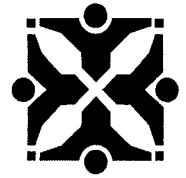


City of Columbia

701 East Broadway, Columbia, Missouri 65201



Agenda Item Number: B 284-14

Department Source: Public Works

To: City Council

From: City Manager & Staff

Council Meeting Date: September 2, 2014

Re: Bid Call and Easement Acquisition for College Avenue Safety Enhancements (CASE) Project

Documents Included With This Agenda Item

Council memo, Resolution/Ordinance

Supporting documentation includes: Maps, Right of Way Plans

Executive Summary

Authorizing a bid call through the Purchasing division, and the acquisition of easements necessary to construct the College Avenue Safety Enhancements (CASE) project. The public hearing for this project was held on May 19, 2014, and Interested Party (IP) meetings were held on November 19, 2013 and February 25, 2014.

Discussion

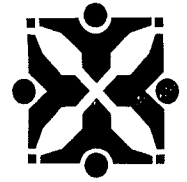
The City of Columbia and the University of Missouri have partnered to improve safety for pedestrians and motorists along College Avenue, between University Avenue on the north, and Rollins Street on the south. Council passed Ordinance 21710 on June 3, 2013 authorizing a Cost Allocation Agreement with the University of Missouri, which defines the scope of services and responsibilities of both parties, authorizes the split of the required 20% match of \$164,750, and naming the City as the lead agency for design and construction of the proposed improvements. A public engagement process, which included a targeted public outreach meeting and two IP meetings, were conducted between October 2013 and February 2014.

An engineering evaluation was conducted using input from the public process, new traffic and pedestrian count data, and a 2009 pedestrian study conducted by the University of Missouri, to identify alternative safety improvements for the corridor. The complete report, titled "Preferred Alternative Recommendation for the College Avenue Safety Enhancement (CASE) Project", was previously provided to Council. Based on the Transportation Enhancement grant application, these alternatives were then rated using criteria established by the design team. At the May 19, 2014 public hearing, Council directed staff to proceed with final plans for a low concrete wall, stamped to look like stone, with a short fence on top. The estimated construction cost is \$750,000. The intent of the improvements is to channel pedestrians to two (2) mid-block signalized crossings. The signals will be High-intensity Activated Crosswalk beacons, or HAWK signals, that will stop traffic to allow pedestrians to cross College Avenue.

The report also provided recommendations for infrastructure and operation improvements to help mitigate the left turn restrictions. The infrastructure improvements have been added to the CIP; and the

City of Columbia

701 East Broadway, Columbia, Missouri 65201



operation improvements may be implemented after project construction, and once actual traffic patterns are observed and analyzed.

Fiscal Impact

Short-Term Impact: The MoDOT grant is for \$659,000, and the City and the University will split a 20% local match of \$82,375 each. The City's portion of the match will be paid by Annual Sidewalk Capital Improvement funds.

Long-Term Impact: Annual costs for maintenance and repairs are estimated at \$2,000.

Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Transportation

Strategic Plan Impact: Health, Safety and Wellbeing, Infrastructure

Comprehensive Plan Impact: Infrastructure, Mobility, Connectivity, and Accessibility, Livable & Sustainable Communities

Suggested Council Action

Authorize a bid call through the Purchasing division and the acquisition of easements necessary to construct the College Avenue Safety Enhancement (CASE) project.

Legislative History

05/19/14 - (R64-14) Public Hearing

02/25/14 - IP meeting

12/16/13 - (REP 171-13) Staff Report to Council

11/19/13 - IP meeting

08/19/13 - (R159-13) Authorizing a contract with Engineering Surveys and Services, LLC for the College Avenue pedestrian refuge enhancement project.

06/03/13 - (Ord 21710) Authorizing a public infrastructure development cost allocation agreement with the University of Missouri, and appropriating funds

04/29/13 - CATSO FY 2013-2016 TIP Amendments

03/04/14 - (Ord 21621) Authorizing a transportation enhancement funds program agreement with the MHTC for the College Avenue Median/Pedestrian Refuge Project

09/17/12 - (R161-12) Authorization to apply for Enhancement Grant funds


Department Approved


City Manager Approved

Introduced by _____

First Reading _____

Second Reading _____

Ordinance No. _____

Council Bill No. B 284-14

AN ORDINANCE

declaring the need to acquire easements for construction of roadway safety improvements on College Avenue between University Avenue and Rollins Street; authorizing acquisition by negotiation or, if necessary, by condemnation; authorizing the City Manager to obtain and execute all instruments necessary for acquisition of such land; and fixing the time when this ordinance shall become effective.

WHEREAS, the Constitution and Statutes of the State of Missouri and the Home Rule Charter for the City of Columbia, Missouri, authorize the City Council to exercise the power of eminent domain, within or without the City, and among other things, to acquire, and maintain any property, real or personal within or without the City for all public uses or purposes, and to acquire, receive and hold any estate or interest in any such property; and

WHEREAS, the Council deems it necessary for the welfare and improvement of the City and in the public interest that certain private property be acquired by negotiation or by condemnation for public improvement.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Council hereby declares the need to acquire easements for construction of roadway safety improvements on College Avenue between University Avenue and Rollins Street as follows:

The Curators of the University of Missouri Permanent Utility Easement - (North Crossing)

A tract of land located in the northwest quarter of Section 18 T48N R12W, in Columbia, Boone County, Missouri, further described as follows:

Starting at the northwest corner of Lot 45 of Fair Grounds Addition, recorded in book 80 page 530, shown by said plat as being south 305 feet and east 25 feet from the west quarter corner of Section 18-48-12, thence N 54°04'20"E 1101.26 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point located 38.50 feet right (west) of station PC 75+86.4; thence N 0°37'10"E, along said line, 537.72 feet, to a point 38.5 feet right (west) of station 70+48.68, the point of beginning.

From the point of beginning, thence leaving the westerly right-of-way line of State Route 763 (College Avenue), N 89°22'50"W 11.00 feet; thence N 0°37'10"E 25.00 feet; thence S 89°22'50"E 11.00 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point 38.50 feet right of station 70+23.68; thence S 0°37'10"W along said line 25.00 feet to the beginning, and containing 275 square feet or 0.01 acre.

The Curators of the University of Missouri
Temporary Construction Easement - (North Crossing)

A tract of land located in the northwest quarter of Section 18 T48N R12W, in Columbia, Boone County, Missouri, further described as follows:

Starting at the northwest corner of Lot 45 of Fair Grounds Addition, recorded in book 80 page 530, shown by said plat as being south 305 feet and east 25 feet from the west quarter corner of Section 18-48-12, thence N 54°04'20"E 1101.26 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point located 38.50 feet right (west) of station PC 75+86.4; thence N 0°37'10"E, along said line 612.95 feet, to a point 38.5 feet right (west) of station 69+73.45, the point of beginning.

From the point of beginning, thence leaving the westerly right-of-way line of State Route 763 (College Avenue), N 89°22'50"W 28.00 feet; thence N 0°37'10"E 120.00 feet; thence S 89°22'50"E 28.00 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point 38.50 feet right (west) of station 68+53.45; thence S 0°37'10"W, along said line, 29.71 feet; thence leaving said line N 89°22'50"W 11.00 feet; thence S 0°37'10"W 34.00 feet; thence S 89°22'50"E 11.00 feet to the westerly right-of-way line of State Route 763 (College Avenue); thence S 0°37'10"W, along said line, 56.29 feet to the beginning and containing 2986 square feet or 0.07 acre.

The Curators of the University of Missouri
Permanent Utility Easement - (South Crossing)

A tract of land located in the northwest quarter of Section 18 T48N R12W, in Columbia, Boone County, Missouri, further described as follows:

Starting at the northwest corner of Lot 45 of Fair Grounds Addition, recorded in book 80 page 530, shown by said plat as being south 305 feet and east 25 feet from the west quarter corner of Section 18-48-12, thence N 54°04'20"E 1101.26 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point located 38.50 feet right (west) of station PC 75+86.4; thence N 0°37'10"E, along said line, 112.97 feet, to a point 38.5 feet right (west) of station 74+73.43, the point of beginning.

From the point of beginning, thence leaving the westerly right-of-way line of State Route 763 (College Avenue), N 89°22'50"W 13.00 feet; thence N 0°37'10"E 34.00 feet; thence S 89°22'50"E 13.00 feet to the westerly right-of-way line of State Route 763 (College

Avenue) at a point 38.50 feet right of station 74+39.43; thence S 0°37'10"W along said line, 34.00 feet to the beginning and containing 442 square feet or 0.01 acre.

**The Curators of the University of Missouri
Temporary Construction Easement - (South Crossing)**

A tract of land located in the northwest quarter of Section 18 T48N R12W, in Columbia, Boone County, Missouri, further described as follows:

Starting at the northwest corner of Lot 45 of Fair Grounds Addition, recorded in book 80 page 530, shown by said plat as being south 305 feet and east 25 feet from the west quarter corner of Section 18-48-12, thence N 54°04'20"E 1101.26 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point located 38.50 feet right (west) of station PC 75+86.4; thence N 0°37'10"E, along said line 50.97 feet, to a point 38.5 feet right (west) of station 75+35.43, the point of beginning.

From the point of beginning, thence leaving the westerly right-of-way line of State Route 763 (College Avenue), N 89°22'50"W 28.00 feet; thence N 0°37'10"E 120.00 feet; thence S 89°22'50"E 28.00 feet to the westerly right-of-way line of State Route 763 (College Avenue) at a point 38.50 feet right (west) of station 74+15.43; thence S 0°37'10"W, along said line, 24.00 feet; thence leaving said line, N 89°22'50"W 13.00 feet; thence S 0°37'10"W 34.00 feet; thence S 89°22'50"E 13.00 feet to the westerly right-of-way line of State Route 763 (College Avenue); thence S 0°37'10"W along said line, 62.00 feet to the beginning and containing 2918 square feet or 0.07 acre.

**Zeta Phi Corp of Beta Theta Pi
Temporary Construction Easement**

A strip of land, ten (10) feet wide, located in the northwest quarter of Section 18 T48N R12W, in Columbia, Boone County, Missouri, being part of Lot 1 of Pratt's Subdivision – Plat 2, as shown by plat recorded in plat book 34 page 56 of the Boone County records, said ten foot strip lying left, or east of, and adjoining, the following described line;

Beginning at the northwest corner of Lot 1 of Pratt's Subdivision – Plat 2, being 40.0 feet left (east) of State Route 763 centerline station 68+30.6, thence South, along the westerly line of said lot, 159.47 feet to the end of the line. This strip contains 1595 square feet or 0.04 acre.

**Christian Campus House, Inc.
Temporary Construction Easement**

A strip of land, ten (10) feet wide, located in the northwest quarter of Section 18 T48N R12W, in Columbia, Boone County, Missouri, being part of Lots 30, 31 and 32 of

Bouchelle's Addition, as shown by plat recorded in plat book 1 page 17 of the Boone County records, described as follows:

Starting at the northeast corner of Lot 30 of Bouchelle's Addition, thence S 83°54'50"W, along the northerly line of said lot, 161.20 feet to the point of beginning.

From the point of beginning, thence leaving the northerly line of Lot 30 of Bouchelle's Addition, S 5°41'00"E 164.00 feet to the southerly line of the tract of land described by a warranty deed recorded in book 3001 page 77; thence S 83°54'50"W, along said line, 10.00 feet to the easterly right-of-way line of State Route 763 (College Avenue), at a point being 36.5 feet left (east) of centerline station 75+35.38; thence N 5°41'00"W, along said line, 164.00 feet to the northerly line of Lot 30 of Bouchelle's Addition, at a point being 36.5 feet left (east) of centerline station 73+70.38; thence N 83°54'50"E, along said line, 10.00 feet to the beginning and containing 1640 square feet or 0.04 acre.

SECTION 2. The City Manager is authorized to acquire the land described in Section 1 by negotiation.

SECTION 3. The City Manager is authorized to obtain, execute and record all deeds and other instruments necessary to acquire the land described in Section 1.

SECTION 4. If the City cannot agree with the owners, or those claiming an interest in the land described in Section 1, on the proper compensation to be paid for such land, or if the owner is incapable of contracting, is unknown, or cannot be found, or is a non-resident of the State of Missouri, the City Counselor is authorized to petition the Circuit Court of Boone County, Missouri, to acquire the land described in Section 1 by condemnation.

SECTION 5. This ordinance shall be in full force and effect from and after its passage.

PASSED this _____ day of _____, 2014.

ATTEST:

City Clerk

Mayor and Presiding Officer

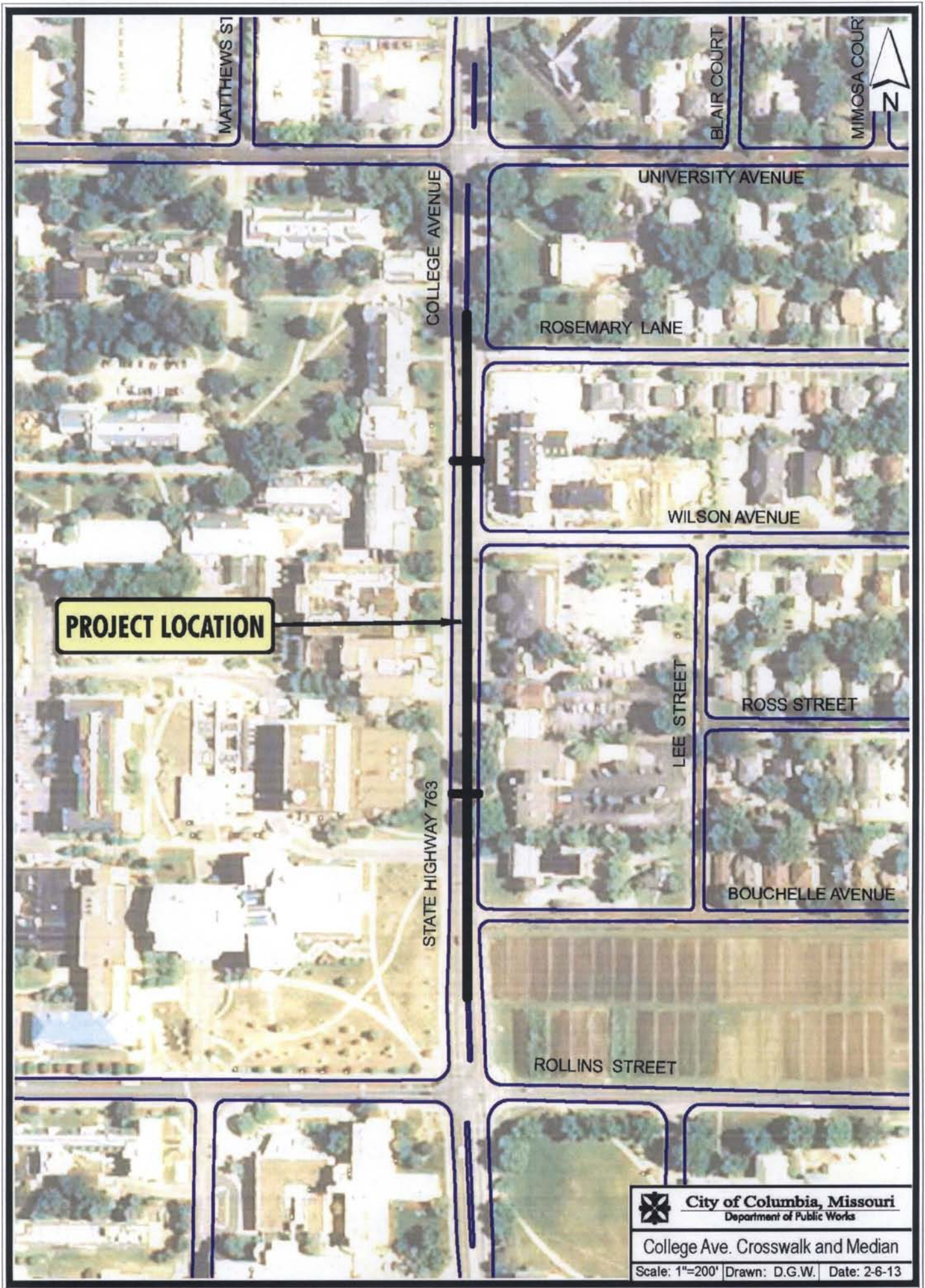
APPROVED AS TO FORM:


City Counselor



SUPPORTING DOCUMENTS INCLUDED WITH THIS AGENDA ITEM ARE AS FOLLOWS:

Maps, Right of Way Plans



	City of Columbia, Missouri	
	Department of Public Works	
	College Ave. Crosswalk and Median	
Scale: 1"=200'		Drawn: D.G.W.
		Date: 2-6-13

City of Columbia, Missouri
Department of Public Works



RIGHT-OF-WAY PLANS FOR PROPOSED
COLLEGE AVENUE SAFETY
ENHANCEMENT PROJECT

FEDERAL I.D. NO. STP 2100(522)
MISSOURI ROUTE 763 FROM
ROLLINS STREET TO UNIVERSITY AVENUE
COLUMBIA, MISSOURI

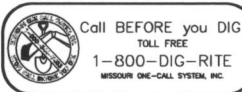
LEGEND

---	PROPERTY LINE
---	ELECTRIC LINE
---	TELEPHONE LINE
---	TELEVISION LINE
---	FIBER OPTIC LINE
---	UNDERGROUND ELECTRIC LINE
---	HIGH VOLTAGE ELECTRIC LINE
---	UNDERGROUND TELEPHONE LINE
---	UNDERGROUND FIBER OPTIC LINE
---	UNDERGROUND TELEVISION LINE
---	SANITARY SEWER LINE
---	STORM SEWER LINE
---	GAS LINE
---	WATER LINE
---	FENCE
---	EXISTING CONTOUR
---	ANCHOR
---	IRON
---	R/W MARKER
---	CONTROL POINT
---	ASBESTOS CEMENT PIPE
---	CAST IRON PIPE
---	CORRUGATED METAL PIPE
---	COATED STEEL
---	DUCTILE IRON PIPE
---	FIRE HYDRANT
---	FLOW LINE
---	GAS VALVE
---	LIGHT POLE
---	METAL ARCH PIPE
---	POST INDICATOR VALVE
---	PERMANENT UTILITY EASEMENT
---	POLYVINYL CHLORIDE PIPE
---	REINFORCED CONCRETE PIPE
---	SIGNAL CONTROL BOX
---	SIGNAL POLE
---	SIGNAL PULLBOX
---	SINGLE WHITE DASHED LINE
---	SINGLE YELLOW SOLID LINE
---	TEMPORARY CONSTRUCTION EASEMENT
---	TELEPHONE PEDESTAL
---	TOP OF WALL
---	UTILITY POLE
---	WITRIFIED CLAY PIPE
---	WATER METER
---	WATER VALVE
---	SILT FENCE
---	FINISH CONTOUR
---	SLOPE LINE/GRADING LIMITS
---	TOP OF CURB ELEVATION
---	TOP OF PAVEMENT ELEVATION
---	FINISH GRADE ELEVATION
---	PROPOSED UNDERGROUND ELECTRIC
---	PROPOSED UNDERGROUND FIBER OPTIC
---	CONCRETE PAVEMENT
---	PARCEL ID NUMBER

UTILITY NOTES

THE LOCATIONS, SIZES, AND MATERIAL TYPES OF UNDERGROUND UTILITIES INDICATED ON THE PLAT, NOT VISIBLE OR APPARENT FROM THE SURFACE, ARE SHOWN IN THEIR APPROXIMATE LOCATIONS FROM A MISSOURI ONE CALL SYSTEM LOCATE, OR UTILITY COMPANY RECORDS AND WERE NOT VERIFIED IN THE FIELD. UNDERGROUND TO ELECTRIC NOT SHOWN. IRRIGATION LINES NOT SHOWN.

WATER CITY OF COLUMBIA WATER & LIGHT DEPARTMENT P.O. BOX 6015 COLUMBIA, MISSOURI 65205 CONTACT: JOE STRODTMAN 573-874-6308 8" PVC LINE ALONG NORTH SIDE UNIVERSITY AVENUE WEST OF COLLEGE AVENUE 15" AC LINE ALONG NORTH SIDE UNIVERSITY AVENUE EAST OF COLLEGE AVENUE 4" CI LINE ALONG SOUTH SIDE UNIVERSITY AVENUE EAST OF COLLEGE AVENUE 15" CI LINE ALONG EAST SIDE COLLEGE AVENUE NORTH OF BOUCHELLE AVENUE 15" PVC LINE ALONG EAST SIDE COLLEGE AVENUE SOUTH OF BOUCHELLE AVENUE 4" CI LINE ALONG NORTH SIDE ROSEMARY LANE 6" PVC LINE ALONG NORTH SIDE ROSEMARY LANE 8" PVC LINE ALONG SOUTH SIDE WILSON AVENUE 8" PVC LINE ALONG SOUTH SIDE BOUCHELLE AVENUE	TELEPHONE CENTURYLINK 625 E. CHERRY STREET COLUMBIA, MISSOURI 65201 CONTACT: TIM DISHMAN 573-886-3505 AS SHOWN TELEVISION MEDIACOM 901 N. COLLEGE AVENUE COLUMBIA, MISSOURI 65201 CONTACT: BOB BONER 573-443-1536 AS SHOWN SANITARY SEWER CITY OF COLUMBIA PUBLIC WORKS DEPARTMENT P.O. BOX 6015 COLUMBIA, MISSOURI 65205 CONTACT: STEVE HUNT 573-874-7250 AS SHOWN STORM SEWER CITY OF COLUMBIA PUBLIC WORKS DEPARTMENT P.O. BOX 6015 COLUMBIA, MISSOURI 65205 CONTACT: TOM WELLMAN 573-874-7250 AS SHOWN MoDOT MoDOT - DISTRICT 5 P.O. BOX 710 1511 MISSOURI BLVD. JEFFERSON CITY, MISSOURI 65102 CONTACT: MIKE SCHUPP 660-882-3197 STORM SEWERS ALONG COLLEGE AVENUE UE TO TRAFFIC SIGNALS ALONG COLLEGE AVENUE UNIVERSITY OF MISSOURI ENERGY MANAGEMENT OFFICE 417 SOUTH FIFTH STREET COLUMBIA, MISSOURI 65211 CONTACT: 573-882-3094 ELECTRIC, STEAM, AND WATER AS SHOWN TELECOMMUNICATIONS 172 GENERAL SERVICES BUILDING COLUMBIA, MISSOURI 65211 CONTACT: MIKE ANDERSON 573-884-6703 UNDERGROUND FIBER OPTIC ALONG EAST SIDE OF COLLEGE AVENUE
--	---



SITE LOCATION MAP

NOT TO SCALE

BENCH MARK

- BM - USGS BRASS PLATE, STAMPED "UNIVERSITY OF MISSOURI" - 1935, IN CONCRETE POST LOCATED AT SOUTH SIDE OF CIRCLE DRIVE WHICH IS NORTH OF THE COLUMNS. (DUE TO CONSTRUCTION IN THIS AREA IN 2005, THIS BENCH MARK HAS BEEN MOVED.) ELEVATION = 735.12
- BM - NGS BRASS PLATE STAMPED "UNIVERSITY OF MISSOURI RESET, 2005" IN A CONCRETE HEADWALL FOR A SPOTLIGHT LOCATED 30 FEET SOUTHWEST OF THE WEST COLUMN IN THE FRANCOIS QUADRANGLE. ELEVATION = 743.80
- TBM - CHISELED SQUARE ON THE WEST SIDE OF THE SIGNAL POLE BASE LOCATED ON THE NORTHEAST CORNER OF COLLEGE AVENUE AND ROLLINS STREET. ELEVATION = 762.18
- TBM - CHISELED "X" ON EAST BOLT OF FIRE HYDRANT LOCATED 35 FEET WEST OF THE NORTHWEST CORNER OF 704 COLLEGE AVENUE. ELEVATION = 778.07
- TBM - CHISELED SQUARE IN THE EAST SIDE OF LIGHT STANDARD BASE LOCATED 41 FEET SOUTH OF UNIVERSITY AVENUE AND 53' WEST OF COLLEGE AVENUE. ELEVATION = 778.18

SURVEY CONTROL POINTS

POINT #	NORTH	EAST	ELEVATION	DESCRIPTION
CP175	1133086.90	1690997.99	783.53	DRILL HOLE
CP190	1132712.39	1690993.51	781.71	DRILL HOLE
CP1216	1132480.49	1691060.00	773.62	DRILL HOLE
CP2013	1133392.62	1691077.73	780.71	DRILL HOLE
CP2251	1131939.95	1690987.08	781.23	DRILL HOLE
CP2252	1132018.79	1690971.22	761.11	MAG NAIL
CP2495	1131926.82	1691077.95	761.90	DRILL HOLE
CP2579	1131992.28	1691076.73	761.66	DRILL HOLE

SHEET INDEX

CIVIL C0.01 COVER C1.01-C1.04 RIGHT-OF-WAY PLAN C1.05-C1.08 ROAD PLANS C1.09 CROSSWALK DETAIL PLAN C2.01-C2.04 EROSION CONTROL AND PAVEMENT MARKING PLAN C4.01-C4.02 DETAILS	LANDSCAPE L5.02 LANDSCAPE PLAN	TRAFFIC T1.01-T1.02 TRAFFIC SIGNAL PLAN	STRUCTURAL S1.01 CONCRETE MEDIAN S1.02 20" FENCE
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NOT FOR CONSTRUCTION

APPROVED BY

DIRECTOR OF PUBLIC WORKS

DATE

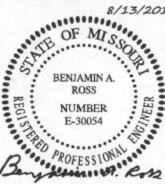


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1113 Fay Street, Columbia, Missouri 65201
573-449-2646 - www.ESS-INC.com
Other Offices:
Jefferson City, Missouri - Sedalia, Missouri
Missouri Engineering Corporation # 20400018

Structural Engineer
EFK Moen, LLC
13523 Barrett Parkway Dr., Suite 250
St. Louis, MO 63021 (314) 394-3152

COLLEGE AVENUE SAFETY
ENHANCEMENT PROJECT
FEDERAL I.D. NO. STP 2100(522)
MISSOURI ROUTE 763 FROM
ROLLINS STREET TO UNIVERSITY AVENUE
COLUMBIA, MISSOURI

THIS DOCUMENT WAS INTENDED TO BE
DIGITALLY SIGNED. IF SIGNATURE AND
VALIDATION ARE NOT PRESENT THIS
MEDIA SHOULD NOT BE CONSIDERED
A CERTIFIED DOCUMENT.



BENJAMIN A. ROSS
REGISTERED PROFESSIONAL
ENGINEER E-30054

Date
AUGUST 13, 2014

Revised

Design: BR Drawn: RTM

COVER

Sheet

C0.01

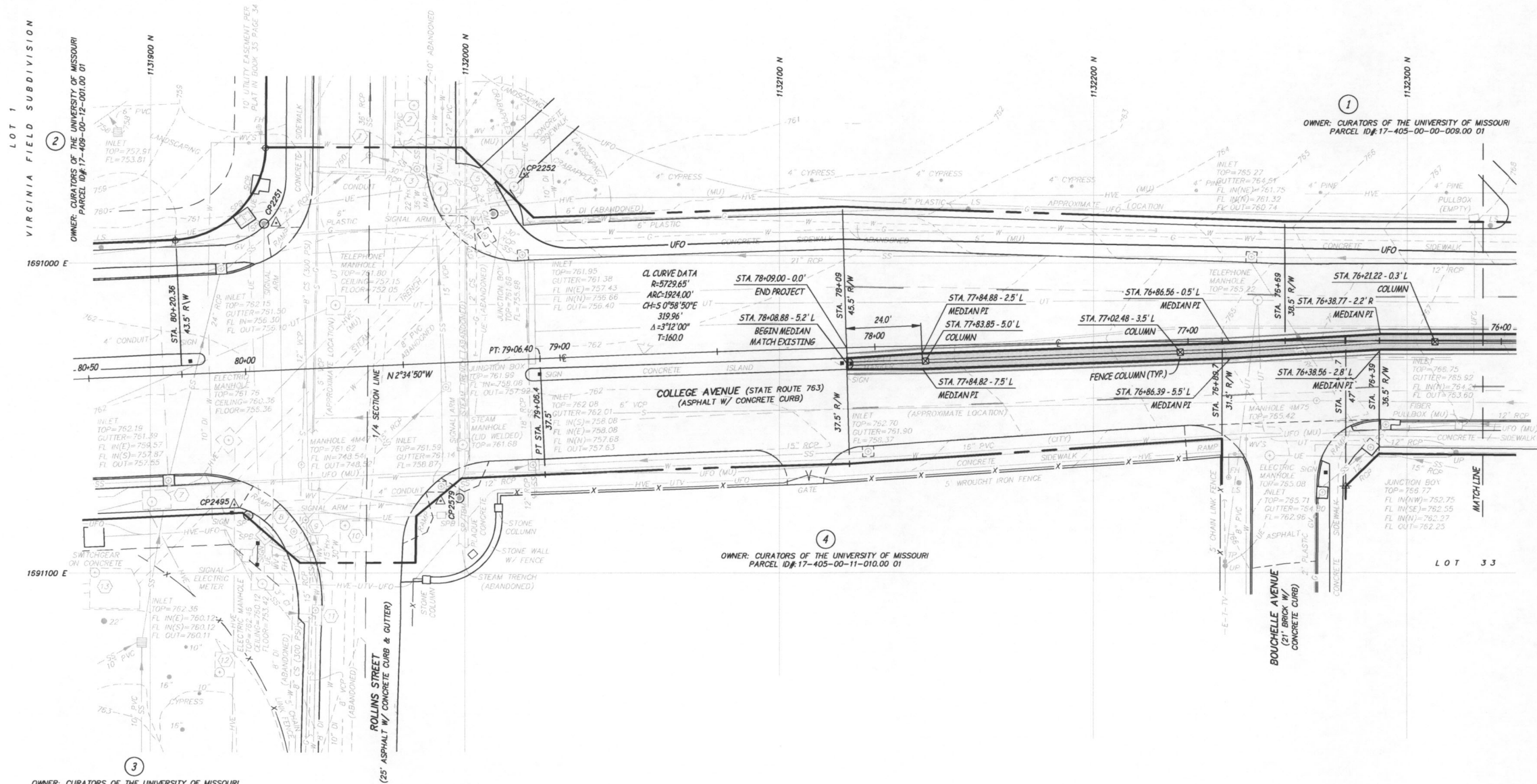
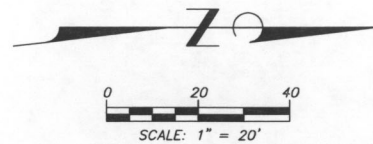
ES&S PROJECT NO. 12398

WITNESSED LAND CORNER NOTE

IRON AT STA. 80+20.35 43.5 FEET RIGHT, BEING THE IRON LOCATED AT THE NORTH END OF THE EAST LINE OF VIRGINIA FIELD SUBDIVISION LOCATED IN THE SOUTHWEST QUARTER OF SECTION 18 T48N R12W, AND RECORDED IN PLAT BOOK 35 PAGE 34, ACCEPTED BY TIMOTHY J. REED, PLS 2089.

TRAFFIC SIGNAL INTERCONNECT NOTE

1. INSTALL NEW CONDUIT UNDER EXISTING SIDEWALK AND DRIVEWAYS USING ANY MDDOT APPROVED TRENCHLESS METHOD OR THE EXISTING 6" ABANDONED GAS LINE ALONG THE WEST SIDE OF COLLEGE AVENUE. (IF USING GAS LINE CONTRACTOR SHALL PROVIDE A 2" CONDUIT INSIDE GAS LINE, ALL OPENINGS SHALL BE WATER TIGHT, TO BE COORDINATED WITH AMEREN UE.)
2. REMOVE AND REPLACE EXISTING SIDEWALK AS REQUIRED. EXISTING SIDEWALK REPLACEMENT IS INCIDENTAL TO THE CONTRACT.
3. INSTALL CONDUIT UNDER PUBLIC STREETS USING ANY MDDOT APPROVED TRENCHLESS METHOD.



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Other Offices:
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Missouri Engineering Corporation # 200400018

Structural Engineer
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13523 Barrett Parkway Dr., Suite 250
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**COLLEGE AVENUE SAFETY
ENHANCEMENT PROJECT**
FEDERAL I.D. NO. S7P 2100(522)
MISSOURI ROUTE 763 FROM
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COLUMBIA, MISSOURI

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8/13/2014
STATE OF MISSOURI
BENJAMIN A. ROSS
REGISTERED PROFESSIONAL ENGINEER
NUMBER E-30054
Benjamin A. Ross

BENJAMIN A. ROSS
REGISTERED PROFESSIONAL ENGINEER
E-30054

Date
AUGUST 13, 2014

Revised

Design: BR Drawn: RTM

RIGHT-OF-WAY PLAN

Sheet

C1.01

NOT FOR CONSTRUCTION

ES&S PROJECT NO. 13398

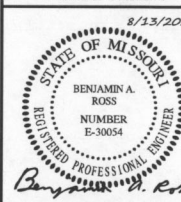


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St. Louis, MO 63021 (314) 394-1522

**COLLEGE AVENUE SAFETY
ENHANCEMENT PROJECT**
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BENJAMIN A. ROSS
REGISTERED PROFESSIONAL
ENGINEER E-30054

Date
AUGUST 13, 2014

Revised

Design: BR Drawn: RTM

RIGHT-OF-WAY PLAN

Sheet

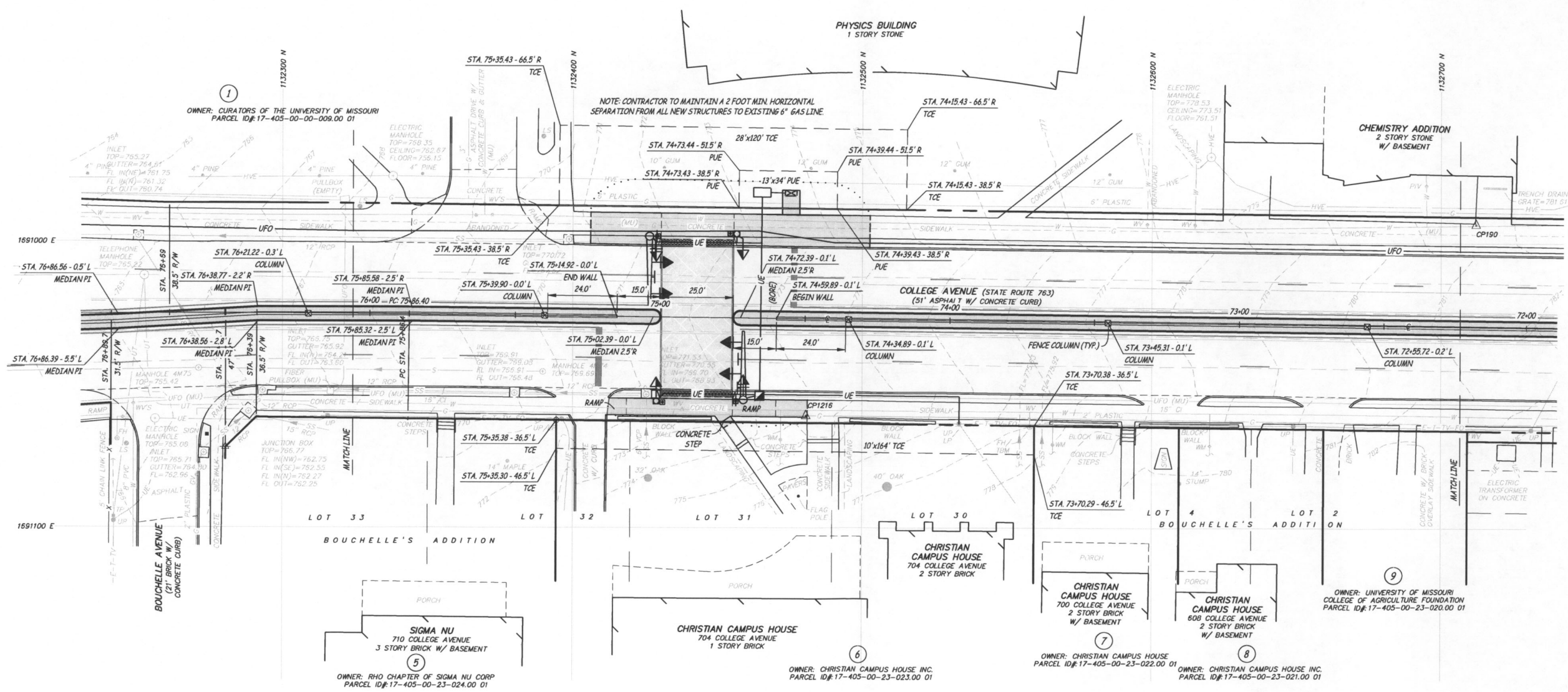
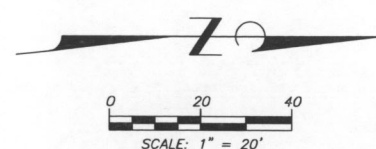
C1.02

ES&S PROJECT NO. 12398

ADD ALTERNATE #1

1,250 SQ. FT. PREFORMED THERMOPLASTIC CROSSWALK
BRICK PATTERN PAVEMENT MARKING MATERIAL
COORDINATE COLOR AND PATTERN WITH OWNER.

1 CURATORS OF THE UNIVERSITY OF MISSOURI
TOTAL PARCEL = 33.40 ACRES 1,454,904 SQ. FT.
PERMANENT UTILITY EASEMENTS = 0.02 ACRE 816 SQ. FT.
TEMPORARY CONSTRUCTION EASEMENTS = 0.14 ACRE 5,904 SQ. FT.
REMAINING PARCEL = 33.40 ACRES 1,454,904 SQ. FT.



6 CHRISTIAN CAMPUS HOUSE INC.
TOTAL PARCEL = 1.32 ACRES 57,400 SQ. FT.
TEMPORARY CONSTRUCTION EASEMENTS = 0.04 ACRE 1,640 SQ. FT.
REMAINING PARCEL = 1.32 ACRE 57,400 SQ. FT.

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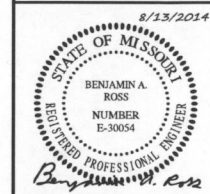


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Missouri Engineering Corporation # 200400018

Structural Engineer
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COLLEGE AVENUE SAFETY
ENHANCEMENT PROJECT
FEDERAL I.D. NO. SYP 2100(522)
MISSOURI ROUTE 763 FROM
ROLLINS STREET TO UNIVERSITY AVENUE
COLUMBIA, MISSOURI

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BENJAMIN A. ROSS
REGISTERED PROFESSIONAL
ENGINEER E-30054

Date
AUGUST 13, 2014

Revised

Design: BR Drawn: RTM

RIGHT-OF-WAY PLAN

Sheet

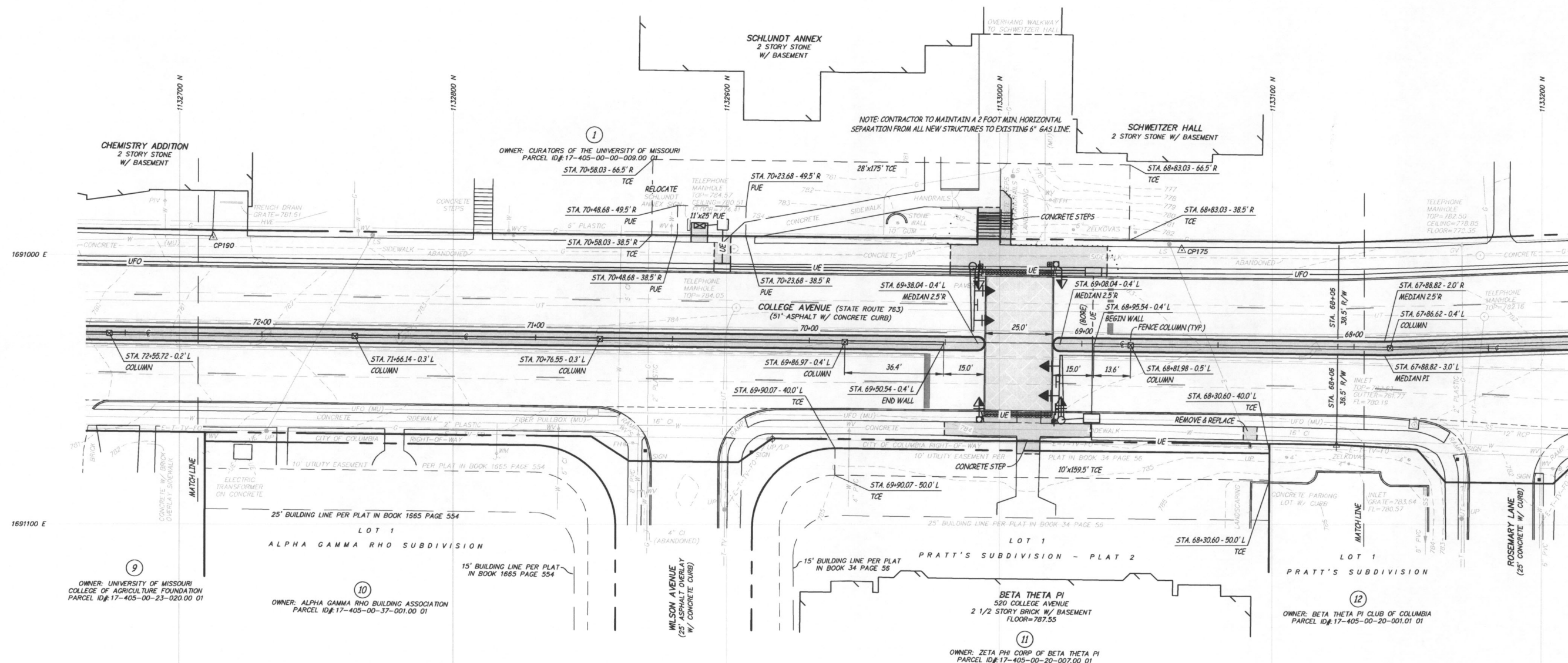
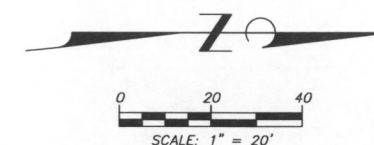
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ES&S PROJECT NO. 12398

ADD ALTERNATE #1

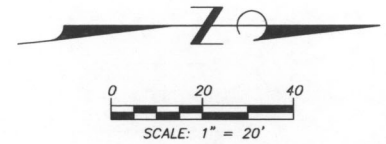
1,250 SQ. FT. PREFORMED THERMOPLASTIC CROSSWALK
BRICK PATTERN PAVEMENT MARKING MATERIAL
COORDINATE COLOR AND PATTERN WITH OWNER.

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TEMPORARY CONSTRUCTION EASEMENTS = 0.14 ACRE 5,904 SQ. FT.
REMAINING PARCEL = 33.40 ACRES 1,454,904 SQ. FT.



11 BETA PHI CORP OF BETA THETA PI
TOTAL PARCEL = 1.30 ACRES 56,828 SQ. FT.
TEMPORARY CONSTRUCTION EASEMENTS = 0.04 ACRE 1,595 SQ. FT.
(INCLUDING 1595 SQ. FT. IN EXISTING UTILITY EASEMENT)
REMAINING PARCEL = 1.30 ACRES 58,828 SQ. FT.


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**COLLEGE AVENUE SAFETY
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MISSOURI ROUTE 763 FROM
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8/13/2014



STATE OF MISSOURI
BENJAMIN A.
ROSS
NUMBER
E-30054
REGISTERED PROFESSIONAL ENGINEER

Benjamin A. Ross

Date
AUGUST 13, 2014

Revised

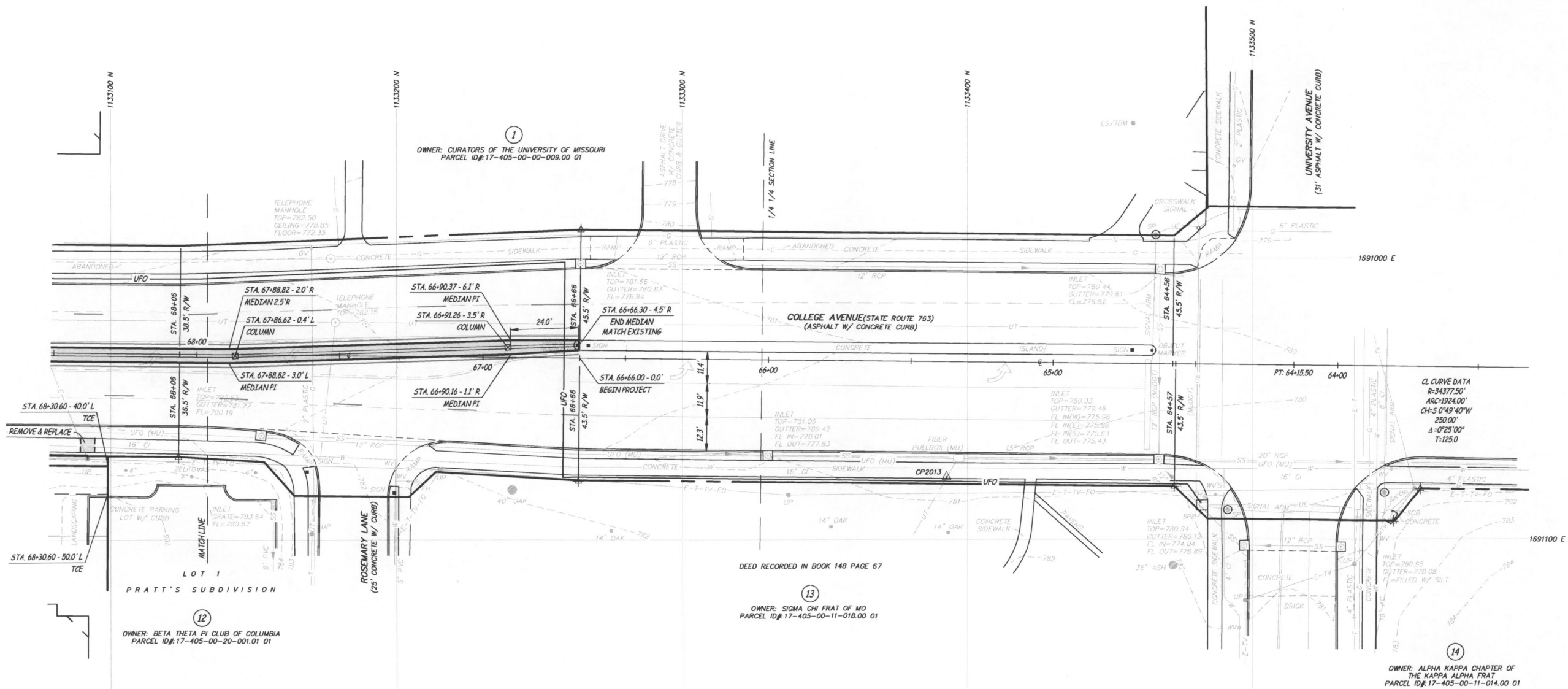
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RIGHT-OF-WAY PLAN

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C1.04

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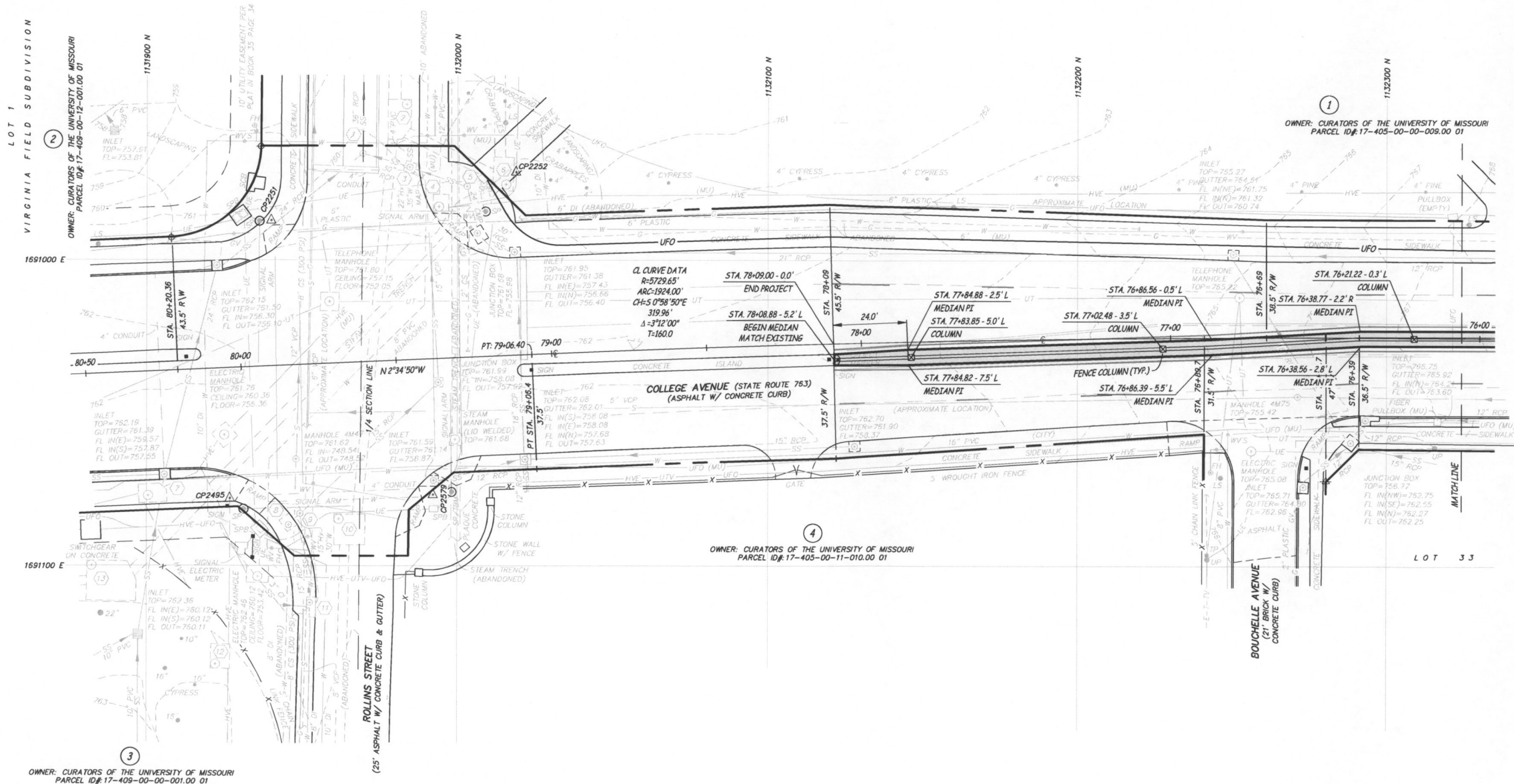
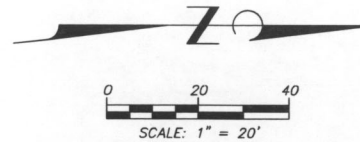
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WITNESSED LAND CORNER NOTE

IRON AT STA. 80+20.36 43.5 FEET RIGHT, BEING THE IRON LOCATED AT THE NORTH END OF THE EAST LINE OF VIRGINIA FIELD SUBDIVISION, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 18 T48N R12W, AND RECORDED IN PLAT BOOK 35 PAGE 34. ACCEPTED BY TIMOTHY J. REED, PLS 2008.

TRAFFIC SIGNAL INTERCONNECT NOTE

1. INSTALL NEW CONDUIT UNDER EXISTING SIDEWALK AND DRIVEWAYS USING ANY MODOT APPROVED TRENCHLESS METHOD OR THE EXISTING 6" ABANDONED GAS LINE ALONG THE WEST SIDE OF COLLEGE AVENUE. (IF USING GAS LINE CONTRACTOR SHALL PROVIDE A 2" CONDUIT INSIDE GAS LINE. ALL OPENINGS SHALL BE WATER TIGHT, TO BE COORDINATED WITH AMEREN UE.)
2. REMOVE AND REPLACE EXISTING SIDEWALK AS REQUIRED. EXISTING SIDEWALK REPLACEMENT IS INCIDENTAL TO THE CONTRACT.
3. INSTALL CONDUIT UNDER PUBLIC STREETS USING ANY MODOT APPROVED TRENCHLESS METHOD.



COLLEGE AVENUE SAFETY ENHANCEMENT PROJECT FEDERAL I.D. NO. S7P 2100(522) MISSOURI ROUTE 763 FROM ROLLINS STREET TO UNIVERSITY AVENUE COLUMBIA, MISSOURI

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Date
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ROAD PLAN

Sheet

C1.05

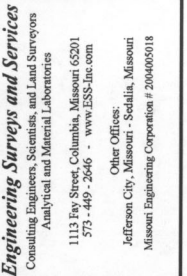
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**COLLEGE AVENUE SAFETY
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FEDERAL I.D. NO. STP 2100(522)
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COLLEGE AVENUE SAFETY
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ENGINEER E-30054

Date
AUGUST 13, 2014

Revised

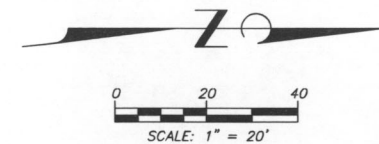
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ROAD PLAN

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C1.07

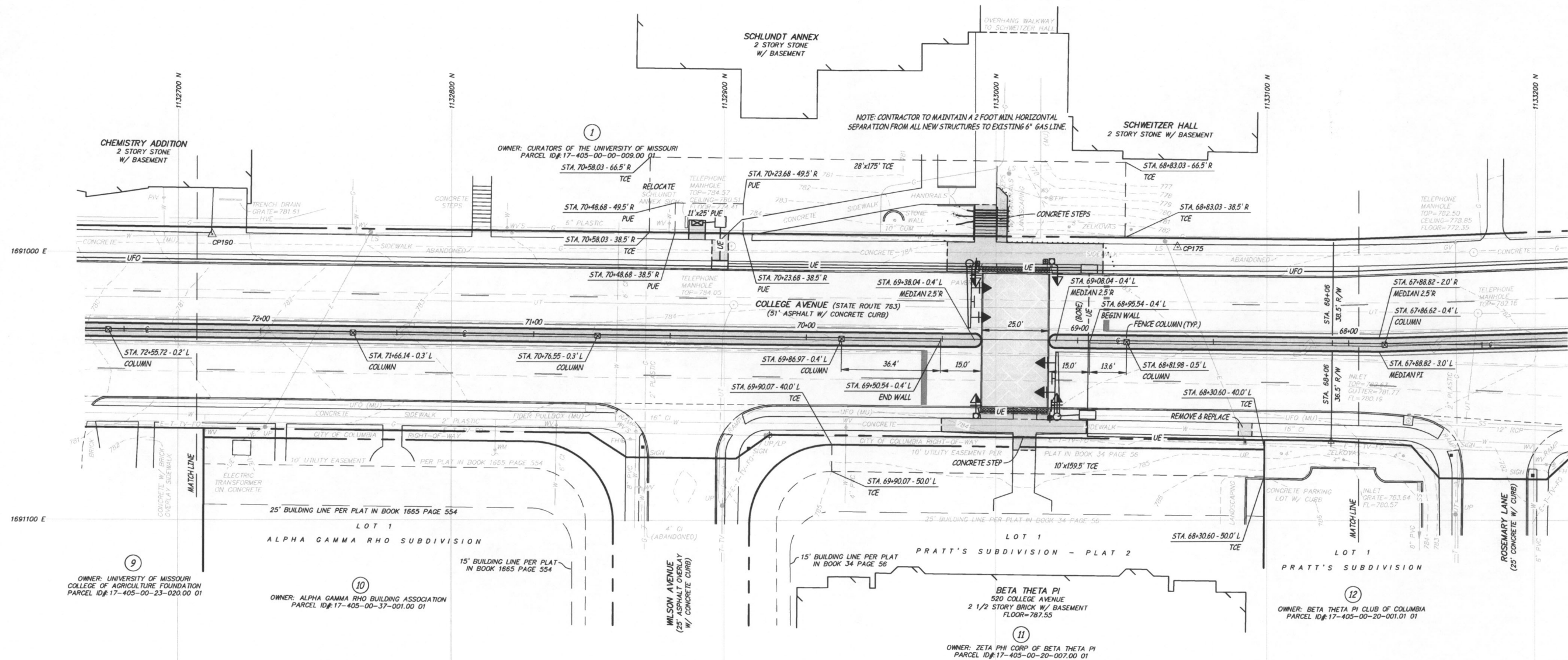
ES&S PROJECT NO. 12398



ADD ALTERNATE #1

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BRICK PATTERN PAVEMENT MARKING MATERIAL,
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TEMPORARY CONSTRUCTION EASEMENTS = 0.14 ACRE 5,904 SQ. FT.
REMAINING PARCEL = 33.40 ACRES 1,454,904 SQ. FT.



11 BETA PHI CORP OF BETA THETA PI
TOTAL PARCEL = 1.30 ACRES 56,528 SQ. FT.
TEMPORARY CONSTRUCTION EASEMENTS = 0.04 ACRE 1,595 SQ. FT.
(INCLUDING 1595 SQ. FT. IN EXISTING UTILITY EASEMENT)
REMAINING PARCEL = 1.30 ACRES 56,528 SQ. FT.

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COLLEGE AVENUE SAFETY
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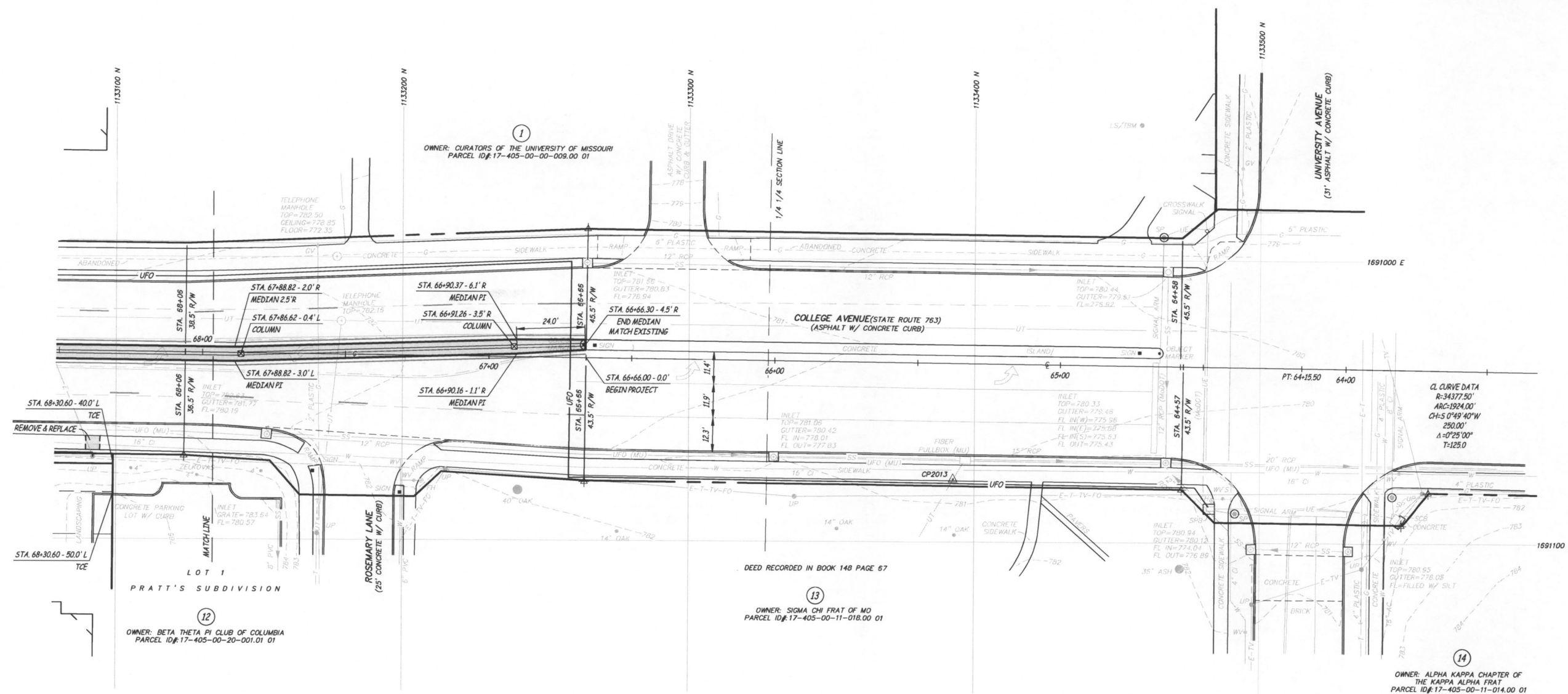
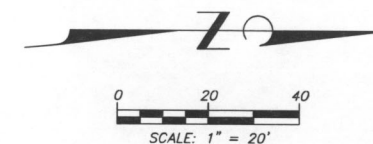
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ROAD PLAN

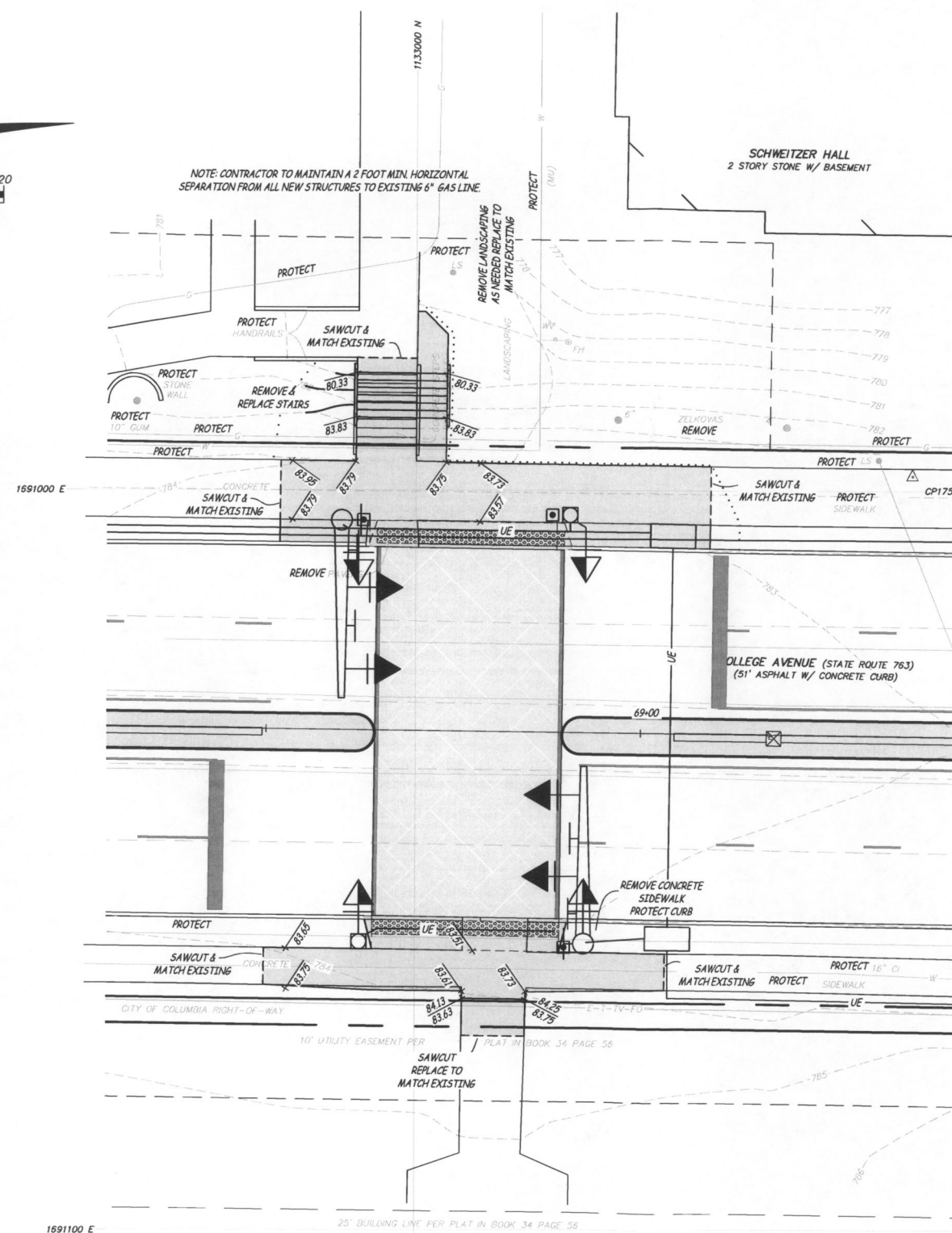
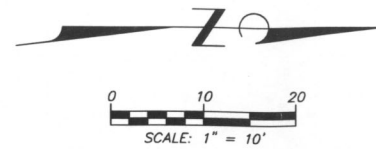
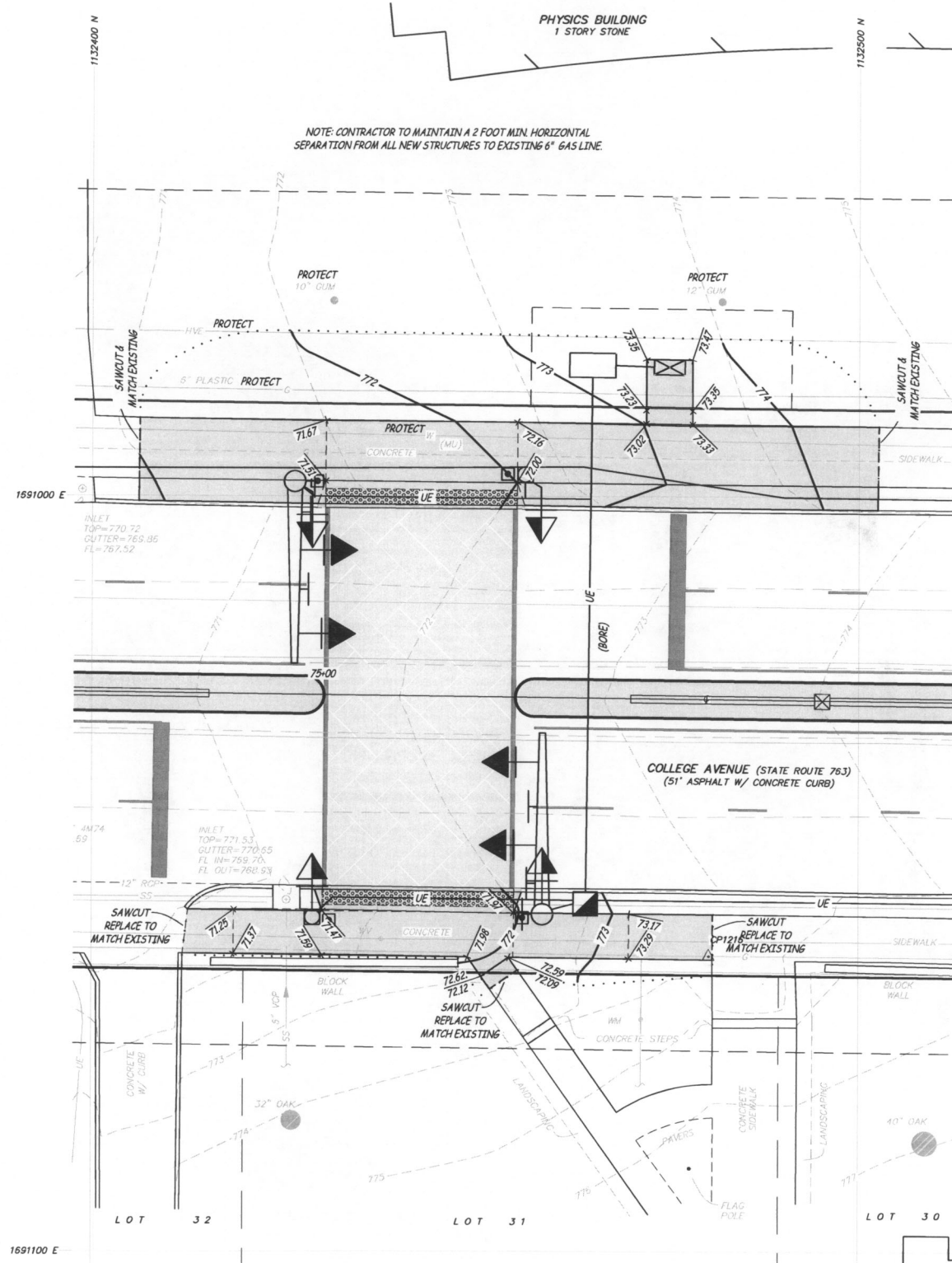
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**COLLEGE AVENUE SAFETY
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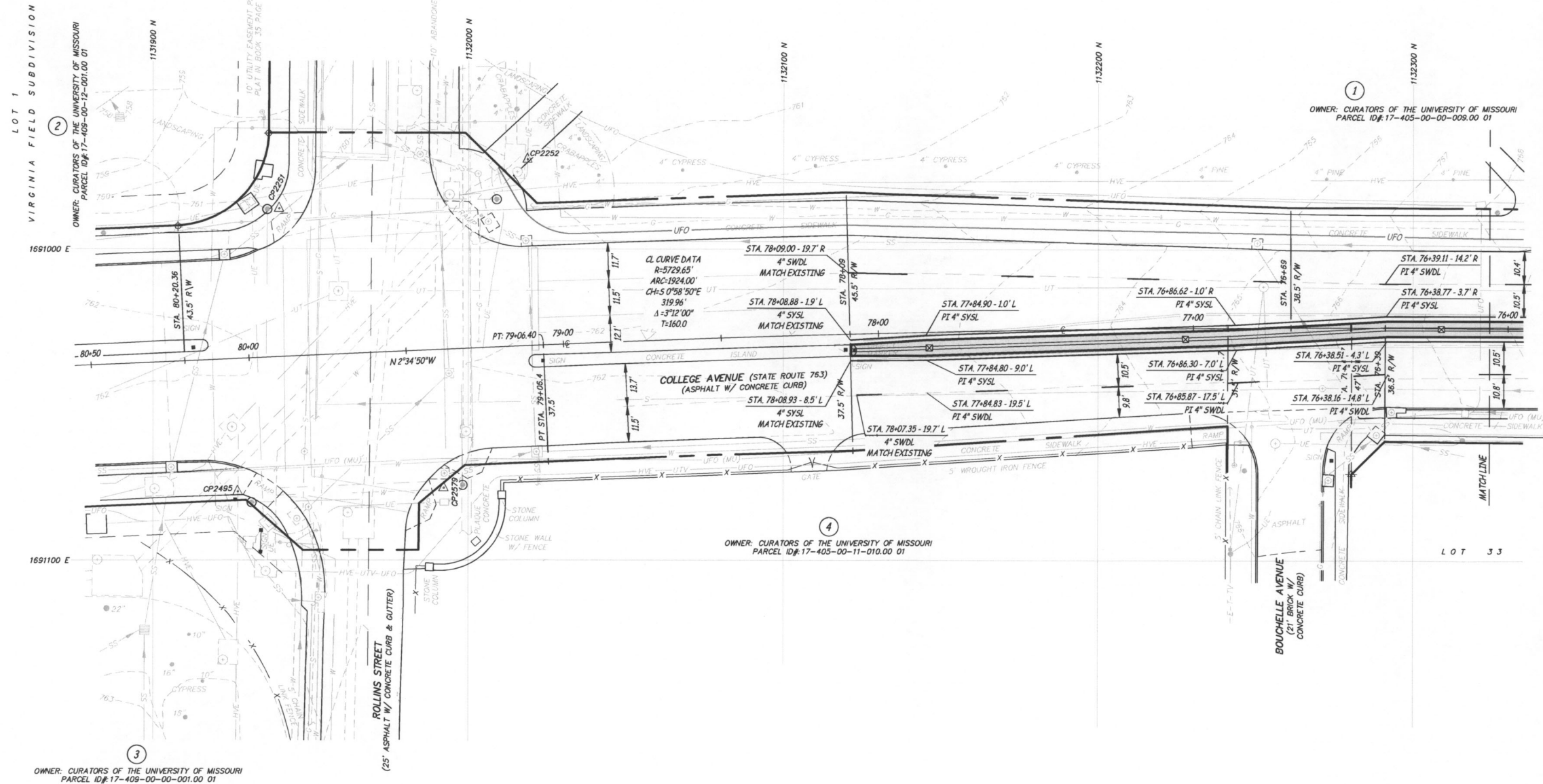
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CROSSWALK DETAIL PLAN

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ENGINEER E-30054

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**EROSION CONTROL AND
PAVEMENT MARKING PLAN**

Sheet

C2.01

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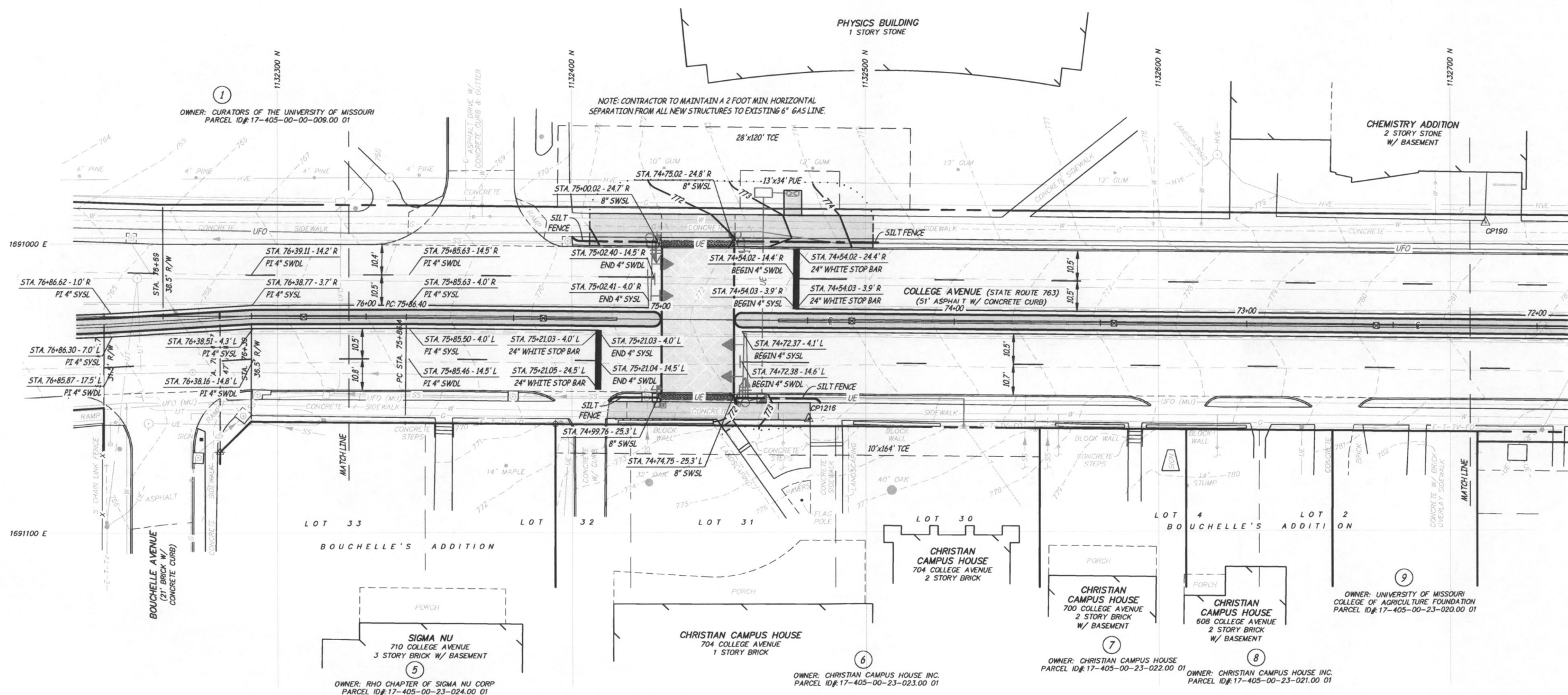
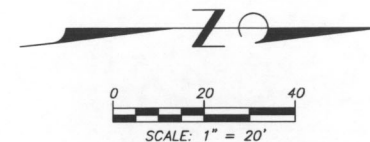
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EROSION CONTROL AND
PAVEMENT MARKING PLAN

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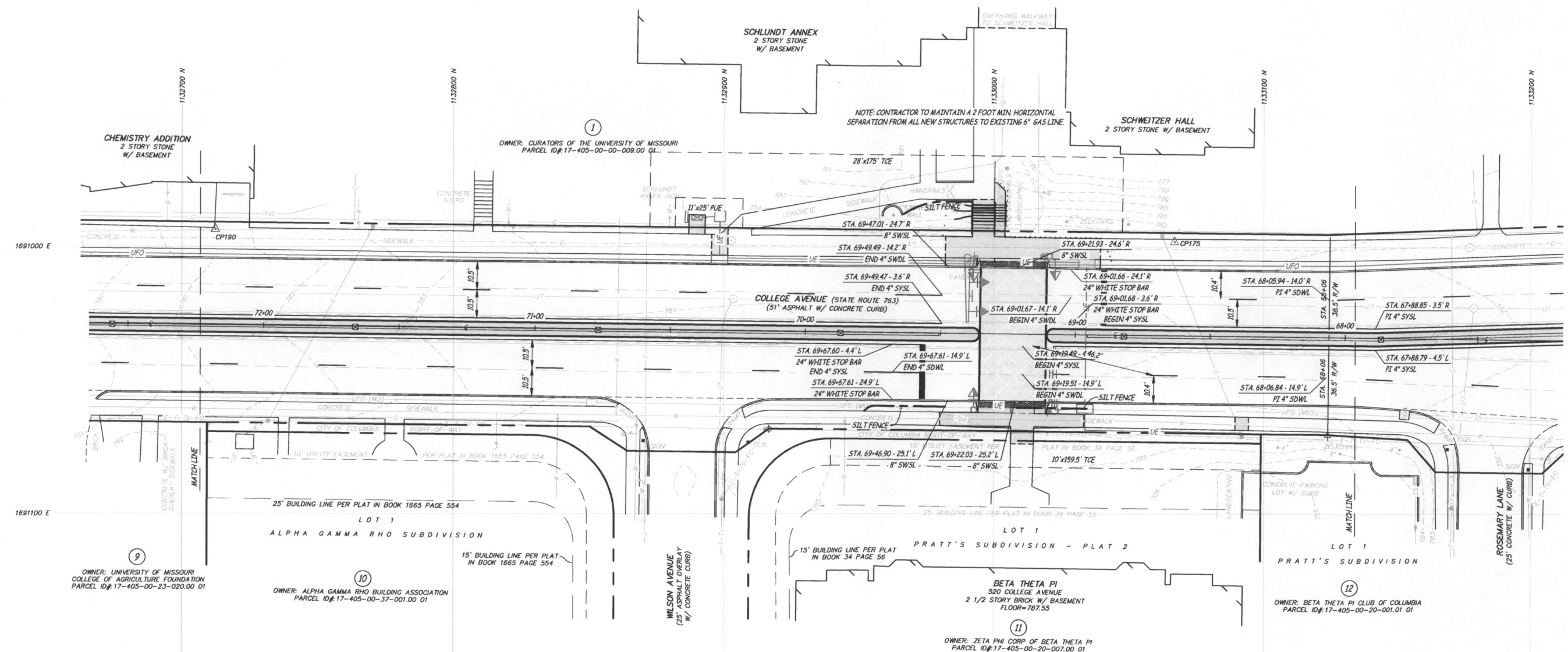
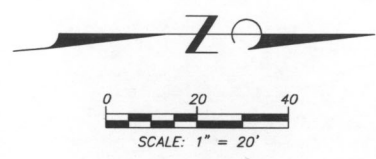
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EROSION CONTROL AND
PAVEMENT MARKING PLAN

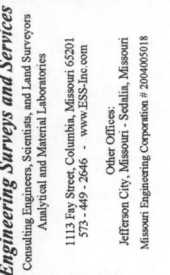
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C2.03

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**COLLEGE AVENUE SAFETY
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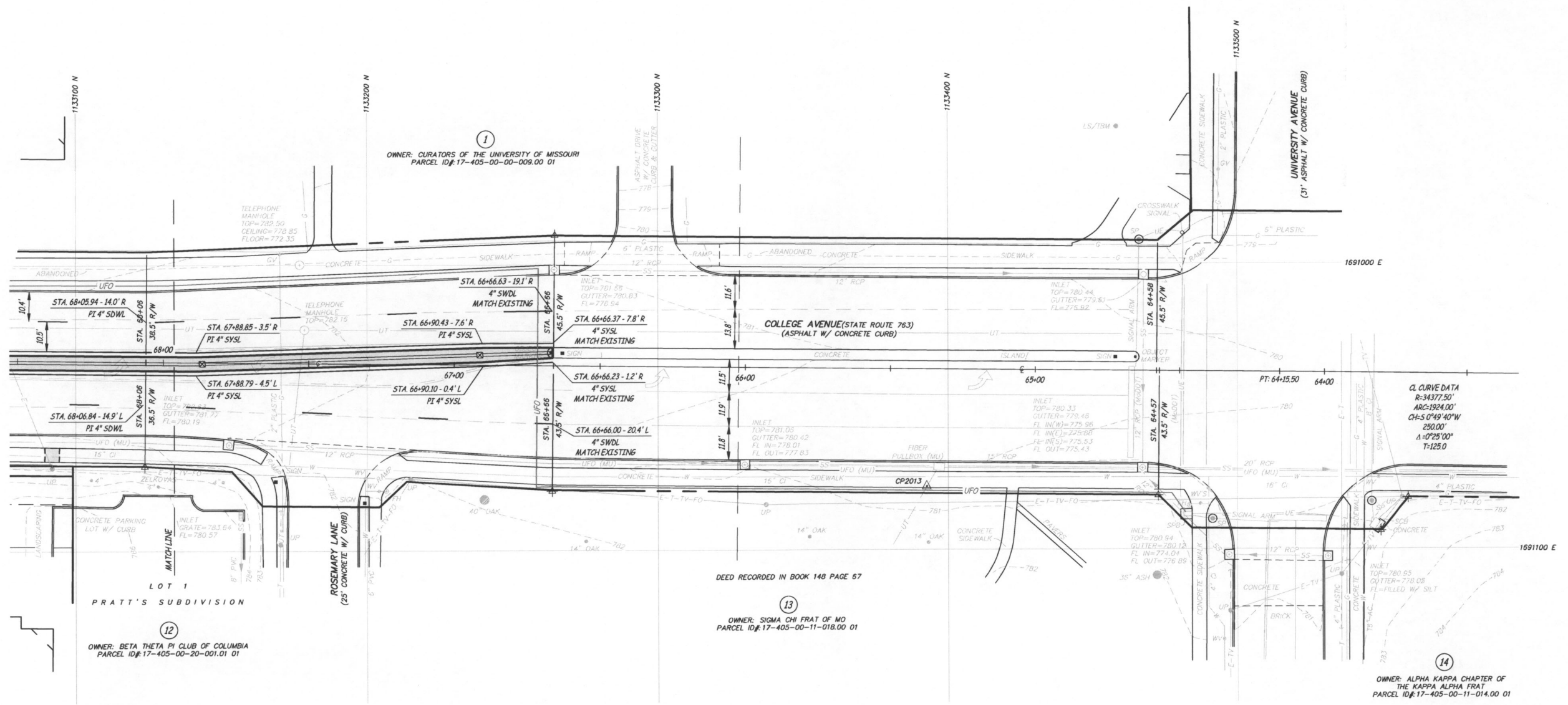
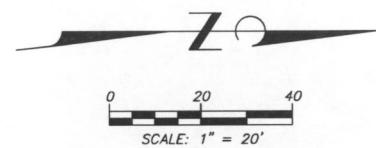
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EROSION CONTROL AND MOVEMENT MARKING PLAN

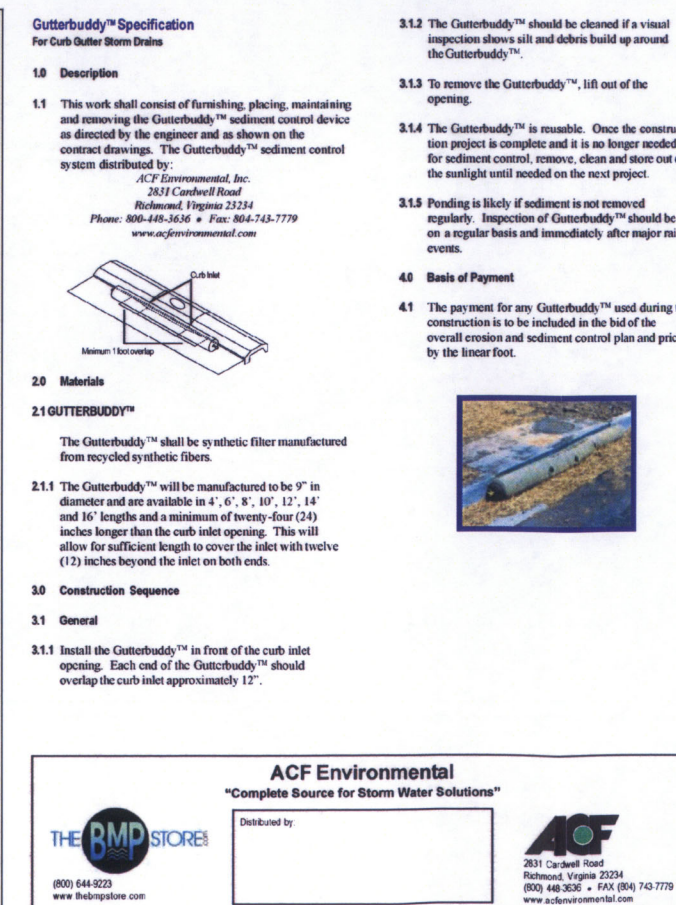
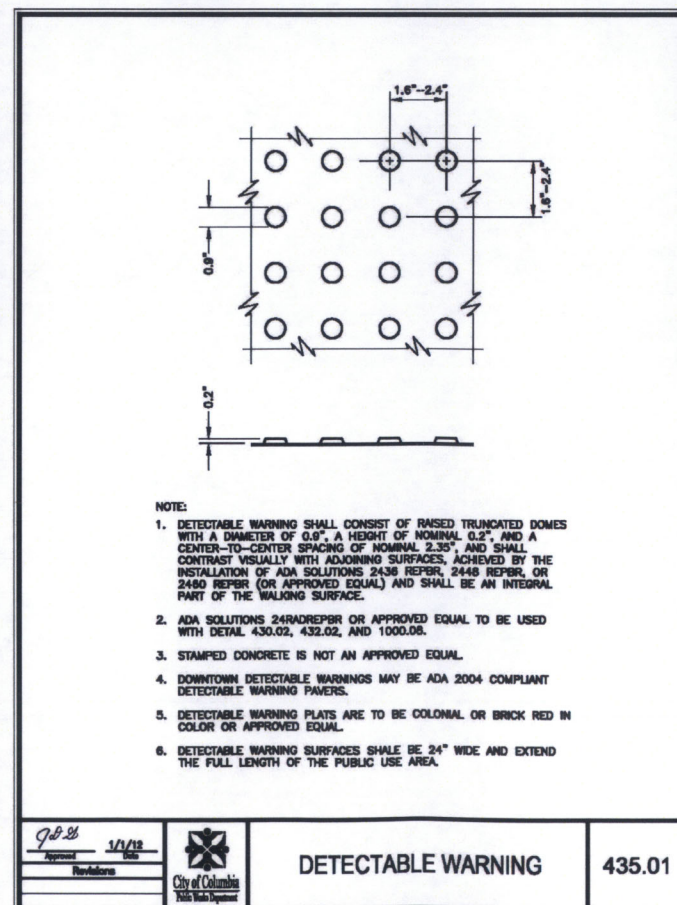
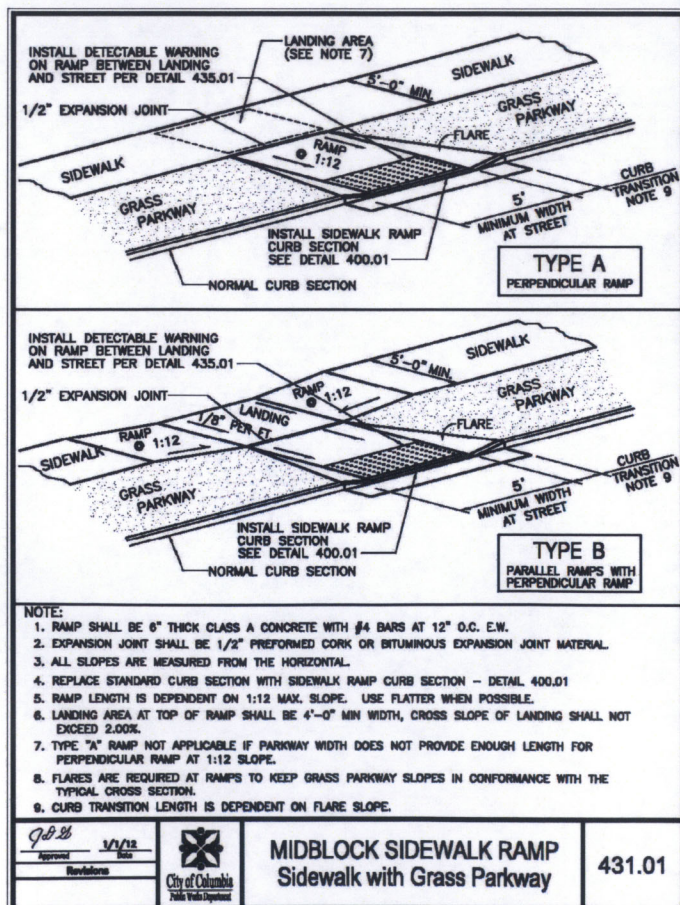
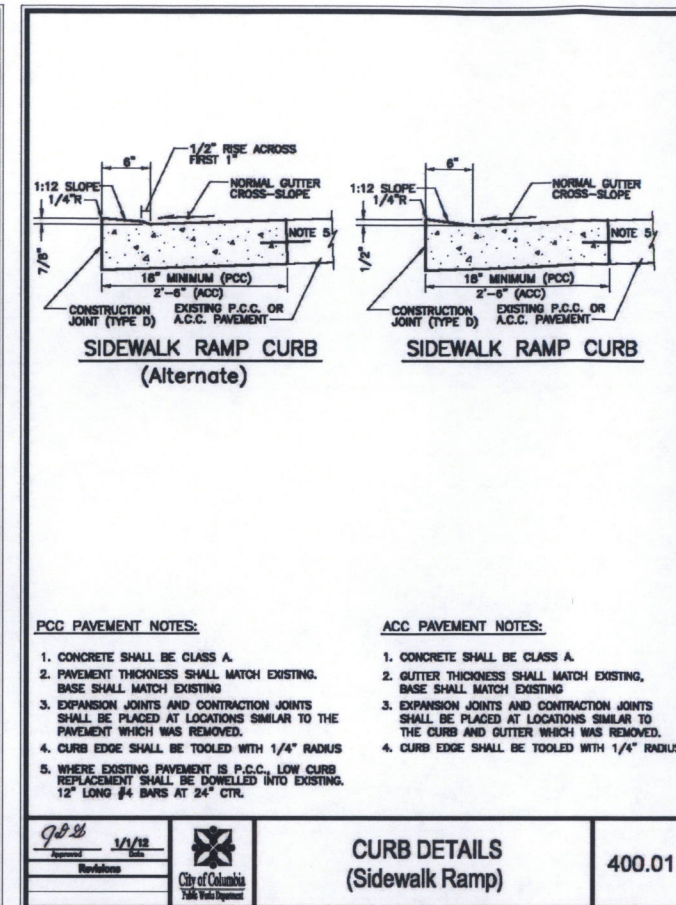
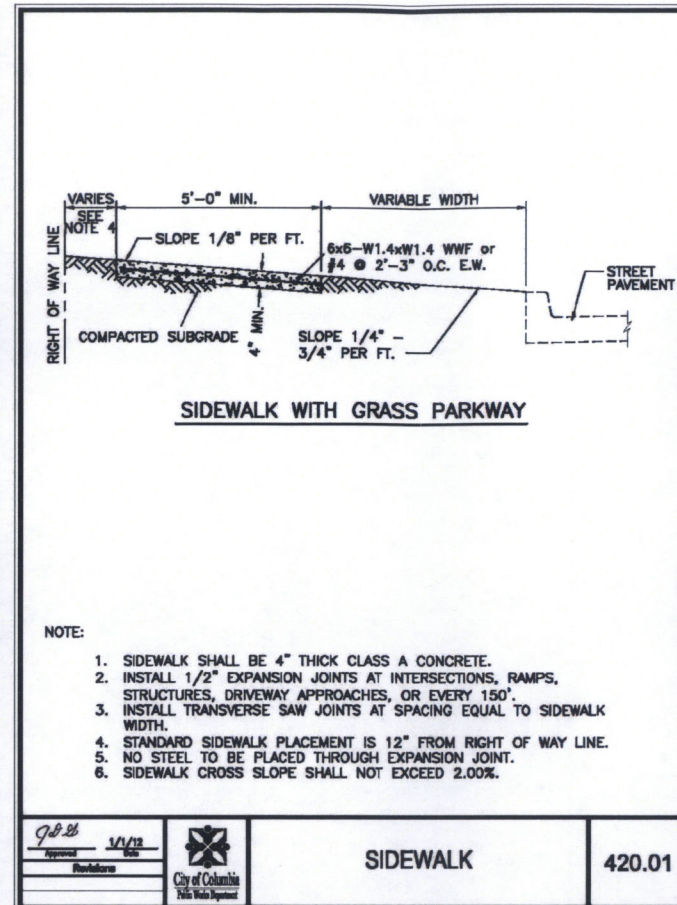
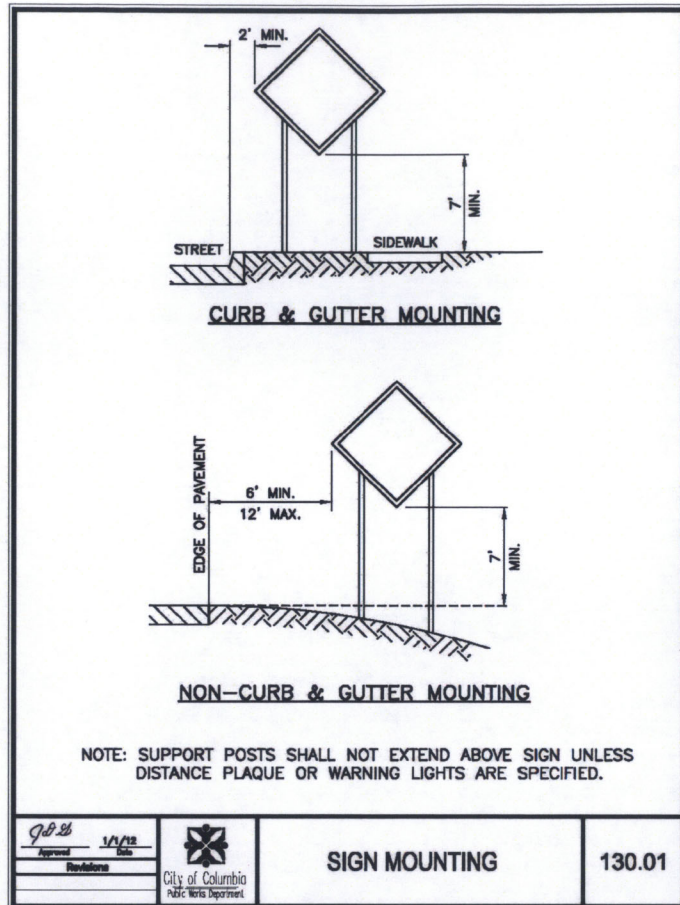
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BENJAMIN A. ROSS
REGISTERED PROFESSIONAL
ENGINEER E-30054

Date
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Revised

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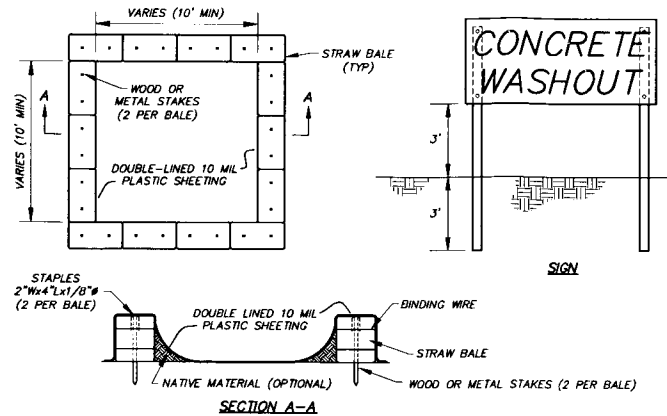
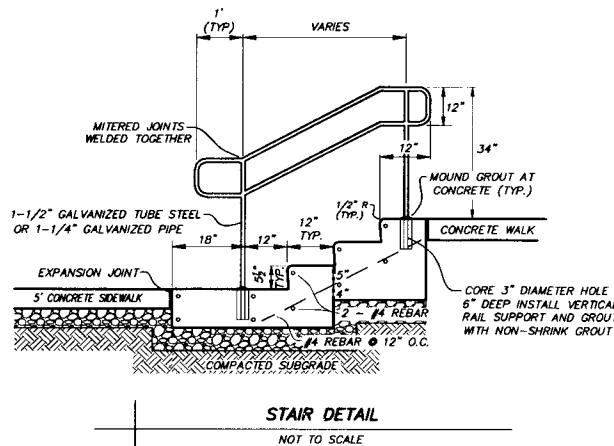
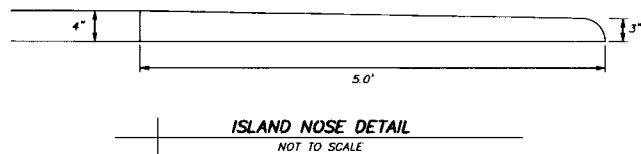
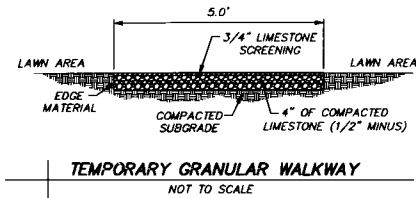
DETAILS

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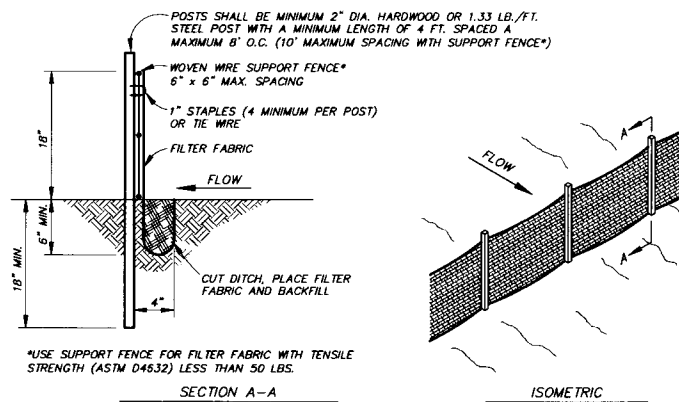
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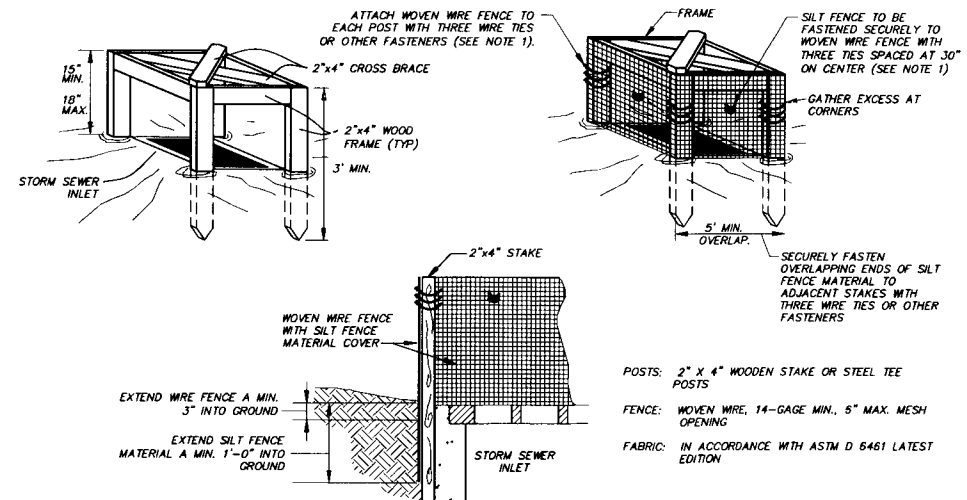
- NOTES:
1. ALL CONCRETE WASTE MATERIAL, INCLUDING WASHOUT WATER, SHALL BE TOTALLY CONTAINED.
 2. SEE SWPPP FOR MORE DETAILS.
 3. UPON PROJECT COMPLETION CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL CONCRETE WASTE FROM THE OWNER'S PROPERTY PER ALL APPLICABLE SOLID WASTE REGULATIONS.
 4. CONSTRUCT SIGN OF WEATHER PROOF MATERIALS OF A SIZE EASILY READABLE BY CONCRETE TRUCK DRIVERS. PLACE SIGN WITHIN 10' OF WASHOUT.
 5. CONTRACTOR SHALL CONTAIN WASHOUT WATERS AT ALL TIMES.

CONCRETE WASHOUT AREA
NOT TO SCALE



- NOTES:
1. CONTRACTOR SHALL INSTALL SILT FENCE AT TOE OF SLOPES OF ALL AREAS AFFECTED BY CONSTRUCTION PRIOR TO ANY DISTURBANCE ON THE SITE.
 2. SILT FENCE SHALL REMAIN UNTIL VEGETATION HAS BEEN ESTABLISHED ON DISTURBED AREAS.
 3. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
 4. SILT FENCES SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, ETC., TO VERIFY THE FABRIC IS SECURELY ATTACHED TO THE POSTS, THE POSTS ARE SECURELY IN THE GROUND, AND THE FABRIC IS SECURELY IMBEDDED IN THE GROUND TO PREVENT RUNOFF FROM GOING UNDER ANY PART OF THE FENCE.
 5. CONTRACTOR SHALL REMOVE ALL SILT FENCES WHEN ALL DISTURBED AREAS ARE COVERED WITH A MINIMUM 80% VEGETATION. SEED AND MULCH ALL AREAS DISTURBED DURING REMOVAL.

SILT FENCE DETAIL
NOT TO SCALE



1. ATTACH THE WOVEN WIRE FENCE TO EACH POST AND THE GEOTEXTILE TO THE WOVEN WIRE FENCE (SPACED EVERY 30") WITH THREE WIRE TIES OR OTHER FASTENERS, ALL SPACED WITHIN THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1" VERTICALLY APART.
2. WHEN TWO SECTIONS OF SILT FENCE MATERIAL ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED ACROSS TWO POSTS.
3. MAINTENANCE SHALL BE PERFORMED AS NOTED IN THE SWPPP. DEPTH OF ACCUMULATED SEDIMENTS MAY NOT EXCEED ONE-THIRD THE HEIGHT OF THE FABRIC. MAINTENANCE CLEANING MUST BE CONDUCTED REGULARLY TO PREVENT ACCUMULATED SEDIMENTS FROM REACHING ONE-THIRD THE HEIGHT OF THE SILT FENCE MATERIAL.
4. ALL SILT FENCE SHALL INCLUDE WIRE SUPPORT.

SILT FENCE INLET PROTECTION
NOT TO SCALE



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**COLLEGE AVENUE SAFETY
ENHANCEMENT PROJECT**
FEDERAL I.D. NO. STP 2100(522)
MISSOURI ROUTE 763 FROM
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BENJAMIN A. ROSS
REGISTERED PROFESSIONAL
ENGINEER E-30054

Date
AUGUST 13, 2014

Revised

Design: BR Drawn: RTM

DETAILS

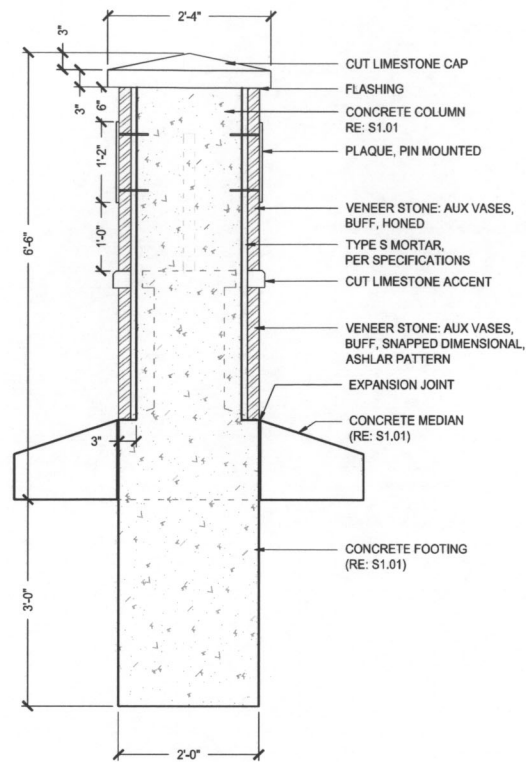
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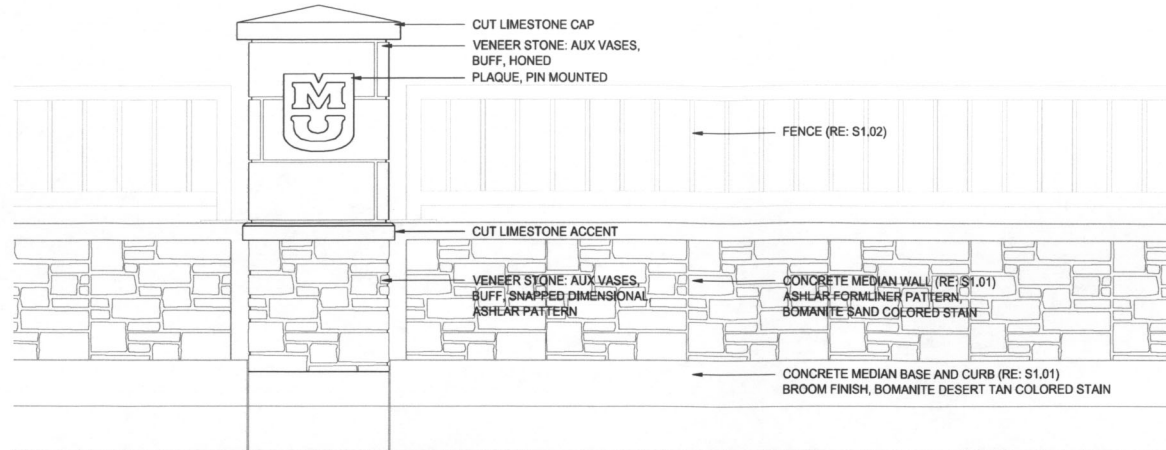
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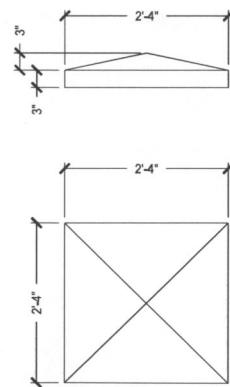
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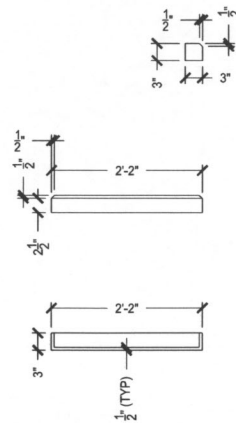
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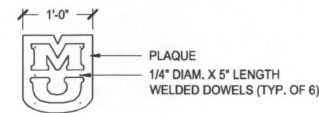
2 COLUMN ELEVATION & MEDIAN FINISHES



3 LIMESTONE CAP DETAILS



4 LIMESTONE ACCENT DETAILS



5 PLAQUE DETAIL



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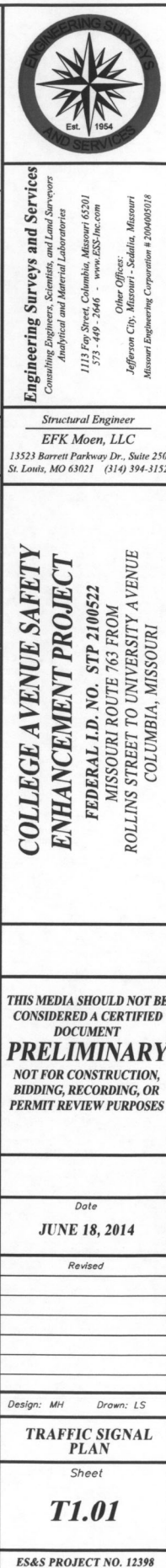
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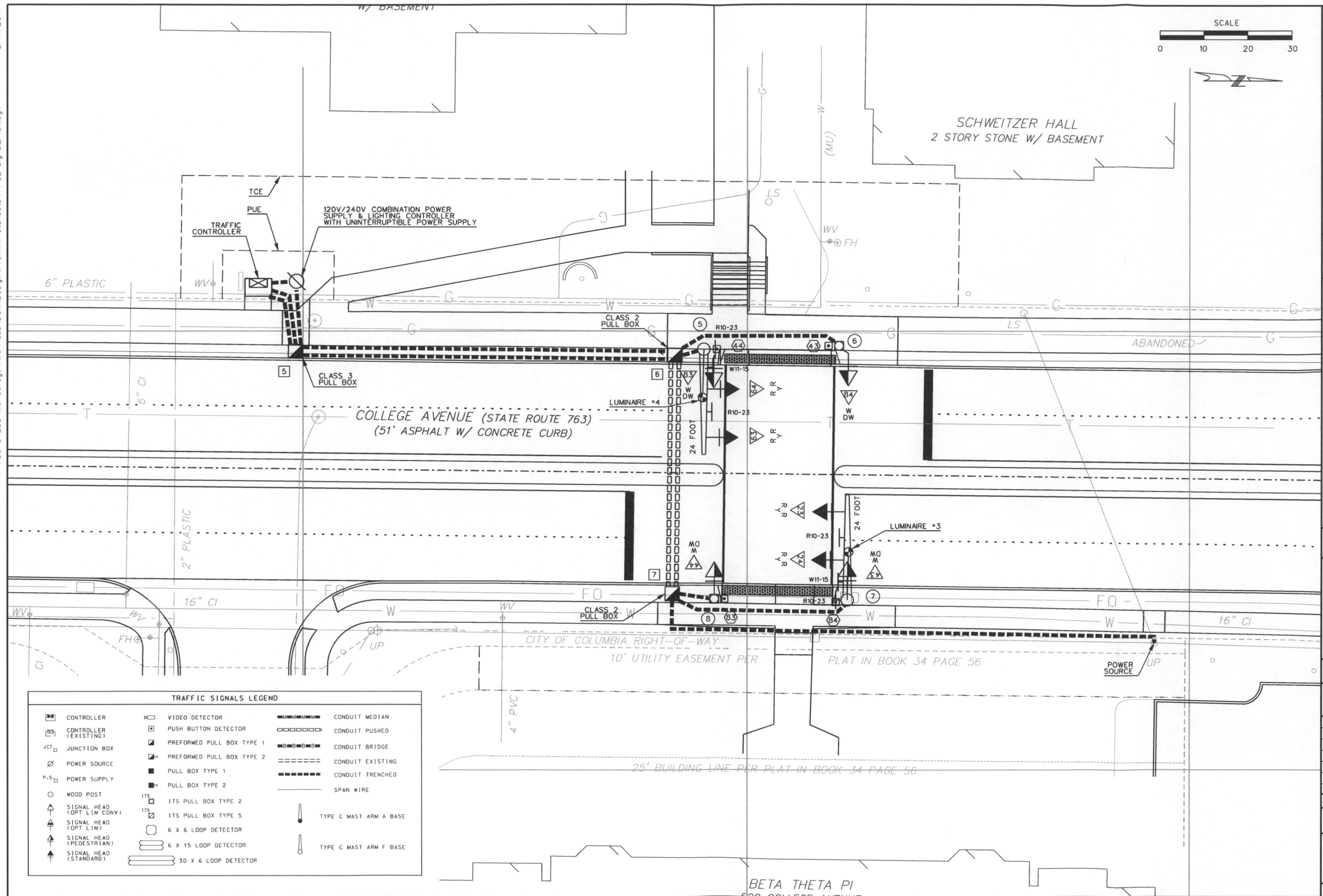
AESTHETIC DETAILS

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AUGUST 14, 2014

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Design: MH Drawn: LS

**TRAFFIC SIGNAL
PLAN**

Sheet

T1.02

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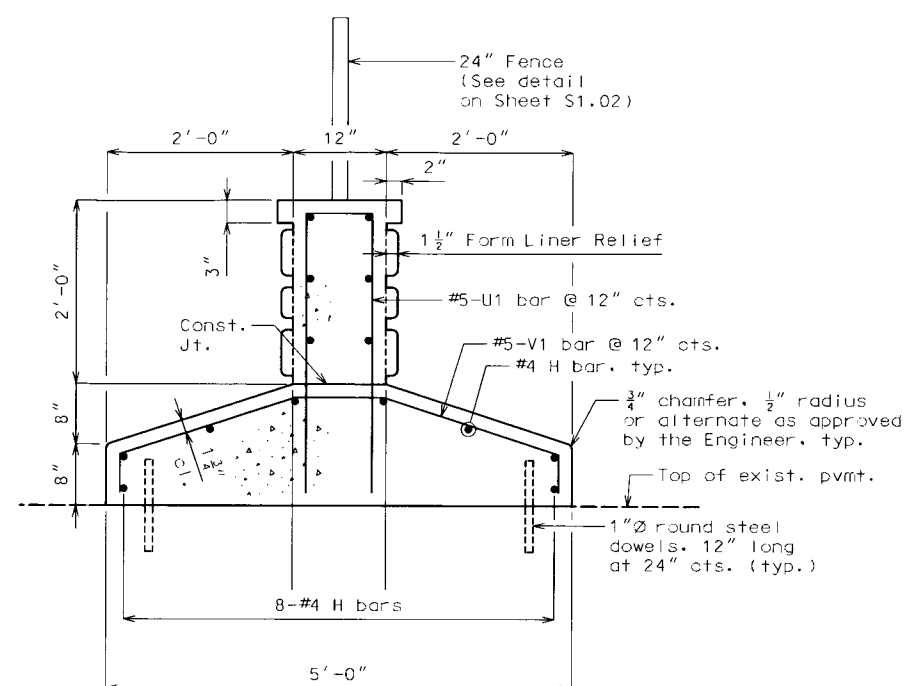
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CONCRETE MEDIAN

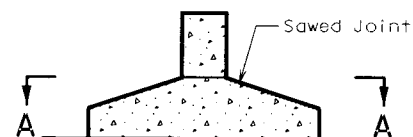
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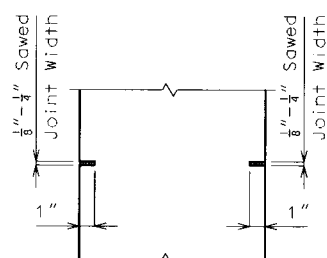
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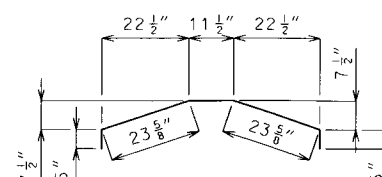
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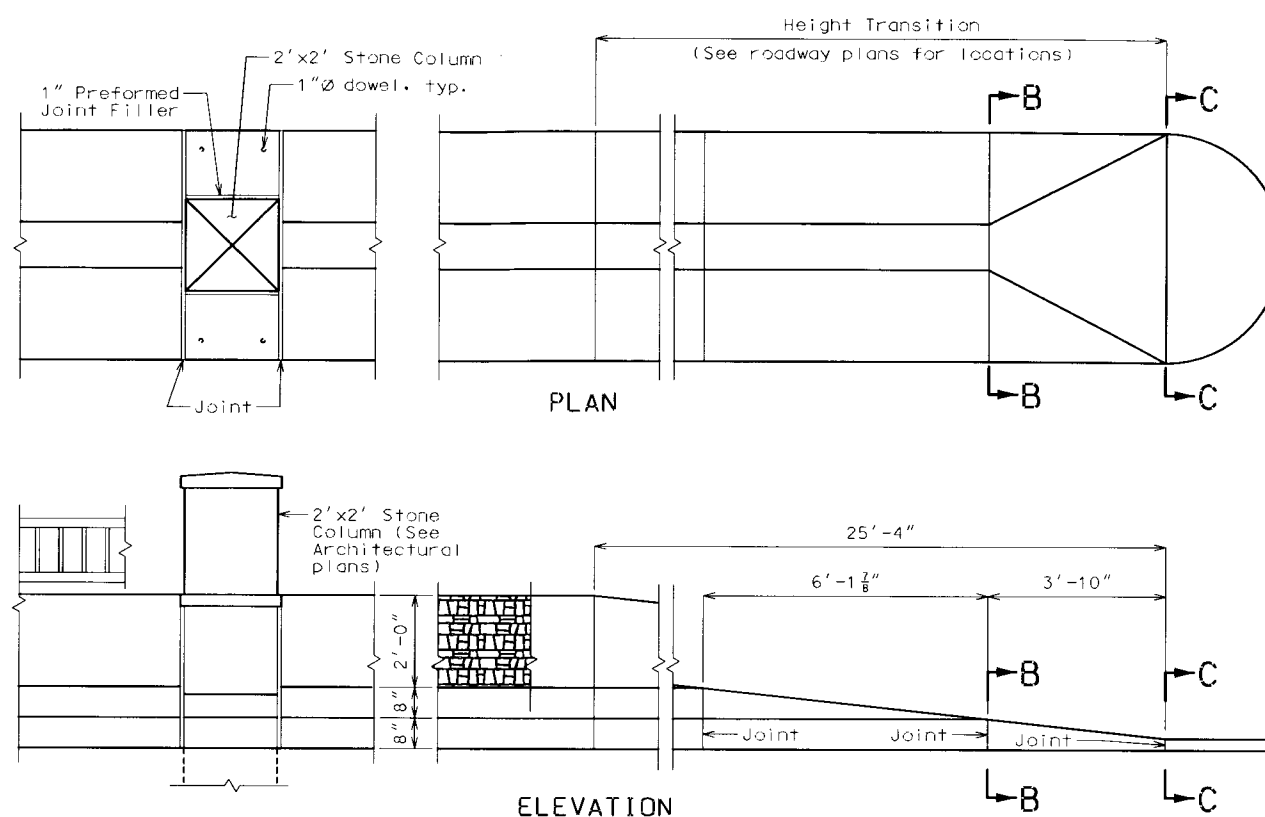
SECTION THROUGH
 SAWED JOINT



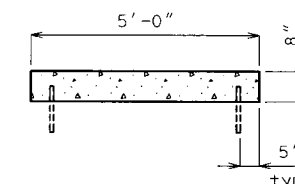
SECTION A-A



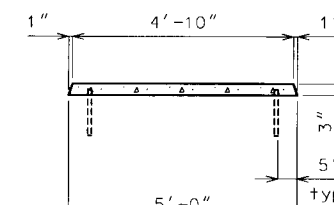
V1 BAR (#5)



ELEVATION



SECTION B-B



SECTION C-C

Notes:

Materials:
 Concrete: Class = Pavement Concrete, $f'c=4,000\text{psi}$
 Reinforcing Steel: $f_y=60,000\text{ psi}$

Bar Splices shall be a minimum of 24 times the normal diameter of the bar.

Any reinforcing bar installation method devised by the Contractor and approved by the Engineer that will assure the longitudinal reinforcing steel will be positioned $\pm \frac{1}{2}$ inch as dimensioned will be satisfactory.

Sawed joints shall be located at pavement transverse joints, not to exceed 10' between joints.

The cross sectional area of new concrete above the top of existing pavement = 7.04 sq. ft.

The top of median shall be built parallel to grade with joints normal to grade.

Payment for all concrete, reinforcement and dowels, complete in place, will be considered completely covered by the contract unit price for Concrete Median.

See architectural plans for concrete color and formliner details.

The 2' high by 12" wide decorative wall may be constructed with precast concrete at the Contractor's option. The Contractor shall submit shop drawings to the Engineer for review prior to the start of work. The shop drawings shall detail the connection of the cast in place concrete median section to the precast wall section. The shop drawings shall be designed and signed and sealed by a registered professional engineer in the State of Missouri.



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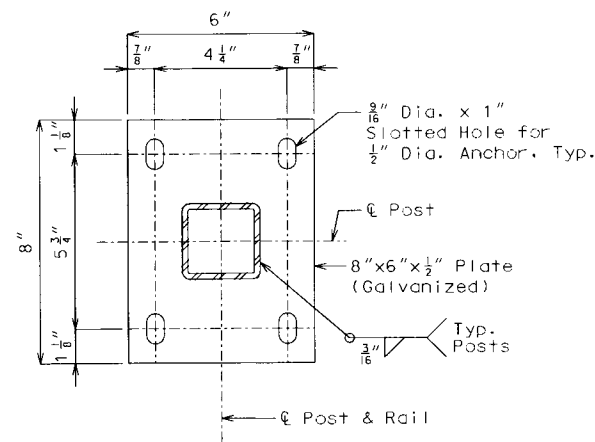
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20" FENCE

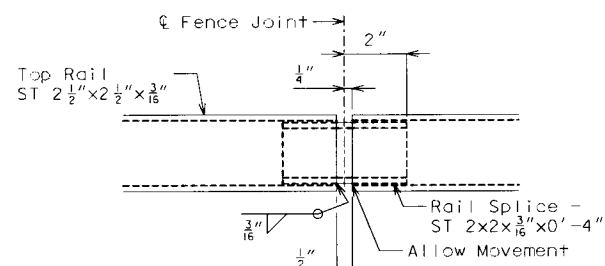
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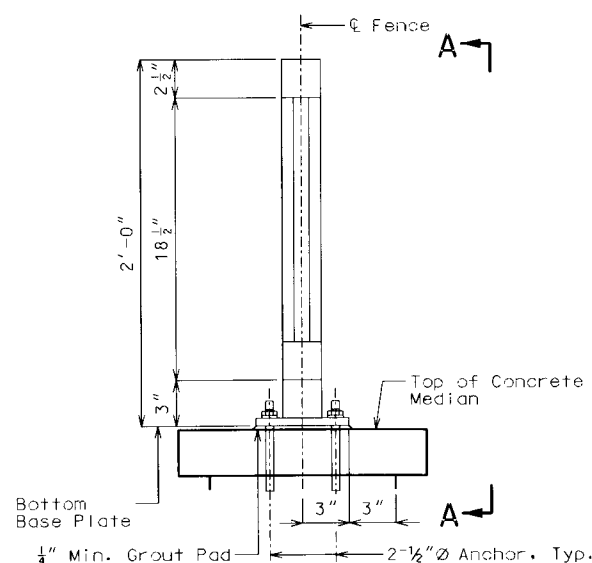


BASE PLATE DETAIL

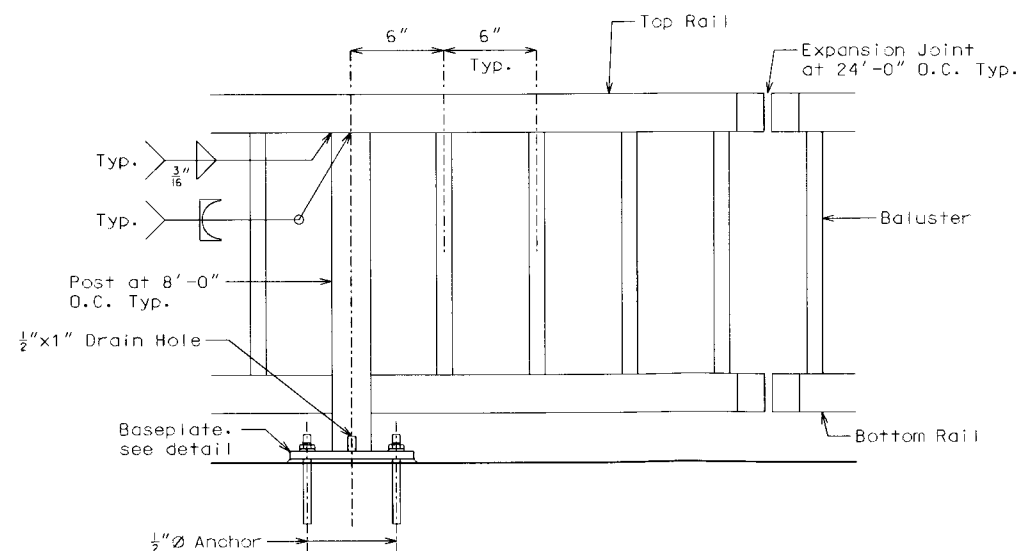


EXPANSION JOINT DETAIL

Top Rail shown. Bottom Rail similar.



SECTION OF RAIL POST



SECTION A-A

Notes:

All rails and posts shall be $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{16}$ structural tubing. Tubing for all rails and posts shall conform to ASTM A500, Grade B. Balusters shall be $\frac{3}{4} \times \frac{3}{4}$ steel bar. Balusters and base plates shall conform to ASTM A709, Grade 36.

Galvanize and paint all rails, posts, balusters and base plates after fabrication. Galvanization shall be in accordance with ATM A123 and Missouri Standard Specification for Highway Construction Sec. 1081. Fence shall be painted with System G (Black) in accordance with Sec 1081. Black color shall be federal color number 17038.

Rails and base plates shall be set parallel to top of median. All posts and balusters shall be set vertical. Grout shall be used between concrete and base plate for post.

All rail-to-post welded connections shall be set parallel to top of median. All posts and balusters shall be set vertical. Grout shall be used between concrete and base plate post.

Use E70xx electrodes for all welding.

All material, labor, splices, grout and installation shall be paid for under the bid item "Pedestrian Fence" per linear foot.

A grouted leveling pad shall be used to erect the posts vertical. The leveling pads shall be a non-shrink grout as approved by the Engineer. The grout shall be mixed, applied and cured according to the manufacturer's recommendations.

Concrete anchors, nuts and washers shall be galvanized in accordance with ASTM A153 and Sec. 1081.

Nuts shall conform to ASTM A307. Nuts shall be regular hexagon type. Washers shall be of standard commercial quality.

The concrete anchors shall have a minimum ultimate pullout strength of 7900 lbs. based on the concrete. The length of embedment into concrete shall conform to manufacturer's recommendations.