Charlie A. Dooley
County Executive

Saint Louis
COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS

Sheryl L. Hodges, D.E., P.E., L.P.G.
Director

October 21, 2014

ADDENDUM NO. 2

Notice to All Persons and Firms Proposing
to Submit a Bid or Furnish Materials for
Mason Road Bridge No. 211
St. Louis County Project No. AR-1133
Federal Project No. STP-5574(604)

The construction contract for this project has been revised as follows:

No. 1

Replace Special Provision No. 100.10.2 "Completion of Project" with the attached:

100.10.2 COMPLETION OF PROJECT

No. 2

Replace Special Provision No. 100.10.3 "Working Restrictions" with the attached:

100.10.3 WORKING RESTRICTIONS

No. 3

Replace Special Provision No. 100.80.4 "Project Assurances" with the attached:

100.80.4 PROJECT ASSURANCES

No. 4

Replace Special Provision No. 200.40.1 "Removal of Guardrail-Discard" with the attached:

200.40.2 REMOVAL OF GUARDRAIL-SALVAGE

No. 5

Replace Special Provision No. 700.40.5 "Modular Block Retaining Wall (Miscellaneous Requirements)" with the attached:

700.40.5 MODULAR BLOCK RETAINING WALL (MISCELLLANEOUS REQUIREMENTS)

No. 6

Replace Special Provision No. 1000.10.2 "Internally Cured Concrete (ICC)" with the attached:

1000.10.2 INTERNALLY CURED CONCRETE (ICC)

No. 7

Replace Corrected Bid Document, "BID" pg. 306 of 345 as attached.

No. 8

Delete Plan Sheet Nos. 2, 3, 5, 6, 7, 8, 9, 29, 34, 37, 40, 41, 42, 43, 46, 47,48, 50, 51, 52 & 57.

No. 9

Insert New Plan Sheet Nos. 2, 3, 5, 6, 7, 8, 9, 29, 34, 37, 40, 41, 42, 43, 46, 47, 48, 50, 51, 52 & 57.

No. 10

Insert New Plan Sheet No. 50A

REVISED ITEMIZED BID SHEET NOS. 331 OF 345 TO 337 OF 345 ARE ATTACHED AND REFLECT THE CHANGES NOTED IN ITEM NOS. 8, 9, AND 10 ABOVE. FAILURE TO SUBSTITUTE THE ITEMIZED BID SHEETS MAY RESULT IN REJECTION OF THE BID.

REVISED BID DOCUMENT, "BID", IS ATTACHED AND SHOWS THE CHANGES NOTED IN ITEM NO. 7 ABOVE. FAILURE TO SUBSTITUTE THIS BID DOCUMENT MAY RESULT IN REJECTION OF THE BID.

ATTENTION BIDDERS: CHECK THE SECOND STATEMENT ON ADDENDUM ACKNOWLEDGEMENT SHEET NO. 330 OF 345 OF THE BID DOCUMENTS AND COMPLETE APPROPRIATELY.

Daniel R. Naunheim, P.E.
Division Manager, Design

DRN/KJJ/jlh
Attachments: Itemized Bid Sheets, Bid Document, Plan Sheets, Special Provisions and Addendum Acknowledgement ***(Please sign and return.)***

October 21, 2014

ADDENDUM ACKNOWLEDGEMENT

ADDENDUM NO. 2

FROM: St. Louis County Department of Highways and Traffic

RE: Mason Road Bridge No. 211
St. Louis County Project No. AR-1133
Federal Project No. STP-5574(604)

PACKAGE INCLUDES THIS ACKNOWLEDGEMENT AND ADDENDUM NOTICE AND REVISED BID SHEET, BID DOCUMENT, AND/OR OTHER ITEMS.
(21 pages & 22 plan sheets total)

IF YOU DID NOT RECEIVE ALL PAGES, CALL (314) 615-8581.

UPON RECEIPT OF THIS PACKAGE, **PLEASE SIGN AND DATE** (IN THE INDICATED LOCATIONS BELOW), AND **FAX THIS ACKNOWLEDGEMENT TO THE DEPARTMENT OF HIGHWAYS & TRAFFIC AT (314) 615-8194** (Attn: Karen Jones, DESIGN DIVISION) TO VERIFY RECEIPT

COMPANY _____

RECEIVED BY _____

DATE _____

100.10.2 COMPLETION OF PROJECT

A. The work on this project shall commence on the date specified in the "Notice To Proceed" and completed no later than November 1, 2015 from said commencement date unless additional time is granted by the Director. Due to seasonal limitations, sodding and crack sealing may be completed after the dates shown on the schedule.

Liquidated damages in the amount of $1,100 per day will be charged after the expiration of the time stipulated for each and every calendar day that all work remains uncompleted.

Liquidated damages in the amount of $1,100 per day will be charged after the expiration of the ninety (90) calendar day road closure limitation of Mason Road (see JSP 100.10.3 part C).

B. An additional $200.00 per hour will be charged should temporary striping/marking not begin within the time limits specified in section 621.3.2 of the “St. Louis County Standard Specifications for Highway Construction”.

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B. An additional $200.00 per hour will be charged should temporary striping/marking not begin within the time limits specified in section 621.3.2 of the “St. Louis County Standard Specifications for Highway Construction”.

100.10.3 WORKING RESTRICTIONS

A. On each of the project sites, the Contractor shall confine his operations and restrict the storage of equipment and materials to the easement areas shown on the plans. The Contractor will not be permitted to operate equipment or store material on roadways or drives that are normally in use by the public.

B. The Contractor shall use every precaution to prevent damage to private and public utility lines, conduits, and other improvements. The Contractor will be responsible for all damage to any utility or other such improvement due to his operations, and shall repair or replace as necessary any such damaged facility or make payment to the owner for repair or replacement. Trees and shrubs in the easement areas not specifically marked To Be Removed (TBR) shall be carefully preserved.

C. The contractor shall limit the closure of Mason Road at the project location to ninety (90) calendar days.

Access During Work: The Contractor will ensure that Golf Club Investment Company ("GCI") will have reasonable access to and from Mason Road and to and from each of Parcel 5 and Parcel 7, including access to and from the house located on Parcel 5 and the maintenance facility located on Parcel 7, during all phases of work on the Mason Road Bridge Project. The County will take all reasonable steps to minimize disruption to Parcel 5 and Parcel 7 during work.

D. No direct payment will be made for compliance with this provision.

100.80.4 PROJECT ASSURANCES

The following agreements will require the Contractor's compliance:

A. Location, Parcel No. 5 & 7:

Access During Work: The Contractor will ensure that Golf Club Investment Company ("GCI") will have reasonable access to and from Mason Road and to and from each of Parcel 5 and Parcel 7, including access to and from the house located on Parcel 5 and the maintenance facility located on Parcel 7, during all phases of work on the Mason Road Bridge Project. The Contractor will take all reasonable steps to minimize disruption to Parcel 5 and Parcel 7 during work.

B. General:

The Contractor will limit the closure of Mason Road at the project location to ninety (90) calendar days.

Timing of Work On Mason Road Bridge Project. The Contractor will ensure that all work performed on the Mason Road Bridge Project, including work performed by any of the County's agents and designees will be performed before December 15, 2015.

Removal of Construction Debris and Installation of Sidewalks: The Contractor shall remove all construction debris and pavement which is disturbed by the Mason Road Bridge Project. The Contractor will install sidewalks within the County's right of way from Mulberry Row Court to Belleville Springs Drive.

No direct payment shall be made for any additional time, special equipment, or additional labor to comply with these requirements.

200.40.2 REMOVAL OF GUARDRAIL - SALVAGE

The Contractor will carefully remove all guardrails and posts to be salvaged as directed by the Engineer. The salvaged guardrail is to become the property of St. Louis County. The Contractor shall deliver the guardrail to St. Louis County Maintenance District Headquarters located at 11201 Schaefer Road. The Contractor shall load and stack the guardrail on timbers or other means to facilitate removal from the vehicle by St. Louis County personnel. The Contractor shall notify Mr. Terry Mitchell at (314) 615-1107, a minimum of 48 hours prior to delivery. The Contractor will be required to dispose of any guardrail which has been damaged as approved by the Engineer. The cost of removal of the guardrail and delivery to the above address, or disposal of damaged guardrail, shall be included under Pay Item No. 202-20.10, Removal of Improvements.

700.40.5 MODULAR BLOCK RETAINING WALL (MISCELLANEOUS REQUIREMENTS)

The Contractor will be required to fill any open space in joints between the modular block wall and any adjacent structure (building, concrete wall, etc.) or pavement (sidewalk, ramp, etc.) with a weatherproof caulk. The color of the caulk shall be approved by the Engineer prior to use.

For the proposed retaining wall on Parcel 6, the contractor will allow the owners of the Enclave at Bellerive a choice of 4 colors for the retaining wall and that the wall material shall be a tumbled stone modular block.

No direct payment shall be made for any additional time, special equipment, or additional labor to comply with these requirements.

1000.10.2 INTERNALLY CURED CONCRETE (ICC)

Description.

This specification shall apply to Slab on Steel, Reinforced Concrete Slab Overlay, Slab on Prestressed Concrete Deck Beams, Concrete Approach Pavement, Bridge Approach Slabs, Safety Barriers, and Sidewalk on Structure where applicable. This specification shall be used for modifying pavement and/or structural concrete used in this project (PCCP, High Early or Very Early Opening Strength PCCP Repairs; Class B-1, B-2 or MB-2). Concrete shall be modified with lightweight fine aggregate (LWA) substituted for a portion of the standard fine aggregate using intermediate expanded shale, clay or slate (ESCS) lightweight fine aggregate to aid the curing process internally.

The conventional concrete mixture being modified shall satisfy all project requirements and specifications for constituent materials and for both fresh and hardened concrete properties.

The ICC mixture shall meet all project requirements and specifications for constituent materials and for both fresh and hardened concrete properties, including the additional requirements in this specification.

Materials and Design.

All materials shall conform to Division 1000, Materials Details, and specifically as follows:

Lightweight Aggregate. Lightweight aggregate for internal curing shall conform to the requirements in ASTM C 1761 *Standard Specification for Lightweight Aggregate for Internal Curing of Concrete*.

All materials, proportioning, air-entraining, mixing, slump, and transporting of internally cured concrete (ICC) shall be in accordance with Section 501, 502, 703 or 704, as applicable, with the following modifications:

1. Design an internal cure concrete mixture with lightweight fine aggregate, proportioned according to the American Concrete Institute Manual of Concrete Practice, ACI 211.2, Standard Practice for Selecting Proportions for Structural Lightweight Concrete. Produce a homogeneous mixture of cementitious materials, fine aggregate, lightweight fine aggregate, coarse aggregate, air entraining agent, water-reducing and set-retarding admixture, and water as designed.
2. Use a minimum total cementitious content for PCCP, High Early or Very Early Opening Strength PCCP Repairs; Class B-1, B-2 or MB-2 in accordance with Section 501.3.3. Use Type III cement as specified or Type I/II cement with the maximum allowable percentage of at least one supplementary cementitious material.
3. Substitute lightweight fine aggregate, meeting the requirements of ASTM C 1761, by volume of the standard fine aggregate. The lightweight fine aggregate shall also meet the chemical and physical requirements listed below.

Chemical Requirements	**Test Method**	**Minimum**	**Maximum**
Organic Impurities	ASTM C 40	Shall not produce a color darker than the standard solution (3)	
Staining, stain index	ASTM C 641	--	60

Chemical Requirements	**Test Method**	**Minimum**	**Maximum**
Loss on Ignition, percent	ASTM C 114	--	5
Physical Property	**Test Method**	**Minimum**	**Maximum**
Clay Lumps and Friable Particles, percent	ASTM C 142	--	2.0
Grading	ASTM C 136 and as modified by ASTM C 330	In accordance with Table I of ASTM C 1761	
Oven Dry Loose Density, lb/ft^3	ASTM C 29 (shovel method)	--	70
Relative Density (specific gravity) of pre-wetted LWA	ASTM C 127	As reported	
Water Absorption, percent	ASTM C 1761, Section 10	5	--
Desorption @ 94% Relative Humidity, percent released	ASTM C 1761, Section 11	85	--

4. **Stockpile Construction and Maintenance**. Construct lightweight fine aggregate stockpile(s) at the production facility so as to maintain uniform moisture throughout the pile. Using a sprinkler system approved by the Materials Engineer, continuously and uniformly sprinkle the stockpile(s) with potable water for a minimum of 48 hours. If a steady rain of comparable intensity occurs, the producer may turn off the sprinkler system at the direction of the Materials Engineer, until the rain ceases. At the end of the wetting period, or after the rain ceases, allow the stockpile(s) to drain for 12 to 15 hours immediately prior to use, unless otherwise directed by the Materials Engineer.

5. **Mix Design.** After the materials have been accepted for this work, determine the proportions for ICC and equivalent batch masses based on trials made with materials to be used in the work. Make appropriate adjustments to the specific gravity (Bulk SSD) and fineness modulus of the combined fine aggregate when developing the mix design.

   At least 14 days prior to concrete placement, provide the Chief Materials Engineer with a copy of the trial mix design with data in accordance with Section 501 and as follows:

   a. The Chief Materials Engineer, or his representative, will approve the batch weights prior to use. Use these values to manufacture all high performance concrete with lightweight fine aggregate for this project, and periodically correct the batch weights to account for changes in the fine aggregate fineness modulus and aggregate moisture contents.

6. Achieve a minimum 28-day compressive strength as specified in Sec 501 for the mix designation used.

CONSTRUCTION DETAILS

A. Apply the provisions of Section 501 and the following modifications:

Add the following to Section 501.12.8 Handling of Materials:

i. The minimum absolute volume of lightweight fine aggregate needed to replace normal weight fine aggregate shall be determined from the weight of internal moisture required for internal curing. The weight of internal moisture shall be 7 pounds per 100 pounds of total cementitious material per cubic yard. Use the following formula to compute the absolute volume, in cubic feet, of pre-wetted lightweight aggregate per cubic yard of concrete.

$$LWA_{AV} = \frac{0.07\ (\text{total weight of cementitious material})\ (1 + \text{absorption})\ /\ ((\text{absorption})(\text{desorption}))}{62.4 \times \text{Lightweight Aggregate Relative Density}}$$

Where:

LWA_{AV} = Absolute volume of pre-wetted lightweight aggregate per cubic yard of concrete, ft^3/yd^3;

The total weight of cementitious material is expressed in lbs;

The absorption and desorption values are expressed as decimal fractions; and

The absorption and desorption values used to compute LWA_{AV} shall be for the specific source of lightweight fine aggregate selected for use in the internally cured concrete mixture.

ii. Batch the lightweight fine aggregate with some mixing water first, and then routinely batch the fine aggregate, coarse aggregate, admixtures, cementitious, and remaining mixing water and mix completely.

B. **ICC Mixture.** The proportions of the ICC mixture shall be determined by modifying the proportions of the conventional normal weight concrete mixture in the following manner: the volume of pre-wetted lightweight aggregate that corresponds to LWA_{AV} computed above shall replace an equal volume of normal weight fine aggregate. Other minor adjustments to the mixture may be made to achieve mixture performance requirements. Trial batches shall be conducted to demonstrate that the internally cured concrete mixture satisfies project requirements. Submit the internally cured concrete mixture design and any test results as required by the contract documents.

Submittals shall include the absorption and desorption values for the selected source of lightweight aggregate that were used to compute the quantity of pre-wetted lightweight aggregate required to supply the water for internal curing.

Construction.

The ICC mixture shall be batched, transported, placed and finished to meet all requirements specified in the contract documents for the conventional normal weight concrete mixture.

The free moisture content of the pre-wetted lightweight aggregate shall be determined immediately prior to batching as specified above. Batching weights shall be adjusted to account for the free moisture in the lightweight fine aggregate.

Water absorbed in the lightweight aggregate is retained within the aggregate during mixing and does not affect the quantity of mix water. Therefore, batching weights shall not be adjusted for the absorbed moisture on the pre-wetted lightweight aggregate.

Density of ICC should be greater than 135 pcf.

Acceptance.

Physical Properties. Physical properties of the mix shall be in accordance with Section 501.

Method of Measurement.

Measurement for the ICC PCCP, High Early or Very Early Opening Strength PCCP Repairs; Class B-1, B-2 or MB-2 concrete shall be in accordance with the contract special provisions, Sec 502 or Sec 703.4.

Basis of Payment.

The work performed and the materials furnished under this item will be paid for in accordance with the contract special provisions, Sec 502 or Sec 703.5 and at the contract unit price for each of the pay items included in the contract.

7. ITEMIZED BID. The undersigned submits the following itemized bid and hereby authorizes the Director to correct any multiplication of "Unit Price" by "Quantity" as shown under "Amount" when copying the itemized bid sheet(s) into any contract.

8. TIME FOR COMPLETION. If this bid is accepted the undersigned hereby agrees that work will begin not later than the authorization date in the Notice to Proceed and will be diligently prosecuted at such rate and in such manner as, in the judgment of the Director, is necessary for the completion of the work within the time specified as follows:

Completion Date: November 1, 2015

9. LIQUIDATED DAMAGES. The undersigned further agrees that, should he fail to complete the work on the date, or in the time specified, or reopen the roadway within the 90 calendar day road closure limit, or such additional time as may be allowed by the Director under the contract, the amount of liquidated damages to be recovered, in accordance with the requirements of Section 108.7 of the Standard Specifications, shall survive as follows:

Liquidated Damages Per Day: $1,100.00

Failure to begin temporary striping within the time specified:

Liquidated Damages Per Hour: $ 200.00

10. BID GUARANTEE. The undersigned submits and attaches to this bid a bid guarantee meeting the following requirements: Each Bid shall be accompanied by a certified check or cashier's check equal to five (5) percent of the total bid, payable to **"Treasurer, St. Louis County"**, to the use of the County, or a bidders bond, in like sum, executed by a surety company authorized to so business in the State of Missouri, as a guarantee on the part of the bidder that if its bid be accepted, it will, within ten (10) days after receipt of notice of such acceptance, enter into a contract and bond to do the work advertised; and, in case of default, forfeit such bid guaranty. The provisions of Section 103.4.1 shall also apply to this bid guaranty. Bid guarantees will be returned as per Section 103.3, Standard Specifications.

11. SUPERVISION OF WORK. The undersigned intends to have the following person(s) supervise the work:

_____ _____

_____ _____

ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	ROADWAY ITEMS				
201-20.10	Clearing and Grubbing	L.S.	1		
202-20.10	Removal of Improvements	L.S.	1		
202-22.30	Removal of Rigid Pavement	S.Y.	563		
203-10.00	Class "A" Excavation	C.Y.	7216.6		
203-10.30	Land Disturbance Permits	L.S.	1		
304-05.04	Type 5 Aggregate Base (4" Thick)	S.Y.	5729.7		
404-12.72	Superpave Asphaltic Concrete Mixture SP125 (PG 70-22)DLP *	TON	461.1		
405-30.10	Type "C" Bituminous Concrete (Pavement) *	TON	27.2		
405-30.30	Type "X" Bituminous Concrete (Base) *	TON	2040.2		
407-10.27	Tack-Emulsified Asphalt (SS-1H) *	GAL.	410		
408-10.15	Prime-Liquid Asphalt (MC30) *	GAL.	1350		
502-11.06	Concrete Pavement (6" Non-reinforced)	S.Y.	87.6		
502-11.07	Concrete Pavement (7" Non-reinforced) *	S.Y.	176.7		

* INDICATES CHANGES DUE TO ADDENDUM NO. 2 REVISIONS

ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
504-10.20	Concrete Approach Pavement	S.Y.	222		
509-11.06	Concrete Base (6" Non-reinforced) *	S.Y.	205.7		
603-10.09	Expose Water Service House Leads (Less than 2")	EACH	1		
603-10.10	Relocating House Water Service Lead	L.F.	80		
603-10.20	Relocating Water Service Valve and Box	EACH	2		
603-10.25	Relocating Water Service Meter and Box	EACH	1		
604-12.01	Single Curb Inlet, Untrapped	EACH	11		
604-14.04	Area Inlet, Single, Open 4 Sides, Untrapped	EACH	1		
604-19.27	Manhole	EACH	2		
604-20.30	Adjusting Manhole to Grade	EACH	1		
604-23.04	Hydrodynamic Separator (4')	EACH	2		
604-40.11	Pipe Collar, Type "A" (Concrete)	EACH	2		
605-10.10	Class "A" Underdrain	L.F.	88		
606-10.10	Guardrail, Type "A"	L.F.	20		

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ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
606-23.00	Transition Section	EACH	3		
606-30.97	Crashworthy Guardrail Terminal, Modified (25.0' Length)	EACH	3		
608-50.06	Paved Approach (6")	S.Y.	25.6		
608-50.07	Paved Approach (7")	S.Y.	126.5		
609-10.15	Concrete Curb, Modified Type "S"	L.F.	47		
609-10.42	Concrete Gutter, Type "B"	L.F.	251.5		
609-10.53	Curb and Gutter, Vertical *	L.F.	2034.4		
611-50.30	Heavy Stone Revetment	S.Y.	190.5		
612-10.20	Moveable Barricades with Model "B" Amber Flashers (2 Each per Barricade)	EACH	6		
612-30.10	Standard Traffic Control Devices	L.S.	1		
612-70.20	Changeable Message Board (Noiseless), Rental	EACH	2		
615-10.00	Office for Engineer	MO.	10		
616-10.05	Construction Signs	S.F.	186.25		
616-10.25	Channelizer (Trim Line)	EACH	62		

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ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
616-10.95	Edge Drop-Off Treatment	L.F.	1932		
617-20.01	Concrete Median Barrier, Type "B" Modified	L.F.	169		
619-00.00	Mobilization	L.S.	1		
622-10.01	Temporary Pavement Markings, Tape (Includes Removal)	S.F.	200		
726-23.15	15" Class III Reinforced Concrete Pipe Culvert (Gasket Type)	L.F.	777		
726-25.15	15" Class V Reinforced Concrete Pipe Culvert (Gasket Type)	L.F.	131		
726-54.08	8" Polyvinyl Chloride Pipe	L.F.	20		
726-54.12	12" Polyvinyl Chloride Pipe	L.F.	26.9		
732-00.15	15" Flared End Section	EACH	2		
802-30.00	Type 3 Mulch (Vegetative with an Overspray)	ACRE	1		
803-10.00	Sodding	S.Y.	1603.4		
805-10.00	Seeding	ACRE	1.1		
806-55.00	Storm Water Pollution Prevention Plan (SWPPP)	L.S.	1		
	SUBTOTAL Roadway Items				

ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	STRUCTURAL ITEMS				
202-10.20	Removal of Bridges	L.S.	1		
202-22.17	Removal of Asbestos (Bridge Demolition)	L.S.	1		
206-10.00	Class 1 Excavation	C.Y.	1507		
503-10.00	Bridge Approach Slab	S.Y.	238		
606-20.00	Bridge Anchor Section	EACH	3		
606-20.01	Bridge Anchor Section (Modified) *	EACH	1		
607-10.60	Pedestrian Fence (Structure)	L.F.	200		
607-30.25	Aluminum Handrail (Structure)	L.F.	252		
702-10.12	Structural Steel Piles (12")	L.F.	480		
702-70.00	Pile Point Reinforcement	EACH	16		
703-03.00	Bridge Deck Surface Penetration Sealer	S.F.	2070		
703-40.03	Class "B-1" Concrete (Substructure) *	C.Y.	149		
703-42.15	Safety Barrier Curb (Bridges, Cast-in-Place)	L.F.	99		

ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
703-42.30	Slab on Prestressed Concrete Deck Beams	S.Y.	230		
703-44.40	Bridge Plaque	EACH	1		
703-90.13	Modular Block Wall (h>4')	S.F.	2500		
705-14.48	Prestressed Concrete Members, Box Section, 48' Span	EACH	7		
710-60.00	Reinforcing Steel (Epoxy-Coated) (Grade 60) *	LBS.	13300		
715-10.00	Vertical Drain at End Bents	EACH	2		
	SUBTOTAL Structural Items				
COUNTY TRAFFIC SIGNAL ITEMS					
904-93.10	Temporary Signal Installation	EACH	2		
	SUBTOTAL County Traffic Signal Items				
PEDESTRIAN AND BICYCLE ITEMS					
608-60.04	Concrete Sidewalk (4" Thick) *	S.Y.	709		
608-60.06	Concrete Sidewalk (6" Thick)	S.Y.	14.6		
608-60.07	Concrete Sidewalk, Curb Ramp (7" Thick)	S.Y.	6.9		
608-60.98	Truncated Domes for Curb Ramps (New Construction)	S.F.	16		

* INDICATES CHANGES DUE TO ADDENDUM NO. 2 REVISIONS

ITEMIZED BID

FEDERAL PROJECT NO. STP-5574(604)
COUNTY PROJECT NO. AR-1133

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	SUBTOTAL Pedestrian and Bicycle Items				
	PROJECT TOTAL				

SUB-TOTALS	TOTAL	UNIT	ITEM NO.	DESCRIPTION	REMARKS
				ROADWAY ITEMS	
1	1	L.S.	201-20.10	Clearing and Grubbing	
1	1	L.S.	202-20.10	Removal of Improvements	Sawcutting Incidental
563	563	S.Y.	202-22.30	Removal of Rigid Pavement	Sawcutting Incidental
6560.5	7216.6	C.Y.	203-10.00	Class "A" Excavation	Includes 10% additional.
1	1	L.S.	203-10.30	Land Disturbance Permits	
5208.8	5729.7	S.Y.	304-05.04	Type 5 Aggregate Base (4" Thick)	Includes 10% additional.
419.2	461.1	Ton	404-12.72	Superpave Asphaltic Concrete Mixture SP125 (PG70-22) DLP	Estimated at 2.16 Ton/ CY. 10% added.
⚠ 24.7	27.2	Ton	405-30.10	Type "C" Bituminous Concrete (Pavement)	Estimated at 2.16 Ton/ CY. 10% added.
⚠1854.7	2040.2	Ton	405-30.30	Type "X" Bituminous Concrete (Base)	Estimated at 2.16 Ton/ CY. 10% added.
⚠ 371	410.0	Gal.	407-10.27	Tack-Emulsified Asphalt (SS-1H)	Estimated at 0.10 Gallon / SY. 10% added.
⚠ 1223	1350.0	Gal.	408-10.15	Prime-Liquid Asphalt (MC30)	Estimated at 0.35 Gallon / SY 10% added.
87.6	87.6	S.Y.	502-11.06	Concrete Pavement (6" Non-reinforced)	
⚠ 176.7	176.7	S.Y.	502-11.07	Concrete Pavement (7" Non-reinforced)	
222	222	S.Y.	504-10.20	Concrete Approach Pavement	
⚠ 205.7	205.7	S.Y.	509-11.06	Concrete Base (6" Non-reinforced)	
1	1	Each	603-10.09	Expose Water Service House Leads (Less than 2")	
80	80	L.F.	603-10.10	Relocating House Water Service Lead	
2	2	Each	603-10.20	Relocating Water Service Valve and Box	
1	1	Each	603-10.25	Relocating Water Service Meter and Box	
11	11	Each	604-12.01	Single Curb Inlet, Untrapped	
1	1	Each	604-14.04	Area Inlet, Single, Open 4 Sides, Untrapped	
2	2	Each	604-19.27	Manhole	
1	1	Each	604-20.30	Adjusting Manhole to Grade	
2	2	Each	604-23.04	Hydrodynamic Separator (4')	
2	2	Each	604-40.11	Pipe Collar, Type "A" (Concrete)	
88	88	L.F.	605-10.10	Class "A" Underdrain	
20	20	L.F.	606-10.10	Guardrail, Type "A"	
3	3	Each	606-23.00	Transition Section	
3	3	Each	606-30.97	Crashworthy Guardrail Terminal, Modified (25.0' Length)	
25.6	25.6	S.Y.	608-50.06	Paved Approach (6")	
126.5	126.5	S.Y.	608-50.07	Paved Approach (7")	
47	47	L.F.	609-10.15	Concrete Curb, Modified Type "S"	
251.5	251.5	L.F.	609-10.42	Concrete Gutter, Type "B"	
⚠2034.4	2034.4	L.F.	609-10.53	Curb and Gutter, Vertical	
190.5	190.5	S.Y.	611-50.30	Heavy Stone Revetment	
6	6	Each	612-10.20	Moveable Barricades with Model "B" Amber Flashers (2 Each per Barricade)	
1	1	L.S.	612-30.10	Standard Traffic Control Devices	
2	2	Each	612-70.20	Changeable Message Board (Noiseless), Rental	
10	10	Mo.	615-10.00	Office for Engineer	
186.3	186.3	S.F.	616-10.05	Construction Signs	
62	62	Each	616-10.25	Channelizer (Trim Line)	
1932	1932	L.F.	616-10.95	Edge Drop-Off Treatment	
169	169	L.F.	617-20.01	Concrete Median Barrier, Type "B" Modified	
1	1	L.S.	619-00.00	Mobilization	
200	200	S.F.	622-10.01	Temporary Pavement Markings, Tape (Includes Removal)	
777	777	L.F.	726-23.15	15" Class III Reinforced Concrete Pipe Culvert (Gasket Type)	
131	131	L.F.	726-25.15	15" Class V Reinforced Concrete Pipe Culvert (Gasket Type)	
20	20	L.F.	726-54.08	8" Polyvinyl Chloride Pipe	
26.9	26.9	L.F.	726-54.12	12" Polyvinyl Chloride Pipe	
2	2	Each	732-00.15	15" Flared End Section	
1	1	Acre	802-30.00	Type 3 Mulch (Vegetative with an Overspray)	
1457.6	1603.4	S.Y.	803-10.00	Sodding	Includes 10% additional.
1	1.1	Acre	805-10.00	Seeding	Includes 10% additional.
1	1	L.S.	806-55.00	Storm Water Pollution Prevention Plan (SWPPP)	
				STRUCTURAL ITEMS	
1	1	L.S.	202-10.20	Removal of Bridges	
1	1	L.S.	202-22.17	Removal of Asbestos (Bridge Demolition)	
1370	1507	C.Y.	206-10.00	Class 1 Excavation	Includes 10% additional.
238	238	S.Y.	503-10.00	Bridge Approach Slab	
3	3	Each	606-20.00	Bridge Anchor Section	
⚠ 1	1	Each	606-20.01	Bridge Anchor Section (Modified)	
200	200	L.F.	607-10.60	Pedestrian Fence (Structure)	
251.5	252	L.F.	607-30.25	Aluminum Handrail (Structure)	
480	480	L.F.	702-10.12	Structural Steel Piles (12")	
16	16	Each	702-70.00	Pile Point Reinforcement	
2070	2070	S.F.	703-03.00	Bridge Deck Surface Penetration Sealer	
⚠ 149	149	C.Y.	703-40.03	Class "B-1" Concrete (Substructure)	
99	99	L.F.	703-42.15	Safety Barrier Curb (Bridges, Cast-in-Place)	
230	230	S.Y.	703-42.30	Slab on Prestressed Concrete Deck Beams	
1	1	Each	703-44.40	Bridge Plaque	
2500	2500	S.F.	703-90.13	Modular Block Wall (h>4')	
7	7	Each	705-14.48	Prestressed Concrete Members, Box Section, 48' Span	
⚠13300	13300	Lbs.	710-60.00	Reinforcing Steel (Epoxy-Coated) (Grade 60)	
2	2	Each	715-10.00	Vertical Drain at End Bents	

SUB-TOTALS	TOTAL	UNIT	ITEM NO.	DESCRIPTION	REMARKS
				COUNTY TRAFFIC SIGNAL ITEMS	
2	2	Each	904-93.10	Temporary Signal Installation	
				PEDESTRIAN AND BICYCLE ITEMS	
⚠ 709	709	S.Y.	608-60.04	Concrete Sidewalk (4" Thick)	
14.6	14.6	S.Y.	608-60.06	Concrete Sidewalk (6" Thick)	
6.9	6.9	S.Y.	608-60.07	Concrete Sidewalk, Curb Ramp (7" Thick)	
16	16	S.F.	608-60.98	Truncated Domes for Curb Ramps (New Construction)	

EARTHWORK SUMMARY (C.Y.)

	CUT	FILL	NET
Mainline Section	6560.5	548.9	-6011.6
	6560.5	548.9	6011.6
Bridge Section	1370.0	0.0	-1370.0
	1370.0	0.0	1370.0

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
1	10-13-14	KJ		ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY
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STATE OF MISSOURI
JOSEPH W. KULESSA
NUMBER PE-2010000841
PROFESSIONAL ENGINEER

DATE: 10/21/2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
1ST FLOOR
ST. LOUIS, MISSOURI 63132
(314) 615-8543

JOSEPH W. KULESSA
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LICENSE NO. PE-2010000841

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE
NO. 211

SUMMARY OF QUANTITIES
(SHEET 1 OF 3)

DESIGNED: E.C. DAM
DRAWN: J.A. BROWN
CHECKED: J.W. KULESSA

SHEET SEQUENCE:
2 OF 57

202-22.30 REMOVAL OF RIGID PAVEMENT ⚠

LOCATION	STA.	STA.	SIDE	QUANTITY (S.Y.)	REMARKS
MASON ROAD	4+08.00	5+82.79	LT./RT.	563.0	Existing Concrete Pavement
	TOTAL:			563.0	

304-05.04 TYPE 5 AGGREGATE BASE (4" THICK)

LOCATION	STA.	STA.	SIDE	QUANTITY (S.Y.)	REMARKS
MASON ROAD	4+08.00	12+38.79	LT./RT.	2752.5	Mainline Pavement
MASON ROAD	13+99.29	18+66.00	LT./RT.	1387.3	Mainline Pavement
MASON ROAD	4+46.98		LT.	77.7	Paved Approach
MASON ROAD	6+72.42		RT.	48.8	Paved Approach
MASON ROAD	12+33.18		LT.	205.7	Paved Approach
MASON ROAD	16+18.76		RT.	6.9	Curb Ramp
MASON ROAD	14+94.28		RT.	113.2	Paved Approach and Driveway
BELLERIVE SPRINGS DR	0+13.50	0+60.15	RT.	176.7	
MASON ROAD	10+39.82	12+25.25	LT.	47.7	Temporary Pavement
MASON ROAD	15+70.92	19+83.30	LT.	155.7	Temporary Pavement
MASON ROAD	6+51.39	6+56.39	RT.	3.4	Sidewalk adjacent to Driveway
MASON ROAD	6+87.43	6+92.65	RT.	3.4	Sidewalk adjacent to Driveway
MASON ROAD	14+79.66	14+84.66	RT.	3.9	Sidewalk adjacent to Driveway
MASON ROAD	15+05.05	15+10.05	RT.	3.9	Sidewalk adjacent to Driveway
	TOTAL:			4986.8	

404-12.72 SUPERPAVE ASPHALTIC CONCRETE MIXTURE SP125 (PG70-20) SLP

LOCATION	STA.	STA.	SIDE	(S.Y.)	QUANTITY (Ton)	REMARKS
MASON ROAD	4+08.00	12+38.79	LT./RT.	2105.7	252.7	Mainline Pavement; 2" Thick
MASON ROAD	13+99.29	18+66.00	LT./RT.	1387.3	166.5	Mainline Pavement; 2" Thick
	TOTAL:				419.2	

405-30.10 TYPE C BITUMINOUS PAVEMENT ⚠

LOCATION	STA.	STA.	SIDE	(S.Y.)	QUANTITY (Ton)	REMARKS
MASON ROAD	12+33.18		LT.	205.7	24.7	Paved Approach
	TOTAL:				24.7	

405-30.30 TYPE X BITUMINOUS CONCRETE (BASE) ⚠

LOCATION	STA.	STA.	SIDE	(S.Y.)	QUANTITY (Ton)	REMARKS
MASON ROAD	4+08.00	12+38.79	LT./RT.	2105.7	1073.9	Mainline Pavement; 8.5" Thick
MASON ROAD	13+99.29	18+66.00	LT./RT.	1387.3	707.5	Mainline Pavement; 8.5" Thick
MASON ROAD	10+39.82	12+25.25	LT.	47.7	17.2	Temporary Pavement; 6" Thick
MASON ROAD	15+70.92	19+83.30	LT.	155.7	56.1	Temporary Pavement; 6" Thick
	TOTAL:				1854.7	

407-10.27 TACK-EMULSIFIED ASPHALT (SS-1H) ⚠

LOCATION	STA.	STA.	SIDE	(S.Y.)	QUANTITY (Gal)	REMARKS
MASON ROAD	4+08.00	12+38.79	LT./RT.	2105.7	211.0	Mainline Pavement
MASON ROAD	13+99.29	18+66.00	LT./RT.	1387.3	139.0	Mainline Pavement
MASON ROAD	12+33.18		LT.	205.7	21.0	Paved Approach
	TOTAL:				371.0	

408-10.15 PRIME-LIQUID ASPHALT (MC30) ⚠

LOCATION	STA.	STA.	SIDE	(S.Y.)	QUANTITY (Gal)	REMARKS
MASON ROAD	4+08.00	12+38.79	LT./RT.	2105.7	737.0	Mainline Pavement
MASON ROAD	13+99.29	18+66.00	LT./RT.	1387.3	486.0	Mainline Pavement
	TOTAL:				1223.0	

502-11.06 CONCRETE PAVEMENT (6" NON-REINFORCED)

LOCATION	STA.	STA.	SIDE	QUANTITY (S.Y.)	REMARKS
MASON ROAD	14+94.28		RT.	87.6	Driveway
	TOTAL:			87.6	

502-11.07 CONCRETE PAVEMENT (7" NON-REINFORCED) ⚠

LOCATION	STA.	STA.	SIDE	QUANTITY (S.Y.)	REMARKS
BELLERIVE SPRINGS DR	0+13.50	0+60.15	RT.	176.7	Sidestreet Approach
	TOTAL:			176.7	

509-11.06 CONCRETE BASE (6" NON-REINFORCED) ⚠

LOCATION	STA.	STA.	SIDE	QUANTITY (S.Y.)	REMARKS
MASON ROAD	12+33.18		LT.	205.7	Paved Approach
	TOTAL:			205.7	

603-10.09 EXPOSE WATER SERVICE HOUSE LEADS (LESS THAN 2")

LOCATION	STA.	STA.	SIDE	EACH	REMARKS
MASON ROAD	15+20.64		RT.	1.0	338 North Mason Road
	TOTAL:			1.0	

603-10.10 RELOCATING HOUSE WATER SERVICE LEAD

LOCATION	STA.	STA.	SIDE	(L.F.)	REMARKS
MASON ROAD	15+20.64		RT.	30.0	338 North Mason Road
MASON ROAD	11+50.00		LT.	50.0	12925 Ladue Road
	TOTAL:			80.0	

603-10.20 RELOCATING WATER SERVICE VALVE AND BOX

LOCATION	STA.	STA.	SIDE	EACH	REMARKS
MASON ROAD	16+70.96		LT.	1.0	Mainline Pavement
MASON ROAD	15+20.64		RT.	1.0	338 North Mason Road
	TOTAL:			2.0	

603-10.25 RELOCATING WATER SERVICE METER AND BOX

LOCATION	STA.	OFFSET	SIDE	EACH	REMARKS
MASON ROAD	15+20.64		RT.	1.0	338 North Mason Road
	TOTAL:			1.0	

607-30.25 ALUMINUM HANDRAIL (STRUCTURE)

LOCATION	STA.	OFFSET	SIDE	EACH	REMARKS
MASON ROAD	7+49.80	10+01.29	RT.	251.5	Retaining Wall
	TOTAL:			251.5	

608-50.06 PAVED APPROACH (6")

LOCATION	STA.	OFFSET	SIDE	S.Y.	REMARKS
MASON ROAD	14+94.28		RT.	25.6	
	TOTAL:			25.6	

608-50.07 PAVED APPROACH (7")

LOCATION	STA.	OFFSET	SIDE	S.Y.	REMARKS
MASON ROAD	4+46.98		LT.	77.7	Commerical Entrance
MASON ROAD	6+72.42		RT.	48.8	Commerical Entrance
	TOTAL:			126.5	

608-60.04 CONCRETE SIDEWALK (4" THICK) ⚠

LOCATION	STA.	STA.	SIDE	S.Y.	REMARKS
MASON ROAD	2+92.89	12+68.70	RT.	551.0	
MASON ROAD	13+69.29	16+18.78	RT.	158.0	
	TOTAL:			709.0	

608-60.06 CONCRETE SIDEWALK, (6" THICK)

LOCATION	STA.	OFFSET	SIDE	S.Y.	REMARKS
MASON ROAD	6+51.39	6+56.39	RT.	3.4	Sidewalk adjacent to Driveway
MASON ROAD	6+87.43	6+92.65	RT.	3.4	Sidewalk adjacent to Driveway
MASON ROAD	14+79.66	14+84.66	RT.	3.9	Sidewalk adjacent to Driveway
MASON ROAD	15+05.05	15+10.05	RT.	3.9	Sidewalk adjacent to Driveway
	TOTAL:			14.6	

608-60.07 CONCRETE SIDEWALK, CURB RAMP (7" THICK)

LOCATION	STA.	OFFSET	SIDE	S.Y.	REMARKS
MASON ROAD	16+18.76	18	RT.	6.9	
	TOTAL:			6.9	

608-60.98 TRUNCATED DOMES FOR CURB RAMPS (NEW CONSTRUCTION)

LOCATION	STA.	OFFSET	SIDE	S.F.	REMARKS
MASON ROAD	16+25.00	18	RT.	16.0	
	TOTAL:			16.0	

609-10.15 CONCRETE CURB, TYPE "S"

LOCATION	STA.	STA.	SIDE	L.F.	REMARKS
PRIVATE DRIVE	11+98.22	12+01.48	LT.	47.0	Driveway (Left Side Only)
	TOTAL:			47.0	

609-10.42 CONCRETE GUTTER, TYPE "B"

LOCATION	STA.	STA.	SIDE	L.F.	REMARKS
MASON ROAD	7+49.80	10+01.29	RT.	251.5	Retaining Wall
	TOTAL:			251.5	

609-10.53 CURB AND GUTTER, VERTICAL

LOCATION	STA.	STA.	SIDE	L.F.	REMARKS
MASON ROAD	4+08.00	11+98.22	LT.	723.0	Mainline Pavement
MASON ROAD	4+08.00	12+68.77	RT.	772.8	Mainline Pavement
MASON ROAD	13+99.29	16+09.14	LT.	197.6	Mainline Pavement
MASON ROAD	13+69.29	16+98.82	RT.	341.0	Mainline Pavement
	TOTAL:			2034.4	

802-30.00 TYPE 3 MULCH (VEGETATIVE WITH AN OVERSPRAY)

LOCATION	STA.	STA.	SIDE	ACRE	REMARKS
MASON ROAD	7+00.00	12+93.89	LT.	0.4	
MASON ROAD	13+69.16	18+66.00	LT.	0.2	
MASON ROAD	6+83.17	12+93.89	RT.	0.4	Retaining Wall Area
	TOTAL:			1.0	

803-10.00 SODDING

LOCATION	STA.	STA.	SIDE	S.Y.	REMARKS
MASON ROAD	2+92.89	12+68.70	RT.	529.4	
MASON ROAD	13+69.16	18+66.00	RT.	545.7	
MASON ROAD	4+08.00	7+00.00	LT.	382.5	
	TOTAL:			1457.6	

805-10.00 SEEDING

LOCATION	STA.	STA.	SIDE	ACRE	REMARKS
MASON ROAD	7+00.00	12+93.89	LT.	0.4	
MASON ROAD	13+69.16	18+66.00	LT.	0.2	
MASON ROAD	6+83.17	12+93.89	RT.	0.4	Retaining Wall Area
	TOTAL:			1.0	

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

REV	DATE	BY	APP.	DESCRIPTION
1	10-13-14	KJJ		ADDENDUM NO. 2

DISCLAIMER OF ENGINEER'S RESPONSIBILITY
I hereby certify that the documents intended to be authorized by my seal are limited to this sheet, and I assume no responsibility for any other Drawings, Specifications, Reports, Plans or other documents or instruments relating to or intended to be used for any part of the engineering project or survey

STATE OF MISSOURI
JOSEPH W. KULESSA
NUMBER PE2010000841
PROFESSIONAL ENGINEER

DATE: 10/21/2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
STE. 210 FLOOR 2
ST. LOUIS, MISSOURI 63132
(314) 615-5543

JOSEPH W. KULESSA
PROFESSIONAL ENGINEER
LICENSE NO. PE-2010000841

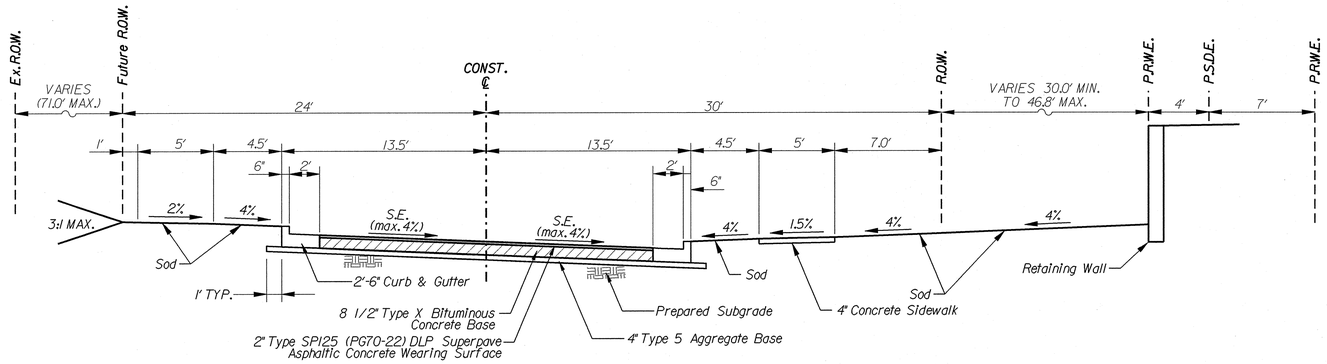
Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE NO. 211

SUMMARY OF QUANTITIES (SHEET 2 OF 3)

DESIGNED: E.C. DAM
DRAWN: J. A. BROWN
CHECKED: J.W. KULESSA

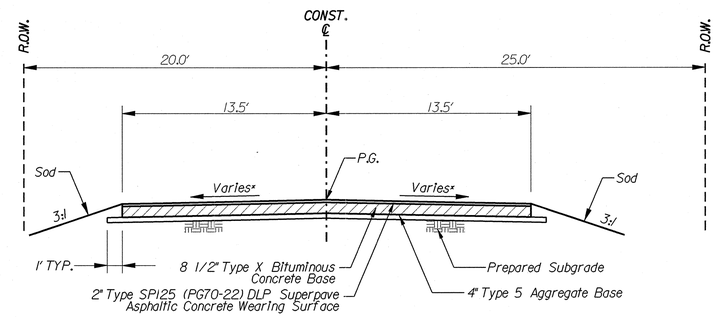
SHEET SEQUENCE:
3 OF 57



TYPICAL SECTION - MASON ROAD
STA. 6+38.12 TO STA. 12+38.78

NOTES:

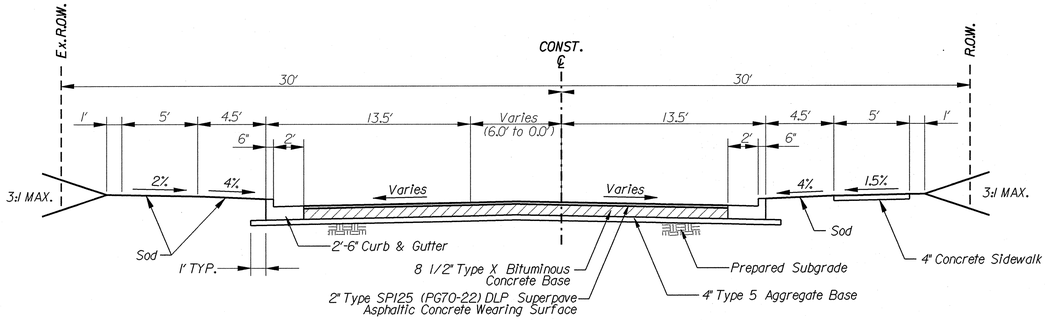
1. Retaining wall Sta. 7+49.80 to Sta. 10+01.29.
2. Bridge Sections Sta. 12+38.78 to Sta. 13+99.29.



TYPICAL SECTION - MASON ROAD
STA. 16+09.14 TO STA. 18+66.00

NOTES:

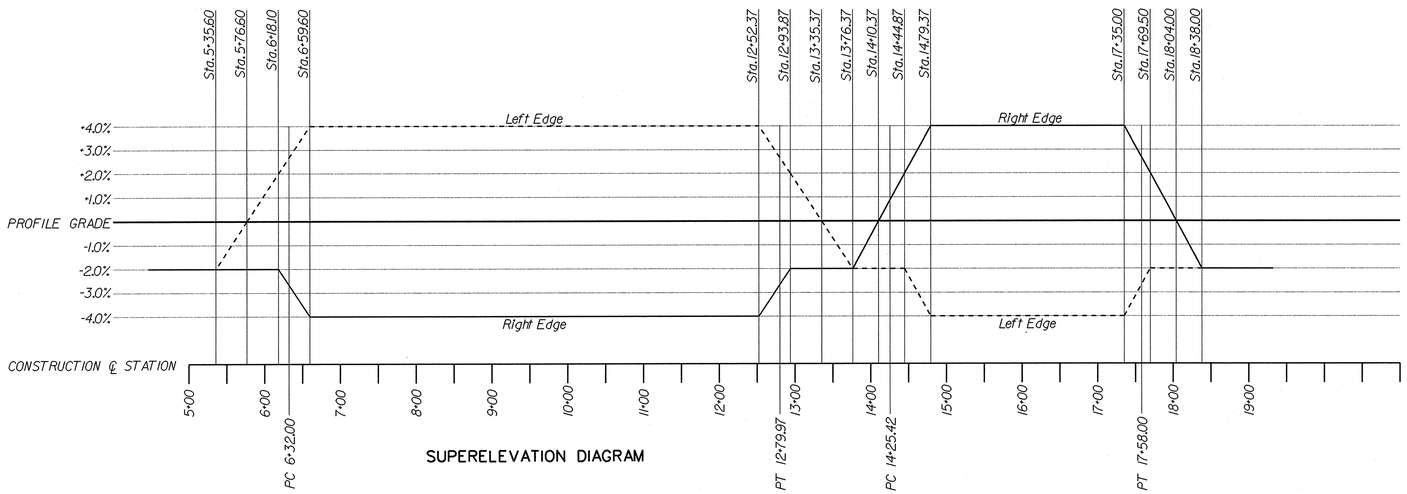
1. Bellerive Springs Dr. at Rt. edge of pavement, Sta. 16+09.14 to Sta. 16+98.87.



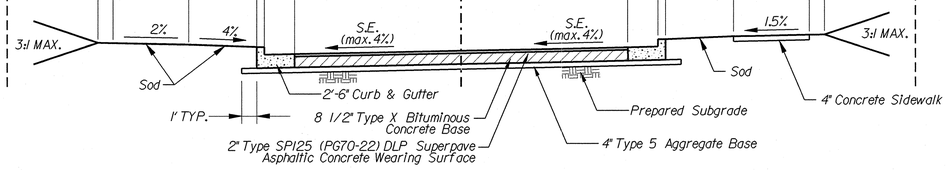
TYPICAL SECTION - MASON ROAD
STA. 4+08.00 TO STA. 6+38.12

NOTES:

1. Sidewalk begins at Sta. 2+92.89, 24' RT. Transitions from 24' Rt. to 18.0' Rt. Sta. 3+95.92 to Sta. 4+08.00.

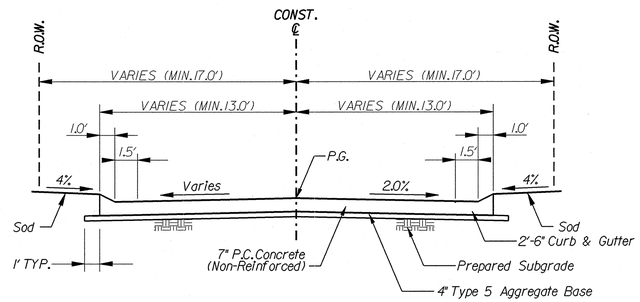


SUPERELEVATION DIAGRAM



TYPICAL SECTION - MASON ROAD
STA. 13+99.29 TO STA. 16+09.14

NOTES:
1. Bridge Section from Sta. 12+68.78 to Sta. 13+99.29



TYPICAL SECTION - BELLERIVE SPRINGS DRIVE

REVISIONS			
REV	DATE	BY	APP.	DESCRIPTION
1	10/03/14	KJJ		ADDENDUM NO. 2

COUNTY PROJECT NO. AR-1133
FEDERAL PROJECT NO. STP-5574(604)
E-W GATEWAY TIP NO. 5808-13
MSD: P-29044-00
MSD BASE MAP: 18P1

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STATE OF MISSOURI
JOSEPH W. KULESSA NUMBER PE-2010000841
PROFESSIONAL ENGINEER

DATE: 10/21/2014

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Director

MASON ROAD BRIDGE NO. 211

TYPICAL SECTIONS

DESIGNED: E. C. DAM
DRAWN: K. J. JONES
CHECKED: J. W. KULESSA
SHEET SEQUENCE: 5 OF 57

7

N/F
GOLF CLUB INVESTMENT COMPANY
4023/562
LOCATOR: 17P120042
12925 LADUE ROAD
COMMITMENT NO.: TA 84778
AREA: 212.086 ACRES MORE OR LESS (DEED)

N

0 20 40 60

SCALE IN FEET
SCALE: 1" = 20'

LOT 3 - SUBDIVISION OF ESTATE OF WILLIAM HOGG

EXIST. R/W

MASON ROAD

18979' N03°36'53"E

0+00 1+00 2+00 3+00 4+00

CURVE 1

CONCRETE PAVEMENT (UIP)

RIGHT OF WAY DEDICATION (PB 354 PG 209)

PERMANENT SIGHT DISTANCE EASEMENT (PB 354 PG 209)

BEGIN PROJECT STA. 2+92.89; 23.82' RT.

10' WIDE EASEMENT (PB 354 PG 209)

EXIST. R/W

5' CONCRETE SIDEWALK (TBR)

2'X2' BRICK PILLAR (UIP)

10'W. TEMP. SLOPE & CONSTRUCTION LICENSE (PB 354 PG 209)

BEGIN NEW PAVEMENT STA. 4+08.00

STA. 3+05.92, 24.00' RT.

STA. 4+74.22, 18.00' RT.

266.00' N14°10'52"E

4+08.00 BEGIN 8.00' RADIUS TAPER

EXIST. CURB PROP. CURB

CONCRETE PRIVATE DRIVE

T.S.C.L.

ASPHALT

12.9'R

10'R

NEW R/W

PT 3+66.00

EASEMENT TO AMERENUE 17266/4047

2'X2' BRICK PILLAR (UIP)

2" PVC IRRIGATION LINE (TBR&R)

10'W. TEMP. SLOPE & CONSTRUCTION LICENSE (PB 354 PG 209)

APPROXIMATE LOCATION SOUTH LINE LOT 5 - SUBDIVISION OF ESTATE OF WILLIAM HOGG

APPROXIMATE LOCATION NORTH LINE LOT 4 - SUBDIVISION OF ESTATE OF WILLIAM HOGG

ENCLAVE BELLERIVE
PLAT ONE
PB 354 PG 209

FUTURE DEVELOPMENT

MATCHLINE STA. 5+00.00

6 COMMON GROUND & EASEMENT (PB 354 PG 209)

N/F
THE ENCLAVE AT BELLERIVE, L.L.C.
15969/1219
LOCATOR: 18P530057
408 WYTHE HOUSE COURT
COMMITMENT NO.: 101196
AREA: 5.85 ACRES (ASSESSOR)

PERMANENT SIDEWALK EASEMENT TO ST. LOUIS COUNTY (8248/4911)

COBBLE STONE

MULBERRY ROW COURT (PRIVATE)

SIDEWALK EASEMENT TO COUNTY (8248/4911)

STONE RETAINING WALL

6

N/F
THE ENCLAVE AT BELLERIVE, L.L.C.
15969/1219
LOCATOR: 18P530057
408 WYTHE HOUSE COURT
COMMITMENT NO.: 101196
AREA: 5.85 ACRES (ASSESSOR)

Curve No.1
P.I.= 2+78.15
Delta= 10°34'19"
Dc= 5°59'58"
T= 88.36'
L= 176.21'
R= 955.00'
E= 4.08'

FOUND CROSS 346

MASON ROAD

WYTHE HOUSE COURT (PRIVATE)

FOUND CROSS 347

FOUND CROSS 348

RIGHT OF WAY RESERVATION TO BE DEDICATED TO ST. LOUIS COUNTY UPON DEMAND (PB 298 PG 47)

BELLERIVE SPRINGS DRIVE

EXISTING RIGHT OF WAY AS ESTABLISHED BY (PB 298 PG 47)

FOUND IRON PIPE S49°05'37"W 0.05'

LOT 1

SAINT LOUIS COUNTY BENCHMARK:
13-126 479.06 - "Standard Tablet" stamped 11 GEU 1974 near Smith Creek crossing at (east) [employee] entrance to Bellerive Golf Course: 175' north of bridge #211 (near) [in] south end of retaining wall. [4' north of south end along creek and 9' north of centerline of golf cart bridge].

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
1	10-13-14	KJJ		ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY
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STATE OF MISSOURI
JOSEPH W. KULESSA
NUMBER PE-2010000841
PROFESSIONAL ENGINEER

DATE: 10/21/2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
1ST FLOOR
ST. LOUIS, MISSOURI 63132
(314) 615-8543

JOSEPH W. KULESSA
PROFESSIONAL ENGINEER
LICENSE NO. PE-2010000841

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE
NO. 211

PLAN SHEET 1 OF 4

DESIGNED: E.C. DAM
DRAWN: K.J. JONES
CHECKED: J.W. KULESSA
SHEET SEQUENCE: 6 OF 57

7
N/F
GOLF CLUB INVESTMENT COMPANY
4023/562
LOCATOR: 17P120042
12925 LADUE ROAD
COMMITMENT NO.: TA 84778
AREA: 212.086 ACRES MORE OR LESS (DEED)

MASON ROAD

MATCHLINE STA. 5+00.00

MATCHLINE STA. 10+00.00

CONSTRUCTION ℄

CURVE 2

8+00

9+00

6+00

7+00

CONCRETE PRIVATE DRIVE

EXIST. R/W

NEW R/W

CL.

T.S.C.L.

P.S.D.E.

P.R.W.E.

PERMANENT SIGHT DISTANCE EASEMENT

PERMANENT RETAINING WALL EASEMENT

RETAINING WALL

TYPE "B" CONCRETE GUTTER

BEGIN RETAINING WALL STA 7+49.80, 46.80' RT

RESERVED FOR SIDEWALK (PB 354 PG 209) SEE AFFIDAVIT RECORDED IN (14229/471)

5'X5' CONCRETE SIDEWALK

CI 14

CI 12

CI 11

CI 10

CI 9

15.5' R

PC 6+32.00

EXIST. -99'-
PROP. -97'-

12.42'

SWALE WITH R/P

SWALE

EDGE OF ASPHALT

TREE LINE

BUILDING

GRAVEL

GARDEN AREA

STEPS

ASPHALT

TIE RETAINING WALL

MODULAR BLOCK WALL

CONCRETE

SIGNS (UIP)

GUY (UIP)

UP (UIP)

W (UIP)

FH (UIP)

TMH (UIP)

SIGN (TBR)

LONG CONCRETE BEAM (TBR)

CONCRETE PAVEMENT (TBR)

ASPHALT PAVEMENT (TBR)

6

N/F
THE ENCLAVE AT BELLERIVE, L.L.C.
15969/1219
LOCATOR: 18P530057
408 WYTHE HOUSE COURT
COMMITMENT NO.: 101196
AREA: 5.85 ACRES (ASSESSOR)

10'W TEMP. SLOPE & CONSTRUCTION LICENSE (PB 354 PG 209)

10' WIDE EASEMENT (PB 354 PG 209)

2'X2' BRICK PILLAR (UIP)

2" PVC IRRIGATION LINE (UIP)

Curve No.2
PI.: 10+26.66
Delta: 82°30'08"
Dc: 12°43'57"
T: 394.66'
L: 647.97'
R: 450.00'
E: 148.54'
S.E.: 4.0%

5' WIDE EASEMENT (PB 354 PG 209)

CENTERLINE 10' WIDE EASEMENT (PB 354 PG 209)

6

N/F
THE ENCLAVE AT BELLERIVE, L.L.C.
15969/1219
LOCATOR: 18P530057
408 WYTHE HOUSE COURT
COMMITMENT NO.: 101196
AREA: 5.85 ACRES (ASSESSOR)

ENCLAVE BELLERIVE PLAT ONE
PB 354 PG 209
FUTURE DEVELOPMENT

339 FOUND CROSS

350 FOUND CROSS
S45°47'09"E 0.06'

N

0 20 40 60

SCALE IN FEET
SCALE: 1" = 20'

SAINT LOUIS COUNTY BENCHMARK:
13-126 479.06 - "Standard Tablet" stamped 11 GEU 1974 near Smith Creek crossing at (east) [employee] entrance to Bellerive Golf Course: 175' north of bridge #211 (near) [in] south end of retaining wall. [4' north of south end along creek and 9' north of centerline of golf cart bridge].

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

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STATE OF MISSOURI
JOSEPH W. KULESSA
NUMBER PE-2010000841
PROFESSIONAL ENGINEER

DATE: 10/21/2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
2ND FLOOR
ST. LOUIS, MISSOURI 63132
(314) 615-8543

JOSEPH W. KULESSA
PROFESSIONAL ENGINEER
LICENSE NO. PE-2010000841

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE
NO. 211

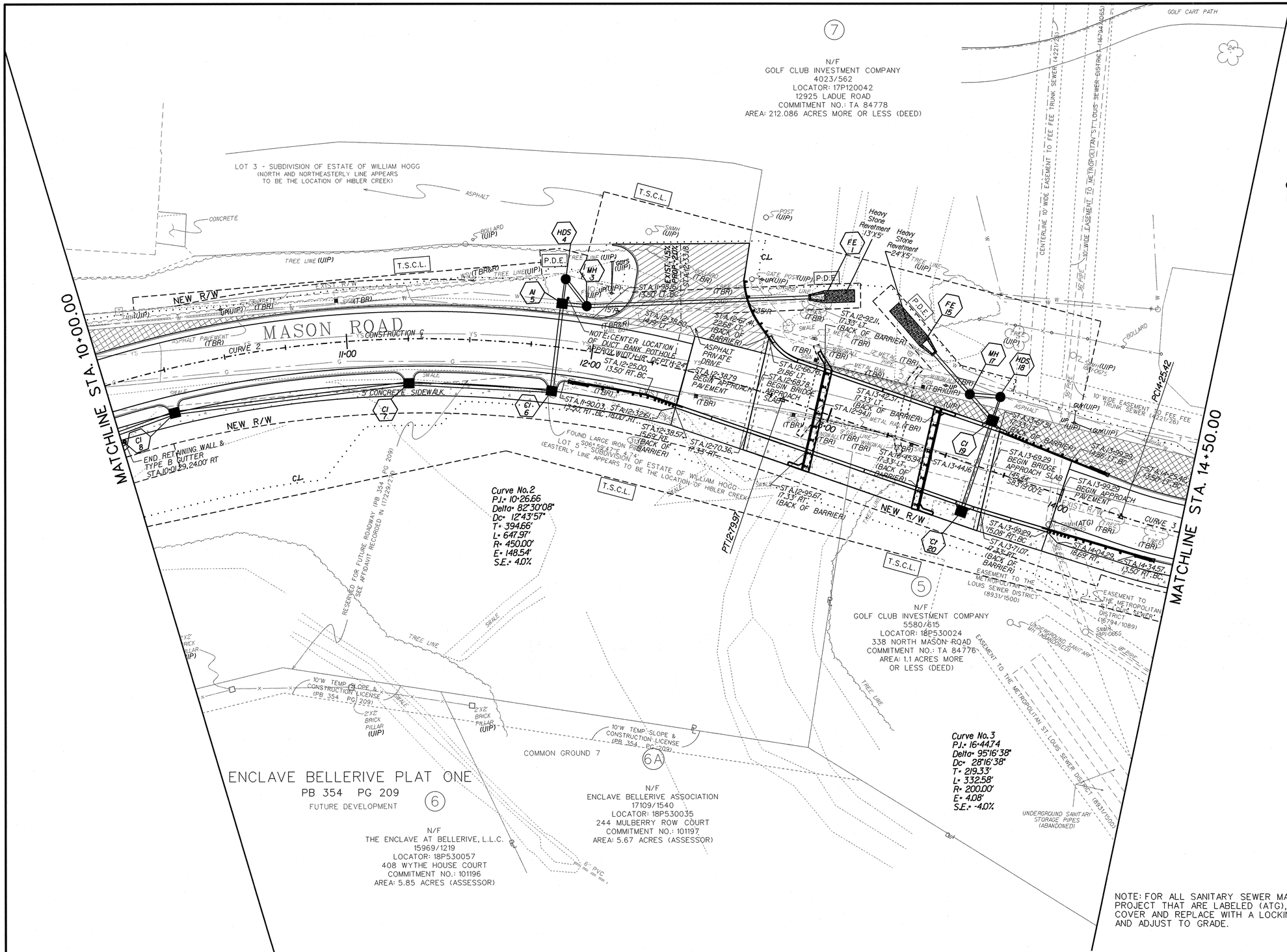
PLAN SHEET 2 OF 4

DESIGNED: E.C. DAM

DRAWN: K.J. JONES

CHECKED: J.W. KULESSA

SHEET SEQUENCE: 7 OF 57



NOTE: FOR ALL SANITARY SEWER MANHOLES ON THIS PROJECT THAT ARE LABELED (ATG), REMOVE EXISTING COVER AND REPLACE WITH A LOCKING COVER WITH SEAL AND ADJUST TO GRADE.

SAINT LOUIS COUNTY BENCHMARK:
13-126 479.06 - "Standard Tablet" stamped 11 GEU 1974 near Smith Creek crossing at (east) [employee] entrance to Bellerive Golf Course; 175' north of bridge #211 (near) [in] south end of retaining wall. [4' north of south end along creek and 9' north of centerline of golf cart bridge].

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ST. LOUIS, MISSOURI 63132
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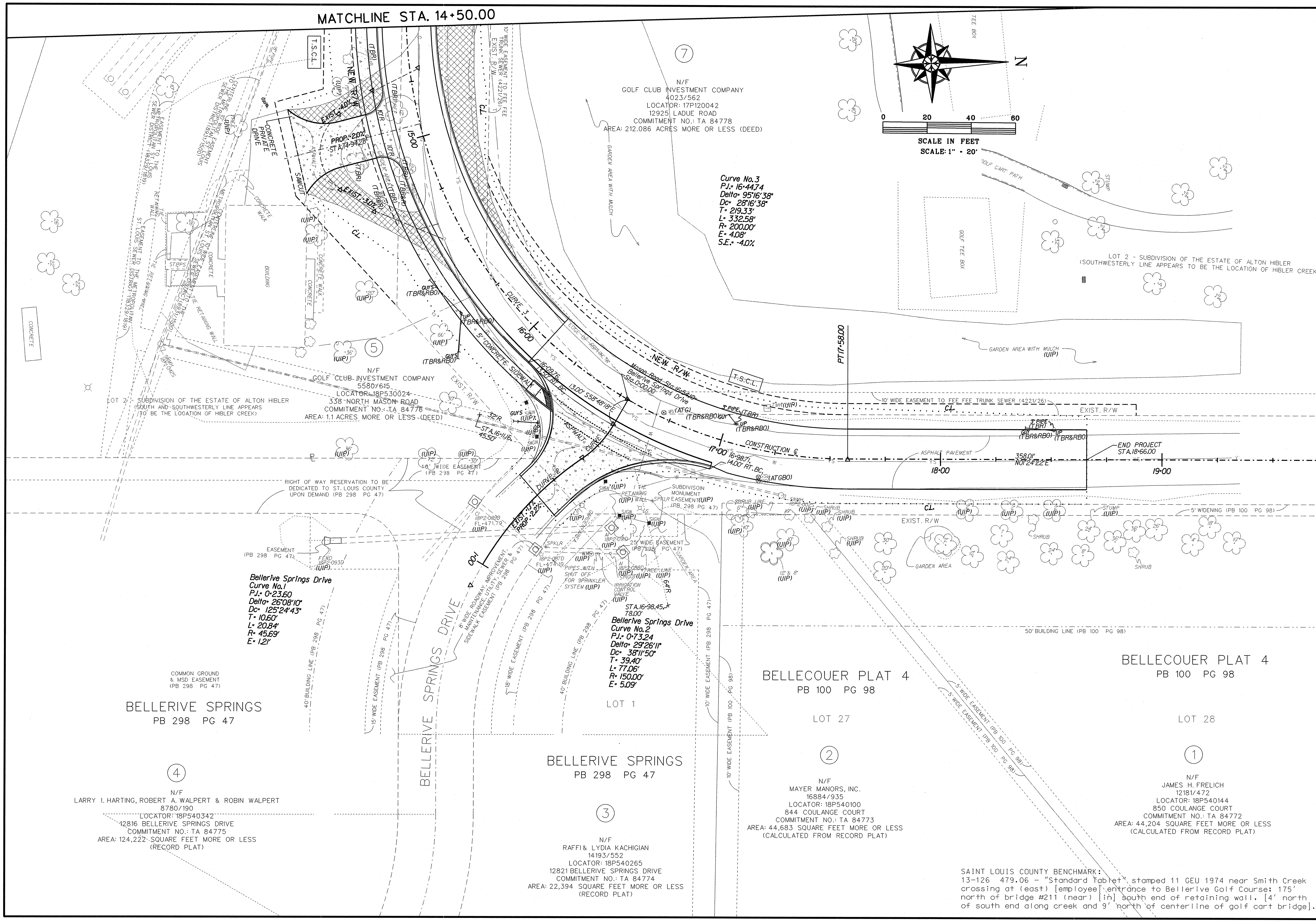
Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE
NO. 211

PLAN SHEET 3 OF 4

DESIGNED: E.C. DAM
DRAWN: K.J. JONES
CHECKED: J.W. KULESSA
SHEET SEQUENCE: 8 OF 57



MATCHLINE STA. 14+50.00
N
0 20 40 60
SCALE IN FEET
SCALE: 1" - 20'
7
N/F
GOLF CLUB INVESTMENT COMPANY
4023/562
LOCATOR: 17P120042
12925 LADUE ROAD
COMMITMENT NO.: TA 84778
AREA: 212.086 ACRES MORE OR LESS (DEED)
Curve No. 3
P.I.= 16+44.74
Delta= 95°16'38"
Dc= 28°16'38"
T= 219.33'
L= 332.58'
R= 200.00'
E= 4.08'
S.E.= -4.0%
LOT 2 - SUBDIVISION OF THE ESTATE OF ALTON HIBLER
(SOUTHWESTERLY LINE APPEARS TO BE THE LOCATION OF HIBLER CREEK)
GOLF CART PATH
GOLF TEE BOX
GARDEN AREA WITH MULCH
5
N/F
GOLF CLUB INVESTMENT COMPANY
5580/615
LOCATOR: 18P530024
338 NORTH MASON ROAD
COMMITMENT NO.: TA 84776
AREA: 1.1 ACRES MORE OR LESS (DEED)
LOT 2 - SUBDIVISION OF THE ESTATE OF ALTON HIBLER
(SOUTH AND SOUTHWESTERLY LINE APPEARS
TO BE THE LOCATION OF HIBLER CREEK)
CONCRETE PRIVATE DRIVE
5" CONCRETE SIDEWALK
NEW R/W
EXIST. R/W
T.S.C.L.
CURVE 1
CURVE 2
CURVE 3
CONSTRUCTION ℄
PT17+58.00
10' WIDE EASEMENT TO FEE FEE TRUNK SEWER (4221/26)
END PROJECT
STA.18+66.00
ASPHALT PAVEMENT
358.01'
N01°24'22"E
18+00
19+00
5' WIDENING (PB 100 PG 98)
RIGHT OF WAY RESERVATION TO BE
DEDICATED TO ST. LOUIS COUNTY
UPON DEMAND (PB 298 PG 47)
10' WIDE EASEMENT
(PB 298 PG 47)
SUBDIVISION MONUMENT
Bellerive Springs Drive
Curve No. 1
P.I.= 0+23.60
Delta= 26°08'10"
Dc= 125°24'43"
T= 10.60'
L= 20.84'
R= 45.69'
E= 1.21'
Bellerive Springs Drive
Curve No. 2
P.I.= 0+73.24
Delta= 29°26'11"
Dc= 38°11'50"
T= 39.40'
L= 77.06'
R= 150.00'
E= 5.09'
BELLERIVE SPRINGS DRIVE
50' BUILDING LINE (PB 100 PG 98)
COMMON GROUND
& MSD EASEMENT
(PB 298 PG 47)
BELLERIVE SPRINGS
PB 298 PG 47
4
N/F
LARRY I. HARTING, ROBERT A. WALPERT & ROBIN WALPERT
8780/190
LOCATOR: 18P540342
12816 BELLERIVE SPRINGS DRIVE
COMMITMENT NO.: TA 84775
AREA: 124,222 SQUARE FEET MORE OR LESS
(RECORD PLAT)
LOT 1
BELLERIVE SPRINGS
PB 298 PG 47
3
N/F
RAFFI & LYDIA KACHIGIAN
14193/552
LOCATOR: 18P540265
12821 BELLERIVE SPRINGS DRIVE
COMMITMENT NO.: TA 84774
AREA: 22,394 SQUARE FEET MORE OR LESS
(RECORD PLAT)
BELLECOUER PLAT 4
PB 100 PG 98
LOT 27
2
N/F
MAYER MANORS, INC.
16884/935
LOCATOR: 18P540100
844 COULANGE COURT
COMMITMENT NO.: TA 84773
AREA: 44,683 SQUARE FEET MORE OR LESS
(CALCULATED FROM RECORD PLAT)
BELLECOUER PLAT 4
PB 100 PG 98
LOT 28
1
N/F
JAMES H. FRELICH
12181/472
LOCATOR: 18P540144
850 COULANGE COURT
COMMITMENT NO.: TA 84772
AREA: 44,204 SQUARE FEET MORE OR LESS
(CALCULATED FROM RECORD PLAT)
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COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

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NUMBER PE-2010000841
PROFESSIONAL ENGINEER

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1ST FLOOR
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JOSEPH W. KULESSA
PROFESSIONAL ENGINEER
LICENSE NO. PE-2010000841

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE
NO. 211

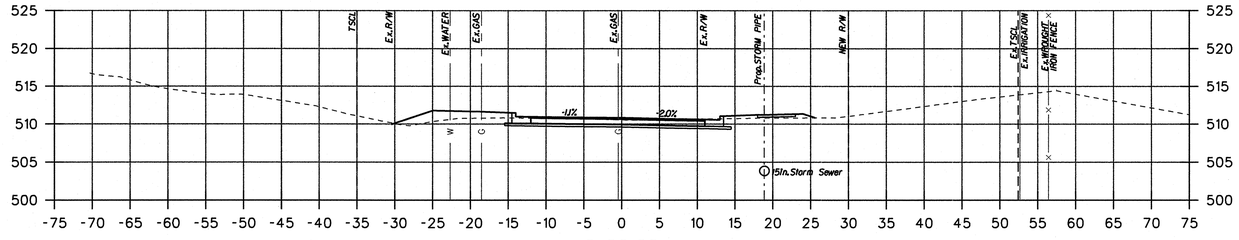
PLAN SHEET 4 OF 4

DESIGNED:
E.C. DAM

DRAWN:
K.J. JONES

CHECKED:
J.W. KULESSA

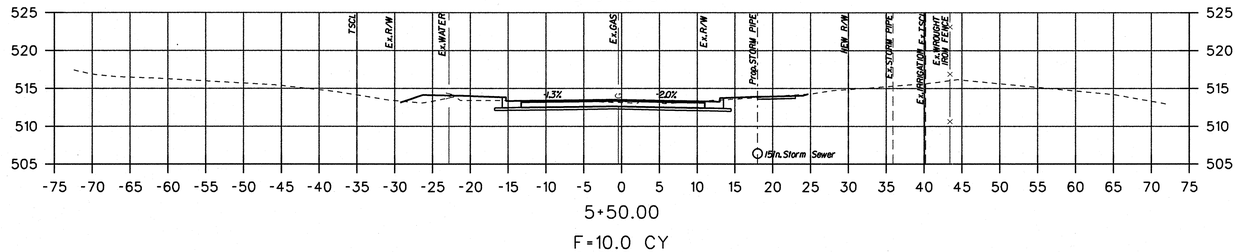
SHEET SEQUENCE:
9 OF 57



6+00.00

F=25.7 CY
C=64.6 CY

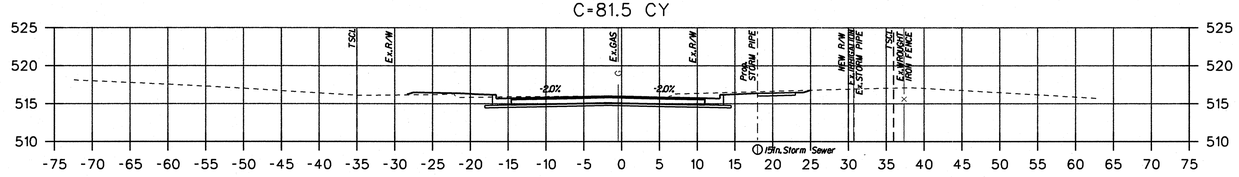
F=20.3 SF
C=32.1 SF



5+50.00

F=10.0 CY
C=81.5 CY

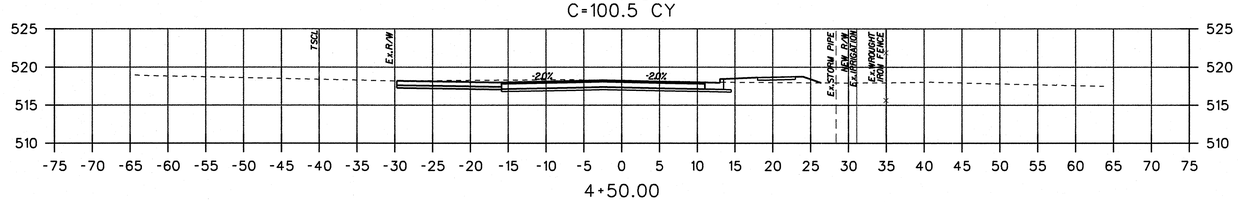
F=7.4 SF
37.7 SF



5+00.00

F=10.1 CY
C=100.5 CY

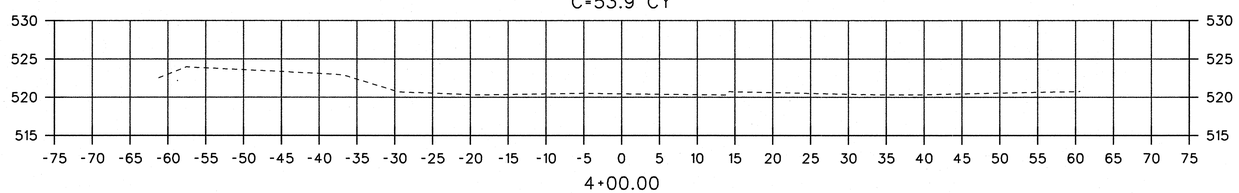
F=3.4 SF
C=50.4 SF



4+50.00

F=7.0 CY
C=53.9 CY

F=7.5 SF
C=58.2 SF



4+00.00

F=0.0 CY
C=0.0 CY

F=0.0 SF
C=0.0 SF

10'
10'

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

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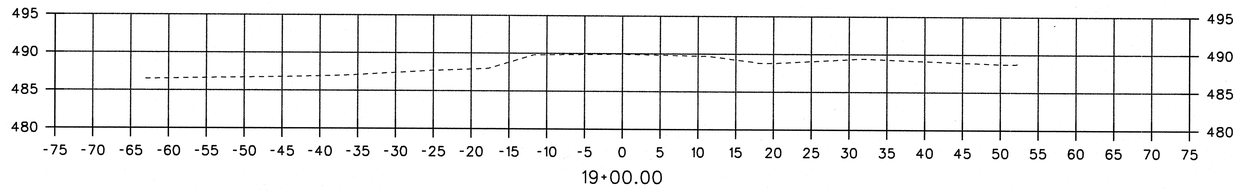
Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE
NO. 211

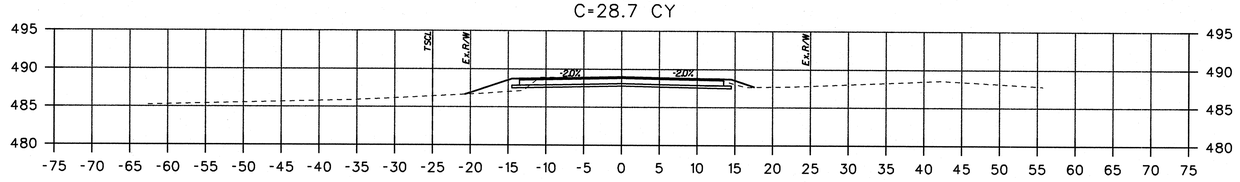
CROSS SECTIONS
(1 of 6)

DESIGNED: E.C. DAM
DRAWN: K.J. JONES
CHECKED: J.W. KULESSA
SHEET SEQUENCE: 29 OF 57



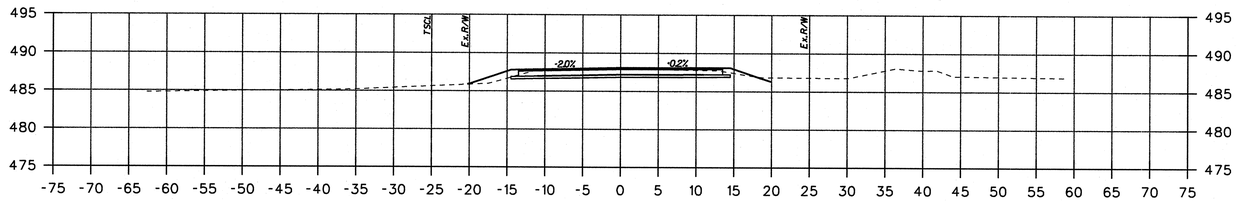
19+00.00
F=7.6 CY
C=28.7 CY

F=0.0 SF
C=0.0 SF



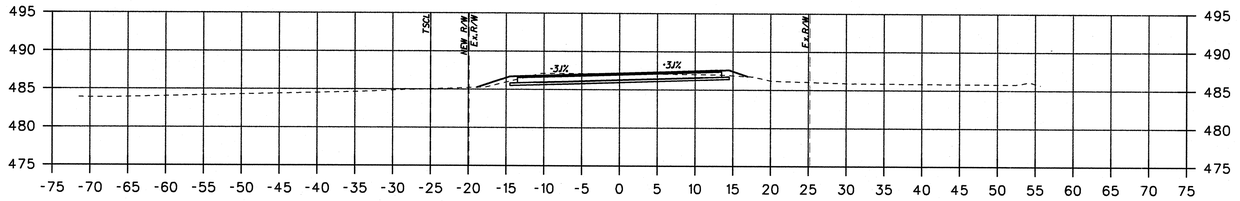
18+50.00
F=13.3 CY
C=55.6 CY

F=8.2 SF
C=31.0 SF



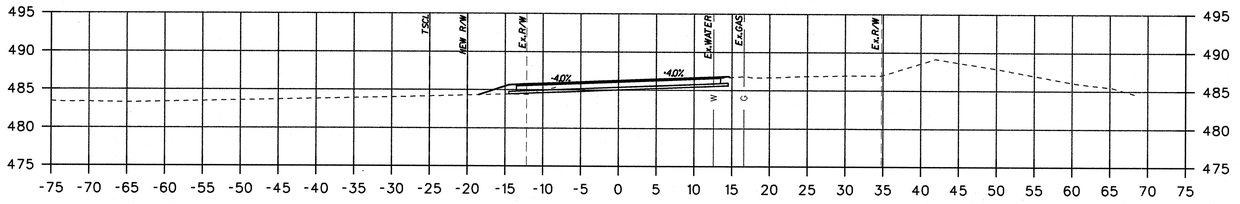
18+00.00
F=9.3 CY
C=55.7 CY

F=6.2 SF
C=29.0 SF



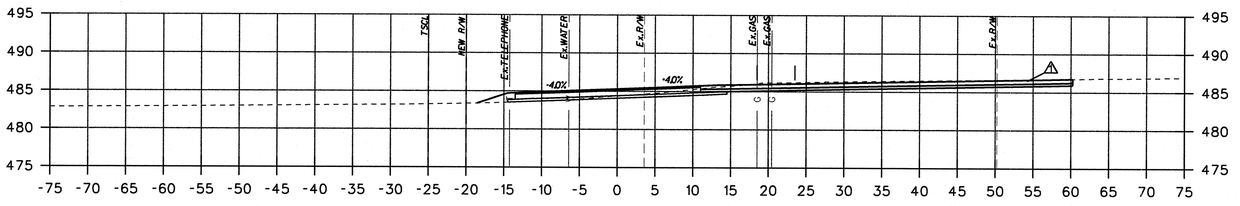
17+50.00
F=6.7 CY
C=53.6 CY

F=3.8 SF
C=31.1 SF



17+00.00
F=6.3 CY
C=72.6 CY

F=3.4 SF
C=26.7 SF



16+50.00 at Bellerive Springs Drive
F=17.6 CY
C=55.6 CY

F=3.4 SF
C=51.7 SF

10'
10'

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
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STATE OF MISSOURI
JOSEPH W. KULESSA
NUMBER PE-2010000841
PROFESSIONAL ENGINEER

DATE: 10/21/2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
1ST FLOOR
ST. LOUIS, MISSOURI 63132
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PROFESSIONAL ENGINEER
LICENSE NO. PE-2010000841

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD BRIDGE NO. 211

CROSS SECTIONS (6 of 6)

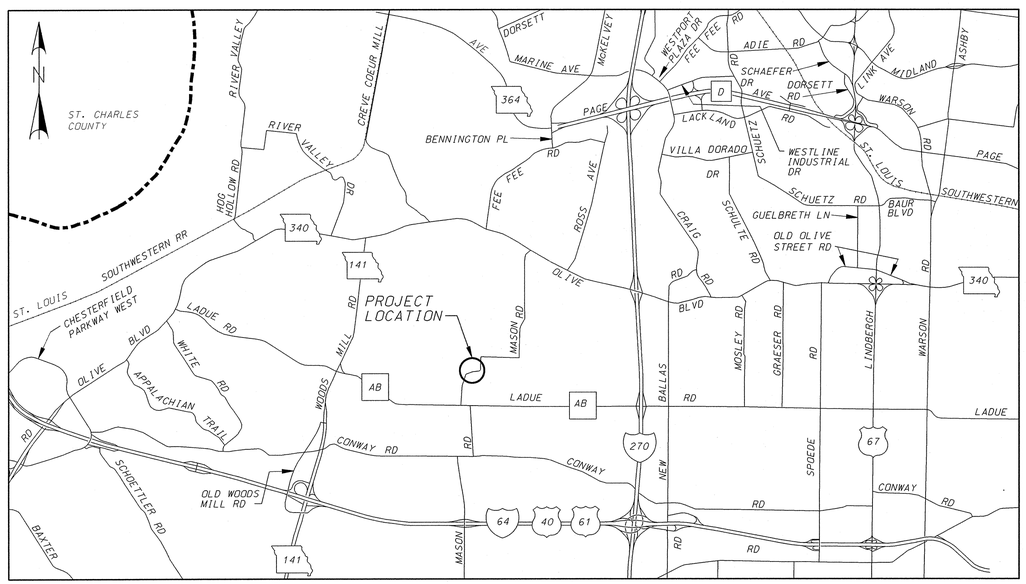
DESIGNED: E.C. DAM
DRAWN: K.J. JONES
CHECKED: J.W. KULESSA
SHEET SEQUENCE: 34 OF 57

Roadway Quantities

Item		Total	Item No.
Type 5 Aggregate Base (4" Thick)	sq. yd.	222	304-05.04
Concrete Approach Pavement	sq. yd.	222	504-10.20
Class A Underdrain	lin. ft.	88.0	605-10.10
Guardrail Type A	lin. ft.	20	606-10.10
Guardrail Transition Section	each	3	606-23.00
Crashworthy Guardrail Terminal, Modified (25' Length)	each	3	606-30.97
Heavy Stone Revetment	sq. yd.	170.0	611-50.30

Structure Quantities

Item		Substr.	Superstr.	Total	Item No.
Removal of Bridges	lump sum		1.0	1.0	202-10.20
Asbestos Abatement	lump sum		1	1	202-22.17
Bridge Approach Slab	sq. yd.		238	238	503-10.10
~~Bridge Anchor Section~~	~~each~~		~~3~~	~~3~~	~~606-20.00~~
Bridge Anchor Section (Modified)	each		1	1	606-21.01
Pedestrian Fence (Structure)	lin. ft.		200	200	607-10.60
Concrete Median Barrier, Type "B" Modified	lin. ft.		169	169	617-20.01
Bridge Deck Surface Penetration Sealer	sq. ft.		2,070	2,070	703-03.00
Safety Barrier Curb (Bridges, Cast-in-Place)	lin. ft.		99	99	703-42.15
Slab on Prestressed Concrete Deck Beams	sq. yd.		230	230	703-42.30
Bridge Plaque	each		1	1	703-44.40
Prestressed Concrete Members, Box Section, 48' Span	each		7.0	7.0	705-14.48
Class 1 Excavation	cu. yd.	1,370		1,370	206-10.00
Structural Steel Piles (12")	lin. ft.	480		480	702-10.12
Pile Point Reinforcement	each	16		16	702-70.00
Class "B-1" Concrete (Substructure)	cu. yd.	149		149	703-40.03
Modular Block Wall (h greater than 4')	sq. ft.	2,500		2,500	703-90.13
Reinforcing Steel (Epoxy Coated) (Grade 60)	pound	13,300		13,300	710-60.00
Vertical Drain at End Bent	each	2		2	715-10.00



LOCATION MAP

GENERAL NOTES:

Design Specifications:
2008 AASHTO LRFD 4th Edition, with 2008 Interims
Load and Resistance Factor Design

Design Loading:
HL-93 (LRFD Superstructure, LRFD Substructure)
30 psf Future Wearing Surface
Earth 120 pcf
Superstructure: Simply Supported for DL & LL

Standard Specifications:
Saint Louis County Standard Specifications for Highway Construction

Design Unit Stresses:

Class B-1 Concrete (Substructure)	f'c = 4,000 psi
Class B-1 Concrete (Superstructure-Barrier)	f'c = 4,000 psi
Class Modified B-2 (MB-2) (Superstructure-Slab)	f'c = 4,000 psi
Reinforcing Steel (Epoxy-Coated) (Grade 60)	fy = 60,000 psi
Steel Pile (ASTM A709 Grade 50)	fy = 50,000 psi

For prestressed concrete deck beam stresses, see Bridge Sheet Nos. 10 & 11.

Reinforcing Steel:
Minimum clearance to reinforcing steel shall be 1-1/2" unless otherwise noted.

Miscellaneous:

High strength bolts, nuts, and washers will be sampled for quality assurance as specified in MoDOT's Engineering Policy Guide Sec. 106 and Field Section (FS-712) from MoDOT's Materials Manual. Two (2) additional samples must be provided for testing in addition to the minimum number shown on the design drawings unless otherwise noted.

"Sec" refers to the sections in the standard and supplemental specifications unless specified otherwise.

Traffic Handling:
Mason Road will be closed to vehicular traffic during construction.

Roadway Striping:
Final striping to be completed by St. Louis County forces.

Bridge Location:
Township = 45N
Range = 5E
Section = 08

Foundation Data

Bent No.			1	2
H-Piles	Type		Foundation	Foundation
	Pile Type and Size		HP12 X 84	HP12 X 84
	Number		8	8
	Approximate Length	foot	30.0	30.0
	Nominal Axial Compressive Resistance	kip	812	812
	Minimum Tip Penetration		El. 455.73	El. 456.73
	Criteria for Minimum Tip Penetration		Penetrate anticipated soft geotechnical layers	Penetrate anticipated soft geotechnical layers
	Pile Standard		702.1	702.1

BRIDGE SHEET INDEX

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

BRIDGE SHEET NO. 2 OF 20

ST. LOUIS COUNTY BRIDGE NO. 211

MODOT BRIDGE NO. 096B211

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-0029044-00

MSD BASE MAP: 18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
1	10/20/14	DAH	PRT	ADDENDUM NO. 2

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STATE OF MISSOURI ★ ENGINEER ★ DANIEL A. HOWELL NUMBER PE-2011015754 10-20-14 ★ PROFESSIONAL ★

DATE: 20-OCT-2014

PREPARED BY:
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Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

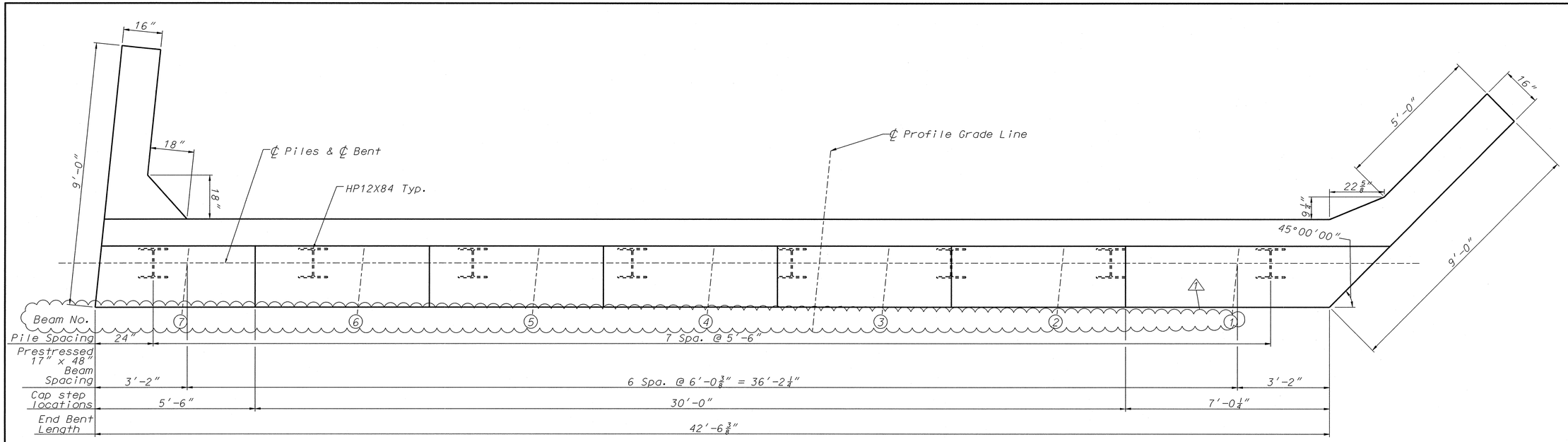
QUANTITIES AND GENERAL NOTES

DESIGNED: D.A. HOWELL

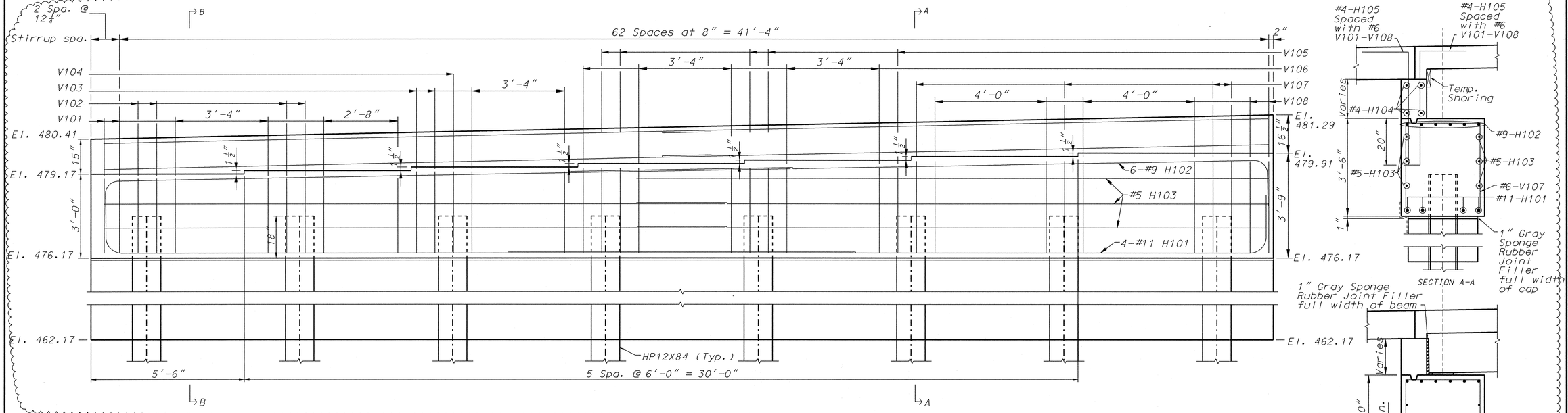
DRAWN: D.A. HOWELL

CHECKED: P.R. THEBEAU

SHEET SEQUENCE: 37 OF 57



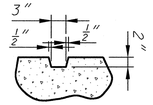
PLAN



ELEVATION

BAR SIZE	LAP LENGTH (IN.)
#5	39
#9	96
#11	150

Notes:
1) See Bridge Sheet No. 6 of 20 for wing wall and infill wall details
2) Longitudinal bars indicate lap splicing as shown. Contractor has option to provide single continuous bar if available for the lengths shown.



SECTION THRU KEY

Updated for Superelevation 1

Note:
Refer to Section A-A for reinforcing not shown

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COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-0029044-00

MSD BASE MAP:
18P1

REVISIONS

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10-20-14

DATE:
20-OCT-2014

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Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

END BENT NO. 1
PLAN & ELEVATION

DESIGNED:
D.A. HOWELL

DRAWN:
D.A. HOWELL

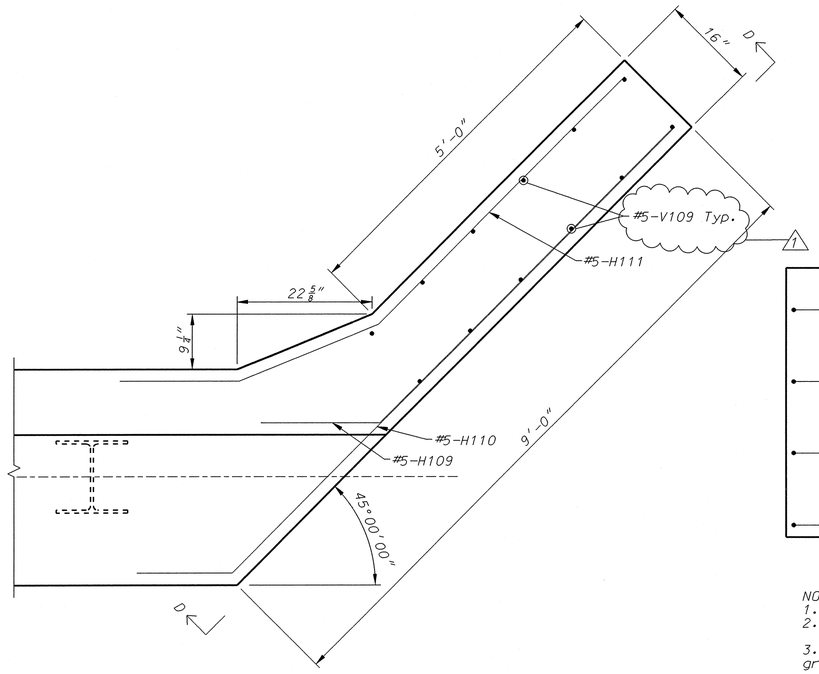
CHECKED:
P.R. THEBEAU

SHEET SEQUENCE:
40 OF 57

ST. LOUIS COUNTY BRIDGE NO.
211

BRIDGE SHEET NO.
5 OF 20

MODOT BRIDGE NO.
096B2111



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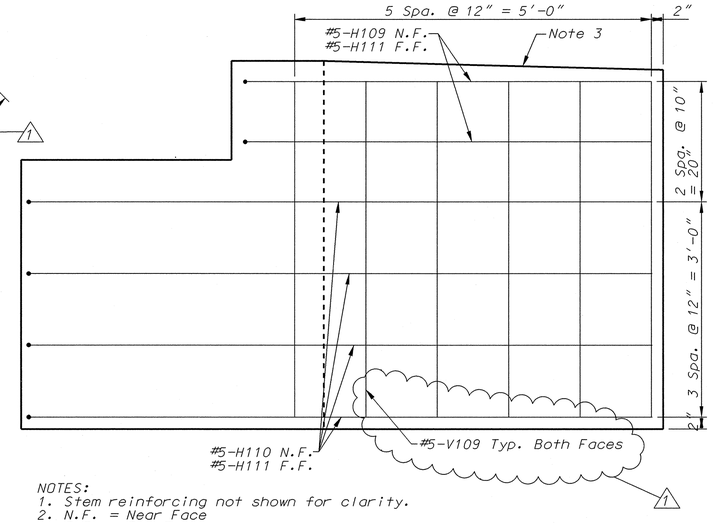
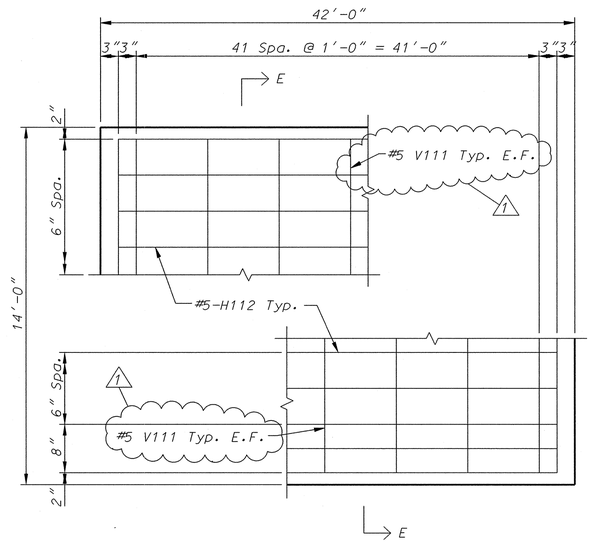
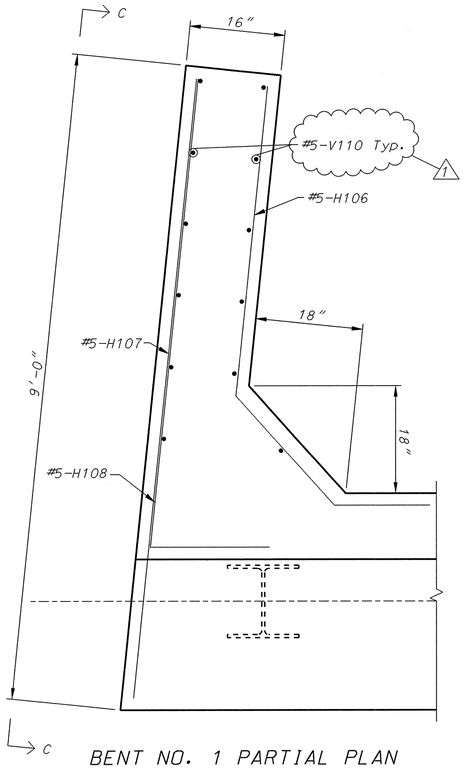


NOTES:
1. Stem reinforcing not shown for clarity.
2. N.F. = Near Face
   F.F. = Far Face
3. Top of wing wall shall match longitudinal grade at bottom of approach slab.

VIEW D-D



IN-FILL WALL ELEVATION



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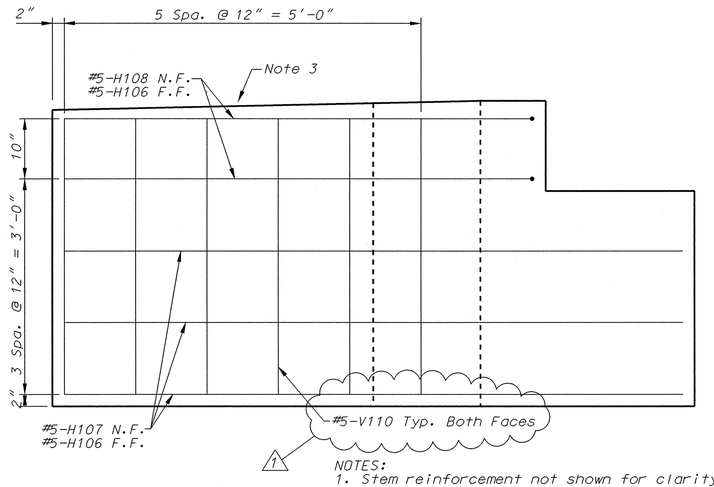
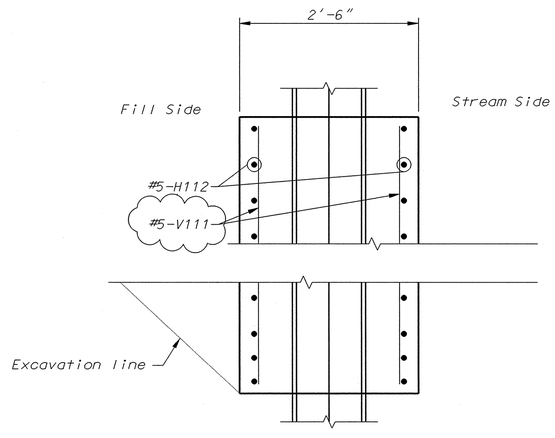


NOTES:
1. Stem reinforcement not shown for clarity
2. N.F. = Near Face
   F.F. = Far Face
3. Top of wing wall shall match longitudinal grade at bottom of approach slab.

VIEW C-C



Notes:
1. Temporary stream diversion required for in-fill wall construction. Refer to Bridge Sheet No. 4.

SECTION E-E

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COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

REV.	DATE	BY	APP.	DESCRIPTION
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STATE OF MISSOURI ★ REGISTERED ★ ENGINEER
DANIEL A. HOWELL
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PE-2011015754
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★ PROFESSIONAL ★

DATE:
20-OCT-2014

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Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

END BENT NO. 1
WING WALL &
IN-FILL WALL DETAILS

DESIGNED:
D.A. HOWELL

DRAWN:
D.A. HOWELL

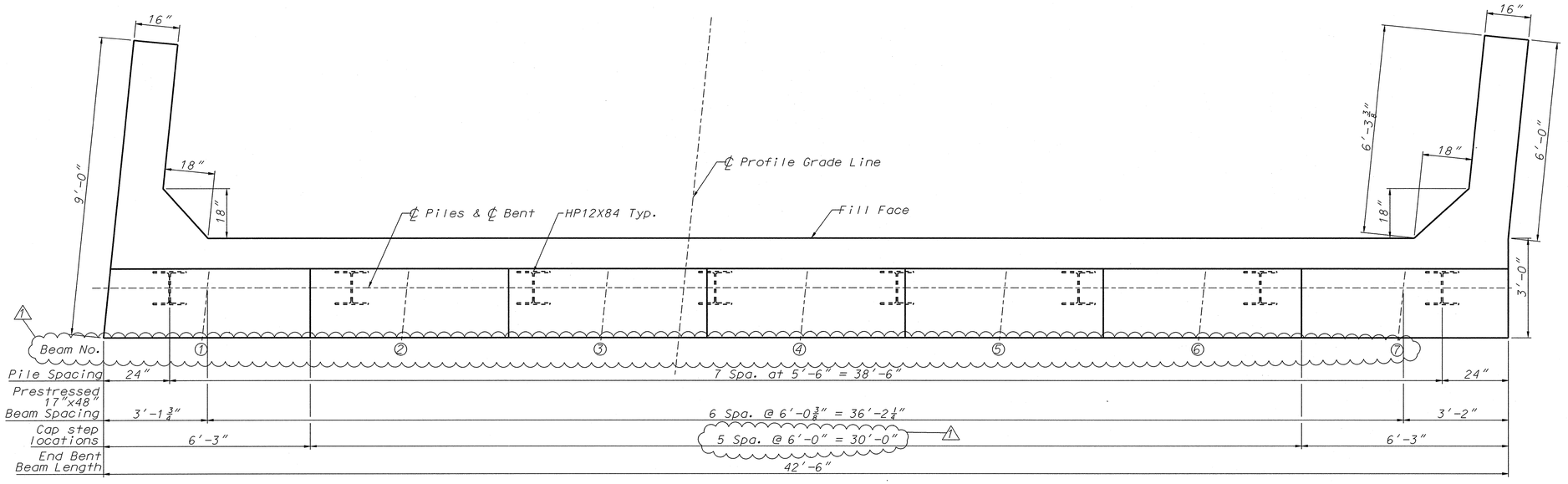
CHECKED:
P.R. THEBEAU

SHEET SEQUENCE:
41 OF 57

ST. LOUIS COUNTY BRIDGE NO.
211

BRIDGE SHEET NO.
6 OF 20

MODOT BRIDGE NO.
096B2111



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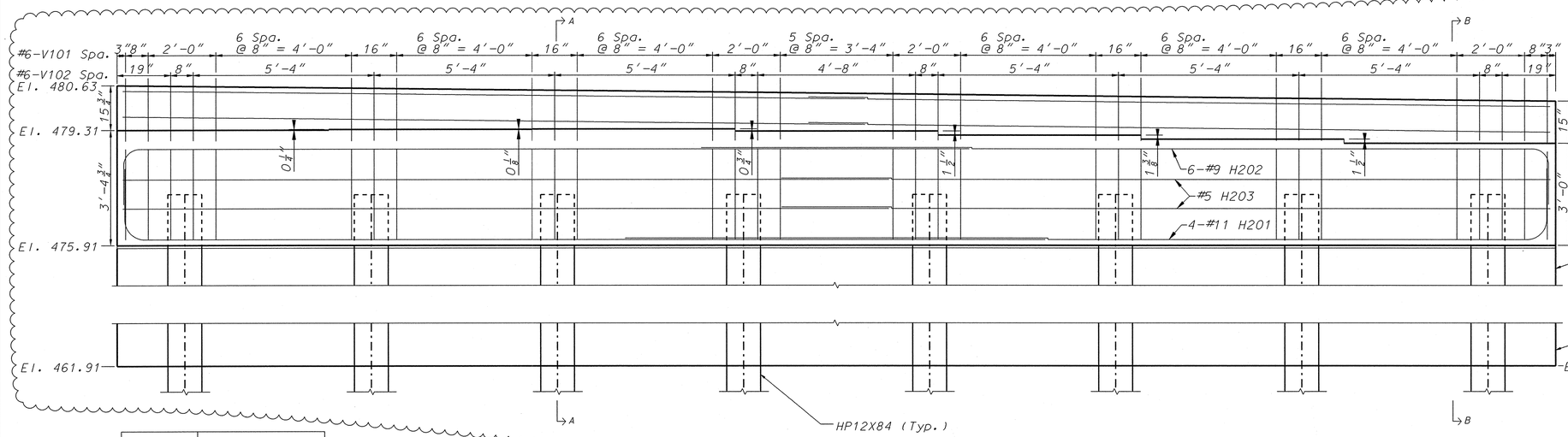
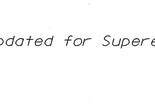


ELEVATION

BAR SIZE	LAP LENGTH (IN.)
#4	20
#5	39
#9	96
#11	150

Notes:
1) See Bridge Sheet 8 for wing wall and infill wall details
2) Longitudinal bars indicate lap splicing as shown. Contractor has option to provide single continuous bar if available for the lengths shown.



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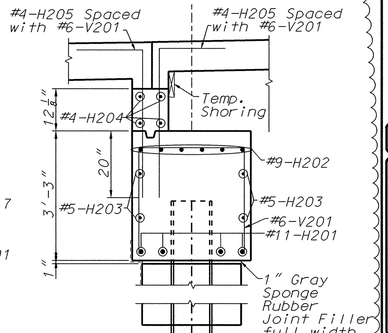
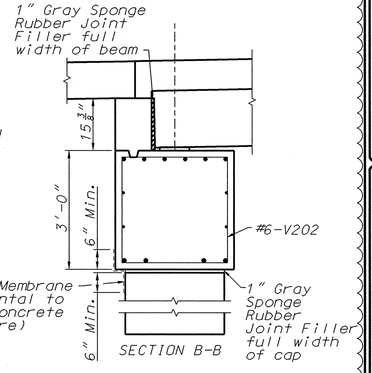


SECTION A-A



SECTION B-B

Note:
Refer to Section A-A for reinforcing not shown

Updated for Superelevation 1

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

BRIDGE SHEET NO. 7 OF 20

MODOT BRIDGE NO. 096B2111

ST. LOUIS COUNTY BRIDGE NO. 211

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-29044-00

MSD BASE MAP: 18P1

REVISIONS

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PE-2011018754
10-20-14

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Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

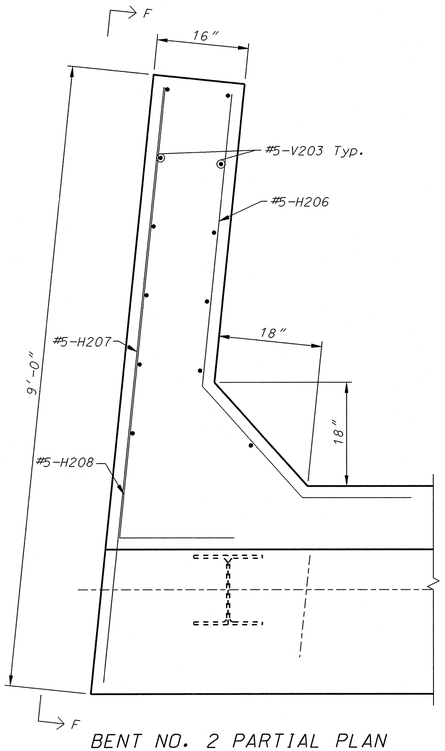
END BENT NO. 2
PLAN & ELEVATION

DESIGNED: D.A. HOWELL

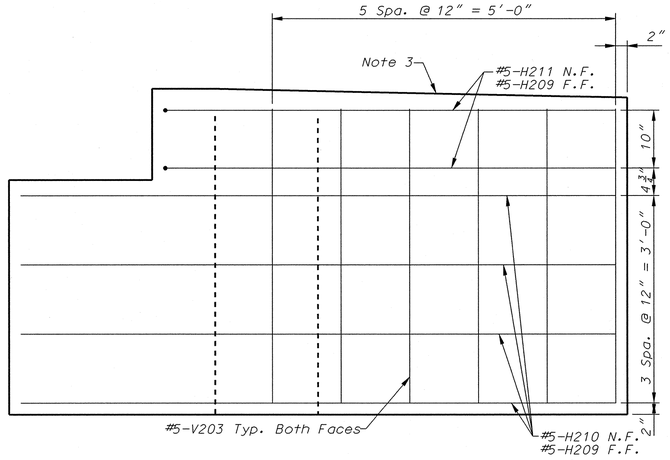
DRAWN: D.A. HOWELL

CHECKED: P.R. THEBEAU

SHEET SEQUENCE: 42 OF 57

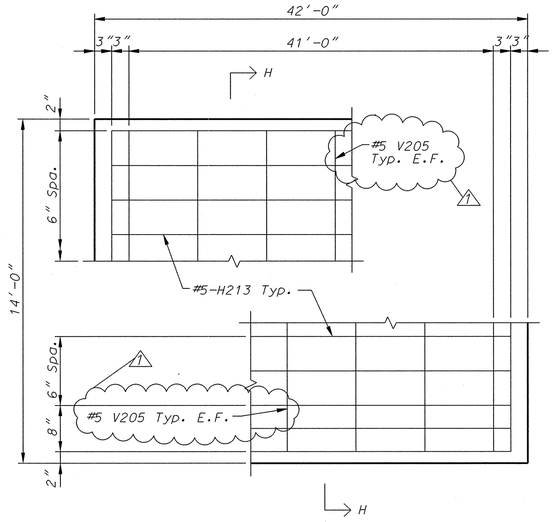


BENT NO. 2 PARTIAL PLAN

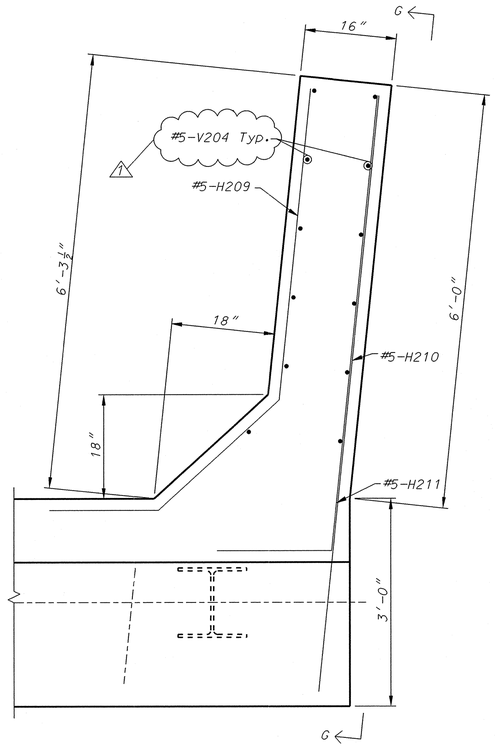


NOTES:
1. Stem reinforcement not shown for clarity
2. N.F. = Near Face
   F.F. = Far Face
3. Top of wing wall shall match longitudinal grade at bottom of approach slab.

VIEW G-G



IN-FILL WALL ELEVATION



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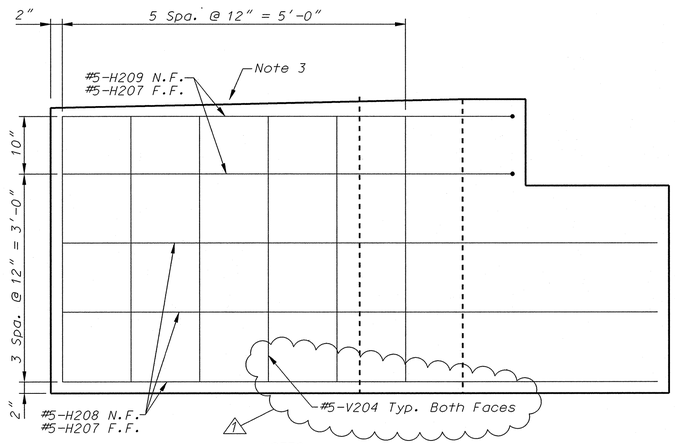

NOTES:
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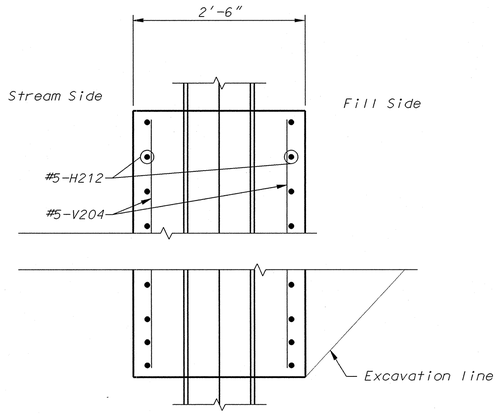
3. Top of wing wall shall match longitudinal grade at bottom of approach slab.

VIEW F-F



Notes:
1. Temporary stream diversion may be required for in-fill wall construction. Refer to Bridge Sheet No. 4 of 20.

SECTION H-H

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-29044-00

MSD BASE MAP: 18P1

REVISIONS

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STATE OF MISSOURI ★ REGISTERED ★ PROFESSIONAL ENGINEER
DANIEL A. HOWELL
NUMBER PE-2011015754

DATE: 20-OCT-2014

PREPARED BY:
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Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

END BENT NO. 2
WING WALL &
IN-FILL WALL DETAILS

DESIGNED: D.A. HOWELL

DRAWN: D.A. HOWELL

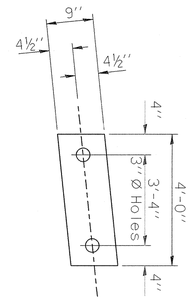
CHECKED: P.R. THEBEAU

SHEET SEQUENCE: 43 OF 57

ST. LOUIS COUNTY BRIDGE NO. 211

BRIDGE SHEET NO. 8 OF 20

MODOT BRIDGE NO. 096B2111



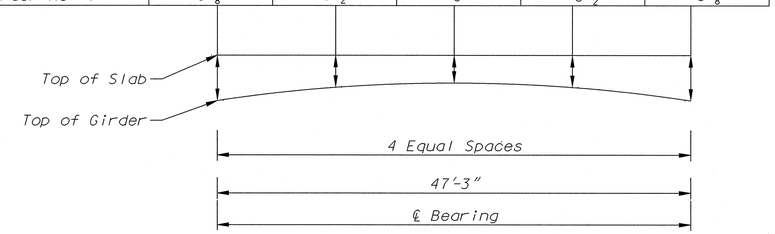
1" THICK ELASTOMERIC BEARING PAD

The cost of all fabric bearing pads shall be considered completely covered by the cost of the 17" x 48" Deck Beams.

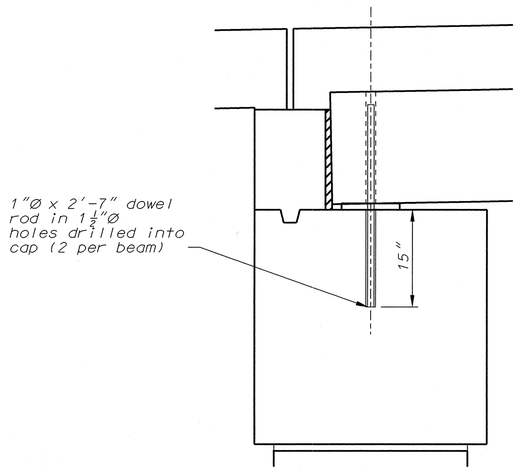
1

THEORETICAL CAST-IN-PLACE SLAB + HAUNCH THICKNESS (at ℄ of girder)

	(℄ brg - ℄ brg.)				
	℄ brg.	.25	.50	.75	℄ brg.
Girder no. 1	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"
Girder no. 2	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"
Girder no. 3	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"
Girder no. 4	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"
Girder no. 5	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"
Girder no. 6	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"
Girder no. 7	9 7/8"	8 1/2"	8"	8 1/2"	9 7/8"

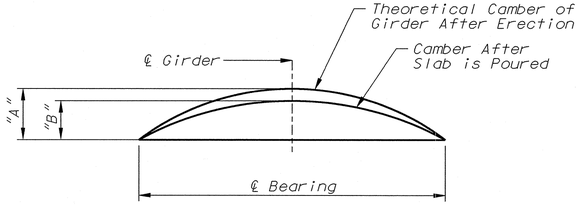


THEORETICAL CAST-IN-PLACE OVERLAY THICKNESS DIAGRAM



SECTION THROUGH END BENT AT GIRDER

Note:
Dowel rods to be epoxied to depth shown as per Job Special Provision 700.40.2.



"A"	"B"
2 1/8"	1 7/16"

GIRDER CAMBER DIAGRAM

THEORETICAL TOP OF GIRDER ELEVATIONS (at ℄ of girder prior to forming slab/sidewalk)

	(℄ brg - ℄ brg.)				
	℄ brg.	.25	.50	.75	℄ brg.
Girder no. 1	481.41	481.35	481.23	481.05	480.81
Girder no. 2	481.29	481.25	481.17	481.02	480.82
Girder no. 3	481.16	481.17	481.11	481.01	480.84
Girder no. 4	481.04	481.06	481.02	480.93	480.77
Girder no. 5	480.91	480.93	480.89	480.80	480.65
Girder no. 6	480.79	480.81	480.77	480.68	480.53
Girder no. 7	480.66	480.69	480.65	480.56	480.41

1

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BRIDGE SHEET NO. 11 OF 20

ST. LOUIS COUNTY BRIDGE NO. 211

MODOT BRIDGE NO. 096B211

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-0029044-00

MSD BASE MAP: 18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
1	10/20/14	DAH	PRT	ADDENDUM NO. 2

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STATE OF MISSOURI ★ REGISTERED ★ PROFESSIONAL ★ ENGINEER
DANIEL A. HOWELL
NUMBER PE-2011015754
10-20-14

DATE: 20-OCT-2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
1ST FLOOR
CREVE COEUR, MISSOURI 63132
(314) 615-8543

DANIEL A. HOWELL
PROFESSIONAL ENGINEER
LICENSE NO. 2011015754

Saint Louis COUNTY HIGHWAYS & TRAFFIC PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASONR ROAD
BRIDGE NO. 211
OVER SMITH CREEK

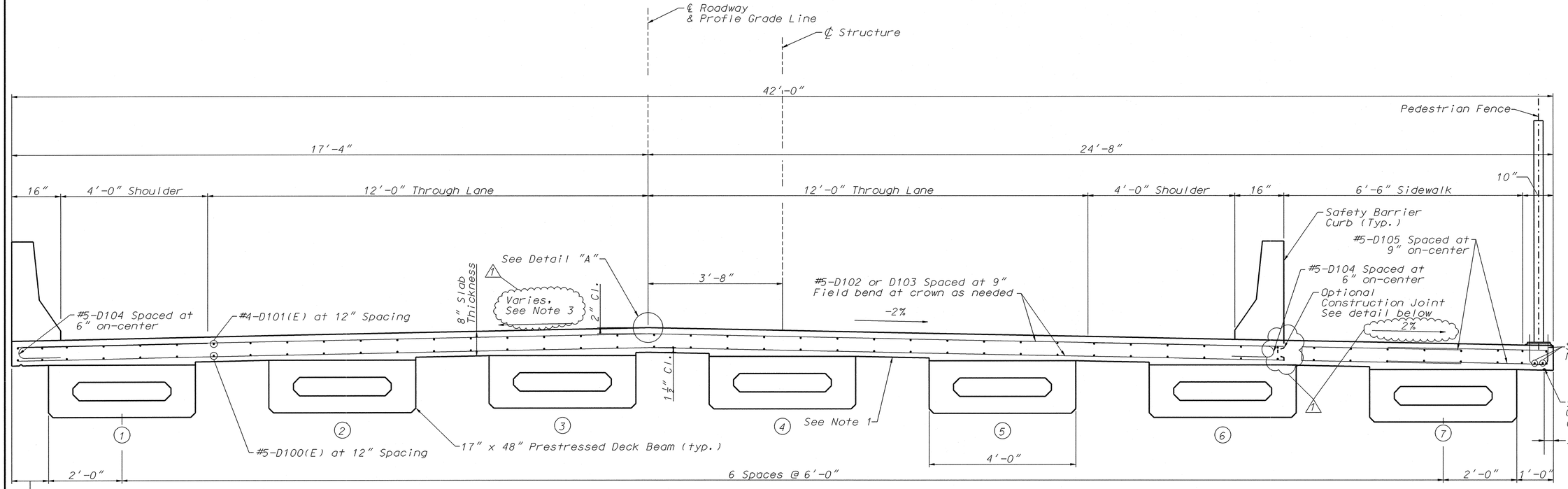
17" X 48" PRESTRESSED CONCRETE DECK BEAM DETAILS CONTINUED

DESIGNED: D.A. HOWELL

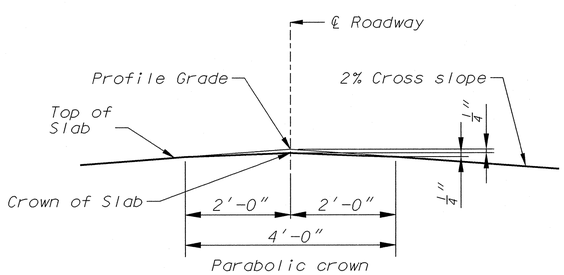
DRAWN: D.A. HOWELL

CHECKED: P.R. THEBEAU

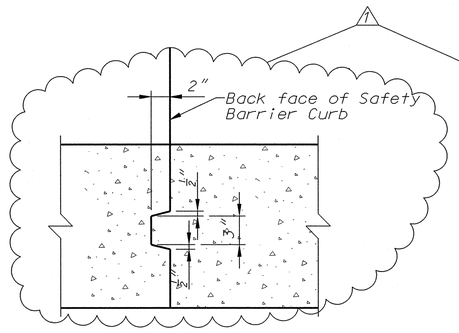
SHEET SEQUENCE: 46 OF 57



TYPICAL SECTION - LOOKING UPSTATION



DETAIL "A"



SECTION THRU KEY

Notes:
1. Contractor shall provide temporary shoring between beams during casting of the deck.
2. Sidewalk anchorage 'U' bars and longitudinal steel are paid for under the unit price for "Chain Link Fence on Structure", per Lin. Ft., and are not included in the bar list for the deck steel.
3. Cross slope varies from +2.04% at End Bent No. 1 to -0.27% at End Bent No. 2 measured from the crown of roadway.
See Sheet 5 of 57 for Superelevation Diagram.

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
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DANIEL A. HOWELL
NUMBER PE-2001015754
STATE OF MISSOURI
REGISTERED PROFESSIONAL ENGINEER
10-21-14

DATE:
20-OCT-2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
1ST FLOOR
CREVE COEUR, MISSOURI 63132
(314) 615-8543

DANIEL A. HOWELL
PROFESSIONAL ENGINEER
LICENSE NO. 2011015754

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

SLAB CROSS SECTION

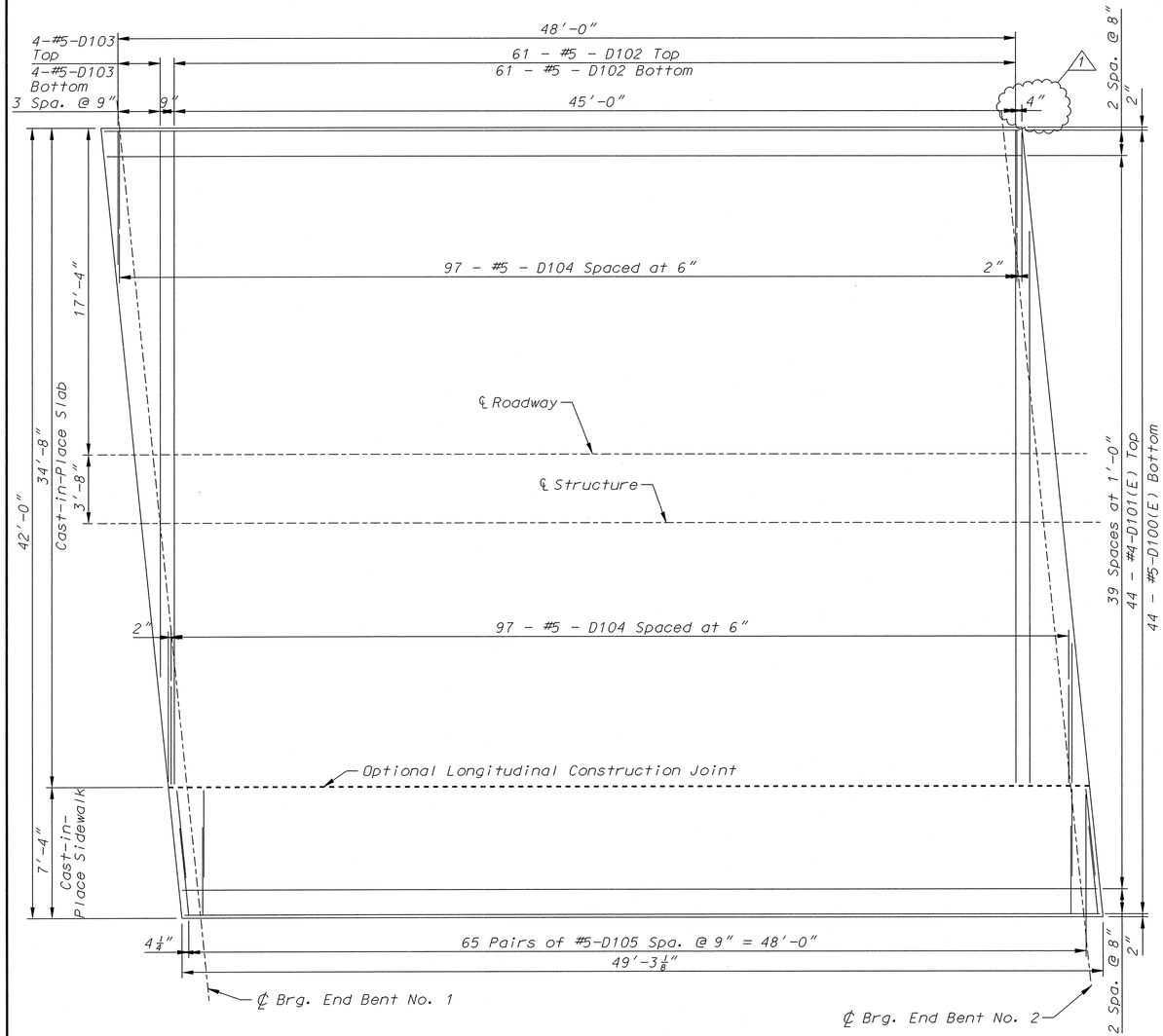
DESIGNED: D.A. HOWELL
DRAWN: D.A. HOWELL
CHECKED: P.R. THEBEAU

SHEET SEQUENCE:
47 OF 57

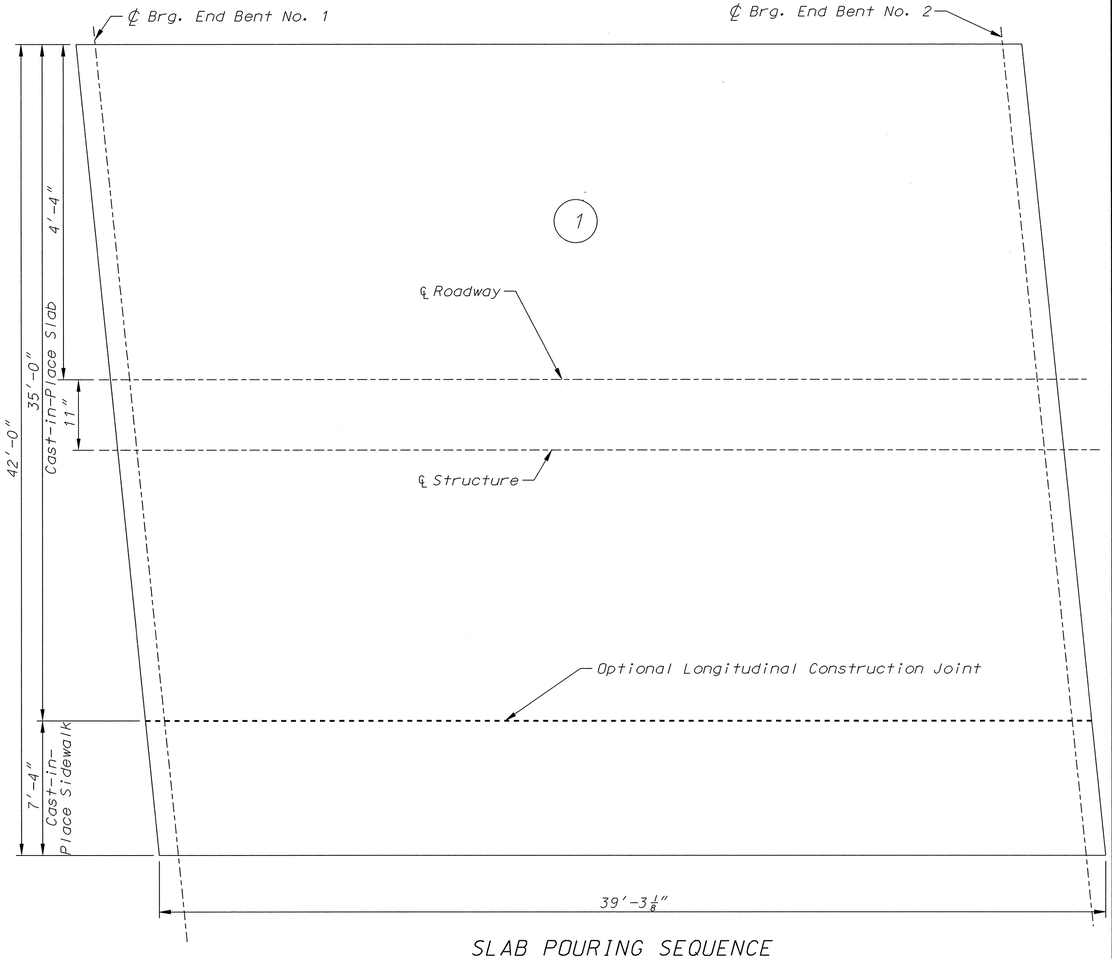
ST. LOUIS COUNTY BRIDGE NO.
211

BRIDGE SHEET NO.
12 OF 20

MODOT BRIDGE NO.
096B2111



REINFORCED CONCRETE SLAB PLAN



SLAB POURING SEQUENCE

	Sequence of Pours	Min. rate of pour cu. yds./hr.	
	Direction	With retarder	No retarder
Basic sequence	1	25	--
	Either direction		

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COUNTY PROJECT NO.
AR-1133

FEDERAL PROJECT NO.
STP-5574(604)

E-W GATEWAY TIP NO.
5808-13

MSD:
P-29044-00

MSD BASE MAP:
18P1

REVISIONS

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STATE OF MISSOURI
DANIEL A. HOWELL
NUMBER PE-2011015754
10-20-14
PROFESSIONAL ENGINEER

DATE:
20-OCT-2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
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CREVE COEUR, MISSOURI 63132
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DANIEL A. HOWELL
PROFESSIONAL ENGINEER
LICENSE NO. 2011015754

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

PLAN OF SLAB
& SLAB POURING
SEQUENCE

DESIGNED:
D.A. HOWELL

DRAWN:
D.A. HOWELL

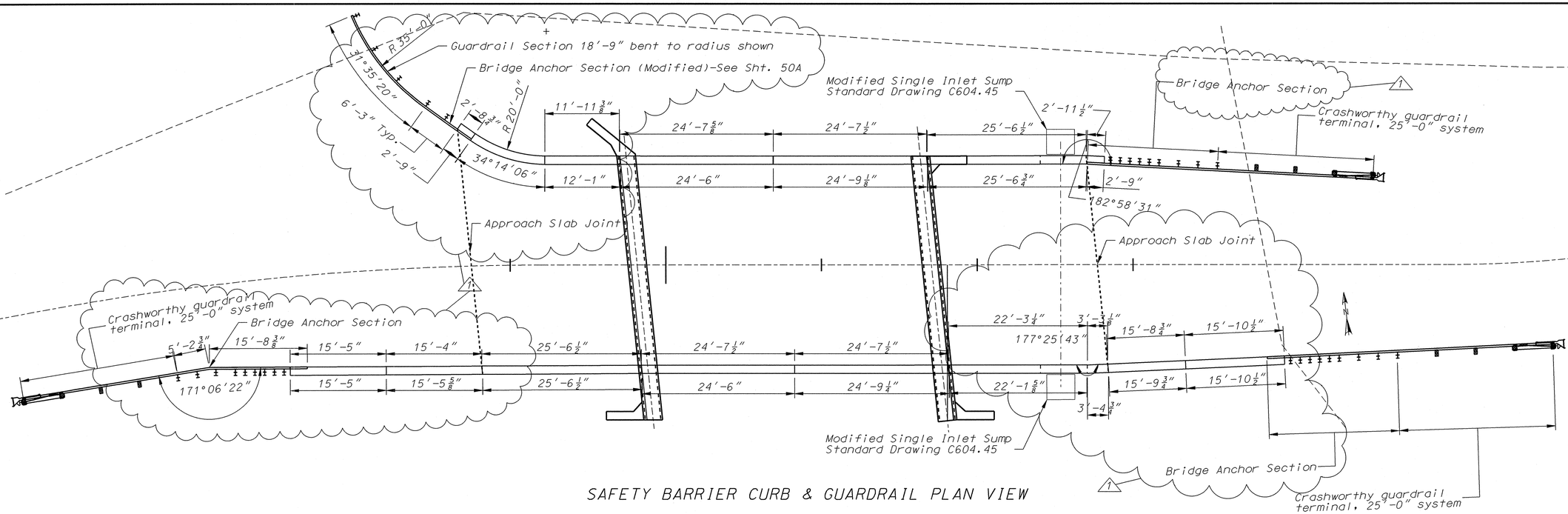
CHECKED:
P.R. THEBEAU

SHEET SEQUENCE:
48 OF 57

ST. LOUIS COUNTY BRIDGE NO.
211

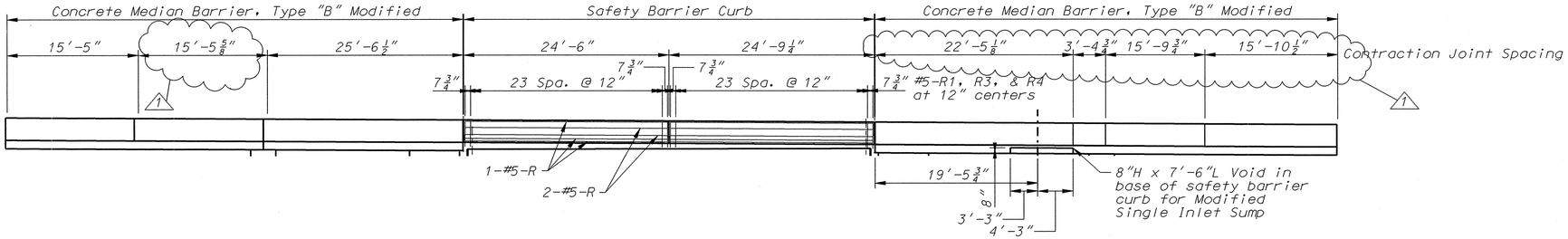
BRIDGE SHEET NO.
13 OF 20

MODOT BRIDGE NO.
096B2111



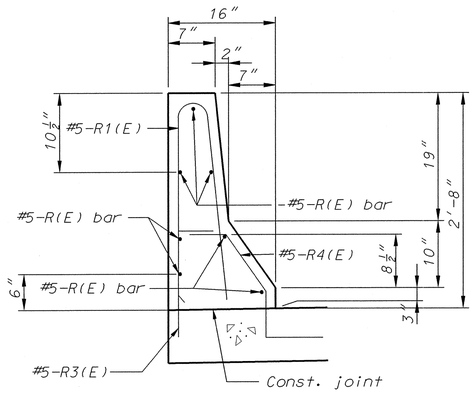
SAFETY BARRIER CURB & GUARDRAIL PLAN VIEW

NOTES:
1. Bridge Anchor Section is detailed on Std. Drawing C606.22.
2. Crashworthy guardrail terminal, 25'-0" system is detailed on Std. Drawing C606.33.

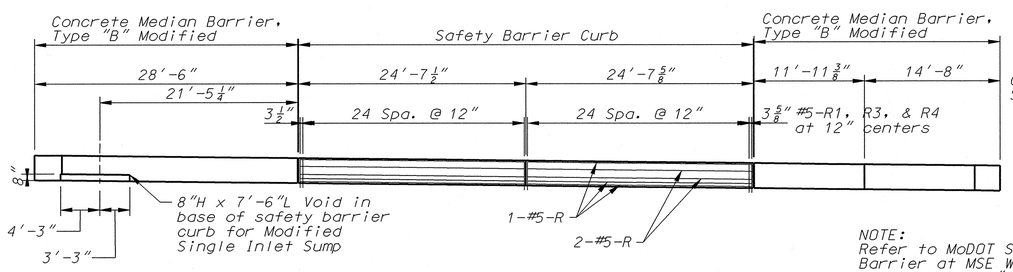


CONCRETE RAIL - SOUTH ELEVATION

NOTE:
Refer to MoDOT Std. 617.10H "Permanent Concrete Traffic Barrier at MSE Wall Type B Modified" for Concrete Median Barrier, Type "B" Modified reinforcing steel

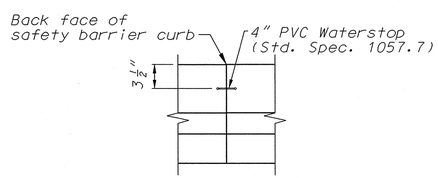


SAFETY BARRIER CURB REINFORCING



CONCRETE RAIL - NORTH ELEVATION

NOTE:
Refer to MoDOT Std. 617.10H "Permanent Concrete Traffic Barrier at MSE Wall Type B Modified" for Concrete Median Barrier, Type "B" Modified reinforcing steel



CONTRACTION JOINT DETAIL

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

BRIDGE SHEET NO. 15 OF 20

MODOT BRIDGE NO. 098B211

ST. LOUIS COUNTY BRIDGE NO. 211

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-0029044-00

MSD BASE MAP: 18P1

REVISIONS

REV	DATE	BY	APP	DESCRIPTION
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STATE OF MISSOURI ★ PROFESSIONAL ENGINEER ★ DANIEL A. HOWELL PE-2010015754 10-20-14

DATE: 20-OCT-2014

PREPARED BY: DESIGN DIVISION 1050 N. LINDBERGH BLVD. ST. LOUIS, MISSOURI 63132 CREVE COEUR, MISSOURI (314) 615-8543

DANIEL A. HOWELL PROFESSIONAL ENGINEER LICENSE NO. 2010015754

Saint Louis COUNTY HIGHWAYS & TRAFFIC PUBLIC WORKS

Sheryl L. Hodges, D.E., P.E., LPG Director

MASON ROAD BRIDGE NO. 211 OVER SMITH CREEK

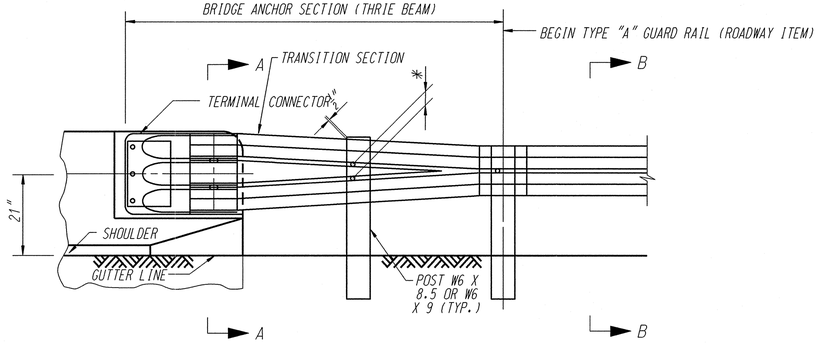
CONCRETE BARRIER & GUARDRAIL PLAN AND LAYOUT

DESIGNED: D.A. HOWELL

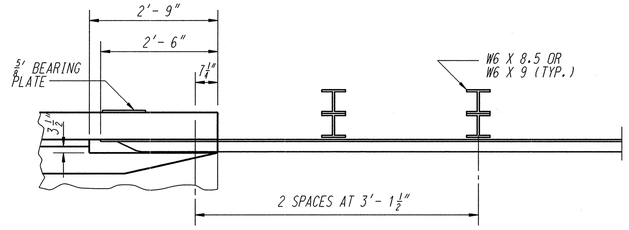
DRAWN: D.A. HOWELL

CHECKED: P.R. THEBEAU

SHEET SEQUENCE: 50 OF 57

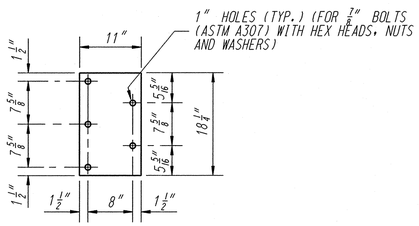


PART SECTION THRU SLAB AT END OF WING

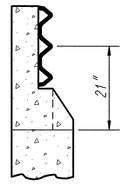


PLAN

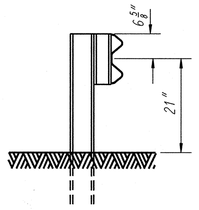
TRANSITION SECTION



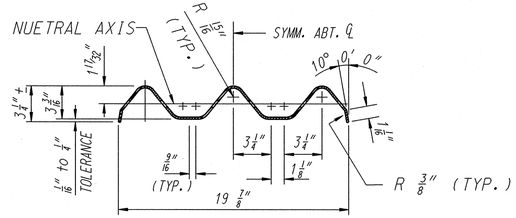
5/8" BEARING PLATE



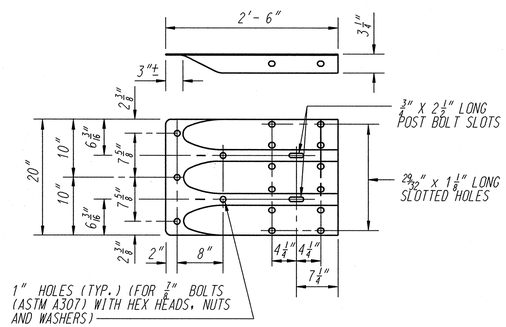
SECTION A-A



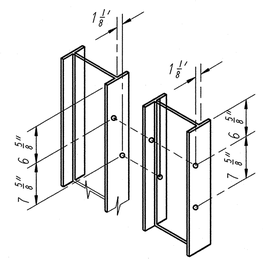
SECTION B-B



SECTION THRU THRIE BEAM RAIL



TERMINAL CONNECTOR



(ALL HOLES 13/16" DIAMETER)

HOLE PUNCHING DETAILS
(FOR STEEL POSTS & BLOCKS)

GENERAL NOTES

1. Do not scale drawing. Follow dimensions.
2. The Thrie Beam Rail, Terminal Connector and Transition Section for the Bridge Anchor Section shall be made of steel and shall be 12 gage. Zinc coating shall be Type 2.
3. For protective coating and material requirements, see Section 1040 of the Saint Louis County Standard Specifications.
4. Rail posts shall be set perpendicular to the roadway profile grade and vertically in cross section.
5. Washers shall be used at all post bolts (between bolt head and beam). They shall be retangular in shape (3"x 1 3/4"x 5/16" min.) and flat, or when necessary of such design as to fit the contour of the beam. Washers shall have a 11/16"x 1" slotted hole.
6. Use 5/8" Button-Head, Oval Shoulder Bolts with Hex Nuts at all slots. (Tickness of Hex Nuts = 5/8".)
7. The Bearing Plate shall be fabricated from A36 steel and galvanized.
8. ALL LAP SPLICES, INCLUDING TERMINAL CONNECTORS, SHALL BE MADE IN THE DIRECTION OF TRAFFIC.
9. For Guard Rail requirements refer to the Construction Details for "Guard Rail," Standard Drawing C606.01.
10. (*) Verify by Rail Transition Producer.

Sheet Added

1

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5805-13

MSD: P-0029044-00

MSD BASE MAP: 18P1

REVISIONS

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STATE OF MISSOURI ★ ENGINEER ★ DANIEL A. HOWELL NUMBER PE-2011017754 10-20-14 ★ PROFESSIONAL

DATE: 20-OCT-2014

PREPARED BY: DESIGN DIVISION, 1050 N. LINDBERGH BLVD. 1ST FLOOR, CREVE COEUR, MISSOURI 63132, (314) 615-8543 — PROFESSIONAL ENGINEER

Saint Louis COUNTY HIGHWAYS & TRAFFIC PUBLIC WORKS — Sheryl L. Hodges, D.E., P.E., LPG, Director

MASON ROAD BRIDGE NO. 211 OVER SMITH CREEK

MODIFIED BRIDGE ANCHOR SECTION

DESIGNED: D.A. HOWELL

DRAWN: D.A. HOWELL

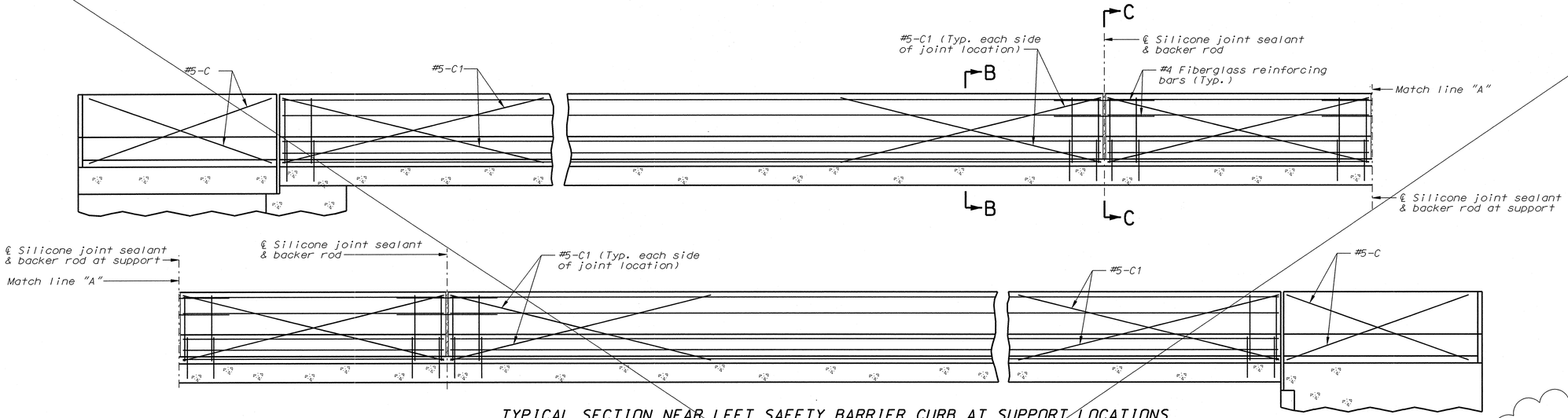
CHECKED: P.R. THEBEAU

SHEET SEQUENCE: 50A OF 57

ST. LOUIS COUNTY BRIDGE NO. 351

BRIDGE SHEET NO. 15A OF 20

MODOT BRIDGE NO. 096B351



TYPICAL SECTION NEAR LEFT SAFETY BARRIER CURB AT SUPPORT LOCATIONS (OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB)

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Notes:

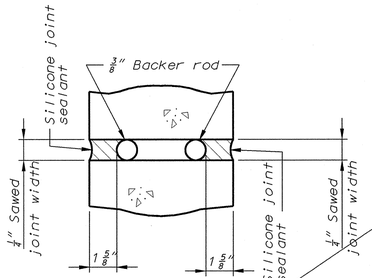
Top of safety barrier curb shall be built parallel to grade with barrier curb joints (except at end bents) normal to grade.

Payment for all concrete and reinforcement, complete in place, will be considered completely covered by the contract unit price for safety barrier curb per linear foot.

Concrete in the safety barrier curb shall be Class B-1.

Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top of slab from end of wing to end of wing.

The curb shall be cured by application of Type 1-D or Type 2 Liquid Membrane-Forming Compound in accordance with Sec 1055. Surface sealing for concrete in accordance with Sec 703 is not required. Application of linseed oil at the contractor's expense is permitted.



SECTION A-A

Note:

Cost of silicone joint sealant and backer rod, complete in place, will be considered completely covered by the contract unit price for Safety Barrier Curb.

Notes:

Joint sealant and backer rods shall be used on all slip-form barrier curbs instead of joint filler and shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

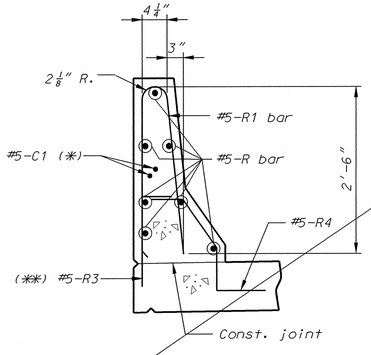
Plastic waterstop shall not be used with slip-form option.

C Bars (Slip-form option only) shall be used in addition to cast-in-place conventional forming reinforcement for bridge safety barrier curb.

For Slip-Form option, all sides of the safety barrier curb shall have a vertically broomed finish and the curb top shall have a transversely broomed finish.

Concrete traffic barrier delineators shall be placed on top of the safety barrier curb as shown on Missouri Standard Plans 617.10 and in accordance with Sec 617. Delineators on bridges with two-lane, two-way traffic shall have retroreflective sheeting on both sides. Concrete traffic barrier delineators will be considered completely covered by the contract unit price for "Safety Barrier Curb".

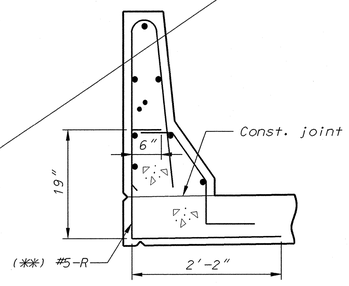
Joints will be required every 10 feet for slip form barrier option.
Contractor is responsible for modifications to reinforcement steel for the extra joint locations.



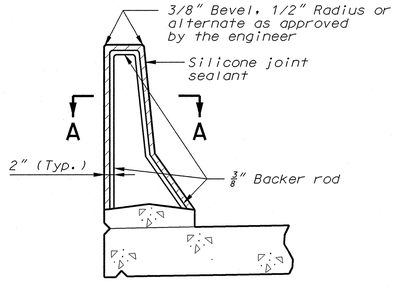
Notes:
(*) Each side of joint location.

(**) The R3 bar and #5 bottom transverse slab bar in cantilever (P/S panels only) combination may be furnished as one bar at the contractor's option.

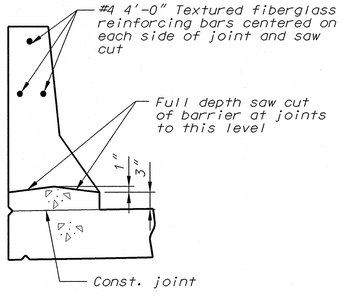
PART SECTION B-B



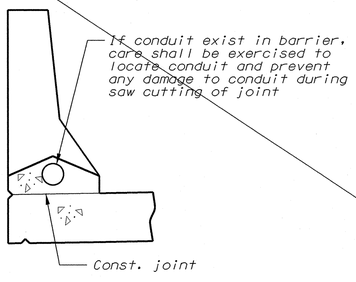
PART SECTION B-B
(Optional #5-R bar shown)



SECTION THRU JOINT



PART SECTION C-C



PART SECTION C-C
(Use when conduit required)

OPTIONAL SLIP-FORM BRIDGE SAFETY BARRIER CURB

(Left barrier curb shown, right barrier curb similar.)

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

BRIDGE SHEET NO. 16 OF 20

MODOT BRIDGE NO. 096B211

ST. LOUIS COUNTY BRIDGE NO. 211

COUNTY PROJECT NO. AR-1133

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-0029044-00

MSD BASE MAP: 18P1

REVISIONS				
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DANIEL A. HOWELL NUMBER PE-2011015754 — STATE OF MISSOURI — REGISTERED PROFESSIONAL — 10-20-14

DATE: 20-OCT-2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI 63132
CREVE COEUR
(314) 615-8543

DANIEL A. HOWELL
PROFESSIONAL ENGINEER
LICENSE NO. 2011015754

Saint Louis COUNTY HIGHWAYS & TRAFFIC PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

SAFETY BARRIER CURB
SLIP FORM OPTION

DESIGNED: D.A. HOWELL

DRAWN: D.A. HOWELL

CHECKED: P.R. THEBEAU

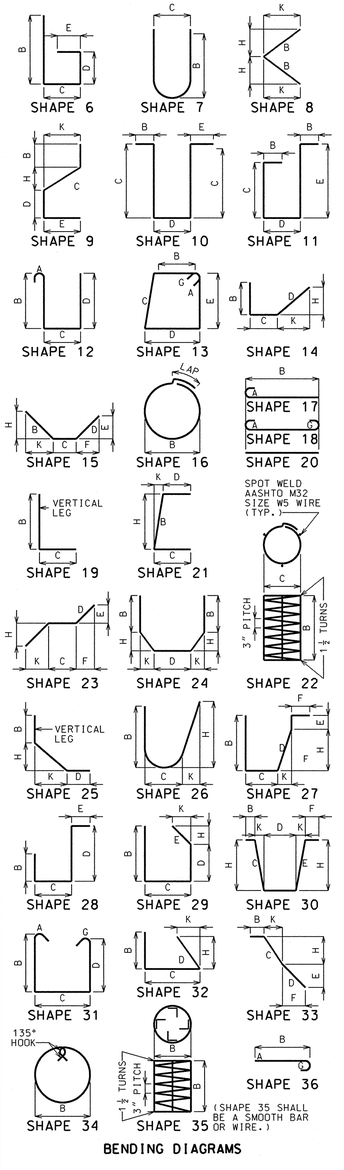
SHEET SEQUENCE: 51 OF 57

BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	PIN DIA. "D" (IN.)	SUBSTR. (X)	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.
8	11	H101	END BENT 1	E	19		X	27 1.00	1 11.000						29 0	28 8	1218
12	9	H102	END BENT 1	E	19		X	24 10.00	1 1.000						25 11	25 8	1047
10	5	H103	END BENT 1	E	20		X	22 5.50							22 6	22 6	235
8	4	H104	END BENT 1	E	20		X	21 11.00							21 11	21 11	117
128	5	H105	END BENT 1	E	19		X	4 0.00	1 8.000						5 8	5 6	734
5	5	H106	END BENT 1	E	15		X	4 4.00	2 0.750	1 4.000	0 11.875	0 10.750	3 2.750	2 10.750	7 9	7 9	40
3	5	H107	END BENT 1	E	20		X	8 8.00							8 8	8 8	27
2	5	H108	END BENT 1	E	21		X	6 6.50	1 8.000				6 6.125	0 8.000	8 3	8 1	17
2	5	H109	END BENT 1	E	14		X		1 8.000	5 10.000			4 1.500	4 1.500	7 6	7 6	16
4	5	H110	END BENT 1	E	14		X		1 4.000	8 9.125			6 2.375	6 2.375	10 1	10 1	42
6	5	H111	END BENT 1	E	15		X	1 8.00	2 1.250	4 10.375	1 10.625	4 5.875	0 7.750	1 6.500	8 8	8 8	54
58	5	H112	END BENT 1	E	20		X	22 5.50							22 6	22 6	1361
13	6	V101	END BENT 1	E	13	S	X	2 8.00	2 8.000	2 8.000	2 8.000				12 0	11 6	225
4	6	V102	END BENT 1	E	10	S	X		3 9.250	2 8.000					10 3	9 11	60
8	5	V103	END BENT 1	E	13	S	X	2 8.00	2 11.000	2 8.000	2 11.000				12 1	11 8	97
1	5	V104	END BENT 1	E	10	S	X		2 11.000	2 8.000					8 6	8 3	9
5	5	V105	END BENT 1	E	10	S	X		3 0.500	2 8.000					8 9	8 6	44
13	5	V106	END BENT 1	E	13	S	X	2 8.00	3 0.500	2 8.000	3 0.500				12 4	11 11	162
4	5	V107	END BENT 1	E	10	S	X		3 3.500	2 8.000					9 3	9 0	38
16	5	V108	END BENT 1	E	13	S	X	2 8.00	3 3.500	2 8.000	3 3.500				12 10	12 5	207
12	5	V109	END BENT 1	E	20		X	4 8.00							4 8	4 8	58
12	5	V110	END BENT 1	E	20		X	3 10.00							3 10	3 10	48
43	5	V111	END BENT 1	E	20		X	13 8.00							13 8	13 8	613
8	11	H201	END BENT 2	E	19		X	27 1.00	1 11.000						29 0	28 8	1218
12	9	H202	END BENT 2	E	19		X	24 10.00	1 1.000						25 11	25 8	1047
8	5	H203	END BENT 2	E	20		X	22 5.50							22 6	22 6	188
8	4	H204	END BENT 2	E	20		X	21 11.00							21 11	21 11	117
128	5	H205	END BENT 2	E	19		X	4 0.00	1 8.000						5 8	5 6	734
5	5	H206	END BENT 2	E	15		X	1 7.00	2 2.000	4 2.750	3 1.625	2 10.125	1 2.125	1 0.750	8 0	8 0	42
3	5	H207	END BENT 2	E	20		X	8 7.75							8 8	8 8	27
2	5	H208	END BENT 2	E	21		X	9 2.88	1 8.000				6 6.250	6 6.625	10 11	10 5	22
5	5	H209	END BENT 2	E	15		X	1 7.00	2 4.500	4 6.250	3 0.375	3 4.250	1 0.750	1 2.125	8 6	8 6	44
3	5	H210	END BENT 2	E	20		X	8 7.75							8 8	8 8	27
2	5	H211	END BENT 2	E	14		X		1 8.000	6 7.250			0 8.000	6 6.875	8 3	8 3	17
58	5	H212	END BENT 2	E	20		X	21 8.00							21 8	21 8	1311
12	6	V201	END BENT 2	E	10	S	X		2 8.000	2 8.000					8 0	7 8	138
52	6	V202	END BENT 2	E	13	S	X	2 8.00	2 8.000	2 8.000	2 8.000				12 0	11 6	898
12	5	V203	END BENT 2	E	20		X	4 3.00							4 3	4 3	53
12	5	V204	END BENT 2	E	20		X	3 10.00							3 10	3 10	48
43	5	V205	END BENT 2	E	20		X	13 8.00							13 8	13 8	613
44	5	D100	SLAB	E	20			48 11.00							48 11	48 11	2245
44	4	D101	SLAB	E	20			48 11.00							48 11	48 11	1438
122	4	D102	SLAB	E	20			34 4.00							34 4	34 4	2798
16	4	D103	SLAB	E	20			7 1.50							7 2	7 2	
			INCR = 7'-3.5"					29 0.00							29 0	29 0	193
194	5	D104	SLAB	E	17			5 2.00							5 9	5 9	1163
130	5	D105	SIDEWALK	E	10				4 4.000	0 4.500					9 1	8 9	1186
28	5	R	BARRIER	E	20			24 4.00							24 4	24 4	711
104	5	R1	BARRIER	E	26			2 6.00	0 4.500				2 6.000	0 3.000	5 3	5 2	560
104	5	R3	BARRIER	E	19			1 5.00	0 6.000						1 11	1 9	190
104	5	R4	BARRIER	E	27				0 6.000	0 11.2500	7.000	0 9.2500	6.375	0 9.250	2 10	2 7	280
~~16~~	~~5~~	~~C1~~	~~SLIP FORM OPT.~~	~~E~~	~~20~~			~~8 0.00~~							~~8 0~~	~~8 0~~	~~134~~
~~8~~	~~5~~	~~C2~~	~~SLIP FORM OPT.~~	~~E~~	~~20~~			~~6 6.00~~							~~6 6~~	~~6 6~~	~~54~~
																REINFORCING STEEL (EPOXY COATED)	23779
																REINFORCING STEEL (BRIDGES)	0

BILL OF REINFORCING STEEL

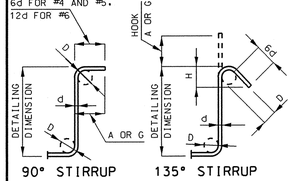
NO. REQ'D.	MARK NO. SIZE	MARK	LOCATION	EPOXY (E)	SHAPE NO.	PIN DIA. "D" (IN.)	SUBSTR. (X)	B FT. IN.	C FT. IN.	D FT. IN.	E FT. IN.	F FT. IN.	H FT. IN.	K FT. IN.	NOMINAL LENGTH FT. IN.	ACTUAL LENGTH FT. IN.	WEIGHT LBS.



BENDING DIAGRAMS

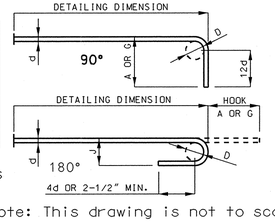
(SHAPE 35 SHALL BE A SMOOTH BAR OR WIRE.)

TWO ADDITIONAL ARE INCLUDED IN THE BAR BILL FOR TESTING.



STIRRUP HOOK DIMENSIONS GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS					
BAR SIZE	D (IN.)	ALL GRADES 180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G	
#3	2-1/4"	5"	3"	6"	
#4	3"	6"	4"	8"	
#5	3-3/4"	7"	5"	10"	
#6	4-1/2"	8"	6"	12"	
#7	5-1/4"	10"	7"	14"	
#8	6"	11"	8"	16"	
#9	9-1/2"	15"	11-3/4"	19"	
#10	10-3/4"	17"	13-1/4"	22"	
#11	12"	19"	14-3/4"	2'-0"	
#14	18-1/4"	2'-3"	21-3/4"	2'-7"	

NOTE:
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT.
S = STIRRUP.
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATOR'S USE (NEAREST INCH).
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS, LENGTH AND WEIGHT OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

Note: This drawing is not to scale. Follow dimensions.

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

COUNTY PROJECT NO. AR-1133
FEDERAL PROJECT NO. STP-5574(604)
E-W GATEWAY TIP NO. 5808-13
MSD: P-0029044-00
MSD BASE MAP: 18P1

REVISIONS				
REV	DATE	BY	APP.	DESCRIPTION
1	10/20/14	DAH	PRT	ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY
I hereby specify that this document was prepared by me or under my direct supervision and that I am authorized by my seal are limited to this sheet, and I assume no responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or verbal advice relating to or intended to be used for any part of the engineering project or survey

STATE OF MISSOURI ★ ENGINEER ★ PROFESSIONAL
DANIEL A. HOWELL
NUMBER PE-2010015754
10-20-14

DATE: 20-OCT-2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ESTL, MISSOURI 63132
CREVE COEUR, MISSOURI 63132
(314) 615-8543
DANIEL A. HOWELL
PROFESSIONAL ENGINEER
LICENSE NO. 2010015754

Saint Louis COUNTY
HIGHWAYS & TRAFFIC
PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211
OVER SMITH CREEK

BAR LIST

DESIGNED: D.A. HOWELL
DRAWN: D.A. HOWELL
CHECKED: P.R. THEBEAU
SHEET SEQUENCE: 52 OF 57

ST. LOUIS COUNTY BRIDGE NO. 211
BRIDGE SHEET NO. 17 OF 20
MODOT BRIDGE NO. 096B211

GENERAL NOTES:

Design Specifications:
AASHTO LRFD Bridge Design Specifications, 4th Ed., with 2008 Interims.
Seismic Acceleration Coefficient = 0.18g
Soil Site Class C (Very Dense Soil and Soft Rock Profile)

Construction Specifications:
St. Louis County Standard Specifications for Highway Construction, June 1, 2013. "Sec" refers to the sections in this standad specification unless specified otherwise.

Design Loading:
Refer to Geotechnical Report for additional details.
Earth/Granular Backfill: Min. of 110 pcf
Backfill min. angle of internal friction = 17 degrees
Equivalent Fluid Pressure (Active): 47*h+0.38*q
Equivalent Fluid Pressure (At-Rest): 68*h+0.55*q
Where h = depth below adjacent grade (ft)
q = surcharge load, psf
Note: A live load surcharge will be required behind the wall for a driveway for a future residence.

Design Unit Stresses:

Class B Concrete (Retaining Wall):	f'c = 4,000 psi
Reinforcing Steel (Epoxy-Coated)	fy = 60,000 psi
Allowable gross bearing pressure:	Q = 5,500 psi

TEMPORARY EXCAVATION:

Where applicable, temporary excavation slopes shall be consistent with current OSHA regulations. Soils at the site are anticipated to be classified as OSHA Type C soils. OSHA guidelines provide for temporary slopes for Type C soils to be constructed at 1 vertical on 1.5 horizontal (1V:1.5H) or flatter.

Temporary slopes left exposed could undergo sloughing and result in an unstable situation. The contractor should evaluate stability and failure consequences before open cut slopes are made. All cost to restore area, including roadway pavement, to its original condition will be the responsibility of the Contractor.

SHORING AND STAGED CONSTRUCTION

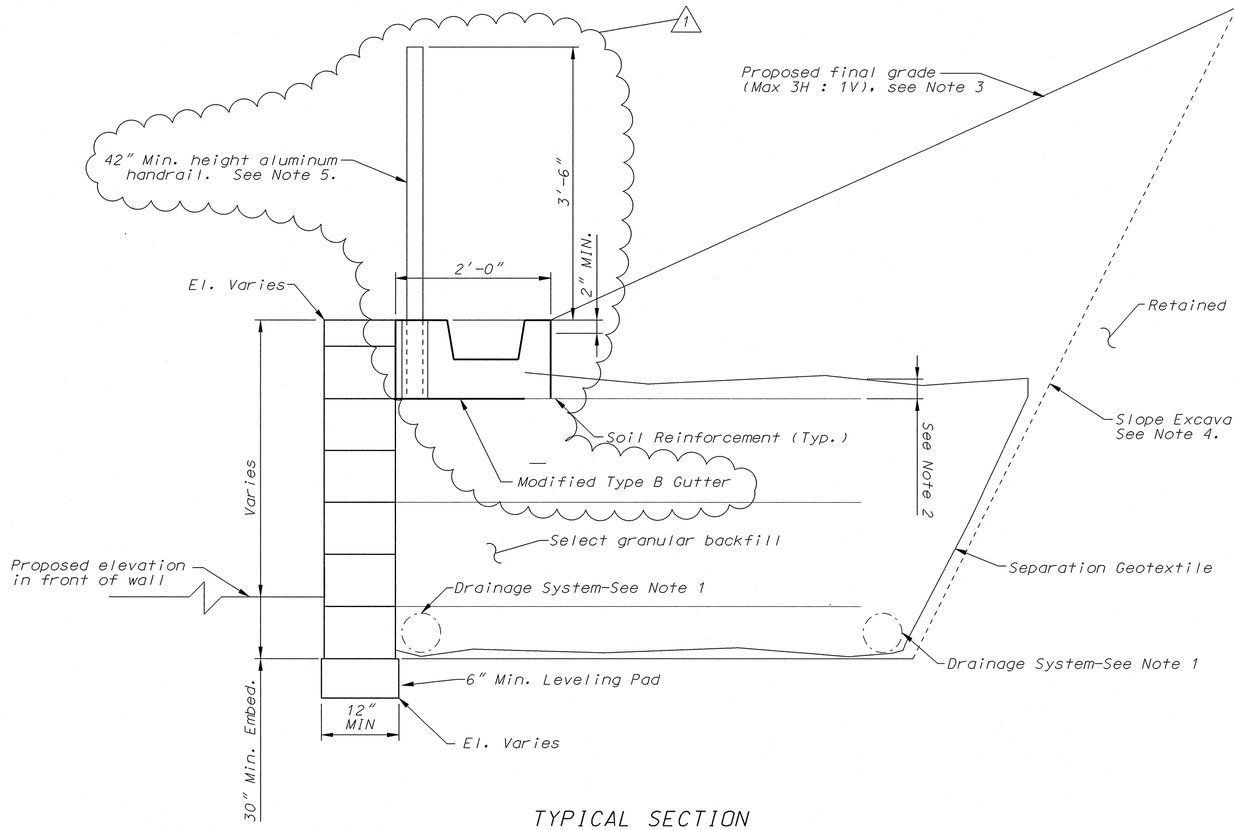
Temporary retention systems or staged construction may be required due to construction limits shown, proximity to adjacent structures, and possible utilities. If staged construction is chosen, excavation shall be limited to one day's work of excavation and wall construction.

Any cost to provide temporary retention system or staged construction will be considered as cost incidental to the excavation and construction of the retaining walls.

MSE WALL DESIGN:

Block Wall Requirements:
Wall maufacturers and geogrid reinforcing shall be selected from Missouri Department of Transportation's pre-approved list of manufacturers.

Estimated Quantities for Small Modular Block Wall		
Item		Total
Modular Block Wall (over 4' height)	sq. ft.	2500



TYPICAL SECTION

NOTE:
1. Provide a minimum of 6" diameter perforated PVC or PE pipe unless larger size pipes are required by the wall manufacturer.
2. Topmost layer of reinforcment shall be fully covered with select granular backfill for structural system, as approved by the wall manufacturer, before placement of the Separation Geotextile
3. Final grade varies along length of wall. Refer to roadway drawings for additional details.
4. Slope excavation line limited to construction limits shown on Wall Sheet 1. Temporary shoring may be required if excavation line exceeds construction limits shown.
5. Aluminum handrail system and anchorage requirements are detailed on St. Louis County Std. Drawing C607.13. General Note 3 will be modified such that the pay item will be for "Aluminum Handrail (Structural)," bid item 607-30.25.

THIS DRAWING IS NOT TO SCALE, FOLLOW DIMENSIONS

WALL SHEET NO. 2 OF 2

ST. LOUIS COUNTY BRIDGE NO.

MODOT BRIDGE NO.

COUNTY PROJECT NO. AR-1494

FEDERAL PROJECT NO. STP-5574(604)

E-W GATEWAY TIP NO. 5808-13

MSD: P-0029044-00

MSD BASE MAP: 18P1

REVISIONS

REV.	DATE	BY	APP.	DESCRIPTION
1	10/20/14	DAH	PRT	ADDENDUM NO. 2

DISCLAIMER OF RESPONSIBILITY: I hereby specify that the documents listed to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents, or portions thereof, relating to or intended to be used for any part of the engineering project or survey

STATE OF MISSOURI * ENGINEER * DANIEL A. HOWELL PE-2011015754 10-20-14 PROFESSIONAL

DATE: 20-OCT-2014

PREPARED BY:
DESIGN DIVISION
1050 N. LINDBERGH BLVD.
ST. LOUIS, MISSOURI 63132
CREVE COEUR, MISSOURI 63132
(314) 615-8543

DANIEL A. HOWELL
PROFESSIONAL ENGINEER
LICENSE NO. 2011015754

Saint Louis COUNTY HIGHWAYS & TRAFFIC PUBLIC WORKS
Sheryl L. Hodges, D.E., P.E., LPG
Director

MASON ROAD
BRIDGE NO. 211

RETAINING WALL
GENERAL NOTES, TYP. SECTION & QUANTITIES

DESIGNED: D.A. HOWELL

DRAWN: D.A. HOWELL

CHECKED: P.R. THEBEAU

SHEET SEQUENCE: 57 OF 57