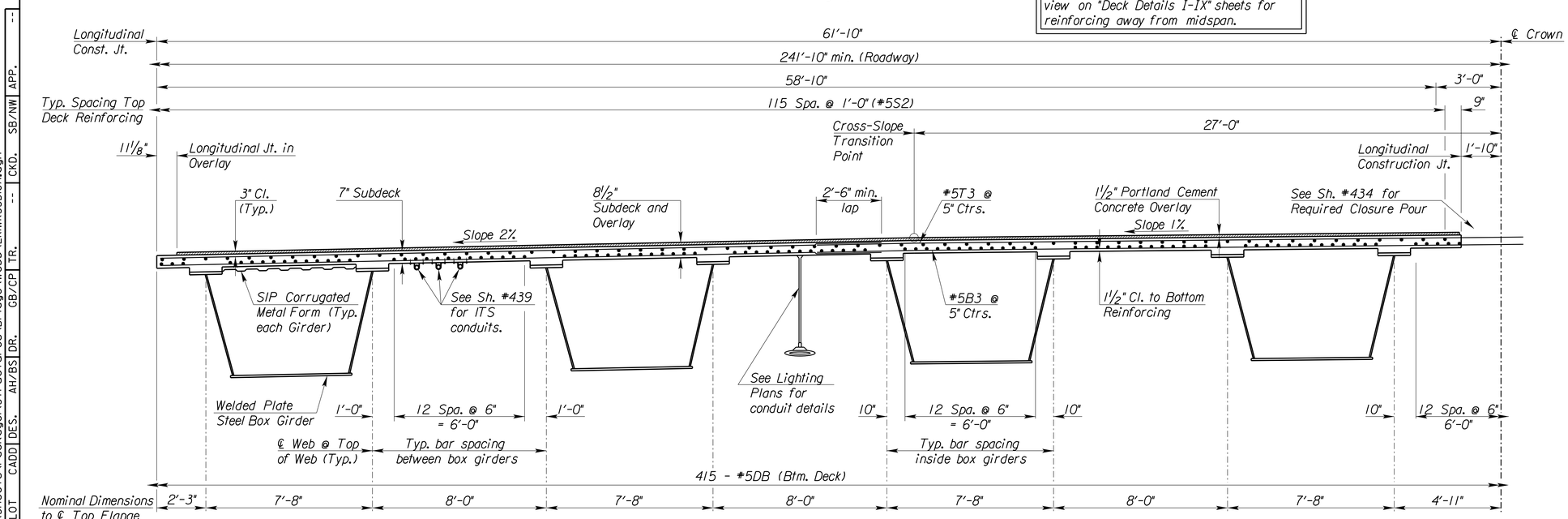
PART TYPICAL SECTION

Section near midspan. Normal to ℄ Structure. Looking Upstation (south).

Spacing and size of top & bottom bars shown at midspan of structure. See plan view on "Deck Details I-IX" sheets for reinforcing away from midspan.

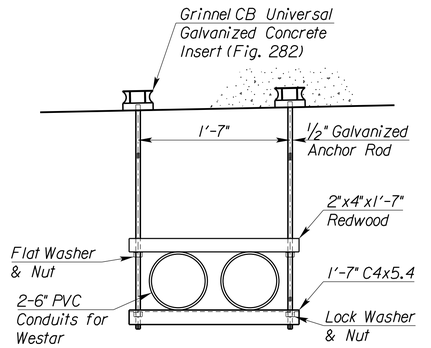


TRAFFIC SIGNAL UTILITY HANGER DETAIL



PART TYPICAL SECTION

Section near midspan. Normal to ℄ Structure. Looking Upstation (south).



WESTAR UTILITY HANGER DETAIL

Detail is conceptual only. Provide Shop Drawings of hanger for approval by Westar and Owner's Engineer.

Provide flexible connectors for Conduit at each end of bridge for expansion. Space hangers at 6' centers through bridge. Adjust height of hanger to clear internal bracing. At ends of bridge, top of conduits to be 3'-0" below grade.

See Sh's. #424-432 for Deck Details I-IX.

CITY OF WICHITA

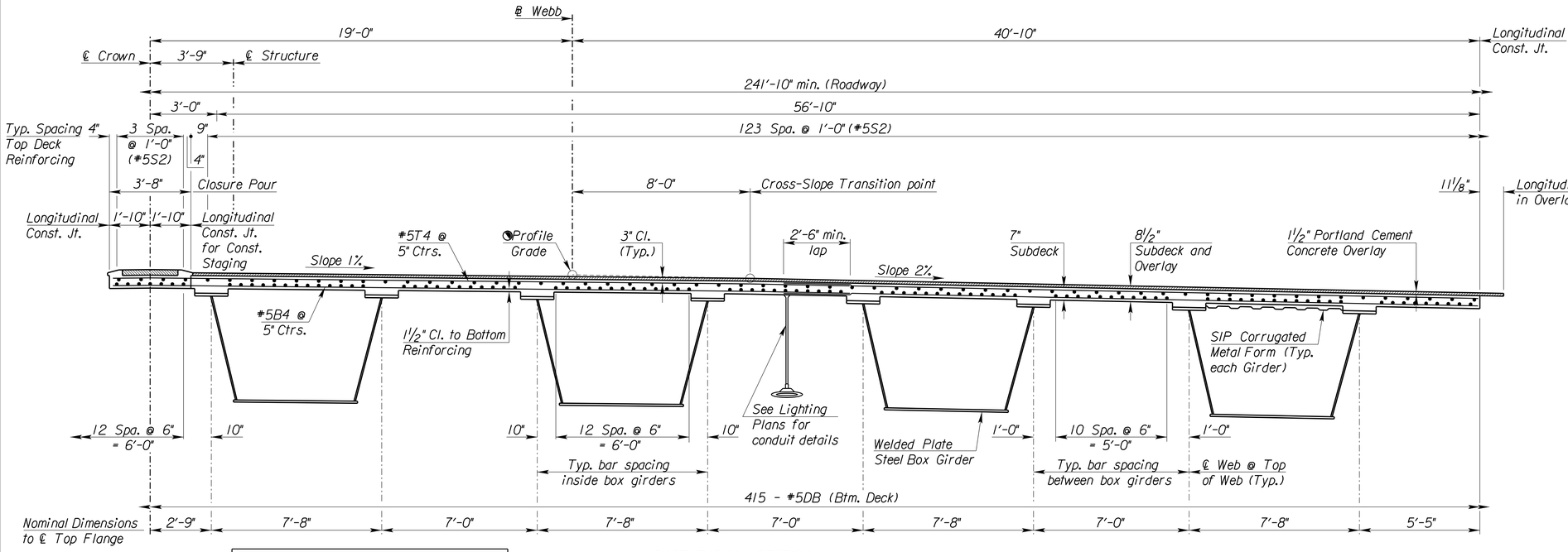
WEBB ROAD OVER EAST KELLOGG

DECK DETAILS X

BR. NO. 54-87-32.12 (826) STA. 49+99.68

9:57:25 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKSSD10A.dgn
SURV. -- | PLOT | CADD | DES. | AH/BS | DR. | GB/CP | TR. | -- | CK'D. | SB/NW | APP. | -

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	434	1055

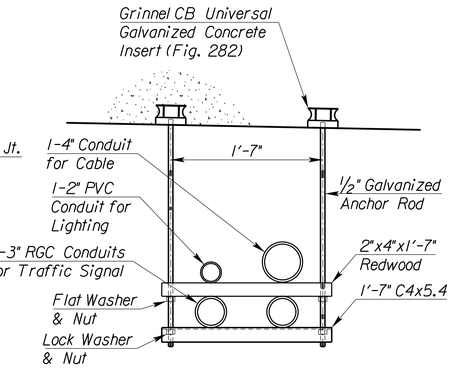


Spacing and size of top & bottom bars shown at midspan of structure. See plan view on "Deck Details I-IX" sheets for reinforcing away from midspan.

PART TYPICAL SECTION

Section near midspan. Normal to ℄ Structure. Looking Upstation (south).

◔ Profile Grade is 0.08' above top of the portland cement concrete overlay at this location.

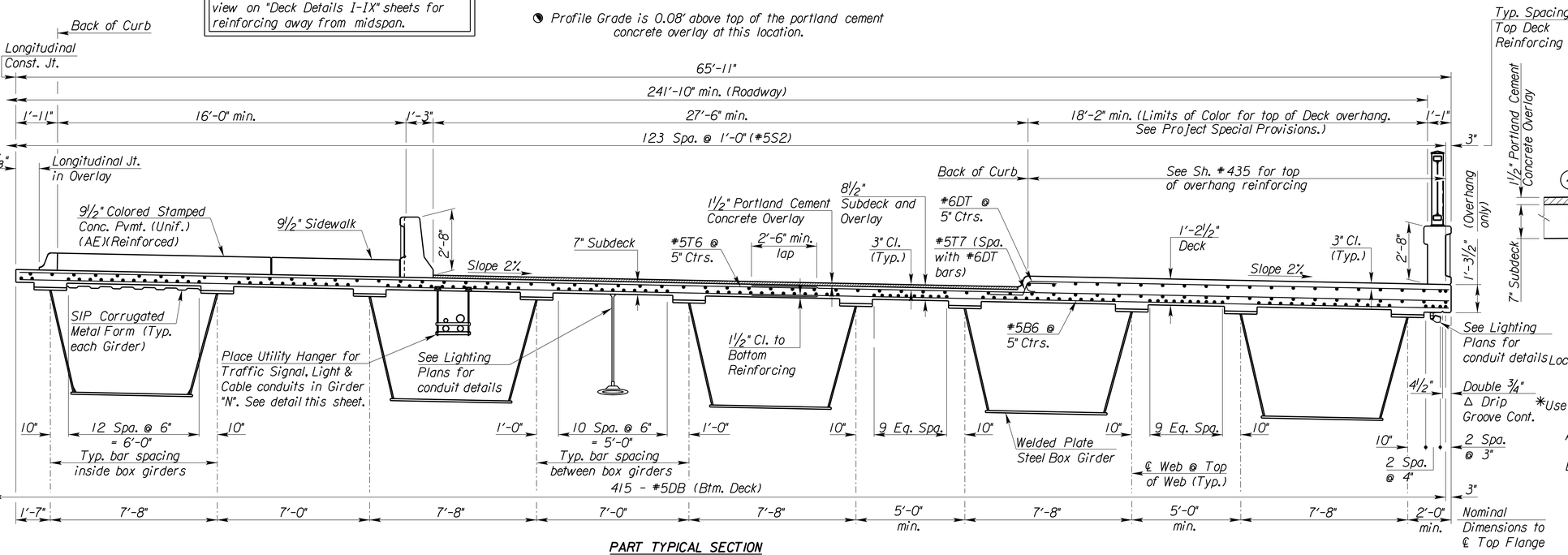


TRAFFIC SIGNAL & CABLE UTILITY HANGER DETAIL

Detail is conceptual only. Provide Shop Drawings of hanger for approval by Owner's Engineer.

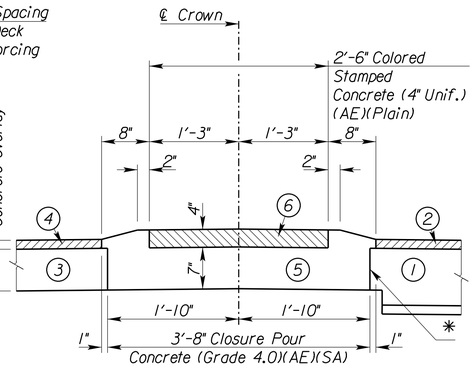
Provide flexible connectors for Conduit at each end of bridge for expansion. Space hangers at 6' centers through bridge. Adjust height of hanger to clear internal bracing. At ends of bridge, top of conduits to be 3'-0" below grade.

Note: Closure Pour may not be poured until all other deck pours are complete.



PART TYPICAL SECTION

Section near midspan. Normal to ℄ Structure. Looking Upstation (south).



SECTION SHOWING CLOSURE POUR

Looking upstation (South).

Anticipated sequence of construction shown in (*). Location of Overlay Longitudinal Construction Joint is 1'-11" from ℄ Crown for the entire length of the bridge.

*Use epoxy bonding agent, material to be approved by Engineer. Concrete surface must be clean prior to application. Apply bonding agent immediately before concrete pour. Follow manufacturer's recommendations. Bonding agent must be tacky at time of concrete pour.

See Sh's. #424-432 for Deck Details I-IX.

CITY OF WICHITA

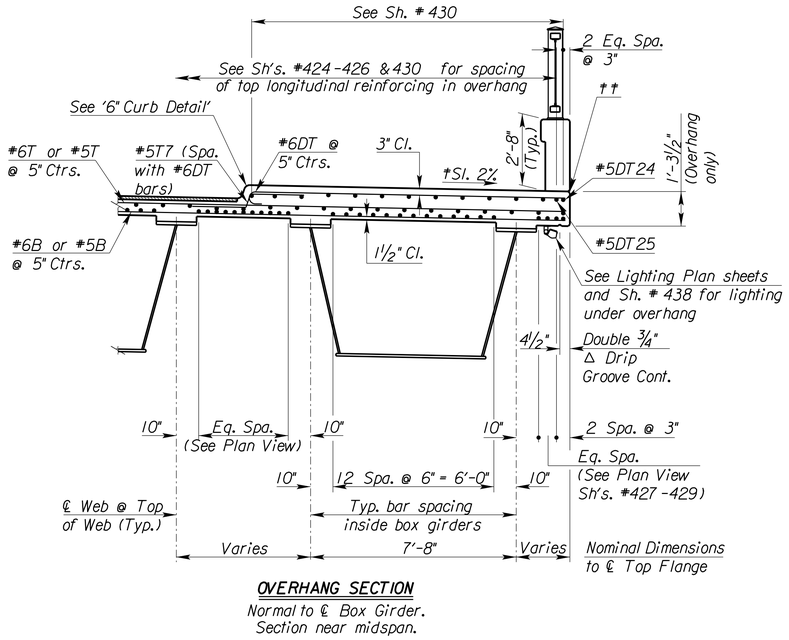
WEBB ROAD OVER EAST KELLOGG

DECK DETAILS XI

BR. NO. 54-87-32.12 (826) STA. 49+99.68

9:57:28 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKSSDIIA.dgn
SURV. -- PLOT CADD DES. AH/BS DR. GB/CP TR. -- CKD. SB/NW APP. --

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	435	1055



OVERHANG SECTION

Normal to ℄ Box Girder. Section near midspan.

Support top mat of reinforcing steel in overhang. Any additional steel, spacers, etc. including labor required for this support is subsidiary to the "Reinforcing Steel (Grade 60)(Epoxy Coated)" bid item.

† Normal to ℄ Webb

†† All top of deck elevations (including at abutments) are defined from ℄ Webb, following cross-slopes shown on Sh's. #433-434 normal to ℄ Webb, to back of curb. Difference between top of 6" curb (raised concrete) and theoretical top of Portland Cement Concrete Overlay at back of 6" curb is 6".

NOTES:

9½" concrete sidewalk shall be paid for as Sq. Ft. of "Concrete Sidewalk (9½")(Reinforced)" and includes all work and materials (including reinforcing steel and Type B Expansion Joint) required to construct the sidewalk as shown.

9½" Colored Stamped Concrete shall be paid for as Sq. Yds. of "Colored Stamped Concrete (9½" Unif.)(AE)(Reinf.)" and includes all work and materials (including reinforcing steel and Type B Expansion Joint) required to construct the 9½" Colored Stamped Concrete as shown.

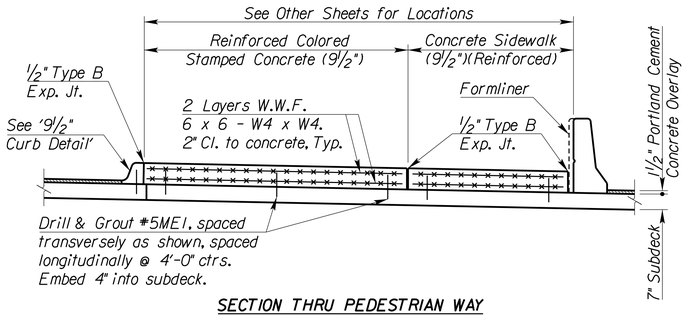
9½" Curb shall be paid for as Lin. Ft. of 9½" Curb and includes all work and materials (including reinforcing steel and Type B Expansion Joint) required to construct the curb as shown.

All labor and materials to construct the integral 6" curb adjoining the thickened deck overhang is included in the "Concrete (Grade 4.0)(AE)(SA)" bid item.

All reinforcing steel shall be epoxy coated.

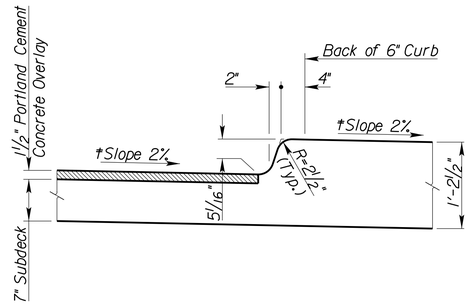
See "General Notes" sheet for "Drilling and Grouting" note.

See "Deck Details VIII - IX" for location of Back of 6" Curb, Back of 9½" Curb, and limits of 9½" Concrete Sidewalk (Reinforced) and 9½" Stamped Reinforced Colored Concrete.

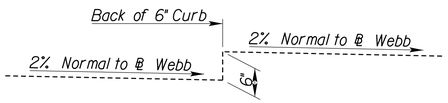


SECTION THRU PEDESTRIAN WAY

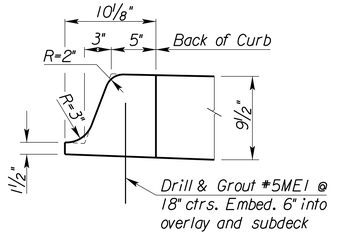
9½" Concrete Sidewalk (Reinforced) and 9½" Reinforced Colored Stamped Concrete are paid for by their respective bid items.



6" CURB DETAIL



CROSS-SLOPE DETAIL



9½" CURB DETAIL

Provide full depth joints in 9½" curb at 6'-0" ± centers. Fill outer 1¼" of all joints with sealant. See KDOT Special Provisions for sealant. Joints and sealant are subsidiary to other bid items.

See Sh's. #377-378 for General Notes.
See Sh's. #430-432 for Deck Details VIII-IX.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

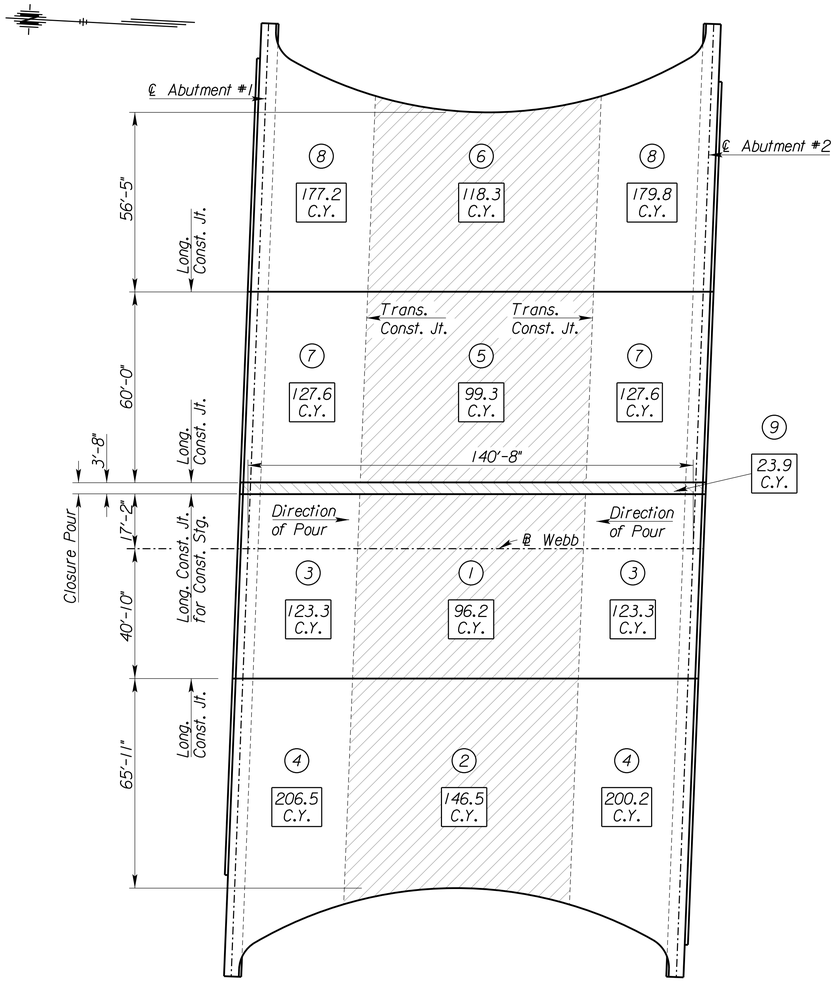
DECK DETAILS XII

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:57:32 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKSSD12A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	436	1055



CONCRETE PLACING SEQUENCE

Place the concrete as shown (Transverse Construction Joints are REQUIRED).
See "Deck Details I-III" sheets for location of Transverse Construction Joints.
Location of Longitudinal Construction Joints may be adjusted,
with approval of the Engineer, at no cost to the Owner. Dimensions to
Longitudinal Construction Joints are from ℄ Webb at midspan (after the PI).
See notes on "General Notes II" sheet.
Quantities include deck, fillets & abutment diaphragms only.

Concrete pours at the ends MUST begin pouring at
the abutments, and move to the center of the bridge.

Contractor must wait a minimum of 14 days between concrete pours
to minimize development of shrinkage cracks in concrete.

Closure Pour may not be placed until all permanent concrete elements (barriers,
handrail, curb, sidewalk, stamped concrete and overlay) are constructed.

End pours (e.g., (1) & (2)) must achieve 3,000 psi f'c in cylinder breaks prior to
pouring of middle segments (e.g., (3) & (4)).

The Contractor may place the barriers continuously from one end of the bridge to the other.

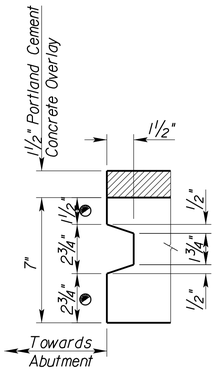
ANTICIPATED CONSTRUCTION STAGING:

1) West of Closure Pour:
   - Construct girders, including internal, external and lateral bracing, including external permanent bracing at abutments beneath the closure pour.
   - Construct deck, in sequence shown on plans.
   - Construct permanent elements (barriers, handrail, curb, sidewalk, stamped concrete and overlay) and temporary barrier.
   - Remove temporary external bracing.
   - Open to traffic.
2) East of Closure Pour:
   - Construct girders, including internal, external and lateral bracing, but not the temporary bracing under the closure pour.
   - Construct deck, in sequence shown on plans.
   - Construct permanent elements (barriers, handrail, curb, sidewalk, stamped concrete and overlay).
   - Construct temporary bracing under the closure pour. Remove temporary external bracing not under or adjacent to closure pour.
3) Closure Pour:
   - Construct closure pour.
   - Remove temporary external bracing.
   - Remove temporary barrier.
4) Entire bridge open to traffic.

*Elevations are at top of thickest top flange and include the theoretical camber before deck pour.

* Girder Field Splice Elevations			
		Field Splice Number	
Girder	Side	1	2
"A"	Lt.	1366.88	1366.88
	Rt.	1367.03	1367.03
"B"	Lt.	1367.17	1367.16
	Rt.	1367.32	1367.31
"C"	Lt.	1367.44	1367.41
	Rt.	1367.59	1367.57
"D"	Lt.	1367.73	1367.71
	Rt.	1367.88	1367.86
"E"	Lt.	1368.03	1368.02
	Rt.	1368.18	1368.17
"F"	Lt.	1368.33	1368.32
	Rt.	1368.48	1368.48
"G"	Lt.	1368.64	1368.64
	Rt.	1368.73	1368.72
"H"	Lt.	1368.80	1368.80
	Rt.	1368.88	1368.88
"I"	Lt.	1368.90	1368.90
	Rt.	1368.82	1368.83
"J"	Lt.	1368.75	1368.76
	Rt.	1368.68	1368.68
"K"	Lt.	1368.56	1368.56
	Rt.	1368.40	1368.41
"L"	Lt.	1368.26	1368.27
	Rt.	1368.11	1368.12
"M"	Lt.	1367.97	1367.99
	Rt.	1367.82	1367.84
"N"	Lt.	1367.69	1367.72
	Rt.	1367.54	1367.56
"O"	Lt.	1367.43	1367.45
	Rt.	1367.27	1367.30
"P"	Lt.	1367.18	1367.19
	Rt.	1367.03	1367.04
"Q"	Lt.	1366.90	1366.89
	Rt.	1366.75	1366.74

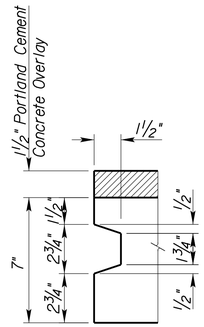
Dead Load Deflection at Field Splices (in)			
	Conc.	Total	
F.S. #1	3 15/16"	5 3/16"	Girder "A"
F.S. #2	4 1/8"	6 1/16"	
F.S. #1	4 1/4"	5 3/16"	Girder "B"
F.S. #2	4 5/16"	5 1/8"	
F.S. #1	4 1/8"	5 11/16"	Girder "C"
F.S. #2	4 1/8"	5 11/16"	
F.S. #1	3 1/8"	5 1/16"	Girder "D"
F.S. #2	3 15/16"	5 1/2"	
F.S. #1	3 3/4"	5 5/16"	Girder "E"
F.S. #2	3 13/16"	5 3/8"	
F.S. #1	3 11/16"	5 3/16"	Girder "F"
F.S. #2	3 3/4"	5 5/16"	
F.S. #1	3 5/8"	5 3/16"	Girder "G"
F.S. #2	3 11/16"	5 1/4"	
F.S. #1	3 9/16"	5 1/8"	Girder "H"
F.S. #2	3 5/8"	5 3/16"	
F.S. #1	3 9/16"	5 1/8"	Girder "I"
F.S. #2	3 5/8"	5 3/16"	
F.S. #1	3 5/8"	5 3/16"	Girder "J"
F.S. #2	3 5/8"	5 3/16"	
F.S. #1	3 5/8"	5 3/16"	Girder "K"
F.S. #2	3 5/8"	5 3/16"	
F.S. #1	3 5/8"	5 3/16"	Girder "L"
F.S. #2	3 11/16"	5 3/16"	
F.S. #1	3 3/4"	5 1/4"	Girder "M"
F.S. #2	3 3/4"	5 5/16"	
F.S. #1	3 15/16"	5 1/16"	Girder "N"
F.S. #2	4"	5 1/2"	
F.S. #1	4 1/4"	5 3/16"	Girder "O"
F.S. #2	4 1/4"	5 3/16"	
F.S. #1	4 9/16"	6 1/8"	Girder "P"
F.S. #2	4 7/16"	6"	
F.S. #1	4 7/16"	6 3/8"	Girder "Q"
F.S. #2	4 3/16"	6"	



TRANSVERSE CONSTRUCTION JOINT

Transverse Construction Joints are required due to the anticipated deflection of a simple span bridge with steel girders and subsidiary to the "Concrete (Gr.4.0)(AE)(SA)" bid item.

These dimensions are considered a minimum in the variable thickness deck overhang (no portland cement concrete overlay)



LONGITUDINAL CONSTRUCTION JOINT

Longitudinal construction joints are required and subsidiary to the "Concrete (Gr.4.0)(AE)(SA)" bid item. Locations shown are optional. Additional longitudinal construction joints may be used. Engineer approval required for relocation and/or addition of longitudinal construction joints. Any such revisions will be at no increase in cost to Owner.

ASSUMED FINISHING MACHINE VALUES LOADING DIAGRAM

Note: The Contractor shall submit to the Engineer design calculations for a torsional analysis of the exterior girder and bracing using the actual screed loads. The design calculations shall bear the seal of a licensed Professional Engineer.

Design Falsework, including additional temporary bracing, to ensure stability of the box girders during construction due to eccentric loading caused by screed loads, concrete deck placement and horizontal curvature of the girders.

See Sh. #378 for General Notes II.
See Sh's #424-426 for Deck Details I-III.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

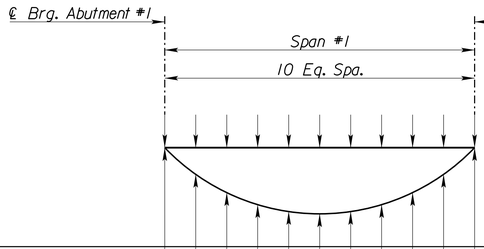
DECK DETAILS XIII

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

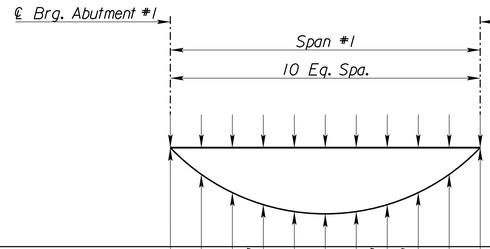
9:57:36 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKSSDI3A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	437	1055



See other sheets for individual girder span lengths and location of Field Splices.

Concrete Dead Load (Composite + Noncomposite)	0"	1 11/16"	3 1/16"	4 3/16"	4 7/8"	5 1/8"	4 7/8"	4 3/16"	3 1/8"	1 11/16"	0"		Girder "A"
Total Dead Load (Steel + Concrete)	0"	2 7/16"	4 9/16"	6 1/8"	7 3/16"	7 1/2"	7 3/16"	6 3/16"	4 5/8"	2 7/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 7/8"	3 11/16"	4 5/8"	5 5/16"	5 9/16"	5 5/16"	4 9/16"	3 7/16"	1 13/16"	0"		Girder "B"
Total Dead Load (Steel + Concrete)	0"	2 9/16"	4 11/16"	6 5/16"	7 1/4"	7 9/16"	7 1/4"	6 1/4"	4 5/8"	2 7/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 13/16"	3 3/8"	4 1/2"	5 3/16"	5 7/16"	5 3/16"	4 1/2"	3 5/16"	1 3/4"	0"		Girder "C"
Total Dead Load (Steel + Concrete)	0"	2 1/2"	4 9/16"	6 3/16"	7 1/8"	7 7/16"	7 1/8"	6 3/16"	4 9/16"	2 7/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 11/16"	3 1/8"	4 1/4"	5 1/16"	5 1/8"	4 15/16"	4 5/16"	3 3/16"	1 11/16"	0"		Girder "D"
Total Dead Load (Steel + Concrete)	0"	2 3/8"	4 3/8"	5 15/16"	6 7/8"	7 3/16"	6 15/16"	6"	4 5/16"	2 3/8"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 5/8"	3"	4 1/16"	4 3/4"	5"	4 3/4"	4 1/8"	3 1/16"	1 5/8"	0"		Girder "E"
Total Dead Load (Steel + Concrete)	0"	2 5/16"	4 1/4"	5 3/4"	6 11/16"	7"	6 3/4"	5 13/16"	4 1/16"	2 5/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 15/16"	4"	4 5/8"	4 7/8"	4 11/16"	4 1/16"	3"	1 5/8"	0"		Girder "F"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 3/16"	5 11/16"	6 5/8"	6 15/16"	6 5/8"	5 3/4"	4 1/4"	2 1/4"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 15/16"	3 15/16"	4 9/16"	4 13/16"	4 5/8"	3 15/16"	2 15/16"	1 9/16"	0"		Girder "G"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 3/16"	5 5/8"	6 9/16"	6 7/8"	6 9/16"	5 11/16"	4"	2 1/4"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 7/8"	3 15/16"	4 9/16"	4 13/16"	4 9/16"	3 15/16"	2 15/16"	1 9/16"	0"		Girder "H"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 1/8"	5 5/8"	6 9/16"	6 13/16"	6 9/16"	5 11/16"	4 3/16"	2 1/4"	0"		



Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 7/8"	3 15/16"	4 1/2"	4 9/16"	3 15/16"	3 5/16"	2 15/16"	1 9/16"	0"		Girder "I"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 1/8"	5 9/16"	6 1/2"	6 13/16"	6 1/2"	5 5/16"	4 3/16"	2 3/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 15/16"	3 15/16"	4 9/16"	4 13/16"	4 9/16"	3 15/16"	2 15/16"	1 9/16"	0"		Girder "J"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 3/16"	5 5/8"	6 1/2"	6 13/16"	6 1/2"	5 5/16"	4 3/16"	2 3/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 15/16"	3 15/16"	4 9/16"	4 13/16"	4 9/16"	3 15/16"	2 15/16"	1 9/16"	0"		Girder "K"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 3/16"	5 5/8"	6 1/2"	6 13/16"	6 1/2"	5 5/16"	4 3/16"	2 3/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 9/16"	2 15/16"	3 15/16"	4 9/16"	4 13/16"	4 5/8"	4"	2 15/16"	1 9/16"	0"		Girder "L"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 3/16"	5 5/8"	6 1/2"	6 13/16"	6 9/16"	5 11/16"	4 3/16"	2 1/4"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 5/8"	3"	4 1/16"	4 11/16"	4 15/16"	4 5/8"	4 1/8"	3 1/16"	1 5/8"	0"		Girder "M"
Total Dead Load (Steel + Concrete)	0"	2 1/4"	4 1/4"	5 3/4"	6 5/8"	6 15/16"	6 5/16"	5 3/4"	4 1/16"	2 1/4"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 11/16"	3 3/16"	4 1/4"	5 1/16"	5 3/16"	4 15/16"	4 1/4"	3 3/16"	1 11/16"	0"		Girder "N"
Total Dead Load (Steel + Concrete)	0"	2 3/8"	4 1/16"	5 3/4"	6 7/8"	7 1/16"	6 15/16"	6"	4 3/16"	2 3/8"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 7/8"	3 11/16"	4 5/8"	5 3/8"	5 9/16"	5 3/8"	4 5/8"	3 7/16"	1 13/16"	0"		Girder "O"
Total Dead Load (Steel + Concrete)	0"	2 1/2"	4 11/16"	6 5/16"	7 1/4"	7 5/8"	7 1/4"	6 1/16"	4 11/16"	2 1/2"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 15/16"	3 5/8"	4 13/16"	5 9/16"	5 13/16"	5 9/16"	4 13/16"	3 9/16"	1 7/8"	0"		Girder "P"
Total Dead Load (Steel + Concrete)	0"	2 5/8"	4 13/16"	6 1/2"	7 1/2"	7 7/8"	7 1/2"	6 5/16"	4 13/16"	2 9/16"	0"		
Concrete Dead Load (Composite + Noncomposite)	0"	1 13/16"	3 3/8"	4 1/2"	5 3/16"	5 7/16"	5 3/16"	4 1/2"	3 5/16"	1 3/4"	0"		Girder "Q"
Total Dead Load (Steel + Concrete)	0"	2 5/8"	4 13/16"	6 7/16"	7 1/2"	7 13/16"	7 7/16"	6 3/8"	4 11/16"	2 1/2"	0"		

DEAD LOAD DEFLECTION DIAGRAM AT TENTH POINTS

(Ordinates are in inches)

E_s = 29,000 ksi

CAMBER: Camber the steel girders for the total dead load deflection and the vertical curvature. The ordinates shown for concrete dead load deflection represent the amount of camber that should be in the girders after they are erected and bolted but prior to placing the floor forms. Construct the finished deck to plan grade by varying the depth of the fillet over the girder to provide for girder camber and concrete dead load deflection and vertical curvature. After the structural steel is completely erected and the falsework bents are removed, measure the camber in the field by taking a profile of each girder. Correct any variation between the actual camber and the concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the girders so that the finished floor is constructed to the theoretical grade. The minimum depth of the deck over the girder shall be 7 1/4 " @ ℄ top flange not including the fillet or overlay.

The theoretical amount of concrete required for the fillets is 60.67 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

Deflections based on pouring sequence shown. Adjustments in dead load camber will need to be made, at no cost to the Owner, to compensate for any approved change to the pouring sequence.

Plan quantities include the fillet concrete and are the basis of payment.

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:57:39 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKSSD114A.dgn

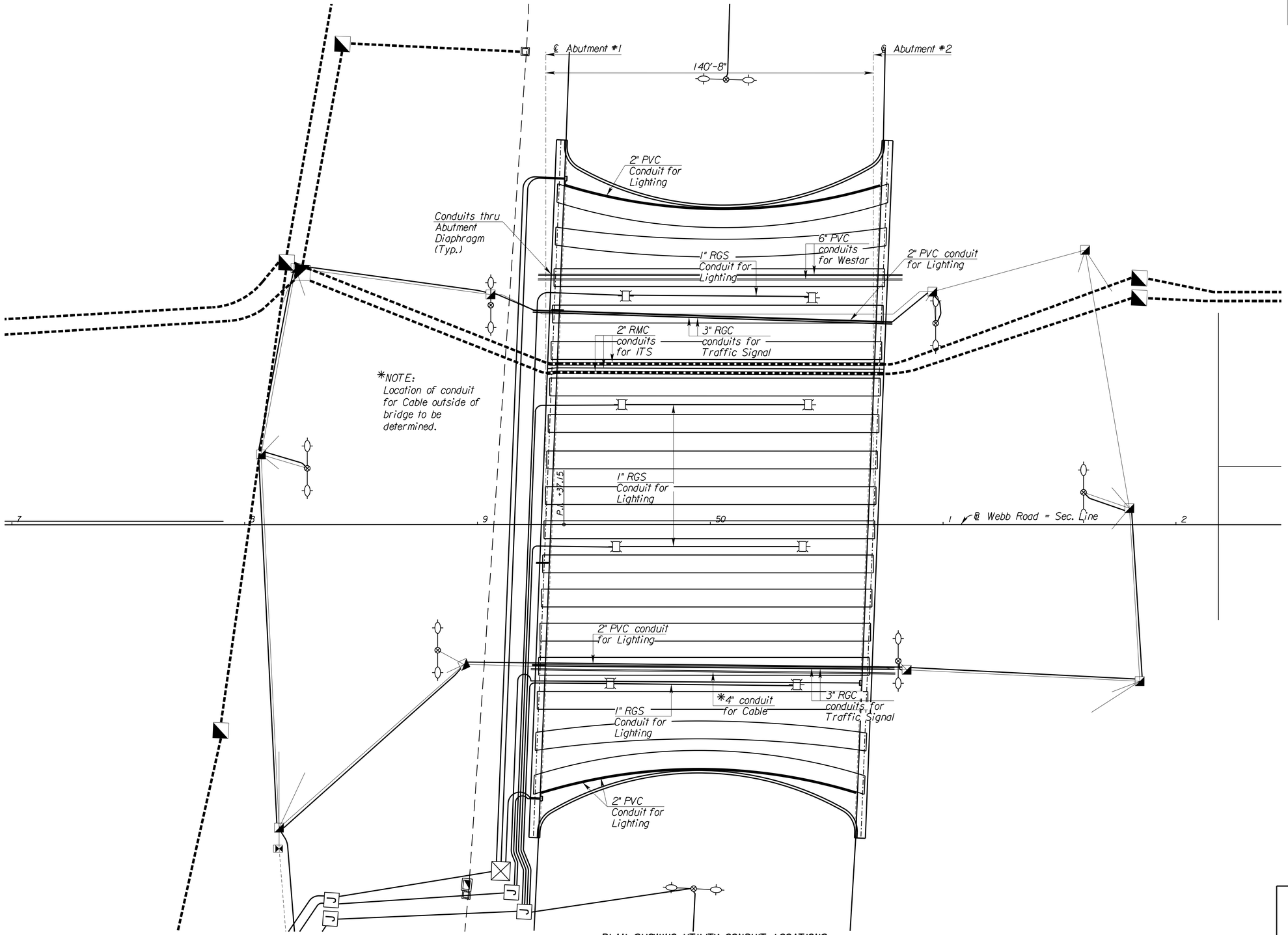
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

DECK DETAILS XIV

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	438	1055



PLAN SHOWING UTILITY CONDUIT LOCATIONS

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:57:44 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKSSD15A.dgn

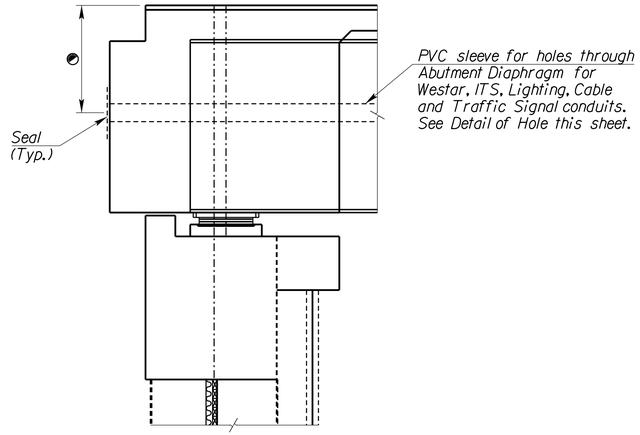
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

UTILITY DETAILS I

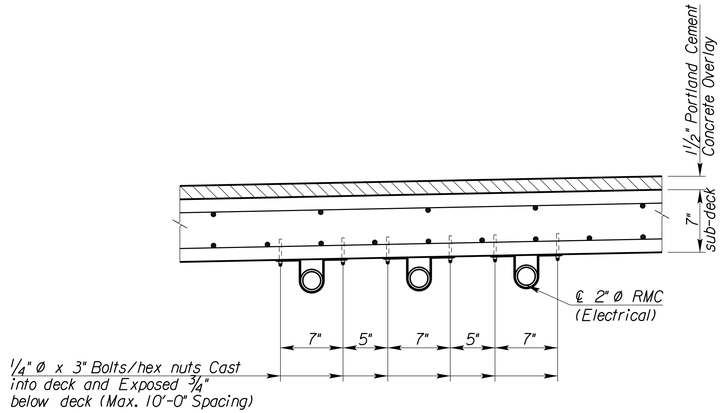
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	439	1055



SECTION SHOWING CONDUITS THROUGH ABUTMENT DIAPHRAGM

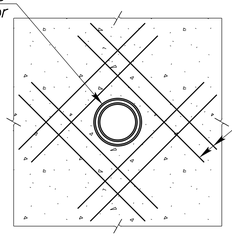
◔ See plans for quantity, size and location of conduits through abutment diaphragm.



TYPICAL SECTION THRU DECK AT 2" Ø RMC

See Sh's. # 433 & 434 for Westar and Traffic conduit details. See Sh. #526 for Lighting conduit details.

Place PVC sleeve for conduits thru abutment diaphragm prior to pouring concrete, size to be approved by Engineer.



DETAIL OF HOLE THROUGH ABUTMENT DIAPHRAGM

Typical for all holes thru Abutment Diaphragm. Provide PVC sleeves in the Abutment Diaphragm for ITS, Westar, Traffic Signal, Cable and Lighting conduits. See Sh. #438 for plan location of conduits. Grout space between PVC sleeve and conduit with an approved KDOT silicone after installation of the conduit and before backfilling behind the Abutment. Adjust placement of reinforcing steel to accomodate sleeve location (do not field cut reinforcing). All labor and material for this work is subsidiary to the respective uitility bid item.

GENERAL NOTES

UTILITY ACCOMODATION: The Contractor shall coordinate with the signal/lighting subcontractor prior to installing the conduits to allow for scheduling the installation of the electrical cable and light standards. The Contractor shall provide access to the pull boxes, including any work platform necessary for their access. All other equipment, materials and labor to install the electrical cable and light standards shall be provided by the signal/lighting subcontractor.

PULL BOXES: See lighting plans.

ELECTRICAL CONDUIT: The Contractor shall furnish and install all conduit, couplings (threaded), bolts, nuts, washers, Redwood dimension lumber, brackets, additional structural angles and holes in proper diaphragms as shown on the plans. The conduit, fittings and miscellaneous hardware shall conform to the Traffic Signal Special Provisions and the Standard Specifications, Section 1703. All materials and labor shall be included in the bid item "Traffic Signal Installation" or "Electrical Lighting System".

DIMENSION VERIFICATION: The Contractor shall verify that the bolt spacings shown on the plans are correct for the conduit hangers that will be furnished.

ELECTRIC SYSTEMS: Accessories (conduits, hangers, and incidentals) needed to support and carry electric systems (Westar, lighting, traffic & ITS) through the bridge are subsidiary to their respective bid item. Accessories (conduits, hangers, and incidentals) needed to support and carry Cable electric systems are subsidiary to the Concrete (Gr. 4.0)(AE)(SA). The mass for additional structural steel required for the support of conduits (including angles, support brackets and plates) is subsidiary to the bid item "Structural Steel (ASTM A709)(Grade 50)".

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:57:47 AM
4/17/2015
T:\35765A\Cadd\Sheets\Packages\Structures\Bridge\Webb\EKIWKSSDI6A.dgn

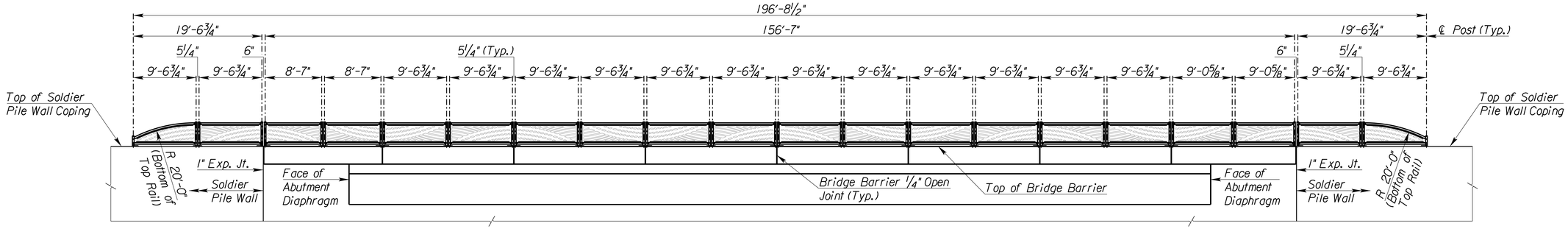
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

UTILITY DETAILS II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	440	1055



SE or NW

NE or SW

DEVELOPED ELEVATION

(Horizontal dimensions along edge of deck)
(East outside Barrier shown. West outside Barrier symetrical)

GENERAL NOTES:

Material Specifications:
- Plates & Shapes: A709 Grade 36
- Tube: A-500 Grade B
- U-bolts: Grade 36 (Galv.)(including nuts & washers)

Posts shall be set vertical and shimmed if necessary. All cut edges shall be true and smooth, free of burrs, ragged breaks, and sharp edges.

All handrail components, except U-Bolt assemblies, shall be sandblasted and powder coat painted per KDOT std. spec. and latest special provisions for primer and polyurethane finish coat. See Project Special Provisions for color selection process for handrail.

U-Bolt assemblies shall be hot dip galvanized after fabrication. All bolts, nuts, and washers shall be zinc or cadmium plated, conforming to KDOT Standard Specifications. U-Bolt assemblies, bolts, nuts and washers shall be furnished and installed by the Contractor.

Embed U-Bolts in the concrete. Take care to protect U-Bolts from damage during construction.

Cost for posts, end posts, pipe rail, rail sleeves, caps, angles, U-Bolts, and all components required for the installation, including labor and incidentals, of the handrail shall be included in the price bid for "Bridge Handrail (Metal)(3'-6") Linear Ft." measured from end to end of rail.

Additional details may be required for the installation of the handrail in the field in order to fit within the actual geometry of the rail. Any extra detailing required to install the handrail shall be included in the bid item "Bridge Handrail (Metal)(3'-6") Linear Ft."

All fillet welds shall be ¼" unless otherwise noted.

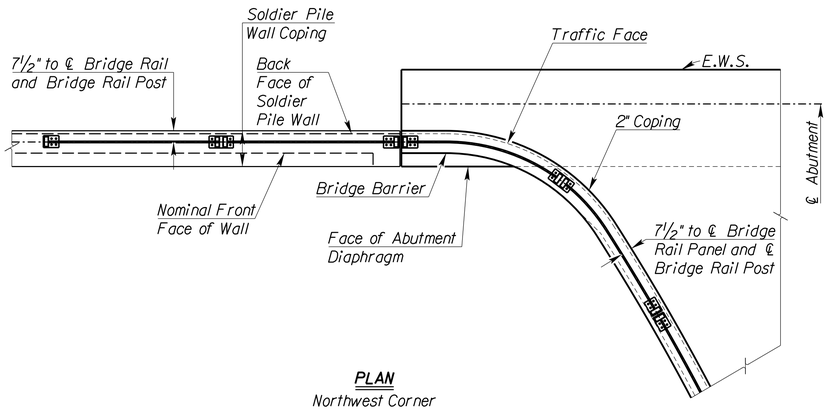
Shop drawings must be submitted for approval by the Engineer prior to fabrication.

See KDOT Specifications and Project Special Provisions.

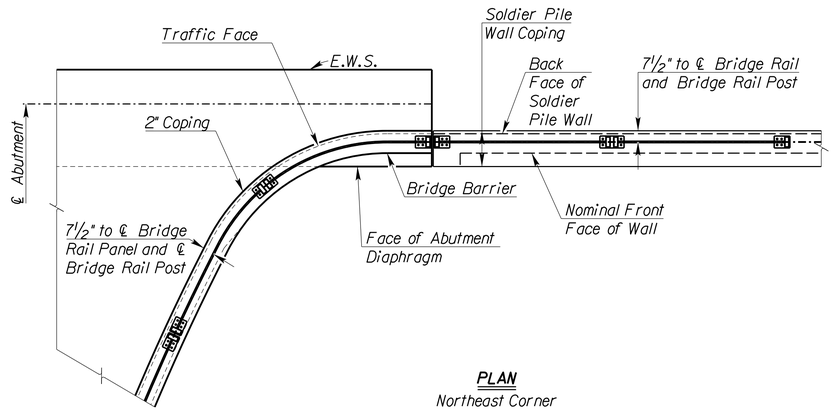
See Sh's. #314, 318, 322, & 329 for Soldier Pile Retaining Wall Geometry

See Sh. #441 for Sections and Details.

See Sh. #442 for Panel Elevations.



PLAN
Northwest Corner
(Southeast Corner Similar)



PLAN
Northeast Corner
(Southwest Corner Similar)

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

SPECIAL BRIDGE RAIL DETAILS I

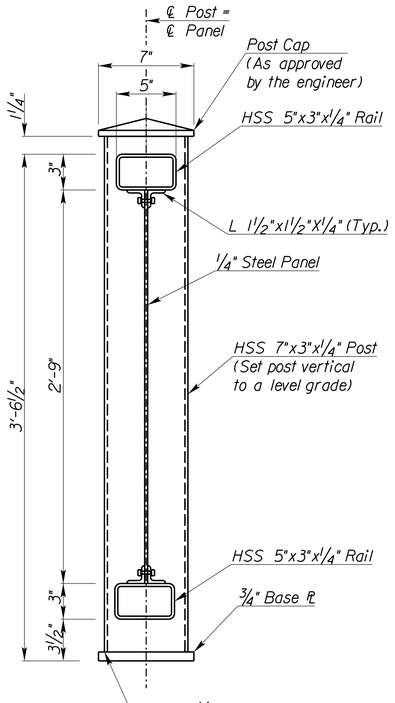
BR. NO. 54-87-32.12 (826) STA. 49+99.68

9:58:14 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKHRD01A.dgn

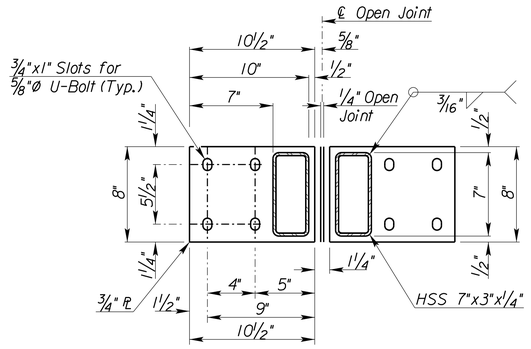
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	441	1055

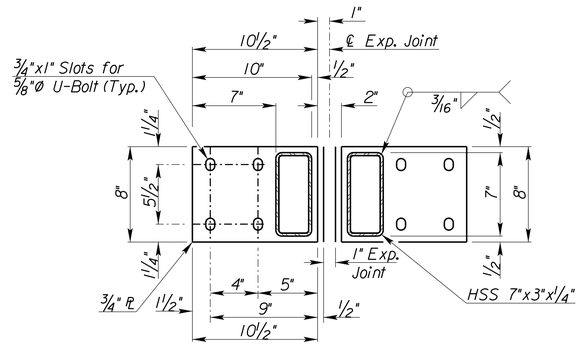
See Sh. # 440 for General Notes.



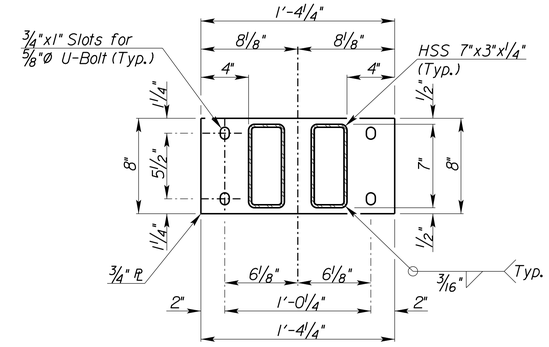
INTERIOR POST TYPICAL SECTION
(Rail Sleeve omitted for clarity)



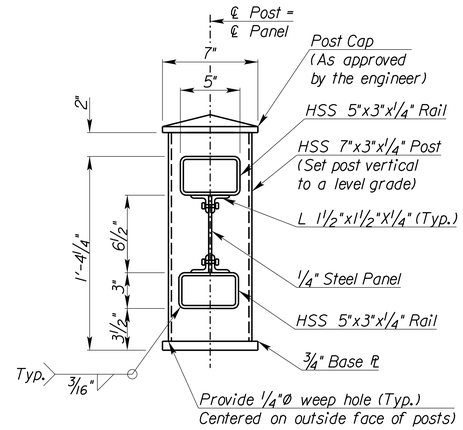
BASE PLATE PLAN
(At Open Joints)



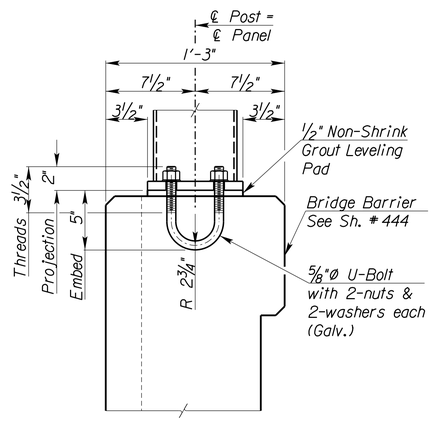
BASE PLATE PLAN
(At Expansion Joint)



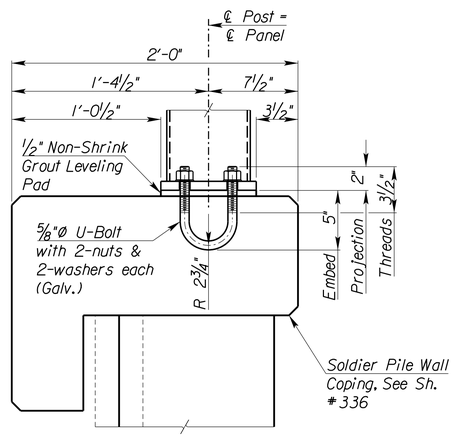
BASE PLATE PLAN
(Non-Joint Locations)



END POST SECTION

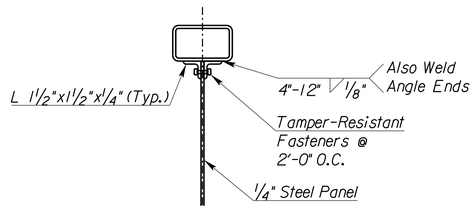


Post at Barrier

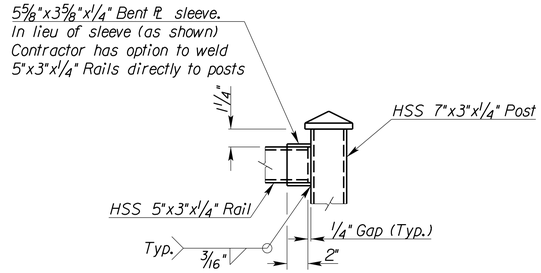


Post at Soldier Pile Wall

U-BOLT DETAIL



TYPICAL PANEL CONNECTION DETAIL



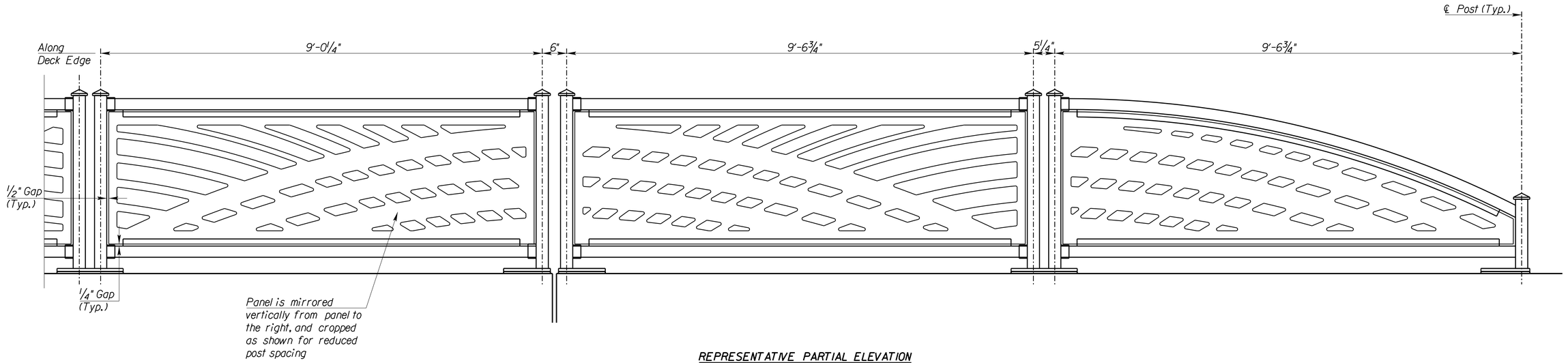
Typical Rail to Post Interior Connection
ELEVATION

CITY OF WICHITA
WEBB ROAD OVER EAST KELLOGG
SPECIAL BRIDGE RAIL DETAILS II
BR. NO. 54-87-32.12 (826) STA. 49+99.68

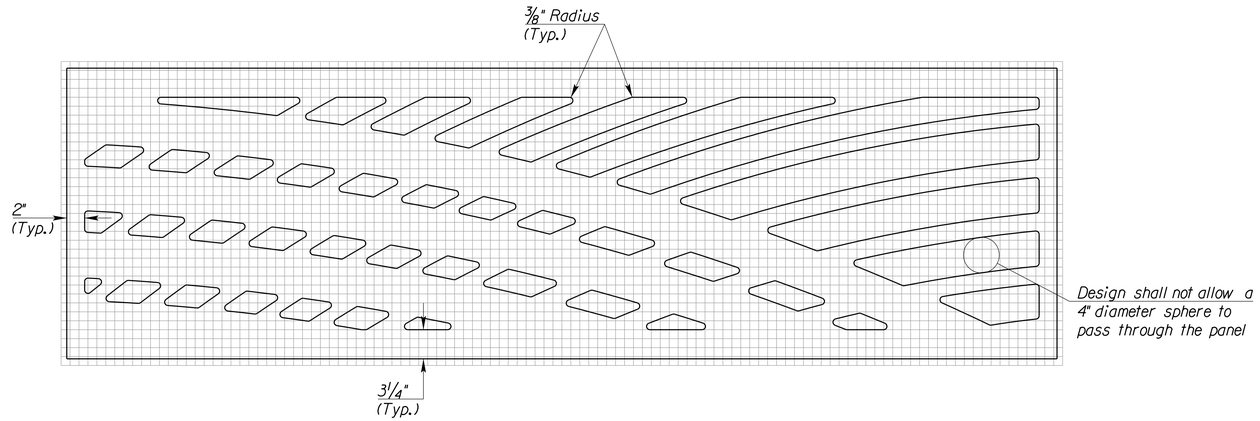
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:58:18 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKHRD02A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	442	1055



REPRESENTATIVE PARTIAL ELEVATION



TYPICAL STEEL PANEL

Grid pattern 1" on center each way.
Longest panel shown.

GENERAL NOTES:

1. See Sh's. #440-441 for other notes, developed elevation, sections and connection details.
2. Overall panel shapes are similar, and rotated or mirrored as shown on Sh. #440 . Panel length varies with post spacing and effects of horizontal and vertical curve. End panel is cropped as shown for the taper of the top rail.
3. All exposed edges to be ground to a smooth radius.
4. For bidding purposes, use elevations shown on this sheet. Successful bidder will be provided with electronic drawing files of actual pattern for fabrication purposes.

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:58:21 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKHRD03A.dgn

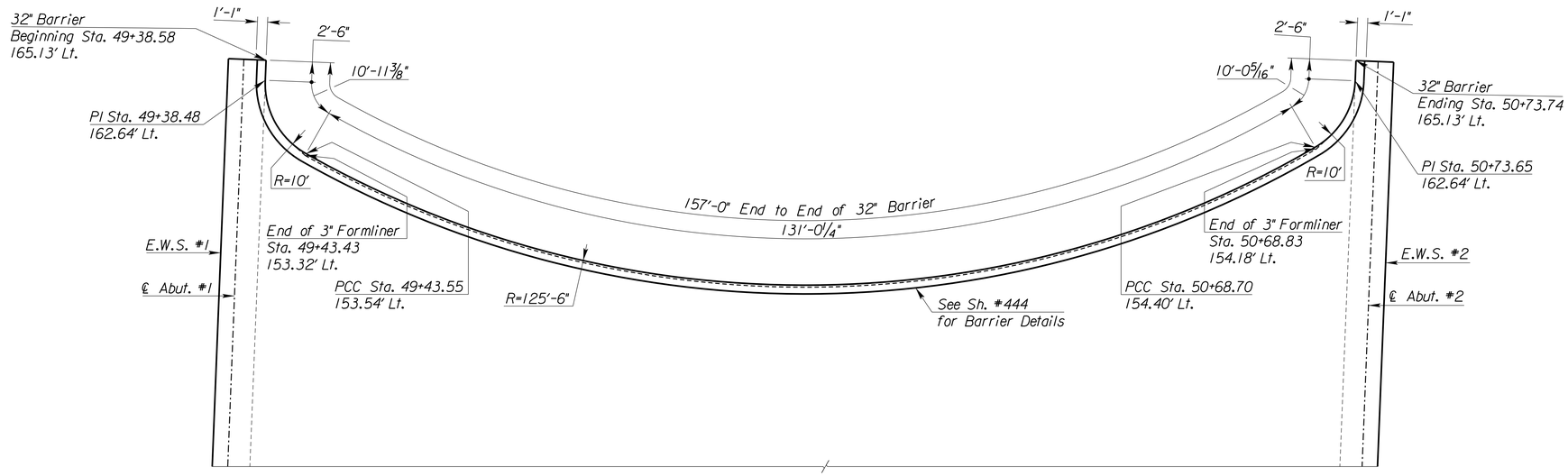
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

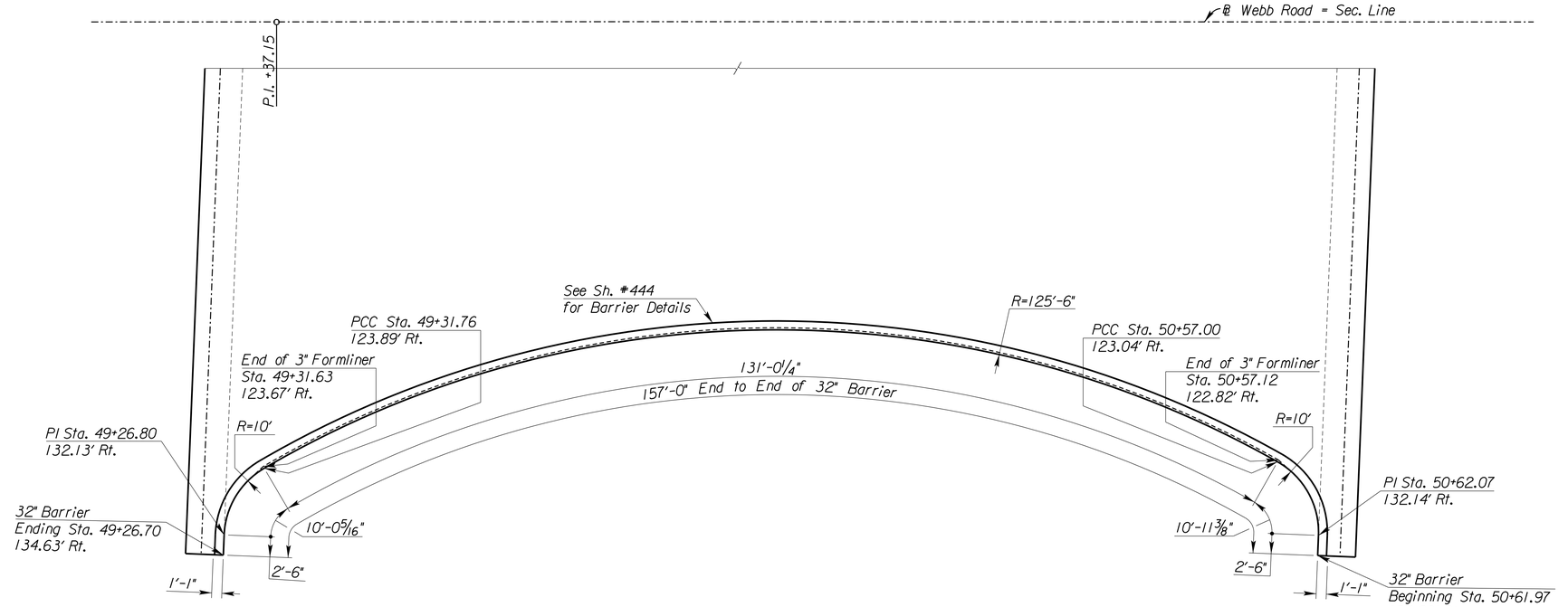
SPECIAL BRIDGE RAIL DETAILS III

BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	443	1055



℄ Webb Rd.
P.I. Sta. 49+37.15
Δ = 0°02'35.75" Rt.



OUTSIDE BARRIER LAYOUT
(Plan View)

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:58:25 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EKIWKBBD01A.dgn

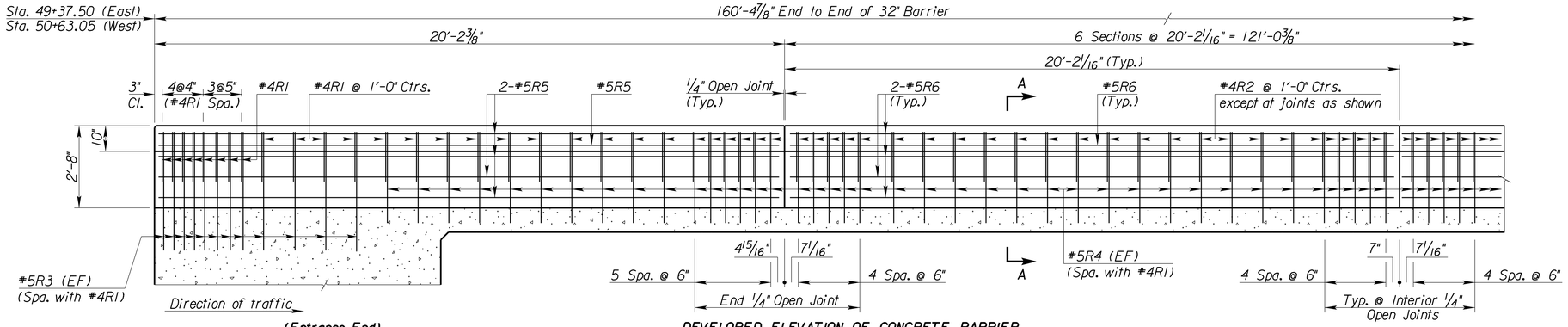
CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BARRIER DETAILS I

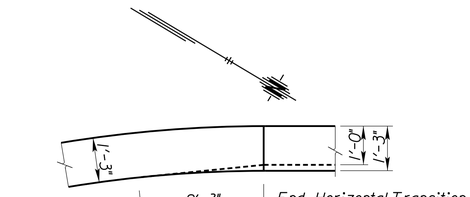
BR. NO. 54-87-32.12 (826) STA. 49+99.68

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	444	1055



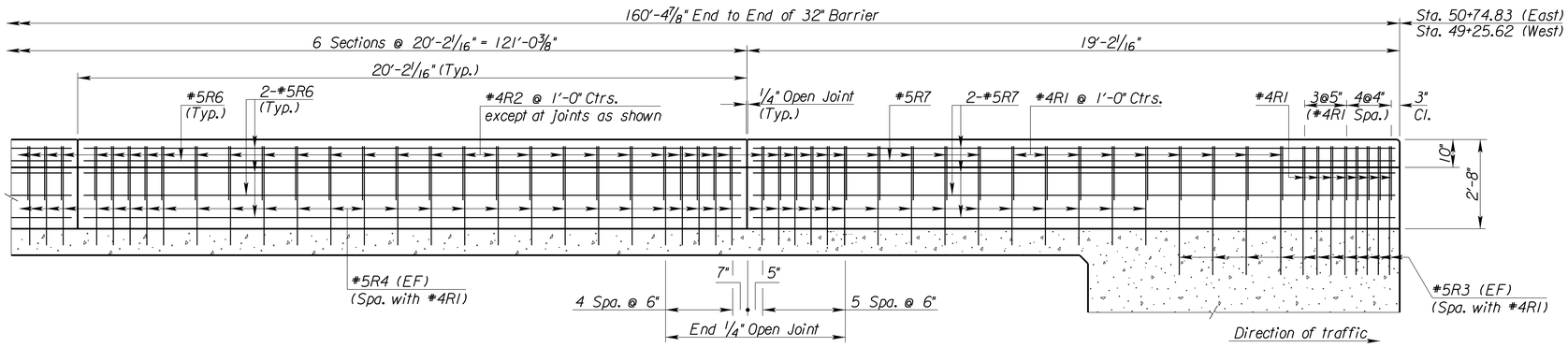
DEVELOPED ELEVATION OF CONCRETE BARRIER

(East Outside Barrier shown; West Outside Barrier similar)
(Horizontal dimensions along traffic face unless noted otherwise.)



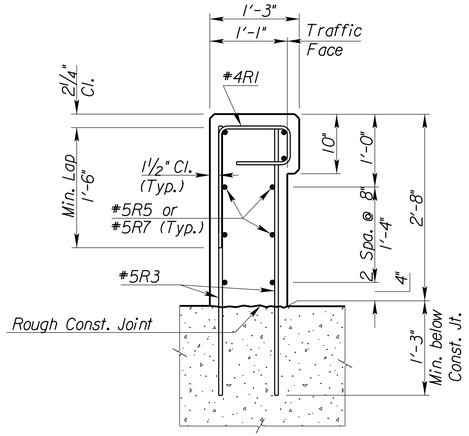
PLAN

(Showing horizontal transition for formliner)
(See Sh. #447 for location of formliner limits)



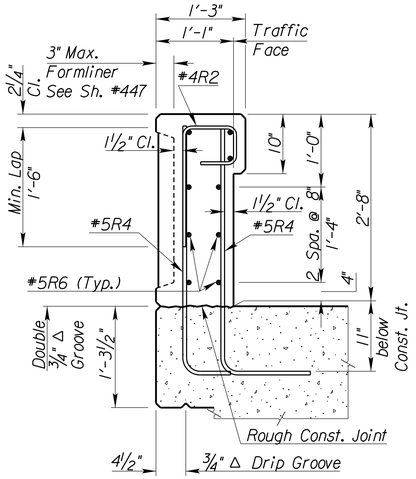
DEVELOPED ELEVATION OF CONCRETE BARRIER

(East Outside Barrier shown; West Outside Barrier similar)
(Horizontal dimensions along traffic face unless noted otherwise.)



SECTION THRU BARRIER END

(At Abutment)



SECTION THRU BARRIER

(Section A-A)

Note:
Field bend horizontal reinforcing for placement along the curve of the barrier.

See "Special Bridge Rail Details" Sh. No's. 440-441 for handrail on top of outside barrier, including embedded u-bolt detail.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

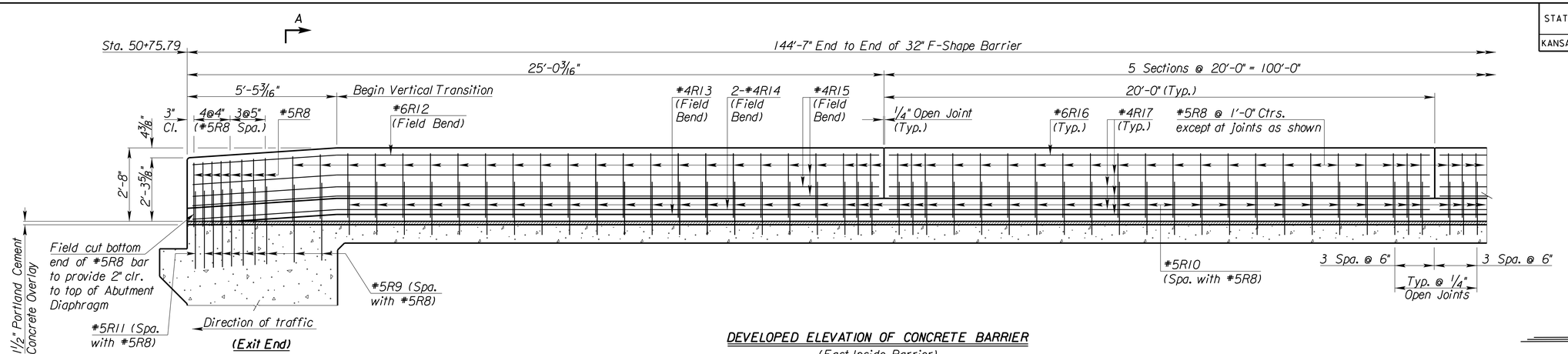
BARRIER DETAILS II

BR. NO. 54-87-32.12 (826) STA. 49+99.68

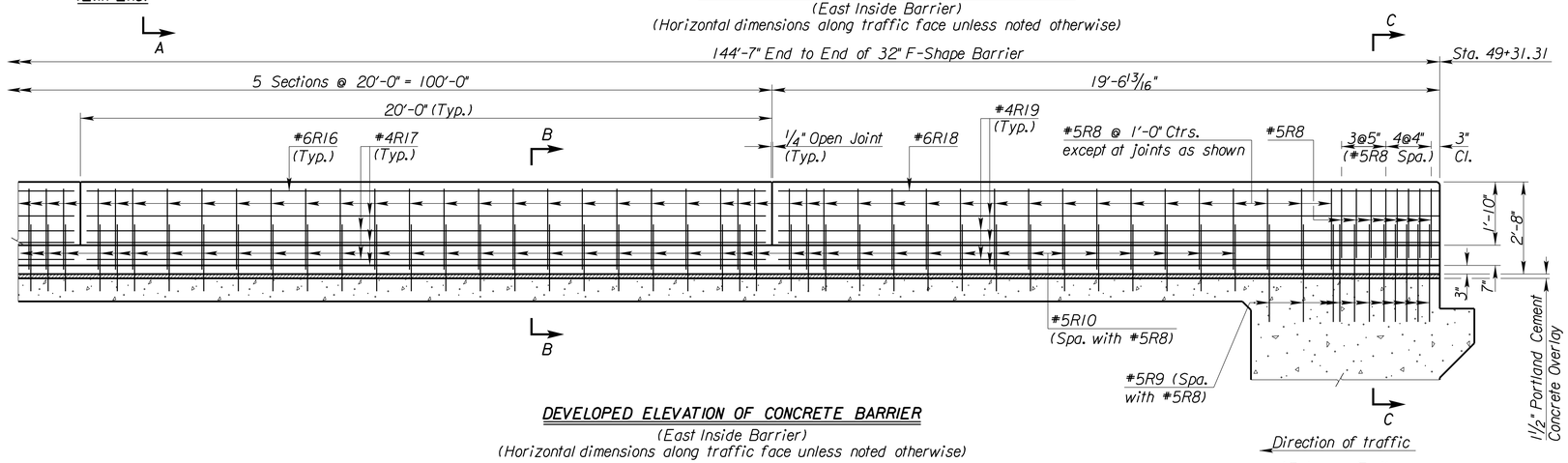
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CK'D.	SB/NW	APP.

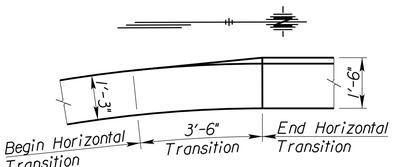
T:\35765A\Cadd\Sheets\Package1\Structures\Bridge\Webb\EK1WKBBD02A.dgn
4/17/2015
9:59:07 AM

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	445	1055



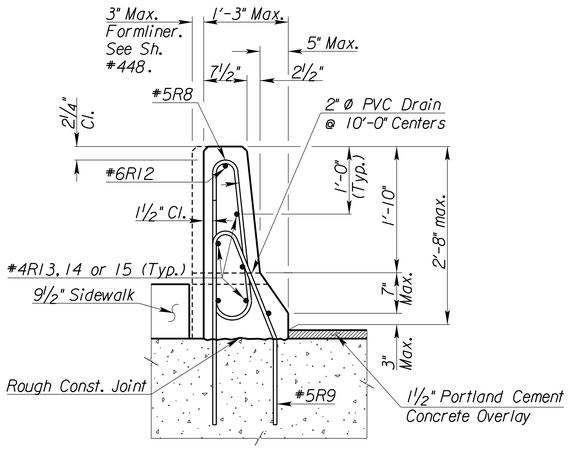
DEVELOPED ELEVATION OF CONCRETE BARRIER
(East Inside Barrier)
(Horizontal dimensions along traffic face unless noted otherwise)



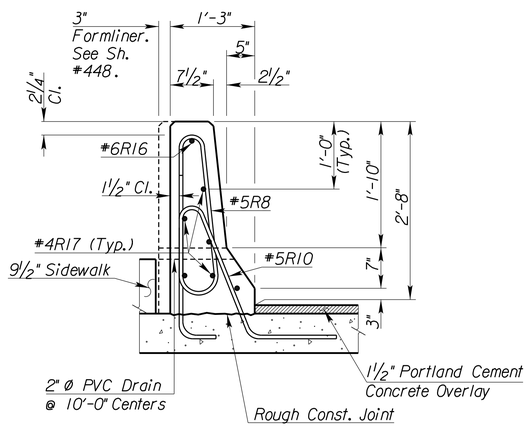


PLAN
(Showing horizontal transition for formliner)
(See Sh. #448 for location of formliner limits)

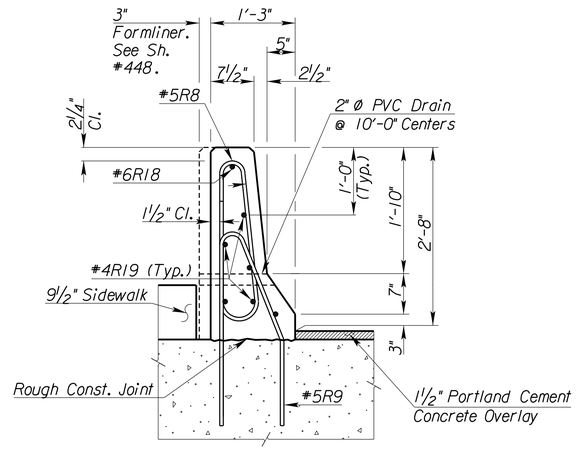
DEVELOPED ELEVATION OF CONCRETE BARRIER
(East Inside Barrier)
(Horizontal dimensions along traffic face unless noted otherwise)



SECTION THRU BARRIER END
(At Abutment)
(Section A-A)



SECTION THRU BARRIER
(Section B-B)



SECTION THRU BARRIER END
(At Abutment)
(Section C-C)

Note:
Field bend horizontal reinforcing for placement along the curve of the barrier.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

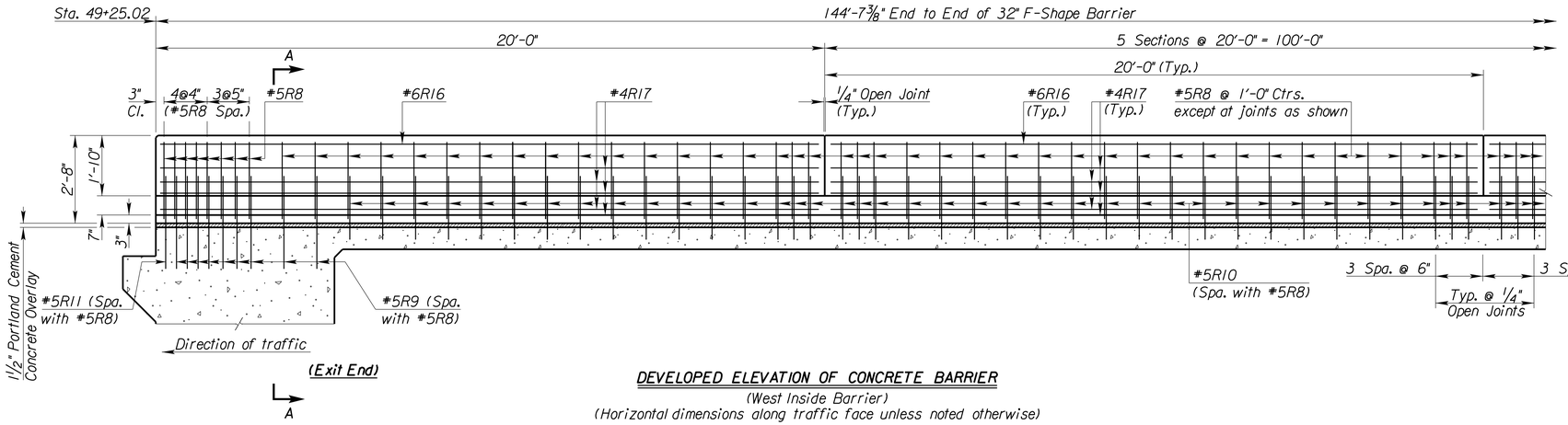
BARRIER DETAILS III

BR. NO. 54-87-32.12 (826) STA. 49+99.68

SURV.	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.
--	--										

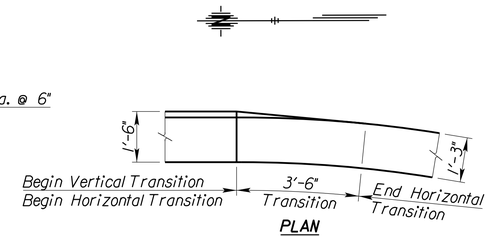
9:59:11 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKBBD03A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	446	1055



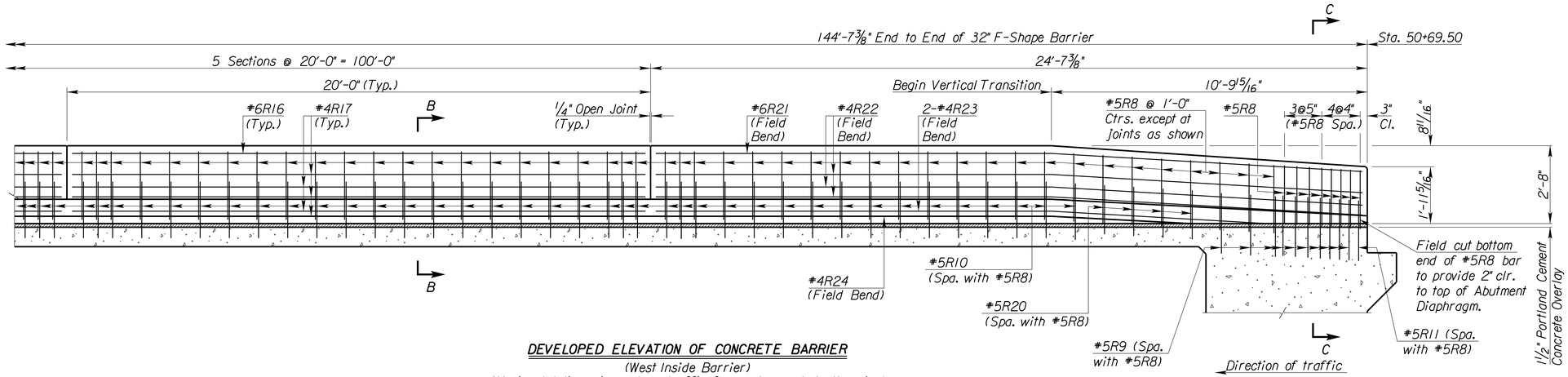
DEVELOPED ELEVATION OF CONCRETE BARRIER

(West Inside Barrier)
(Horizontal dimensions along traffic face unless noted otherwise)



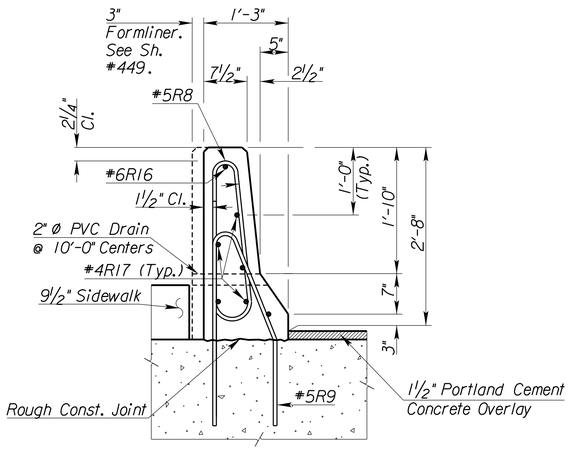
PLAN

(Showing horizontal transition for formliner)
(See Sh. #449 for location of formliner limits)



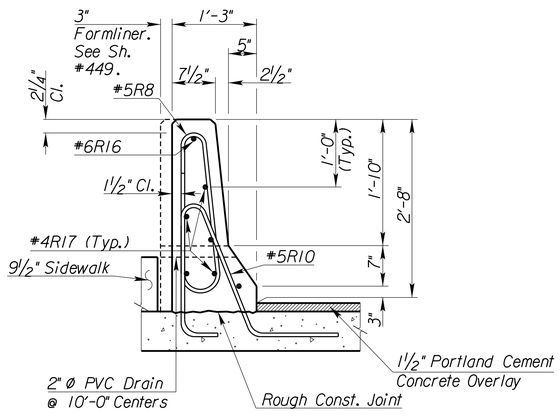
DEVELOPED ELEVATION OF CONCRETE BARRIER

(West Inside Barrier)
(Horizontal dimensions along traffic face unless noted otherwise)



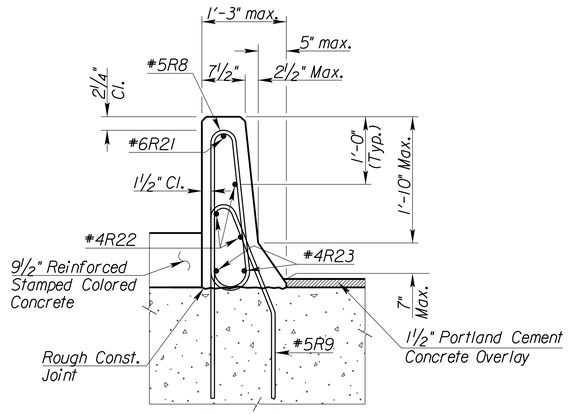
SECTION THRU BARRIER END

(At abutment)
(Section A-A)



SECTION THRU BARRIER

(Section B-B)



SECTION THRU BARRIER END

(At abutment)
(Section C-C)

Note:
Field bend horizontal reinforcing for placement along the curve of the barrier.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BARRIER DETAILS IV

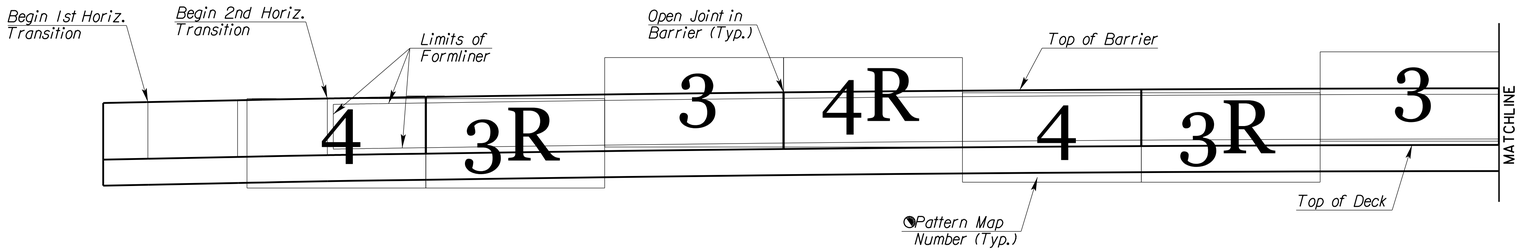
BR. NO. 54-87-32.12 (826) STA. 49+99.68

446

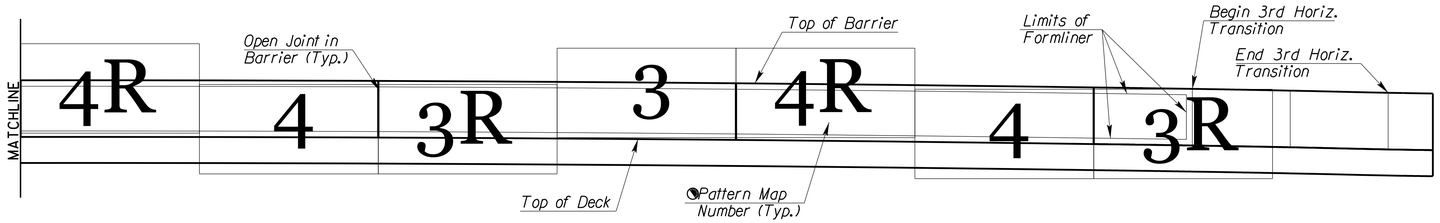
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:59:14 AM
4/17/2015
I:\35765A\Cadd\Sheets\Packages\Structures\Bridge\Webb\EKIWKBBD04A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	447	1055



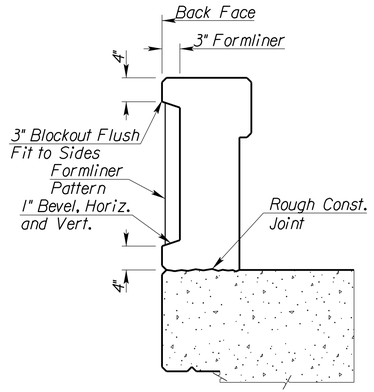
Northwest or Southeast



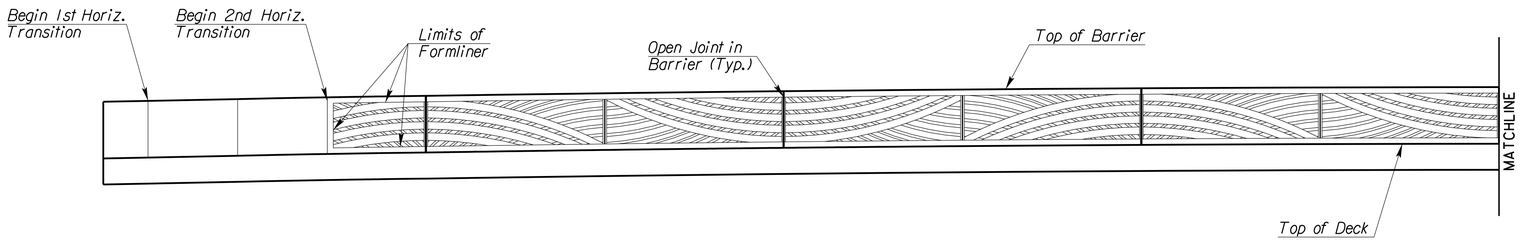
Southwest or Northeast

DEVELOPED ELEVATION

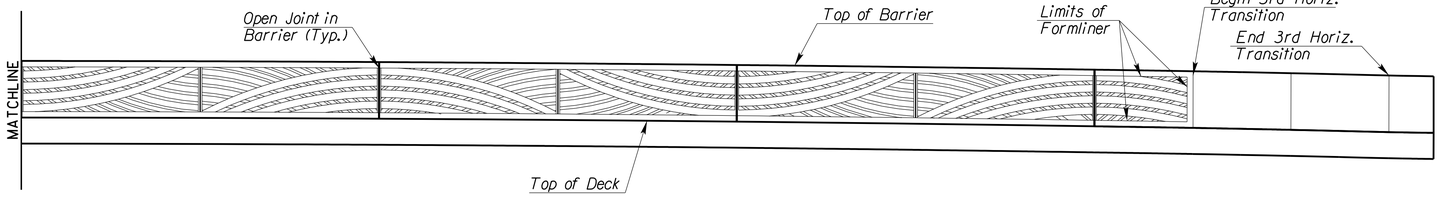
(Exterior Barrier Back Face)
(Showing Pattern Map)



SECTION THRU BARRIER SHOWING FORMLINER



Northwest or Southeast



Southwest or Northeast

DEVELOPED ELEVATION

(Exterior Barrier Back Face)
(Showing Pattern)

NOTES:
Barrier patterning for west exterior barrier is symmetrical to east exterior barrier: i.e., both elevations are represented on this sheet (views identical).

Open Joints in bridge barrier are control points defining begin and end limits of formliner panels.

See "Barrier Details II" Sh. # 444 for location of Open Joints in Barrier.

See Sh. # 339 for Pattern Map Key.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

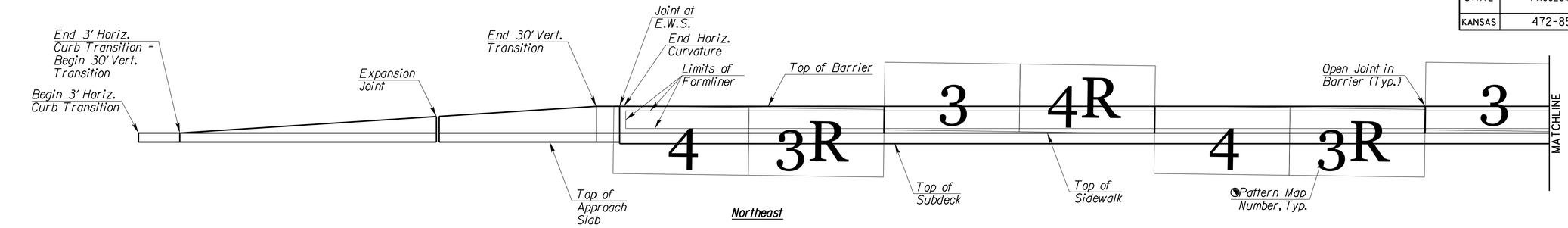
BARRIER PATTERNING I

BR. NO. 54-87-32.12 (826) STA. 49+99.68

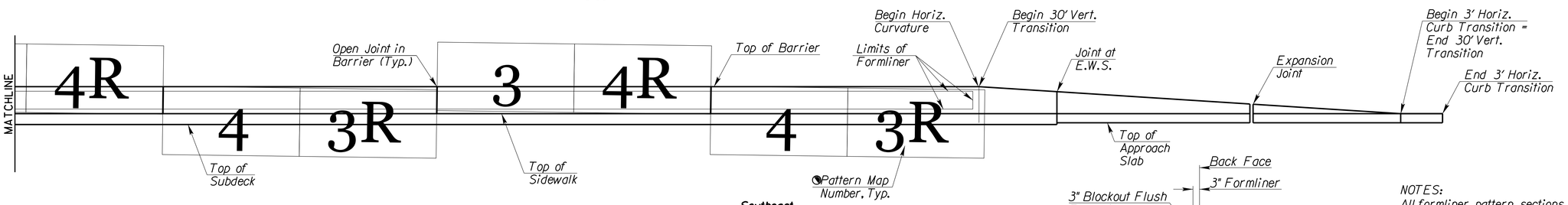
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:59:24 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKBBDIIA.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	448	1055



Northeast

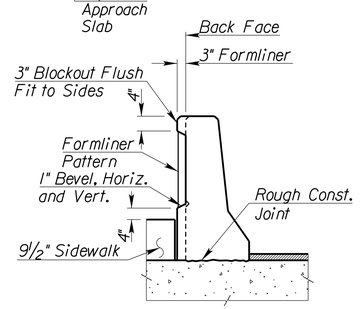


Southeast

DEVELOPED ELEVATION

(East Interior Barrier Back Face)
(Showing Pattern Map)

See Sh. #339 for Pattern Map Key.



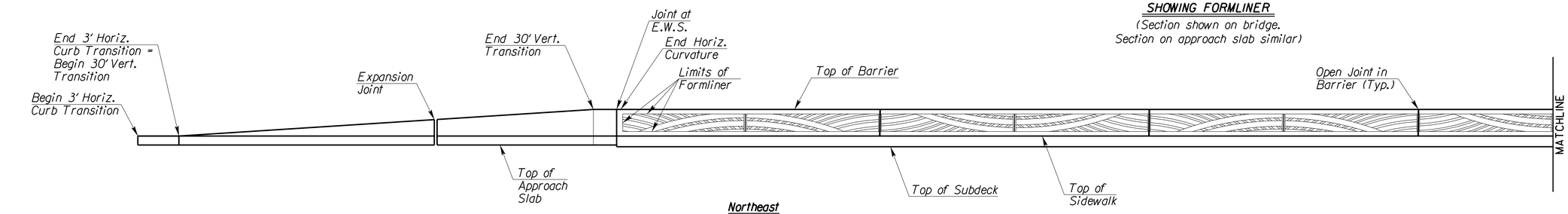
SECTION THRU BARRIER SHOWING FORMLINER

(Section shown on bridge.
Section on approach slab similar)

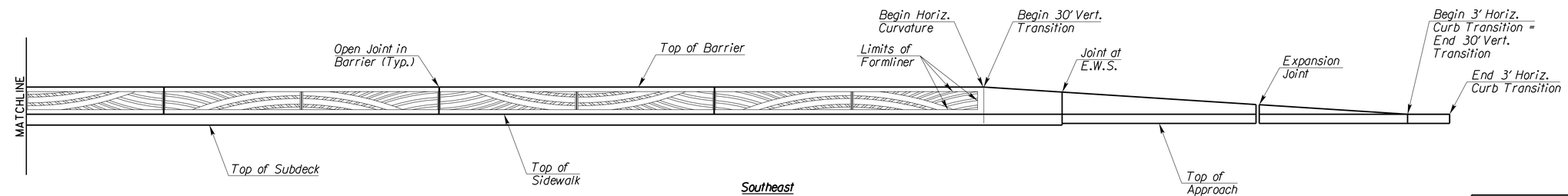
NOTES:
All formliner pattern sections are 10'-0" in length except for each end section, which are equal in length.

Open Joints in bridge barrier are control points defining begin and end limits of formliner panels.

See "Barrier Details III" Sh. #445 for location of Open Joints in Barrier.



Northeast



Southeast

DEVELOPED ELEVATION

(East Interior Barrier Back Face)
(Showing Pattern)

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BARRIER PATTERNING II

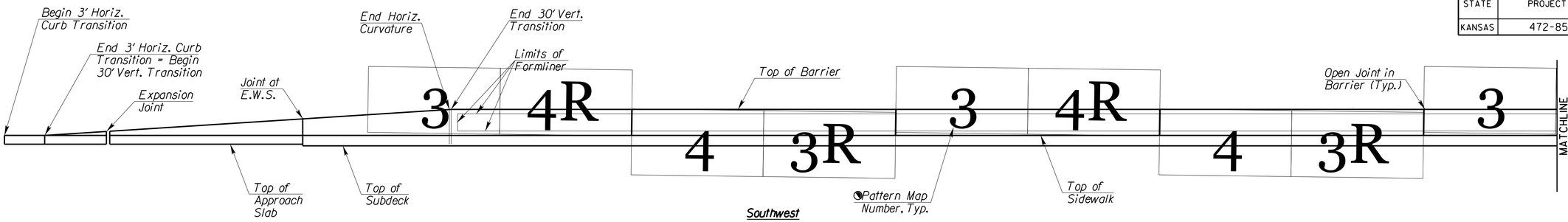
BR. NO. 54-87-32.12 (826) STA. 49+99.68

448

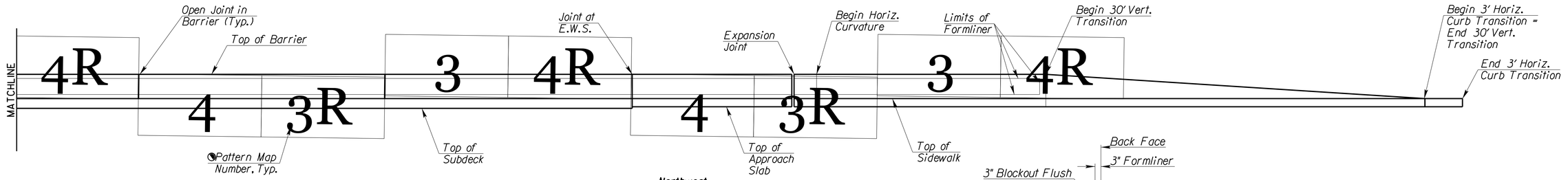
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

9:59:32 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKBBDI2A.DGN

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	449	1055



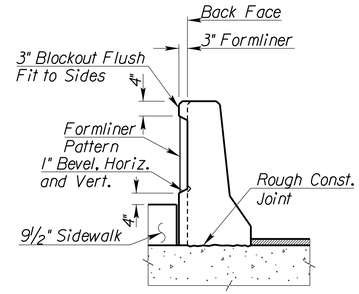
Southwest



Northwest

DEVELOPED ELEVATION
(West Interior Barrier Back Face)
(Showing Pattern Map)

See Sh. #339 for Pattern Map Key.

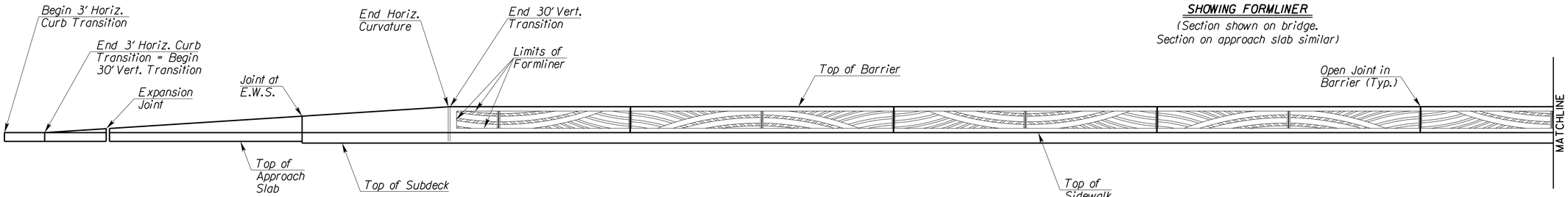


SECTION THRU BARRIER SHOWING FORMLINER
(Section shown on bridge.
Section on approach slab similar)

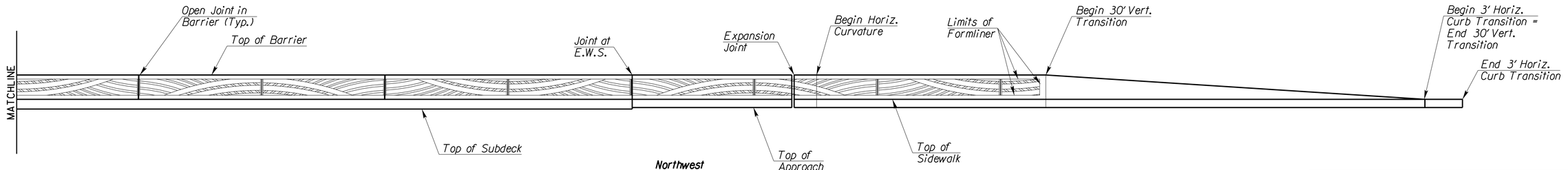
NOTES:
All formliner pattern sections are 10'-0" in length except for each end section.

Open Joints in bridge barrier are control points defining begin and end limits of formliner panels.

See "Barrier Details IV" Sh. #446 for location of Open Joints in Barrier.



Southwest



Northwest

DEVELOPED ELEVATION
(West Interior Barrier Back Face)
(Showing Pattern)

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BARRIER PATTERNING III

BR. NO. 54-87-32.12 (826) STA. 49+99.68

449

9:59:37 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK1WKBBD13A.DGN

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	450	1055

ABUTMENT #1
BILL OF REINFORCING STEEL
EPOXY COATED GRADE 60

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
NB1	#8	48	52'-0"	NB3	#5	600	10'-5"
NB9	#8	12	60'-10"				
NB10	#8	12	43'-2"	NB4	#4	104	4'-6"
				NB5	#4	300	7'-4"
NB8	#7	208	4'-0"	GP1	#4	204	4'-6"
				GP2	#4	170	4'-8"
NB2	#6	36	50'-10"				
NB11	#6	9	58'-6"				
NB12	#6	9	43'-2"				
NW1	#6	144	50'-10"				
NW2	#6	4	31'-3"				
NW3	#6	2	17'-10"				
NW4	#6	4	29'-6"				
NW5	#6	2	28'-5"				
NW6	#6	4	35'-8"				
NW7	#6	308	⊗				
NW8	#6	292	⊗				
NW9	#6	40	58'-6"				
NW10	#6	40	43'-2"				
NB6	#4	4	6'-3"				
NB7	#4	30	6'-0"				

ABUTMENT #2
BILL OF REINFORCING STEEL
EPOXY COATED GRADE 60

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
SB1	#8	48	52'-0"	SB3	#5	600	10'-5"
SB8	#8	12	43'-2"				
SB9	#8	12	60'-10"	SB4	#4	104	4'-6"
				SB5	#4	300	7'-4"
SB2	#6	36	50'-10"	GP1	#4	204	4'-6"
SB10	#6	9	43'-2"	GP2	#4	170	4'-8"
SB11	#6	9	58'-6"				
SW1	#6	144	50'-10"				
SW2	#6	4	34'-2"				
SW3	#6	2	27'-1"				
SW4	#6	4	29'-4"				
SW5	#6	2	20'-3"				
SW6	#6	4	32'-11"				
SW7	#6	292	⊗				
SW8	#6	308	⊗				
SW9	#6	40	43'-2"				
SW10	#6	40	58'-6"				
SB6	#4	4	6'-3"				
SB7	#4	30	6'-0"				

SUPERSTRUCTURE
BILL OF REINFORCING STEEL
EPOXY COATED GRADE 60

Abutment #1 Diaphragm

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
ND1	#8	18	54'-11"	ND11	#5	236	2'-10"
ND2	#8	18	52'-2"	ND12	#5	18	7'-11"
ND3	#8	6	⊗	ND13	#5	708	11'-5"
ND4	#8	6	⊗	ND14	#5	408	10'-7"
				ND15	#5	46	11'-1"
ND5	#6	18	52'-8"	ND16	#5	200	10'-1"
ND6	#6	18	50'-8"	ND40	#5	2	7'-5"
ND7	#6	18	42'-0"				
ND8	#6	18	47'-0"				
ND9	#6	6	33'-8"				
ND10	#6	6	13'-0"				
ND17	#6	12	11'-2"				
ND18	#6	12	6'-10"				
ND19	#6	12	6'-5"				
ND20	#6	36	7'-10"				
ND21	#6	6	8'-5"				
ND22	#6	30	8'-10"				
ND23	#6	12	6'-6"				
ND24	#6	12	6'-10"				
ND25	#6	12	11'-2"				
ND26	#6	24	11'-6"				
ND27	#6	24	4'-10"				
ND28	#6	24	7'-5"				
ND29	#6	24	4'-9"				
ND30	#6	24	7'-0"				
ND31	#6	156	⊗				
ND32	#6	72	⊗				
ND33	#6	12	⊗				
ND34	#6	60	⊗				
ND35	#6	24	7'-1"				
ND36	#6	24	4'-8"				
ND37	#6	24	7'-4"				
ND38	#6	24	4'-9"				
ND39	#6	24	11'-5"				

SUPERSTRUCTURE
BILL OF REINFORCING STEEL
EPOXY COATED GRADE 60

Abutment #2 Diaphragm

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
SD1	#8	18	52'-2"	SD11	#5	253	2'-10"
SD2	#8	18	55'-0"	SD12	#5	18	7'-11"
SD3	#8	6	⊗	SD13	#5	728	11'-5"
SD4	#8	6	⊗	SD14	#5	408	10'-7"
				SD15	#5	36	11'-1"
SD5	#6	18	50'-7"	SD16	#5	214	10'-1"
SD6	#6	18	52'-8"	SD40	#5	2	7'-5"
SD7	#6	18	44'-6"				
SD8	#6	18	49'-4"				
SD9	#6	6	20'-0"				
SD10	#6	6	12'-1"				
SD17	#6	12	11'-2"				
SD18	#6	12	6'-10"				
SD19	#6	12	6'-6"				
SD20	#6	30	8'-10"				
SD21	#6	6	8'-5"				
SD22	#6	36	7'-10"				
SD23	#6	12	6'-5"				
SD24	#6	12	6'-10"				
SD25	#6	12	11'-2"				
SD26	#6	24	11'-5"				
SD27	#6	24	4'-9"				
SD28	#6	24	7'-4"				
SD29	#6	24	4'-8"				
SD30	#6	24	7'-1"				
SD31	#6	156	⊗				
SD32	#6	60	⊗				
SD33	#6	12	⊗				
SD34	#6	72	⊗				
SD35	#6	24	7'-0"				
SD36	#6	24	4'-9"				
SD37	#6	24	7'-5"				
SD38	#6	24	4'-10"				
SD39	#6	24	11'-6"				

⊗ See Bending Diagrams.

See Sh. #452 for Bending Diagrams.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BAR LIST I

BR. NO. 54-87-32.12 (826) STA. 49+99.47

SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:59:41 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKBLB01A.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	451	1055

SUPERSTRUCTURE BILL OF REINFORCING STEEL EPOXY COATED GRADE 60

Deck

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
S1	#6	976	20'-0"	DT1	#7	9	⊗
S3	#6	82	⊗	DT2	#7	5	⊗
S4	#6	82	⊗	DT3	#7	3	⊗
T1	#6	300	41'-10"	DT4	#7	9	⊗
T5	#6	300	46'-7"	DT5	#7	13	⊗
B1	#6	300	41'-7"	DT26	#7	9	⊗
B5	#6	300	46'-4"	DT27	#7	13	⊗
				DT28	#7	9	⊗
S2	#5	490	56'-7"	DT29	#7	6	⊗
T2	#5	342	33'-4"	DT30	#7	8	⊗
T3	#5	642	33'-0"				
T4	#5	642	32'-0"	DT13	#6	41	10'-10"
T6	#5	342	38'-1"	DT14	#6	82	13'-5"
B2	#5	340	33'-4"	DT15	#6	84	12'-5"
B3	#5	640	33'-0"	DT16	#6	22	14'-0"
B4	#5	640	32'-0"	DT17	#6	35	15'-5"
B6	#5	340	38'-1"	DT18	#6	56	16'-11"
DB1	#5	44	⊗	DT40	#6	26	12'-5"
DB2	#5	32	19'-7"	DT41	#6	24	15'-7"
DB3	#5	20	14'-4"	DT42	#6	11	18'-1"
DB4	#5	14	13'-10"	DT43	#6	29	18'-11"
DB5	#5	10	40'-10"	DT44	#6	51	20'-2"
DB6	#5	14	13'-10"	DT45	#6	47	19'-11"
DB7	#5	20	14'-4"	DT46	#6	12	20'-6"
DB8	#5	32	19'-7"	DT47	#6	14	21'-1"
DB9	#5	44	⊗	DT48	#6	12	22'-0"
DB10	#5	78	49'-3"	DT49	#6	17	23'-0"
DB11	#5	36	24'-3"	DT50	#6	22	24'-7"
DB12	#5	26	22'-6"	DT51	#6	55	26'-4"
DB13	#5	20	60'-0"				
DB14	#5	26	23'-3"	T7	#5	640	3'-6"
DB15	#5	38	23'-6"				
DB16	#5	78	48'-9"				
DB17	#5	36	22'-4"				
DB18	#5	26	23'-9"				
DB19	#5	20	60'-0"				
DB20	#5	26	25'-11"				
DB21	#5	36	20'-2"				
DB22	#5	939	48'-7"				
DT6	#5	7	5'-3"				
DT7	#5	14	13'-10"				
DT8	#5	10	24'-5"				
DT9	#5	10	17'-4"				
DT10	#5	10	28'-0"				
DT11	#5	20	57'-8"				
DT12	#5	1	59'-9"				
DT19	#5	170	4'-0"				
DT20	#5	66	5'-0"				
DT21	#5	114	3'-5"				
DT22	#5	25	3'-7"				
DT23	#5	45	3'-3"				
DT24	#5	6	51'-3"				
DT25	#5	6	51'-1"				
DT31	#5	8	5'-3"				

⊗ See Bending Diagrams.

SUPERSTRUCTURE BILL OF REINFORCING STEEL EPOXY COATED GRADE 60

Deck (Cont'd)

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
DT32	#5	3	3'-9"				
DT33	#5	12	16'-3"				
DT34	#5	8	26'-5"				
DT35	#5	6	17'-6"				
DT36	#5	12	33'-0"				
DT37	#5	21	44'-6"				
DT38	#5	22	59'-0"				
DT39	#5	1	53'-10"				
DT52	#5	35	5'-9"				
DT53	#5	68	2'-9"				
DT54	#5	6	6'-6"				
DT55	#5	65	4'-4"				
DT56	#5	3	50'-11"				
DT57	#5	3	51'-3"				

SUPERSTRUCTURE BILL OF REINFORCING STEEL EPOXY COATED GRADE 60

Barriers

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
R12	#6	1	24'-8"	R4	#5	700	4'-11"
R16	#6	11	19'-8"	R8	#5	334	6'-6"
R18	#6	1	19'-2"	R9	#5	39	5'-11"
R21	#6	1	24'-3"	R10	#5	288	6'-0"
				R11	#5	3	3'-8"
R3	#5	96	3'-9"	R20	#5	4	5'-6"
R5	#5	18	18'-11"				
R6	#5	108	19'-8"	R1	#4	70	3'-10"
R7	#5	18	18'-0"	R2	#4	328	3'-7"
R13	#4	1	23'-2"				
R14	#4	2	24'-8"				
R15	#4	3	24'-8"				
R17	#4	66	19'-8"				
R19	#4	6	19'-2"				
R22	#4	3	24'-3"				
R23	#4	2	18'-7"				
R24	#4	1	17'-4"				

SUPERSTRUCTURE BILL OF REINFORCING STEEL EPOXY COATED GRADE 60

Sidewalks, Stamped Colored Concrete

Straight Bars				Bent Bars			
Mark	Size	Number	Length	Mark	Size	Number	Length
ME1	#5	554	11"				

See Sh. #452 for Bending Diagrams.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

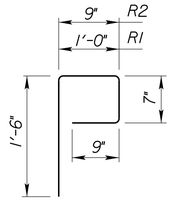
BAR LIST II

BR. NO. 54-87-32.12 (826) STA. 49+99.47

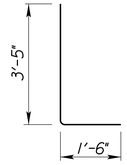
SURV.	--	PLOT	CADD	DES.	AH/BS	DR.	GB/CP	TR.	--	CKD.	SB/NW	APP.	--

9:59:44 AM
4/17/2015
T:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EK\WKBLB02A.dgn

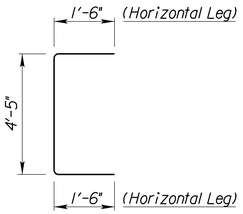
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	452	1055



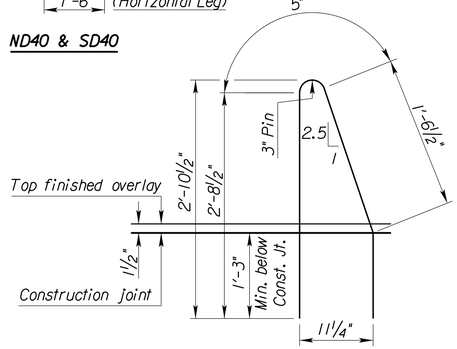
R1 & R2



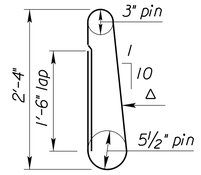
R4



ND40 & SD40

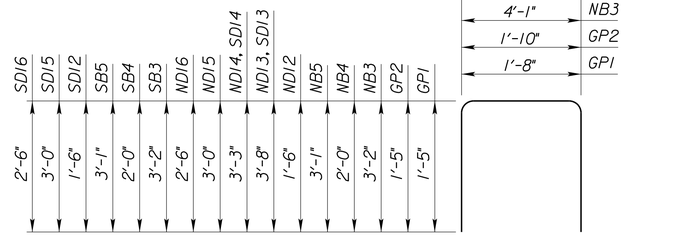


R9



R8

Δ Traffic side



GP1, GP2, NB3, NB4, NB5, ND12, ND13, ND14, ND15, ND16, SB3, SB4, SB5, SD12, SD13, SD14, SD15 & SD16

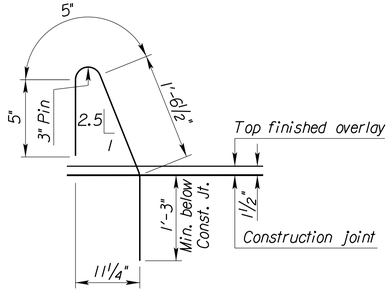
Increase from 17'-1" to 24'-1" by 1'-0" increments (cut 1 each length)	DT30
Increase from 11'-5" to 16'-0" by 11" increments (cut 1 each length)	DT29
Increase from 5'-3" to 9'-11" by 7" increments (cut 1 each length)	DT28
Increase from 10'-9" to 16'-9" by 6" increments (cut 1 each length)	DT27
Increase from 5'-3" to 9'-5" by 6 1/4" increments (cut 1 each length)	DT26
Increase from 11'-5" to 21'-5" by 10" increments (cut 1 each length)	DT5
Increase from 5'-4" to 10'-0" by 7" increments (cut 1 each length)	DT4
Increase from 13'-9" to 14'-9" by 6" increments (cut 1 each length)	DT3
Increase from 10'-10" to 13'-2" by 7" increments (cut 1 each length)	DT2
Increase from 5'-3" to 9'-5" by 6 1/4" increments (cut 1 each length)	DT1



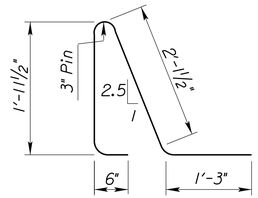
DT1, DT2, DT3, DT4, DT5, DT26, DT27, DT28, DT29 & DT30

Increase from 14'-8" to 18'-2" by 2" increments (cut 2 each length).	DB1
Increase from 14'-8" to 19'-0 1/2" by 2 1/2" increments (cut 2 each length).	DB9
Increase from 33'-1" to 36'-5" by 8" increments (cut 1 each length).	ND3
Increase from 12'-10" to 17'-10" by 1'-0" increments (cut 1 each length).	ND4
Increase from 5'-1" to 7'-2" by 5" increments (cut 26 each length).	ND31
Increase from 6'-9" to 8'-10" by 5" increments (cut 12 each length).	ND32
Increase from 7'-4" to 9'-5" by 5" increments (cut 2 each length).	ND33
Increase from 7'-9" to 9'-10" by 5" increments (cut 10 each length).	ND34
Increase from 17'-5" to 20'-7 1/4" by 1/4" increments (cut 2 each length).	NW7
Increase from 17'-7" to 20'-7 1/4" by 1/4" increments (cut 2 each length).	NW8
Increase from 19'-7" to 24'-2" by 11" increments (cut 1 each length).	SD3
Increase from 12'-5" to 18'-8" by 1'-3" increments (cut 1 each length).	SD4
Increase from 5'-1" to 7'-2" by 5" increments (cut 26 each length).	SD31
Increase from 7'-9" to 9'-10" by 5" increments (cut 10 each length).	SD32
Increase from 7'-4" to 9'-5" by 5" increments (cut 2 each length).	SD33
Increase from 6'-9" to 8'-10" by 5" increments (cut 12 each length).	SD34
Increase from 17'-5 1/2" to 20'-5 3/4" by 1/4" increments (cut 2 each length).	SW7
Increase from 17'-6" to 20'-8 1/4" by 1/4" increments (cut 2 each length).	SW8

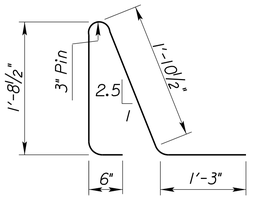
DB1, DB9, ND3, ND4, ND31, ND32, ND33, ND34, NW7, NW8, SD3, SD4, SD31, SD32, SD33, SD34, SW7 & SW8



R11



R10



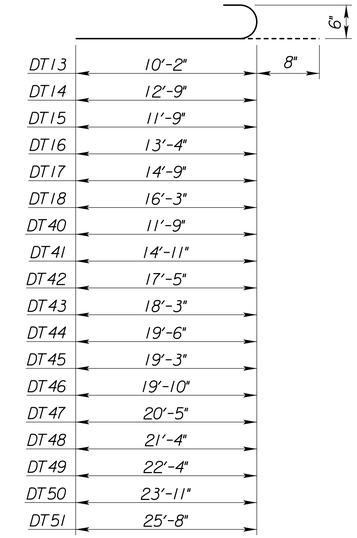
R20

Increase from 5'-8" to 7'-10" by 3 1/4" increments (cut 2 each length)	
Increase from 7'-8 1/2" to 41'-5 1/2" by 1'-3" increments (cut 2 each length)	
Increase from 44'-5" to 61'-2" by 5'-7" increments (cut 2 each length)	

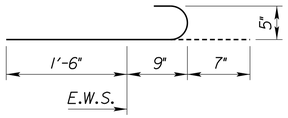
S3

Increase from 5'-8 1/2" to 8'-4" by 3 1/2" increments (cut 2 each length)	
Increase from 9'-6 3/4" to 40'-11 3/4" by 1'-2 1/2" increments (cut 2 each length)	
Increase from 43'-10" to 60'-7" by 5'-7" increments (cut 2 each length)	

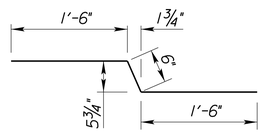
S4



DT13, DT14, DT15, DT16, DT17, DT18, DT40, DT41, DT42 DT43, DT44, DT45, DT46, DT47, DT48, DT49, DT50 & DT51



ND11 & SD11



T7

BENDING DIAGRAMS

All dimensions are out to out of bars.

CITY OF WICHITA

WEBB ROAD OVER EAST KELLOGG

BENDING DIAGRAMS

BR. NO. 54-87-32.12 (826) STA. 49+99.47

9:59:47 AM
4/17/2015
I:\35765A\Cadd\Sheets\Package\Structures\Bridge\Webb\EKIWKBLB03A.dgn
SURV. -- PLOT CADD DES. AH/BS DR. GB/CP TR. -- CK'D. SB/NW APP. --

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	453	1055

O D 10¾" T. = 0.25"
O D 12¾" T. = 0.25 Min.
O D 14" T. = 0.25 Min.

Note:
Pile shall be driven with a steel head having a projecting ring fitting inside the pipe. Clearance between ring and pipe should be ¼".

Note:
Pile pipe may be spiral welded, longitudinal welded, or seamless steel pipe.

¾" Driving ℄

O D

¾" Round ℄

PLAIN ROUND
CAST-IN-PLACE CONCRETE PILES

Head

5 turns 1" pitch
16 turns-3" pitch
Continuous spiral W5 wire-6" pitch
5 turns 1" pitch
1"
12" or 14"
2" Cl.
W5 wire spiral ties
8 - ⅜" Ø 270K strands @ 16,000 Lbs. each 12" x 12" piles
8 - ½" Ø 270K strands @ 22,700 Lbs. each 14" x 14" piles
Tip

Note: If additional driving is required, use 1" pitch as shown.
3"
12"
Build-up
W5 wire 6"pitch
5" lap
5"
8-#5 bars

BUILD UP SECTION

12" OR 14"
PRESTRESSED
CONCRETE PILES

5 turns 1" pitch
16 turns-3" pitch
Continuous spiral W5 wire-6" pitch
6⅝"
4 1/16"
6⅝"
1'-4"
2" Cl.
8-#6 bars
Typ. both build-up sections
Prestress pile
9 - ½" Ø 270K strands @ 24,800 Lbs. each
W5 wire spiral Ties

BUILD-UP
WITHOUT DRIVING

5 turns-1" pitch
16 turns-3" pitch
6 turns 6" pitch
5 turns 3" pitch
5 turns 1" pitch
W5 wire spiral ties
See "Prestressed Piles" notes

BUILD-UP
WITH DRIVING

16" PRESTRESSED
CONCRETE PILES

GENERAL NOTES

PRESTRESSED PILES: Fabricate prestressed concrete pile splices in accordance with the Manufacturer's recommendations subject to the approval of the Engineer.

Method of attachment of pile to build-up may be by any of the methods given in the notes on "Alternate Methods. If mild reinforcing steel is used for attachment, the area shall be no less than that used in the build-up.

ALTERNATE METHODS: Method of attachment of a pile to build-up may be by any of the following methods:
1. Cut off at least 2'-0" of pile and expose a minimum of 2'-0" of strands.
2. Cast 8-#6, or 8-#5 bars (equally spaced into pile head. All bars shall extend into pile head and project from extend into pile head and project from the pile head a minimum of 2'-0".
3. Drill 8 holes in pile head (equally spaced) for installation of 8 grouted dowel bars of same size and length as in 2.
4. Provide cored holes for bars as in 3.
No bars or strands are to extend from head of pile or build-up into footing or pile cap unless approved by the Engineer.

TEST PILES: Drive test piles where called for on the bridge plans. The test piles located within the limits of the substructure will become a part of the bridge pile system.

DRIVING FORMULA: Driving formula shall conform to the Standard Specifications.

MEASUREMENT AND PAYMENT: Measurement and payment for all piles shall comply with the Standard Specifications.

The following items are covered in Division 1000 of the Standard Specifications:

REINFORCEMENT: Use reinforcing steel conforming to ASTM A615, Grade 60. Hoops and spirals may be either plain or deformed bars.

PRESTRESSING STEEL: Use uncoated seven-wire stress relieved or low relaxation prestressing strand conforming to ASTM A416, Gr. 270.

SPECIFICATIONS: Standard Specifications for State Road and Bridge Construction as currently used by the Kansas Department of Transportation. The following items are covered in Division 700 of the Standard Specifications:

CONCRETE: Concrete for cast-in-place shall be f'c = 3,500 PSI.. Concrete for prestressed shall be f'c = 5,000 PSI.

WELDING: All field welding shall meet the requirements of the Standard Specifications.

Use only Shielded Metal Arch Welding SMAW (stick welding) for pile splices.

Use only low hydrogen E7018, 7016, or 7015 series welding rod (electrode) for all welding applications during pile splicing. See General Notes or proper storage of welding rod. welding filler rod (electrode) for field welding of splices.

New electrode are to be purchased for each KDOT project. The electrode shall arrive on the project in factory hermetically sealed containers opened and labeled with indelible ink in front of the engineer. The label shall include the current date and the project number. If the container seal is questionable or shows signs of damage the electrode is to be dried in an oven at least one hour at a temperature of 700°F to 800°F.

Upon removal from intact hermetically sealed factory packaging or the drying oven the electrode is to be placed in a storage oven with a minimum temperature of 250°F.

When electrodes are removed from the hermetically sealed container or storage oven and exposed to the atmosphere for less than 4 hours place into the storage oven for at least 4 hours before removing for use.

If electrode is exposed to the atmosphere for 4 hours or more (or 9 hours for moisture resistant electrodes designated with an R in their labeling) then electrode can be dried in a drying oven at a temperature of 450°F to 550°F.

If the electrode is exposed to the atmosphere for 4 hours or more a second time or the rod becomes wet discard rod.

CAST-IN-PLACE SHELLS: Steel shells for cast-in-place piles shall conform to the requirements of the Standard Specifications.
All piles driven without a mandrel shall be of the minimum thicknesses shown. Piles driven with a mandrel shall be of sufficient strength and thickness to withstand driving without injury and to resist harmful distortion and/or buckling due to soil pressure after the mandrel is removed.
Remove, replace or correct to the satisfaction of the Engineer improperly driven, broken or otherwise defective pipe piles. Otherwise drive an additional pile at no extra cost.
The Contractor shall maintain a light suitable for visual inspection of the pile on the job at all times prior to and during the filling of the pipe.

STEEL PILE: Steel pile shall conform to the requirements of the Standard Specifications.

PILE POINTS: Pile points shall conform to the dimensions shown and to requirements of the Standard Specifications.

PAINT: All paint shall comply with the Standard Specifications, or as specified on the plans.

MILL TEST REPORTS: Steel piles test reports and steel shell test reports shall comply with the Standard Specifications.

FOR INFORMATION ONLY EQUIVALENT POINT BEARING PILES		
STEEL PILES	CONCRETE PILES	
	Pipe	Pre-stress
HP10x42	10¾	
HP12x53	12¾	
HP14x73	14	12
HP14x102		14
HP14x117		16

CAST STEEL PILE POINT

The pile point shall be a one-piece unit of cast steel. Weld pile points in accordance with manufacturers recommendations to each steel pile before driving.

Length (L)
Pick-up point
0.7 L
0.3 L
SINGLE POINT PICK-UP

Pick-up points
0.21 L
0.58 L
0.21 L
DOUBLE POINT PICK-UP

PICK-UP POINTS FOR PRESTRESSED PILING

Max. length - 55' single point pick-up
Max. length - 80' double point pick-up

Note: Piles shall be marked at Pick-up points to indicate proper points for attaching handling lines.

Outside Flange

Inside Flange

H-Pile Point

PIPE PILE POINT

Weld Symbology Definition

Use grinder to bevel edges of splice as shown in weld symbology and drawing. In addition to bevels, produce clean, bare, and shiny surfaces at and around the splice welding location.

Use E7018, 7016, or 7015 series welding rod (electrode) for all welding applications during pile splicing. See General Notes for proper storage of welding rod.

Lay full penetration root weld from beveled side of splice.

Back gouge root weld from side opposite of root welding application making sure to remove all foreign materials, porous steel, and inclusions from root weld. Finish welding the non beveled side of the splice.

Finish welding beveled side of the splice while removing slag, foreign materials, porous steel, and inclusions in between welding passes, use of a grinder may be needed.

Verify that enough filler metal has been correctly placed in all weld locations to obtain a flush or convex surface with no concavity produced upon completion of the final welds.

SPLICES: Splices for steel piles and shell piling shall be in accordance with details shown on this sheet and the Standard Specifications.

For integral pile bent abutments and piers, if a pile splice is required, do not locate the pile splice within a region extending 2'-0" above and 10'-0" below the bottom of the concrete web wall. For abutments, locate the pile splice at least 10'-0" below the bottom of concrete.

With the approval of the Engineer, one splice per bent may be allowed in the region described above without testing. If additional splices are anticipated, based on the geology, the Contractor will add a sufficient amount to the bottom of pile, prior to driving, so that the splice is below the regions described above in the completed pile.

† For integral pile bent abutments and piers, if a splice is located within the regions described above, then the Contractor will test the welds by Radiograph (RT) test methods. Repair and retest any welds not passing the test(s). Each weld tested will have written confirmation of results. Report these results to the Engineer. This work is not paid for directly, but is subsidiary to "Piles".

45° (Min.)
0 to ⅛"
1/16" to ⅛"
SECTION THRU FLANGE

H-Pile Section

RT
BG
Cope regions

Pipe Section

PILE SPLICE DETAILS

BG = Backgouge

NO.	DATE	REVISIONS	BY	APP'D
4	06-18-12	Clarify ft. rod type, use and weld	JPJ	TLF
3	1-5-09	Pile Splice Location and Weld Test	JPJ	KFH
2	6-14-06	Rev. Pile Splice Note & Reinforcing	JPJ	KFH
1	11-12-03	Revised Notes	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PILE DETAILS

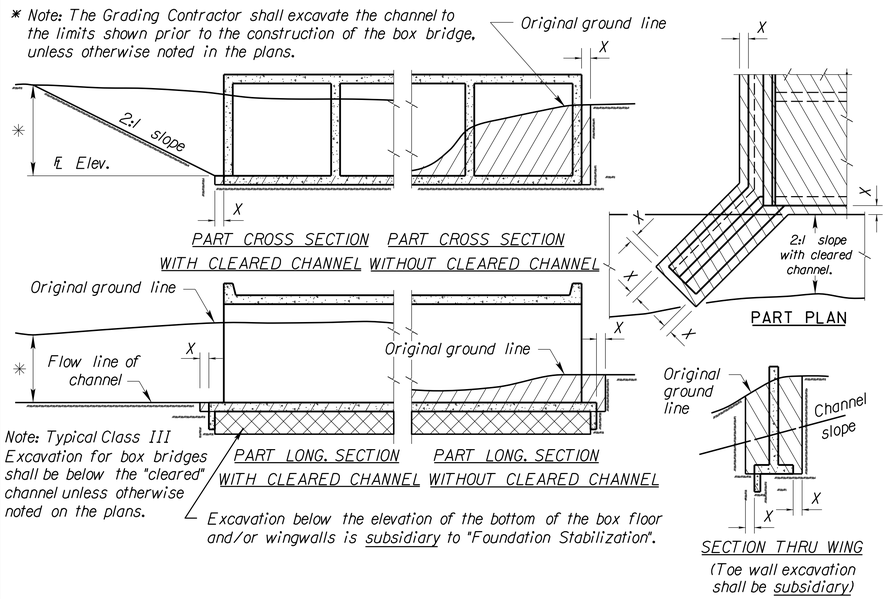
BRIIO

FHWA APPROVAL	10-04-12	APP'D	Terry L. Fleck
DESIGNED JPJ	DETAILED	QUANTITIES	CADD RAA
DESIGN CK.	DETAIL CK.	QUAN.CK.	CADD CK.

Std. Base File: brII0.dgn
Plotted By: --
Plot Location: $UNIT$
File: T:\35765A\Cadd\Sheets\Package1\Standards\KDOT\EKISTDBRII0A.dgn
Plot Date: 4/17/2015

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	454	1055

* Note: The Grading Contractor shall excavate the channel to the limits shown prior to the construction of the box bridge, unless otherwise noted in the plans.

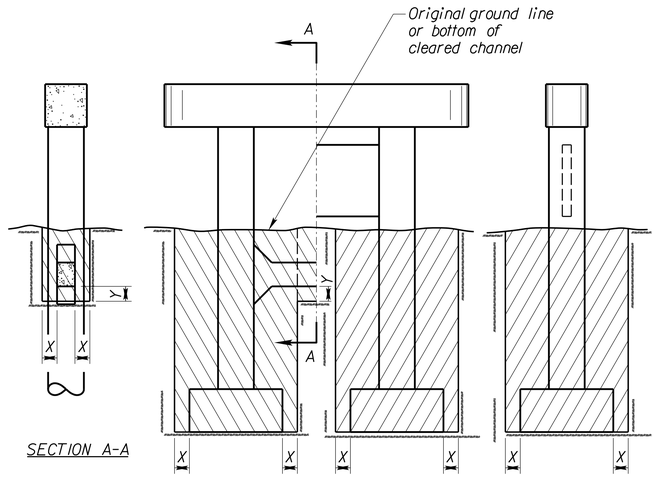


Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

Excavation below the elevation of the bottom of the box floor and/or wingwalls is subsidiary to "Foundation Stabilization".

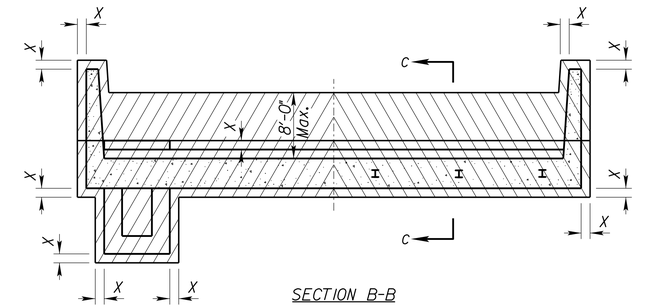
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

Note: Excavation for culverts less than bridge length and the additional excavation for "Embedded Structures" shall not be paid for as Class III Excavation, but shall be subsidiary to Grade 4.0 Concrete.

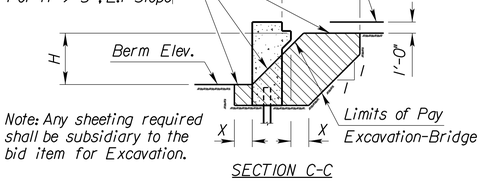


EXCAVATION DETAILS FOR TYPICAL PIERS

See detail when rock or shale (rock) is encountered. ⊛

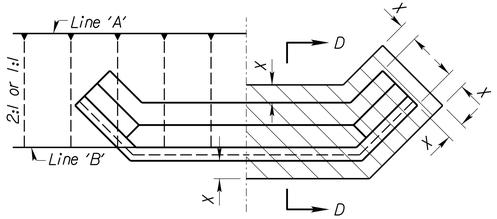


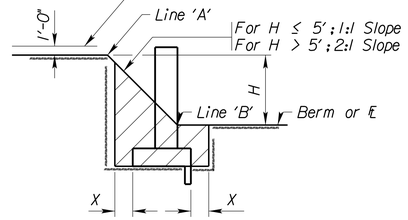
Note: Bridge Contractor shall finish the embankment and berms after the construction of the abutment and dispose of any excess material as approved by the Engineer.



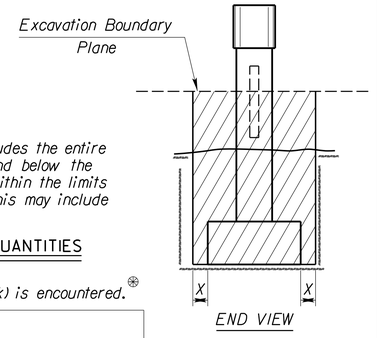
EXCAVATION DETAILS FOR TYPICAL ABUTMENTS

See detail when rock or shale (rock) is encountered. ⊛





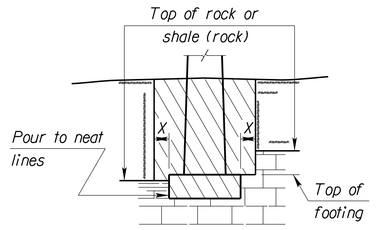
EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



Note: Class II Excavation includes the entire volume of whatever nature found below the "Excavation Boundary Plane", within the limits specified for measurement. This may include water or air.

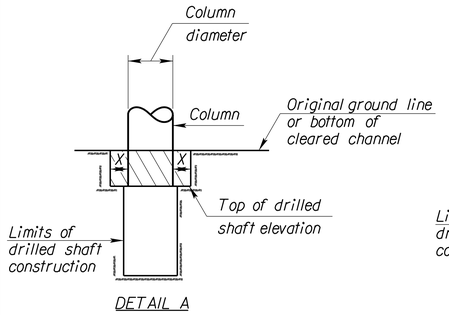
CLASS II EXCAVATION QUANTITIES

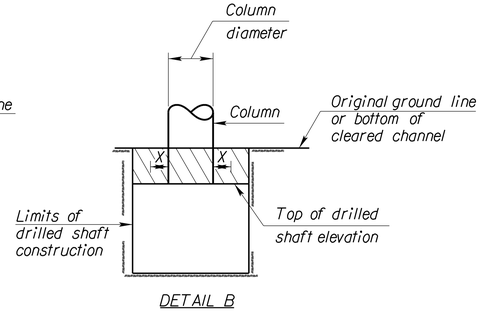
See detail when rock or shale (rock) is encountered. ⊛



⊛ EXCAVATION DETAIL FOR FOOTINGS IN ROCK OR SHALE (ROCK)
(Piers and Abutments)

Note: Excavation below top of rock, hard shale or below top of footing, whichever is lower, shall be to neat lines of the concrete construction.





DRILLED SHAFT DETAILS

Note: Whenever the limits of the drilled shaft construction are greater than the Column Diameter + 2X, the limits of Class I, II or III Excavation shall be the limits of the drilled shaft construction. (See Detail B)

Note: All bridge excavation shall be computed on the basis of the hatched areas and boundary lines indicated on this sheet and the Excavation Boundary Plane on the Construction Layout.

Sides of trenches in hard or compacted soil including embankments shall be shored, sheeted, braced or otherwise supported when the trench is more than 5 feet in depth and 8 feet or more in length. In lieu of the shoring, the sides of the trench above the 5 foot level may be sloped to preclude collapse. The slope for average soils shall be 1:1. If the angle of repose of the soil is less, flatter slopes shall be required.

Dimension "X" shall be 2'-0" unless indicated otherwise on the general plans.

Dimension "Y" shall be 1'-6" unless indicated otherwise on the general plans.

NO.	DATE	REVISIONS	BY	APP'D
5				
4	8-15-12	Embeddement Excavation Subsidiary	JPJ	TLF
3	10-16-06	Revised "Foundation Stab." Note	JPJ	KFH
2	10-19-04	Concrete - Class to Grade	RAM	KFH
1	4-10-02	Added "Foundation Stab." Note	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

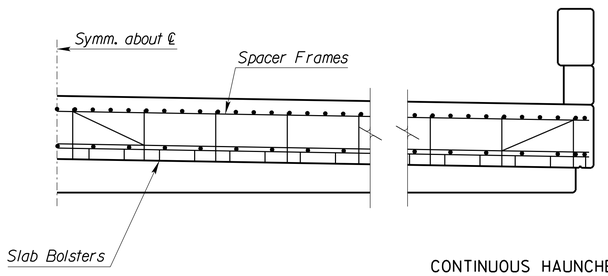
BRIDGE EXCAVATION (LFD)

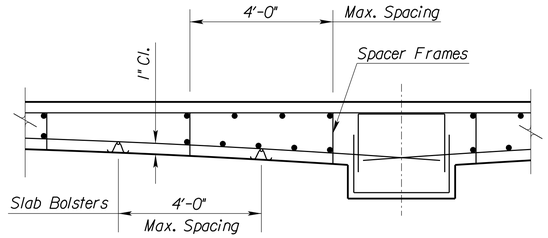
BRIOOA

FHWA APPROVAL		11-01-06	APP'D	KENNETH F. HURST
DESIGNED	DETAILED	RDR	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	LRR	QUAN. CK.	CADD CK.

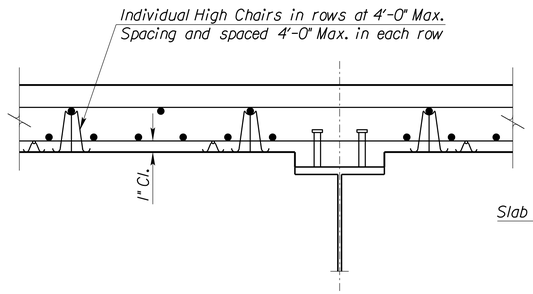
Std. Base File: br100.dgn
Plotted By: --
Plot Location: $UNIT$
File: T:\357651\CaddSheets\Package\KDOT\EK\STDBRI00A.dgn
Plot Date: 4/17/2015

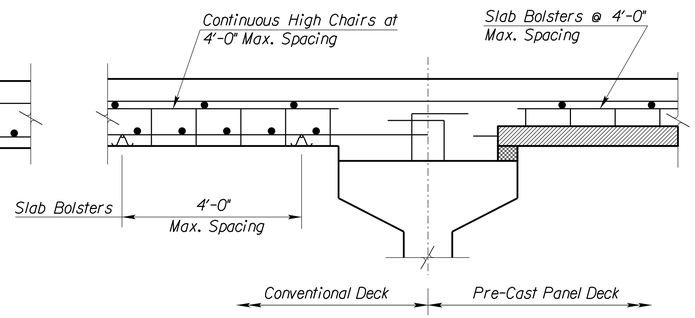
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-85031	2015	455	1055



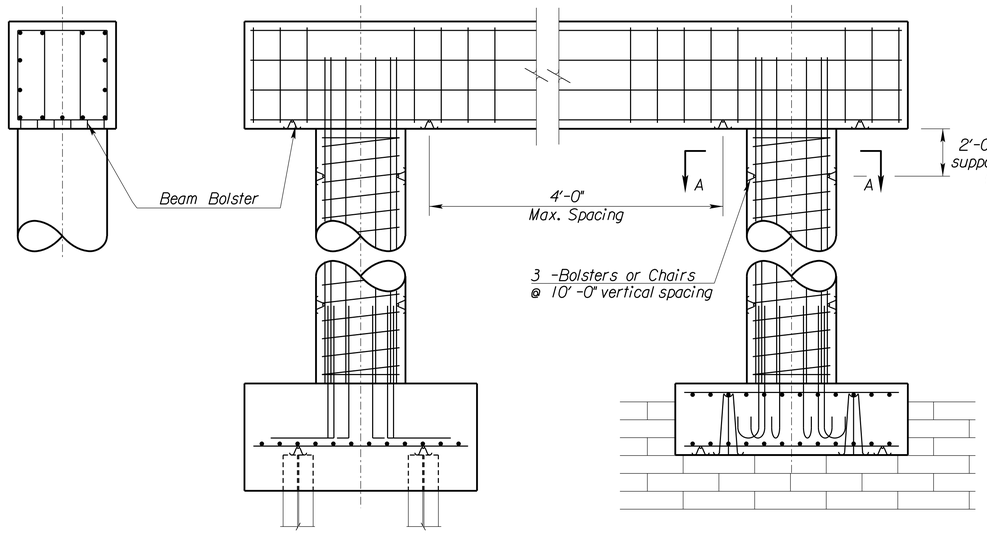


CONTINUOUS HAUNCHED SLAB

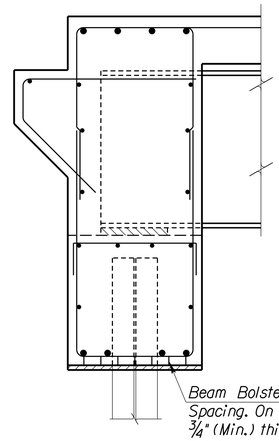




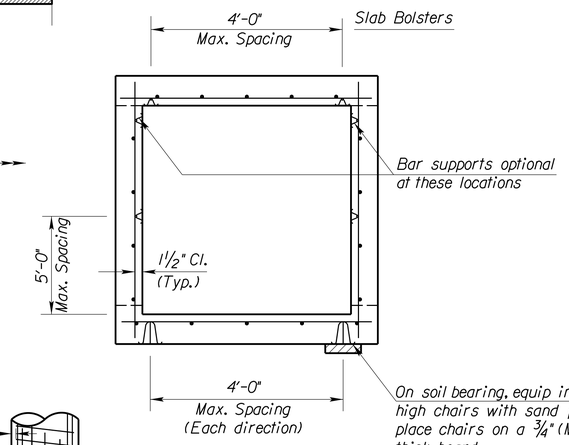
DECK GIRDERS



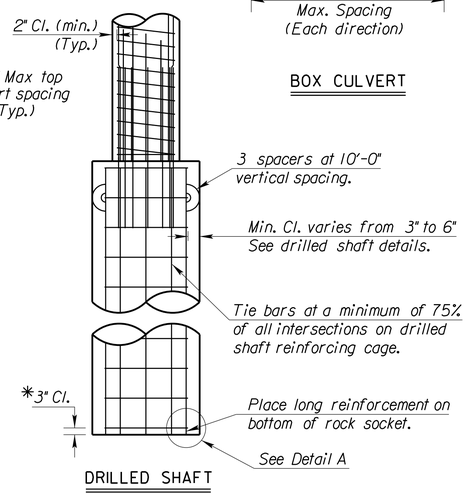
PIER



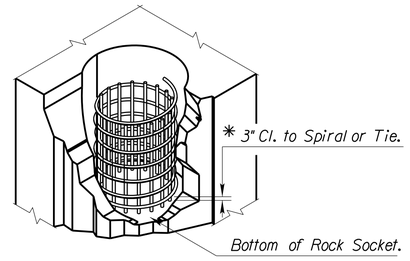
ABUTMENT



BOX CULVERT

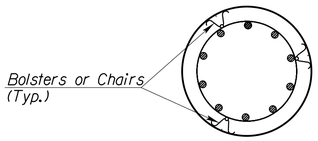


DRILLED SHAFT



DETAIL A

* Note: Longitudinal reinforcing steel is placed on the bottom of the rock socket. Maintain 3" clearance from the bottom of rock socket to the first spiral or tie bar.



SECTION A-A

TYPICAL SECTION

Reference is made to the latest edition of the CRSI "Manual of Standard Practice" for recommended industry practices concerning reinforcing steel.

Use only the following types of bar supports:

1) Wire Bar Supports:

a) Epoxy coated reinforcing: Class 1 Protection
b) Non-epoxy coated reinforcing: Class 1, 2, or 3 Protection

2) Plastic Bar Supports

3) Supplementary bars

When securing epoxy coated reinforcement, use tie wires or metal clips that are epoxy or plastic coated.

Do not weld reinforcing steel to bar supports or to other reinforcing steel. Shop weld spacer frames for haunched slabs.

Tie bars at all intersections around the perimeter of each mat and at not less than 2'-0" centers or at every intersection, whichever is greater.

Where more than one length of bar support is required, lap the end legs so they are locked or tied together.

Use proper height supports to maintain the distance between the reinforcing and the formed surface or the top surface of deck slabs within 1/4" of that indicated on the plans.

Spacings shown are maximums. Use sufficient supports, as determined by the Engineer, to retain the reinforcing steel in position.

Construct any platforms, required for the support of workers and/or equipment during concrete placement, directly on the forms and not on the reinforcing steel.

Designs and arrangements of Supports or Spacers other than as shown on this sheet, may be used with the permission of the Engineer.

NO.	DATE	REVISIONS	BY	APP'D
5	11-10-10	Column Bar Supports Req'd	JPJ	TLF
4	12-01-05	Drilled Shaft Spiral Steel Placement	JPJ	KFH
3	8-21-00	Added Pre-Cast Panel Detail	RAM	KFH
2	12-20-99	Added Haunched Slab Bolsters	RAM	KFH
1	12-09-99	Revised Drilled Shaft Clearance	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

SUPPORTS AND SPACERS FOR REINFORCING STEEL

BRI20

FHWA APPROVAL		11-17-10	APP'D	Terry L. Fleck	
DESIGNED	RAM	DETAILED	RAA	QUANTITIES	CADD RAA
DESIGN CK.	LRR	DETAIL CK.	RAM	QUAN. CK.	CADD CK. RAM

Std. Base File: br120.dgn
Plotted By: --
Plot Location: $UNIT$
File: T:\35765A\Cadd\Sheets\Package\Standards\KDOT\LEK\STDBRI20A.dgn
Plot Date: 4/17/2015