JEFFERSON COUNTY MISSOURI

JASON JONAS, P.E.
DIRECTOR OF PUBLIC WORKS
ROMAINE CREEK ROAD
BRIDGE REPLACEMENT
SECTION 16 TOWNSHIP T43N, RANGE 5E
PROJECT NO. BRM-5403(654)
BRIDGE NO. 06800231

FINAL PLANS

SHEET INDEX

DESIGN CRITERIA

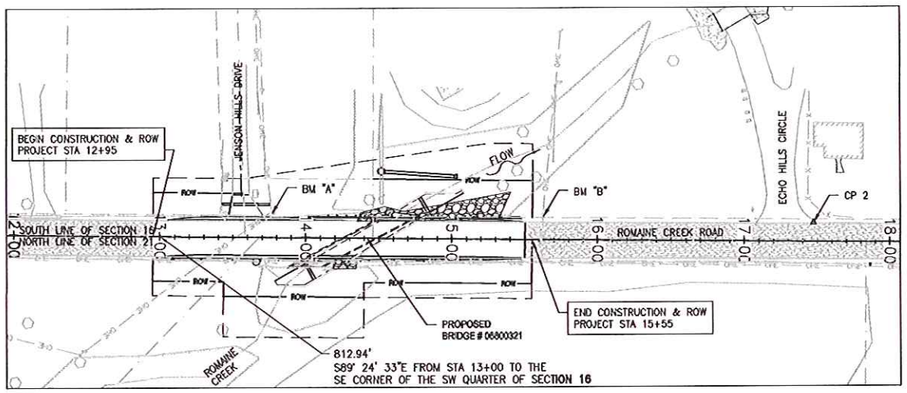
1. A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (AASHTO "GREEN BOOK" EDITION 2011)
2. 2011 MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION
3. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) EDITION 2009
4. AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS
5. MODOT ENGINEERING POLICY GUIDE

DESIGN DESIGNATION

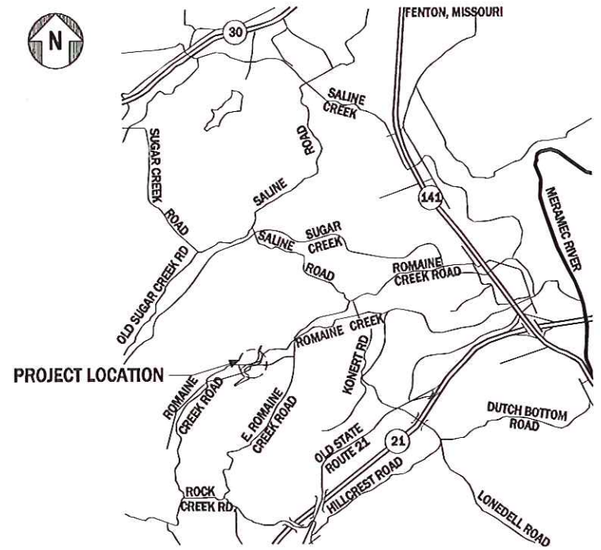
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR
CURRENT POSTED SPEED	35 MPH
DESIGN SPEED	35 MPH
CURRENT ADT	372 (2012)
FUTURE ADT (EST)	987 (2032)
TRUCK %	5%

LENGTH OF PROJECT

BEGINNING STATION	13+00
ENDING STATION	15+50
APPARENT LENGTH	250 FEET
EQUATION AND EXCEPTION	NONE
TOTAL CORRECTIONS	NONE
NET LENGTH OF PROJECT	250 FEET (0.05 MI)



LOCATION MAP
SCALE: 1" = 50'



VICINITY MAP
NOT TO SCALE

LOCAL UTILITY COMPANIES

ELECTRIC
AMEREN MISSOURI
JIM HOVIS
6450 HWY MM
HOUSE SPRINGS, MO 63051
636-671-6155

GAS
LACLEDE GAS
PAT MAYFIELD
410 MAIN ST.
FESTUS, MO 63028
314-575-4717

SEWER
NORTHEAST PUBLIC SEWER DISTRICT
BOB HEMBROCK, P.E.
1041 GRAVOIS RD.
FENTON, MO 63026
636-343-5090

TELEPHONE
AT&T DISTRIBUTION
JIM LASHLEY
909 CHESTNUT
ST. LOUIS, MO 63101
636-402-7027

CABLE
CHARTER COMMUNICATIONS
DARYL STEFFEN
915 CHARTER COMMONS DR.
TOWN & COUNTRY, MO 63017
636-387-6663

WATER
JEFFERSON COUNTY PWSD #3
CHERYL MOELLERING
1469 OLD STATE ROUTE 21
ARNOLD, MO 63010
636-287-2188

NOTE: NO OTHER KNOWN UTILITIES.
UTILITY LOCATE: 1-800-DIG-RITE

LOCAL AGENCY
JEFFERSON COUNTY, MISSOURI

SIGNATURE 4/22/16 DATE

PUBLIC WORKS DIRECTOR
TITLE

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

PLOT SCALE FACTOR 0.5

T:\working\13107 - Romaine Creek Road Bridge\Drawings\13107-COVER SHEET.dwg
voss 12/18/15-09:53

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314.781.7770
F. 314.781.9075
Missouri State Certificate of Authority # 1271

JEFFERSON COUNTY PUBLIC WORKS

STATE OF MISSOURI GLENN A. SMITH NUMBER E-21311 PROFESSIONAL ENGINEER
1/19/16
Glenn A. Smith – Engineer
MO# E-21311

DRAWN BY	MMV
CHECKED BY	MMV
SCALE ON 22"X34"	AS SHOWN
DATE	1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
TITLE SHEET

PROJECT NO.	13107
DRAWING NO.	T-001

GENERAL NOTES:

1. REMOVE ALL WASTE MATERIALS, INCLUDING EXCAVATED MATERIAL, TRASH, AND DEBRIS, AND DISPOSE OF IT PROPERLY OFF-SITE.
2. CONTRACTOR SHALL REPLACE ALL FENCES, SIGNS, ETC. DAMAGED BY THIS CONSTRUCTION. PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING CONDITIONS, TREES, ETC.
3. CONTRACTOR SHALL COORDINATE AND COOPERATE WITH OTHER CONTRACTORS AND COUNTY MAINTENANCE CREWS PERFORMING ROAD WORK FOR THE COUNTY.
4. A COPY OF ALL LOAD TICKETS SHALL BE TURNED IN DAILY TO THE DIRECTOR OF PUBLIC WORKS OR THE DIRECTOR OF PUBLIC WORKS DESIGNATED REPRESENTATIVE.
5. CATCHLINES APPROXIMATE LIMITS OF DISTURBANCE.
6. SAWCUT EXISTING PAVEMENT (FULL DEPTH) AS NECESSARY TO INSTALL PROPOSED IMPROVEMENTS WITH 1' MAXIMUM OVERDIG. (COST INCIDENTAL TO OTHER ITEMS).

INFORMATION ON SITE CONDITIONS:

1. GENERAL: INFORMATION OBTAINED BY THE OWNER REGARDING SITE CONDITIONS, TOPOGRAPHY AND SUBSURFACE INFORMATION OBTAINED BY THE ENGINEER'S INVESTIGATION OF SURFACE AND SUBSURFACE CONDITIONS, SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. NEITHER THE ENGINEER NOR THE COUNTY ASSUMES ANY RESPONSIBILITY FOR ITS ACCURACY OR COMPLETENESS OR FOR THE CONTRACTOR'S INTERPRETATION OF SUCH INFORMATION.
2. EXISTING ELEVATIONS: ELEVATIONS ARE EXPECTED TO VARY +/- 0.1 FEET FROM THE ELEVATIONS SHOWN. THE CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS PRIOR TO START OF NEW WORK.

EXISTING UTILITIES AND FACILITIES:

1. CONTRACTOR TO NOTIFY AND COORDINATE WITH UTILITY COMPANIES TWO WEEKS PRIOR TO COMMENCEMENT OF PROJECT.
2. ALL UTILITIES, EITHER SHOWN OR NOT SHOWN, IN DIRECT CONFLICT WITH THIS CONSTRUCTION SHALL BE RELOCATED BY OTHERS (RESPECTIVE UTILITY COMPANY). CONTRACTOR SHALL COORDINATE THE WORK WITH EACH UTILITY COMPANY AFFECTED.
3. CONTRACTOR TO VERIFY LOCATIONS OF ALL GAS AND WATER SERVICE VALVES, SEWER VENTS, AND WATER METERS BEFORE BEGINNING WORK.
4. CONTRACTOR TO VERIFY THE EXISTENCE OF ANY CABLE AND ALL OTHER UTILITY SYSTEMS BEFORE COMMENCING WORK.
5. CONTRACTOR TO COORDINATE THE ADJUSTMENT OF UTILITY MAIN LINE VALVE COVERS WITH THE CORRESPONDING UTILITY OWNER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
6. ALL POWER POLES WITHIN THE LIMITS OF DISTURBANCE TO BE USED IN PLACE.
7. KNOWN UTILITIES AND FACILITIES ADJACENT TO OR WITHIN THE WORK AREA ARE SHOWN ON THE DRAWINGS. THE LOCATIONS SHOWN ARE TAKEN FROM EXISTING RECORDS AND THE BEST INFORMATION AVAILABLE FROM EXISTING UTILITY PLANS; HOWEVER, IT IS EXPECTED THAT THERE MAY BE SOME DISCREPANCIES AND OMISSIONS IN THE LOCATIONS AND QUANTITIES SHOWN. THOSE SHOWN ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY, AND NO RESPONSIBILITY IS ASSUMED BY EITHER THE OWNER OR THE ENGINEER FOR THEIR ACCURACY OR COMPLETENESS. CONTRACTOR'S REQUEST FOR ADDITIONAL COMPENSATION OR CONTRACT TIME RESULTING FROM ENCOUNTERING UTILITIES NOT SHOWN WILL NOT BE CONSIDERED.
8. NEITHER OWNER NOR ITS OFFICERS OR AGENTS SHALL BE RESPONSIBLE TO CONTRACTOR FOR DAMAGES AS A RESULT OF CONTRACTOR'S FAILURE TO PROTECT UTILITIES ENCOUNTERED IN THE WORK.
9. CONTRACTOR SHALL EXERCISE REASONABLE CARE AND COORDINATE WITH THE COUNTY AND THE UTILITY COMPANY TO VERIFY LOCATIONS OF UTILITIES AND FACILITIES SHOWN ON THE DRAWINGS AND TO DETERMINE THE PRESENCE OF THOSE NOT SHOWN. IMMEDIATE AND ADJACENT AREAS WHERE EXCAVATIONS ARE TO BE MADE SHALL BE THOROUGHLY CHECKED BY VISUAL EXAMINATION FOR INDICATIONS OF UNDERGROUND FACILITIES, AND ALSO CHECKED WITH ELECTRONIC METAL AND PIPE DETECTION EQUIPMENT. WHERE THERE IS REASONABLE CAUSE TO VERIFY THE PRESENCE OR ABSENCE OF AN UNDERGROUND FACILITY, MAKE EXPLORATORY EXCAVATIONS PRIOR TO PROCEEDING WITH MAJOR EXCAVATION IN THE AREA.
10. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL ASPECTS OF MISSOURI UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION STATUTE RSMO 319.015 TO 319.050. CALL 1-800-DIG-RITE.

PRECONSTRUCTION SURVEY AND MONITORING:

1. AFTER THE CONTRACT IS AWARDED AND BEFORE STARTING THE WORK, THE CONTRACTOR SHALL PERFORM A PRECONSTRUCTION SURVEY OF THE SITE. MAKE A THOROUGH EXAMINATION, PROVIDING COLOR PHOTOGRAPHS AND A COLOR VIDEO OF ALL EXISTING BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS WHICH MIGHT BE DAMAGED BY THE CONTRACTOR'S OPERATIONS. THE EXAMINATION SHALL BE MADE JOINTLY BY REPRESENTATIVES OF THE CONTRACTOR, THE OWNER, AND THE ENGINEER. THE SCOPE OF THE EXAMINATION AND PHOTOGRAPHS SHALL INCLUDE CRACKS IN STRUCTURES, SETTLEMENT, LEAKAGE, AND SIMILAR CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRONIC DOCUMENTATION OF THE PRECONSTRUCTION SURVEY, INCLUDING VIDEO, PHOTOS, ETC.
2. THE CONTRACTOR SHALL ESTABLISH VERTICAL AND HORIZONTAL SURVEY CONTROL POINTS ON ALL STRUCTURES AND IMPROVEMENTS LOCATED IN THE VICINITY OF THE WORK PRIOR TO BEGINNING WORK. THE CONTRACTOR SHALL FURNISH THE COUNTY WITH COPIES OF THE SURVEY NOTES FOR EACH SURVEY AND A COPY OF THE LAYOUT OF THE SURVEY CONTROL POINTS.
3. COPIES OF ALL ELECTRONIC DOCUMENTATION SHALL BE PROVIDED TO THE OWNER AND THE ENGINEER.
4. THE ABOVE RECORDS AND PHOTOGRAPHS ARE INTENDED FOR USE AS EVIDENCE IN ASCERTAINING THE EXTENT OF ANY DAMAGE WHICH MAY OCCUR AS A RESULT OF THE CONTRACTOR'S OPERATIONS AND ARE FOR THE PROTECTION OF THE CONTRACTOR AND THE OWNER. THE RECORDS WILL PROVIDE A MEANS OF DETERMINING WHETHER AND TO WHAT EXTENT DAMAGE MAY HAVE OCCURRED AS A RESULT OF THE CONTRACTOR'S OPERATIONS. THE RECORDS WILL ALSO BE UTILIZED TO GUIDE THE RESTORATION PHASE OF THIS PROJECT.

CONTRACTOR'S RESPONSIBILITIES:

1. WHERE CONTRACTOR'S OPERATIONS COULD CAUSE DAMAGE OR INCONVENIENCE TO RAILWAY OR PUBLIC/PRIVATE UTILITY SYSTEMS, THE CONTRACTOR SHALL MAKE ARRANGEMENTS NECESSARY FOR THE PROTECTION OF THESE UTILITIES AND SERVICES. REPAIR OR REPLACE EXISTING UTILITIES REMOVED OR DAMAGED DURING CONSTRUCTION, UNLESS OTHERWISE PROVIDED FOR IN THESE CONTRACT DOCUMENTS.
2. NOTIFY UTILITY OFFICES THAT ARE AFFECTED BY CONSTRUCTION OPERATIONS AT LEAST 72 HOURS IN ADVANCE. UNDER NO CIRCUMSTANCES SHALL ANY UTILITY BE EXPOSED WITHOUT FIRST OBTAINING PERMISSION FROM THE APPROPRIATE AGENCY. ONCE PERMISSION HAS BEEN GRANTED, LOCATE, EXPOSE, AND PROVIDE TEMPORARY SUPPORT FOR THE UTILITIES AS REQUIRED.
3. CONTRACTOR SHALL BE SOLELY AND DIRECTLY RESPONSIBLE TO OWNER AND OPERATOR OF SUCH PROPERTIES FOR DAMAGE, INJURY, EXPENSE, LOSS, INCONVENIENCE, DELAY, SUITS, ACTIONS, OR CLAIMS OF ANY CHARACTER BROUGHT BECAUSE OF INJURIES OR DAMAGE WHICH MAY RESULT FROM CONSTRUCTION OPERATIONS UNDER THIS CONTRACT.
4. IN EVENT OF INTERRUPTION TO DOMESTIC WATER, SEWER, STORM DRAIN, OR OTHER UTILITY SERVICES AS A RESULT OF ACCIDENTAL DAMAGE DUE TO CONSTRUCTION OPERATIONS, PROMPTLY NOTIFY THE PROPER AUTHORITY. COOPERATE WITH SAID AUTHORITY IN RESTORATION AS PROMPTLY AS POSSIBLE AND PAY FOR REPAIR.
5. IN THE EVENT CONTRACTOR ENCOUNTERS WATER SERVICE LINES THAT INTERFERE WITH TRENCHING, OBTAIN PRIOR APPROVAL OF THE WATER UTILITY, CUT THE SERVICE, DIG THROUGH, AND RESTORE SERVICE TO PREVIOUS CONDITIONS USING EQUAL MATERIALS.

INTERFERING STRUCTURES:

1. TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO EXISTING STRUCTURES TO REMAIN WHETHER ON THE SURFACE, ABOVEGROUND, OR UNDERGROUND. AN ATTEMPT HAS BEEN MADE TO SHOW MAJOR STRUCTURES ON THE DRAWINGS. WHILE THE INFORMATION HAS BEEN COMPILED FROM THE BEST AVAILABLE SOURCES, ITS COMPLETENESS AND ACCURACY CANNOT BE GUARANTEED.
2. PROTECT EXISTING STRUCTURES TO REMAIN FROM DAMAGE, WHETHER OR NOT THEY LIE WITHIN LIMITS OF EASEMENTS OBTAINED BY THE OWNER. WHERE EXISTING FENCES, GATES, BARNS, SHEDS, BUILDINGS, OR OTHER STRUCTURE MUST BE REMOVED TO PROPERLY CARRY OUT WORK, OR ARE DAMAGED DURING THE WORK, RESTORE THEM TO ORIGINAL CONDITION AND TO THE SATISFACTION OF PROPERTY OWNER.
3. CONTRACTOR MAY REMOVE AND REPLACE IN EQUAL OR BETTER THAN ORIGINAL CONDITION, SMALL STRUCTURES SUCH AS FENCES, AND SIGNPOSTS THAT INTERFERE WITH CONTRACTOR'S OPERATIONS. THIS WORK SHALL BE COORDINATED WITH THE OWNER. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING IRRIGATION SYSTEMS. SYSTEMS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED WITHIN FIVE (5) DAYS. IF THE SYSTEM IS NOT REPAIRED WITHIN THE TIME LIMIT, THEN THE COUNTY SHALL REPAIR THE SYSTEM AND BACKCHARGE THE CONTRACTOR.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ELECTRONIC DOG FENCES. FENCES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED WITH IN FIVE (5) DAYS. IF THE FENCE IS NOT REPAIRED WITHIN THE TIME LIMIT, THEN THE COUNTY SHALL REPAIR THE FENCE AND BACKCHARGE THE CONTRACTOR.
6. MAILBOXES SHALL BE MOVED TO A NEW LOCATION AND KEPT IN OPERATION DURING CONSTRUCTION. MAILBOXES SHALL BE RESTORED TO THEIR ORIGINAL LOCATION OR A SUITABLE PERMANENT LOCATION AFTER CONSTRUCTION OF NEW PAVEMENT. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.
7. EXISTING TREES TO REMAIN SHALL BE PROTECTED AT ALL TIMES. A $250 BACKCHARGE, PER INCIDENT, SHALL BE ASSESSED FOR DAMAGED TREES. DAMAGED TREES SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH COUNTY INSTRUCTIONS.
8. ANY EXISTING SIGNS WHICH MAY INTERFERE WITH CONSTRUCTION ACTIVITIES MAY BE REMOVED AND SHALL BE REPLACED AFTER PROJECT COMPLETION AT THE CONTRACTOR'S EXSPENSE. SIGNAGE IS TO BE APPROVED BY THE COUNTY.
9. CONTRACTOR IS RESPONSIBLE FOR REMOVAL, PROTECTION, AND FINAL PLACEMENT OF ALL EXISTING SIGNAGE WITHIN THE LIMITS OF THIS PROJECT. ALL EXISTING SIGNAGE SHALL BE RE-ERECTED IN ITS ORIGINAL LOCATION UNLESS OTHERWISE DIRECTED BY THE COUNTY. SIGNS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED TO THE COUNTY'S SATISFACTION AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTATION OF CONDITIONS OF SIGNS BEFORE CONSTRUCTION BEGINS. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.

CONNECTING TO EXISTING FACILITIES:

1. UNLESS OTHERWISE SHOWN OR SPECIFIED, DETERMINE METHODS OF CONNECTING NEW WORK TO EXISTING FACILITIES, AND OBTAIN ENGINEER'S REVIEW AND ACCEPTANCE OF PROPOSED CONNECTIONS.
2. DETERMINE LOCATION, ELEVATION, NATURE, MATERIALS, DIMENSIONS, AND CONFIGURATIONS OF EXISTING FACILITIES WHERE NECESSARY FOR CONNECTING NEW WORK.
3. INSPECT EXISTING RECORD DRAWINGS AND SHOP DRAWINGS, CONDUCT EXPLORATORY EXCAVATIONS AND FIELD INSPECTIONS, AND CONDUCT SIMILAR ACTIVITIES AS NEEDED.
4. SHUTDOWN OF OWNER'S EXISTING FACILITIES PRIOR TO CONNECTION, IF NECESSARY, SHALL BE BY OWNER OR AS SPECIFIED.
5. PRIOR TO BEGINNING CONNECTION WORK, THE CONTRACTOR SHALL MEET ALL STATED, REGULATORY, AND STATUTORY NOTICE REQUIREMENTS.

RESTORATION NOTES:

1. CONTRACTOR SHALL SEED ALL GRASS AREAS DISTURBED BY THE CONSTRUCTION UNLESS OTHERWISE SPECIFIED, (SEE PLANS AND SPECIFICATION FOR DETAILS), AREA OF DISTURBANCE SHALL BE MINIMIZED TO REDUCE SEEDING.
2. RESTORATION OF THE SITE SHALL BE MADE WITH "IN KIND" MATERIALS.
3. DAMAGED COUNTY OR PRIVATE PROPERTY SHALL BE REPAIRED OR REPLACED TO MATCH PRECONSTRUCTION CONDITIONS.
4. CLEAN UP OF JOB SITE @ END OF EACH DAY.
5. MAINTAIN PROPER STORAGE OF HAZARDOUS MATERIALS, IF ANY, ONSITE.

PAVEMENT AND DRIVEWAY NOTES:

1. PAVEMENT STRIPING SHALL BE REPLACED TO MATCH PRECONSTRUCTION CONDITIONS UNLESS OTHERWISE INDICATED ON THE PLANS.
2. ALL PAVEMENT REMOVED OR DAMAGED BY THIS CONSTRUCTION IN EXCESS OF THAT INDICATED ON THE PLANS SHALL BE REPLACED, "IN KIND".
3. THE CONTRACTOR SHALL KEEP ALL PAVEMENTS CLEAN AND FREE OF MUD, ROCK, AND DEBRIS DURING CONSTRUCTION.
4. CONTRACTOR SHALL NOTIFY PROPERTY OWNERS (PREFERABLY IN PERSON) 24 HOURS IN ADVANCE OF ANY DISRUPTED ACCESS TO THEIR DRIVEWAY.
5. CONTRACTOR SHALL NOT DISRUPT ACCESS TO A RESIDENT'S DRIVEWAY FOR MORE THAN ONE (1) DAY NOR FOR A TOTAL OF SIX (6) DAYS THROUGHOUT THE LIFE OF THE PROJECT. ONE DAY SHALL BE CONSIDERED A PERIOD OF TIME OF EIGHT (8) CONSECUTIVE HOURS TO 24 CONSECUTIVE HOURS.

LEGEND:

EXISTING TREE
BENCHMARK
CRASHWORTHY END TERMINAL
MAILBOX
POWER POLE
POWER POLE & GUY WIRE
ROAD SIGN (EXISTING)
ROAD SIGN (PROPOSED)
STREET SIGN
TELEPHONE BOX
PROPOSED CULVERT
ASPHALT ACC
CONCRETE PCC
EXISTING ASPHALTIC SURFACE
EXISTING BUILDING
TURF REINFORCEMENT MAT
GRAVEL/CRUSHED STONE
ROCK BLANKET
SURFACE ROCK
CABLE LINE
CENTER LINE
EXISTING CONTOUR
EXISTING FENCE LINE
HYDRAULIC GRADE LINE
HYDRAULIC GRADE LINE
LIMITS OF DISTURBANCE
OVERHEAD ELECTRIC LINE
PROPERTY LINE
PROPOSED CONTOURS
PROPOSED FENCE LINE
TEMPORARY CONSTRUCTION
TREELINE
SECTION LINE
RIGHT OF WAY LINE (EXISTING)
RIGHT OF WAY LINE (PROPOSED)

ADT	AVERAGE DAILY TRAFFIC
BOP	BEGINNING OF PROJECT
BK	BOOK
BM	BENCHMARK
BRG	BEARING
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CP	CONTROL POINT
D	DIAMETER
d	DEPTH
DWG	DRAWING
E	EASTING
EOP	END OF PROJECT
EL, ELEV	ELEVATION
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
INCR	INCREASING
INT	INTERMEDIATE
LHF	LEFT HAND FORWARD
LF	LINEAR FEET
LPA	LOCAL PUBLIC AGENCY
LT	LEFT
ML	MAINLINE
N	NORTHING
O.D.	OUTSIDE DIAMETER
O/S	OFFSET
PC	POINT OF CURVE
PDE	PERMANENT DRAINAGE EASEMENT
PG	PAGE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PRE	PERMANENT ROAD EASEMENT
PT	POINT OF TANGENT
Q	FLOW (CFS)
RCP	REINFORCED CONCRETE PIPE
RDWY	ROADWAY
RHF	RIGHT HAND FORWARD
ROW, R/W	RIGHT-OF-WAY
RT	RIGHT
STA	STATION
TBA	TO BE ABANDONED
TCE	TEMPORARY CONSTRUCTION EASEMENT
TBP	TO BE PROTECTED
TBR	TO BE REMOVED
TBR&R	TO BE REMOVED & RELOCATED
TYP	TYPICAL
UIP	USE IN PLACE
U.P.	UTILITY POLE
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VPC	VERTICAL POINT OF CURVE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENT

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CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314.781.7770
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Missouri State Certificate of Authority # 1271

JEFFERSON COUNTY MISSOURI

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY MMV
CHECKED BY MMV
SCALE ON 22"X34" NONE
DATE 1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
GENERAL NOTES

PROJECT NO. 13107
DRAWING NO. T-002

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SITE BENCHMARK/CONTROL POINTS

THE ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88 DATUM AND WERE ESTABLISHED BY GPS OBSERVATION UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSIOM GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING STATIONS AND BY DIFFERENTIAL LEVELING DURING JANUARY, 2014.

PROJECT BENCHMARKS

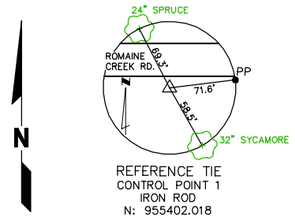
BM "A" ELEVATION 542.23

SET "80D NAIL" IN A POWER POLE APPOXIMATELY 20 FEET EAST OF JENSEN HILLS DRIVE AND 15 FEET NORTH OF THE CENTERLINE OF ROMAINE CREEK ROAD. POWER POLE TAG NO. #15206.

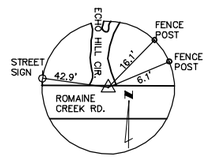
BM "B" ELEVATION 540.18

SET "80D NAIL" IN A POWER POLE APPROXIMATELY 165 FEET WEST OF ECHO HILL CIRCLE AND 18' NORTH OF THE CENTERLINE OF ROMAINE CREEK ROAD. POWER POLE TAG NO. #358541.

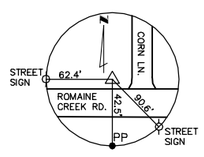
SURVEY CONTROL



REFERENCE TIE
CONTROL POINT 1
IRON ROD
N: 955402.018
E: 829329.374



REFERENCE TIE
CONTROL POINT 2
COTTON PICKER SPINDLE
N: 955434.577
E: 829817.063



REFERENCE TIE
CONTROL POINT 3
IRON ROD
N: 955437.092
E: 830244.355

HORIZONTAL CONTROL

THE HORIZONTAL COORDINATES WERE ESTABLISHED BY GPS OBSERVATIONS USING A CELLULAR EQUIPPED EPOCH MODEL 50 S/N ROVER AND A SPECTRA PRECISION RANGER, AND, BASED ON THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING STATIONS.. THE MISSOURI EAST ZONE NAD83(NSRS2007) STATE PLANE GRID COORDINATES FOR THE CONTROL POINTS WERE CALCULATED AND TO THE BEST OF OUR KNOWLEDGE, THE SAID STATE PLANE GRID COORDINATES MEET THE ACCURACY STANDARDS OF THE CURRENT MISSOURI MINIMUM STANDARDS FOR PROPERTY BOUNDARY SURVEYS (20 CSR 2030-16) AS AN URBAN CLASS SURVEY.

THE AVERAGE COMBINED PROJECT GRID FACTOR IS 0.9999124 AS CALCULATED BY SPECTRA PRECISION SURVEY PRO 5.0 SOFTWARE.

PROJECT COORDINATES ARE MODIFIED MISSOURI STATE PLANE COORDINATES AND WERE ESTABLISHED BY APPLYING THE INVERSE OF THE PROJECT GRID FACTOR (1.0000876) ABOUT THE ORIGIN OF THE COORDINATE SYSTEM (0,0).

GENERAL NOTES:

1. EASEMENT SEARCH REPORTS WERE NOT PROVIDED FOR OUR USE. THIS PROPERTY IS SUBJECT TO EASEMENTS AND OTHER MATTERS OF RECORD.

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JEFFERSON COUNTY MISSOURI 1818

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY **MMV**

CHECKED BY **DJR**

SCALE ON 22"X34" **1" = 20'**

DATE **1/19/2016**

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
SURVEY CONTROL

PROJECT NO. **13107**

DRAWING NO. **T-003**

	Bid Item	Item No	Description	Bid Quantity	Unit
ROADWAY	2013000	1	Clearing and Grubbing	0.4	AC
	2022010	2	Removal of Improvements	1	LS
	2031000	3	Class A Excavation	209	CY
	2035500	4	Embankment in Place	270	CY
	2051010	5	Modified Subgrade	10	SY
	3040504	6	Type 5 Aggregate for Base (4" Thick)(Roadway)	797	SY
	3040504	7	Type 5 Aggregate for Base (14" Thick)(Beyond Shoulders)	142	SY
	4011209	8	Bituminous Pavement Mixture PG64-22, (BP-1)(Driving Lanes & Shoulders)	89.3	TON
	4011209	9	Bituminous Pavement Mixture PG64-22, (BP-1)(Private Driveways)	7.0	TON
	4013000	10	Bituminous Pavement Mixture PG64-22, (Base)(Driving Lanes & Shoulders)	376.8	TON
	6061010	11	Guardrail Type A	190	LF
	6063015	12	Type A Crashworthy End Terminal (25')	4	EA
	6096030A	13	Furnishing Type 3 Rock Ditch Liner	9	CY
	6096043	14	Placing Type 3 Rock Ditch Liner	9	CY
	6113020	15	Furnishing Type 2 Rock Blanket	51	CY
	6113040	16	Placing Type 2 Rock Blanket	51	CY
	6143013	17	Manhole Frame and Cover, Type 3	1	EA
	6161005	18	Construction Signs	199	SF
	6161031	19	Type III Moveable Barricade with Light	6	EA
	6181000	20	Mobilization	1	LS
	6274000	21	Contractor Furnished Surveying and Staking	1	LS
	7250318A	22	18 In. Corrugated Metal Pipe	35	LF
	7265436	23	24 In. Class V Reinforced Concrete Pipe Culvert	50	LF
	7310048	24	Precast Concrete Manhole - 48 In.	5	LF
	7320024A	25	24 In. Concrete Flared End Section	1	EA
	8051000	26	Seeding and Mulching	0.4	AC
	8061019	27	Silt Fence	861	LF
	8061021	28	Type I Ditch Check	3	EA
	8064130	29	Type 3 Turf Reinforcement Mat	176	SY
	8080299	30	Live Stakes (Black Willow Species)	1437	EA
SIGNAGE/STRIPING/SIGNALS					
	6206000B	31	Acrylic Waterbourne Pav't. Paint 4 Inch White	500	LF
	6206001B	32	Acrylic Waterbourne Pav't. Paint 4 Inch Yellow	500	LF
BRIDGE	2063300	33	Class 4 Excavation	250	CY
	2064099	34	Granular Backfill	77	CY
	2160500	35	Removal of Bridges	1	LS
	7034009	36	Class B-1 Concrete (Retaining Walls)	32.6	CY
	7034040	37	Class B-1 Concrete (Culverts-Bridge)	130.0	CY
	7061020	38	Reinforcing Steel (Culverts-Bridge)	19720	LBS
	7061040	39	Reinforcing Steel (Retaining Walls)	3990	LBS
	7133000	40	Bridge Guardrail (W-Beam)	38	LF

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JEFFERSON COUNTY MISSOURI 1818

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
1-19-16
PROFESSIONAL ENGINEER
MATTHEW M. VOSS–ENGINEER
MO# PE–2011015812

DRAWN BY
MMV

CHECKED BY
MMV

SCALE ON 22"X34"
NONE

DATE
1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
SUMMARY OF QUANTITIES (2A)

PROJECT NO.
13107

DRAWING NO.
T-004

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

T:\working\13107 – Romaine Creek Road Bridge\Drawings\13107-COVER SHEET.dwg
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2013000	Clearing and Grubbing			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50	LT & RT	0.4	AC

2022010	Removal of Improvements			
Sheet	STA to STA	Location	Quantity	Unit
C-101			1	LS

2031000	Class A Excavation			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50		209	CY

2035500	Embankment in Place			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50		270	CY

2051010	Modified Subgrade			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50		10	SY

3040504	Type 5 Aggregate for Base (4" Thick) (Roadway)			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50		797	SY

3040504	Type 5 Aggregate for Base (4" Thick) (Beyond Shoulders)			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50	14' LT & RT	142	SY

4011209	Bituminous Pavement Mixture PG64-22 (BP-1)(Driving Lanes & Shoulders)			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50		89	TON

4011209	Bituminous Pavement Mixture PG64-22 (BP-1)(Private Driveways)			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+56	17' LT	7	TON

4013000	Bituminous Pavement Mixture PG64-22 (Base)(Driving Lanes & Shoulders)			
Sheet	STA to STA	Location	Quantity	Unit
C-101	13+00 15+50		377	TON

6061010	Guardrail Type A				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+26.95	14+06.32	14' RT	79	LF
C-101	14+25.07	14+57.56	14' RT	33	LF
C-101	14+26.45	14+58.93	14' LT	33	LF
C-101	14+77.66	15+22.66	14' LT	45	LF

6063015	Type A Crashworthy End Terminal (25')				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+01.95	13+26.95	14' RT	1	EA
C-101	14+57.56	14+82.56	14' RT	1	EA
C-101	14+01.45	14+26.45	14' LT	1	EA
C-101	15+22.66	15+47.66	14' LT	1	EA

6096030A	Furnishing Type 3 Rock Ditch Liner				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+45	14+82	LT & RT	9	CY

6096043	Placing Type 3 Rock Ditch Liner				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+45	14+82	LT & RT	9	CY

6113020	Furnishing Type 2 Rock Blanket				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+52	13+95	RT	51	CY

6113040	Placing Type 2 Rock Blanket				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+52	13+95	RT	51	CY

6143013	Manhole Frame and Cover, Type 3				
Sheet	STA to STA		Location	Quantity	Unit
C-101	14+51.42		45.50' LT	1	EA

6161005	Construction Signs				
Sheet	STA to STA		Location	Quantity	Unit
TCP-101			Varies	199	SF

6161031	Type III Moveable Barricade with Light				
Sheet	STA to STA		Location	Quantity	Unit
TCP-102			Varies	6	EA

6181000	Mobilization				
Sheet	STA to STA		Location	Quantity	Unit
C-101				1	LS

6274000	Contractor Furnished Surveying and Staking				
Sheet	STA to STA		Location	Quantity	Unit
C-101				1	LS

7250318A	18 In. Corrugated Metal Pipe				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+41	13+76	22.36' LT	35	LF

7265436	24 In. Class V reinforced Concrete Pipe Culvert				
Sheet	STA to STA		Location	Quantity	Unit
C-101	14+51.42	15+03.18	42.34' LT - 45.50' LT	50	LF

7310048	Precast Concrete Manhole - 48 In.				
Sheet	STA to STA		Location	Quantity	Unit
C-101	14+51.42		45.50' LT	5	LF

7320024A	24 In. Concrete Flared End Section				
Sheet	STA to STA		Location	Quantity	Unit
C-101	15+03.18		42.34' LT	1	EA

8051000	Seeding and Mulching				
Sheet	STA to STA		Location	Quantity	Unit
C-101	13+00	15+50	LT & RT	0.4	AC

8061019	Silt Fence				
Sheet	STA to STA		Location	Quantity	Unit
C-401	12+95	15+55	LT & RT	861	LF

8061021	Type 1 Ditch Check				
Sheet	STA to STA		Location	Quantity	Unit
C-401	13+41		23' RT	1	EA
C-401	14+28		27' RT	1	EA
C-401	14+32		22' LT	1	EA

8064130	Type 3 Turf Reinforcement Mat				
Sheet	STA to STA		Location	Quantity	Unit
C-401	13+45	15+15	LT & RT	176	SY

8080299	Live Stakes (Black Willow Species)				
Sheet	STA to STA		Location	Quantity	Unit
C-401	13+85	15+15	LT & RT	1437	EA

6206000B	Acrylic Waterbourne Pav't. Paint 4 Inch White				
Sheet	STA to STA		Location	Quantity	Unit
STP-101	13+00	15+50	12' LT & RT	500	LF

6206001B	Acrylic Waterbourne Pav't. Paint 4 Inch Yellow				
Sheet	STA to STA		Location	Quantity	Unit
STP-101	13+00	15+50	Centerline	500	LF

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REV.	DATE	DESCRIPTION	APPROVED

T:\working\13107 - Romaine Creek Road Bridge\Drawings\13107-COVER SHEET.dwg
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Missouri State Certificate of Authority # 1271

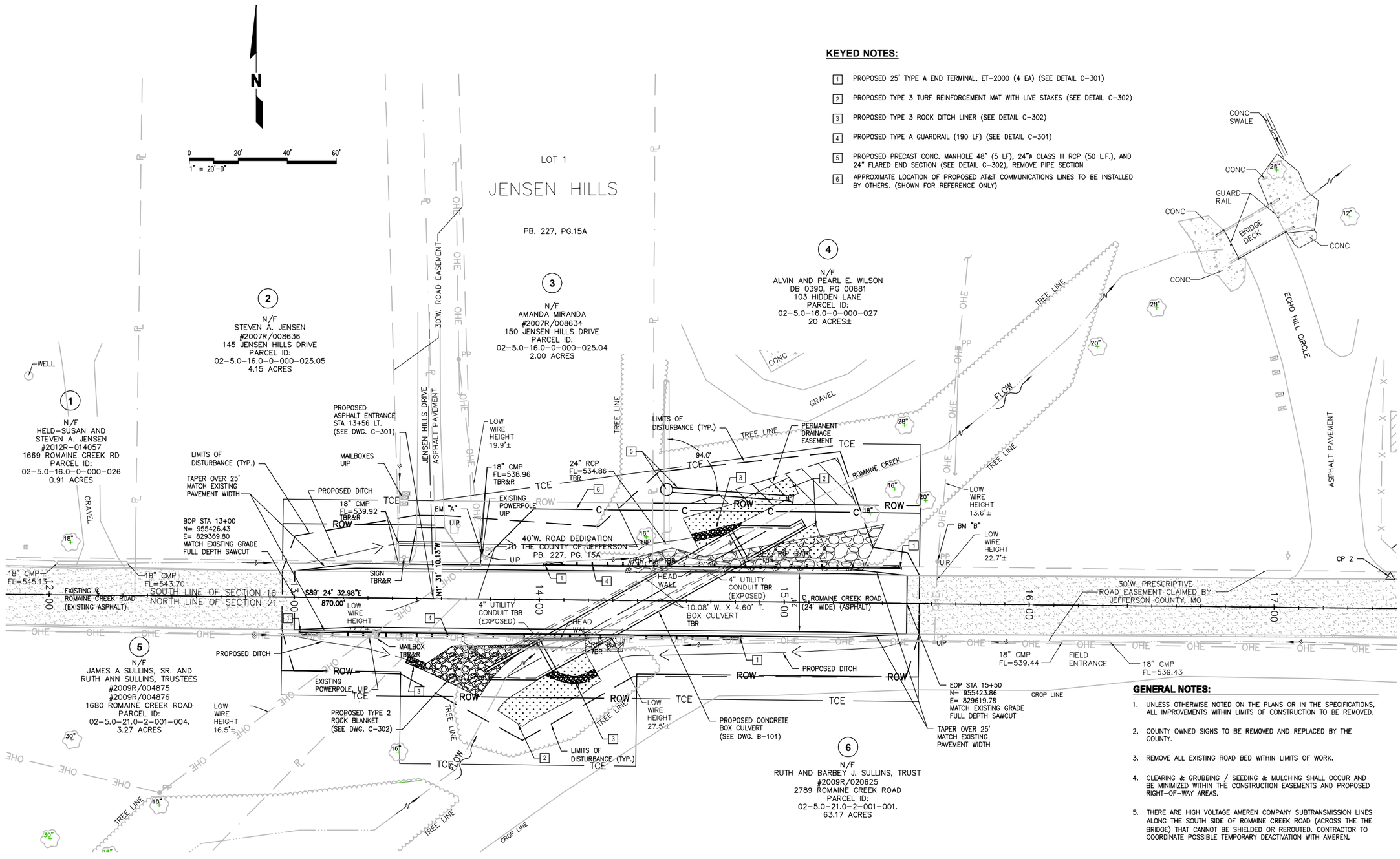
JEFFERSON COUNTY SURVEYOR 2848

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY **MMV**
CHECKED BY **MMV**
SCALE ON 22"X34" **NONE**
DATE **1/19/2016**

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
SUMMARY OF QUANTITIES (2B)

PROJECT NO. **13107**
DRAWING NO. **T-005**



KEYED NOTES:

1. PROPOSED 25' TYPE A END TERMINAL, ET-2000 (4 EA) (SEE DETAIL C-301)
2. PROPOSED TYPE 3 TURF REINFORCEMENT MAT WITH LIVE STAKES (SEE DETAIL C-302)
3. PROPOSED TYPE 3 ROCK DITCH LINER (SEE DETAIL C-302)
4. PROPOSED TYPE A GUARDRAIL (190 LF) (SEE DETAIL C-301)
5. PROPOSED PRECAST CONC. MANHOLE 48" (5 LF), 24"ø CLASS III RCP (50 L.F.), AND 24" FLARED END SECTION (SEE DETAIL C-302), REMOVE PIPE SECTION
6. APPROXIMATE LOCATION OF PROPOSED AT&T COMMUNICATIONS LINES TO BE INSTALLED BY OTHERS. (SHOWN FOR REFERENCE ONLY)

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, ALL IMPROVEMENTS WITHIN LIMITS OF CONSTRUCTION TO BE REMOVED.
2. COUNTY OWNED SIGNS TO BE REMOVED AND REPLACED BY THE COUNTY.
3. REMOVE ALL EXISTING ROAD BED WITHIN LIMITS OF WORK.
4. CLEARING & GRUBBING / SEEDING & MULCHING SHALL OCCUR AND BE MINIMIZED WITHIN THE CONSTRUCTION EASEMENTS AND PROPOSED RIGHT-OF-WAY AREAS.
5. THERE ARE HIGH VOLTAGE AMEREN COMPANY SUBTRANSMISSION LINES ALONG THE SOUTH SIDE OF ROMAINE CREEK ROAD (ACROSS THE THE BRIDGE) THAT CANNOT BE SHIELDED OR REROUTED. CONTRACTOR TO COORDINATE POSSIBLE TEMPORARY DEACTIVATION WITH AMEREN.

PLAN
SCALE: 1" = 20'

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

PLOT SCALE FACTOR 0.5

T:\working\13107 - Romaine Creek Road Bridge\Drawings\C-102 PLAN & PROFILE.dwg
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JEFFERSON COUNTY MISSOURI 1818

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

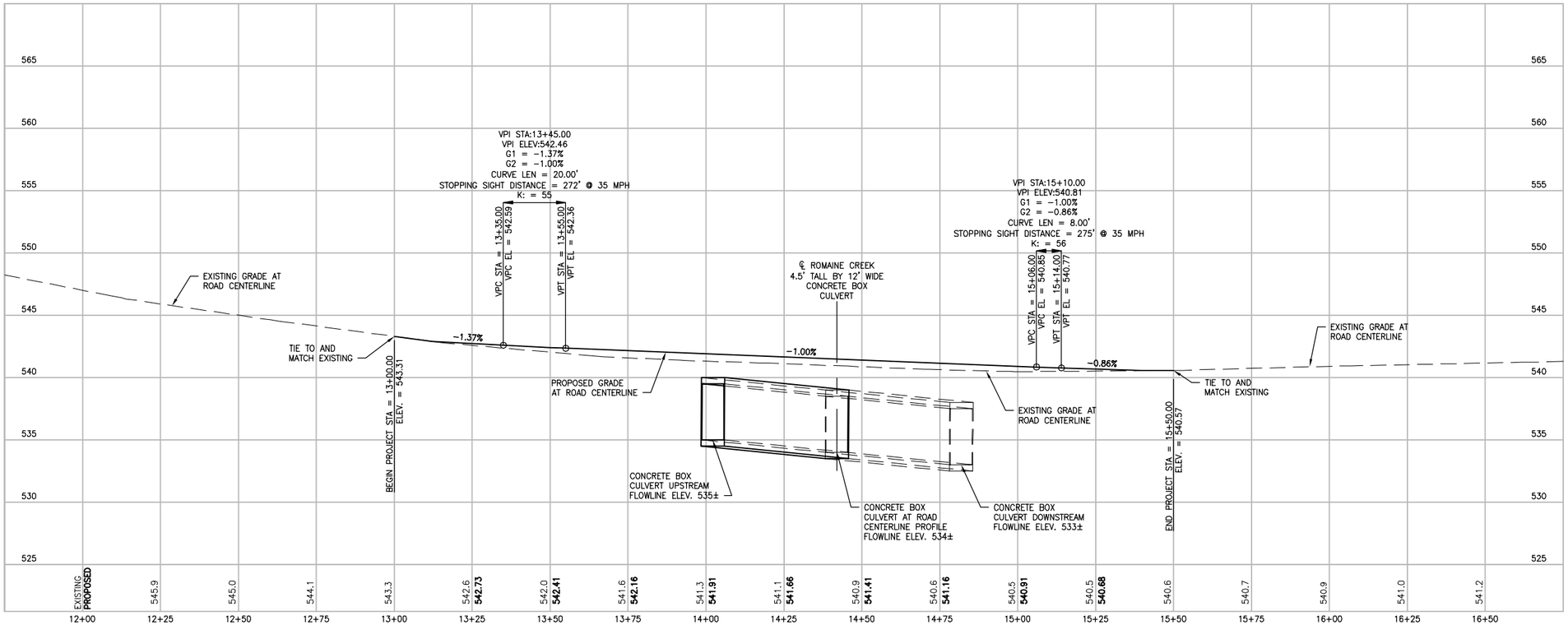
DRAWN BY **MMV**
CHECKED BY **MMV**
SCALE ON 22"x34" **1" = 20'**
DATE **1/19/2016**

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
PLAN & PROFILE

PROJECT NO. **13107**
DRAWING NO. **C-101**

GENERAL NOTES:

1. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, ALL IMPROVEMENTS WITHIN LIMITS OF CONSTRUCTION TO BE REMOVED.
2. COUNTY OWNED SIGNS TO BE REMOVED AND REPLACED BY THE COUNTY.
3. REMOVE ALL EXISTING ROAD BED WITHIN LIMITS OF WORK.
4. CLEARING & GRUBBING / SEEDING & MULCHING SHALL OCCUR AND BE MINIMIZED WITHIN THE CONSTRUCTION EASEMENTS AND PROPOSED RIGHT-OF-WAY AREAS.
5. CONCRETE BOX CULVERT SHOWN ON PROFILE FOR 3-DIMENSIONAL VISUALIZATION PURPOSELY ONLY.



PROFILE

SCALE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

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REV.	DATE	DESCRIPTION	APPROVED

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PLOT SCALE FACTOR 0.5

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Missouri State Certificate of Authority # 1271

CHRISTIAN COUNTY SURVEY 1848

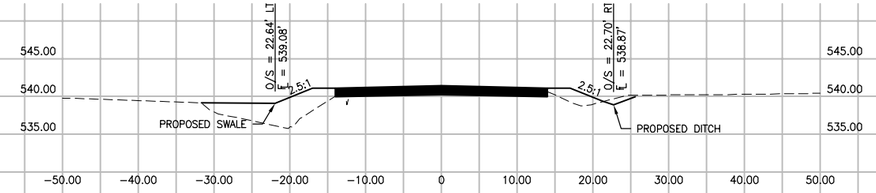
STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY **MMV**
CHECKED BY **MMV**
SCALE ON 22"x34" **1" = 20'**
DATE **1/19/2016**

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
PLAN & PROFILE

PROJECT NO. **13107**
DRAWING NO. **C-102**



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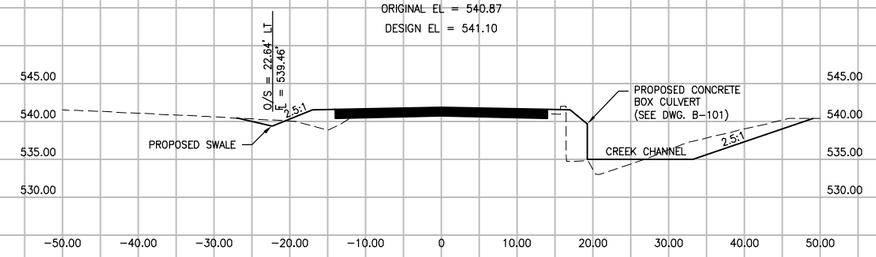

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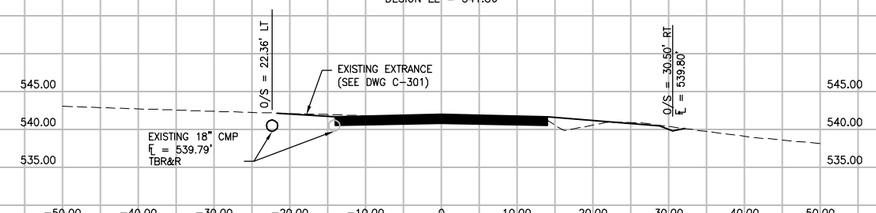

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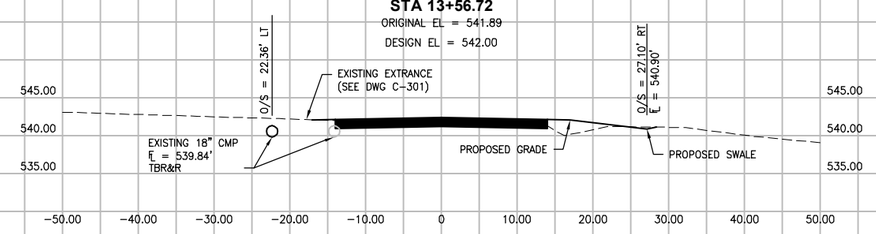

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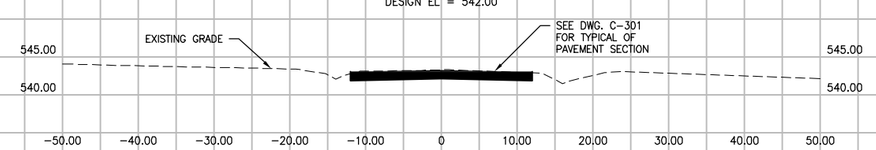

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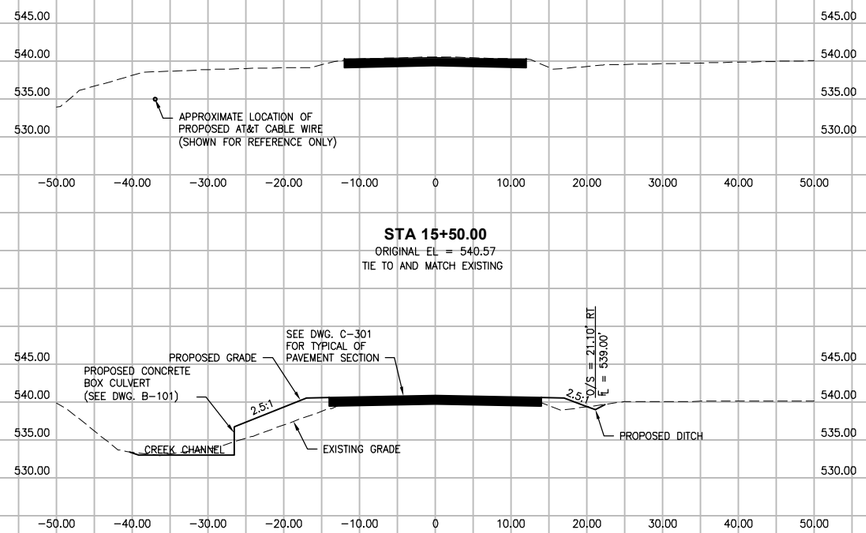

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TIE TO AND MATCH EXISTING

STA 15+00.00
ORIGINAL EL = 540.47
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REV.	DATE	DESCRIPTION	APPROVED

PLOT SCALE FACTOR 0.5

T:\working\13107 – Romaine Creek Road Bridge\Drawings\C-201 CROSS-SECTIONS.dwg
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Missouri State Certificate of Authority # 1271

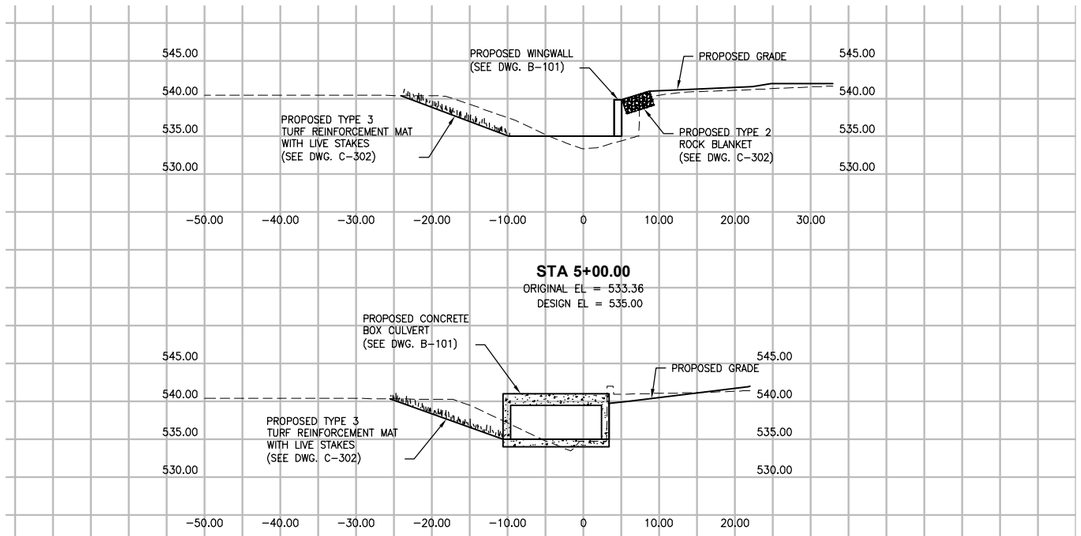
JEFFERSON COUNTY MISSOURI 1818

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY
MMV
CHECKED BY
MMV
SCALE ON 22"X34"
1"=10'
DATE
1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
CROSS-SECTIONS (ROADWAY)

PROJECT NO.
13107
DRAWING NO.
C-201



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CULVERT OMISSION FROM STA 4+00 TO 4+90
(SEE DWG. B-101)

STA 4+90.00
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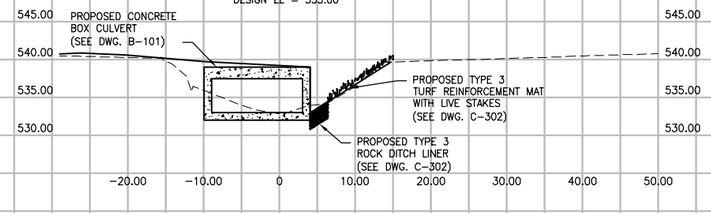

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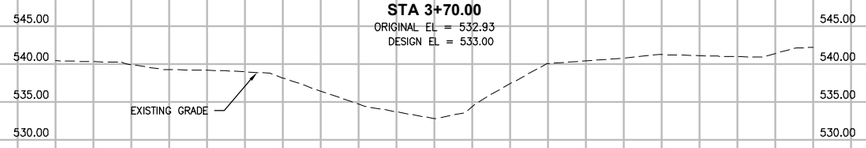

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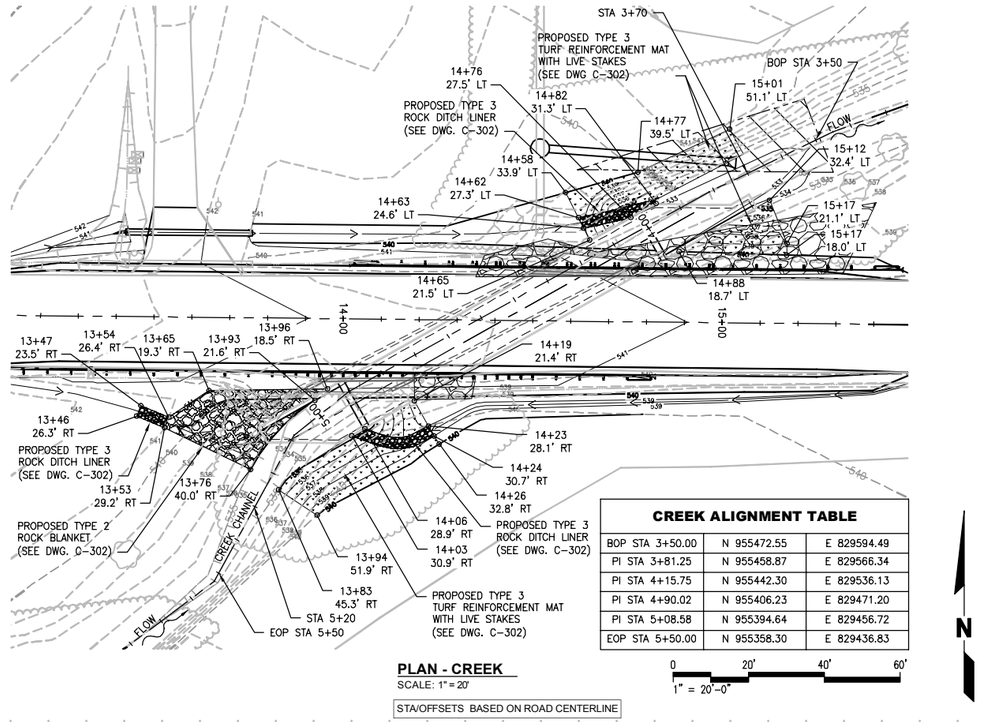


PLAN - CREEK
SCALE: 1" = 20'

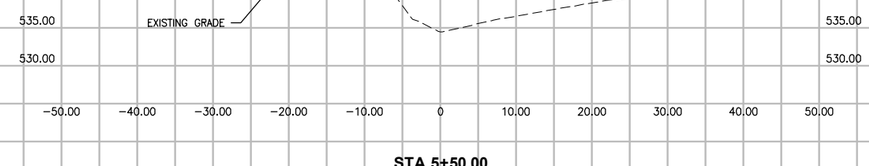
STA/OFFSETS BASED ON ROAD CENTERLINE

CREEK ALIGNMENT TABLE

BOP STA 3+50.00	N 955472.55	E 829594.49
PI STA 3+81.25	N 955458.87	E 829566.34
PI STA 4+15.75	N 955442.30	E 829536.13
PI STA 4+90.02	N 955406.23	E 829471.20
PI STA 5+08.58	N 955394.64	E 829456.72
EOP STA 5+50.00	N 955358.30	E 829436.83

0 20' 40' 60'
1" = 20'-0"

N



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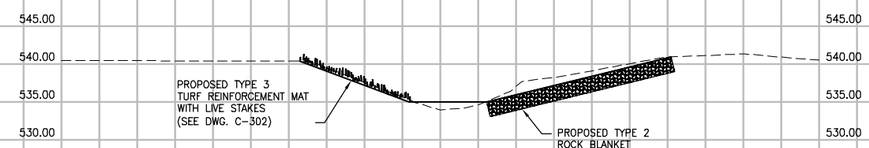

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ORIGINAL EL = 533.95
DESIGN EL = 535.00

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

T:\working\13107 - Romaine Creek Road Bridge\Drawings\C-202 CREEK CROSS-SECTIONS.dwg
voss 06/17/14-10:57

PLOT SCALE FACTOR 0.5

CDG ENGINEERS
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JEFFERSON COUNTY 1818 MISSOURI

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY
MMV

CHECKED BY
MMV

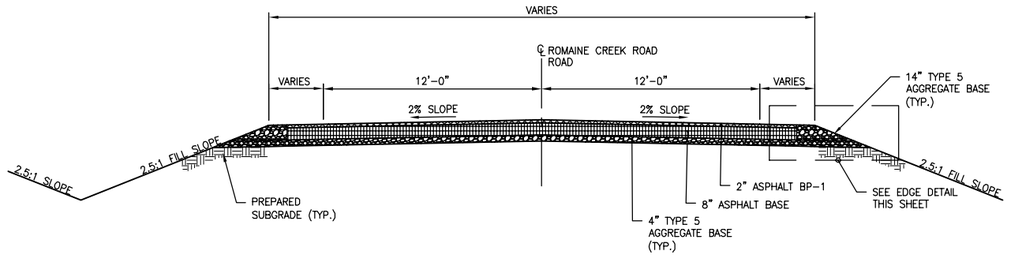
SCALE ON 22"X34"
1"=10'

DATE
1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
CROSS-SECTIONS (CREEK)

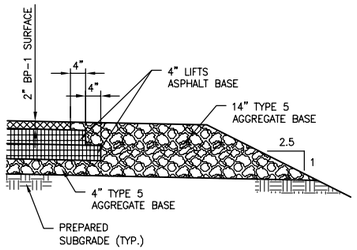
PROJECT NO.
13107

DRAWING NO.
C-202

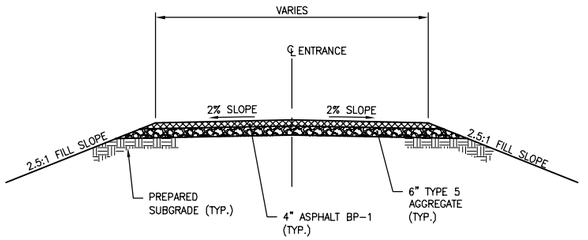


TYPICAL SECTION - TAPER
SCALE: 1"= 4'-0"

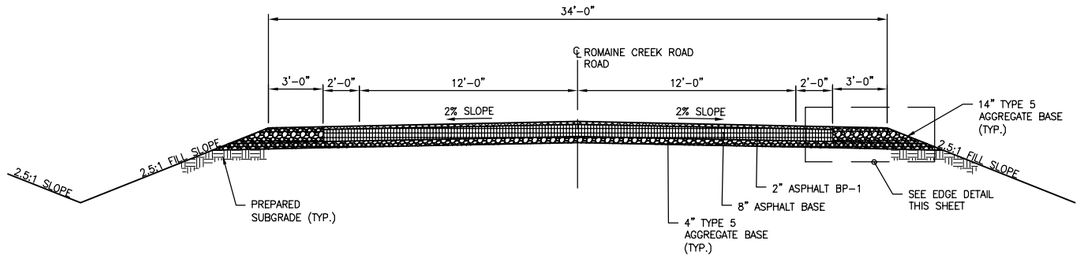
STA 13+00 THRU 13+30
STA 15+20 THRU 15+50



TYPICAL PAVEMENT - EDGE DETAIL
NOT TO SCALE

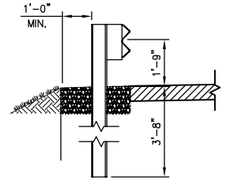


TYPICAL SECTION - ENTRANCE
SCALE: 1" = 4'-0"



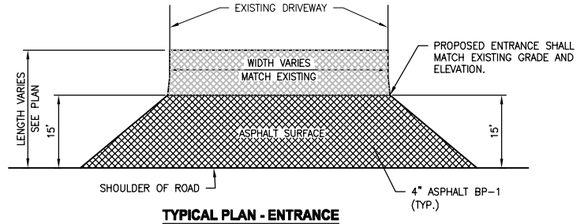
TYPICAL SECTION - NORMAL
SCALE: 1"= 4'-0"

STA 13+30 THRU 15+20



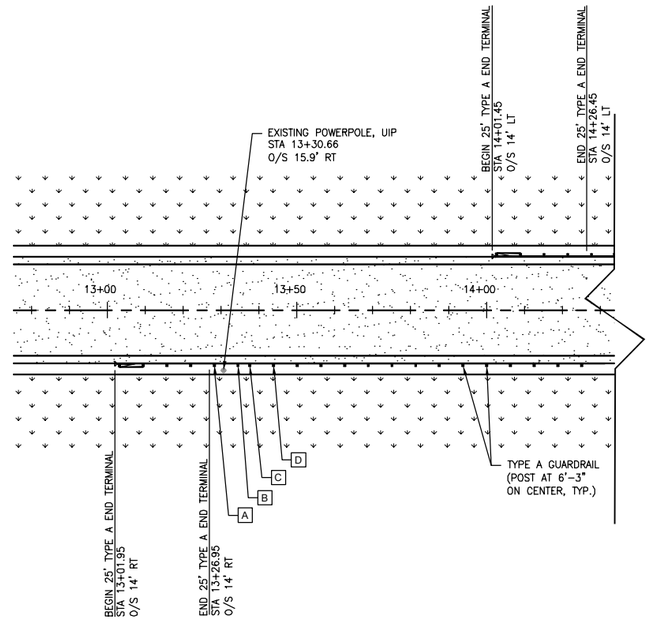
GUARD RAIL NOTES:
1. INSTALL GUARDRAIL PER SPECIFICATIONS.
2. INSTALL POST PER SPECIFICATIONS.

TYPICAL DETAIL - TYPE A GUARDRAIL
NOT TO SCALE



TYPICAL PLAN - ENTRANCE
NOT TO SCALE

MAINLINE STA 13+56 LEFT



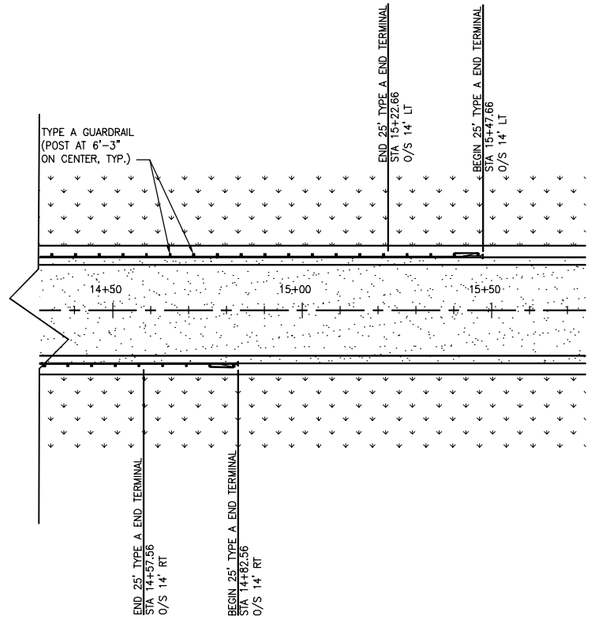
PARTIAL PLAN - GUARDRAIL WEST OF BOX CULVERT
NOT TO SCALE

GUARDRAIL POST SPACING AROUND POWERPOLE

POST	STA	O/S	POST TO POST SPACING
A	13+28.19	14'-0"	
			6'-3"
B	13+34.44	14'-0"	
			3'-1 1/2"
C	13+37.57	14'-0"	
			6'-3"
D	13+43.82	14'-0"	

NOTE(S): OFFSET MEASURED FROM CENTERLINE STATION TO ROADSIDE FACE OF TYPE A GUARDRAIL.

ALONG SOUTH SIDE OF ROMAINE CREEK ROAD, WEST OF PROPOSED BOX CULVERT, CONTRACTOR TO SPACE AND INSTALL NEW TYPE A GUARDRAIL POSTS TO MISS EXISTING POWERPOLE, WHICH WILL BE USED IN PLACE.



PARTIAL PLAN - GUARDRAIL EAST OF BOX CULVERT
NOT TO SCALE

GENERAL NOTES:

1. THE DESIGN GUIDE FOR THE WIDTH OF RIGHT OF WAY FOR THIS PROJECT WILL BE 60 FEET. MORE OF LESS RIGHT OF WAY, AS WELL AS OTHER PROPERTY INTERESTS, MAY BE SECURED TO SATISFY THE REQUIREMENTS OF THE DESIGN FEATURES OF THIS PROJECT.

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

PLOT SCALE FACTOR 0.5

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JEFFERSON COUNTY MISSOURI 1851 18848

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

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MMV

CHECKED BY
MMV

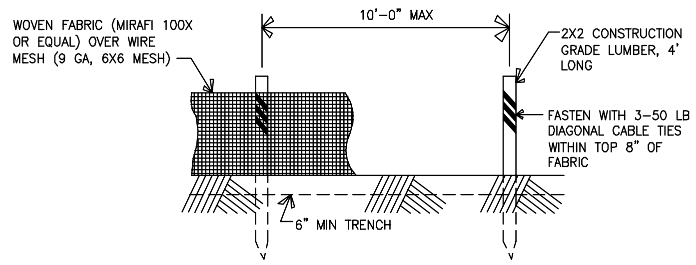
SCALE ON 22"x34"
AS SHOWN

DATE
1/19/2016

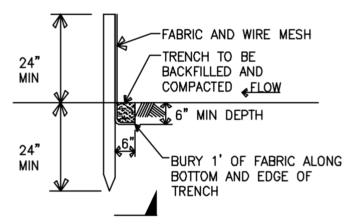
ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
TYPICAL SECTIONS & DETAILS

PROJECT NO.
13107

DRAWING NO.
C-301

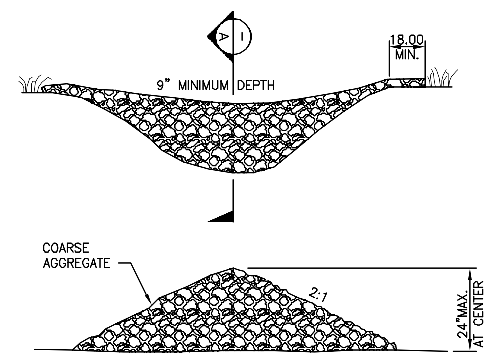


ELEVATION

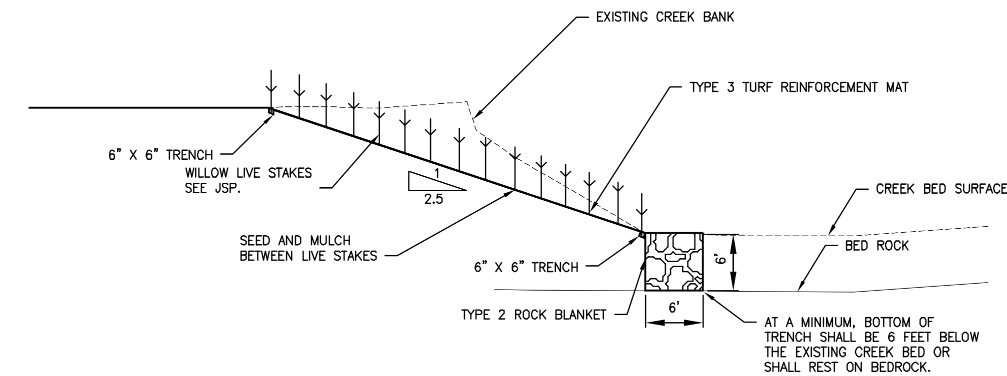


SECTION

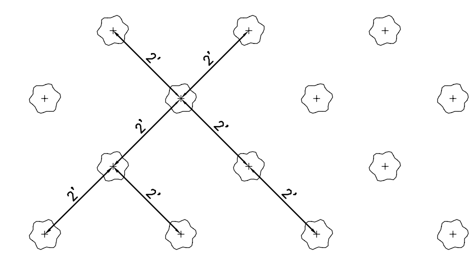
SILT FENCE DETAIL
NOT TO SCALE



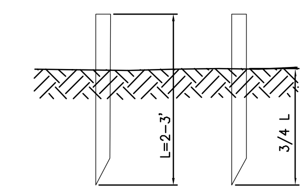
TYPE 1 DITCH CHECK (A / –)
NOT TO SCALE



TYPE 3 TURF REINFORCEMENT MAT WITH LIVE STAKES
NOT TO SCALE



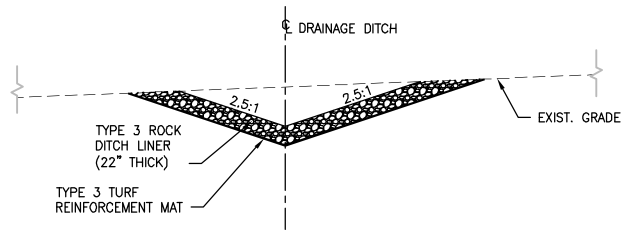
TYPICAL "LIVE STAKE" PLANTING PLAN
NOT TO SCALE



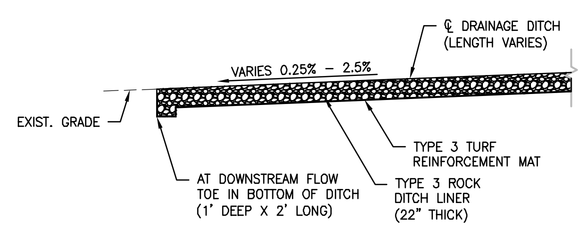
TYPICAL "LIVE STAKE" PLANTING PLAN
NOT TO SCALE

NOTE FOR "LIVE STAKES"

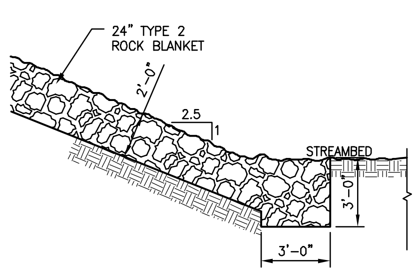
1. SOAK STAKES FOR 24 HOURS MINIMUM PRIOR TO INSTALLATION.
2. ANGLE STAKES SLIGHTLY DOWNSTREAM.
3. APPLY ROOT HORMONE TO BURIED END OF CUTTING.



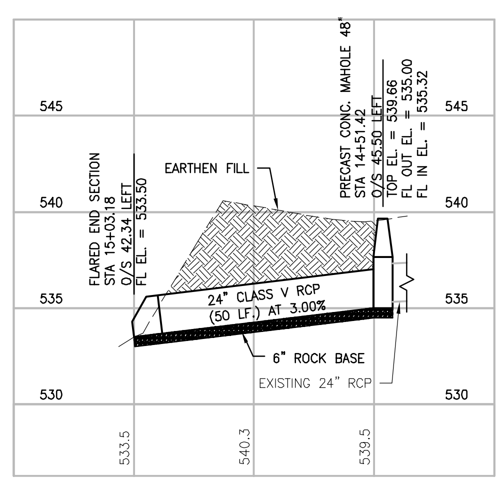
TYPICAL SECTION - TYPE 3 ROCK DITCH LINER
NOT TO SCALE



TYPICAL PROFILE - TYPE 3 ROCK DITCH LINER
NOT TO SCALE



TYPICAL SECTION - TYPE 2 ROCK BLANKET - CREEK BANKS
NOT TO SCALE



STORM SEWER PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 5'

NOTE: CONTRACTOR TO FIELD VERIFY FLOWLINE ELEVATIONS AND MANHOLE DURING CONSTRUCTION. BEDDING SHALL BE PLACED IN ACCORDANCE TO MODOT SPEC. SEC. 726.3.2

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REV.	DATE	DESCRIPTION	APPROVED

PLOT SCALE FACTOR 0.5

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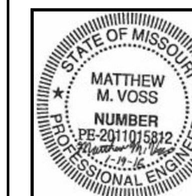
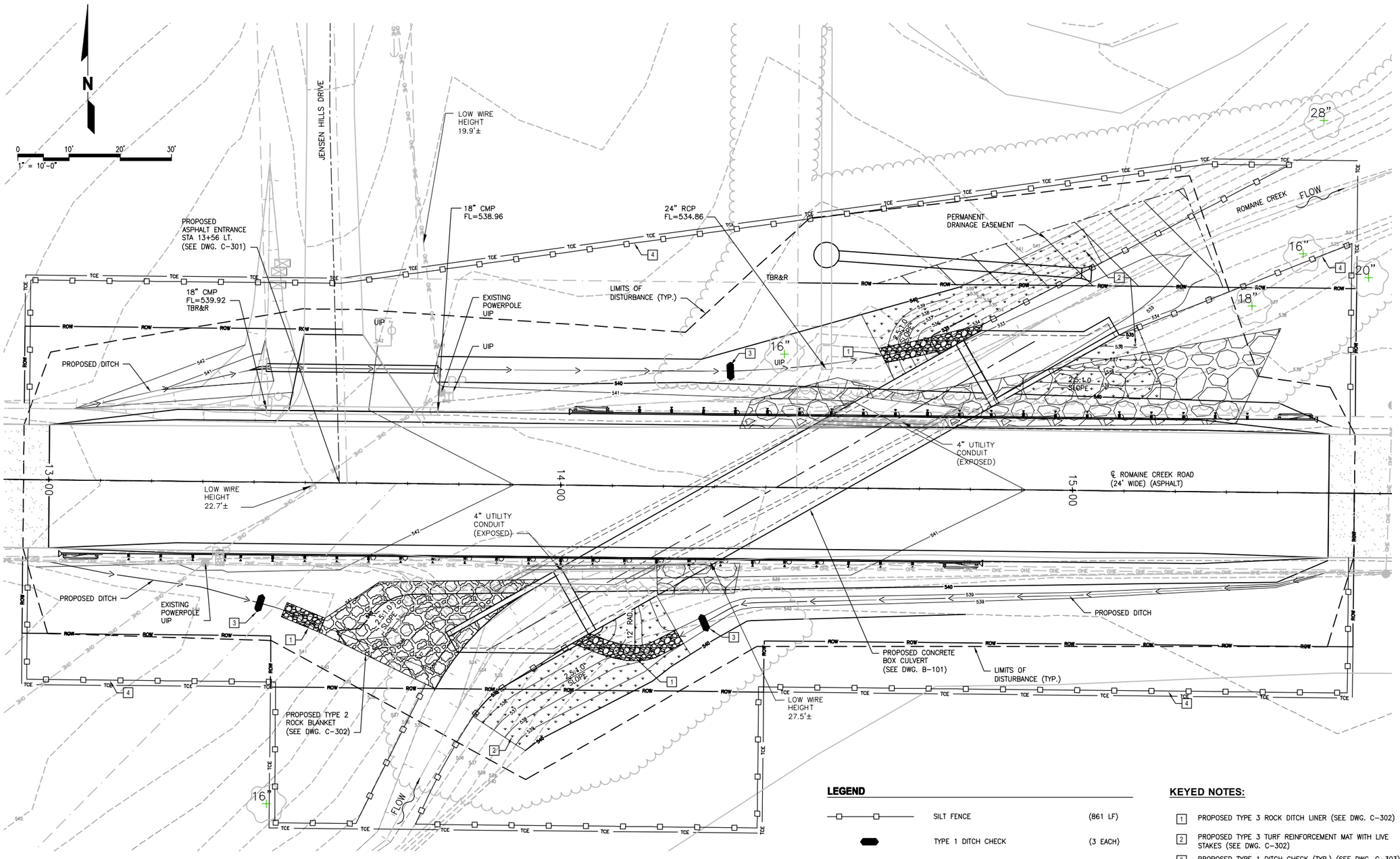


MATTHEW M. VOSS–ENGINEER
MO# PE-2011015812

DRAWN BY MMV
CHECKED BY MMV
SCALE ON 22"x34" AS SHOWN
DATE 1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
TYPICAL SECTIONS & DETAILS

PROJECT NO. 13107
DRAWING NO. C-302



GENERAL NOTES:

1. CONTRACTOR SHALL DESIGN, INSTALL, MAINTAIN, EROSION CONTROL MEASURES DURING CONSTRUCTION AS NECESSARY TO CONTROL AND PREVENT POLLUTION OF STORMWATER AND ADJUST AS DIRECTED BY THE COUNTY AS NECESSARY.
2. CONTRACTOR TO PLACE WASHDOWN STATION AT THE CONSTRUCTION SITE ENTRANCE TO THE PROJECT SITE.
3. EROSION CONTROL METHODS SHALL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS OF 1 INCH OR MORE.
4. EROSION CONTROL MEASURES SHALL BE REMOVED ONCE VEGETATION HAS BEEN FULLY ESTABLISHED AFTER THE COMPLETION OF THE PROJECT.
5. SEEDING SHALL OCCUR UPON THE IMMEDIATE COMPLETION OF GRADING ACTIVITIES.
6. THIS PLAN IS GIVEN AS A GUIDE TO THE CONTRACTOR FOR PLACEMENT OF EROSION CONTROL. CONTRACTOR TO PREPARE AND SUBMIT A SEPARATE SWPPP/EROSION CONTROL PLAN FOR COUNTY APPROVAL.
7. SEE JOB SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

PLAN
SCALE: 1" = 10'

LEGEND

	SILT FENCE	(861 LF)
	TYPE 1 DITCH CHECK	(3 EACH)
	TYPE 2 ROCK BLANKET	(34 CY)
	FLOW DIRECTION	
	TYPE 3 ROCK DITCH LINER	(9 CY)
	TYPE 3 TURF REINFORCEMENT MAT WITH LIVE STAKES	(148 SY)

KEYED NOTES:

1. PROPOSED TYPE 3 ROCK DITCH LINER (SEE DWG. C-302)
2. PROPOSED TYPE 3 TURF REINFORCEMENT MAT WITH LIVE STAKES (SEE DWG. C-302)
3. PROPOSED TYPE 1 DITCH CHECK (TYP.) (SEE DWG. C-303)
4. PROPOSED SILT FENCE (TYP.)

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REV.	DATE	DESCRIPTION	APPROVED

T:\working\13107 - Romaine Creek Road Bridge\Drawings\C-401 GRADING PLAN.dwg
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PLOT SCALE FACTOR 0.5

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JEFFERSON COUNTY MISSOURI 1818

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY
MMV

CHECKED BY
MMV

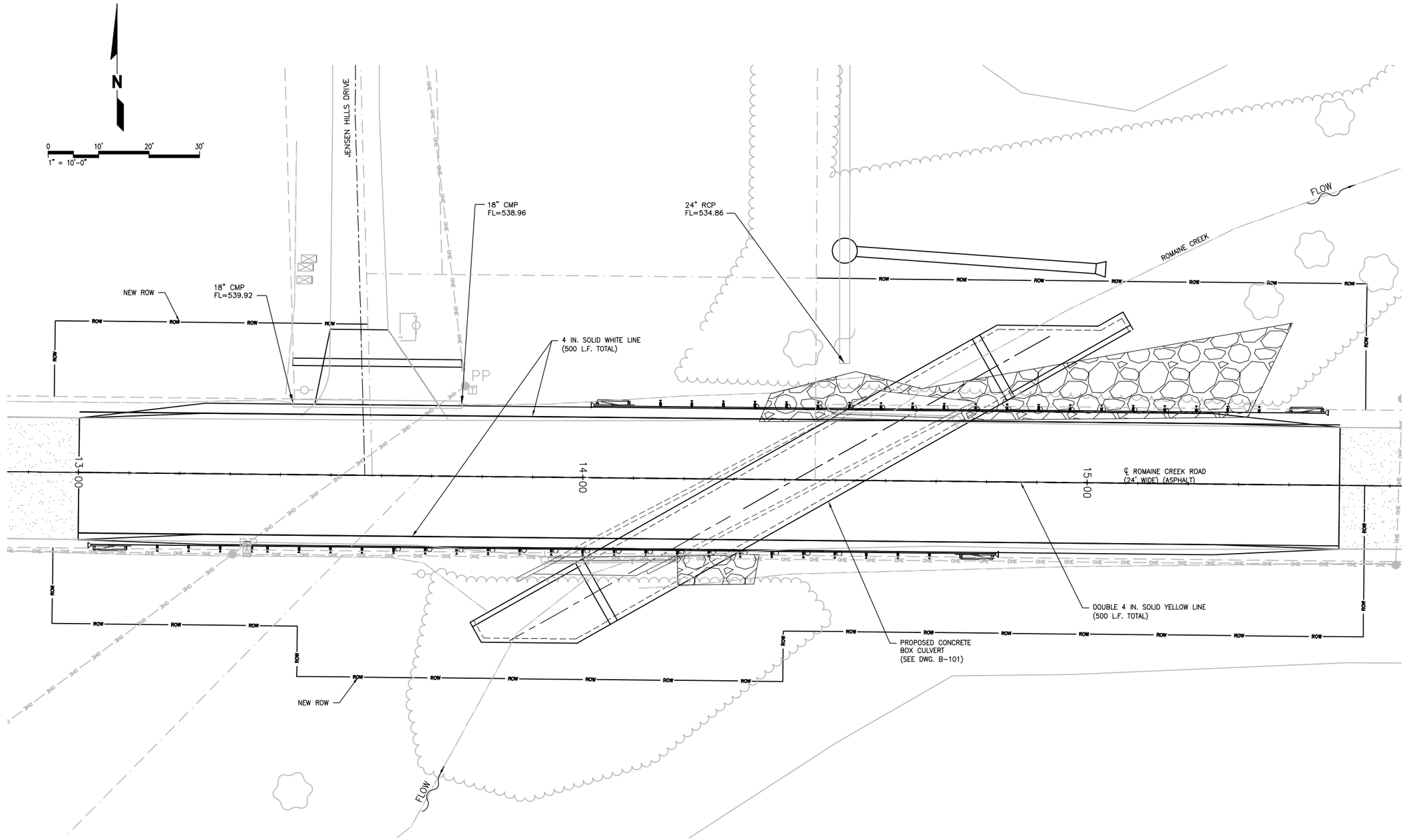
SCALE ON 22"x34"
1" = 10'

DATE
1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
GRADING & EROSION CONTROL PLAN

PROJECT NO.
13107

DRAWING NO.
C-401



PLAN
SCALE: 1" = 10'

GENERAL NOTES:

1. CONTRACTOR SHALL PLACE PAVEMENT MARKINGS AT THE END OF THE PROJECT AND SHALL FOLLOW MODOT'S MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION WHEN ROADWAY STRIPING IS PERFORMED. IF ANY ADJUSTMENTS ARE MADE THE CONTRACTOR SHALL COORDINATE WITH THE COUNTY AS NECESSARY.

2. THIS PLAN IS GIVEN AS A GUIDE TO THE CONTRACTOR FOR PLACEMENT OF STRIPING ON PAVEMENT.

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

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PLOT SCALE FACTOR 0.5

CDG ENGINEERS
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CRAWFORD COUNTY SURVEY 1848

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY
MMV

CHECKED BY
MMV

SCALE ON 22"x34"
1" = 10'

DATE
1/19/2016

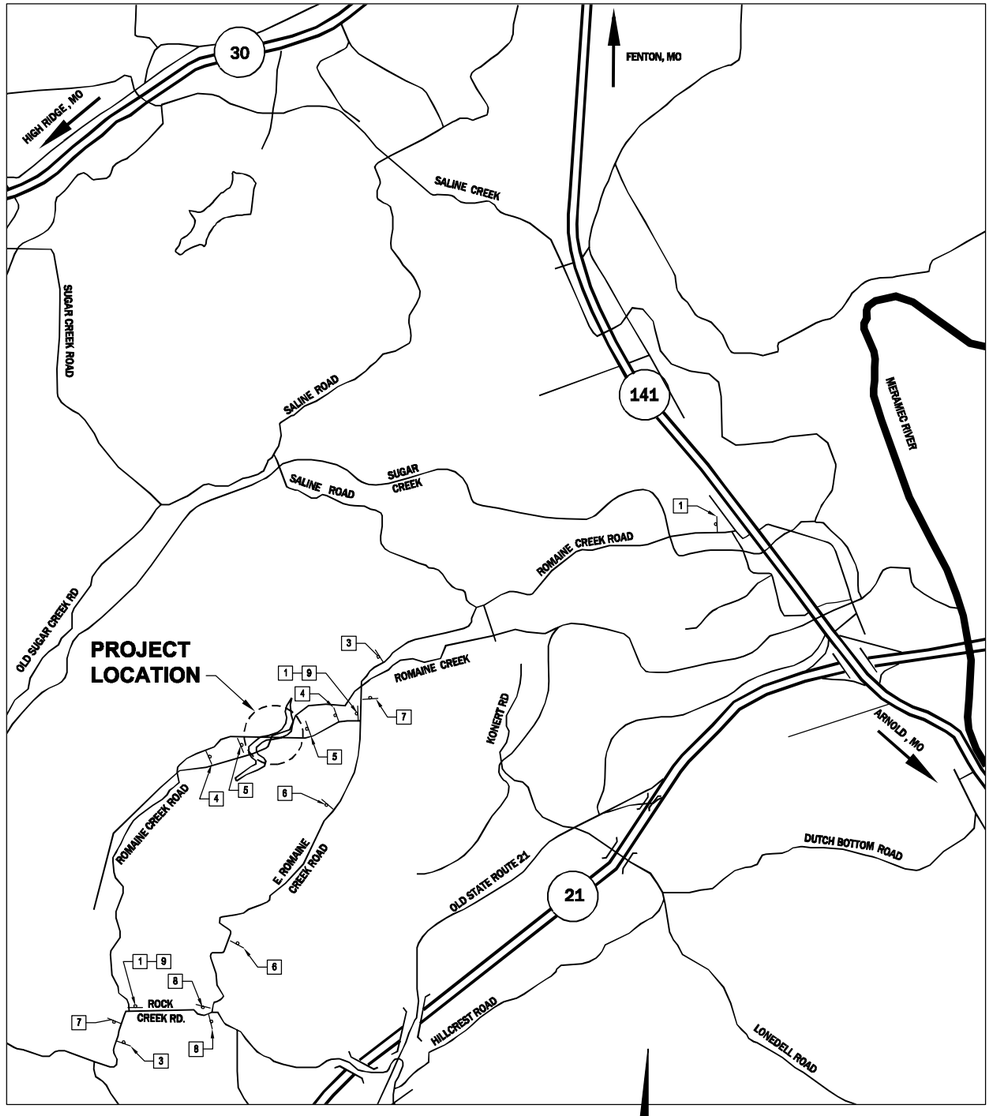
ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
STRIPING PLAN

PROJECT NO.
13107

DRAWING NO.
STP-101

TABLE:

1	BRIDGE OUT XX MILES AHEAD LOCAL TRAFFIC ONLY (R11-3b)
2	TYPE III MOVEABLE BARRICADE (R11-4)
3	DETOUR 1000 FT (W20-2)
4	ROAD CLOSED 1000 FT (W20-3)
5	ROAD CLOSED (W20-3)
6	DETOUR (M4-8)
7	END DETOUR (M4-8a)
8	DETOUR (M4-9)
9	DETOUR (M4-10)
10	PRIVATE DRIVE NO CONTRACTOR USE



VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

1. ALL SIGNS SHALL BE SIZED FOR CONVENTIONAL ROAD, UNLESS NOTED OTHERWISE.
2. ALL SIGNS SHALL CONFORM TO THE CURRENT EDITION OF THE MUTCD.
3. CONTRACTOR TO COORDINATE WITH COUNTY BEFORE SIGN PLACEMENT. DISTANCES FOR R11-3b SIGN TO BE DETERMINED BEFORE SIGN PLACEMENT.
4. ARROW SIGNS (M4-9 & M4-10) SHALL BE SELECTED (LEFT OR RIGHT) IN THE CORRECT DIRECTION OF THE DETOUR ROUTE.
5. MAINTAIN ACCESS FOR ALL LOCAL PROPERTY OWNERS DURING CONSTRUCTION.

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PLOT SCALE FACTOR 0.5

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STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY
PJL

CHECKED BY
MMV

SCALE ON 22"x34"
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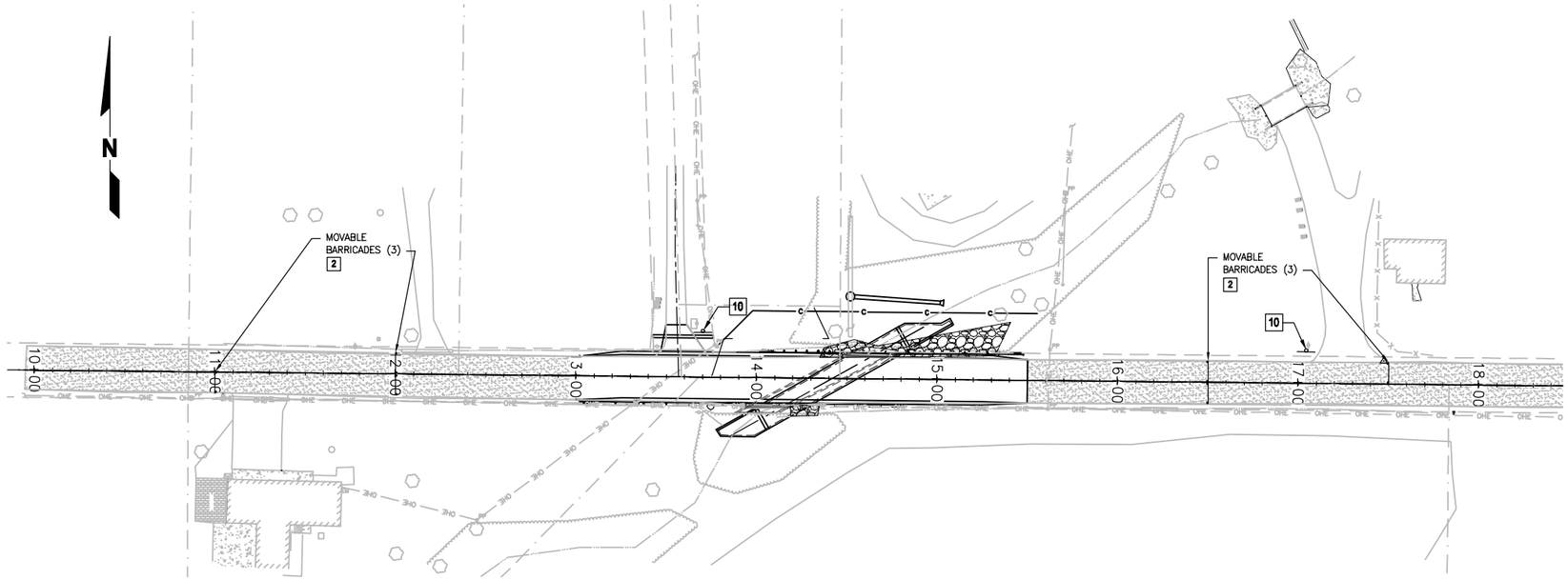
DATE
1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
TRAFFIC CONTROL PLAN

PROJECT NO.
13107

DRAWING NO.
TCP-101

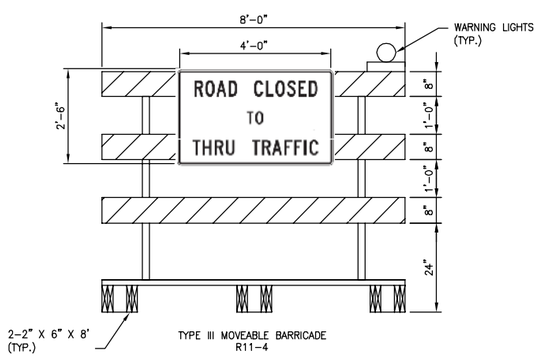


PLAN
SCALE: 1" = 40'

GENERAL NOTES:

1. ALL SIGNS SHALL BE SIZED FOR CONVENTIONAL ROAD, UNLESS NOTED OTHERWISE.
2. ALL SIGNS SHALL CONFORM TO THE CURRENT EDITION OF THE MUTCD.
3. CONTRACTOR TO COORDINATE WITH COUNTY BEFORE SIGN PLACEMENT. DISTANCES FOR R11-3b SIGN TO BE DETERMINED BEFORE SIGN PLACEMENT.
4. ARROW SIGNS (M4-9 & M4-10) SHALL BE SELECTED (LEFT OR RIGHT) IN THE CORRECT DIRECTION OF THE DETOUR ROUTE.
5. MAINTAIN ACCESS FOR ALL LOCAL PROPERTY OWNERS DURING CONSTRUCTION.

R11-3b
60" x 30"
1



2

W20-2
36" x 36"
3

W20-3
36" x 36"
4

W20-3
36" x 36"
5

M4-8
24" x 12"
6

M4-8a
24" x 18"
7

M4-9
30" x 24"
8

M4-10
48" x 18"
9

PRIVATE DRIVE SIGN
60" x 30"
10

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PLOT SCALE FACTOR 0.5

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Missouri State Certificate of Authority # 1271

JEFFERSON COUNTY SURVEYOR 1848

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
1-19-16

MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY
PJL

CHECKED BY
MMV

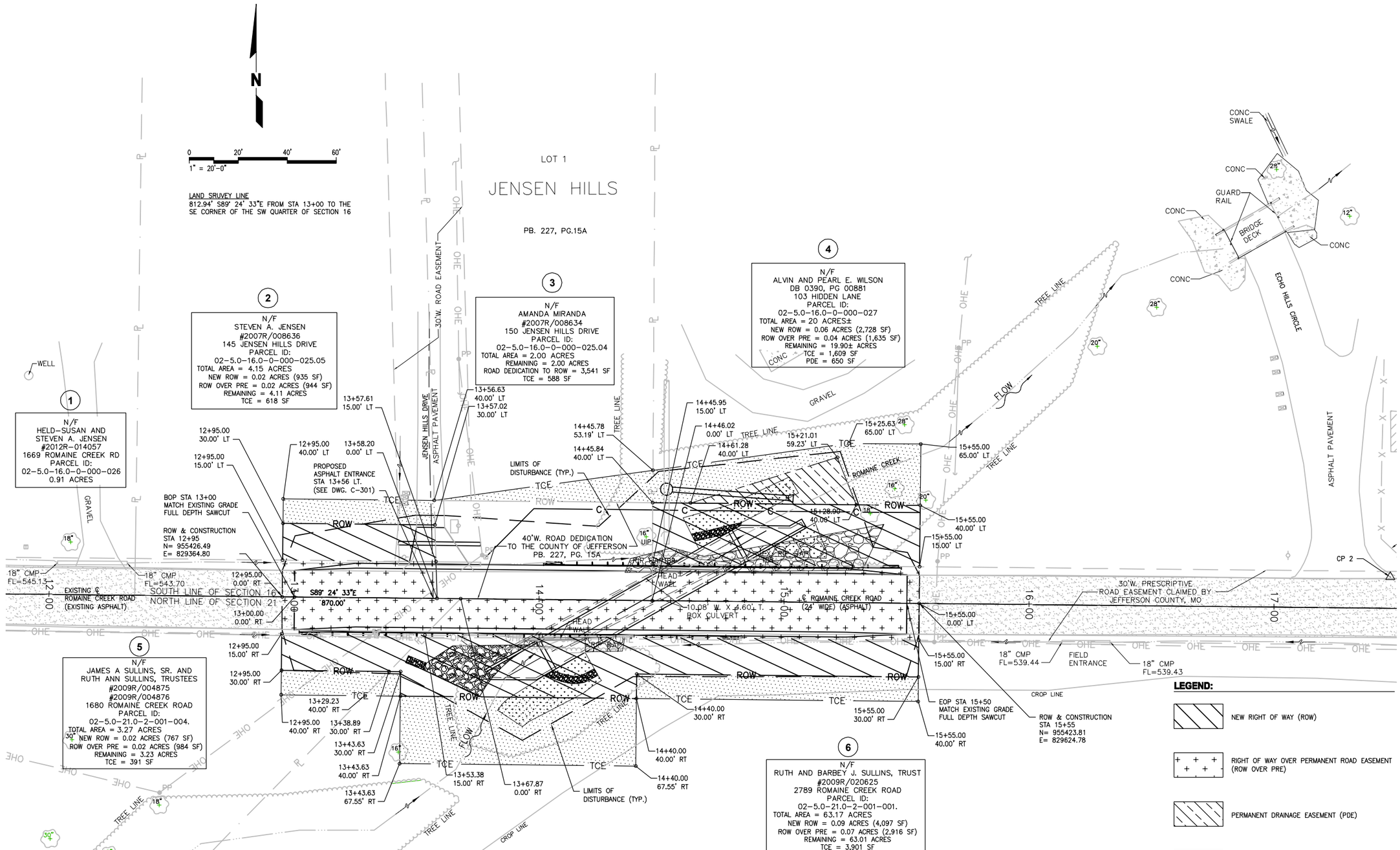
SCALE ON 22"x34"
1" = 40'

DATE
1/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
TRAFFIC CONTROL PLAN

PROJECT NO.
13107

DRAWING NO.
TCP-102



GENERAL NOTES:

1. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, ALL IMPROVEMENTS WITHIN LIMITS OF CONSTRUCTION TO BE REMOVED.
2. REMOVE ALL EXISTING ROAD BED WITHIN LIMITS OF WORK.
3. CLEARING & GRUBBING / SEEDING & MULCHING SHALL OCCUR AND BE MINIMIZED WITHIN THE CONSTRUCTION EASEMENTS AND PROPOSED RIGHT-OF-WAY AREAS.

RIGHT-OF-WAY PLAN
SCALE: 1" = 20'

LEGEND:

- NEW RIGHT OF WAY (ROW)
- RIGHT OF WAY OVER PERMANENT ROAD EASEMENT (ROW OVER PRE)
- PERMANENT DRAINAGE EASEMENT (PDE)
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- TYPE 3 TURF REINFORCEMENT MAT WITH LIVE STAKES

THE UNDERGROUND UTILITIES SHOWN HEREIN WERE PLOTTED FROM AVAILABLE INFORMATION AND DO NOT NECESSARILY REFLECT THE ACTUAL EXISTENCE, NONEXISTENCE, SIZE, TYPE, NUMBER, OR LOCATION OF THESE OR OTHER UTILITIES. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL LOCATE THE UTILITIES IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION IMPROVEMENTS.

REV.	DATE	DESCRIPTION	APPROVED

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PLOT SCALE FACTOR 0.5

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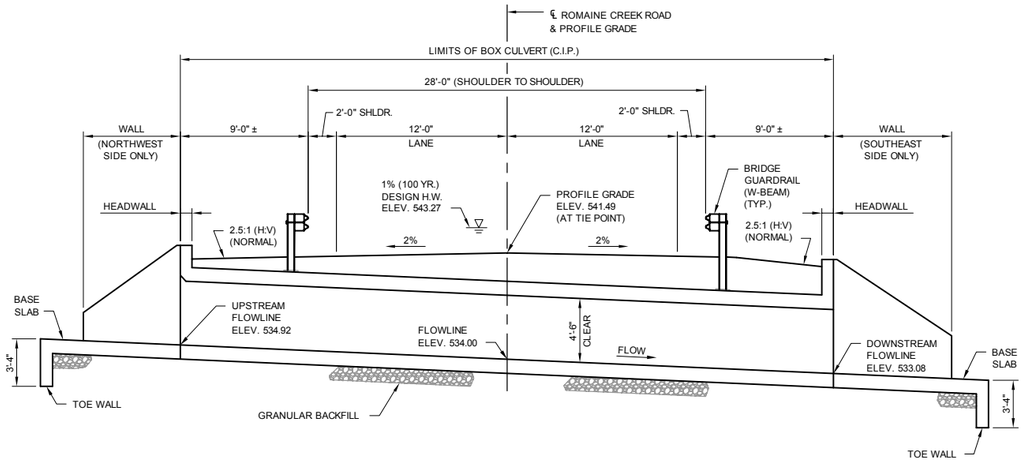
JEFFERSON COUNTY MISSOURI 1818

STATE OF MISSOURI
MATTHEW M. VOSS
NUMBER PE-2011015812
PROFESSIONAL ENGINEER
MATTHEW M. VOSS-ENGINEER
MO# PE-2011015812

DRAWN BY **MMV**
CHECKED BY **MMV**
SCALE ON 22"x34" **1" = 20'**
DATE **1/19/2016**

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403(654)
RIGHT-OF-WAY PLAN

PROJECT NO. **13107**
DRAWING NO. **R-101**



DEVELOPED ELEVATION

(PERPENDICULAR TO ROADWAY CENTERLINE)

TABLE OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	ESTIMATED	FINAL
2063300	CLASS 4 EXCAVATION	CU. YARD	250	
2064099	GRANULAR BACKFILL	CU. YARD	77	
2160500	REMOVAL OF BRIDGES	LUMP SUM	1	
7034009	CLASS B-1 CONCRETE (RETAINING WALLS)	CU. YARD	32.6	
7034040	CLASS B-1 CONCRETE (CULVERTS-BRIDGE)	CU. YARD	130.0	
7061020	REINFORCING STEEL (CULVERTS-BRIDGE)	POUND	19720	
7061040	REINFORCING STEEL (RETAINING WALLS)	POUND	3990	
7133000	BRIDGE GUARDRAIL (W-BEAM)	LIN. FOOT	38	

HYDROLOGIC DATA
DRAINAGE AREA = 1.10 SQ. MILES (ROLLING)
DESIGN DISCHARGE = 1917 CU. FT. / SEC. (100 YEAR)
DESIGN H.W. ELEVATION = 543.27 (100 YEAR)
ESTIMATED BACKWATER = 1.77 FEET
OVERTOPPING FLOOD DATA
DISCHARGE = 949.2 CU. FT. / SEC. < 10 YEARS

GENERAL NOTES:

DESIGN SPECIFICATIONS :
2010 - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND 2010 INTERIM REVISIONS

DESIGN LOADING :
HL93
EARTH 120#/CU. FT.
EQUIVALENT FLUID PRESSURE 65#/CU. FT. (RETAINING WALLS)
EQUIVALENT FLUID PRESSURE 30#/CU. FT. (MIN.), 65#/CU. FT. (MAX) (BOX CULVERT)

DESIGN UNIT STRESSES :
CLASS B-1 CONCRETE (CULVERTS-BRIDGE) f'c = 4,000 psi
CLASS B-1 CONCRETE (RETAINING WALLS) f'c = 4,000 psi
REINFORCING STEEL (GRADE 60) fy = 60,000 psi

MATERIALS:
REINFORCING STEEL: MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1 1/2", UNLESS OTHERWISE SHOWN. THE USE OF AUTOMATIC TIE GUNS SHALL NOT BE PERMITTED. ALL STEEL SHALL BE TIED 100%.

MISCELLANEOUS :

BOX CULVERT SHALL BE CAST-IN-PLACE CONCRETE. PRECAST ALTERNATE IS NOT ALLOWED.

FILTER CLOTH THREE FEET IN WIDTH AND DOUBLE THICKNESS SHALL BE CENTERED ON TRANSVERSE JOINTS IN TOP SLAB AND SIDEWALLS WITH EDGES SEALED WITH MASTIC OR TWO SIDED TAPE. FILTER CLOTH SHALL BE A SUBSURFACE DRAINAGE GEOTEXTILE IN ACCORDANCE WITH SEC 1011. COST OF FURNISHING AND INSTALLING FILTER CLOTH WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR OTHER ITEMS.

PREFORMED FIBER EXPANSION JOINT MATERIAL SHALL BE SECURELY STITCHED TO ONE FACE OF THE CONCRETE WITH NO. 10 GAGE COPPER WIRE OR NO. 12 GAGE SOFT DRAWN GALVANIZED STEEL WIRE.

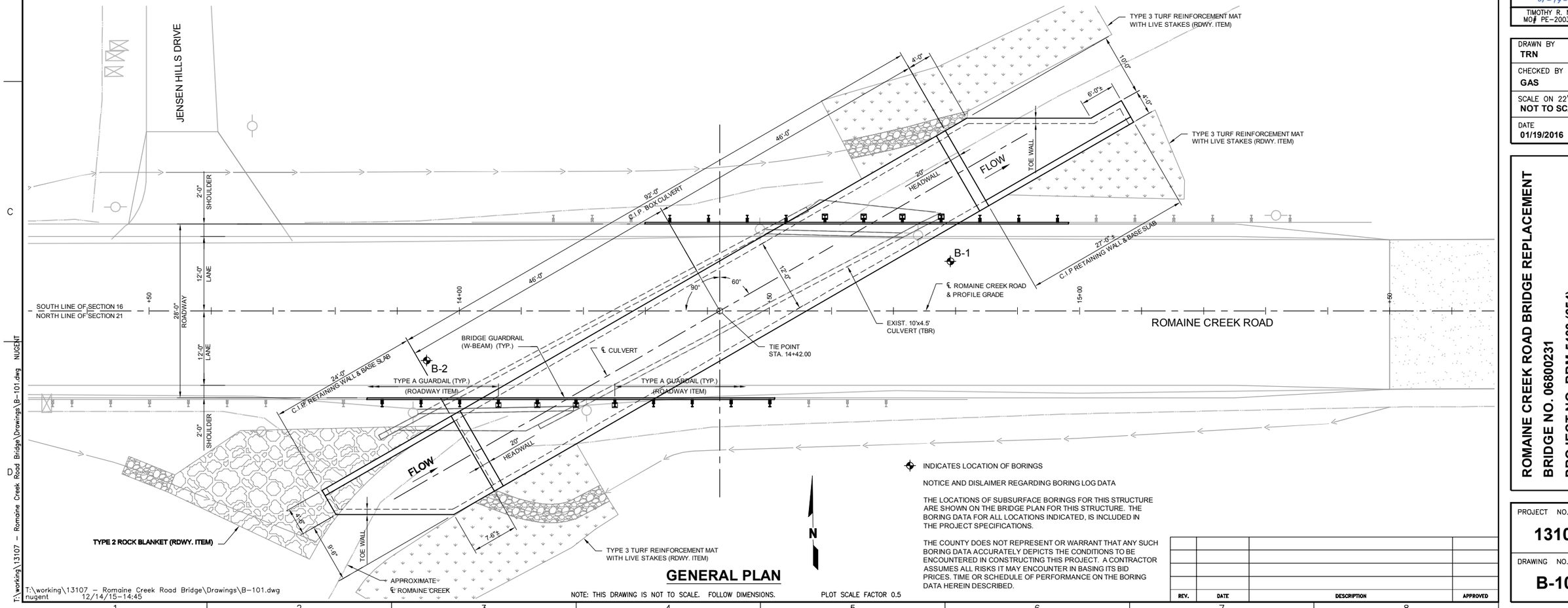
SLOPE OF BOTTOM SLAB SHALL BE PLACED AT NATURAL STREAM GRADIENT.

CHANNEL BOTTOM SHALL BE GRADED WITHIN THE RIGHT OF WAY FOR TRANSITION OF CHANNEL BED TO CULVERT OPENINGS. CHANNEL BANKS SHALL BE TAPERED TO MATCH CULVERT OPENINGS. (ROADWAY ITEM)

TRAFFIC HANDLING :
ROAD CLOSED DURING CONSTRUCTION

CONSTRUCTION SPECIFICATIONS :
THE 2011 EDITION OF THE MISSOURI HIGHWAY DEPARTMENT OF TRANSPORTATION'S "MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" AND THE JOB SPECIFICATIONS SHALL GOVERN.

BENCHMARK :
BM "A", ELEVATION 542.23. SET "80D NAIL" IN POWER POLE APPROXIMATELY 20' EAST OF JENSEN HILLS DRIVE AND 15' NORTH OF THE CENTERLINE OF ROMAINE CREEK ROAD. POWER POLE TAG #15206.



GENERAL PLAN

INDICATES LOCATION OF BORINGS

NOTICE AND DISLAIMER REGARDING BORING LOG DATA

THE LOCATIONS OF SUBSURFACE BORINGS FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN FOR THIS STRUCTURE. THE BORING DATA FOR ALL LOCATIONS INDICATED, IS INCLUDED IN THE PROJECT SPECIFICATIONS.

THE COUNTY DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES. TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA HEREIN DESCRIBED.

REV.	DATE	DESCRIPTION	APPROVED

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. PLOT SCALE FACTOR 0.5

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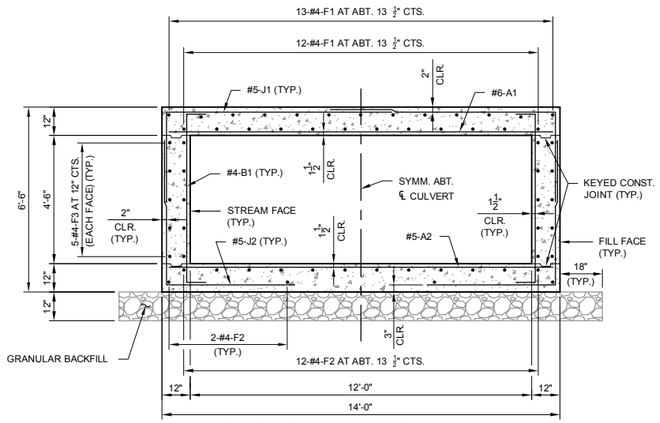
TIMOTHY R. NUGENT
MO# PE-2003001080

DRAWN BY: TRN
CHECKED BY: GAS
SCALE ON 22"x34": NOT TO SCALE
DATE: 01/19/2016

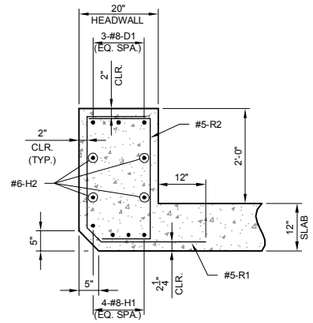
ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403 (654)
GENERAL PLAN & ELEVATION

PROJECT NO. 13107

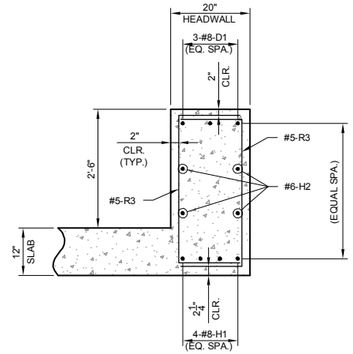
DRAWING NO. B-101



SECTION THRU CULVERT



UPSTREAM HEADWALL DETAIL



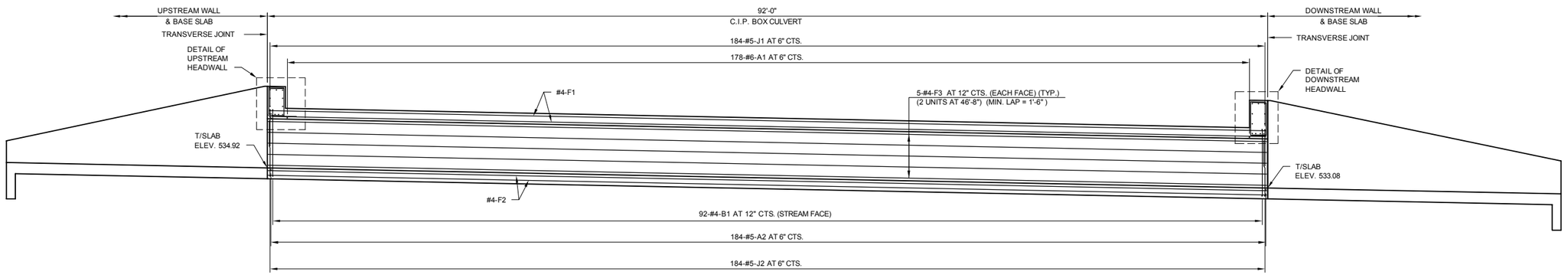
DOWNSTREAM HEADWALL DETAIL

NOTE:

SEE DRAWINGS B-103 & B-104 FOR DETAILS AND REINFORCEMENT OF UPSTREAM AND DOWNSTREAM WALLS AND BASE SLABS.

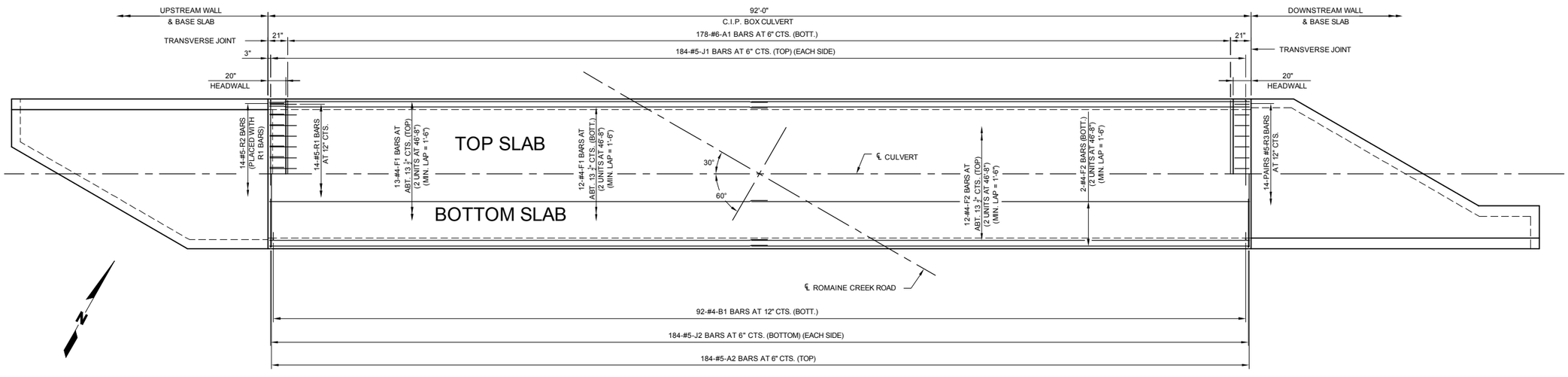
BOX CULVERT SHALL BE CONNECTED TO UPSTREAM AND DOWNSTREAM WALLS AND BASE SLABS BY DOWEL BARS AS SHOWN ON DRAWING B-103.

SEE DRAWING B-104 FOR DETAILS OF CONSTRUCTION JOINTS.



ELEVATION

(ALONG CENTERLINE CULVERT)



HALF PLANS SHOWING CULVERT REINFORCEMENT

NOTE:

HALF PLANS ARE SYMMETRICAL ABOUT CENTERLINE CULVERT

LONGITUDINAL HEADWALL REINFORCEMENT NOT SHOWN FOR CLARITY (SEE HEADWALL DETAILS).

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. PLOT SCALE FACTOR 0.5

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STATE OF MISSOURI
TIMOTHY R. NUGENT
NUMBER PE-2003001080
PROFESSIONAL ENGINEER
01-19-16

TIMOTHY R. NUGENT
MO# PE-2003001080

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DATE
01/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403 (654)
BOX CULVERT PLAN & ELEVATION

PROJECT NO.
13107

DRAWING NO.
B-102

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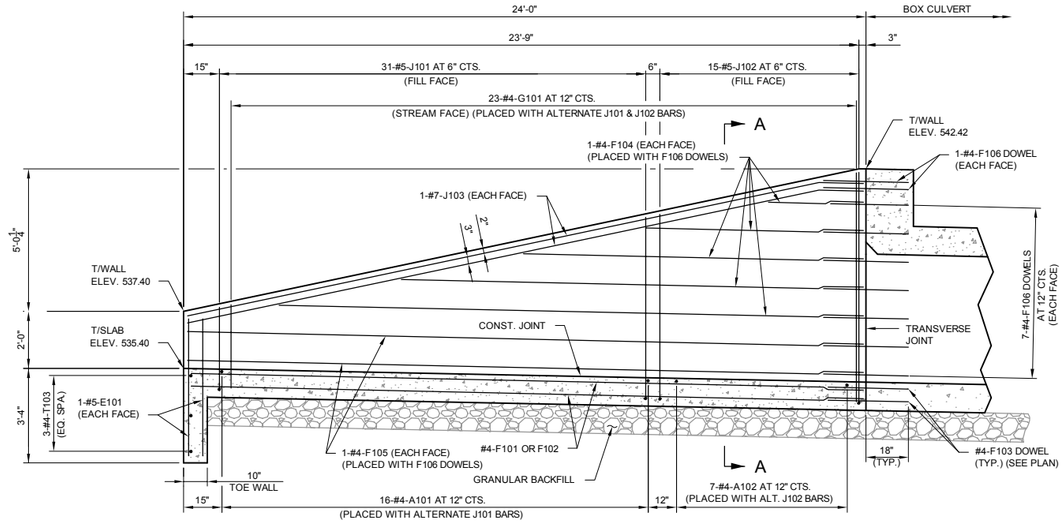
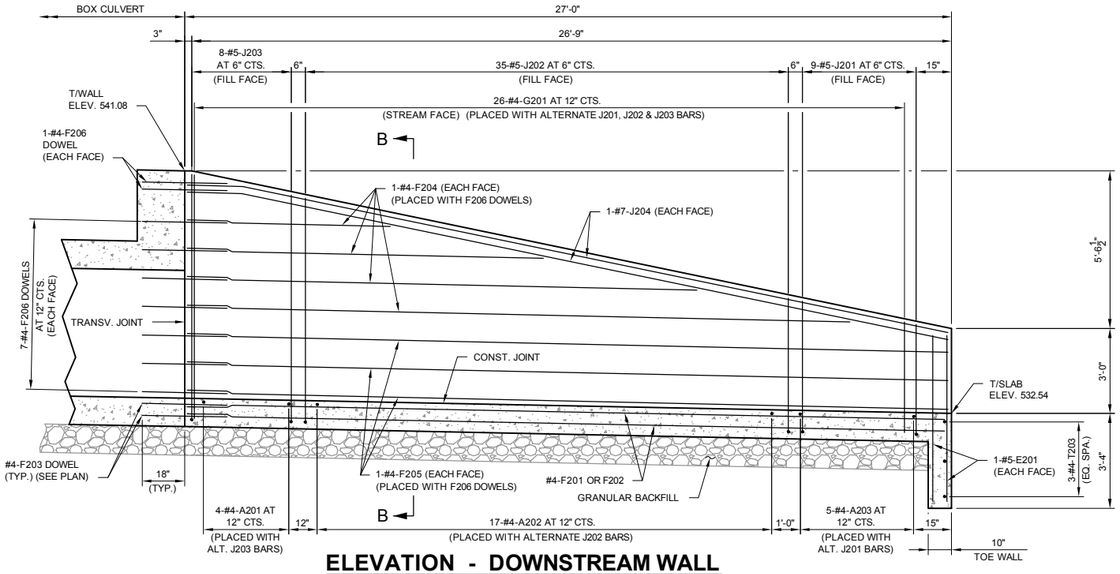


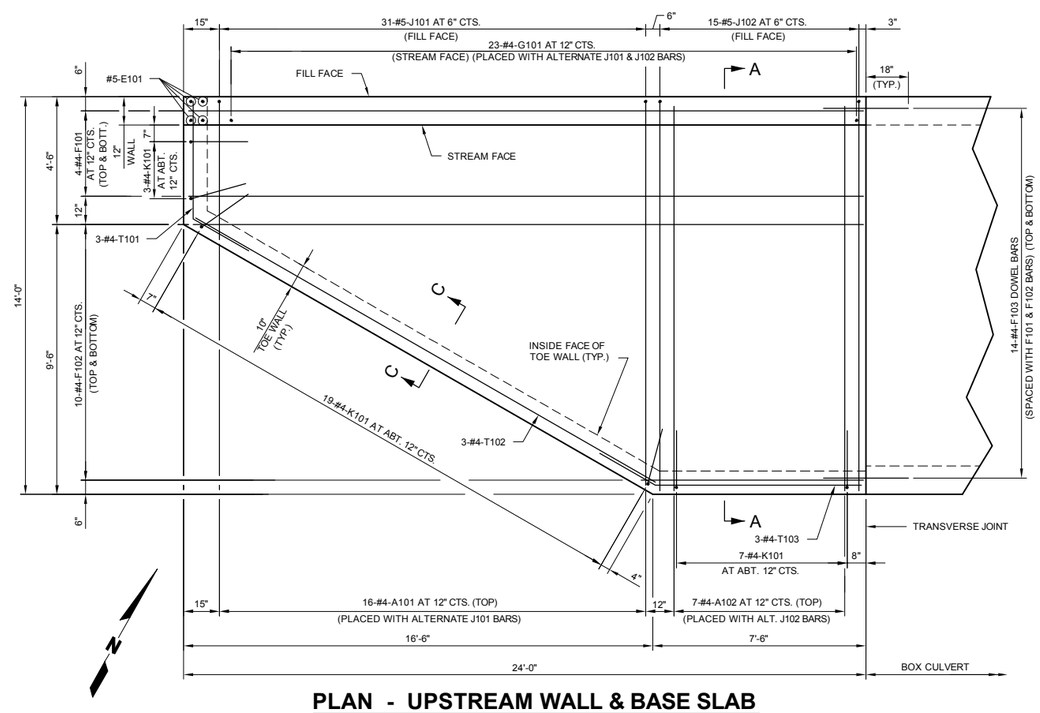
ELEVATION - UPSTREAM WALL

NOTE: BOX CULVERT REINFORCEMENT NOT SHOWN FOR CLARITY.



ELEVATION - DOWNSTREAM WALL

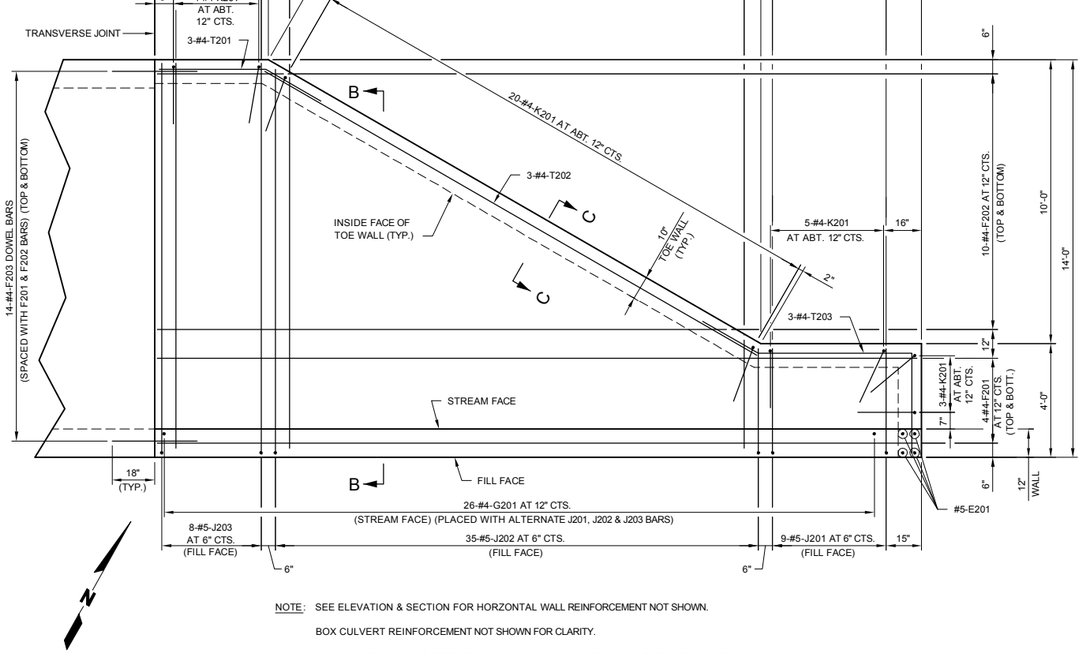
NOTE: BOX CULVERT REINFORCEMENT NOT SHOWN FOR CLARITY.



PLAN - UPSTREAM WALL & BASE SLAB

NOTE: SEE ELEVATION & SECTION FOR HORZONTAL WALL REINFORCEMENT NOT SHOWN.

BOX CULVERT REINFORCEMENT NOT SHOWN FOR CLARITY.



NOTE: SEE ELEVATION & SECTION FOR HORZONTAL WALL REINFORCEMENT NOT SHOWN.

BOX CULVERT REINFORCEMENT NOT SHOWN FOR CLARITY.

PLAN - DOWNSTREAM WALL & BASE SLAB

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SCALE ON 22"x34"
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DATE
01/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403 (654)
BASE SLAB & WALL PLAN & ELEVATION

PROJECT NO.
13107

DRAWING NO.
B-103

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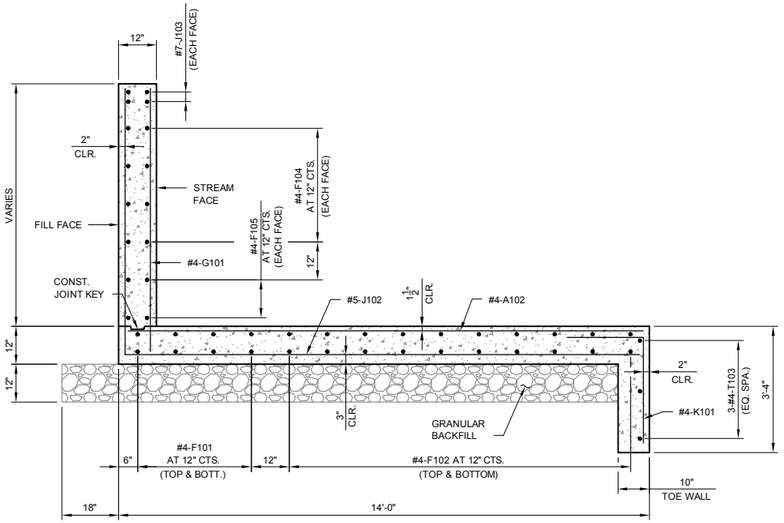
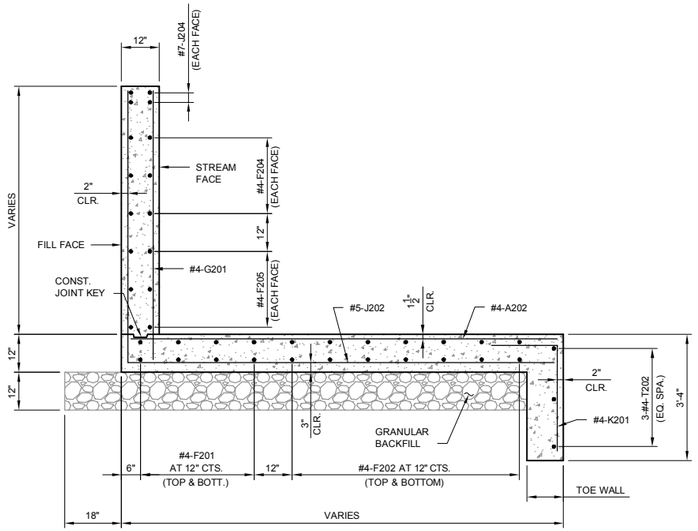
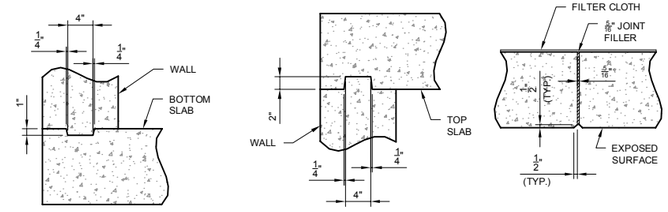
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. PLOT SCALE FACTOR 0.5



SECTION A-A

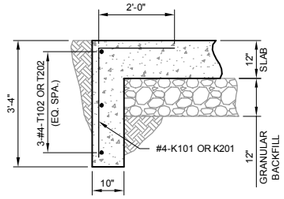


SECTION B-B



KEYED JOINT AT BOTTOM SLAB | KEYED JOINT AT TOP SLAB | TRANSVERSE JOINT

CONSTRUCTION JOINT DETAILS



SECTION C-C

NOTE: BASE SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.

REV.	DATE	DESCRIPTION	APPROVED

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. PLOT SCALE FACTOR 0.5

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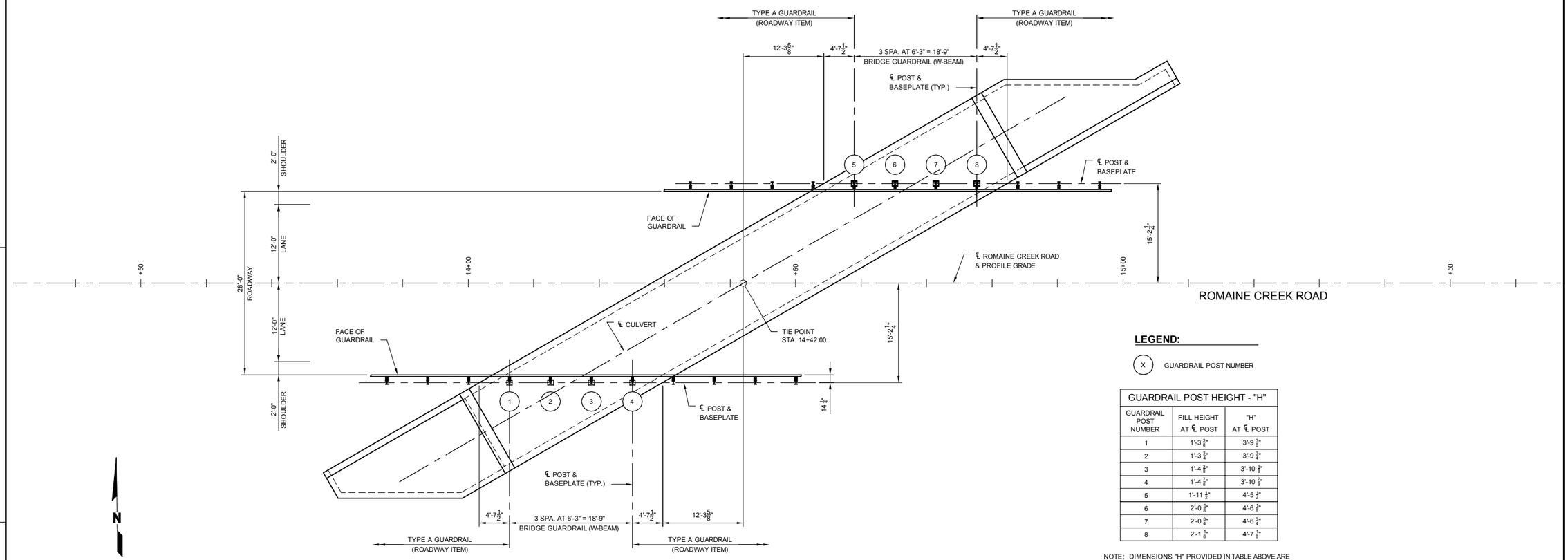
SCALE ON 22"x34"
NOT TO SCALE

DATE
01/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403 (654)
SECTIONS & DETAILS

PROJECT NO.
13107

DRAWING NO.
B-104



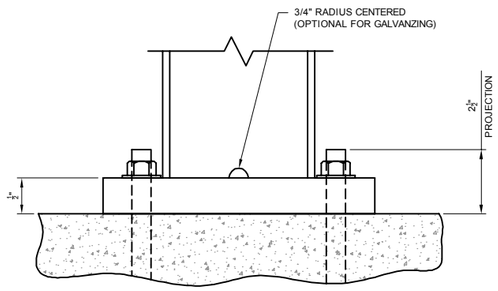
PLAN SHOWING BRIDGE GUARDRAIL POST LOCATIONS

LEGEND:

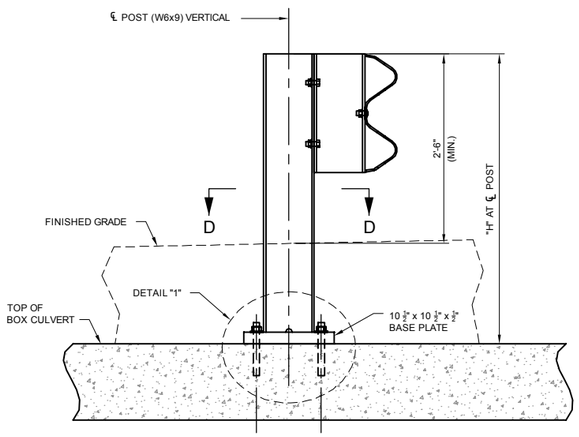
(X) GUARDRAIL POST NUMBER

GUARDRAIL POST HEIGHT - "H"		
GUARDRAIL POST NUMBER	FILL HEIGHT AT ℄ POST	"H" AT ℄ POST
1	1'-3 3/8"	3'-9 3/8"
2	1'-3 3/8"	3'-9 3/8"
3	1'-4 3/8"	3'-10 3/8"
4	1'-4 3/8"	3'-10 3/8"
5	1'-11 1/2"	4'-5 1/2"
6	2'-0 1/8"	4'-6 1/8"
7	2'-0 3/8"	4'-6 3/8"
8	2'-1 1/8"	4'-7 1/8"

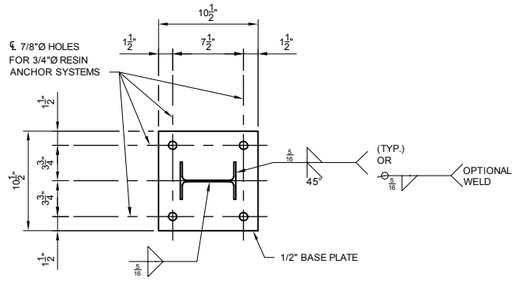
NOTE: DIMENSIONS "H" PROVIDED IN TABLE ABOVE ARE MINIMUM DIMENSIONS BASED ON THEORETICAL GRADES. CONTRACTOR SHALL VERIFY THAT PROVIDED POSTS WILL PROVIDE 2'-6" MIN. POST HEIGHT ABOVE FINISHED GRADE.



DETAIL "1"



PART SECTION AT RAIL POST



SECTION D-D

GUARDRAIL NOTES:

ALL BOLTS, NUTS, WASHERS, PLATES AND ELASTOMERIC MATERIALS WILL CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR BRIDGE GUARDRAIL (W-BEAM)..

ALL STEEL CONNECTING BOLTS AND FASTENERS FOR POSTS AND RAILING AND ALL ANCHOR BOLTS, NUTS, WASHERS AND PLATES SHALL BE GALVANIZED AFTER FABRICATION. PROTECTIVE COATING AND MATERIAL REQUIREMENT OF STEEL RAILING SHALL BE IN ACCORDANCE WITH SEE SEC 1040.

RAIL POSTS SHALL BE SEATED ON ELASTOMERIC PADS HAVING THE SAME DIMENSIONS AS THE POST BASE PLATE AND 1/16" THICKNESS. SUCH PADS MAY BE ANY ELASTOMERIC MATERIAL, PLAIN OR FIBERED, HAVING A HARDNESS (DUROMETER) OF 50 OR ABOVE, AS CERTIFIED BY THE MANUFACTURER. ADDITIONAL PADS OR HALF PADS MAY BE USED IN SHIMMING FOR ALIGNMENT. POST HEIGHTS SHOWN WILL INCREASE BY THE THICKNESS OF THE PAD.

POSTS, BASE PLATES, CHANNELS AND CHANNEL SPLICE PLATES SHALL BE FABRICATED FROM ASTM A709 GRADE 36 STEEL AND GALVANIZED.

FABRICATION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH SEC 1080.

THE CONTRACTOR SHALL USE ONE OF THE QUALIFIED RESIN ANCHOR SYSTEMS IN ACCORDANCE WITH SEC 1039.

COST OF FURNISHING AND INSTALLING THE RESIN ANCHOR SYSTEMS, COMPLETE IN PLACE, WILL BE CONSIDERED COMPLETELY COVERED SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR BRIDGE GUARDRAIL (W-BEAM).

THE MINIMUM EMBEDMENT DEPTH IN CONCRETE WITH f'c = 4,000 PSI FOR THE RESIN ANCHOR SYSTEMS SHALL BE THAT REQUIRED TO MEET THE MINIMUM ULTIMATE PULLOUT STRENGTH IN ACCORDANCE WITH SEC 1039 BUT SHALL NOT BE LESS THAN 5".

SEE THIS SHEET FOR RAIL POST SPACING.

SEE MISSOURI STANDARD PLANS DRAWING 606.00 FOR DETAILS NOT SHOWN.

REV.	DATE	DESCRIPTION	APPROVED

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TIMOTHY R. NUGENT
MO# PE-2003001080

DRAWN BY
TRN

CHECKED BY
GAS

SCALE ON 22"x34"
NOT TO SCALE

DATE
01/19/2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403 (654)
BRIDGE GUARDRAIL (W-BEAM) DETAILS

PROJECT NO.
13107

DRAWING NO.
B-105

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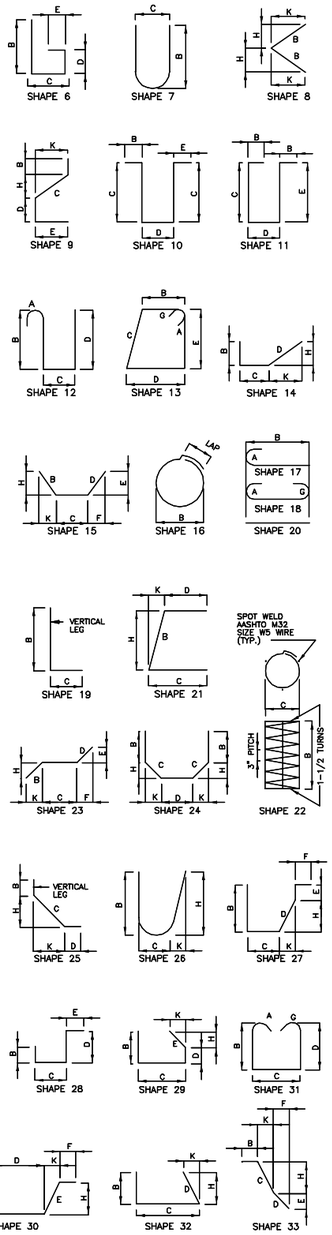
NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS. PLOT SCALE FACTOR 0.5

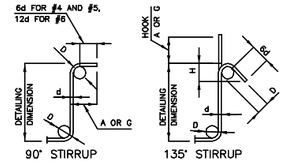
BILL OF REINFORCING STEEL

NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT	B IN	C FT	C IN	D FT	D IN	E FT	E IN	F FT	F IN	H FT	H IN	K FT	K IN	NOMINAL LENGTH FT	NOMINAL LENGTH IN	ACTUAL LENGTH FT	ACTUAL LENGTH IN	WEIGHT LBS
REINFORCING STEEL (CULVERTS-BRIDGE)																												
			BOX CULVERT																									
178	6	A1	TOP SLAB		20					13	6.000													13	6	13	6	3609
184	5	A2	BOTTOM SLAB		20					13	6.000													13	6	13	6	2591
184	4	B1	BOTT SLAB / WALL		10							8.000		6	1.000									7	5	7	3	891
6	8	D1	HEADWALL		20					13	6.000													13	6	13	6	216
50	4	F1	TOP SLAB		20					46	8.000													46	8	46	8	1559
32	4	F2	BOTTOM SLAB		20					46	8.000													46	8	46	8	998
40	4	F3	WALL		20					46	8.000													46	8	46	8	1247
8	8	H1	HEADWALL		20					13	6.000													13	6	13	6	288
8	6	H2	HEADWALL		20					13	6.000													13	6	13	6	162
368	5	J1	TOP SLAB / WALL		19					3	2.000	8	0.000											11	2	11	0	4222
368	5	J2	BOTT SLAB / WALL		19					5	1.000	4	6.000											9	7	9	5	3614
14	5	R1	HEADWALL		27	S				1	4.000	2	4.125		5.000	2	3.000				3.625		3.625	6	4	6	2	90
14	5	R2	HEADWALL		6	S						1	4.000	2	7.750	1	0.000							5	0	4	9	69
28	5	R3	HEADWALL		10	S						1	4.000	3	1.750									5	10	5	7	163
																										SUBTOTAL		19719
REINFORCING STEEL (RETAINING WALLS)																												
			UPSTREAM WALL & BASE SLAB																									
16	4	A101	BASE SLAB		20					4	8.250													4	8	4	8	
			INCR. = 6.875"		20			V	1	13	3.375													13	3	13	3	96
7	4	A102	BASE SLAB		20					13	6.000													13	6	13	6	63
4	5	E101	BASE SLAB / WALL		20					4	10.000													4	10	4	10	20
8	4	F101	BASE SLAB		20					23	9.000													23	9	23	9	127
20	4	F102	BASE SLAB							7	10.000													7	10	7	10	
			INCR. = 21"		20			V	2	23	7.000													23	7	23	7	210
28	4	F103	BASE SLAB		20					3	0.000													3	0	3	0	56
10	4	F104	WALL							3	4.000													3	4	3	4	
			INCR. = 51.625"		20			V	2	20	6.500													20	7	20	7	80
4	4	F105	WALL		20					23	9.000													23	9	23	9	63
18	4	F106	WALL		20					3	0.000													3	0	3	0	36
23	4	G101	BASE SLAB / WALL							2	11.000													2	11	2	11	
			INCR. = 2.75"		20			V	1	7	11.500													8	0	8	0	84
31	5	J101	BASE SLAB / WALL							2	10.750	4	10.375											7	9	7	8	
			"B" INCR.= 1.375"		19			V	1	6	3.750	13	5.500											19	9	19	8	442
			"C" INCR. = 3.4375"																									
15	5	J102	BASE SLAB / WALL							6	5.750	13	8.000											20	2	20	1	
			INCR. = 1.375"		19			V	1	8	1.000	13	8.000											21	9	21	7	326
4	7	J103	WALL		14							22	8.500	1	6.750					4.250	1	6.250		24	3	24	3	198
29	4	K101	TOE WALL		19					2	10.500	2	0.000											4	11	4	9	92
3	4	T101	TOE WALL		14							4	2.000	2	3.000					1	11.375	1	1.500	6	5	6	5	13
3	4	T102	TOE WALL		20					18	8.000													18	8	18	8	37
3	4	T103	TOE WALL		14							7	3.000	2	3.000					1	1.500	1	11.375	9	6	9	6	19
																										SUBTOTAL		1962

BILL OF REINFORCING STEEL

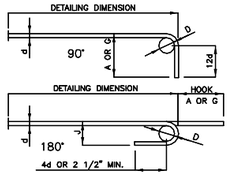
NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT	B IN	C FT	C IN	D FT	D IN	E FT	E IN	F FT	F IN	H FT	H IN	K FT	K IN	NOMINAL LENGTH FT	NOMINAL LENGTH IN	ACTUAL LENGTH FT	ACTUAL LENGTH IN	WEIGHT LBS
REINFORCING STEEL (RETAINING WALLS)																												
			DOWNSTREAM WALL & BASE SLAB																									
4	4	A201	BASE SLAB		20					13	6.000													13	6	13	6	36
17	4	A202	BASE SLAB							3	8.000													3	8	3	8	
			INCR. = 7"		20			V	1	13	0.000													13	0	13	0	95
5	4	A203	BASE SLAB		20					3	6.000													3	6	3	6	12
4	5	E201	BASE SLAB / WALL		20					5	10.000													5	10	5	10	24
8	4	F201	BASE SLAB		20					26	9.000													26	9	26	9	143
20	4	F202	BASE SLAB							4	5.250													4	5	4	5	
			INCR. = 20.75"		20			V	2	20	0.000													20	0	20	0	163
28	4	F203	BASE SLAB		20					3	0.000													3	0	3	0	56
8	4	F204	WALL							7	1.000													7	1	7	1	
			INCR. = 65"		20			V	2	23	4.000													23	4	23	4	81
6	4	F205	WALL		20					26	9.000													26	9	26	9	107
18	4	F206	WALL		20					3	0.000													3	0	3	0	36
26	4	G201	BASE SLAB / WALL							3	11.000													3	11	3	11	
			INCR. = 1.5"		20			V	1	7	0.500													7	1	7	1	96
9	5	J201	BASE SLAB / WALL							3	10.000	3	8.000											7	6	7	4	
			INCR.= 1.125"		19			V	1	4	7.000	3	8.000											8	3	8	1	72
35	5	J202	BASE SLAB / WALL							4	8.125	3	7.000											8	3	8	2	
			"B" INCR.= 1.125"		19			V	1	7	10.375	13	6.000											21	4	21	3	537
			"C" INCR. = 3.5"																									
8	5	J203	WALL							7	11.000	13	8.000											21	7	21	5	
			INCR.= 1.125"		19			V	1	8	6.875	13	8.000											22	3	22	1	181
4	7	J204	WALL		14							25	4.000	1	11.500					4.250	1	11.125		26	4	26	4	215
32	4	K201	TOE WALL		19					2	10.500	2	0.000											4	11	4	9	102
3	4	T201	TOE WALL		14							3	9.000	2	3.000					1	1.500	1	6.500	6	0	6	0	12
3	4	T202	TOE WALL		20					20	0.000													20	0	20	0	40
3	4	T203	TOE WALL		27									2	3.000	5	5.000	3	6.000	1	11.375	1	1.500	11	2	11	1	22
																										SUBTOTAL		2030





STIRRUP HOOK DIMENSIONS				
GRADES 40 – 50 – 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	
		HOOK A OR G	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		90° HOOKS
		A OR G	J	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 DEGREE ARE TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEGREE STANDARD HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E = EPOXY COATED REINFORCEMENT.

S = STIRRUP.

V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.

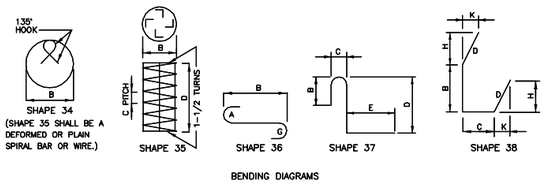
NO. EA. = NUMBER OF BARS OF EACH LENGTH.

NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE. (NEAREST INCH)

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.

REINFORCING STEEL (GRADE 60) fy = 60,000 PSI.



BENDING DIAGRAMS

REV.	DATE	DESCRIPTION	APPROVED

CDG ENGINEERS
One Campbell Plaza
St. Louis, Missouri 63139
T. 314.781.7770
F. 314.781.9075
Missouri State Certificate of Authority # 1271

STATE OF MISSOURI TIMOTHY R. NUGENT NUMBER PE-2003001080 PROFESSIONAL ENGINEER
01-19-16

TIMOTHY R. NUGENT
MO# PE-2003001080

DRAWN BY
TRN

CHECKED BY
GAS

SCALE ON 22"x34"
NONE

DATE
01-19-2016

ROMAINE CREEK ROAD BRIDGE REPLACEMENT
BRIDGE NO. 06800231
PROJECT NO. BRM-5403 (654)
BILL OF REINFORCING STEEL

PROJECT NO.
13107

DRAWING NO.
B-106

T:\working\13107 – Romaine Creek Road Bridge\Drawings\B-106.dwg
nugent 12/14/15-14:50

NOTE: THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

PLOT SCALE FACTOR 0.5