GENERAL NOTES

1. THE CONTRACTOR SHALL FOLLOW THE JOB SPECIAL PROVISIONS FOR THIS PROJECT. FOR ITEMS NOT DIRECTLY COVERED IN THE JOB SPECIAL PROVISIONS THE CONTRACTOR SHALL FOLLOW THE SPECIFICATIONS AS STATED IN THE "MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRICTION "2016" EDITION, AND CURRENT SUPPLEMENTAL SPECIFICATION REVISIONS.

2. CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL IMMEDIATELY UPON DISCOVERY OF A DISCREPANCY BETWEEN THE CONSTRUCTION DRAWINGS AND ACTUAL FIELD CONDITIONS.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS AND TO BE LIABLE FOR DAMAGE AND CONSEQUENT REPAIR TO SUCH IN THE COURSE OF HIS OPERATIONS.

4. THE CONTRACTOR SHALL LOCATE SAW CUT LINES WHERE NECESSARY TO PERFORM THE DEMOLITION AND CONSTRUCTION REQUIRED. ALL JOINTS WHERE NEW CONSTRUCTION MATCHES EXISTING SHALL BE SAW CUT TO NEAT LINES.

5. THE CONTRACTOR WILL KEEP THE CONSTRUCTION SITE NEAT AND ORDERLY AT ALL TIMES WHILE CONSTRUCTION IS TAKING PLACE. THE PROPER AMOUNT OF INSPECTION SHALL BE CALLED FOR AT THEIR PROPER TIMES, OR ANY AND ALL WORK MAY BE REJECTED. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE DESIGN PROFESSIONAL OR OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE. IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN OR NEAR THE CONSTRUCTION SITE.

6. ALL AREAS DISTURBED BY CONSTRUCTION, AND NOT INDICATED TO RECEIVE ANY OTHER FORM OF SURFACE TREATMENT, SHALL BE DRESSED AND SEEDED TO LAWN CONDITIONS.

7. NO TREE TRIMMING TO BE DONE WITHOUT WRITTEN PERMISSION FROM THE CITY OR MSSU.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PUBLIC STREETS IN THE VICINITY OF THE JOB SITE CLEAN AND FREE OF ROCKS, SOIL, AND DEBRIS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES DURING THE ENTIRE CONSTRUCTION PERIOD. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

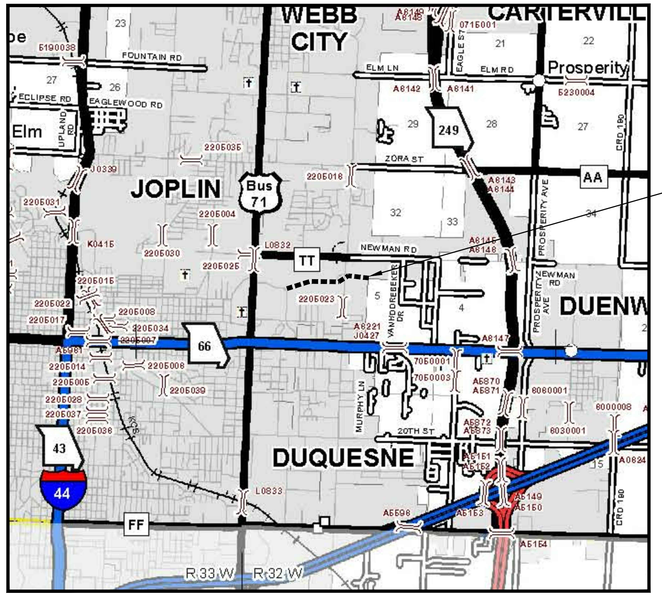
10. THE CONTRACTOR TO RETAIN FLOATABLE WIND BLOWN MATERIALS ON SITE BY STORING ALL TRASH AND BUILDING MATERIAL WASTE IN ENCLOSURES UNTIL PROPER DISPOSAL AT AN OFFSITE FACILITY. CONTRACTOR TO CHECK ADJACENT AREAS DAILY AND PICK UP CONSTRUCTION WASTE MATERIALS AND DEBRIS THAT HAVE BLOWN OR WASHED OFF-SITE

11. TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2' DIGITAL LEVEL.

CONSTRUCTION PLANS
CITY OF JOPLIN
MSSU TRAIL & PEDESTRIAN BRIDGE
OVER TURKEY CREEK
JASPER COUNTY, MISSOURI
SECTION 6, TOWNSHIP 27 NORTH, RANGE 32 WEST

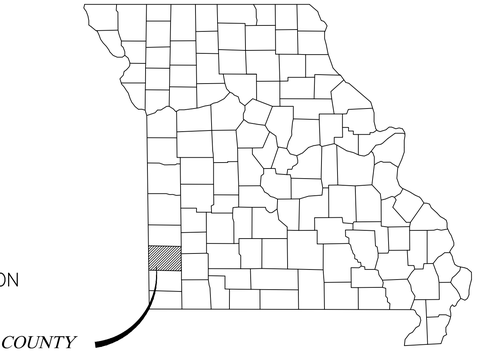
SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
CV-01	COVER SHEET
TC-01	TRAFFIC CONTROL
GR-01 - GR-02	GRADING, EROSION CONTROL PLAN & DETAILS
C-01 - C-04	TRAIL PLAN AND PROFILE
CS-01 - CS-04	CROSS SECTIONS
DE-01	CONSTRUCTION DETAILS
S-01	BRIDGE PLAN & ELEVATION DETAILS
S-02	SOIL DATA
S-03 - S04	BRIDGE END BENT DETAILS
S-05	BRIDGE INTERMEDIATE BENT DETAILS
S-06 - S08	BRIDGE SLAB BEAM DETAILS
S-09	BRIDGE BILL OF REINFORCING

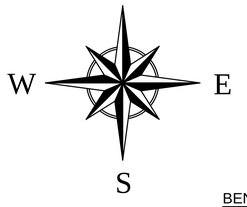


MSSU TRAIL PROJECT LOCATION

GENERAL LOCATION MAP
JASPER COUNTY, MISSOURI



SHOWING LOCATION OF COUNTY
NOT TO SCALE



LEGEND

- = IRON PIN SET (TYPICAL) GREAT RIVER 2001011476
- = EXISTING IRON PIN FOUND, AS NOTED
- = EXISTING RIGHT-OF-WAY
- = EXISTING CONTOUR MAJOR
- = EXISTING CONTOUR MINOR
- = EXISTING TREE, SIZE AS NOTED
- = EXISTING BUSH, SIZE AS NOTED
- = EXISTING TELEPHONE RISER
- = EXISTING LIGHT POLE
- = EXISTING POWER POLE
- = EXISTING ELECTRIC RISER
- = EXISTING SEWER MANHOLE
- = EXISTING GAS VALVE
- = EXISTING GAS METER
- = EXISTING MAIL BOX
- = EXISTING SIGN
- = EXISTING WATER METER
- = EXISTING WATER VALVE
- = EXISTING FIRE HYDRANT
- = EXISTING SEWER LINE
- = EXISTING FENCE LINE
- = EXISTING CHAIN-LINK FENCE LINE
- = EXISTING WOOD FENCE LINE
- = EXISTING ELECTRIC LINE
- = EXISTING UNDERGROUND ELECTRIC
- = EXISTING TELEPHONE LINE
- = EXISTING UNDERGROUND TELEPHONE LINE
- = EXISTING GAS LINE
- = EXISTING WATER LINE
- = EXISTING GAS & WATER LINE

UTILITY DISCLAIMER

THE UNDERGROUND UTILITIES DEPICTED ON THIS SURVEY, ARE THOSE DISCOVERED BY FIELD INSPECTION, OR LOCATED BY UTILITY COMPANY REPRESENTATIVES; AND MAY NOT BE ALL THE UTILITIES ON OR NEAR THE PROPERTY. AFTER USING REASONABLE CARE IN THE LOCATION OF THOSE UTILITIES SHOWN, WE REFRAIN FROM WARRANTING EITHER THE LOCATION OF, OR COMPLETENESS OF, THOSE UTILITIES SHOWN, AS BEING ALL UTILITIES POSSIBLY AFFECTING THE SUBJECT PROPERTY.

MISSOURI ONE CALL SYSTEM, INC. 1-800-344-7483 STOP-CALL BEFORE YOU DIG!

BENCHMARK DATA

BM1 - TOP OF CURB AT THE NORTHWEST CORNER OF PARKING LOT, LOCATED ON THE NORTH SIDE OF THE EXISTING MOVIE THEATER

ELEVATION=986.00'

BM2 - TOP OF CURB AT THE NORTHEAST CORNER OF PARKING LOT, LOCATED ON THE NORTH SIDE OF THE EXISTING MOVIE THEATER

ELEVATION=973.38'

(VERTICAL DATUM : NAVD88)

Point Table				
Point #	Northing	Easting	Elevation	Description
1	337496.4190	2799432.2867	983.91	CP 1 BASE
2	337497.6125	2799637.9931	985.78	CP 2 MAG NAIL
162	337521.9125	2798322.1059	979.01	CP 162 60D
1000	337484.6358	2799419.5681	983.66	CP 1000 60D

SUBMITTED AND RECOMMENDED

CITY OF JOPLIN DATE

No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

GRE GREAT RIVER ENGINEERING
2626 S. INGRAM MILL, SPRINGFIELD, MO 65804
PHONE: (417) 886-7171 FAX: (417) 886-7591
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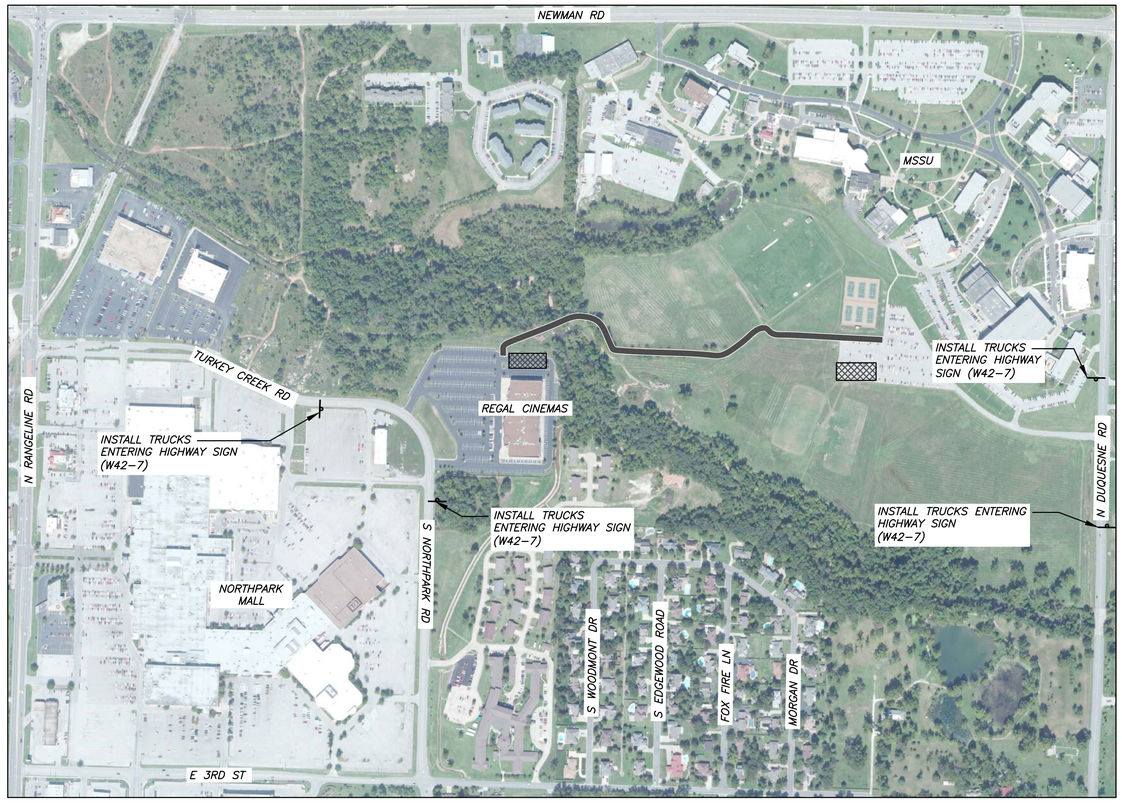
Missouri State Certificate of Authority Numbers:
Engineering: 2000150859, Land Surveying: 2001011476, Landscape Architecture: 2007013373

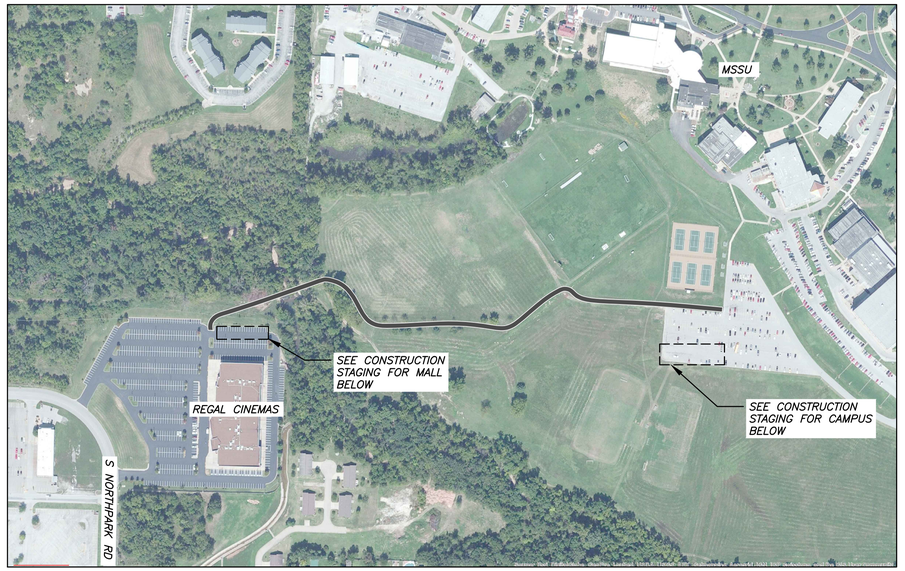
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI
COVER SHEET

DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET
CV-01



TRAFFIC CONTROL FROM MAIN ACCESS POINTS

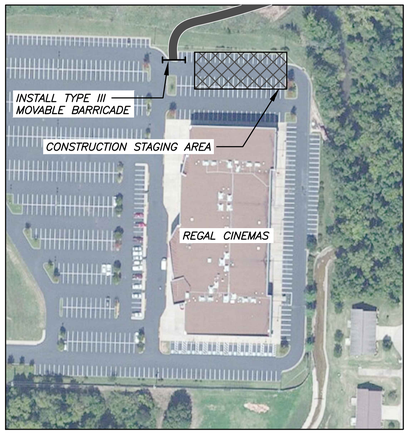


TRAIL LOCATION

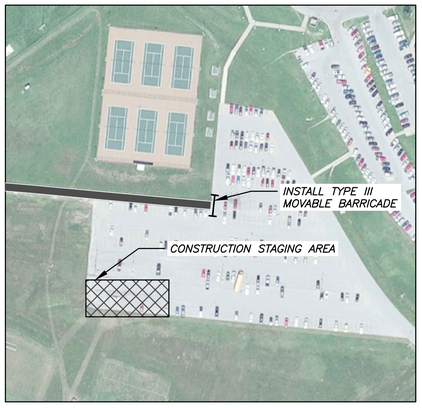
N

LEGEND

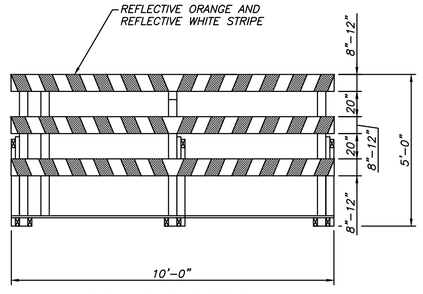
- CONSTRUCTION STAGING AREA
- TRAIL LOCATION
- TYPE 2 BARRICADE
- SIGN LOCATION



CONSTRUCTION STAGING AT MALL



CONSTRUCTION STAGING AT CAMPUS



TYPE III MOVABLE BARRICADE

NOTES:

1. ALL SIGNS TO MEET MoDOT STANDARD SPECIFICATIONS FOR REFLECTIVITY AND OTHER DETAILS. ALL SIGNAGE TO MEET MUTCD REQUIREMENTS. SHOULD CONFLICTS EXIST BETWEEN MoDOT AND MUTCD FOLLOW MUTCD.

2. ALL REFLECTORIZED SURFACES SHALL BE TYPE 1 SHEETING UNLESS OTHERWISE INDICATED. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATION OF BARRICADES. NO PAYMENT WILL BE MADE FOR RELOCATING SIGNS ON MOVABLE BARRICADES WHICH ARE TO BE RELOCATED UNLESS THE SIGN LEGEND IS TO BE CHANGED. STRIPES SHALL SLOPE DOWNWARD TOWARD THE SIDE WHICH TRAFFIC IS TO PASS.

BARRICADES

TRAFFIC CONTROL NOTES:

1. CONTRACTOR SHALL PROVIDE CONTINUOUS ACCESS FOR ALL EXISTING PROPERTY OWNERS.
2. ALL TRAFFIC CONTROL PROCEDURES AND DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MISSOURI DEPT. OF TRANSPORTATION PROJECT DEVELOPMENT MANUAL. MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION AND PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
3. CONTRACTOR SHALL INSTALL TRAFFIC CONTROL DEVICES SUCH AS CONES, DRUMS, FLASHERS, BARRICADES, SIGNS, ETC. TO SAFELY CHANNEL OR DIRECT TRAFFIC INCLUDING PEDESTRIANS. WHEN NECESSARY, FLAG-MEN SHALL BE USED IN CONJUNCTION WITH TRAFFIC CONTROL DEVICES. FLAG-MEN AHEAD SIGNS ARE REQUIRED IN ADVANCE OF FLAG-MEN EXCEPT DURING BRIEF PERIODS AND IN EMERGENCY SITUATIONS.
4. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED WHENEVER NECESSARY, REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED, AND BE REMOVED IMMEDIATELY THEREAFTER. THESE MINIMUM REQUIREMENTS IN NO WAY RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO MAINTAIN TRAFFIC IN A SAFE MANNER. CONTRACTOR SHALL INSTALL ADVANCED WARNING SIGNS WHEN NECESSARY SUCH AS WATCH FOR TRUCK TURNING, TRUCKS CROSSING, ETC. AND PLACE FLAG-MEN AS DIRECTED BY THE ENGINEER ALONG PUBLIC ROADS OR CROSSING OF ROADS.
5. NO OPEN CUTS SHALL BE LEFT UNPROTECTED WHEN THERE IS NO CONSTRUCTION ACTIVITY AT THE WORK SITE. INSTALL CONSTRUCTION FENCE AS NECESSARY. REFER TO MUTCD SECTION 6D WHEN FENCING WILL POSES A POTENTIAL VISUAL BARRIER.
6. DETOUR SIGNS SHALL BE INSTALLED AS NEEDED AND REMOVED WHEN WORK HAS BEEN COMPLETED.



W42-7
(36" x 36")

No.	Revision/Issue	Date

JERANY L. JACKSON
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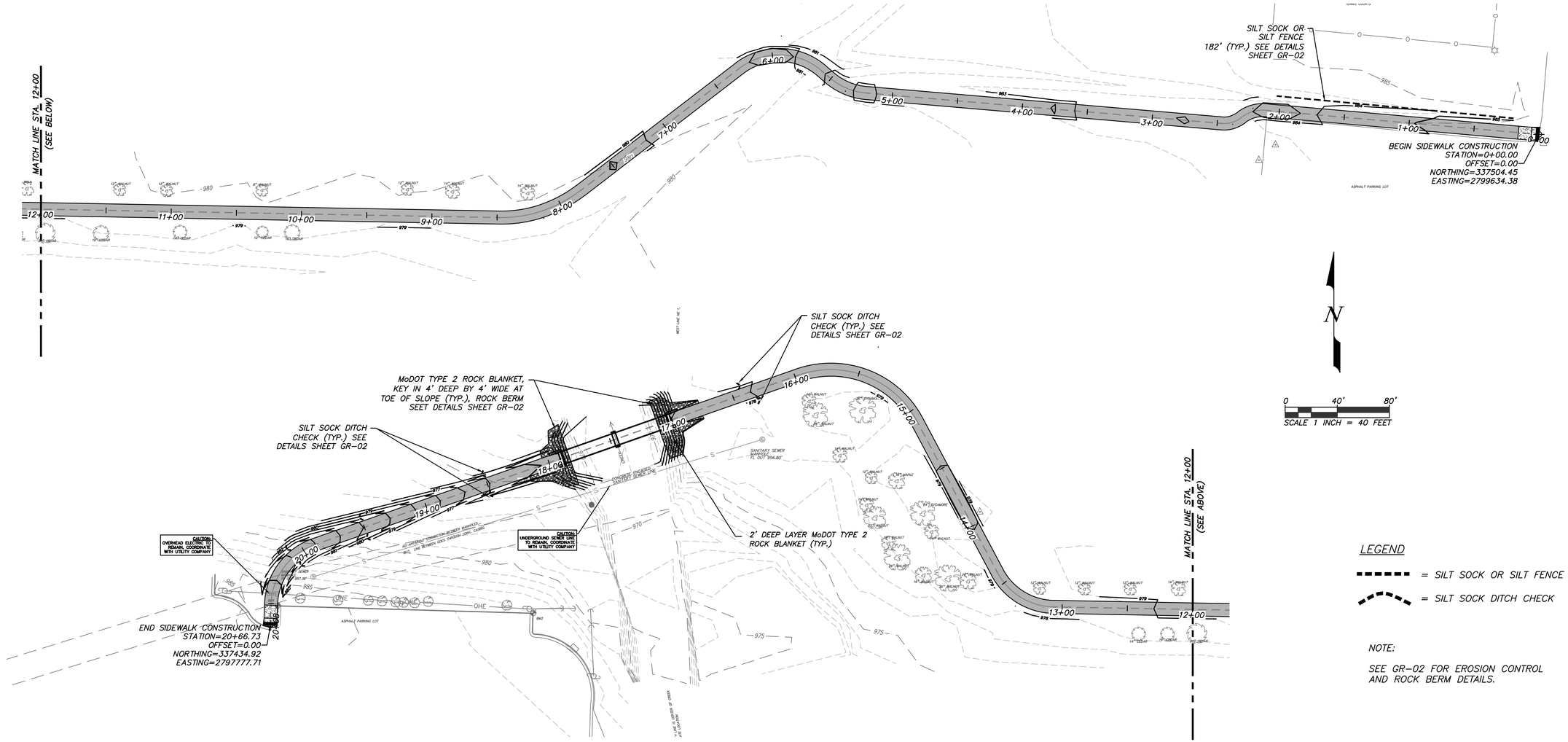
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

TRAFFIC CONTROL
CONSTRUCTION PHASING PLAN

DATE: 01.31.2017

JOB NUMBER: 13-3249

SHEET
TC-01



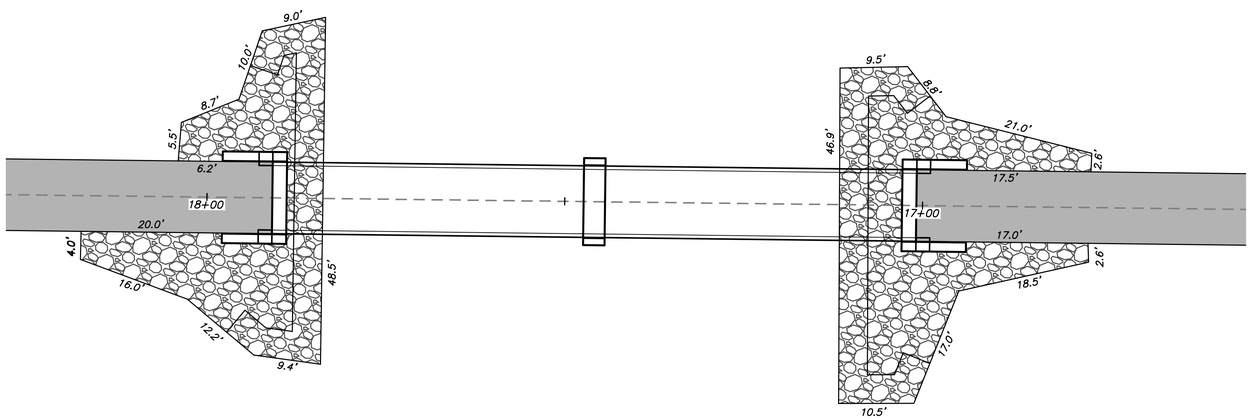
LEGEND

= SILT SOCK OR SILT FENCE

= SILT SOCK DITCH CHECK

NOTE:

SEE GR-02 FOR EROSION CONTROL AND ROCK BERM DETAILS.



MoDOT TYPE 2 ROCK BLANKET LAYOUT PLAN

No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

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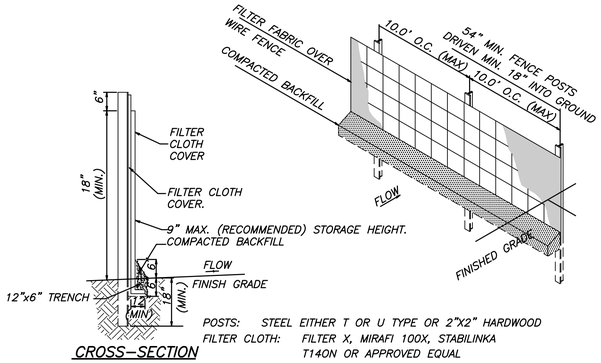
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

GRADING, EROSION CONTROL PLAN & DETAILS

DATE: 01.31.2017

JOB NUMBER: 13-3249

SHEET
GR-01



CROSS-SECTION

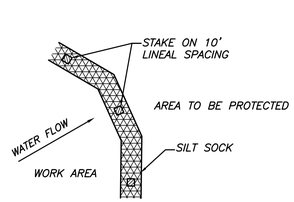
POSTS: STEEL EITHER T OR U TYPE OR 2"X2" HARDWOOD
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

NOTES

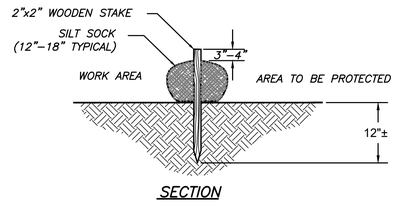
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
5. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
6. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

POST MESH SILT FENCE

NOT TO SCALE



PLAN VIEW



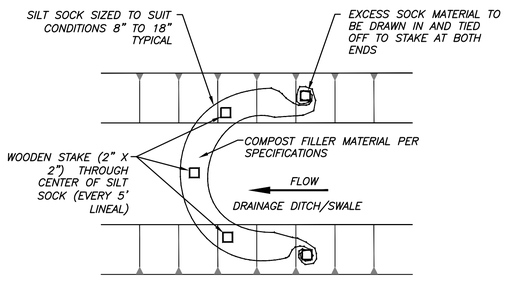
SECTION

NOTES

1. SILT SOCK COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS.
2. SILT SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER.
3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
4. SILT SOCK TO BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
5. INSPECT SILT SOCK AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.

SILT SOCK EROSION CONTROL

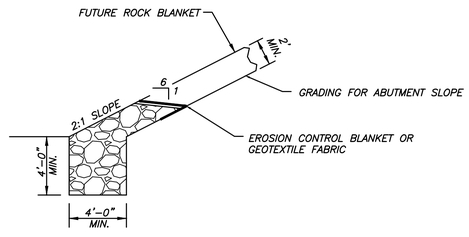
NOT TO SCALE



NOTES
1. ALL MATERIAL TO MEET SILT SOCK SPECIFICATIONS
2. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

SILT SOCK DITCH CHECK

NOT TO SCALE



ROCK BERM

NOTES:

BERM SHALL BE BUILT TO HANDLE SIGNIFICANT RUN-OFF EVENTS.

ROCK BERM SHALL BE PLACED AT THE BEGINNING OF CONSTRUCTION AND WILL BE INCORPORATED INTO THE ROCK BLANKET. COST SHALL BE INCLUDED IN THE UNIT PRICE FOR TYPE 2 ROCK BLANKET.

PRIOR TO FINAL PLACEMENT OF TYPE 2 ROCK BLANKET, CONTRACTOR SHALL REMOVE GEOTEXTILE FABRIC AND ANY SILT BUILDUP ALONG TOP OF ROCK BERM. ALL WORK NECESSARY FOR REMOVAL SHALL BE INCIDENTAL TO BID ITEM TYPE 2 ROCK BLANKET.

GRADING NOTES:

1. THIS PLAN SHOWS THE LOCATION AND DETAILS FOR PRIMARY SEDIMENT CONTROLS TO BE CONSTRUCTED. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING EROSION AND DISCHARGE OF SEDIMENT FROM THE SITE AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE NECESSARY MEASURES DURING ALL PHASES OF HIS OPERATIONS REGARDLESS OF WHETHER THEY ARE SPECIFICALLY NOTED ON THIS PLAN AND SHALL MAINTAIN AND REPLACE CONTROLS AS NECESSARY DURING THE COURSE OF HIS OPERATIONS.
2. SILT FENCES, OR OTHER INITIAL SEDIMENT CONTROLS SHOWN ON THIS PLAN MUST BE INSTALLED PRIOR TO ANY OTHER WORK.
3. THE CONTRACTOR SHALL CLEAN STREETS BOTH INTERIOR AND ADJACENT TO THE SITE, AS NEEDED AFTER EACH RAINFALL, AND AT THE END OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST DURING CONSTRUCTION AND SHALL WATER CONSTRUCTION AREAS WHENEVER CONDITIONS WARRANT.
5. ALL DISTURBED AREAS NOT RECEIVING OTHER PERMANENT STABILIZATION SUCH AS PAVEMENT, ROOFS, SOD, ETC., SHALL BE SEEDED AND MULCHED, AS SPECIFIED BELOW BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED AND PRIOR TO FINAL APPROVAL OF CONSTRUCTION.

- A MINIMUM DEPTH OF 4" OF TOPSOIL (PRIOR TO COMPACTING) SHALL BE SPREAD ON AREAS TO BE SEEDED.
- AFTER TOPSOIL IS SPREAD, LIME SHALL BE SPREAD AT THE RATE OF 800-900 POUNDS, EFFECTIVE NEUTRALIZING MATERIAL (ENM) PER ACRE.
- FERTILIZER SHALL BE SPREAD AT THE RATE OF 400-500 POUNDS PER ACRE, AND SHALL BE 13-13-13 NITROGEN, PHOSPHORUS, AND POTASSIUM.
- SEED MIX SHALL CONSIST OF 60-80 % KENTUCKY 31 TALL FESCUE AND 20-40 %). SEED MIX SHALL BE ANNUAL RYE GRASS (GERMINATION SHALL BE AT LEAST 85 SPREAD AT THE RATE OF 400-500 POUNDS PER ACRE.
- ALL AREAS TO BE SEEDED HAVING SLOPES STEEPER THAN 4:1 SHALL BE MULCHED WITH CEREAL GRAIN MULCH THE RATE OF 100 POUNDS PER 1000 SQUARE FEET (4500 POUNDS PER ACRE). CEREAL GRAIN MULCH SHALL MEET THE REQUIREMENTS OF SECTION 802 OF THE MISSOURI DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR TYPE I MULCH. MULCH MAY BE APPLIED BY HAND; HOWEVER, IT MUST BE EVENLY SPREAD.
  TYPE I MULCH SHALL BE THOROUGHLY WETTED IMMEDIATELY AFTER APPLICATION.
- WHERE SLOPES ARE 4:1 OR GREATER TYPE 3 MULCH ("HYDROMULCH") MEETING THE REQUIREMENTS OF SECTION 802 OF THE MISSOURI DEPARTMENT OF TRANSPORTATION SPECIFICATIONS SHALL BE USED. TYPE 3 MULCH SHALL BE APPLIED AT THE RATE OF 2000 POUNDS PER ACRE.
- PERMANENT SEEDING SEASON RUNS FROM MARCH 1ST TO JUNE 1ST AND AUGUST 15TH TO NOVEMBER 1ST. SEEDING AND MULCHING MUST BE DONE WHENEVER WORK IS COMPLETE REGARDLESS OF THE SEASON. WHENEVER SEEDING AND MULCH IS INSTALLED OUTSIDE OF THE PERMANENT SEEDING SEASON THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLANTING AND MULCHING ANY AREAS WHERE GROWTH HAS NOT BECOME ESTABLISHED DURING THE NEXT PERMANENT SEEDING SEASON.
- ALL AREAS MUST BE MAINTAINED BY THE CONTRACTOR FOR A MINIMUM OF 60 DAYS FOLLOWING INSTALLATION OR 60 DAYS FROM THE START OF THE FIRST PERMANENT SEEDING SEASON AFTER INSTALLATION.

No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

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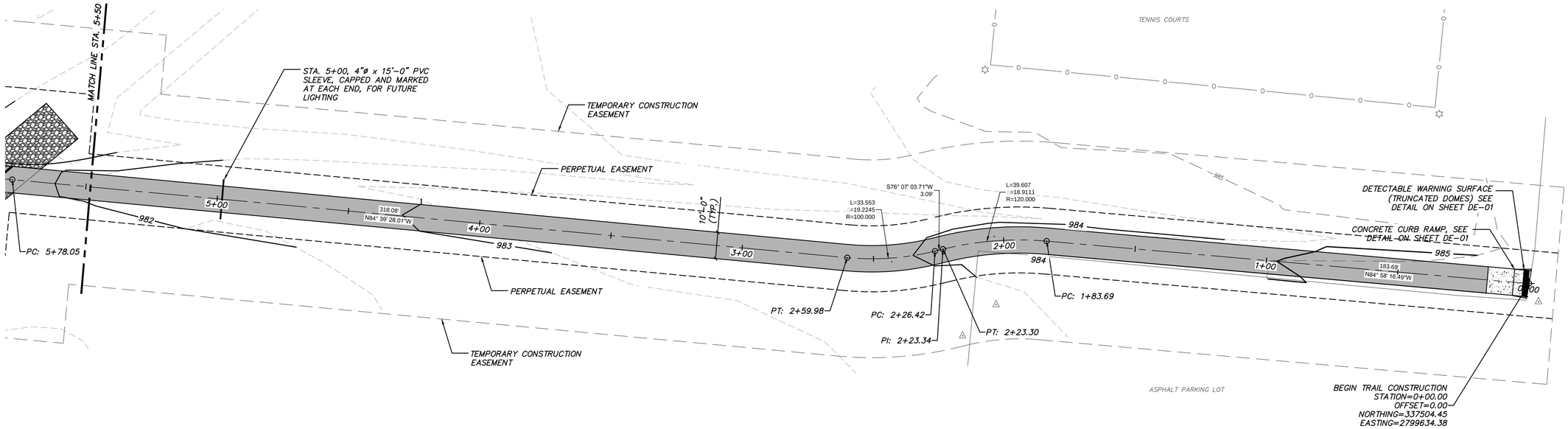
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

TEMPORARY EROSION CONTROL DETAILS

DATE: 01.31.2017

JOB NUMBER: 13-3249

SHEET
GR-02



LEGEND

CONTOUR INTERVAL 1'

= ASPHALT TRAIL (SEE DETAIL, SHEET DE-01)

NOTES:

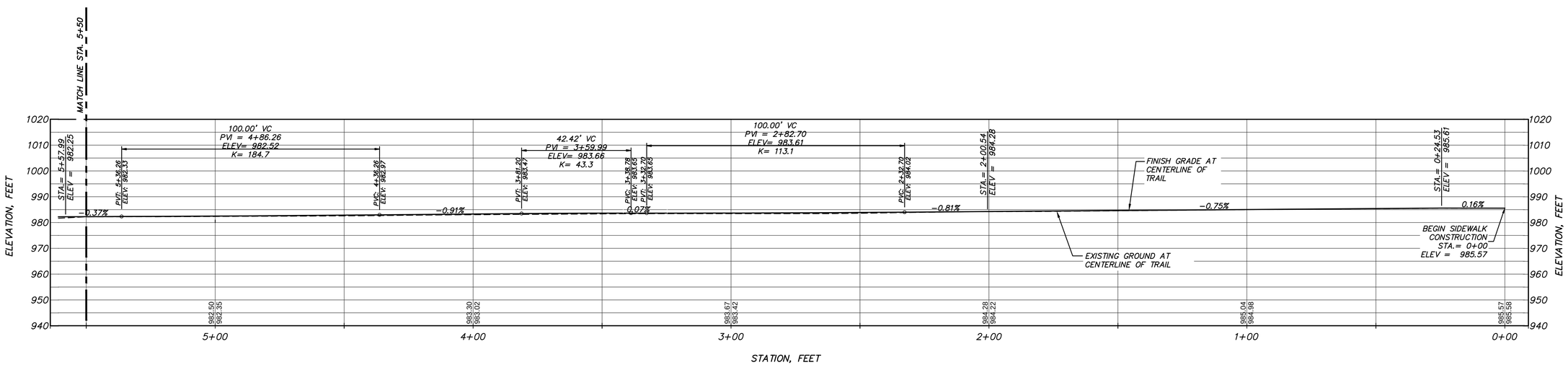
UTILITY NOTE:
UNLESS OTHERWISE SPECIFIED PROTECT IN PLACE ALL UTILITY POLES, RISERS, AND SERVICE RUNS.

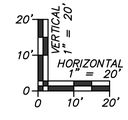
TRAIL IS CROWNED TO DRAIN. BACKFILL AT TRAIL EDGE SHOULD BE GRADED TO DRAIN AWAY FROM TRAIL.

TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2' DIGITAL LEVEL.

N

0 20' 40'
SCALE 1 INCH = 20 FEET





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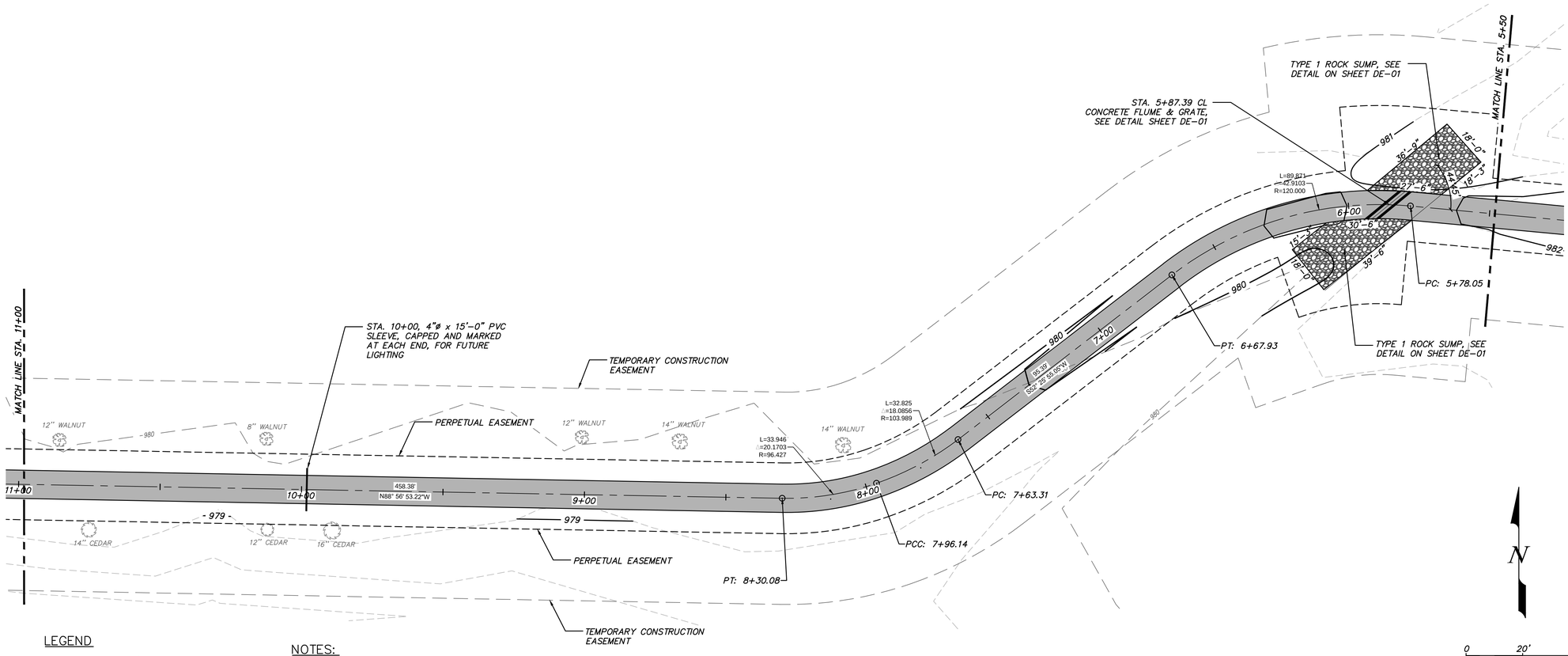
Missouri State Certificate of Authority Numbers:
Engineering: 2000156885, Land Surveying: 2001011476, Landscape Architecture: 2007013673

CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

TRAIL PLAN & PROFILE
STA. 0+00 - STA. 5+50

DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET
C-01



LEGEND

CONTOUR INTERVAL 1'

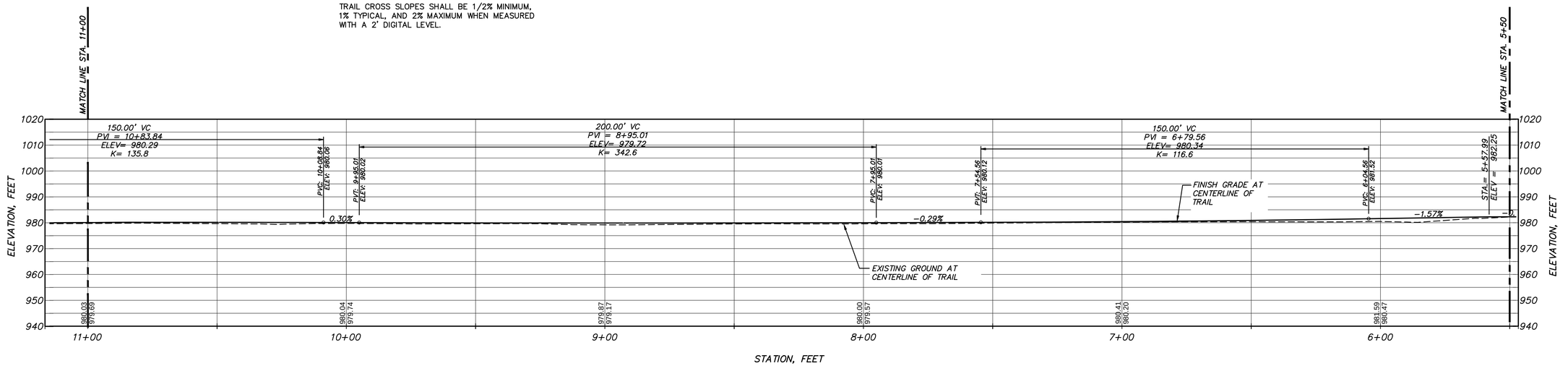
= ASPHALT TRAIL (SEE DETAIL, SHEET DE-01)

NOTES:

UTILITY NOTE:
UNLESS OTHERWISE SPECIFIED PROTECT IN PLACE ALL UTILITY POLES, RISERS, AND SERVICE RUNS.

TRAIL IS CROWNED TO DRAIN. BACKFILL AT TRAIL EDGE SHOULD BE GRADED TO DRAIN AWAY FROM TRAIL.

TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2' DIGITAL LEVEL.



No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

GRE GREAT RIVER ENGINEERING
2826 S. INGRAM MILL, SPRINGFIELD, MO 65804
PHONE: (417) 886-7171 FAX: (417) 886-7591
www.greatriv.com

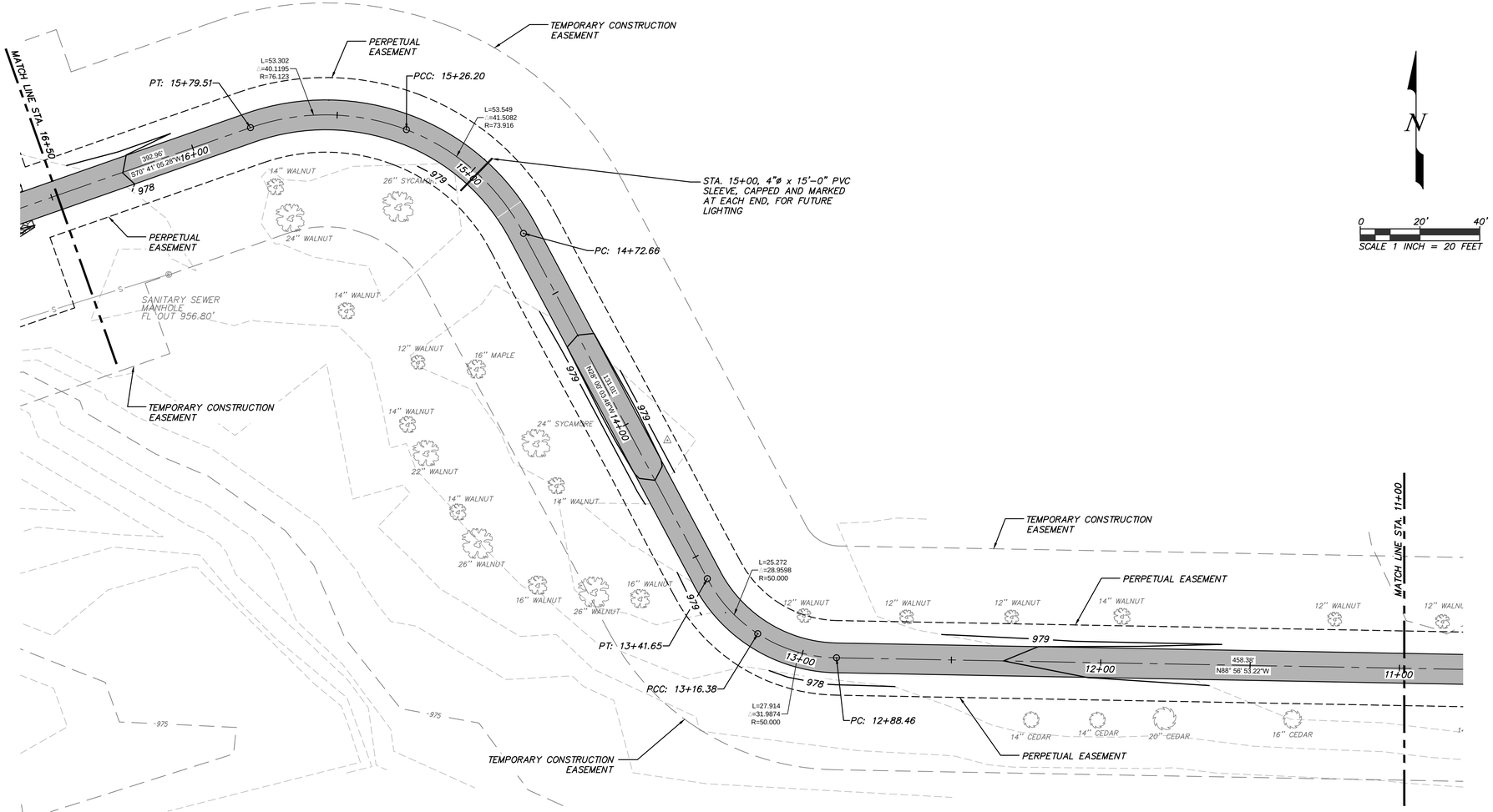
Missouri State Certificate of Authority Numbers:
Engineering: 2000156885, Land Surveying: 2001011476, Landscape Architecture: 2007013673

CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

TRAIL PLAN & PROFILE
STA. 5+50 - STA. 11+00

DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET
C-02



LEGEND

CONTOUR INTERVAL 1'

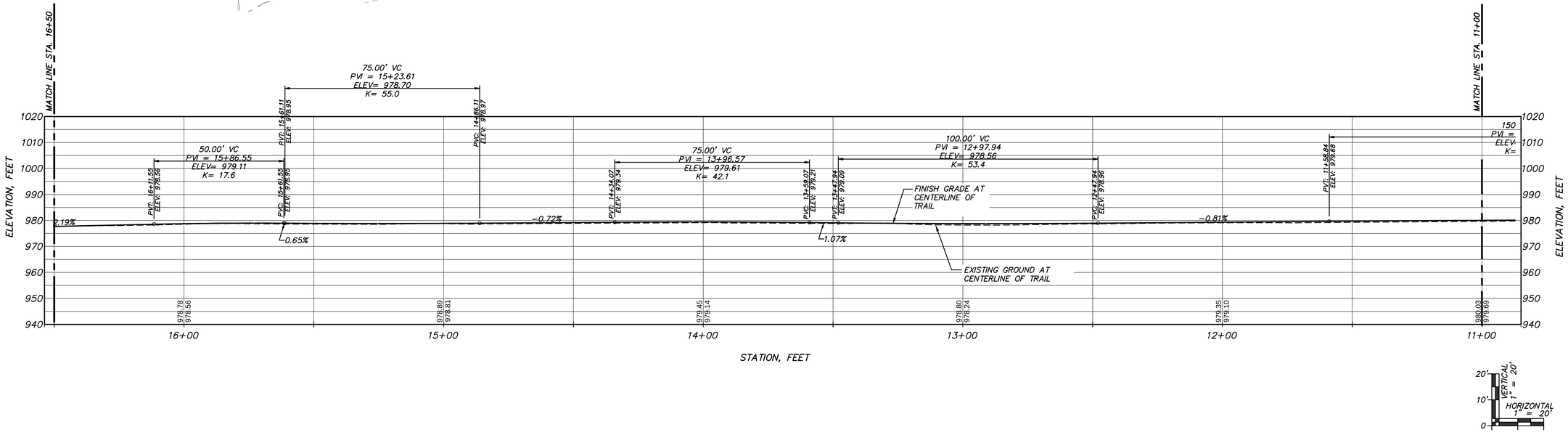
= ASPHALT TRAIL (SEE DETAIL, SHEET DE-01)

NOTES:

UTILITY NOTE:
UNLESS OTHERWISE SPECIFIED PROTECT IN PLACE ALL UTILITY POLES, RISERS, AND SERVICE RUNS.

TRAIL IS CROWNED TO DRAIN. BACKFILL AT TRAIL EDGE SHOULD BE GRADED TO DRAIN AWAY FROM TRAIL.

TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2' DIGITAL LEVEL.



No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

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CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

TRAIL PLAN & PROFILE
STA. 11+00 - STA. 16+50

DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET
C-03

LEGEND

CONTOUR INTERVAL 1'

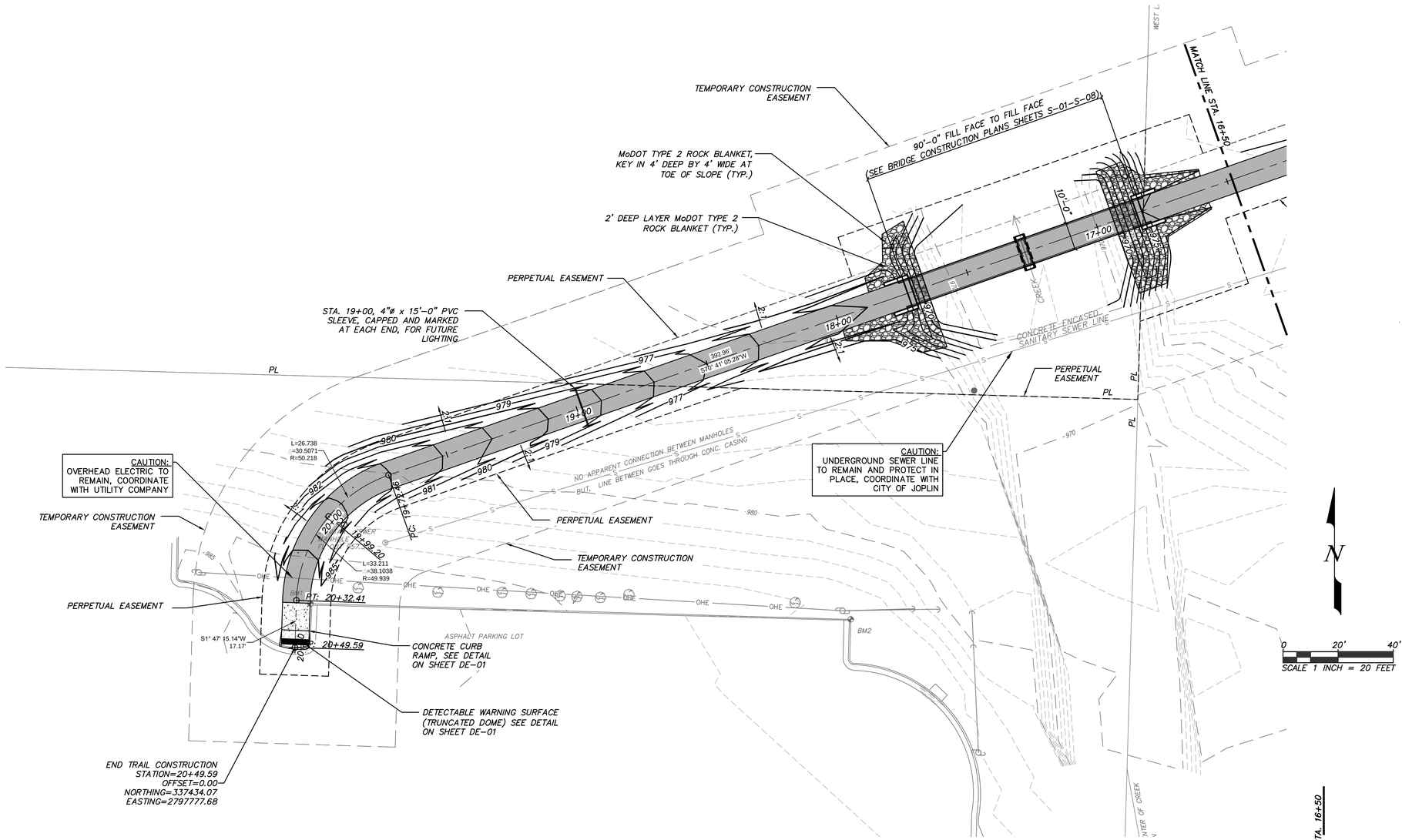
= ASPHALT TRAIL
(SEE DETAIL, SHEET DE-01)

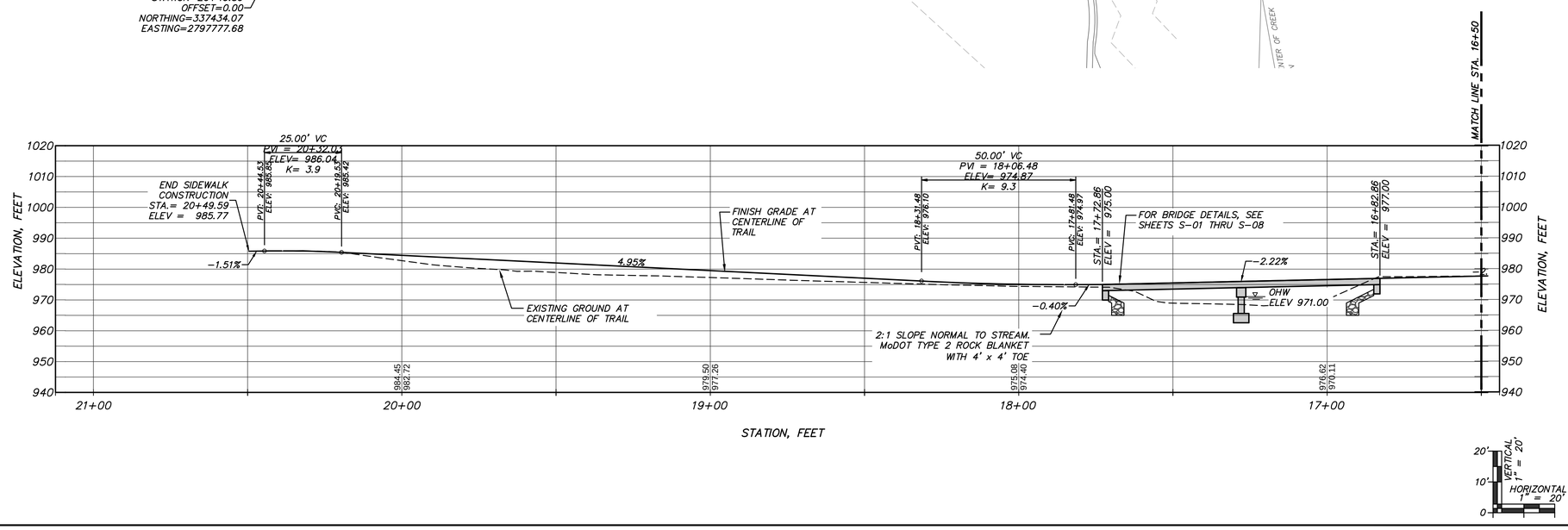
NOTES:

UTILITY NOTE:
UNLESS OTHERWISE SPECIFIED PROTECT IN PLACE ALL UTILITY POLES, RISERS, AND SERVICE RUNS.

TRAIL IS CROWNED TO DRAIN. BACKFILL AT TRAIL EDGE SHOULD BE GRADED TO DRAIN AWAY FROM TRAIL.

TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2' DIGITAL LEVEL.





No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

GRE GREAT RIVER ENGINEERING
2626 S. INGRAM MILL, SPRINGFIELD, MO 65804
PHONE: (417) 886-7171 FAX: (417) 886-7591
www.greatriv.com
Missouri State Certificate of Authority Numbers:
Engineering: 2000156859, Land Surveying: 2001011741, Landscape Architecture: 2007013373

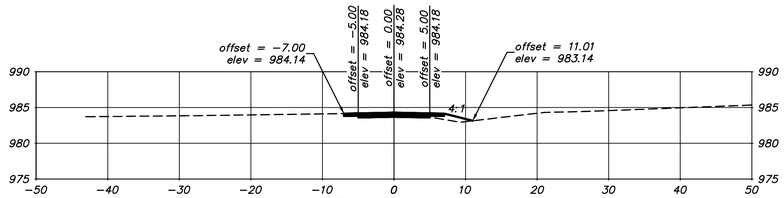
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

TRAIL PLAN & PROFILE
STA. 16+50 - STA. 20+65.65

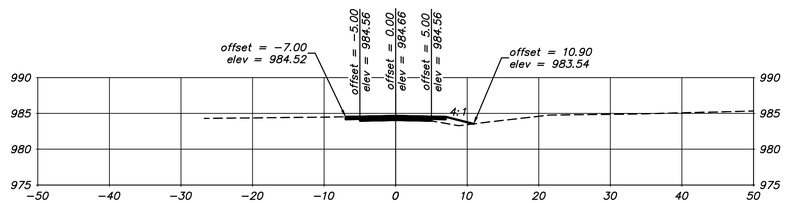
DATE: 01.31.2017

JOB NUMBER: 13-3249

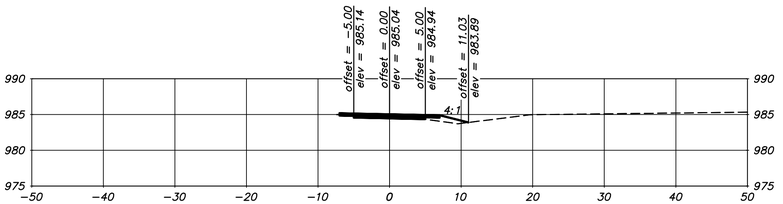
SHEET
C-04



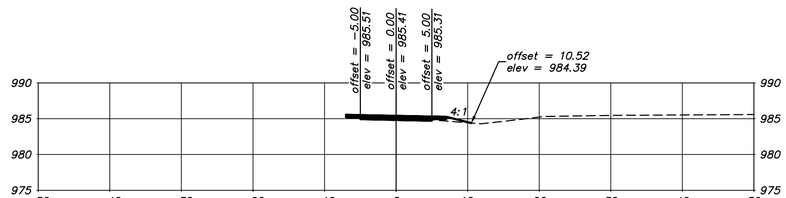
STA. 2+00.00



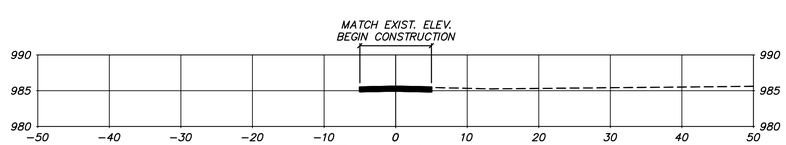
STA. 1+50.00



STA. 1+00.00



STA. 0+50.00



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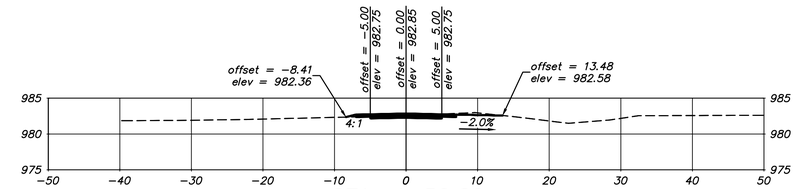
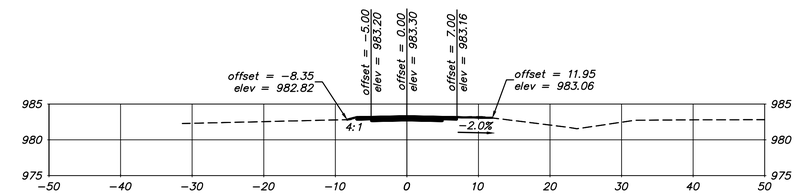
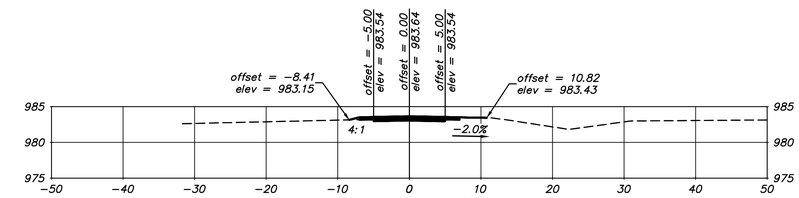


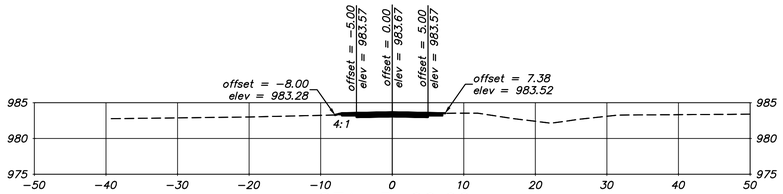
STA. 4+50.00



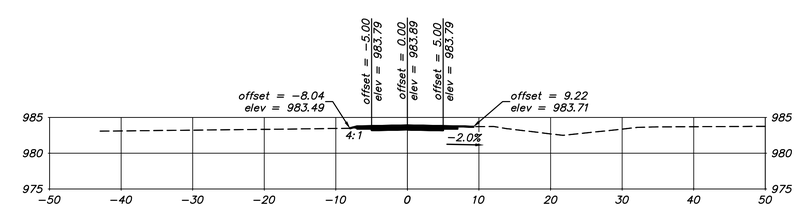
STA. 4+00.00



STA. 3+50.00



STA. 3+00.00



STA. 2+50.00

0 10' 20'
SCALE 1 INCH = 10 FEET

No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

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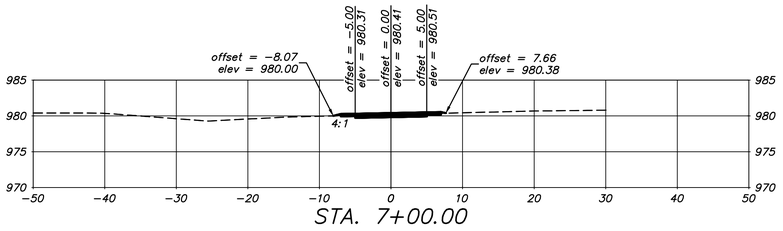
Missouri State Certificate of Authority Numbers:
Engineering: 2000156885, Land Surveying: 2010131476, Landscape Architecture: 2007013673

CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

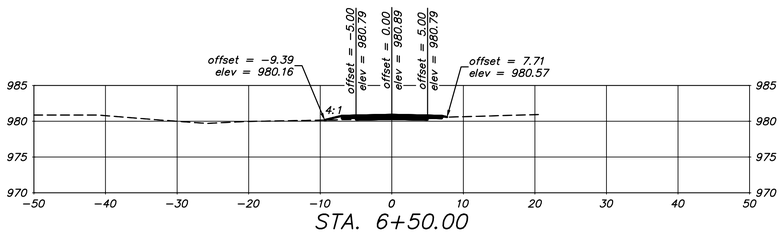
CROSS SECTION
STA. 0+00 - STA. 4+50

DATE: 01.31.2017
JOB NUMBER: 13-3249

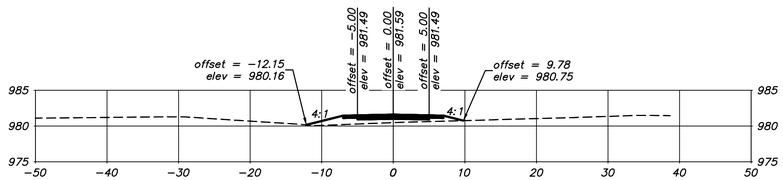
SHEET
CS-01



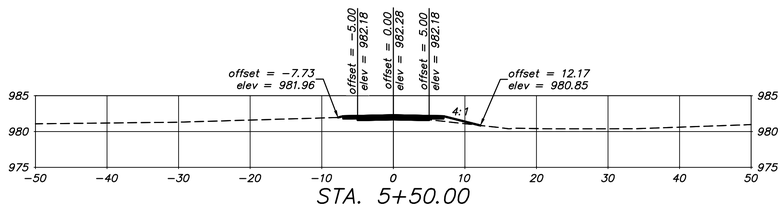
STA. 7+00.00



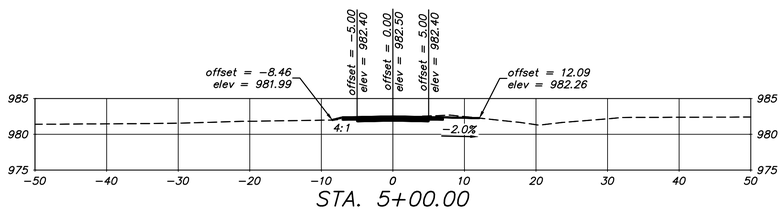
STA. 6+50.00



STA. 6+00.00



STA. 5+50.00



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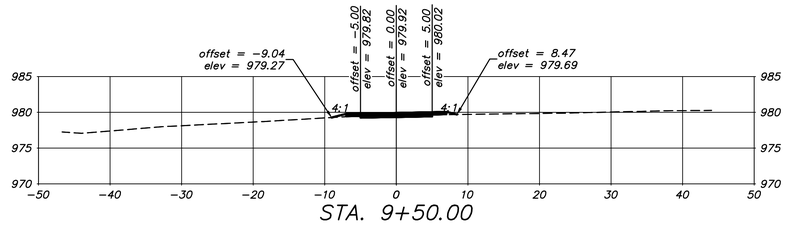
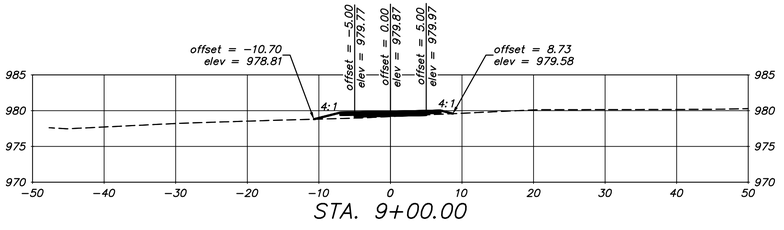


STA. 9+50.00



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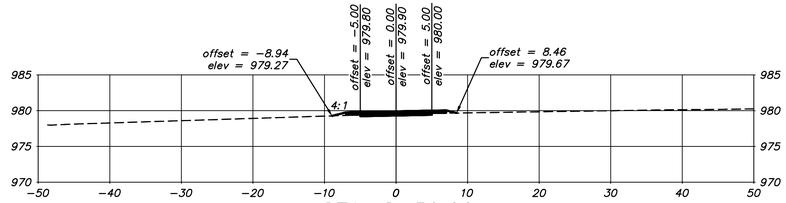
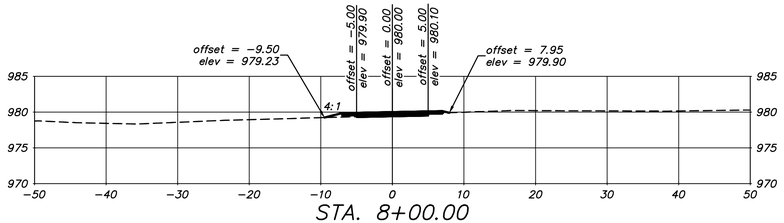
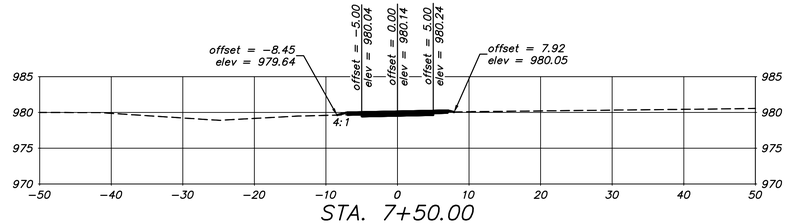


STA. 8+50.00



STA. 8+00.00



STA. 7+50.00

0 10' 20'

SCALE 1 INCH = 10 FEET

No.	Revision/Issue	Date
1		
2		
3		
4		
5		
6		
7		

JERANY L. JACKSON
MO# LA-000175

GRE GREAT RIVER ENGINEERING
2626 S. INGRAM MILL, SPRINGFIELD, MO 65804
PHONE: (417) 886-7171 FAX: (417) 886-7591
www.greinfo.com

Missouri State Certificate of Authority Numbers:
Engineering: 2000156855; Land Surveying: 2001011; Landscape Architecture: 2007013373

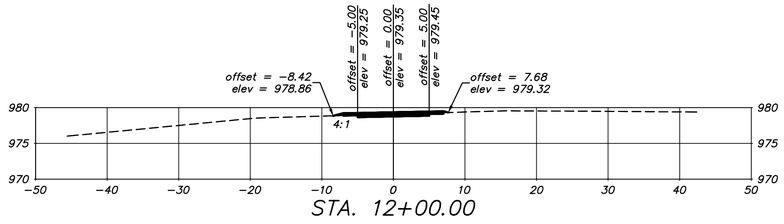
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

CROSS SECTION
STA. 5+00 - STA. 9+50

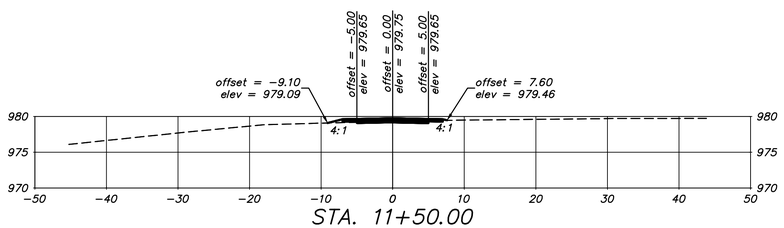
DATE: 01.31.2017

JOB NUMBER: 13-3249

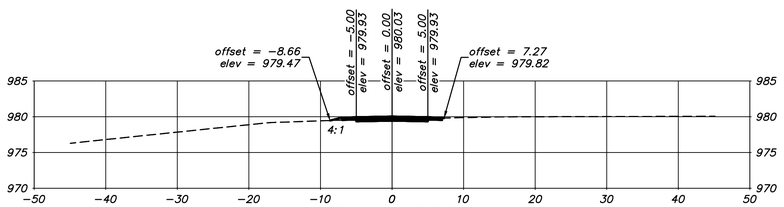
SHEET
CS-02



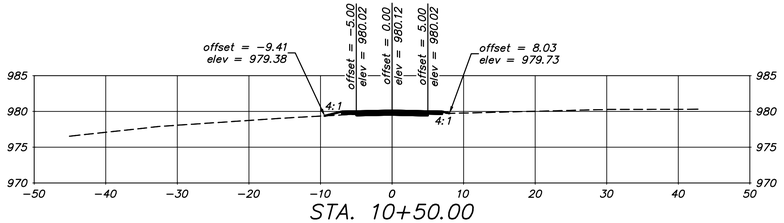
STA. 12+00.00



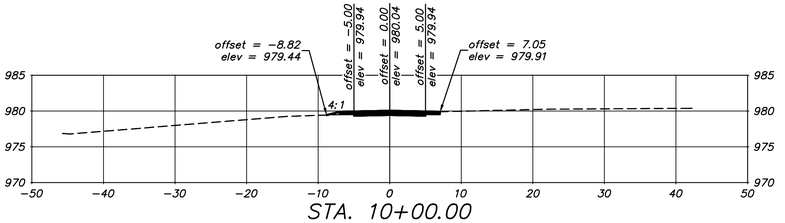
STA. 11+50.00



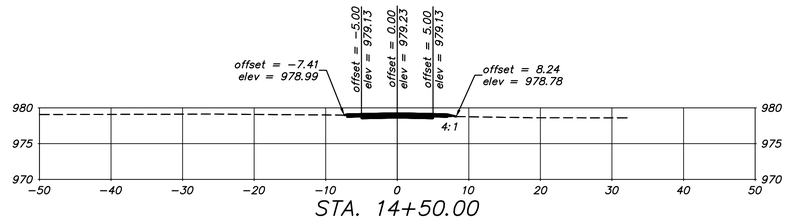
STA. 11+00.00



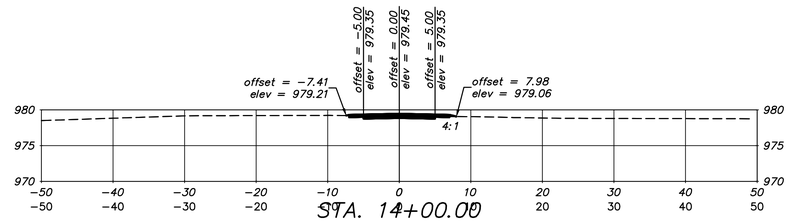
STA. 10+50.00



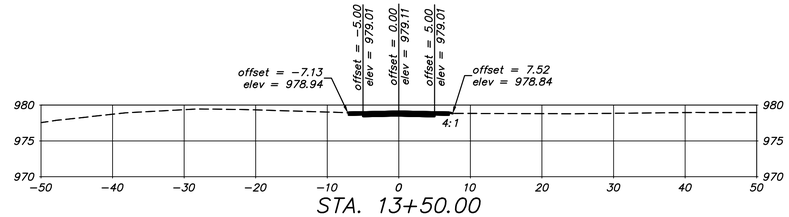
STA. 10+00.00



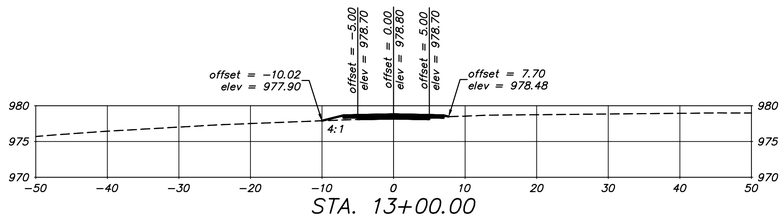
STA. 14+50.00



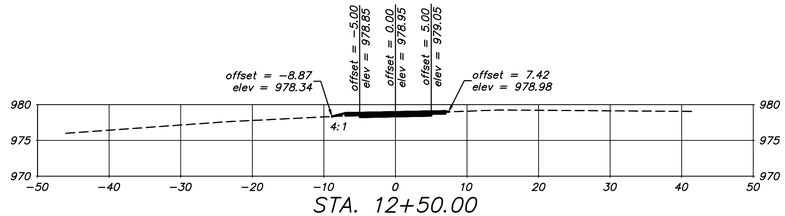
STA. 14+00.00



STA. 13+50.00



STA. 13+00.00



STA. 12+50.00

0 10' 20'

SCALE 1 INCH = 10 FEET

No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

GRE
GREAT RIVER ENGINEERING
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Missouri State Certificate of Authority Numbers:
Engineering: 2000155855; Land Surveying: 2000111741; Landscape Architecture: 2007013373

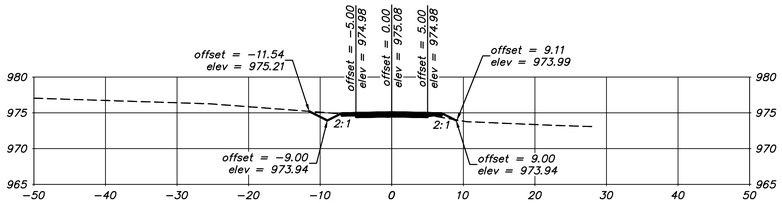
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

CROSS SECTION
STA. 5+50 - STA. 14+50

DATE: 01.31.2017

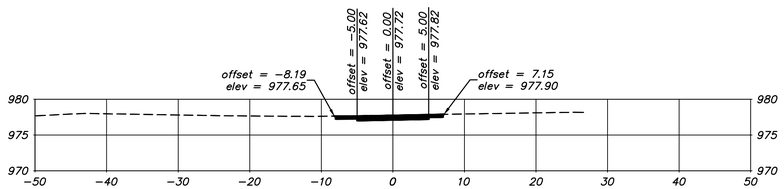
JOB NUMBER: 13-3249

SHEET
CS-03

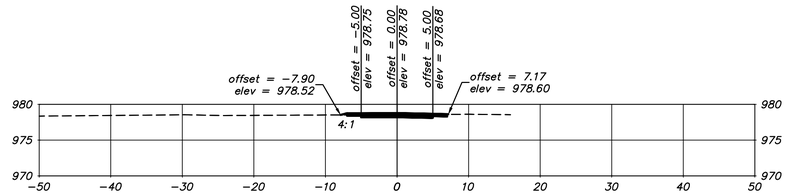


STA. 18+00.00

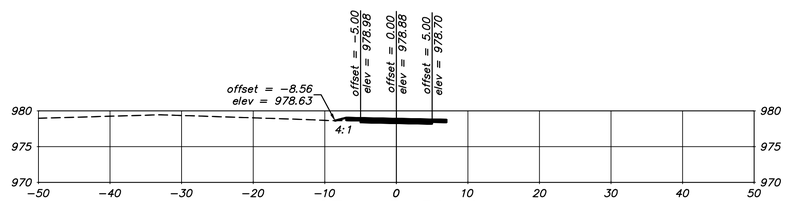
STA. 17+00 THRU 17+50 NOT SHOWN IN LOCATION OF BRIDGE



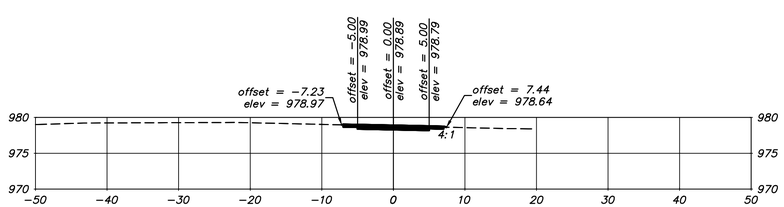
STA. 16+50.00



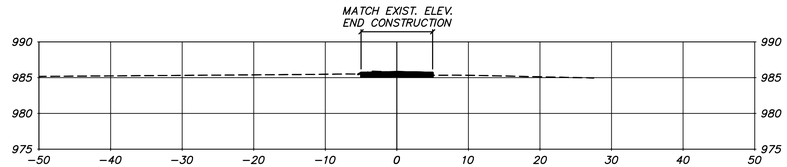
STA. 16+00.00



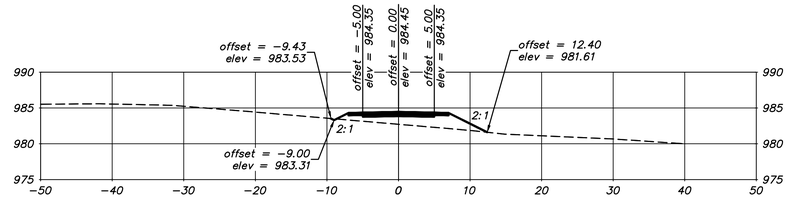
STA. 15+50.00



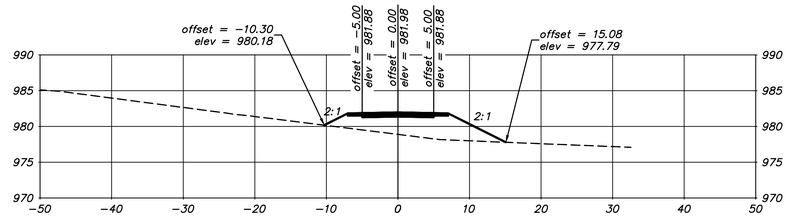
STA. 15+00.00



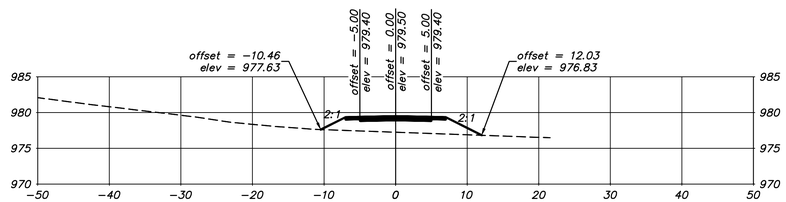
STA. 20+49.59



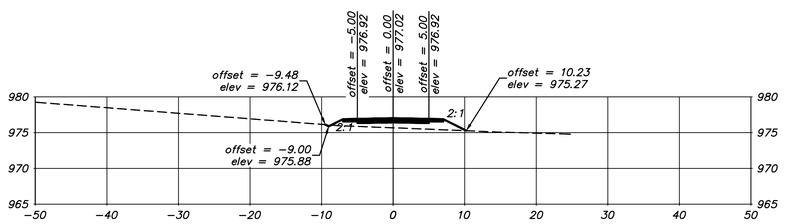
STA. 20+00.00



STA. 19+50.00



STA. 19+00.00



STA. 18+50.00

0 10' 20'
SCALE 1 INCH = 10 FEET

No.	Revision/Issue	Date

STATE OF MISSOURI
JERANY L. JACKSON
NUMBER
LA-000175
LANDSCAPE ARCHITECT

JERANY L. JACKSON
MO# LA-000175

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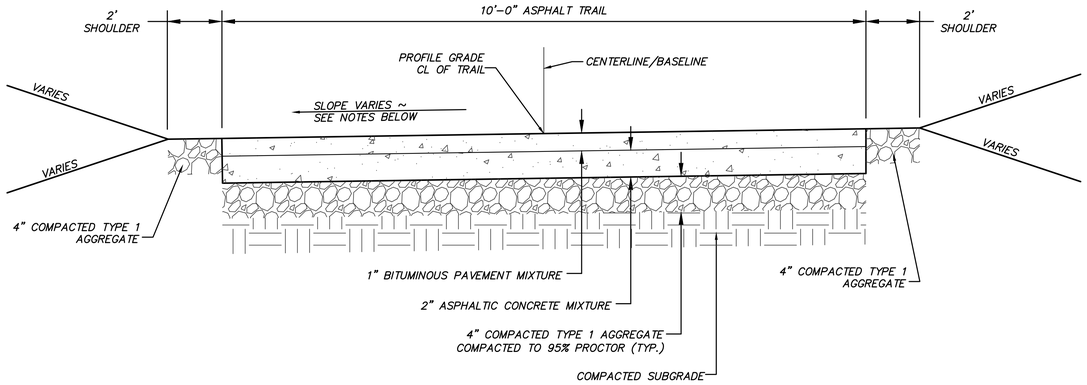
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

CROSS SECTION
STA. 15+00 - STA. 20+65.65

DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET
CS-04

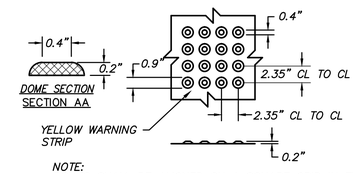


TRAIL CROSS SLOPE NOTES:

1. TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2' DIGITAL LEVEL.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OF ANY NON-ADA COMPLIANT SECTIONS.

10' ASPHALT TRAIL

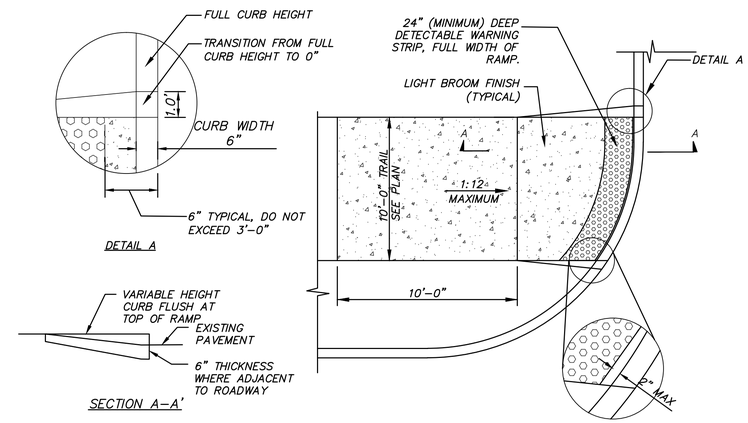
DO NOT SCALE



NOTE:
DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.

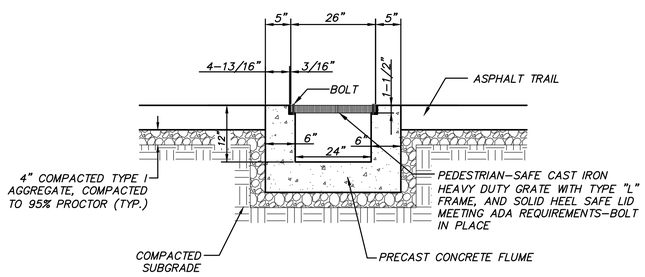
TRUNCATED DOME SIZE AND SPACING

NOT TO SCALE



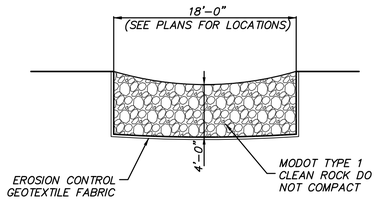
PERPENDICULAR CURB RAMP

NOT TO SCALE



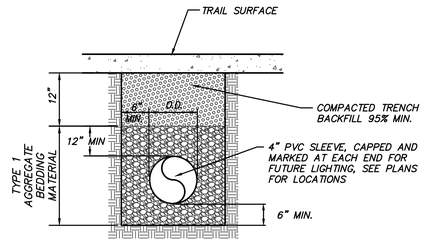
CONCRETE FLUME & GRATE DETAIL

DO NOT SCALE



TYPE 1 ROCK SUMP DETAIL

DO NOT SCALE



PVC SLEEVE DETAIL

No.	Revision/Issue	Date

JERANY L. JACKSON
MO# LA-000175

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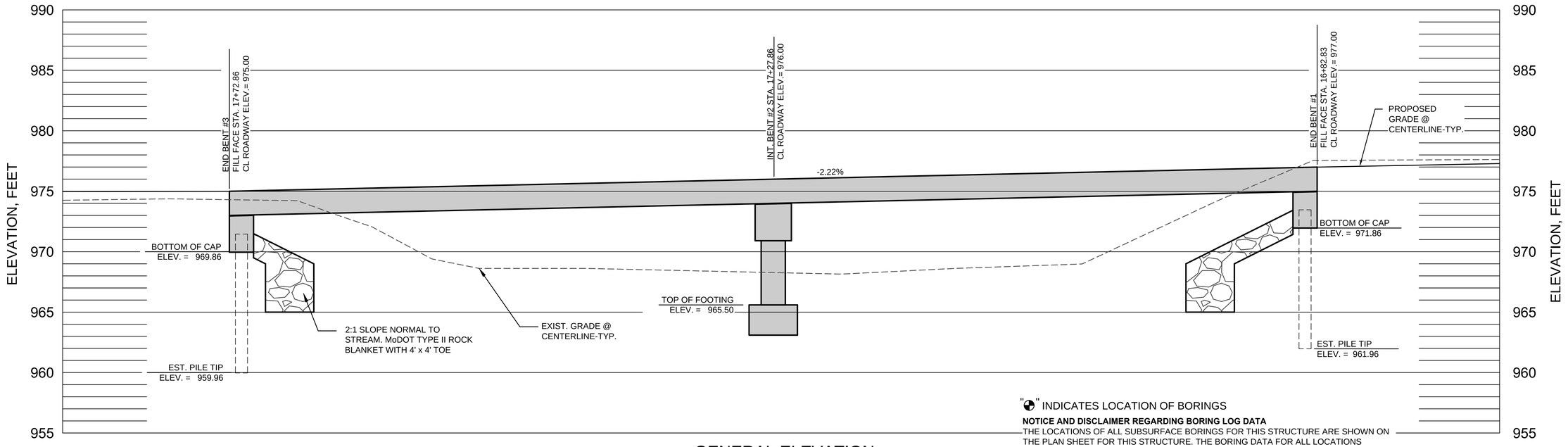
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

CONSTRUCTION DETAILS

DATE: 01.03.2017
JOB NUMBER: 13-3249

SHEET
DE-01

SLAB BEAM BRIDGE
2 SPAN ARRANGEMENT 45'-0" - 45'-0"



GENERAL ELEVATION

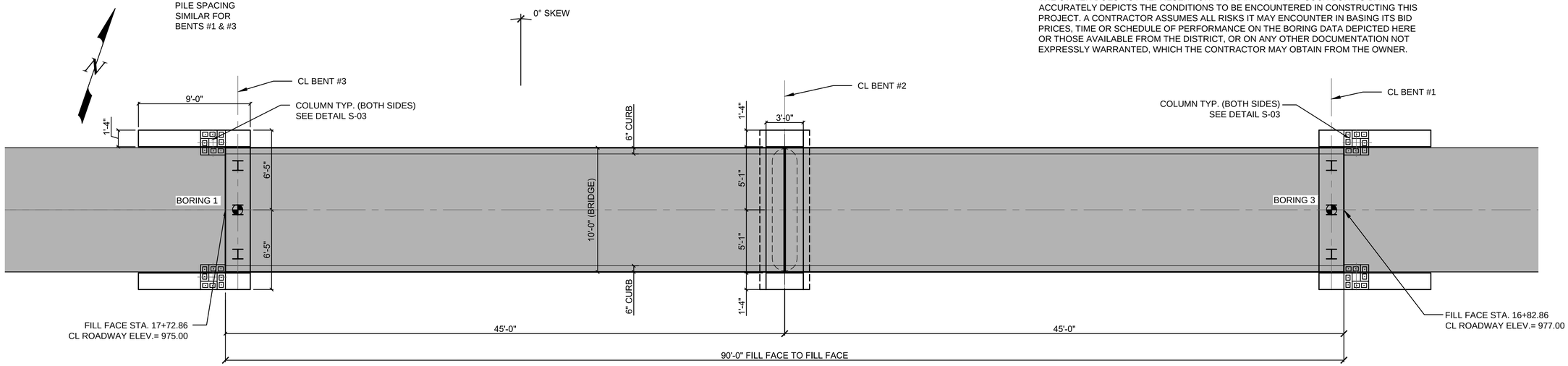
ALONG CENTERLINE OF ROADWAY
1"=50' HOR. 1"=10' VERT.

"◔" INDICATES LOCATION OF BORINGS

NOTICE AND DISCLAIMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORINGS FOR THIS STRUCTURE ARE SHOWN ON THE PLAN SHEET FOR THIS STRUCTURE. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOG OR OTHER FACTUAL RECORDS OF SUBSURFACE DATA AND INVESTIGATION PERFORMED FOR THE DESIGN OF THE PROJECT, ARE SHOWN ON THE BORING DATA SHEET OR WILL BE AVAILABLE FROM THE PROJECT CONTACT UPON WRITTEN REQUEST. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN IS GIVEN TO THE SUBSURFACE DATA AVAILABLE FROM THE OWNER OR ELSEWHERE.

THE OWNER 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 DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE OWNER.



PLAN VIEW

SCALE: 1"=50'

PILE DATA

BENT NO.			1	3
LOAD BEARING PILE	PILE TYPE AND SIZE		HP10x42	HP10x42
	NUMBER		3	3
	APPROXIMATE LENGTH PER EACH	FT	X	X
	PILE DRIVING VERIFICATION METHOD		DF	DF
	MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE	KIP	X	X
	HAMMER ENERGY REQUIRED	FT-LB	X	X

MANUFACTURED PILE POINT REINFORCEMENT & BITUMINOUS COATING SHALL BE USED ON ALL PILES IN THIS STRUCTURE.

PILING IN BENTS 1 & 3 TO BE PRE-BORED 3'-0" INTO ROCK

MINIMUM ENERGY REQUIRED OF HAMMER IS BASED ON PLAN LENGTH AND MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE.

DF = FHWA-MODIFIED GATES DYNAMIC FORMULA

MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE = MAXIMUM FACTORED LOADS/0.4

HYDRAULIC SUMMARY DATA TABLE

DESIGN FLOOD DATA	
DRAINAGE AREA	22 SQ. MI.
DESIGN FREQUENCY	5 YR
DESIGN DISCHARGE	2287 CFS
DESIGN HIGH WATER ELEVATION AT STRUCTURE	975.61 FEET
100 YEAR DISCHARGE	7770 CFS
100 YEAR HIGH WATER ELEVATION AT STRUCTURE	979.15 FEET
100 YEAR BACKWATER	0.6 FEET
APPROACH ROADWAY OVERTOPPING FREQUENCY	5 YR.

No.	Revision/Issue	Date

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CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

BRIDGE PLAN & ELEVATION
DETAILS

DATE: 01.31.2017

JOB NUMBER: 13-3249

SHEET
S-01

4168 W. Kearney St.
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GEOTECHNICAL BORING LOG

BORING NUMBER 1

PAGE 1 OF 1

CLIENT Great River Engineering
PROJECT NAME MSSU Trail & Pedestrian Bridge over Turkey Creek
PROJECT NO. 239640
PROJECT LOCATION Joplin, MO
DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **SURFACE ELEVATION** 974.12 ft **BENCHMARK EL.**
DRILLER MR **DRILL RIG** CME-550X **GROUND WATER LEVELS**
HAMMER TYPE Auto **AT TIME OF DRILLING** 6.5 ft
LOGGED BY BC **CHECKED BY** AM **AT END OF DRILLING**
NOTES

DEPTH (ft)	DRILLING METHOD	STRATA SYMBOL	MATERIAL DESCRIPTION (Unified Soil Classification System)	SAMPLE TYPE NUMBER	RECOVERY % (RQD %)	CORRECTED BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ELEVATION (ft)
0.0	CFA - 4.5" O.D.		LEAN CLAY, Grass Covered, w/ Chert and Limestone Gravel and Cobbles, Brown, Hard, Moist (CL)	SPT 1		7-22-16 (38)		972.5
2.5			- w/ Chert Sand and Stiff below 2.5'					
5.0			5.0 ft	SPT 2		4-3-6 (9)		970.0
			CLAYEY CHERT GRAVEL, w/ Sand, Red Brown, Very Moist to Wet, Medium Dense, Very Moist to Wet (GC)					
7.5			7.0 ft	SPT 3		7-14-22 (36)		967.5
			CHERT GRAVEL & COBBLES, Dense, Wet					
			8.3 ft / 8.5 ft LIMESTONE, Weathered					965.0
10.0	CORE BARREL - 2.0" I.D. NQ		LIMESTONE, Microcrystalline, Light Brown to Light Gray to White, Moderately Hard, Thin to Medium Bedded, Fractured, Slightly Weathered, Scattered Brachiopod and Crinoid Fossils	NQ 1	100 (69)			
			- Scattered Stylolites below 10.8'					962.5
12.5			- Relatively Unweathered below 12.6'	NQ 2	100 (61)			
			14.0 ft Refusal at 8.5 feet. Bottom of borehole at 14.0 feet.					

BORING LOG - PPI - PPI STD TEMPLATE.GDT - 12/2/16 16:45 - S:_MASTER PROJECT FILES\016 MO\5\GREAT RIVER ENGINEERING_MASTER FILE\GRE-239640-JOPLIN TRAIL BRIDGE OVER TURKEY CREEK\SUBS\BORING LOGS\BORING LOGS.GPJ

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GEOTECHNICAL BORING LOG

BORING NUMBER 3

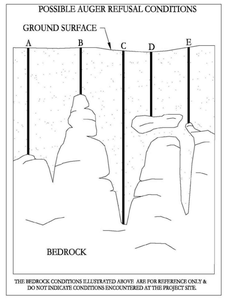
PAGE 1 OF 1

CLIENT Great River Engineering
PROJECT NAME MSSU Trail & Pedestrian Bridge over Turkey Creek
PROJECT NO. 239640
PROJECT LOCATION Joplin, MO
DATE STARTED 11/21/16 **COMPLETED** 11/21/16 **SURFACE ELEVATION** 977.33 ft **BENCHMARK EL.**
DRILLER MR **DRILL RIG** CME-550X **GROUND WATER LEVELS**
HAMMER TYPE Auto **AT TIME OF DRILLING** 7.8 ft
LOGGED BY BC **CHECKED BY** AM **AT END OF DRILLING**
NOTES

DEPTH (ft)	DRILLING METHOD	STRATA SYMBOL	MATERIAL DESCRIPTION (Unified Soil Classification System)	SAMPLE TYPE NUMBER	RECOVERY % (RQD %)	CORRECTED BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	ELEVATION (ft)
0.0	CFA - 4.5" O.D.		LEAN CLAY, Grass Covered, w/ Chert Sand, Gravel, and Cobbles, Brown, Soft, Moist (CL)	SPT 1		10-3-1 (4)		975.0
2.5			3.0 ft LEAN CLAY, w/ Chert Gravel, Red Brown, Medium Stiff, Moist (CL)	SPT 2		3-3-3 (6)		972.5
5.0			5.0 ft FAT CLAY, Dark Gray, Stiff, Moist (CH)	ST 1	100		1.25	
7.5			7.0 ft CHERT GRAVEL & COBBLES, w/ Silt, Medium Dense, Wet	SPT 3		14-9-12 (21)		970.0
10.0								967.5
			11.7 ft / 11.8 ft LIMESTONE, Weathered Refusal at 11.8 feet. Bottom of borehole at 11.8 feet.	SPT 4		72/0"		

BORING LOG - PPI - PPI STD TEMPLATE.GDT - 12/2/16 16:45 - S:_MASTER PROJECT FILES\016 MO\5\GREAT RIVER ENGINEERING_MASTER FILE\GRE-239640-JOPLIN TRAIL BRIDGE OVER TURKEY CREEK\SUBS\BORING LOGS\BORING LOGS.GPJ

Auger refusal is defined as the depth below the ground surface at which a boring can no longer be advanced with the soil drilling technique being used. Auger refusal is subjective and is based upon the type of drilling equipment and types of augers being used, as well as the effort exerted by the driller. Several different auger refusal conditions are possible in the general site area. These conditions are represented graphically in the adjacent figure: (A) on the upper surface of continuous bedrock, (B) on rock "pinnacles", (C) in widened joints that may extend well below the surrounding bedrock surface, (D) slabs of unweathered rock suspended in the residual soil matrix, or "floaters", or (E) on the upper surface of discontinuous bedrock.



NOTE:
FOR LOCATION OF BORINGS, SEE BRIDGE PLAN AND ELEVATION SHEET.

No.	Revision/Issue	Date
1		
2		
3		
4		
5		
6		
7		

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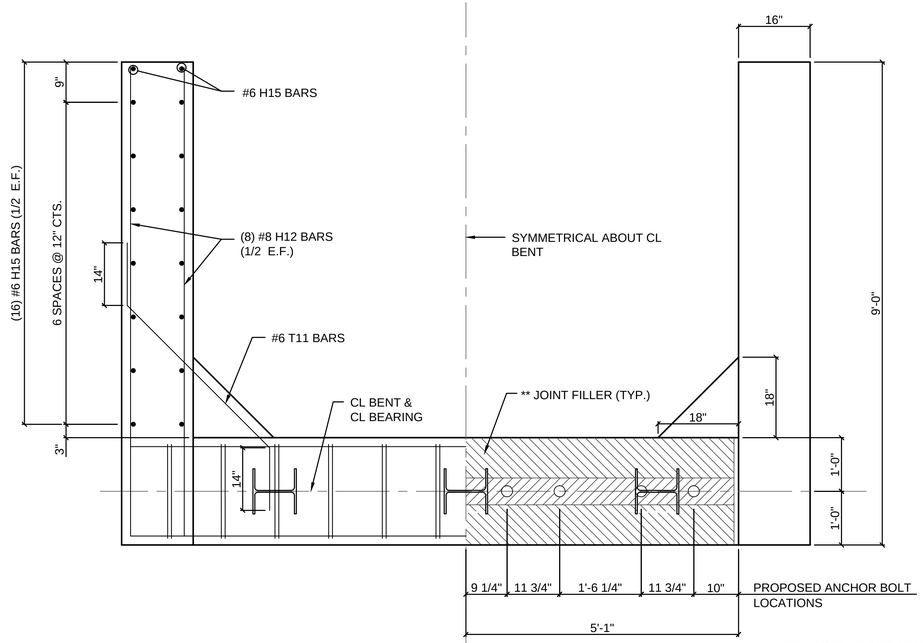
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

SOIL DATA

DATE: 01.31.2017

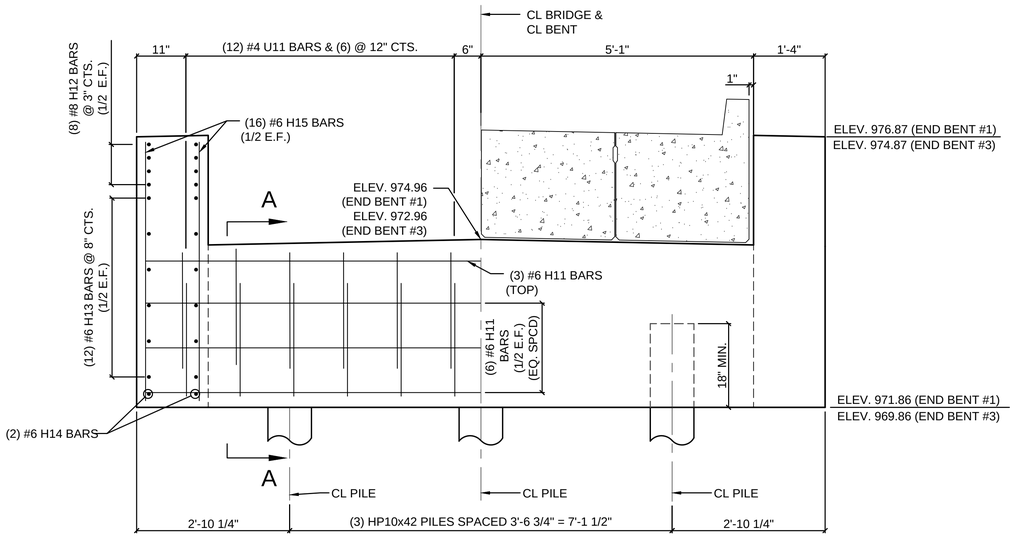
JOB NUMBER: 13-3249

SHEET
S-02



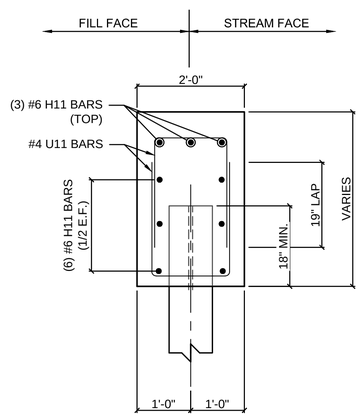
PLAN BENT ELEVATION VIEW

** FILL AREA UNDER BEAMS WITH JOINT FILLER, TO BE SUPPLIED BY CONTRACTOR. JOINT FILLER MUST BE IN PLACE PRIOR TO SETTING BEAMS.



END BENT ELEVATION VIEW

(ELEVATIONS @ FILL FACE)



SECTION A-A

NOTES:

SECTIONS A-A IS TAKEN NORMAL TO CENTERLINE OF BENT.

SEE BRIDGE BILL OF REINFORCING STEEL SHEET FOR BAR DETAILS.

ALL U-BARS AND V-BAR PAIRS IN END BENT ARE TO BE PLACED PARALLEL TO CL OF TRAIL.

FOR LOCATION OF ANCHOR BOLTS AND DETAILS, SEE BRIDGE SLAB BEAM DETAILS SHEETS.

LABELS FOR REINFORCING STEEL ARE SHOWN FOR BENT #1. BENT #3 IS IDENTICAL EXCEPT FOR THE FIRST NUMBER OF THE BAR LABEL.
EXAMPLE: #6 V11 BARS = BENT #1
#6 V31 BARS = BENT #3

E.F. EACH FACE

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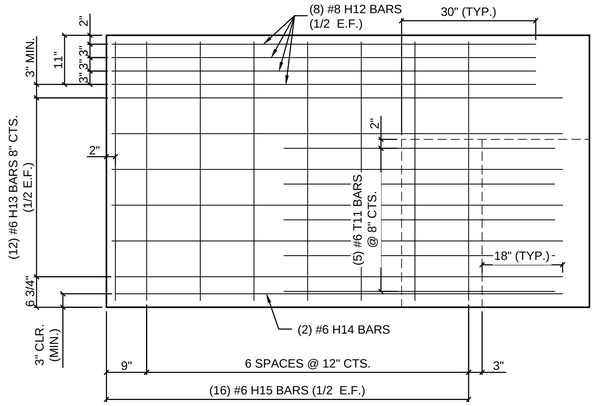
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

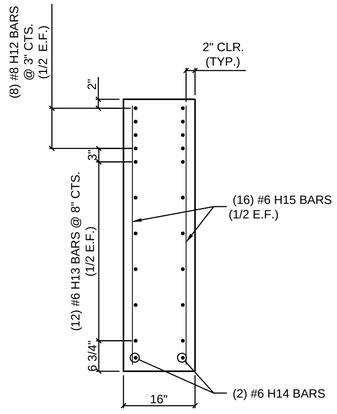
BRIDGE END BENT DETAILS
-

DATE: 01.31.2017
JOB NUMBER: 13-3249

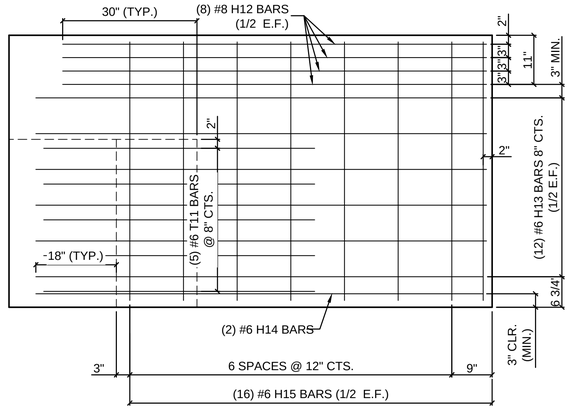
SHEET
S-03



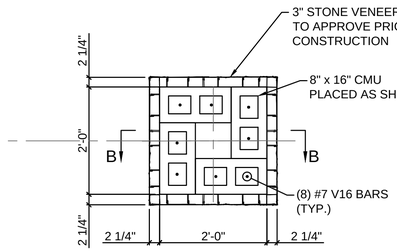
ELEVATION VIEW OF WING
(STREAM FACE)



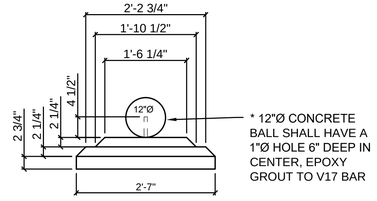
PART SECTION THRU WING

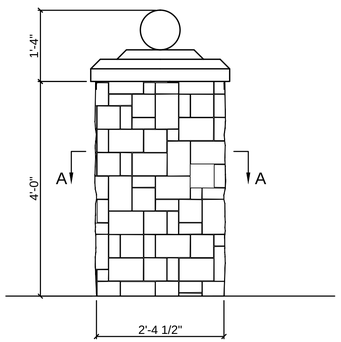


ELEVATION VIEW OF WING
(FILL FACE)

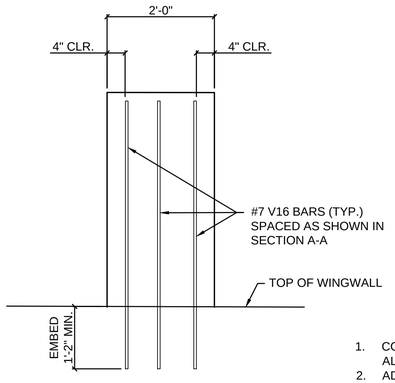


SECTION A-A





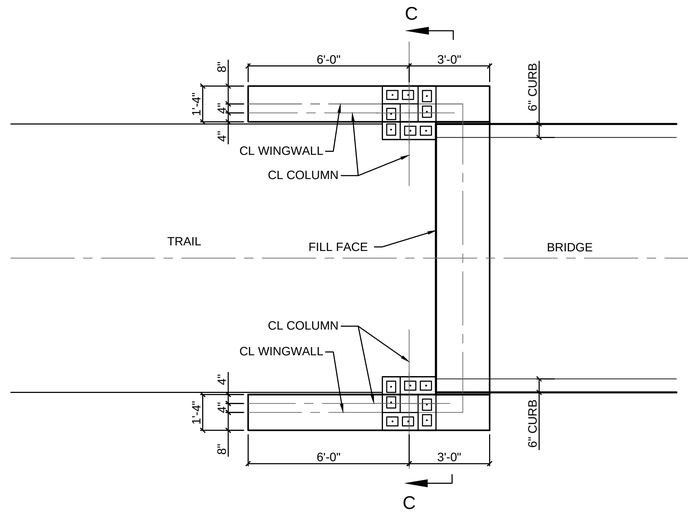
ELEVATION VIEW



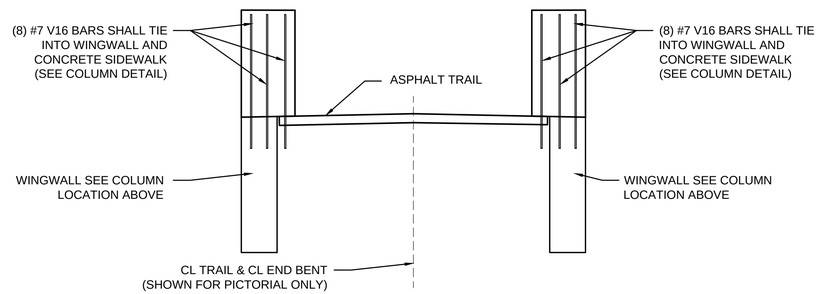
SECTION B-B

1. CONSTRUCT WITH TYPE S MORTAR ALL JOINTS.
2. ADJUSTABLE TAB TYPE MASONRY TIES MINIMUM 3 PER COURSE OFFSET PLACEMENT.
3. TOOL ALL JOINTS CONCAVE
4. ENGINEERED STONE VENEER.

COLUMN DETAIL



COLUMN LOCATION
(WEST ABUTMENT SHOWN)
(EAST ABUTMENT SIMILAR)



SECTION C-C

No.	Revision/Issue	Date

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CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

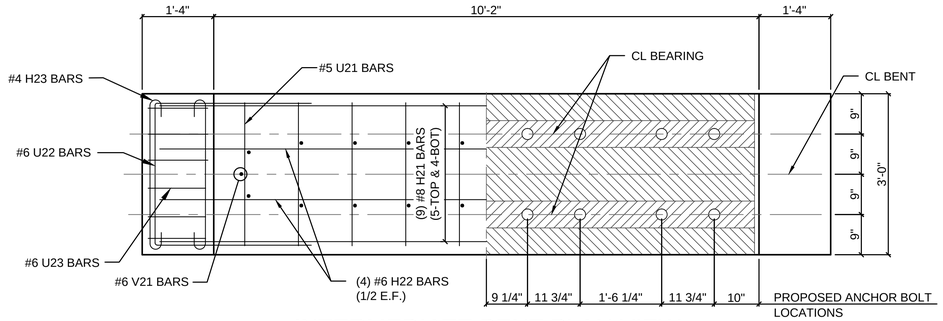
BRIDGE END BENT DETAILS

-

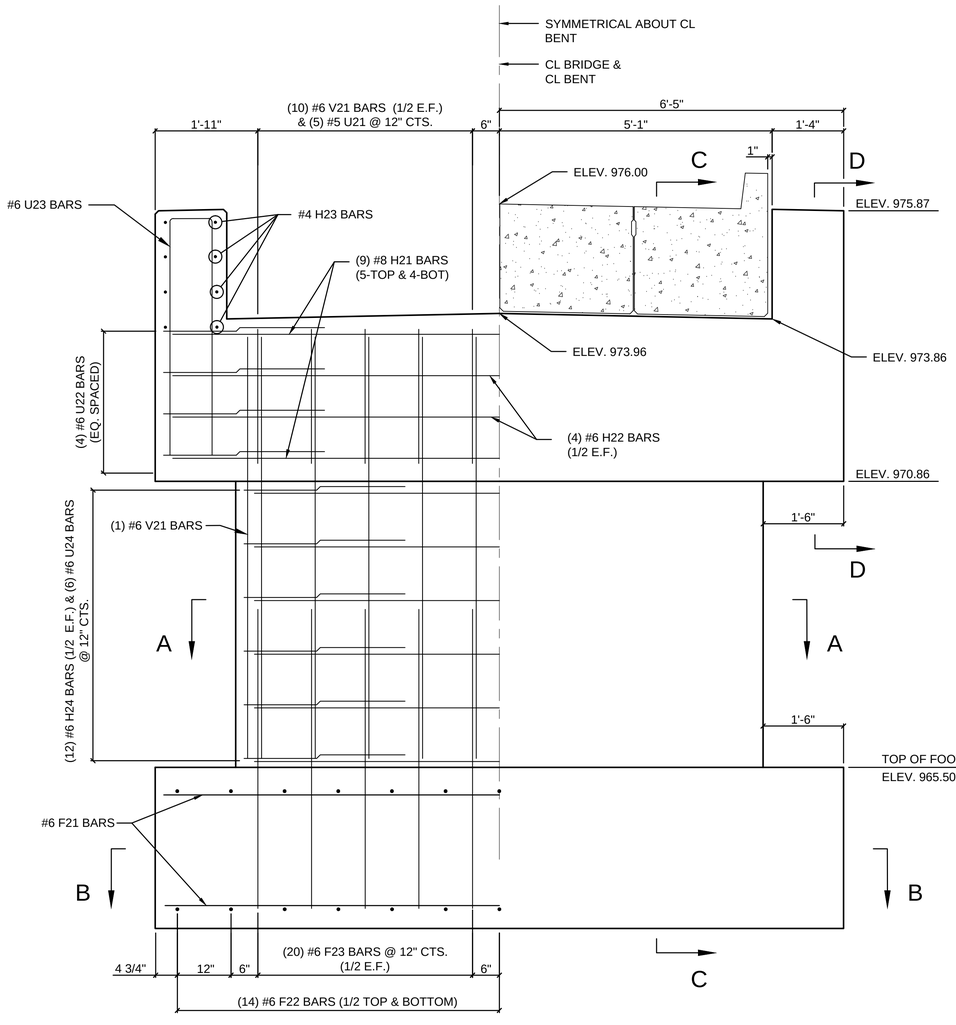
DATE: 01.31.2017

JOB NUMBER: 13-3249

SHEET
S-04

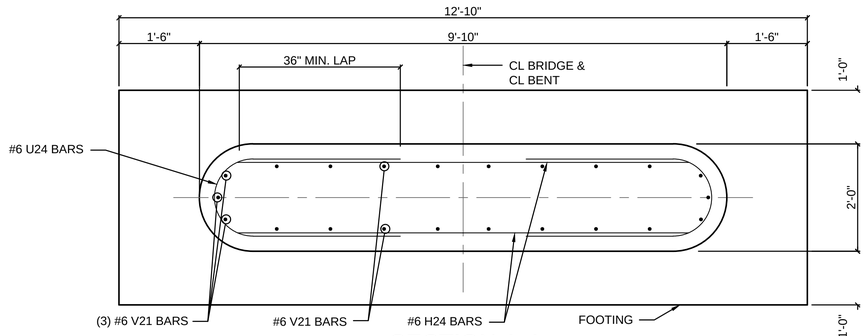


INTERMEDIATE BENT PLAN VIEW

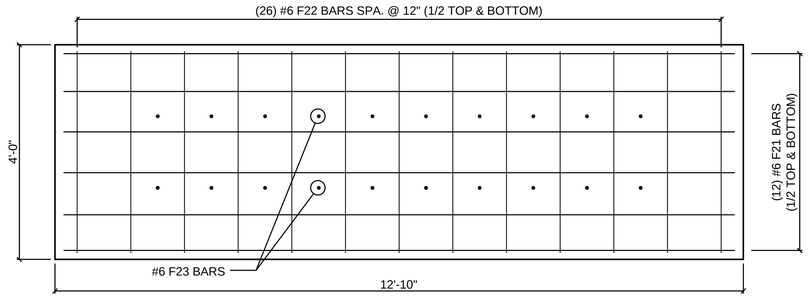


INTERMEDIATE BENT ELEVATION VIEW

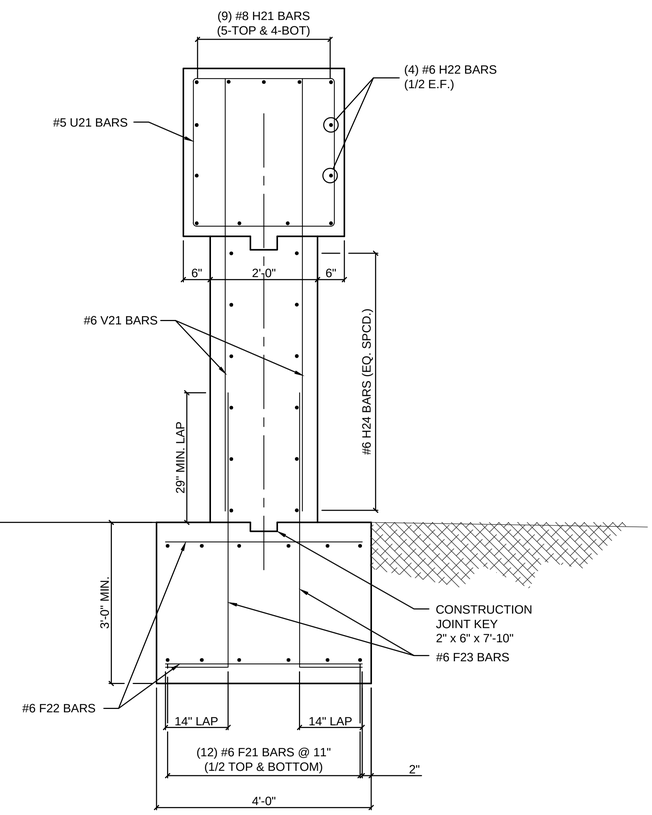
(ELEVATIONS @ CL BENT)



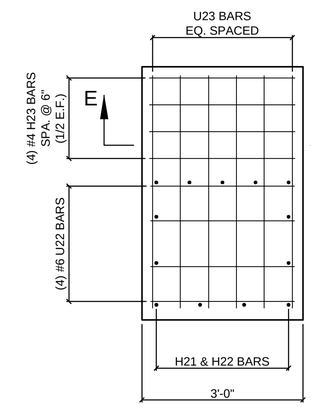
SECTION A-A



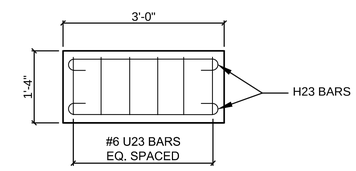
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

No.	Revision/Issue	Date

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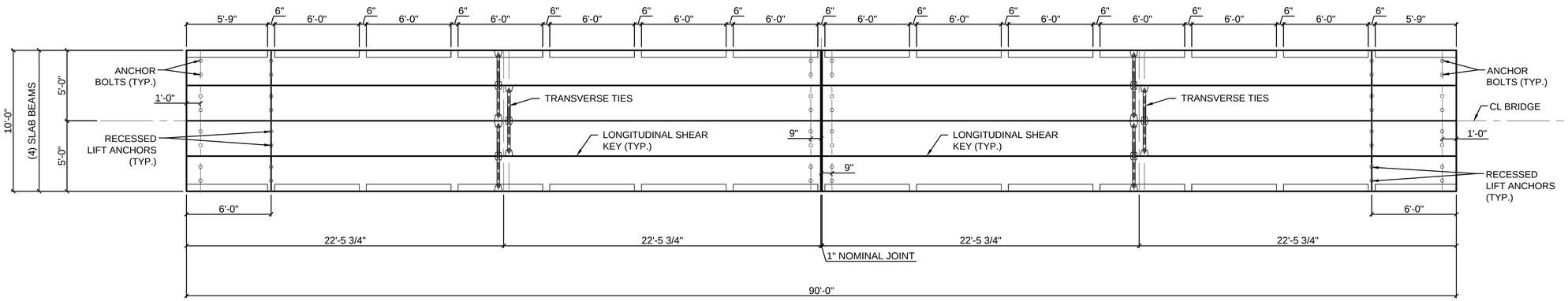
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

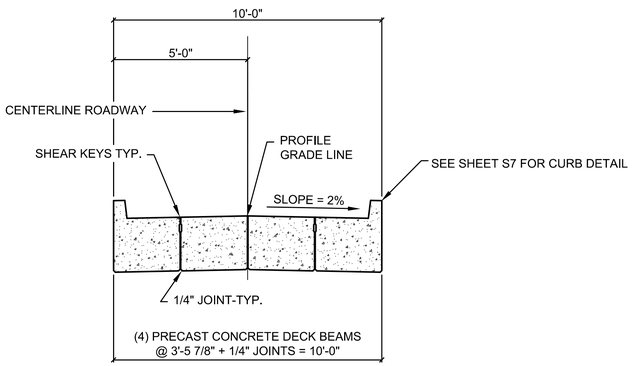
BRIDGE INTERMEDIATE BENT DETAILS
-

DATE: 01.31.2017
JOB NUMBER: 13-3249

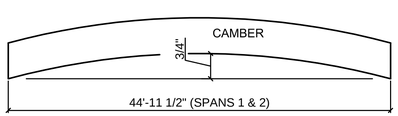
SHEET
S-05



SLAB BEAM LAYOUT PLAN



TYPICAL CROSS SECTION OF ROADWAY
(NEAR CL OF STRUCTURE)



TYPICAL SLAB CAMBER
NOT TO SCALE

SLAB SHALL BE CAMBERED FOR DEAD LOAD DEFLECTIONS.

NOTE: THIS DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

DESIGN DATA

DESIGN SPECIFICATIONS: 2014 A.A.S.H.T.O. LRFD BRIDGE DESIGN SPECIFICATIONS (7TH ED.)

SEISMIC DESIGN CATEGORY 'A'

DESIGN LOADING: HL-93
FUTURE WEARING SURFACE --- 35 PSF
EARTH --- 120 PCF
EQUIVALENT FLUID PRESSURE --- 45 PCF
35 POUND/SQUARE FOOT INITIAL WEARING SURFACE, NO FUTURE WEARING SURFACE ALLOWED

SUPERSTRUCTURE: SIMPLY SUPPORTED NON-COMPOSITE FOR DEAD AND LIVE LOADS.

NOTES:

DESIGN UNIT STRESSES FOR SLAB BEAMS;
CONCRETE f'c = 4,000 psi
REINFORCING STEEL (GRADE 60) fy = 60,000 psi

AFTER BEAMS HAVE BEEN ERECTED, HOLES SHALL BE DRILLED INTO SUBSTRUCTURE AND ANCHOR BOLTS PLACED. ANCHOR HOLES SHALL BE FILLED WITH HIGH STRENGTH NON-SHRINK GROUT TO TOP OF BEAM.

THE 1" DIAMETER RODS IN THE TRANSVERSE TIE ASSEMBLY SHALL BE TIGHTENED TO A SNUG FIT AND THE THREADS SET. POCKETS THAT RECEIVE TRANSVERSE TIE BAR OUTSIDE SHALL BE FILLED WITH GROUT AFTER TRANSVERSE TIE ASSEMBLY IS IN PLACE. SEE SHEET S2 FOR DETAILS. TIE RODS SHALL BE ASTM A36.

ANCHOR BOLTS, HARDENED WASHERS AND HEAVY HEXAGON NUTS SHALL BE COATED WITH A MINIMUM OF TWO COATS OF INORGANIC ZINC PRIMER (5 MILS MINIMUM).

LONGITUDINAL SHEAR KEYS SHALL BE GROUTED.

USE RECESSED LIFT ANCHORS ON EACH END. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.

ALL REBAR IN PRECAST SLAB BEAMS SHALL BE EPOXY COATED.

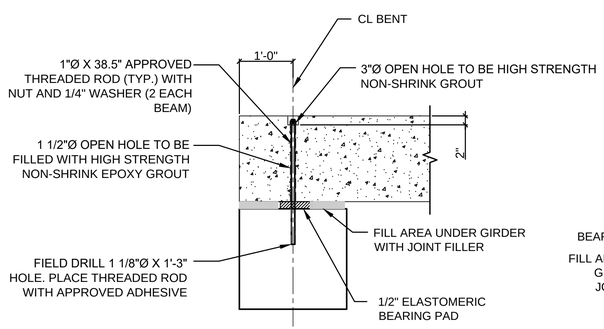
DO NOT LIFT BEAMS UNTIL CONCRETE STRENGTH IS EQUAL TO 3500 PSI.

A FINNED FLOAT PRODUCING GROOVES APPROX. 1/8" WIDE AT 5/8" TO 3/4" CENTERS AND SHALL BE APPROX. 1/8" DEEP.

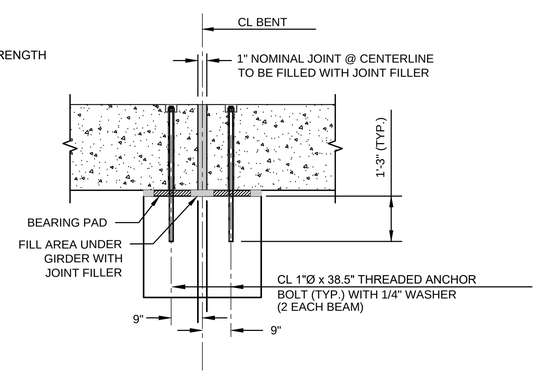
JOINT FILLER MUST BE IN PLACE PRIOR TO SETTING SLAB BEAMS.

BEARINGS SHALL BE 60 DUROMETER NEOPRENE PADS.

NOMINAL 1" JOINT AT CENTERLINE OF PIERS SHALL BE FILLED WITH JOINT FILLER. SEAL JOINTS WITH SONOLISTIC NP-1 BY SONNEBORN SEALANT SYSTEMS OR APPROVED EQUAL.



SECTION AT ABUTMENTS
(ALONG CL BEAMS)



SECTION AT PIERS
(ALONG CL BEAMS)

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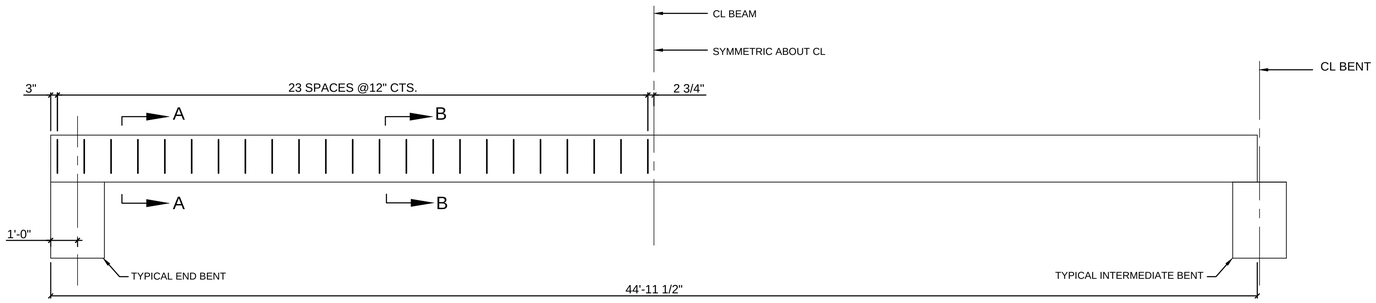
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

BRIDGE SLAB BEAM DETAILS

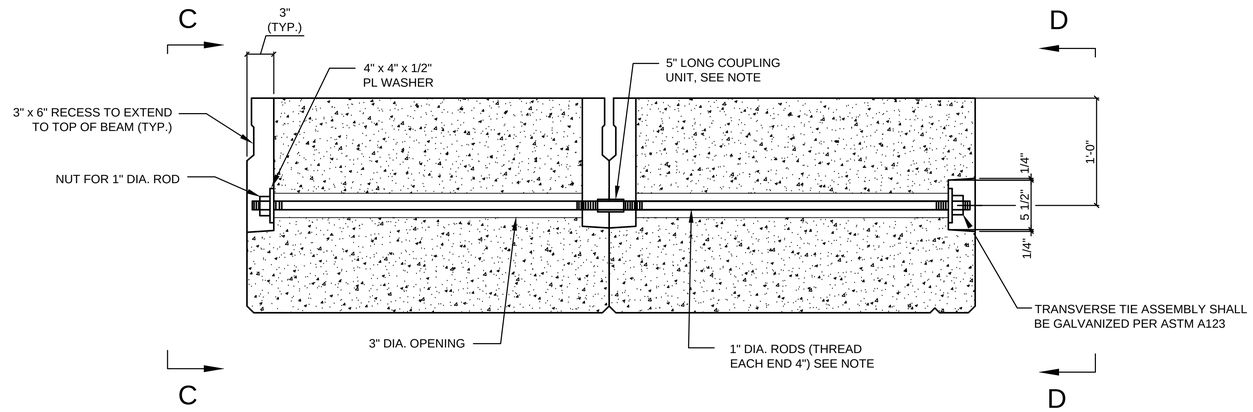
DATE: 01.31.2017

JOB NUMBER: 13-3249

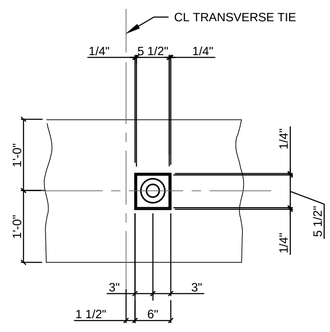
SHEET
S-06



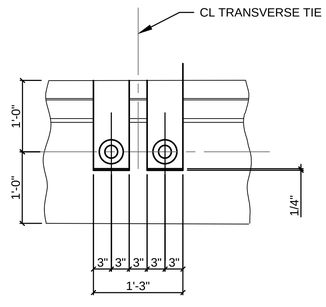
STIRRUP SPACING DETAIL
(SPANS 1 & 2)



SECTION ALONG TRANSVERSE TIE ASSEMBLY



SECTION C-C



SECTION D-D

NOTE:
THIS DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

NOTES:

THE 1" DIAMETER RODS IN THE TRANSVERSE TIE ASSEMBLY SHALL BE TIGHTENED TO A SNUG FIT AND THEN PRE-TENSIONED BY TURN-OF-NUT PRE-TENSIONING METHOD. POCKETS THAT RECEIVE TRANSVERSE TIE BAR SHALL BE FILLED WITH EPOXY GROUT AFTER TRANSVERSE TIE ASSEMBLY IS IN PLACE. TIE RODS SHALL BE IN ACCORDANCE TO ASTM A307.

USE APPROVED HEX COUPLING NUT FOR CONNECTING 1"Ø THREADED RODS.

TURN-OF-NUT PRE-TENSIONING METHOD:

TIGHTEN THE BOLTS TO A SNUG TIGHT CONDITION.

MATCH MARK A PLACE ON THE NUT, BOLT, AND CONCRETE SURFACE IN A STRAIGHT LINE.

VERIFY THE TIE ROD IS PREVENTED FROM TURNING.

THE NUT IS TIGHTENED WITH A 1/3 TURN ROTATION PAST SNUG TIGHT CONDITION.

No.	Revision/Issue	Date

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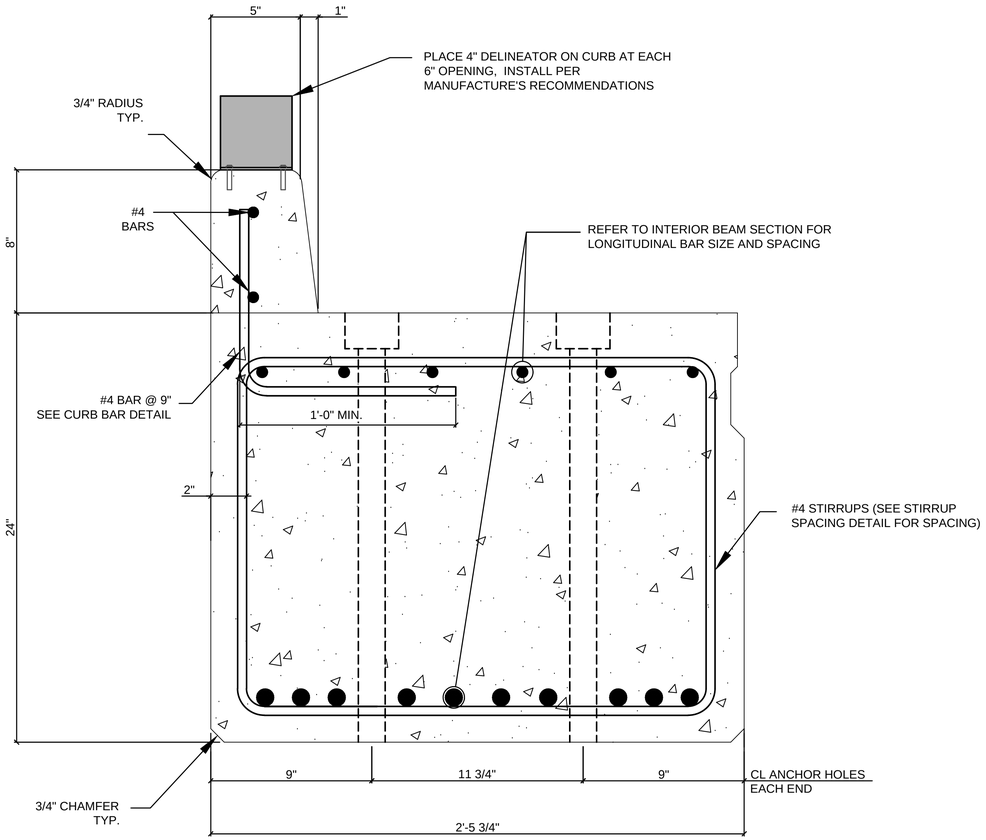
CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

BRIDGE SLAB BEAM
DETAILS

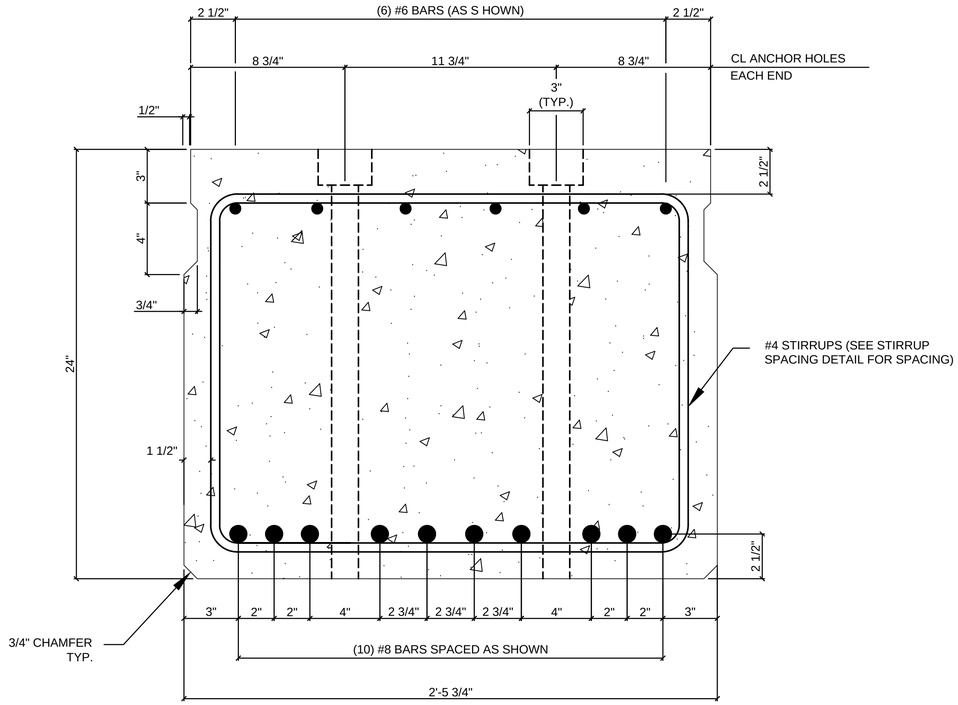
DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET
S-07



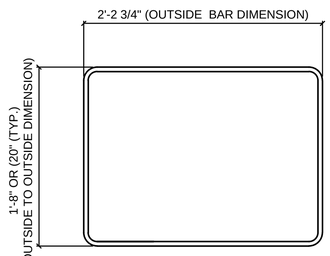
SECTION A-A

TYPICAL CROSS SECTION OF EXTERIOR BEAMS WITH CURB

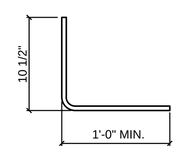


SECTION B-B

TYPICAL CROSS SECTION OF INTERIOR BEAMS



"TRADITIONAL" STIRRUP DETAIL



CURB STIRRUP DETAIL

NOTE: THIS DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

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CITY OF JOPLIN - MSSU TRAIL & PEDESTRIAN BRIDGE OVER TURKEY CREEK
JASPER COUNTY, MISSOURI

BRIDGE SLAB BEAM DETAILS

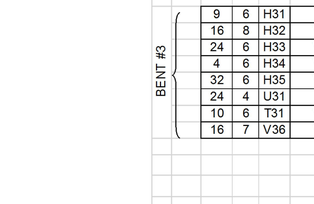
DATE: 01.31.2017
JOB NUMBER: 13-3249

SHEET S-08

COMPLETE BILL OF REINFORCING STEEL

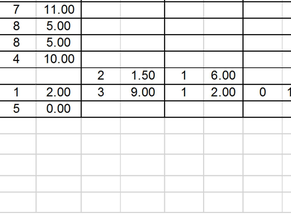
	NO. REQ'D.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	B FT.	B IN.	C FT.	C IN.	D FT.	D IN.	E FT.	E IN.	F FT.	F IN.	H FT.	H IN.	K FT.	K IN.	LENGTH FT.	LENGTH IN.	WEIGHT LBS.
BENT #1	9	6	H11	CAP		20		X			12	6.00													12	6	169
	16	8	H12	WINGWALL		20		X			7	11.00													7	11	339
	24	6	H13	WINGWALL		20		X			8	5.00													8	5	304
	4	6	H14	WINGWALL		20		X			8	5.00													8	5	51
	32	6	H15	WINGWALL		20		X			4	10.00													4	10	233
	24	4	U11	CAP		10	S	X			0	0.00	2	1.50	1	6.00	0	0.00							5	9	93
	10	6	T11	WINGWALL		23	S	X			1	2.00	3	9.00	1	2.00	0	10.00	0	10.00	0	10.00	0	10.00	6	1	92
	16	7	V16	WINGWALL		20		X			5	0.00													5	0	164
INTERMEDIATE BENT #2	12	6	F21	FOOTING		20		X			12	6.00													12	6	226
	26	6	F22	FOOTING		20		X			3	6.00													3	6	137
	20	6	F23	FOOTING		19		X			5	2.00	1	2.00											6	4	191
	12	6	H24	WALL		20		X			4	7.00													4	7	83
	12	6	U24	WALL		7	S	X			3	5.50	1	5.50											8	5	151
	22	6	V21	WALL		20		X			7	10.00													7	10	259
	9	8	H21	CAP		20		X			12	2.00													12	2	293
	4	6	H22	CAP		20		X			12	2.00													12	2	74
	10	5	U21	CAP		13	S	X			2	7.50	2	9.00	2	7.50	2	9.00							11	8	122
	8	6	U22	CAP		10	S	X					2	11.00	2	7.75									8	6	102
	16	4	H23	CAP		18	S	X			2	8.50													3	9	40
	12	6	U23	CAP		10	S	X					4	5.00	0	9.50									9	8	174
BENT #3	9	6	H31	CAP		20		X			12	6.00													12	6	169
	16	8	H32	WINGWALL		20		X			7	11.00													7	11	339
	24	6	H33	WINGWALL		20		X			8	5.00													8	5	304
	4	6	H34	WINGWALL		20		X			8	5.00													8	5	51
	32	6	H35	WINGWALL		20		X			4	10.00													4	10	233
	24	4	U31	CAP		10	S	X					2	1.50	1	6.00									5	9	93
	10	6	T31	WINGWALL		23		X			1	2.00	3	9.00	1	2.00	0	10.00	0	10.00	0	10.00	0	10.00	6	1	92
	16	7	V36	WINGWALL		20		X			5	0.00													5	0	164

SUPERSTRUCTURE WEIGHT:	**0**
SUBSTRUCTURE WEIGHT:	**4,742**
TOTAL WEIGHT:	**4,742**



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:
THIS DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

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.
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 FABRICATORS USE. (NEAREST INCH)
PAYWEIGHTS ARE BASED ON NOMINAL LENGTHS.
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.

BENDING DIAGRAMS

No.	Revision/Issue	Date

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BRIDGE BILL OF REINFORCING
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SHEET
S-09