WILDWOOD

AGENDA
OF THE
CITY OF WILDWOOD'S
ARCHITECTURAL REVIEW BOARD
CITY HALL COMMUNITY ROOM
16860 Main Street
Thursday, January 14, 2016 - 7:00 p.m. to 9:00 p.m.

1. Welcome And Roll Call

2. Approval Of Meeting Minutes: Ready (Will Be Provided Before Meeting)

3. Review Agenda Items To Be Discussed At Tonight's Meeting

4. New Business

4.I. Ready For Action [1 Item]

4.I.i. A Presentation And Discussion Of The Preliminary Development Plan And Elevations For The CVS Pharmacy Located At The Southwest Corner Of State Route 109 And Manchester Road. The Architectural Review Board's Comments Will Be Forwarded To Planning And Zoning Commission And The Petitioner, Prior To The Scheduled Public Hearing. [Wards 1 & 8]

Documents: IV.1.A - ARB COMMENTS_CVS_ 1.14.16.PDF, IV.1.A - CVS ELEVATIONS.PDF

5. Old Business

5.I. Ready For Action [1 Item]

5.I.i. Town Center Development Manual's Review And Update, After The Completion Of The Overall Plan's Ten (10) Year Update [Approved December 2013]. The Board Will Review The Revised "Elements" Section Of The Town Center Plan's Architectural Guidelines. [Wards 1, 4, 5, 6, 7, & 8]

Documents: V. 1. A -TOWN CENTER DEVELOPMENT MANUAL.PDF

5.II. Not Ready For Action – None

6. Other

7. Public Comment

8. Closing Remarks And Adjournment

If you would like to submit a comment regarding an item on this meeting agenda, please visit the Form Center.

WILDWOOD

As part of the zoning process for any proposed development in the Town Center, the Department of Planning and Parks is now forwarding submitted application materials, including the Preliminary Development Plan and elevations, to the City's Architectural Review Board for comments. The comments from the Board are then submitted to the Planning and Zoning Commission and the Petitioner, prior to the public hearing on the matter.

Board members, alternates, and liaisons were provided with the application materials, Preliminary Development Plan, and elevations for the proposed development of a CVS Pharmacy, which is to be located at the southwest corner at the intersection of State Route 109 and Manchester Road **(P.Z. 16-15)**. The following are the comments received by the Department, as of January 8, 2016:

Terry Hoffman, Board Member

- The large CVS sign on the "Left Side Elevation" faces the parking lot and is not really visible from either Manchester Road or Highway 109. I think it should be eliminated. Are all the illuminated ancillary signs (Photo, Beauty, and Drive-Thru Pharmacy) and the "Window Graphics" indicated as hatching on most of the aluminum and glass storefront around the building allowed in the signage ordinance?
- The top of the building is at elevation 758'. The south end of the north-south side street is at elevation 760' as is Highway 109 at the east-west street. The rooftop unit will be visible when traveling south on Highway 109. All rooftop equipment will need to be screened compatible with the building and Town Center guidelines.
- The service area to the building (Rear Elevation) that includes the electric service entry, delivery doors, downspouts, overflow scuppers and drive-thru faces Manchester Road. The little bit of landscaping along Manchester Road is not going to screen this elevation especially since it's down at the sidewalk elevation in front of a retaining wall. This is not the best elevation to be facing a major Wildwood intersection.
- There are two wall pack light fixtures on the Rear Elevation that produce glare especially for south bound traffic on Highway 109. They should be eliminated.
- There are no details of the retaining walls along Manchester Road, Highway 109 and the east-west side street other than they are either concrete or Versa-Lok.
- The dumpster enclosure along with the building electric transformer is at the corner of Manchester Road and the north-south side street. The site element between the dumpster and the transformer is not identified unless it's another dumpster. It doesn't appear to be screened. This type of area is usually rather trashy and should not be located on a major thoroughfare.
- The sidewalk at the north end of the double switchback ramp on the west side of the north-south side street should be angled instead of at a 90 degree angle because pedestrians will cut the corner.

David Dial, Board Member

- This site design is a very poor attempt at a retail project layout. It breaks about every rule for retail success and has a high potential to become an abandoned property in the near future.
- The rear of the building faces an important intersection on the city,
- The rear of the building looks like a rear of a building,
- The loading, drive up window, and trash are all on the street side of the building,

- The entrance faces a direction away from any public street view,
- Retaining walls may hinder street view,
- Clarify the height of the retaining walls a show accurately on the renderings,
- Retaining walls will either have guardrails, fences or will be taller – which is it?
- What is the glass type on the rear/street side of the building?
- The height of the rear of the building is too low to face the street,
- Mechanical equipment is too visible on the street side,
- The street side of this project looks like an abandoned building already,
- Using this site plan as the beginning point for this project is the root cause all of the problems mentioned above. A better starting point, being a better site plan, will alleviate most, if not all, of the problems noted above.
- A better 'designed' site plan, and les of an 'engineered' site plan will be a good starting point.
- Conclusion: please start over, there is no way that I will vote for approval of this project on an ARB level – and I hope that this site plan would never get to that point.

<u>George Crow, Board Member</u>

I appreciate Terry and Dave's comments and agree with their observations. We have consistently not allowed wall light packs. The CVS located at Manchester and Clarkson has adequate lighting that is provided by indirect lighting at the parapet, decorative wall mounted lights and some pole lights in the parking areas. There are no wall packs, In addition to Terry and Dave's comments, I would suggest that turning onto 109 from the south drive should be restricted to a right hand turn, heading south.

B E F O R E

R E N D E R I N G F R O M T H E C O R N E R O F H I G H W A Y 1 0 9 & M A N C H E S T E R R O A D L O O K I N G S O U T H W E S T

NORR
ARCHITECTS ENGINEERS PLANNERS
719 Griswold Street
Suite 1000
Detroit, MI 48226
www.norr.com

T.M.
CROWLEY
& ASSOCIATES

CVS 00000/ CS 85218, S.W.C. MANCHESTER ROAD + HWY 109, WILDWOOD, MO

CVS/pharmacy

08.06.2014

LEFT SIDE ELEVATION (PARKING)

SCALE: 1/8"

FRONT ELEVATION (HWY 109)

SCALE: 1/8"

RIGHT SIDE ELEVATION (MANCHESTER RD.)

SCALE: 1/8"

REAR ELEVATION (MANCHESTER RD,)

SCALE: 1/8"

EXTERIOR FINISH SCHEDULE

TAG	MATERIAL / DESCRIPTION	MFR./ STYLE / CAT. NO.	COLOR	NOTES
E1	EIFS/ DEFS	STO LOTUSAN SYSTEM 191 STOLIT, LOTUSAN 1.5	NA06-0029 PEACHY BEIGE	INSTALLED PER MANUF. SPECIFICATIONS
E2	EIFS	STO LOTUSAN SYSTEM 191 STOLIT, LOTUSAN 1.5	NA05-0001 RAFTERTAIL	CORNICE
E3	STRUCTURAL BRICK	OLDCASTLE ARCHITECTURAL	A-296-R GARNET	HOLCIM ENVIROCORE MORTAR CORAL
E4	STRUCTURAL BRICK ACCENT	OLDCASTLE ARCHITECTURAL	A-297-R SOFT COTTON	HOLCIM ENVIROCORE MORTAR HARWOOD YELLOW
E4A	SPLITFACE CMU ACCENT	OLDCASTLE ARCHITECTURAL	A-297-R SOFT COTTON	HOLCIM ENVIROCORE MORTAR HARWOOD YELLOW
E4B	CAST STONE		BUFF	
E5	PAINT	BENJAMIN MOORE	2174-30 SEDONA CLAY	HOLLOW MTL DOORS/FRAMES, GUTTERS/DOWNSPOUTS
E6	BOLLARD COVER	INNOPLAST BOLLARDGARD BC752 OR BC452	YELLOW	TYP FOR ALL PIPE BOLLARDS
E7	PREFINISHED METAL COPING		COLOR TO MATCH "E2" EIFS	
E8	ALUM STOREFRONT		CLEAR ANODIZED	
E9	ALUM AUTOMATIC DOOR	STANLEY DURAGLIDE 5300	CLEAR ANODIZED	
E10	VINYL AWNING	BURTON SIGNWORKS, INC.	WEBLON #2926 DEEP RED	SUPPLIED & INSTALLED BY GC
E11	ALUMINUM CANOPY	MAPES ARCHITECTURAL CANOPIES	CLASS II CLEAR ANODIZED	
E12	ASPHALT SHINGLES	CERTAINTEED XT25 AR/SEAL KING 25	OAKWOOD	INSTALLED PER MANUF. SPECIFICATIONS

NOTE: SIGNAGE UNDER SEPARATE PERMIT. REFER TO APPROVED SIGNAGE PACKAGE FROM SIGNAGE VENDOR FOR SIZES AND LOCATIONS OF SIGNS. EXTERIOR SIGNAGE TO BE EXPANSION ANCHORED.

PYLON SIGNAGE EIFS COLOR TO MATCH THE BUILDING EIFS COLOR.

LEGEND

(XX) – RE: EXTERIOR FINISH SCHEDULE

– AREA OF WINDOW GRAPHICS

NORR
ARCHITECTS ENGINEERS PLANNERS
150 W. Jefferson Ave.
Suite 1300
Detroit, MI 48226
www.norr.com

T.M. CROWLEY & ASSOCIATES

CVS 10760 S.W.C. MANCHESTER ROAD + HWY 109, WILDWOOD, MO

CVS/pharmacy

09.15.2015

SITE DEVELOPMENT PLANS FOR:

CVS/pharmacy®

CS#85218 SWC MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI 63040
ZONED: B-3 HIGHWAY BUSINESS DISTRICT
PARCEL ID: 22MI40951 AND 22MI40621
A TRACT OF LAND IN THE SOUTHEAST 1/4 OF SOUTHEAST 1/4 OF SECTION 2, TOWNSHIP 44 NORTH, RANGE 3 EAST
ST. LOUIS COUNTY, MISSOURI

PROJECT DIRECTORY

OWNER
MISSOURI CVS PHARMACY, L.L.C.
501 PENNSYLVANIA PARKWAY, SUITE 160
INDIANAPOLIS, IN 46280
(312) 953-6322
CONTACT: MR. RICHARD SMART

DEVELOPER
T.M. CROWLEY & ASSOCIATES
501 PENNSYLVANIA PARKWAY, SUITE 160
INDIANAPOLIS, IN 46280
(317) 819-0116
CONTACT: MR. CHARLIE HAAPALA

ARCHITECT
NORR, LLC
719 GRISWOLD STREET
DETROIT, MI 48226
(313) 324-3100
CONTACT: MRS. ASHLEY DAWSON

CIVIL ENGINEER
PREMIER CIVIL ENGINEERING, LLC
308 TCW COURT
LAKE SAINT LOUIS, MO 63367
(314) 925-7452
CONTACT: MR. MATT FOGARTY

SURVEYOR
PREMIER CIVIL ENGINEERING, LLC
308 TCW COURT
LAKE SAINT LOUIS, MO 63367
(314) 925-7456
CONTACT: MR. DAVID MAXWELL

UTILITY PROVIDERS

AMEREN UE ELECTRIC
P.O. BOX 66149, MC 700
ST. LOUIS, MO. 63166-6149
(314)554-3461
CONTACT: MRS. NANNETTE MORTON

LACLEDE GAS COMPANY
720 OLIVE STREET RM 1408
ST LOUIS, MO 63101
(314) 342-0690
CONTACT: MS. KRISTINA EMBRY

CHARTER COMMUNICATIONS
815 CHARTER COMMONS
TOWN AND COUNTRY, MO 63107
(636) 220-2180
CONTACT: STEVE COLEMAN

METROPOLITAN SEWER DISTRICT
2350 MARKET STREET
ST LOUIS, MO 63103
(314) 768-6200
CONTACT: TO BE DETERMINED

MISSOURI AMERICAN WATER
727 CRAIG ROAD
SAINT LOUIS, MO 63141
(314) 996-2474
CONTACT: MR. LAMAR WHITE

CITY OF WILDWOOD PLANNING DEPARTMENT
16860 MAIN STREET
WILDWOOD, MO 63040
(636) 458-0440
CONTACT: MR. JOE VUJNICH

CITY OF WILDWOOD ENGINEERING DEPARTMENT
16860 MAIN STREET
WILDWOOD, MO 63040
(636) 458-0440
CONTACT: MR. RICK BROWN

MISSOURI DEPARTMENT OF TRANSPORTATION (MoDOT)
ST. LOUIS METRO DISTRICT
1590 WOODLAKE DRIVE
CHESTERFIELD, MO 63017
(314) 565-6716
CONTACT: MR. JOHN BRADEN

MODOT NOTE:

NIGHTTIME LANE CLOSURE WITH FLAGGERS SHALL BE REQUIRED ON MANCHESTER RD. AND N. KIRKWOOD ROAD DURING CURB AND GUTTER REMOVAL AND REPLACEMENT. EXPOSED TRENCHES FOR CURB AND GUTTER CONSTRUCTION SHALL BE FILLED IMMEDIATELY FOLLOWING EXCAVATION.

EXISTING LEGEND	
	FOUND IRON PIPE
	SET IRON PIPE (2012007849)
	FOUND STONE MONUMENT
	FIRE HYDRANT
	WATER VALVE
	WATER METER VAULT
IRV	IRRIGATION CONTROL VALVE
	GAS VALVE
	GAS METER
	LIGHT STANDARD
	CLEAN OUT
	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	STORM SEWER INLET
B	PIPE BOLLARD
	SIGN
	BUSH
	TREE
TSB	TRAFFIC SIGNAL BOX
	MONITORING WELL
	TEST HOLE
	PEDESTRIAN SIGNAL
	ELECTRIC METER
	STORM CURB INLET
	STORM DOUBLE CURB INLET
AC	AIR CONDITIONER
	DOWN SPOUT
B.O.C.	BACK OF CURB

PROPOSED LEGEND	
	UTILITY POLE
	FIRE HYDRANT
	WATER VALVE
	WATER METER VAULT
	GAS METER
	LIGHT STANDARD
	CLEAN OUT
	MONITORING WELL
	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	GRATE INLET
	DOUBLE CURB INLET
	PIPE BOLLARD
	SIGN
	ELECTRIC METER
—UgE—	UNDERGROUND ELECTRIC
—UgT—	UNDERGROUND TELEPHONE
—1.5"W—	1.5" WATER MAIN
—6"W—	6" WATER MAIN
—8"W—	8" WATER MAIN
—G—	GAS LINE
—507—	CONTOUR LINE

LEGAL DESCRIPTION - COMMITMENT NO. L20153513

PARCEL 1:

A TRACT OF LAND IN THE SOUTHEAST 1/4 OF SOUTHEAST 1/4 OF SECTION 2, TOWNSHIP 44 NORTH, RANGE 3 EAST, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT AN IRON ROD IN THE SOUTH LINE OF SAID SECTION 2, DISTANT SOUTH 89 DEGREES 08 MINUTES EAST, 234.43 FEET FROM A STONE SET AT THE NORTHWEST CORNER OF LOT 3 OF THE WRIGHT ESTATE, SAID BEGINNING POINT BEING ALSO THE SOUTHEAST CORNER OF LOT 4 OF DREINHOEFER ESTATE; THENCE ALONG THE SOUTH LINE OF SECTION 2, SOUTH 89 DEGREES 08 MINUTES EAST, 414.62 FEET TO A POINT IN THE WEST LINE OF WOODS AVENUE; THENCE ALONG THE WEST LINE OF WOODS AVENUE, NORTH 06 DEGREES 51 MINUTES EAST, 169.93 FEET TO A POINT; THENCE NORTH 83 DEGREES 09 MINUTES WEST, 5 FEET TO A POINT; THENCE NORTH 06 DEGREES 51 MINUTES EAST 115 FEET TO A POINT; THENCE NORTH 37 DEGREES 40 MINUTES WEST, 46.79 FEET TO A POINT; THENCE NORTH 12 DEGREES 19 MINUTES EAST, 4.21 FEET TO A POINT; THENCE NORTH 38 DEGREES 51 MINUTES WEST, 1717.07 FEET TO AN IRON PIPE IN SOUTH LINE OF MANCHESTER ROAD; THENCE ALONG THE SOUTH LINE OF SAID ROAD NORTH 85 DEGREES 51 MINUTES WEST TO A POINT IN THE EST LINE OF LOT 4 OF DREINHOEFER ESTATE; THENCE ALONG SAID EAST LINE, SOUTH 00 DEGREES 34 MINUTES WEST, 472.84 FEET TO THE PLACE OF BEGINNING. EXCEPTING THEREFROM THAT PORTION OF GROUND CONVEYED TO MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION BY GENERAL WARRANTY DEED RECORDED ON APRIL 24, 2009 IN BOOK 18327 PAGE 3444.

PARCEL 2:

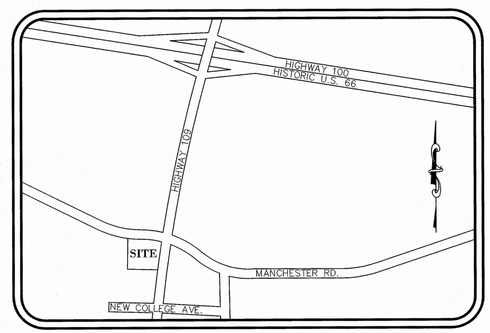
A TRACT OF LAND IN THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 2, TOWNSHIP 44 NORTH, RANGE 3 EAST, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE INTERSECTION OF THE SOUTH LINE OF SAID SECTION 2 WITH THE WEST OF STATE HIGHWAY 109, SAID POINT BEING THE SOUTHEAST CORNER OF A TRACT OF LAND CONVEYED TO HAROLD AND WANDA GLASER BY DEED RECORDED IN BOOK 5404, PAGE 128 OF THE ST. LOUIS COUNTY RECORDS; THENCE ALONG THE WEST LINE OF SAID HIGHWAY 109, NORTH 6 DEGREES 51 MINUTES 00 SECONDS EAST, 169.93 FEET TO AN ANGLE POINT THEREIN; THENCE NORTH 83 DEGREES 09 MINUTES 00 SECONDS WEST, 5.00 FEET TO AN ANGLE POINT THEREIN; THENCE NORTH 6 DEGREES 51 MINUTES 00 SECONDS EAST, 115.00 FEET TO; THENCE ALONG THE NORTHEASTERN LINE OF SAID GLASER, NORTH 37 DEGREES 40 MINUTES 00 SECONDS WEST, 11.41 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED TRACT OF LAND; THENCE CONTINUING ALONG THE NORTHEAST LINE OF GLASER, NORTH 37 DEGREES 40 MINUTES 00 SECONDS WEST, 35.74 FEET TO AN ANGLE POINT THEREIN; THENCE NORTH 12 DEGREES 19 MINUTES 00 SECONDS EAST, 4.21 FEET TO AN ANGLE POINT THEREIN; THENCE NORTH 38 DEGREES 51 MINUTES 00 SECONDS WEST, 154.50 FEET TO A POINT BEING 41 FEET SOUTH OF THE CENTER LINE OF MANCHESTER ROAD; THENCE ALONG A LINE 41 FEET SOUTH OF AND PARALLEL TO THE CENTER LINE OF MANCHESTER ROAD, SOUTH 85 DEGREES 51 MINUTES 00 SECONDS EAST, 20.51 FEET TO A POINT; THENCE SOUTH 38 DEGREES 51 MINUTES 00 SECONDS EAST, 160.33 FEET TO A POINT BEING 53 FEET WEST OF THE CENTER LINE OF STATE HIGHWAY 109; THENCE ALONG A LINE 53 FEET WEST OF AND PARALLEL TO THE CENTER LINE OF STATE HIGHWAY 109, SOUTH 6 DEGREES 51 MINUTES 00 SECONDS WEST, 26.57 FEET TO THE POINT OF BEGINNING BEING THE SAME PROPERTY CONVEYED TO GLASER COMMONS LLC BY THE INSTRUMENT RECORDED ON JUNE 15, 2009 IN BOOK 18423 PAGE 173.

LAND DESCRIPTION - OVERALL - AS SURVEYED

A TRACT OF LAND BEING PART OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 2, TOWNSHIP 44 NORTH, RANGE 3 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT BEING THE SOUTHEAST CORNER OF LOT 4 OF DREINHOEFER ESTATES; THENCE NORTH 01 DEGREES 05 MINUTES 39 SECONDS EAST, ON A BEARING SYSTEM ADOPTED FROM THE MISSOURI STATE PLANE COORDINATE SYSTEM, NAD 1983, EAST ZONE, 472.87 FEET TO A POINT IN THE SOUTH RIGHT OF WAY LINE OF MANCHESTER ROAD; THENCE ALONG SAID SOUTH RIGHT OF WAY LINE OF MANCHESTER ROAD, SOUTH 85 DEGREES 19 MINUTES 21 SECONDS EAST, 305.49 FEET; THENCE SOUTH 38 DEGREES 19 MINUTES 21 SECONDS EAST, 15.74 FEET; THENCE SOUTH 85 DEGREES 19 MINUTES 21 SECONDS EAST, 20.51 FEET; THENCE SOUTH 38 DEGREES 19 MINUTES 21 SECONDS EAST, 159.72 FEET TO A POINT IN THE WEST RIGHT OF WAY LINE OF HIGHWAY 109; THENCE ALONG SAID WEST RIGHT OF WAY LINE OF HIGHWAY 109, SOUTH 07 DEGREES 22 MINUTES 39 SECONDS WEST, 320.98 FEET; THENCE LEAVING SAID WEST RIGHT OF WAY LINE OF HIGHWAY 109, NORTH 88 DEGREES 36 MINUTES 21 SECONDS WEST, 401.65 FEET TO THE POINT OF BEGINNING AND CONTAINING 4.30 ACRES MORE OR LESS.



LOCATION MAP
NOT TO SCALE

DISTURBED AREA = 4.48 ACRES

SHEET LIST

SHEET NUMBER	SHEET TITLE
G-1	COVER SHEET
G-2	CIVIL SPECIFICATIONS
G-3	CIVIL SPECIFICATIONS
C-2	SITE PLAN NORTH
C-2.1	SITE PLAN SOUTH
C-3	GRADING PLAN NORTH
C-3.1	GRADING PLAN SOUTH
C-3.2	PLAN AND PROFILE NORTH SOUTH ROAD
C-3.3	PLAN AND PROFILE EAST WEST ROAD
C-4	UTILITY PLAN NORTH
C-4.1	UTILITY PLAN SOUTH
C-5.0	SITE SECTIONS
C-5.1	SITE DETAILS
C-5.2	SITE DETAILS
PH-1	PHOTOMETRICS PLAN
L-1	LANDSCAPE PLAN NORTH
L-2	LANDSCAPE PLAN SOUTH
L-3	TREE PRESERVATION PLAN

SEWER NOTES

PRIOR TO OBTAINING A CONSTRUCTION PERMIT FROM THE METROPOLITAN ST. LOUIS SEWER DISTRICT, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE THE DISTRICT WITH A COPY OF AN EXECUTED CERTIFICATE OF INSURANCE INDICATING THAT THE PERMITTEE HAS OBTAINED AND WILL CONTINUE TO CARRY COMMERCIAL GENERAL LIABILITY AND COMPREHENSIVE AUTO LIABILITY INSURANCE. THE REQUIREMENTS AND LIMITS SHALL BE AS STATED IN THE "RULES AND REGULATIONS AND ENGINEERING DESIGN REQUIREMENTS FOR SANITARY AND STORMWATER DRAINAGE FACILITIES", SECTION 10.090 (ADDENDUM).

ALL STORM AND SANITARY SEWER STRUCTURES AND APPURTENANCES TO BE DEDICATED TO MSD, OR TO BE PRIVATE UNDER MSD INSPECTION, SHALL CONFORM TO THE METROPOLITAN ST. LOUIS SEWER DISTRICT, STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWERS AND DRAINAGE FACILITIES, 2009. THAT WILL INCLUDE STANDARD DETAILS SHOWN THEREIN, AND SHALL INCLUDE ALL SUBSEQUENT CHANGES MADE THERETO.

SOME RECENT CHANGES CONCERN PIPE FIELD TESTING AND PERFORMANCE, AND INCLUDE THE FOLLOWING:

PART 4-PIPE SEWER CONSTRUCTION

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING-DELETE THE FIRST SENTENCE AND THE FOLLOWING REPLACEMENT APPLIES:

ALL SANITARY AND COMBINED SEWERS SHALL SUSTAIN A MAXIMUM LEAKAGE LIMIT OF 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES SPECIFICATIONS.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 2, REACH INTEGRITY TESTING, SUBPARAGRAPH C, INFILATRATION/EXFILTRATION TESTING-DELETE THE SIXTH SENTENCE, CONCERNING LEAKAGE LIMIS, AND THE FOLLOWING REPLACEMENT APPLIES:

THE MEASUREMENT OF LEAKAGE SHALL NOT EXCEED 100 GALLONS/INCH OF PIPE DIAMETER/LINE OF LINE/DAY, AS REQUIRED BY THE MISSOURI DEPARTMENT OF NATURAL RESOURCES.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH A, VACUUM TESTING-AFTER THE FIRST SENTENCE, THE FOLLOWING ADDITION APPLIES:

THE VACUUM TEST MUST BE PERFORMED PRIOR TO BACKFILLING AROUND THE MANHOLE UNLESS THE CONTRACTOR PROVIDES DOCUMENTATION FROM THE PRECAST MANHOLE MANUFACTURER STATING THAT THE MANHOLE MAY BE VACUUM TESTED AFTER BACKFILLING HAS TAKEN PLACE. THE CONTRACTOR MUST SUBMIT THIS DOCUMENTATION PRIOR TO BACKFILLING AROUND THE MANHOLE.

SECTION B, PIPE FIELD TESTS, PARAGRAPH 4, MANHOLE TESTING, SUBPARAGRAPH B, EXFILTRATION TESTING-DELETE THE SECOND SENTENCE, CONCERNING LEAKAGE LIMITS, AND THE FOLLOWING ADDITION APPLIES:

FOR EXFILTRATION TESTING, THE ALLOWABLE LEAKAGE LIMIT IS 100 GALLONS/INCH OF PIPE DIAMETER/MILE OF LINE/DAY WHEN THE AVERAGE HEAD ON THE TEST SECTION IS THREE (3) FEET OR LESS.

SEWER CONTRUCTION AT ONE PERCENT (1%) OR LESS
FOR SEWER PIPE (STORM, SANITARY AND COMBINED) WITH A DESIGN GRADE LESS THAN ONE PERCENT (1%), VERIFICATION OF THE PIPE GRADE WILL BE REQUIRED FOR EACH INSTALLED REACH OF SEWER, PRIOR TO ANY SURFACE RESTORATION OR INSTALLATION OF AND SURFACE IMPROVEMENTS. THE CONTRACTOR'S FIELD SUPERVISOR WILL BE REQUIRED TO PROVIDE DAILY DOCUMENTATION VERIFYING THAT THE AS-BUILT PIPE GRADE MEETS THE DESIGN GRADE THROUGH THE SUBMITTAL OF SIGNED CUT SHEETS TO THE DISTRICT INSPECTOR UPON REQUEST.

THE CONTRACTOR WILL BE REQUIRED TO REMOVE AND REPLACE ANY SEWER REACH HAVING AN AS-BUILT GRADE WHICH IS FLATTER THAN THE DESIGN BY MORE THAN 0.1%. SEWERS WITH GRADES GREATER THAN THE DESIGN GRADE MAY BE LEFT IN PLACE, PROVIDED NO OTHER SEWER GRADE IS REDUCED BY THIS VARIANCE IN THE AS-BUILT GRADE.

MSD ALSO RESERVES THE RIGHT TO REQUIRE THE CONTRACTOR TO REMOVE AND REPLACE ANY SEWER (AT ANY TIME PRIOR TO CONSTRUCTION APPROVAL) FOR WHICH THE AS-BUILT GRADE DOES NOT COMPLY WITH THE GRADE TOLERANCE STATED IN THE ABOVE PARAGRAPHS.

FIELD SURVEYED VERIFICATION MUST BE MADE UNDER THE DIRECTION OF THE LICENSED LAND SURVEYOR OR REGISTERED ENGINEER. THE SEWER CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST ASSOCIATED WITH THE FIELD VERIFICATION OF THE SEWER GRADE, OR REMOVAL AND REPLACEMENT OF THE SEWER PIPE OR ASSOCIATED APPURTENANCES.

PREPARED BY:

PREMIER CIVIL ENGINEERING

308 TCW COURT
LAKE SAINT LOUIS, MO 63367
PHONE: (314) 925-7444
FAX: (314) 925-7457

STATE OF MISSOURI
STEVE MARION
NUMBER PE2006020114
PROFESSIONAL ENGINEER

STEVE MARION, P.E.
ENGINEER

DATE: 09/18/2015
PCE PROJECT NUMBER: 143901
SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

"Little MO" says
CALL BEFORE YOU DIG!
1-800-DIG-RITE

NOTE
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

ELECTRONIC DRAWING NOTE:
ELECTRONIC MEDIA OR DIGITAL DRAWINGS ARE INSTRUMENT OF PROFESSIONAL SERVICES. OWNERSHIP OF SUCH WILL BE RETAINED BY THE CIVIL ENGINEER AND MAY NOT BE RELEASED TO CONTRACTORS. CONTRACTORS ARE ADVISED TO CREATE BIDS BASED ON THE USE OF PAPER COPIES OF THE PLANS.

REVISIONS:

NO.	DESCRIPTION:	INITIALS:	DATE:

\\vault-pcivsa\RCIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\G-2 CIVIL SPECIFICATIONS.dwg 9/21/2015 11:55 AM

GENERAL NOTES

A. Design data provided in electronic format is for information purposes only and should be used at your own risk, and is provided without representations and warranties. Any conflict between the information reflected on the latest revision of the sealed plan sheets and that provided via electronic format shall be resolved in favor of the sealed plan sheets.
B. Utilities: There may be additional existing utilities not shown on these plans. Existing utilities are shown in an approximate manner only and the Engineer assumes no responsibility for locations shown. Field verify the location of all existing utilities within the limits of construction. Notify the Owner and Engineer if discrepancies are found that will affect the construction project. Protect all existing utilities.
C. Temporary Provisions: Sequence the work and provide temporary measures as needed to maintain access to the site through all entrances at all times during construction. Temporary provisions may include, but are not limited to: barricades, flashing lights, flagman, temporary pavement, and directional signage.
D. Equipment Storage: Do not park equipment or store materials in state, county, or city right-of-way.
E. Notify the Engineer in writing of any discrepancies between the existing conditions in the field and the survey shown on the plans before proceeding with any new construction.
F. Obtain all required construction related permits, including demolition permit, before starting work. Retain copies of all permits at the project site at all times.
G. Approval of these plans does not constitute approval of any land disturbing activities within wetland areas. Contact the appropriate regulatory agency for approval of any wetland area disturbance.
H. Signs (location, number, and size) are not approved under the general development permit. A separate permit is required for onsite signage.
I. No certificate of occupancy will be issued until all site improvements have been completed on the site.
J. Comply with all applicable state, federal, and local building and utility installation codes. All materials and construction methods shall be in accordance with these plans and specifications unless Department of Transportation Standards or local municipal standards are more stringent.
K. Do not deviate from these plans and specifications without prior written approval from the Engineer of record.
L. Work within D.O.T. right-of-way:
   1. All pavement markings within D.O.T. right-of-way shall be thermoplastic and in accordance with D.O.T. specifications.
   2. Re-establish all right-of-way area, which is damaged or disturbed, to original condition or better.
   3. All work in D.O.T. right-of-way shall comply with D.O.T. specifications.
M. Arrange high intensity lighting to conceal the source of light from public view and prevent interference with traffic.
N. Ensure correct horizontal and vertical alignment of all ties between proposed and existing pavements, curb and gutter, sidewalks, walls, and utilities before beginning work. Notify Engineer if discrepancies exist.

TRAFFIC CONTROL

A. If Drawings do not indicate site specific traffic control measures, Contractor shall be responsible for providing a temporary traffic control plan in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.
B. All temporary traffic control signage and markings shall be installed prior to construction and maintained during construction in accordance with the MUTCD, latest edition.
C. Contact property owners to be affected by construction and coordinate temporary driveway closures and sequencing. Maintain access for all property owners during construction.
D. Control dust as necessary to prevent interference with traffic.
E. Inspect traffic control devices on a daily basis to ensure placement of barricades and function of lights is maintained throughout construction.
F. Coordinate all lane closures with the local jurisdiction having authority.

STRUCTURE & SITE DEMOLITION

A. Verify that utilities have been disconnected and capped before starting demolition operations.
B. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
C. Environmental & Geotechnical: Review all project environmental and geotechnical reports and become familiar with all issues before demolition.
D. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
   1. Arrange to shut off indicated utilities with utility companies.
   2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
E. Do not commence demolition operations until temporary erosion and sediment control and plant-protection measures are in place.
F. Obtain the Demolition Permit from the local authority prior to starting demolition activities.
G. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings. Promptly repair any facilities damaged by construction operations to owner's satisfaction at no additional cost to the owner.
H. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
I. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.
J. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.
K. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction
L. Do not burn demolished materials unless special written permission is obtained from Owner and Engineer.
M. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

SITE CLEARING

1.1 PROJECT CONDITIONS
   A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
   B. Environmental & Geotechnical: Review all project environmental and geotechnical reports and become familiar with all issues before site clearing.
   C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
   D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
1.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL
   A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control drawings and requirements of authorities having jurisdiction.
   B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
   C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
   D. Remove erosion and sedimentation controls when site is stabilized and restore and stabilize areas disturbed during removal.
1.3 TREE AND PLANT PROTECTION
   Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Engineer.
1.4 EXISTING UTILITIES
   A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place. Arrange with utility companies to shut off indicated utilities.
   B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
      1. Notify utility owner not less than two days in advance of proposed utility interruptions.
      2. Do not proceed with utility interruptions without utility owner's written permission.
   C. Pothole existing water lines, underground electrical lines, gas lines, underground telephone lines, fiber optic, and any other existing utility lines within the project limits during site clearing and demolition activities. Survey the existing utility elevations and provide the surveyed field locations and depths to the Engineer for review. These existing utilities may require relocation.
1.5 CLEARING AND GRUBBING
   Remove obstructions, concrete, asphalt, trees, shrubs, and other vegetation to permit installation of new construction.
   1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
   2. Grind down stumps and remove roots, obstructions, and debris to a depth of 12 inches below exposed subgrade.
   3. Use only hand methods for grubbing within protection zones.
   4. The subgrade to remain shall be compacted to 95% Standard Proctor maximum dry density following clearing and grubbing activities.
1.6 TOPSOIL STRIPPING
   A. Remove sod and grass before stripping topsoil.
   B. Strip topsoil in a manner to prevent intermingling with underlying subsoil or other waste materials.
   C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.
   D. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.

SITE WATER DISTRIBUTION

(City of Wildwood Specifications and the Environmental Protection Agency Supercede this section)

1.1 GENERAL
   A. Regulatory Requirements:
      1. Comply with requirements of utility company supplying water. Include tapping of water mains and backflow prevention.
      2. Comply with standards of authorities having jurisdiction for potable-water-service piping, including materials, installation, testing, and disinfection.
   B. Piping materials shall bear label, stamp, or other markings of specified testing agency.
   C. Interruption of Existing Water-Distribution Service: Notify Owner at least 2 days prior to interruption of existing water services.
   D. Coordinate with utility company for required inspections and for connection of water main and services before starting construction.
1.2 COPPER TUBE AND FITTINGS
   A. Soft Copper Tube: ASTM B 88, Type K , water tube, annealed temper.
      Copper, Pressure-Seal Fittings:
      1. NPS 2 and Smaller: Wrought-copper fitting with EPDM O-ring seal in each end.
      2. NPS 2-1/2 to NPS 4 : Bronze fitting with stainless-steel grip ring and EPDM O-ring seal in each end.
   B. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end. Furnish Class 300 flanges if required to match piping.
   C. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body with ball-and-socket, metal-to-metal seating surfaces, and solder-joint or threaded ends.
1.3 DUCTILE-IRON PIPE AND FITTINGS
   A. Mechanical-Joint, Ductile-Iron Pipe: AWWA C151, with mechanical-joint bell and plain spigot end unless grooved or flanged ends are indicated.
      1. Mechanical-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
      2. Glands, Gaskets, and Bolts: AWWA C111, ductile- or gray-iron glands, rubber gaskets, and steel bolts.
   B. Push-on-Joint, Ductile-Iron Pipe: AWWA C151, with push-on-joint bell and plain spigot end unless grooved or flanged ends are indicated.
   C. Flanges: ASME 16.1, Class 125, cast iron.
1.4 PVC PIPE AND FITTINGS
   A. PVC, Schedule 40 Pipe: ASTM D 1785. PVC, Schedule 40 Socket Fittings: ASTM D 2466.
   B. PVC, AWWA Pipe: AWWA C900, Class 200, with bell end with gasket, and with spigot end.
   C. Mechanical-Joint, Ductile-Iron Fittings: AWWA C110, ductile- or gray-iron standard pattern or AWWA C153, ductile-iron compact pattern.
1.5 GATE VALVES
   AWWA, Cast-Iron Gate Valves: Nonrising-Stem, Resilient-Seated Gate Valves: Gray- or ductile-iron body and bonnet; with bronze or gray- or ductile-iron gate, resilient seats, bronze stem, and stem nut.
      1) Standard: AWWA C509.
      2) Minimum Pressure Rating: 200 psig .
      3) End Connections: Mechanical joint.
      4) Interior Coating: Complying with AWWA C550.
1.6 GATE VALVE ACCESSORIES AND SPECIALTIES
   A. Tapping-Sleeve Assemblies: Sleeve and valve compatible with drilling machine.
      1) Standard: MSS SP-60.
      2) Tapping Sleeve: Cast- or ductile-iron or stainless-steel, two-piece bolted sleeve with flanged outlet for new branch connection. Include sleeve matching size and type of pipe material being tapped and with recessed flange for branch valve.
      3) Valve: AWWA, cast-iron, nonrising-stem, resilient-seated gate valve with one raised face flange mating tapping-sleeve flange.
   B. Valve Boxes: Comply with AWWA M44 for cast-iron valve boxes. Include top section, adjustable extension of length required for depth of burial of valve, plug with lettering "WATER," and bottom section with base that fits over valve and with a barrel approximately 5 inches in diameter.
1.7 BACKFLOW PREVENTERS
   Double-Check, Detector-Assembly Backflow Preventers:
   1. Standards: ASSE 1048 and UL listed or FMG approved.
   2. Operation: Continuous-pressure applications.
   3. Pressure Loss: 5 psig maximum, through middle 1/3 of flow range.
   4. Body: Cast iron with interior lining complying with AWWA C550 or that is FDA approved.
   5. End Connections: Flanged.
   6. Configuration: Designed for horizontal, straight through flow.
1.8 WATER METER BOXES
   Description: Cast-iron body and cover for disc-type water meter, with lettering "WATER METER" in cover; and with slotted, open-bottom base section of length to fit over service piping.
1.9 CONCRETE VAULTS
   Description: Precast, reinforced-concrete vault, designed for A-16 load designation according to ASTM C 857 and made according to ASTM C 858.
   1. Ladder: ASTM A 36/A 36M, steel or polyethylene-encased steel steps.
   2. Manhole: ASTM A 48/A 48M Class No. 35A minimum tensile strength, gray-iron traffic frame and cover.
      a. Dimension: 24-inch minimum diameter, unless otherwise indicated.
   3. Drain: ASME A112.6.3, cast-iron floor drain with outlet of size indicated. Include body anchor flange, light-duty cast-iron grate, bottom outlet, and integral or field-installed bronze ball or clapper-type backwater valve.
1.10 FIRE HYDRANTS
   Dry-Barrel Fire Hydrants: Freestanding, with one NPS 4-1/2 and two NPS 2-1/2 outlets, 5-1/4-inch main valve, drain valve, and NPS 6 mechanical-joint inlet. Include interior coating according to AWWA C550. Hydrant shall have cast-iron body, compression-type valve opening against pressure and closing with pressure.
   1. Standard: AWWA C502.
   2. Pressure Rating: 250 psig .
1.11 FIRE DEPARTMENT CONNECTIONS
   Fire Department Connections: Freestanding, with cast-bronze body, thread inlets according to NFPA 1963 and matching local fire department hose threads, and threaded bottom outlet. Include lugged caps, gaskets, and chains; lugged swivel connection and drop clapper for each hose-connection inlet; 18-inch- high brass sleeve; and round escutcheon plate.
1.12 VALVE APPLICATIONS
   Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
   1. Underground Valves, NPS 3 and Larger: AWWA, cast-iron, nonrising-stem, resilient-seated gate valves with valve box.
   2. Use the following for valves in vaults and aboveground:
      a. Gate Valves, NPS 2 and Smaller: Bronze, nonrising stem.
      b. Gate Valves, NPS 3 and Larger: AWWA, cast iron, OS&Y rising stem, resilient seated.
      c. Check Valves: AWWA C508, swing type.
1.13 FIELD QUALITY CONTROL
   A. Piping Tests: Conduct piping tests before joints are covered and after concrete thrust blocks have hardened sufficiently. Fill pipeline 24 hours before testing and apply test pressure to stabilize system. Use only potable water.
   B. Hydrostatic Tests: Test at not less than one-and-one-half times working pressure for two hours. Increase pressure in 50-psig increments and inspect each joint between increments. Hold at test pressure for 1 hour; decrease to 0 psig . Slowly increase again to test pressure and hold for 1 more hour. Maximum allowable leakage is 2 quarts per hour per 100 joints. Remake leaking joints with new materials and repeat test until leakage is within allowed limits.
   C. Disinfection: Clean and disinfect potable water mains as directed by the local authority, or, if method is not prescribed by the local authority, use procedure described in AWWA C651.
   D. Prepare reports of testing activities and submit to the Engineer for approval.
1.14 IDENTIFICATION
   Install continuous underground detectable warning tape during backfilling of trench for underground water-distribution piping. Locate below finished grade, directly over piping.

SITE SANITARY SEWERS

(City of Wildwood and Metropolitan St. Louis Sewer District Details and Specifications supercede this section)

1.1 PROJECT CONDITIONS
   A. Interruption of Existing Sanitary Sewerage Service: Coordinate as required with the local sanitary sewer authority before starting construction.
   B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning sanitary sewer installation operations. Field verify all existing utilities shown on the Drawings by pot-holing the lines. Survey existing utilities and provide horizontal and vertical location information to the Engineer to determine of any utilities will conflict with the proposed design.
1.2 DUCTILE-IRON, GRAVITY SEWER PIPE AND FITTINGS
   A. Pipe: ASTM A 746, for push-on joints.
   B. Compact Fittings: AWWA C153, ductile iron, for push-on joints.
   C. Gaskets: AWWA C111, rubber.
1.3 PVC PIPE AND FITTINGS
   PVC Gravity Sewer Piping: ASTM F 679, T-1 wall thickness, PVC gravity sewer pipe with bell-and-spigot ends and with integral ASTM F 477, elastomeric seals for gasketed joints.
1.4 CLEANOUTS
   A. Cast-Iron Cleanouts:
      1. Description: ASME A112.36.2M, round, gray-iron housing with clamping device and round, secured, scoriated, gray-iron cover. Include gray-iron ferrule with inside calk or spigot connection and countersunk, tapered-thread, brass closure plug.
      2. Top-Loading Classification: Traffic rated, Heavy Duty, in all paved areas and areas subject to vehicular traffic.
      3. Sewer Pipe Fitting and Riser to Cleanout: ASTM A 74, Service class, cast-iron soil pipe and fittings.
   B. PVC Cleanouts: PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser to cleanout of same material as sewer piping. Use in Light Duty applications where there is pedestrian traffic only or in landscaped areas.
1.5 MANHOLES
   A. Standard Precast Concrete Manholes:
      1. Description: ASTM C 478 , precast, reinforced concrete, of depth indicated, with provision for sealant joints.
      2. Diameter: 48 inches minimum unless otherwise indicated.
      3. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent flotation.
      4. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section; with separate base slab or base section with integral floor.
      5. Riser Sections: 4-inch minimum thickness, of length to provide depth indicated.
      6. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated; with top of cone of size that matches grade rings.
      7. Joint Sealant: ASTM C 990 , bitumen or butyl rubber.
      8. Resilient Pipe Connectors: ASTM C 923 , cast or fitted into manhole walls, for each pipe connection.
      9. Steps: Individual FRP steps or FRP ladder; wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of manhole to finished grade is less than 48 inches.
      10. Adjusting Rings: Interlocking HDPE rings, with level or sloped edge in thickness and diameter matching manhole frame and cover, and with height as required to adjust manhole frame and cover to indicated elevation and slope. Include sealant recommended by ring manufacturer.
      11. Grade Rings: Reinforced-concrete rings, 6- to 9-inch total thickness, with diameter matching manhole frame and cover, and with height as required to adjust manhole frame and cover to indicated elevation and slope.
   B. Manhole Frames and Covers:
      1. Description: Ferrous; 24-inch ID by 7- to 9-inch riser, with 4-inch-minimum-width flange and 26-inch- diameter cover. Include indented top design with lettering cast into cover, using wording equivalent to "SANITARY SEWER."
      2. Material: ASTM A 536, Grade 60-40-18 ductile iron unless otherwise indicated.
1.6 IDENTIFICATION
   Arrange for installation of green warning tapes directly over piping and at outside edges of underground manholes.
   1. Use warning tape or detectable warning tape over ferrous piping.
   2. Use detectable warning tape over nonferrous piping and over edges of underground manholes.
1.7 FIELD QUALITY CONTROL
   A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
      1. Defects requiring correction include the following:
         a. Alignment: Less than full diameter of inside of pipe is visible between structures.
         b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
         c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
         d. Infiltration: Water leakage into piping.
         e. Exfiltration: Water leakage from or around piping.
      2. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
      3. Reinspect and repeat procedure until results are satisfactory.
   B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
      1. Do not enclose, cover, or put into service before inspection and approval.
      2. Test completed piping systems according to requirements of authorities having jurisdiction.
      3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours advance notice.
      4. Submit a separate report for each test to the Engineer for approval.
      5. Air Tests: Test sanitary sewerage according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
         a. Test plastic gravity sewer piping according to ASTM F 1417.
      6. Manholes: Perform hydraulic test according to ASTM C 969 .
   C. Leaks and loss in test pressure constitute defects that must be repaired.
   D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

SITE STORM UTILITY DRAINAGE PIPING

(City of Wildwood and Metropolitan St. Louis Sewer District Details and Specifications supercede this section)

1.1 PIPE AND FITTINGS- GENERAL
   1. All stormwater pipe, inlets, headwalls, and related appurtenances shall meet local D.O.T. standards.
   2. All stormwater pipe shall be installed in accordance with pipe manufacturers instructions.
1.2 STEEL PIPE AND FITTINGS
   Corrugated-Steel Pipe and Fittings: ASTM A 760/A 760M, Type I with fittings of similar form and construction as pipe.
   1. Standard-Joint Bands: Corrugated steel.
   2. Coating: Aluminum or Bituminous
1.3 PE PIPE AND FITTINGS
   1. Corrugated PE Drainage Pipe and Fittings NPS 3 to NPS 10 : AASHTO M 252M; NPS 12 to NPS 48 : AASHTO M 294M Type S, with smooth waterway for coupling joints.
   2. Silttight Couplings: PE sleeve with ASTM D 1056, Type 2, Class A, Grade 2 gasket material that mates with tube and fittings.
1.4 PVC CORRUGATED PIPE AND FITTINGS
   Corrugated PVC Drainage Pipe and Fittings NPS 4 to NPS 36: Smooth interior, ASTM F949, 46 PSI stiffness when tested in accordance with ASTM D2412. PVC compound having a minimum cell classification of 12454 as defined in ASTM D1784. Fittings: Smooth interior, ASTM F949, Section 5.2.3 or F794, Section 7.2.4. Joints shall be made with integrally-formed bell and spigot gasketed connections. Manufacturer shall provide documentation showing no leakage when gasketed pipe joints are tested in accordance with ASTM D3212. Elastomeric seals (gaskets) shall meet ASTM F477.
1.5 CONCRETE PIPE AND FITTINGS
   1. Reinforced-Concrete Sewer Pipe and Fittings: ASTM C 76 . Bell-and-spigot or tongue-and-groove ends and gasketed joints with ASTM C 443 , rubber gaskets or sealant joints with ASTM C 990 , bitumen or butyl-rubber sealant. Class III, Wall B.
   2. Cast-Iron Area Drains: ASME A112.6.3 gray-iron round body with anchor flange and round grate. Include bottom outlet with inside calk or spigot connection, of sizes indicated.
1.6 MANHOLES
   A. Standard Precast Concrete Manholes:
      1. Description: ASTM C 478 , precast, reinforced concrete, of depth indicated, with provision for sealant joints.
      2. Diameter: 48 inches minimum unless otherwise indicated.
      3. Ballast: Increase thickness of precast concrete sections or add concrete to base section as required to prevent flotation.
      4. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and separate base slab or base section with integral floor.
      5. Riser Sections: 4-inch minimum thickness, of length to provide depth indicated.
      6. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated, and top of cone of size that matches grade rings.
      7. Joint Sealant: ASTM C 990 , bitumen or butyl rubber.
      8. Steps: Individual FRP steps or FRP ladder, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of manhole to finished grade is less than 48 inches.
   B. Manhole Frames and Covers:
      1. Description: Ferrous; 24-inch ID by 7- to 9-inch riser with 4-inch-minimum width flange and 26-inch- diameter cover. Include indented top design with lettering cast into cover, using wording equivalent to "STORM SEWER."
      2. Material: ASTM A 536, Grade 60-40-18 ductile iron unless otherwise indicated.
1.7 INLET & JUNCTION BOXES
   Standard Precast Concrete:
      1. Description: ASTM C 478 , precast, reinforced concrete, of depth indicated, with provision for sealant joints.
      2. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and separate base slab or base section with integral floor.
      3. Riser Sections: 4-inch minimum thickness, 48-inch diameter, and lengths to provide depth indicated.
      4. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
      5. Joint Sealant: ASTM C 990 , bitumen or butyl rubber.
      6. Steps: Individual FRP steps or FRP ladder, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of catch basin to finished grade is less than 48 inches.
      7. Pipe Connectors: ASTM C 923 , resilient, of size required, for each pipe connecting to base section.
1.8 STORMWATER DETENTION STRUCTURES
   A. Cast-in-Place Concrete, Stormwater Detention Structures: Constructed of reinforced-concrete bottom, walls, and top; designed according to ASTM C 890 for A-16 (AASHTO HS20-44), heavy-traffic, structural loading; of depth, shape, dimensions, and appurtenances indicated.
      1. Ballast: Increase thickness of concrete as required to prevent flotation.
      2. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch total thickness, that match 24-inch- diameter frame and cover.
      3. Steps: Individual FRP steps or FRP ladder, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of structure to finished grade is less than 48 inches.
      4. Form and cast wiers and pipe openings as indicated on Drawings.
   B. Manhole Frames and Covers: ASTM A 536, Grade 60-40-18, ductile-iron castings designed for heavy-duty service.
1.9 PIPE OUTLETS
   A. Pre-Cast Head Walls: Pre-Cast reinforced concrete, with apron and tapered sides.
   B. Slope Paved Head Walls: Cast-in-place reinforced concrete as shown on Drawings.
   C. Riprap Basins: Broken, irregularly sized and shaped, graded stone according to NSSGA's "Quarried Stone for Erosion and Sediment Control." Minimum stone size and dimensions as shown on Drawings.
1.10 PIPING INSTALLATION
   A. Install locator wire or tape 6-inches above all non-metallic piping.
   B. Install bedding and backfill in accordance with pipe manufacturers instructions.
   C. Begin installation at downstream piping connection to outfall point.
   D. Construct all headwalls flush with existing and proposed embankment slopes.
1.11 CLEANING
   A. Clean interior of piping of dirt and superfluous materials. Flush with potable water.
   B. Clean accumulated sediment from stormwater pipes, conveyance channels, and pond once site is stabilized with vegetation.

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

CVS pharmacy®
NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU
STORE NUMBER: 10760
MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI
PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE
CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:
NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:
PREMIER CIVIL ENGINEERING
Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:
T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for any other engineering plans involved in this project and specifications bearing this date unless reauthenticated.
STATE OF MISSOURI STEVE MARION NUMBER PE2006007195 PROFESSIONAL ENGINEER
STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE: CIVIL SPECIFICATIONS
SHEET NUMBER: G-2
COMMENTS: NOT RELEASED FOR CONSTRUCTION

\\Vault-pc\vaultc\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\G-2 CIVIL SPECIFICATIONS.dwg

EARTH MOVING

(City of Wildwood Details and Specifications supercede this section)

1.1 PROJECT CONDITIONS
- A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.
- B. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, are in place.
- C. Do not commence earth moving operations until plant-protection measures are in place.
- D. Do not commence earth moving operations without reviewing and making provisions for all Geotechnical recommendations made in the project Geotechnical Report. Comply with recommendations in the geotechnical report regarding general site preparation, building pad preparation, pavement sections, fill, and excavation.
- E. Retain a copy of the project Geotechnical Report at the work site at all times. Any discrepancies between these specifications and the project Geotechnical Report shall be resolved in favor of the project Geotechnical Report.
- F. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- G. Protect and maintain erosion and sedimentation controls during earth moving operations.

1.2 DEWATERING
- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
- C. Design and provide dewatering system using accepted and professional methods consistent with current industry practice. Provide dewatering system of sufficient size and capacity to control groundwater in a manner that preserves strength of foundation soils, does not cause instability or raveling of excavation slopes, and does not result in damage to existing structures. Lower water level in advance of excavation by utilizing wells, wellpoints, or similar positive control methods. Maintain the groundwater level to a minimum of two (2) feet below excavations. Provide piezometers as directed by the engineer to document that the groundwater level is being maintained.
- D. By acceptable means, contractor shall control all water regardless of source and is responsible for proper disposal of the water. No additional payment will be made for any supplemental measures to control seepage, groundwater, or artesian head.
- E. Open pumping with sumps and ditches shall be allowed, provided it does not result in boils, loss of fines, softening of the ground, or instability of slopes. Sumps shall be located outside of load bearing areas so the bearing surfaces will not be disturbed. Water containing silt in suspension shall not be pumped into sewer lines or adjacent water bodies. During normal pumping and upon development of well(s), levels of fine sand or silt in the discharge of water shall not exceed five (5) ppm.
- F. Continuously maintain excavations in a dry condition with positive dewatering methods during preparation of subgrade, installation of pipe, and construction of structures until the critical period of construction and/or backfill is completed to prevent damage of subgrade support, piping, structure, side slopes, or adjacent facilities for flotation or other hydrostatic pressure imbalance.
- G. When construction is complete, properly remove all dewatering equipment from the site, including wells and related temporary electrical service.

1.3 SUBGRADE
- A. Notify Project Geotechnical Engineer when excavations have reached required subgrade.
- B. If Project Geotechnical Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Project Geotechnical Engineer, and replace with compacted backfill or fill as directed.
- D. In heavy duty pavement areas, the gravel aggregate base shall be extended under the curb and gutter section to provide additional stability for truck travel.

1.4 UTILITY TRENCH BEDDING AND BACKFILL
- A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Use Class B bedding under all PVC piping.
- C. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit.
- D. Backfill all utilities under roadways and traffic areas with crushed stone.

1.5 COMPACTION OF SOIL BACKFILLS AND FILLS
- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure. Compact soil materials as indicated on drawings or as indicated in the project Geotechnical Report.
- C. Provide construction phase monitoring and testing as recommended in the project Geotechnical Report. Provide test reports to the Engineer for review and approval.

1.6 GRADING
- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
  1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Landscape Islands: Fill all curbed islands to top of curb with topsoil and apply seed and mulch unless drawings indicate otherwise.
- C. Slopes: Do not create cut or fill slopes steeper than 2h:1v without obtaining special written permission from the Engineer of Record and project Geotechnical Engineer.

1.7 PROTECTION
Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris. See erosion and sediment control plan and notes for further information.

ASPHALT PAVING

1.1 FIELD CONDITIONS
Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
1. Prime Coat: Minimum surface temperature of 60 deg F .
2. Tack Coat: Minimum surface temperature of 60 deg F .
3. Slurry Coat: Comply with weather limitations in ASTM D 3910.
4. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

1.2 ASPHALT MATERIALS
- A. Refer to Project Geotechnical Report and project drawings for required asphalt material design.
- B. Aggregates shall meet the requirements of the local Department of Transportation.
- C. Reclaimed Asphalt Pavement (RAP) shall not be used in the mix design.

1.3 PATCHING
- A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.
- B. Tack Coat: Before placing patch material, apply tack coat uniformly to vertical asphalt surfaces abutting the patch. Apply at a rate of 0.05 to 0.15 gal./sq. yd. .
  1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- C. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

1.4 SURFACE PREPARATION
- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving. Sawcut existing pavement to be joined to provide vertical faces between new and existing surfaces.
- B. Emulsified Asphalt Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.10 to 0.30 gal./sq. yd. per inch depth . Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
  1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
  2. Protect primed substrate from damage until ready to receive paving.
- C. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.02 to 0.08 gal./sq. yd. .
  1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

1.5 PLACING HOT-MIX ASPHALT
- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
  1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
  2. Place hot-mix asphalt surface course in single lift.
  3. Spread mix at a minimum temperature of 250 deg F .
  4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
  5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1.6 JOINTS
- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
- B. Construct smooth transitions between new and existing paving sections.

1.7 COMPACTION
- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers. Complete compaction before mix temperature cools to 185 deg F.
  1. Initial Lift: Average of 92% of maximum theoretical density.
  2. Top Surface Lift: Average of 93% of maximum theoretical density.
  3. Tolerance: +2.0%, -1.0% of any individual test.
- B. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- C. Erect barricades to protect paving from traffic for at least 24 hours after placement for the binder course, and at least 72 hours after placement for the final wearing surface.
- D. If the ambient air temperature is in excess of 90 degrees Fahrenheit during the 72 hour protection period, the pavement surface shall be flooded with water to rapidly cool the pavement at least once per day.

1.8 FIELD QUALITY CONTROL
- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Conduct tests and reports specified in the project geotechnical report.
- C. Testing agency must inspect and approve the subgrade, each fill layer, and the subbase and base course.
- D. Promptly send test reports to the Engineer for review and approval.
- E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

CONCRETE PAVING

1.1 PROJECT CONDITIONS
Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

1.2 STEEL REINFORCEMENT
- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, fabricated from as-drawn steel wire into flat sheets.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 ; deformed.
- C. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.
- D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

1.3 CONCRETE MATERIALS
- A. Cementitious Material: Use cementitious materials, of same type, brand, and source throughout Project.
- B. Normal-Weight Aggregates: ASTM C 33,, uniformly graded. Provide aggregates from a single source.
  1. Maximum Coarse-Aggregate Size: 1 inch nominal.
  2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

1.4 RELATED MATERIALS
Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.

1.5 WHEEL STOPS
Wheel Stops: Innoplast precast, 6' solid yellow plastic parking block. Install per manufacturers specifications.

1.6 SIDEWALKS
Sidewalks: Slope sidewalks away from building with a 2% cross-slope unless Drawings indicate otherwise.

1.7 PREPARATION
Remove loose material from compacted subbase surface immediately before placing concrete.

1.8 STEEL REINFORCEMENT
- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Zinc-Coated Reinforcement: Use galvanized-steel wire ties to fasten zinc-coated reinforcement. Repair cut and damaged zinc coatings with zinc repair material.

1.9 JOINTS
- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
  1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
  2. Ensure forms provide correct horizontal and vertical alignment between new and existing pavements, sidewalks, curb and gutter, etc.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
  1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
  2. Provide tie bars at sides of paving strips where indicated.
  3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
  4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
  1. Locate expansion joints at intervals of 30 feet unless otherwise indicated.
  2. Extend joint fillers full width and depth of joint.
  3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
  4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
  5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
  6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:
  1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate grooving-tool marks on concrete surfaces.
  2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
  3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

1.10 FIELD QUALITY CONTROL
- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Promptly send test reports to the Engineer for review and approval.
- C. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed by the General Contractor's testing agency according to the following requirements:
  1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
  5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
  6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- D. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi .
- E. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer.
- G. Concrete paving will be considered defective if it does not pass tests and inspections.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- I. Prepare test and inspection reports.

1.11 REPAIRS AND PROTECTION
- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Engineer.
- B. Drill test cores, where directed by Engineer, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

PAVEMENT MARKINGS

1.1 QUALITY ASSURANCE
Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of state DOT or local municipality for pavement-marking work.

1.2 FIELD CONDITIONS
Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for alkyd materials, 55 deg F for water-based materials, and not exceeding 95 deg F.

1.3 PAVEMENT-MARKING PAINT
- A. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248; colors complying with FS TT-P-1952. Color: As indicated.
- B. All pavement marking within D.O.T. right-of-way shall be thermoplastic and in accordance with D.O.T. specifications.

1.4 PAVEMENT MARKING
Apply temporary pavement marking before traffic is allowed on any newly paved area or as site conditions dictate. Allow final wearing surface to age for a minimum of 30 days before applying final permanent pavement marking.

1.5 PROTECTING AND CLEANING
- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

CHAIN LINK FENCES AND GATES

1.1 PROJECT CONDITIONS
Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.2 WARRANTY
Special Warranty: Manufacturer's standard form in which Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.

1.3 CHAIN-LINK FENCE FABRIC
General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:
1. Fabric Height: As indicated on Drawings.
2. Steel Wire Fabric: Wire with a diameter of 0.148 inch.
   - a. Mesh Size: 2 inches.
   - b. Polymer-Coated Fabric: ASTM F 668, over zinc-coated steel wire. Color: Black, complying with ASTM F 934.
3. Selvage: Twisted top and knuckled bottom.

1.4 FENCE FRAMING
Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 based on the following:
1. Fence Height: As indicated on Drawings.
2. Material
   - a. Line Post: 1.9 inches in diameter.
   - b. End, Corner and Pull Post: 2.375 inches.
3. Horizontal Framework Members: top rails complying with ASTM F 1043. Top Rail: 1.66 inches in diameter.
4. Brace Rails: Comply with ASTM F 1043.
5. Metallic Coating for Steel Framing: Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.

1.5 TENSION WIRE
Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire complying with ASTM A 817 and ASTM A 824, with the following metallic coating: Type II, zinc coated (galvanized) by hot-dip process, with the following minimum coating weight: Matching chain-link fabric coating weight.

1.6 SWING GATES
- A. General: Comply with ASTM F 900 for gate posts and single or double swing gate types.
  1. Gate Leaf Width: As indicated.
  2. Gate Fabric Height: As indicated.
- B. Pipe and Tubing:
  1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framing.
  2. Gate Posts: Round tubular steel.
  3. Gate Frames and Bracing: Round tubular steel.
- C. Frame Corner Construction: assembled with corner fittings.
- D. Hardware:
  1. Hinges: 360-degree inward and outward swing.
  2. Latches permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.

1.7 FITTINGS
- A. General: Comply with ASTM F 626.
- B. Post Caps: Provide for each post. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
  1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
  2. Rail Clamps: Line and corner boulevard clamps for connecting rails in the fence line-to-line posts.
- E. Tension and Brace Bands: Pressed steel.
- F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. Tie Wires, Clips, and Fasteners: According to ASTM F 626. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following: Hot-Dip Galvanized Steel: 0.148-inch- diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

1.8 GROUT AND ANCHORING CEMENT
- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer, for exterior applications.

1.9 ADJUSTING
Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

CVS pharmacy®
NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU
STORE NUMBER: 10760
MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI
PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE
CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:
NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:
PREMIER CIVIL ENGINEERING
Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

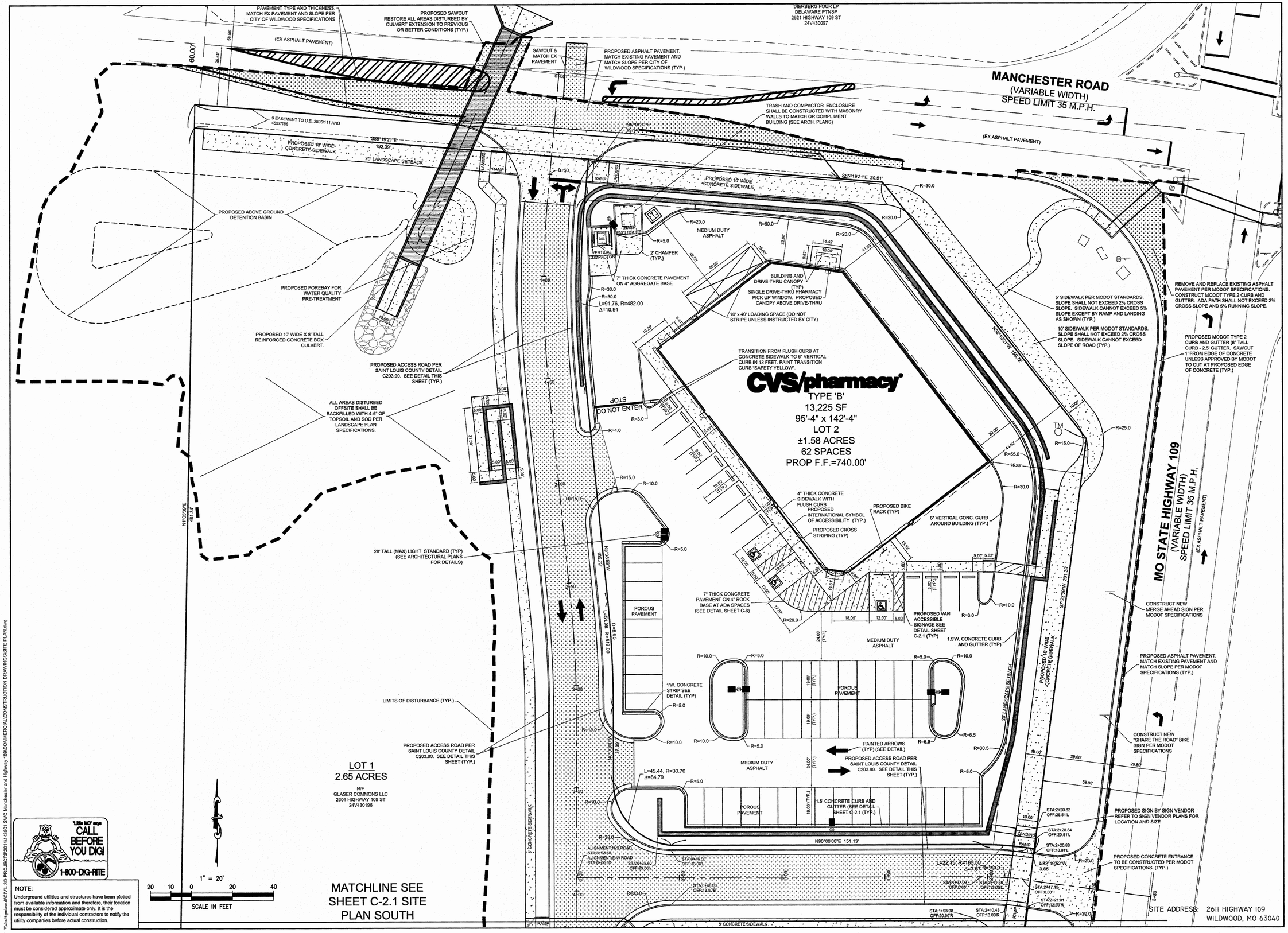
DEVELOPER:
T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excluded from this date unless reauthenticated.
STATE OF MISSOURI STEVE MARION NUMBER PE2006007195 PROFESSIONAL ENGINEER
STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE: CIVIL SPECIFICATIONS
SHEET NUMBER: G-3
COMMENTS: NOT RELEASED FOR CONSTRUCTION

\\Vault-pcvault\CIVIL 3D PROJECTS\2014\143901 SVC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\G-2 CIVIL SPECIFICATIONS.dwg



NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

\\Vault\pcivil\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\CONMERCIAL\CONSTRUCTION DRAWINGS\SITE PLAN.dwg

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically for any plans bearing this date unless resealed/authenticated.

STATE OF MISSOURI
STEVE MARION
NUMBER PE2006007195
PROFESSIONAL ENGINEER

STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

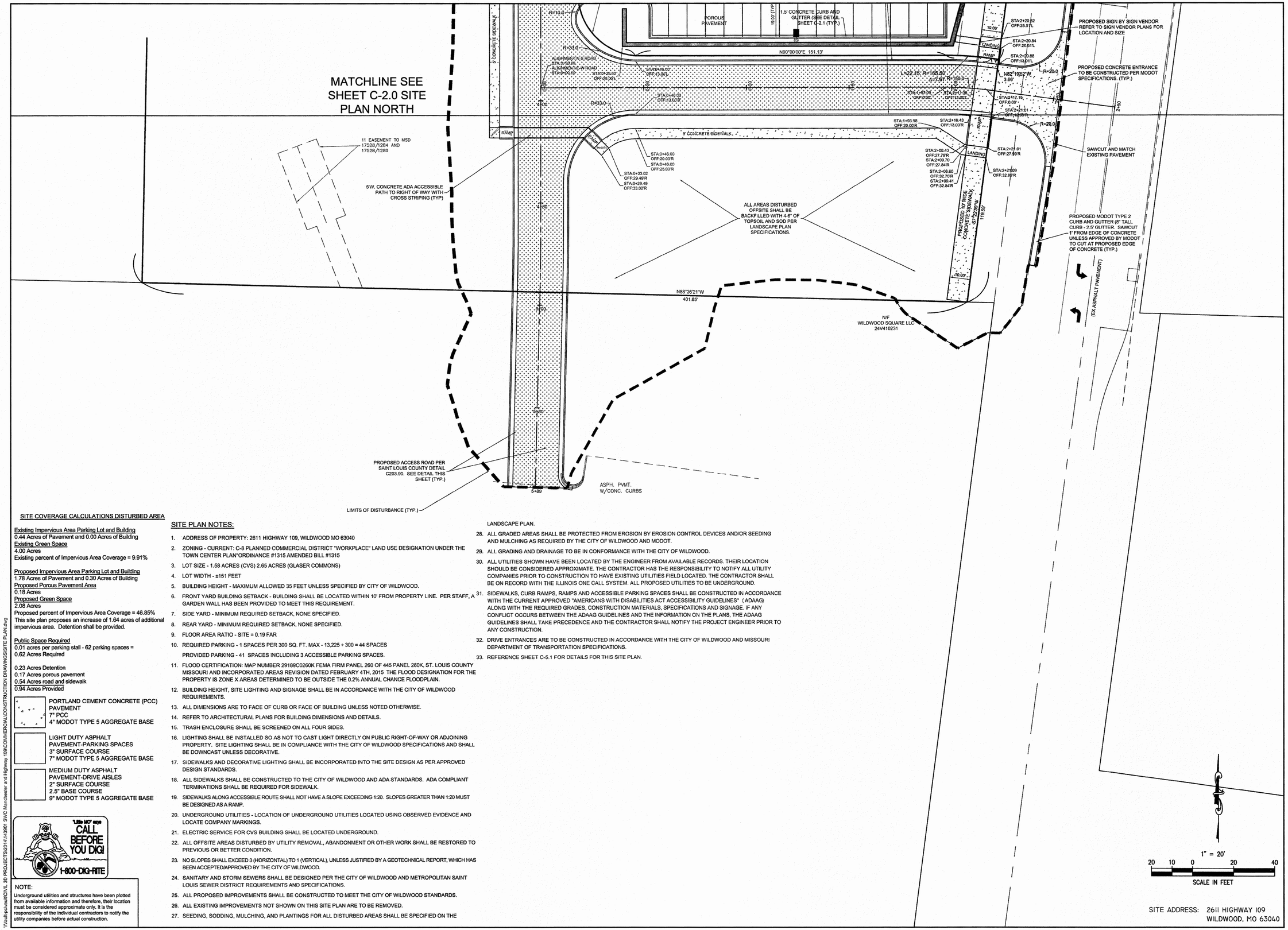
DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE:

SITE PLAN NORTH

SHEET NUMBER:

C-2

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



SITE COVERAGE CALCULATIONS DISTURBED AREA

Existing Impervious Area Parking Lot and Building
0.44 Acres of Pavement and 0.00 Acres of Building
Existing Green Space
4.00 Acres
Existing percent of Impervious Area Coverage = 9.91%

Proposed Impervious Area Parking Lot and Building
1.78 Acres of Pavement and 0.30 Acres of Building
Proposed Porous Pavement Area
0.18 Acres
Proposed Green Space
2.08 Acres
Proposed percent of Impervious Area Coverage = 46.85%
This site plan proposes an increase of 1.64 acres of additional impervious area. Detention shall be provided.

Public Space Required
0.01 acres per parking stall - 62 parking spaces =
0.62 Acres Required

0.23 Acres Detention
0.17 Acres porous pavement
0.54 Acres road and sidewalk
0.94 Acres Provided

PORTLAND CEMENT CONCRETE (PCC) PAVEMENT
7" PCC
4" MODOT TYPE 5 AGGREGATE BASE

LIGHT DUTY ASPHALT PAVEMENT-PARKING SPACES
3" SURFACE COURSE
7" MODOT TYPE 5 AGGREGATE BASE

MEDIUM DUTY ASPHALT PAVEMENT-DRIVE AISLES
2" SURFACE COURSE
2.5" BASE COURSE
9" MODOT TYPE 5 AGGREGATE BASE

"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

SITE PLAN NOTES:

1. ADDRESS OF PROPERTY: 2611 HIGHWAY 109, WILDWOOD MO 63040
2. ZONING - CURRENT: C-8 PLANNED COMMERCIAL DISTRICT "WORKPLACE" LAND USE DESIGNATION UNDER THE TOWN CENTER PLAN"ORDINANCE #1315 AMENDED BILL #1315
3. LOT SIZE - 1.58 ACRES (CVS) 2.65 ACRES (GLASER COMMONS)
4. LOT WIDTH - ±151 FEET
5. BUILDING HEIGHT - MAXIMUM ALLOWED 35 FEET UNLESS SPECIFIED BY CITY OF WILDWOOD.
6. FRONT YARD BUILDING SETBACK - BUILDING SHALL BE LOCATED WITHIN 10' FROM PROPERTY LINE. PER STAFF, A GARDEN WALL HAS BEEN PROVIDED TO MEET THIS REQUIREMENT.
7. SIDE YARD - MINIMUM REQUIRED SETBACK, NONE SPECIFIED.
8. REAR YARD - MINIMUM REQUIRED SETBACK, NONE SPECIFIED.
9. FLOOR AREA RATIO - SITE = 0.19 FAR
10. REQUIRED PARKING - 1 SPACES PER 300 SQ. FT. MAX - 13,225 ÷ 300 = 44 SPACES
    PROVIDED PARKING - 41 SPACES INCLUDING 3 ACCESSIBLE PARKING SPACES.
11. FLOOD CERTIFICATION: MAP NUMBER 29189C0260K FEMA FIRM PANEL 260 OF 445 PANEL 260K, ST. LOUIS COUNTY MISSOURI AND INCORPORATED AREAS REVISION DATED FEBRUARY 4TH, 2015 THE FLOOD DESIGNATION FOR THE PROPERTY IS ZONE X AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
12. BUILDING HEIGHT, SITE LIGHTING AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE CITY OF WILDWOOD REQUIREMENTS.
13. ALL DIMENSIONS ARE TO FACE OF CURB OR FACE OF BUILDING UNLESS NOTED OTHERWISE.
14. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND DETAILS.
15. TRASH ENCLOSURE SHALL BE SCREENED ON ALL FOUR SIDES.
16. LIGHTING SHALL BE INSTALLED SO AS NOT TO CAST LIGHT DIRECTLY ON PUBLIC RIGHT-OF-WAY OR ADJOINING PROPERTY. SITE LIGHTING SHALL BE IN COMPLIANCE WITH THE CITY OF WILDWOOD SPECIFICATIONS AND SHALL BE DOWNCAST UNLESS DECORATIVE.
17. SIDEWALKS AND DECORATIVE LIGHTING SHALL BE INCORPORATED INTO THE SITE DESIGN AS PER APPROVED DESIGN STANDARDS.
18. ALL SIDEWALKS SHALL BE CONSTRUCTED TO THE CITY OF WILDWOOD AND ADA STANDARDS. ADA COMPLIANT TERMINATIONS SHALL BE REQUIRED FOR SIDEWALK.
19. SIDEWALKS ALONG ACCESSIBLE ROUTE SHALL NOT HAVE A SLOPE EXCEEDING 1:20. SLOPES GREATER THAN 1:20 MUST BE DESIGNED AS A RAMP.
20. UNDERGROUND UTILITIES - LOCATION OF UNDERGROUND UTILITIES LOCATED USING OBSERVED EVIDENCE AND LOCATE COMPANY MARKINGS.
21. ELECTRIC SERVICE FOR CVS BUILDING SHALL BE LOCATED UNDERGROUND.
22. ALL OFFSITE AREAS DISTURBED BY UTILITY REMOVAL, ABANDONMENT OR OTHER WORK SHALL BE RESTORED TO PREVIOUS OR BETTER CONDITION.
23. NO SLOPES SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL), UNLESS JUSTIFIED BY A GEOTECHNICAL REPORT, WHICH HAS BEEN ACCEPTED/APPROVED BY THE CITY OF WILDWOOD.
24. SANITARY AND STORM SEWERS SHALL BE DESIGNED PER THE CITY OF WILDWOOD AND METROPOLITAN SAINT LOUIS SEWER DISTRICT REQUIREMENTS AND SPECIFICATIONS.
25. ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO MEET THE CITY OF WILDWOOD STANDARDS.
26. ALL EXISTING IMPROVEMENTS NOT SHOWN ON THIS SITE PLAN ARE TO BE REMOVED.
27. SEEDING, SODDING, MULCHING, AND PLANTINGS FOR ALL DISTURBED AREAS SHALL BE SPECIFIED ON THE LANDSCAPE PLAN.
28. ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF WILDWOOD AND MODOT.
29. ALL GRADING AND DRAINAGE TO BE IN CONFORMANCE WITH THE CITY OF WILDWOOD.
30. ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO HAVE EXISTING UTILITIES FIELD LOCATED. THE CONTRACTOR SHALL BE ON RECORD WITH THE ILLINOIS ONE CALL SYSTEM. ALL PROPOSED UTILITIES TO BE UNDERGROUND.
31. SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAG) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ADAAG GUIDELINES AND THE INFORMATION ON THE PLANS, THE ADAAG GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PRIOR TO ANY CONSTRUCTION.
32. DRIVE ENTRANCES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF WILDWOOD AND MISSOURI DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
33. REFERENCE SHEET C-5.1 FOR DETAILS FOR THIS SITE PLAN.

\\Vault.pw\vault\CIVIL_3D PROJECTS\20141-13901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\SITE PLAN.dwg

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans originalized by the seal, signature, and date hereunder attached. Responsibility is not assumed for any other engineering plans involved in this project and executed after this date unless noted/dated.

STATE OF MISSOURI STEVE MARKOW NUMBER PE2006007195 PROFESSIONAL ENGINEER

STEVE MARKOW P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY:	M. FOGARTY
DATE:	9-18-2015
JOB NUMBER:	143901

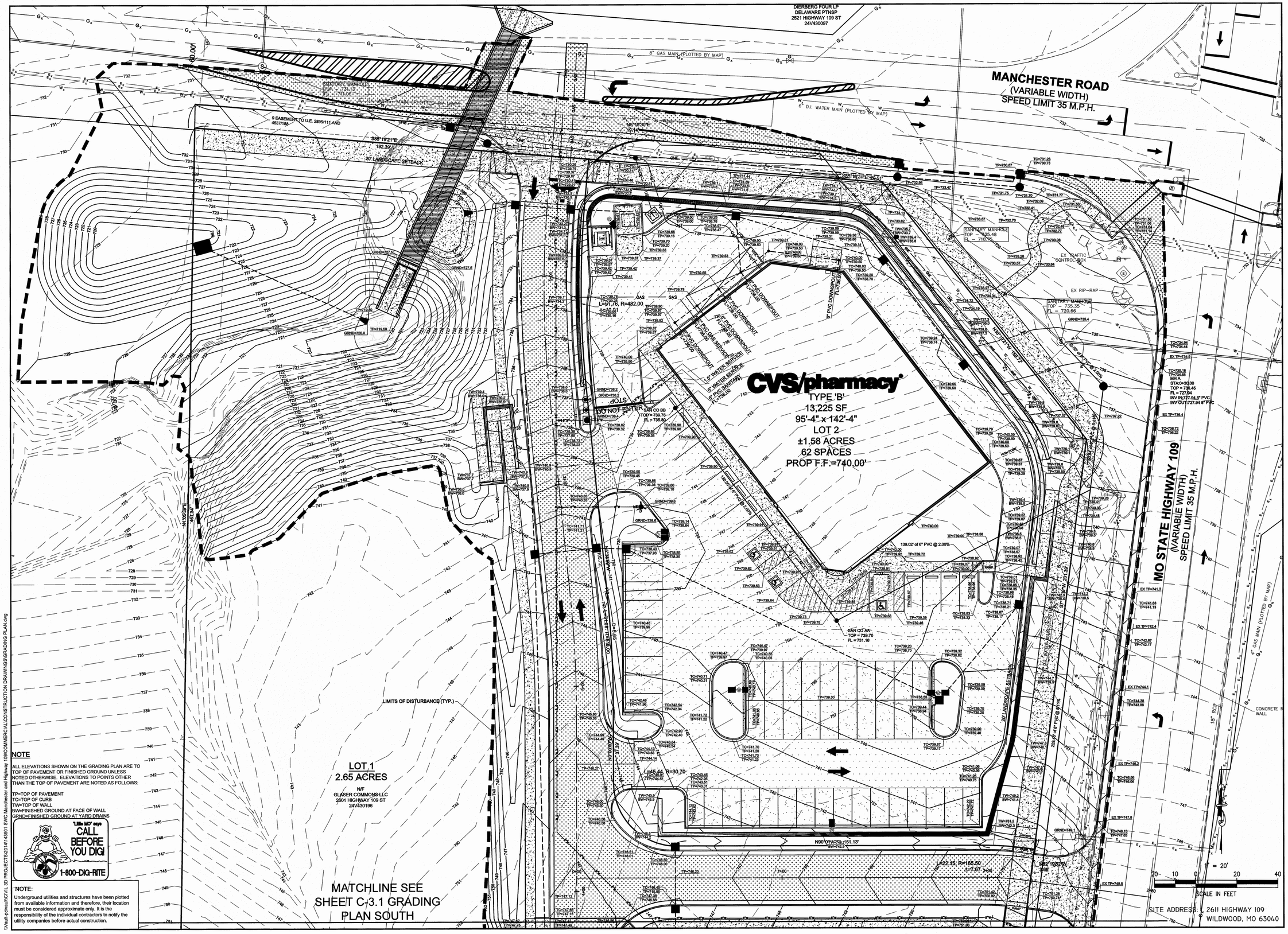
TITLE:

SITE PLAN SOUTH

SHEET NUMBER:

C-2.1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



NOTE

ALL ELEVATIONS SHOWN ON THE GRADING PLAN ARE TO TOP OF PAVEMENT OR FINISHED GROUND UNLESS NOTED OTHERWISE. ELEVATIONS TO POINTS OTHER THAN THE TOP OF PAVEMENT ARE NOTED AS FOLLOWS:

TP=TOP OF PAVEMENT
TC=TOP OF CURB
TW=TOP OF WALL
BW=FINISHED GROUND AT FACE OF WALL
GRND=FINISHED GROUND AT YARD DRAINS

"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

I:\Vault-pc\cvsus\ICIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\GRADING PLAN.dwg

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI
PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is also limited to other engineering plans involved in this project and specifically authenticated by this date unless reauthenticated.

STATE OF MISSOURI
STEVE MARION
NUMBER
PE2006007195
PROFESSIONAL ENGINEER

STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY

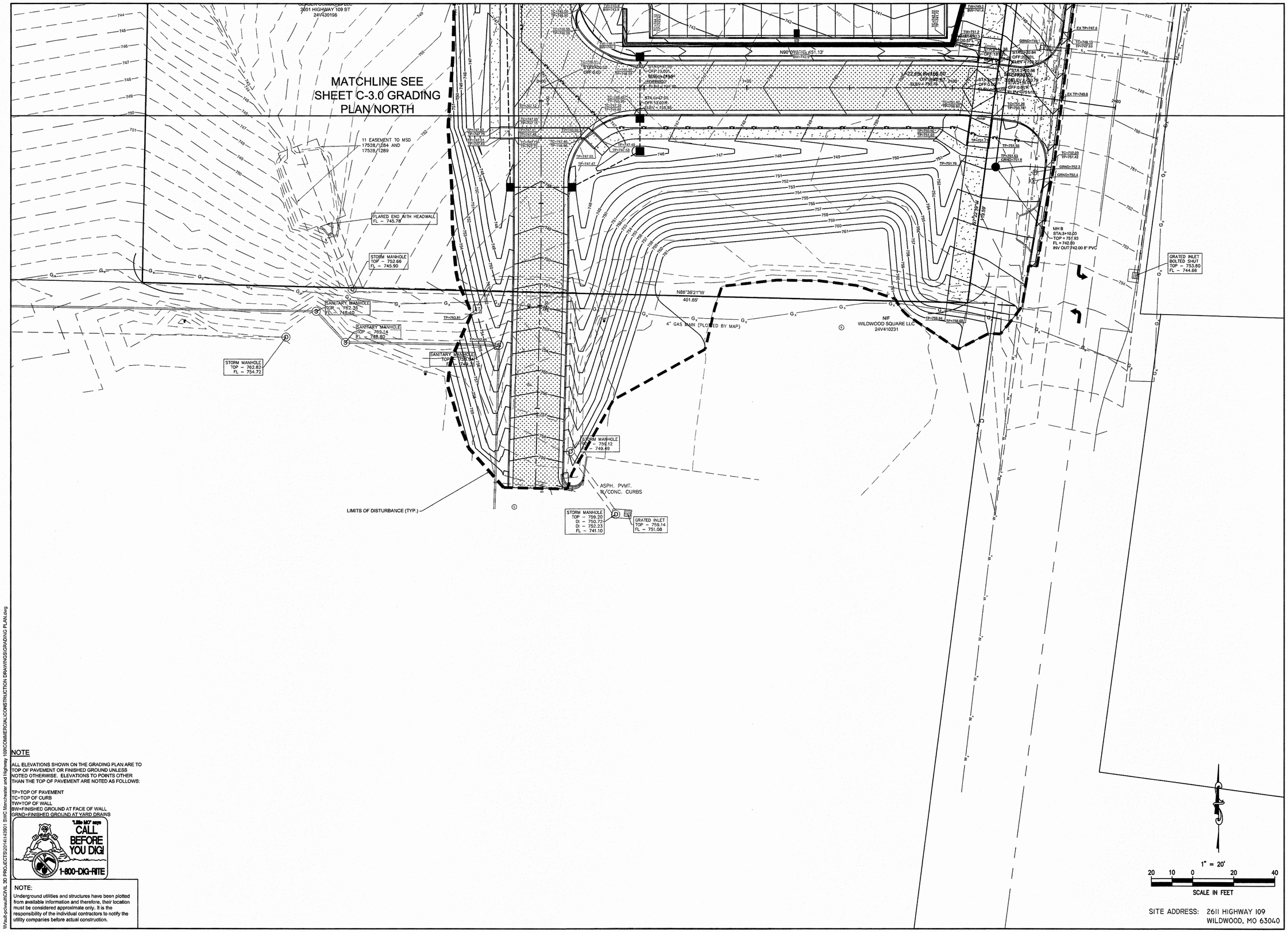
DATE: 9-18-2015

JOB NUMBER: 143901

TITLE: GRADING PLAN NORTH

SHEET NUMBER: C-3

COMMENTS: NOT RELEASED FOR CONSTRUCTION



SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

NOTE

ALL ELEVATIONS SHOWN ON THE GRADING PLAN ARE TO TOP OF PAVEMENT OR FINISHED GROUND UNLESS NOTED OTHERWISE. ELEVATIONS TO POINTS OTHER THAN THE TOP OF PAVEMENT ARE NOTED AS FOLLOWS:

TP=TOP OF PAVEMENT
TC=TOP OF CURB
TW=TOP OF WALL
BW=FINISHED GROUND AT FACE OF WALL
GRND=FINISHED GROUND AT YARD DRAINS

"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

W:\cad-pc\revit\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\GRADING PLAN.dwg

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excluded by this date unless reauthenticated.

STATE OF MISSOURI
STEVEN J. MARTIN
NUMBER PE2006007195
PROFESSIONAL ENGINEER

STEVEN J. MARTIN, P.E.
ENGINEER
PE2006007195

REVISIONS:

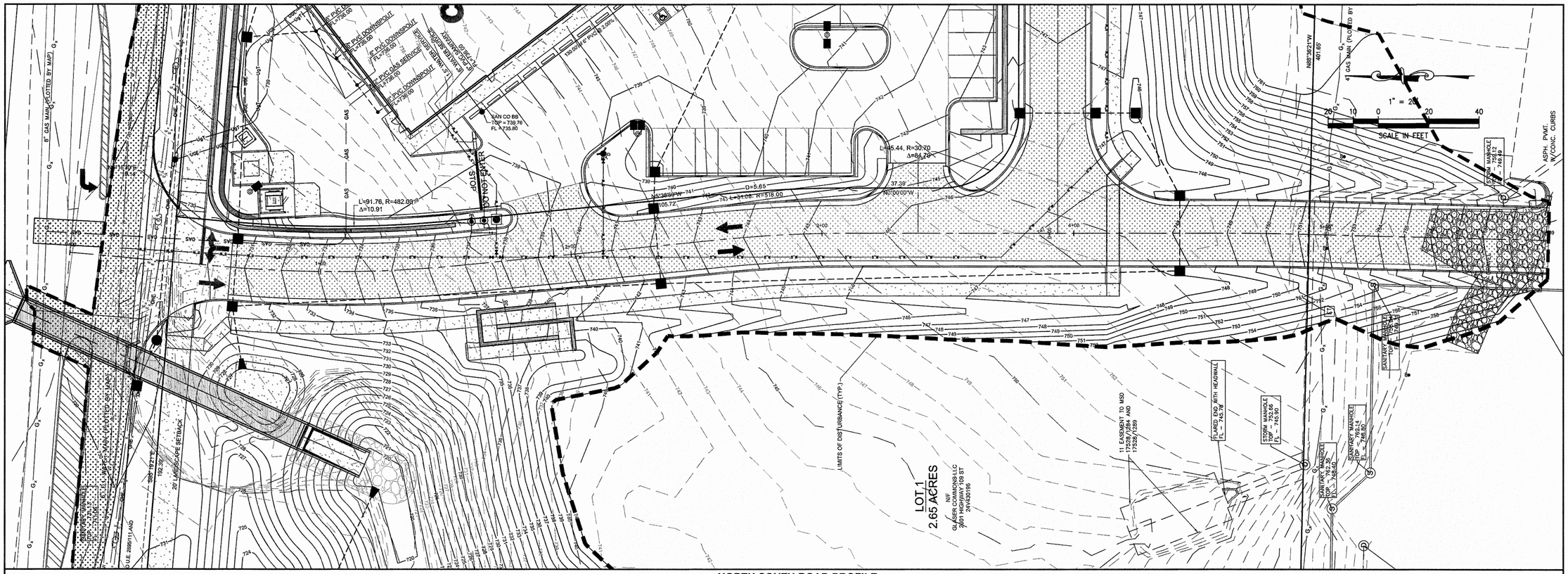
DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE:

GRADING PLAN SOUTH

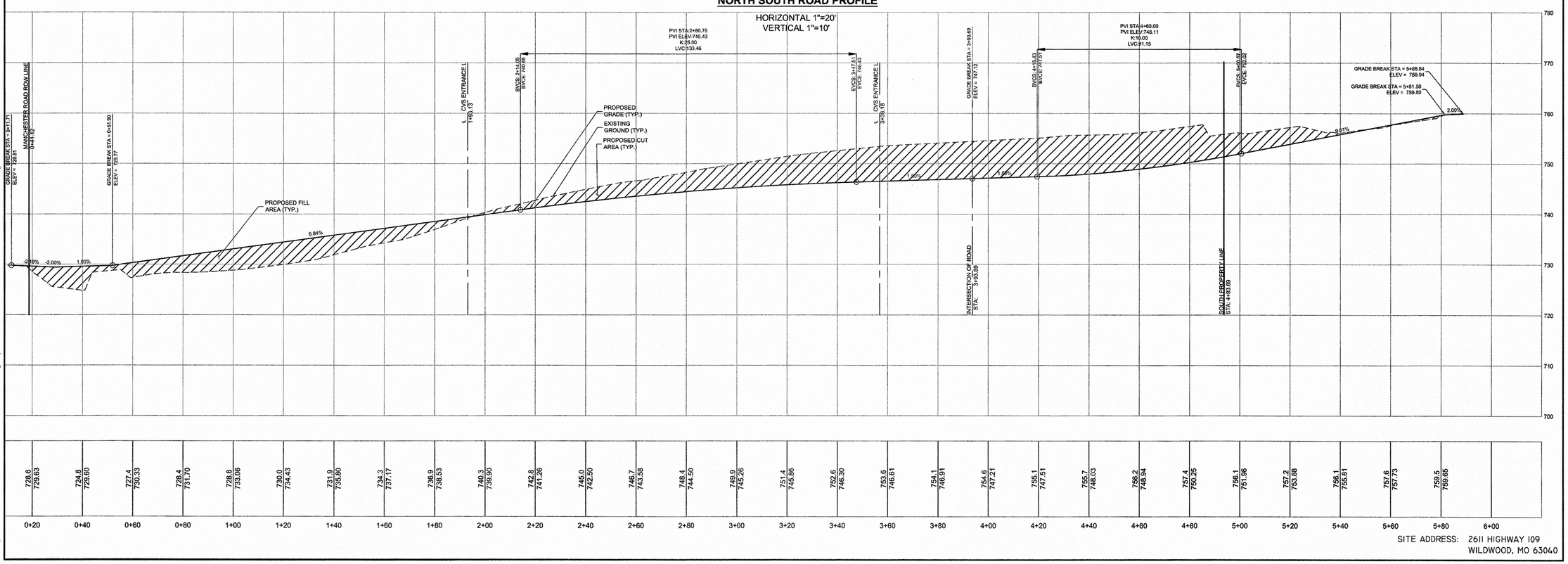
SHEET NUMBER:

C-3.1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



NORTH SOUTH ROAD PROFILE



SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

W:\autt-pc\vault\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\GRADING PLAN.dwg

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

The responsibility for professional engineering liability on this project is hereby limited to the set of plans originally sealed by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excludes plans after this date unless recertificated.

STATE OF MISSOURI
STEVEN J. MARRIOTT
NUMBER
PE2006007195
PROFESSIONAL ENGINEER

STEVEN J. MARRIOTT, P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY

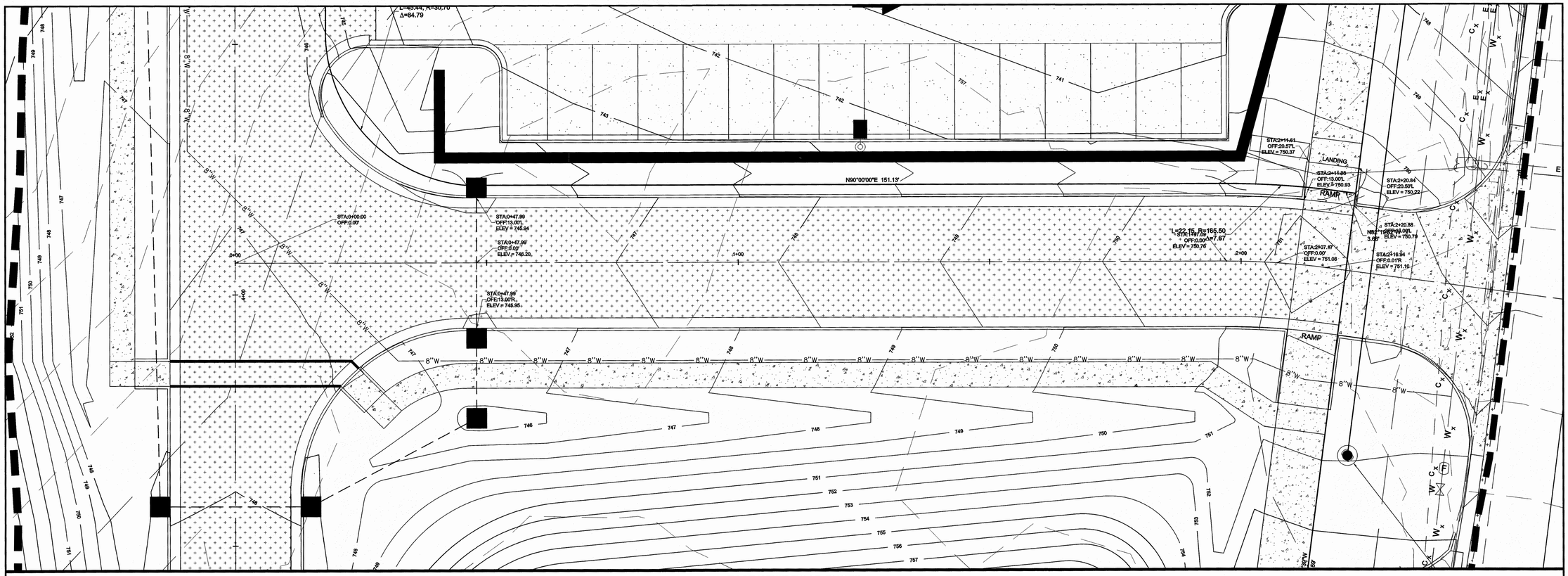
DATE: 9-18-2015

JOB NUMBER: 143901

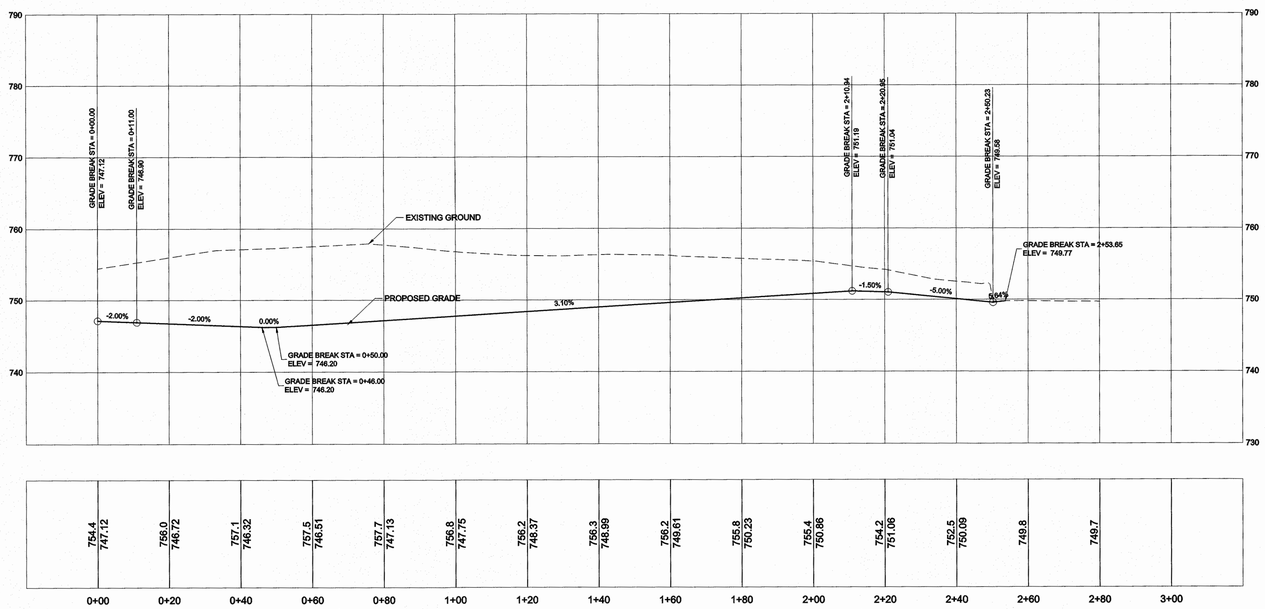
TITLE:
PLAN AND PROFILE
NORTH SOUTH ROAD

SHEET NUMBER:
C-3.2

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



EAST WEST ROAD PROFILE



HORIZONTAL 1"=20'
VERTICAL 1"=10'

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI
PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically all plans not bearing the same unless reauthenticated.

STATE OF MISSOURI
STEVE MARION
NUMBER
PE2006007195
PROFESSIONAL ENGINEER

STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

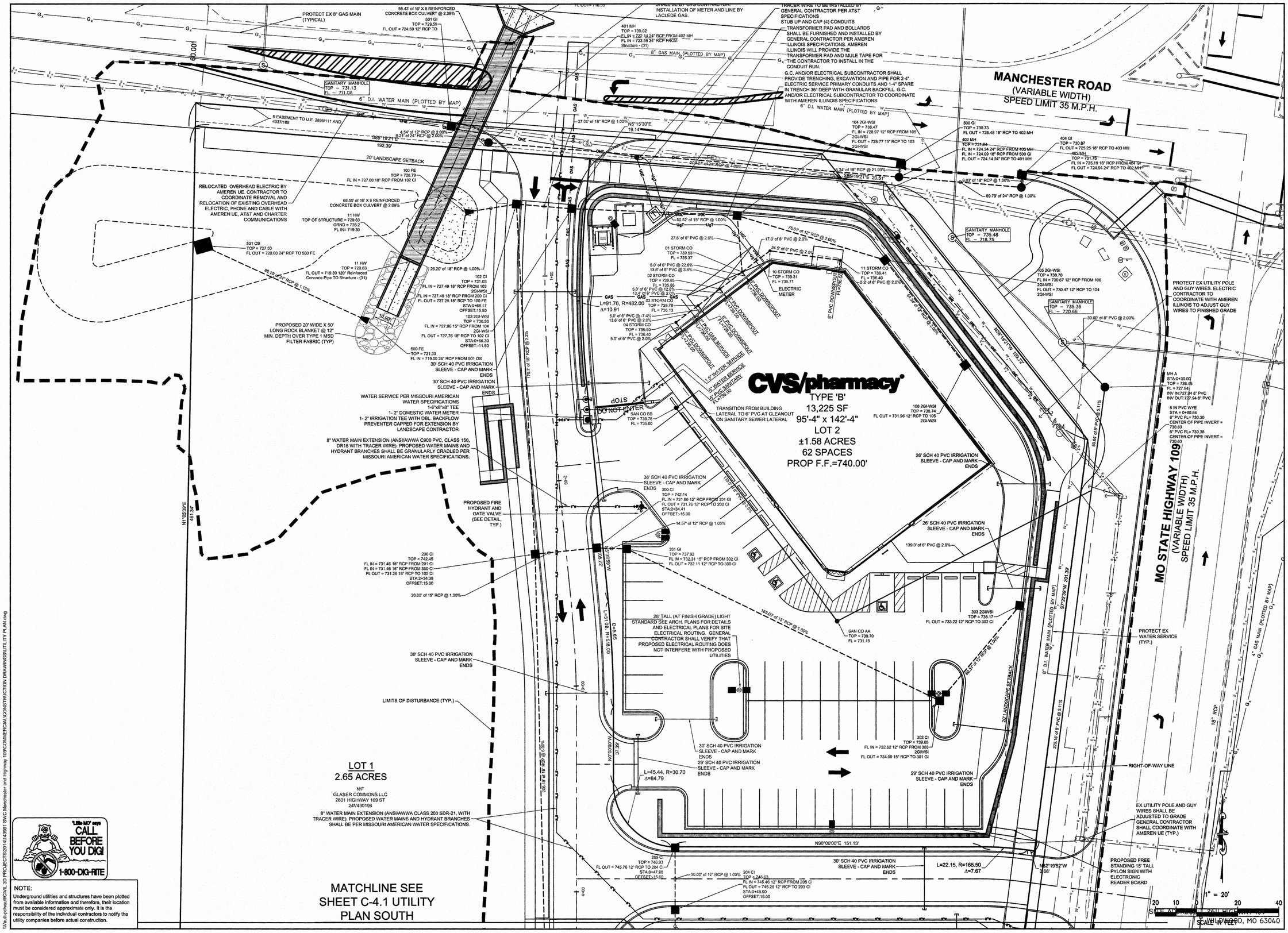
DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901

TITLE:
PLAN AND PROFILE
EAST WEST ROAD

SHEET NUMBER:
C-3.3

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

\\fault-p01vault\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\GRADING PLAN.dwg



"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

W:\autoproject\CIVIL 3D PROJECTS\2014\43901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\UTILITY PLAN.dwg

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

This responsibility for professional engineering liability on this project is hereby limited to the seal of plans authorized by the seal, signature, and date hereinafter attached. Responsibility is disclaimed for other engineering plans involved in this project and specifications issued after this date unless constructed.

STATE OF MISSOURI
STEVE MARION
NUMBER
PE2006007195
PROFESSIONAL ENGINEER

STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY:	M. FOGARTY
DATE:	9-18-2015
JOB NUMBER:	143901

TITLE:

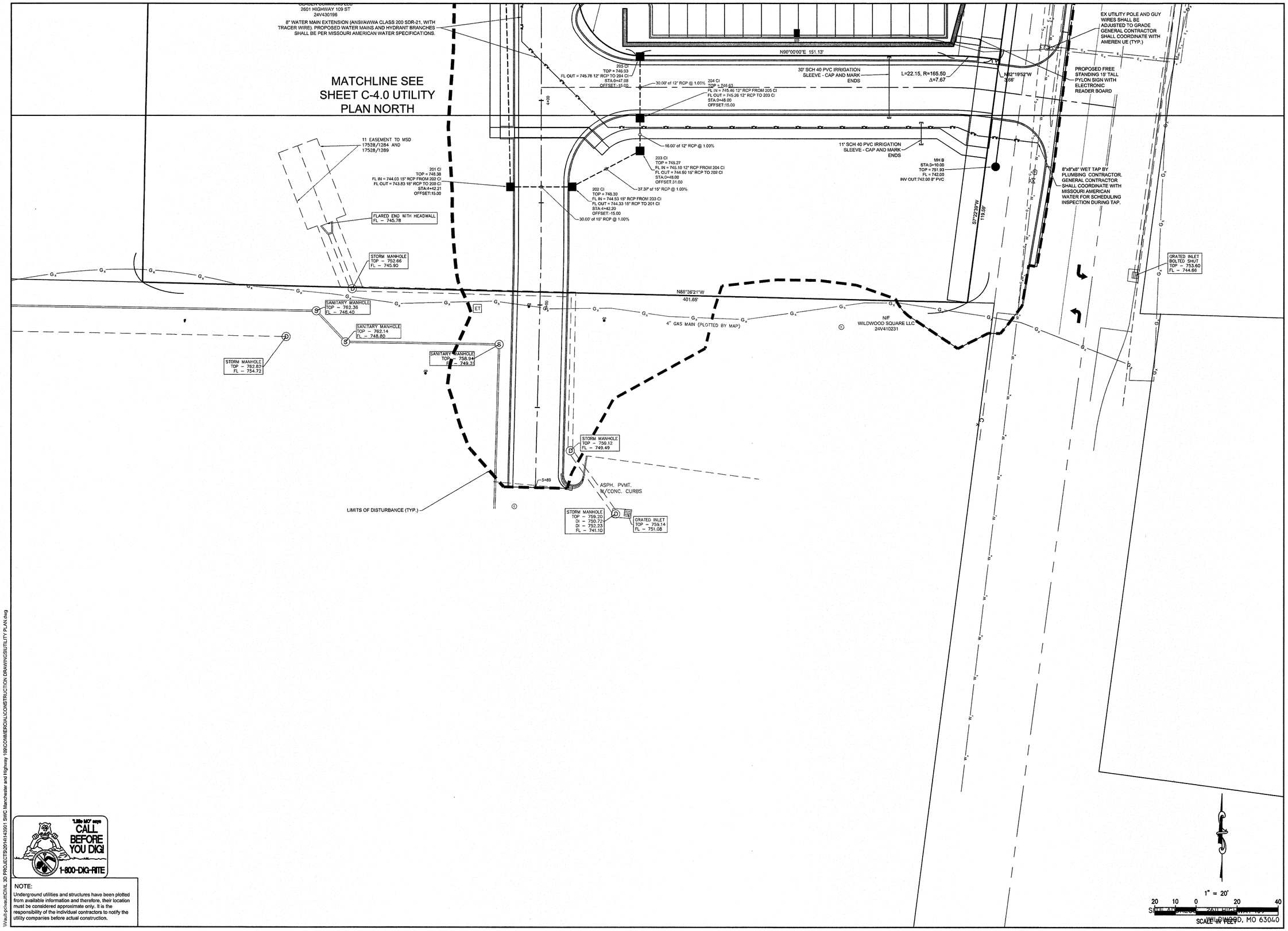
UTILITY PLAN NORTH

SHEET NUMBER:

C-4

COMMENTS:

NOT RELEASED FOR CONSTRUCTION



"Little MO" says
CALL BEFORE YOU DIG!
1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

\\Vault-p/vault\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\UTILITY PLAN.dwg

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excluded from this state unless reauthenticated.

STATE OF MISSOURI
STEVE M. MARION
NUMBER
PE2006067195
PROFESSIONAL ENGINEER

STEVEN M. MARION P.E.
ENGINEER
PE2006067195

REVISIONS:

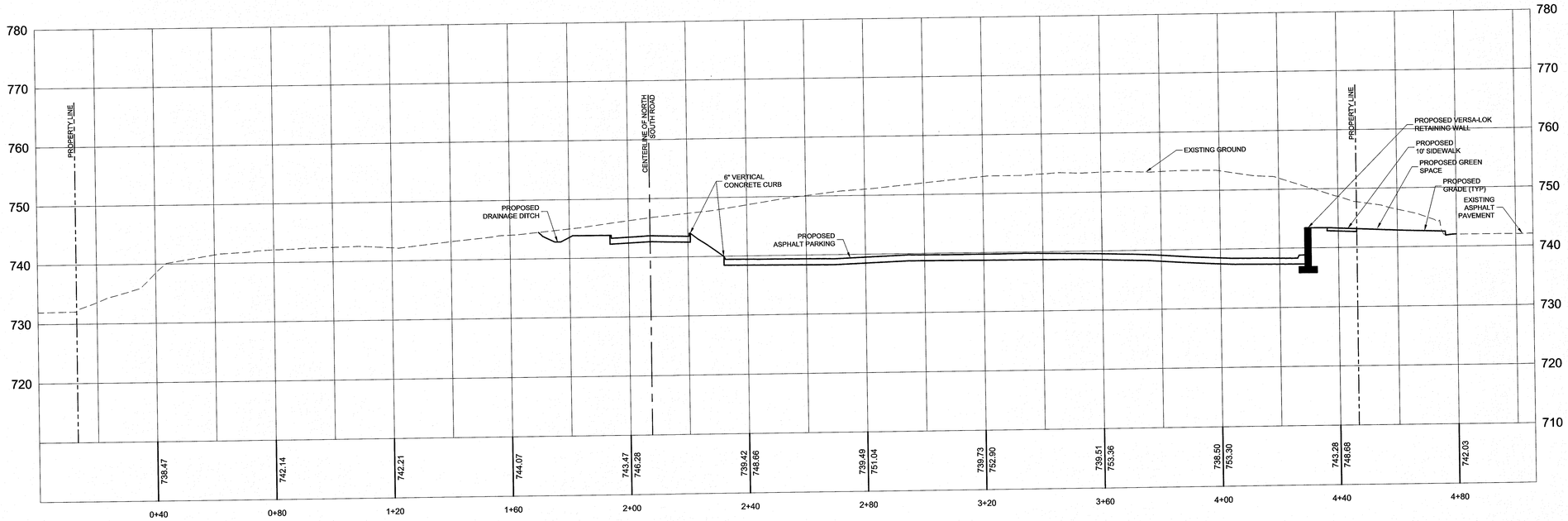
DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE:

UTILITY PLAN SOUTH

SHEET NUMBER:

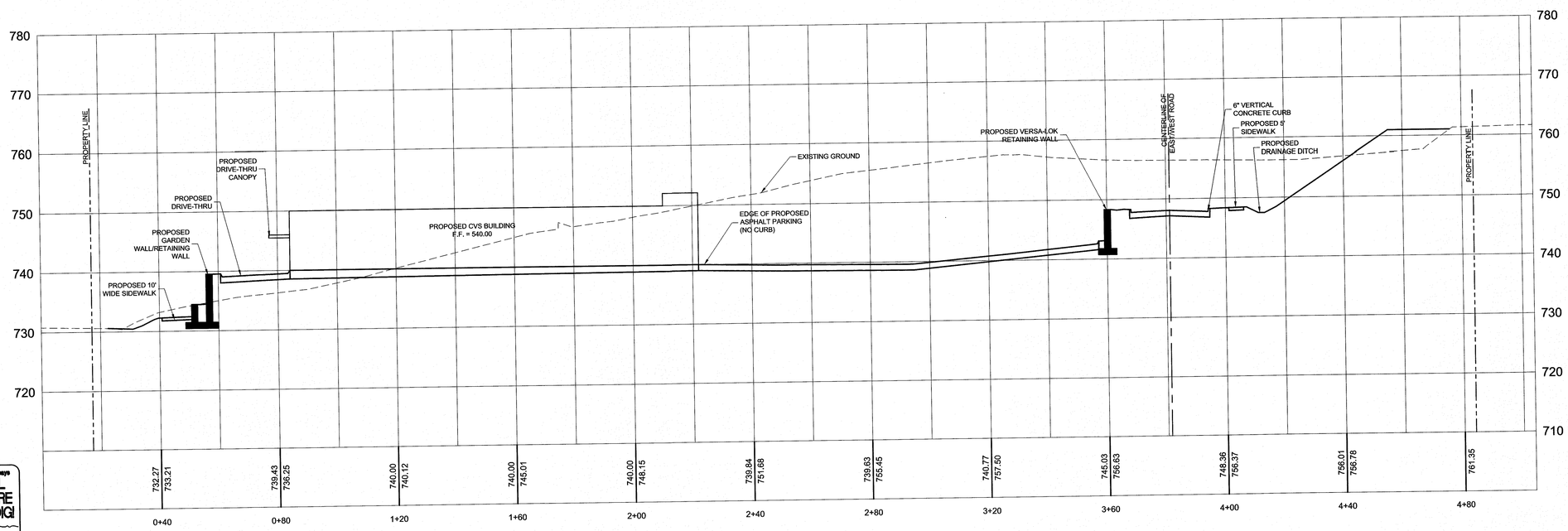
C-4.1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



SECTION A-A

1"=20' HORIZONTAL
1"=10' VERTICAL



SECTION B-B

1"=20' HORIZONTAL
1"=10' VERTICAL

"Little Mo" says
CALL BEFORE YOU DIG!
1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date beneunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excludes revisions after this date unless reauthenticated.

STATE OF MISSOURI
STEVE MARION
NUMBER PE2006007195
PROFESSIONAL ENGINEER

STEVEN MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE:

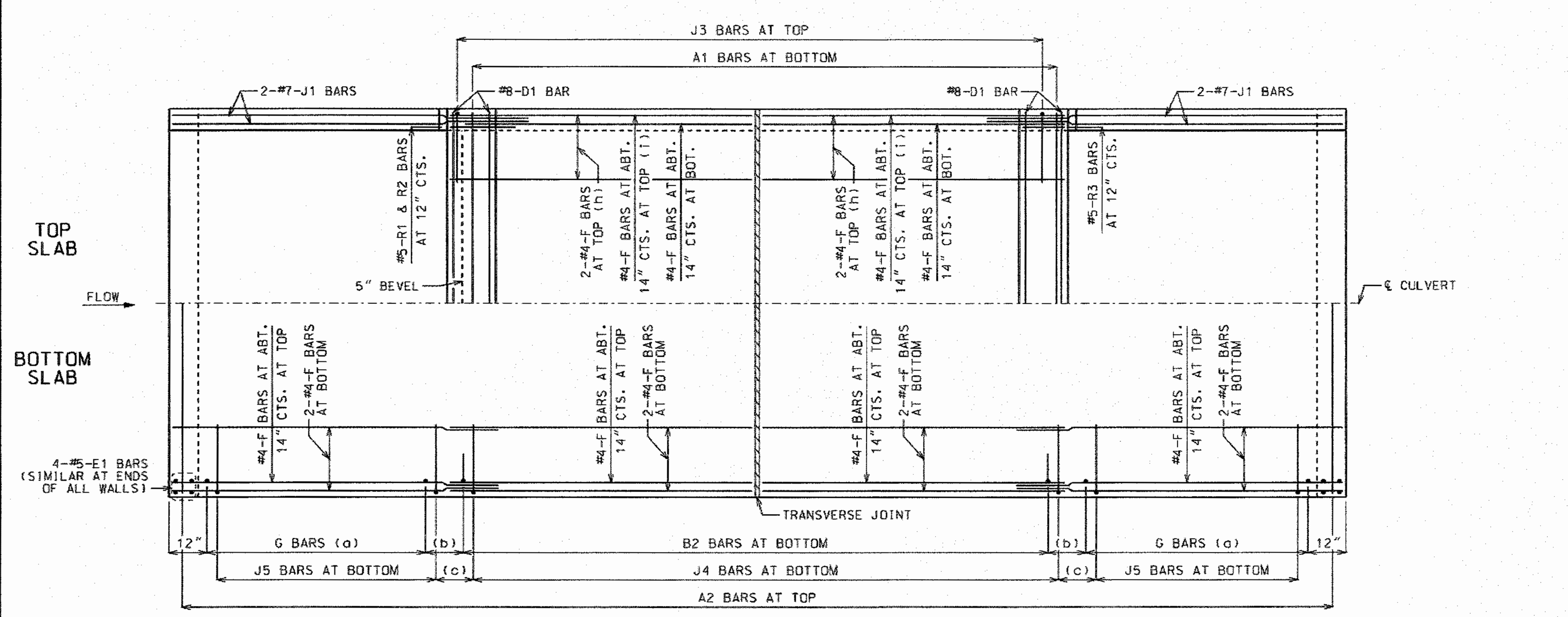
SITE SECTIONS

SHEET NUMBER:

C-5.0

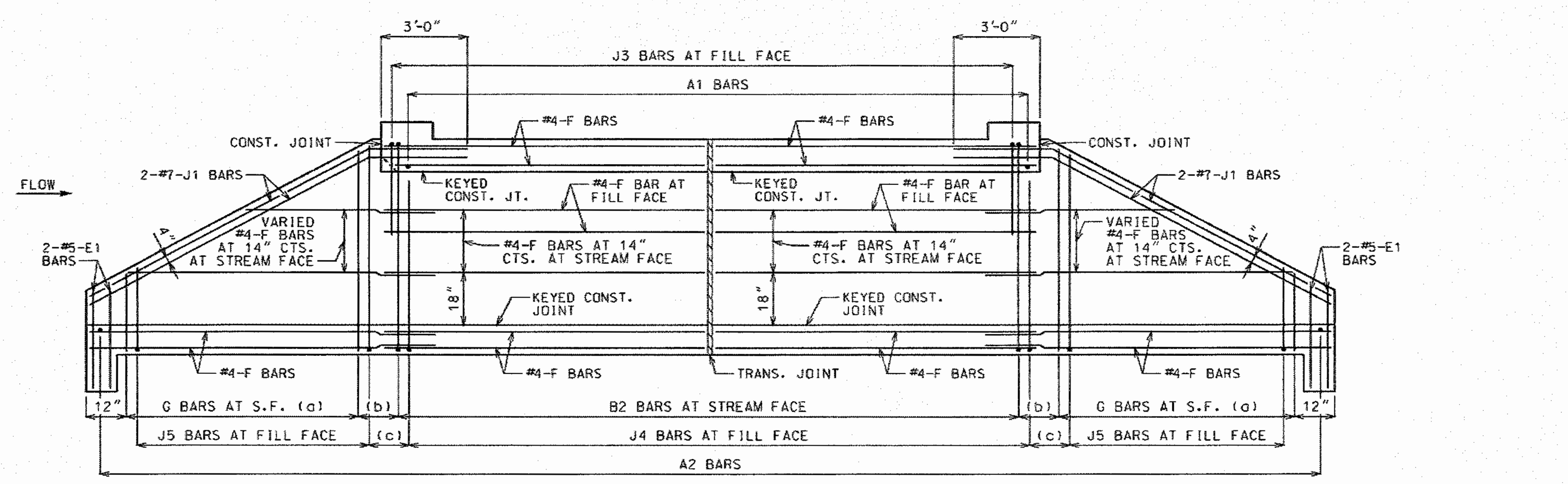
COMMENTS:
NOT RELEASED FOR CONSTRUCTION

\\Vault-pc\vault\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\SITE PLAN\SITE SECTIONS AND DETAILS.dwg



HALF PLANS

HALF PLANS ARE SYMMETRICAL ABOUT ℄ CULVERT.



ELEVATION

J1 BARS MAY BE BENT IN FIELD OR SHOP.

LAYING OUT TRANVERSE JOINTS

UNLESS SHOWN ON ROADWAY OR BRIDGE PLANS

USE A TRANSVERSE JOINT WHEN BARREL LENGTH IS OVER 80 FEET. USE ADDITIONAL JOINTS TO LIMIT CUT SECTION LENGTH AND END SECTION BARREL LENGTH MEASURED ALONG CENTERLINE OF CULVERT TO 50 FEET.

MINIMUM END SECTION LENGTH SHALL BE 3 FEET MEASURED ALONG THE SHORTEST WALL FROM THE INSIDE FACE OF HEADWALL TO THE TRANSVERSE JOINT.

TO AVOID LOCATING TRANSVERSE JOINTS UNDER A TRAVELED WAY WITH DESIGN FILLS 2 FEET OR LESS THE FOLLOWING SHALL APPLY:

BARREL LENGTH UP TO 90 FEET WITHOUT A TRANSVERSE JOINT

CUT SECTION LENGTHS UP TO 60 FEET

WHEN BARREL AND CUT SECTION LENGTH RESTRICTIONS REQUIRE TRANSVERSE JOINTS TO BE LOCATED UNDER A TRAVELED WAY WITH DESIGN FILLS 2 FEET OR LESS, THE JOINTS SHALL BE LOCATED TO MINIMIZE THE LENGTH OF JOINT UNDER THE TRAVELED WAY.

TRAVELED WAY IS THE ROADWAY WIDTH MINUS SHOULDER WIDTHS.

FOR CUT SECTION DETAILS, SEE 703.16.

GENERAL NOTES:

FOR SECTIONS THRU BARREL, WINGS AND HEADWALLS, SEE SHEET 3 OF 3. FOR BAR SIZES, SPACING AND DIMENSIONS OF ALL REINFORCEMENT EXCEPT J5 BARS, SEE 703.17. FOR J5 BARS, SEE 703.37.

CONSTRUCTION JOINT KEY NOT SHOWN FOR CLARITY IN HALF PLANS AND ELEVATION. SEE SHEET 3 OF 3 FOR DETAILS.

DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1½".

LAP LONGITUDINAL BARS A MINIMUM OF 23" AT SPLICES.

BEVELED HEADWALL SHALL BE LOCATED AT UPSTREAM END.

(a) SAME SIZE AND SPACING AS B2 BARS

(b) VARIES, 12" MAXIMUM

(c) J4 BAR SPACING

(d) NOT SPECIFIED ON THIS SHEET

(e) NOT SPECIFIED ON THIS SHEET

(f) NOT SPECIFIED ON THIS SHEET

(g) NOT SPECIFIED ON THIS SHEET

(h) FOR DESIGN FILLS OVER 2'-0"

(i) FOR DESIGN FILLS 2'-0" OR LESS

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

CONCRETE SINGLE BOX CULVERT

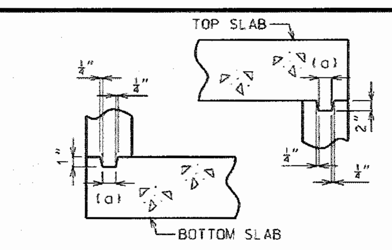
SKEW: SQUARED
WINGS: STRAIGHT

REINFORCEMENT

DATE EFFECTIVE: 07/01/2015
DATE PREPARED: 5/13/2015

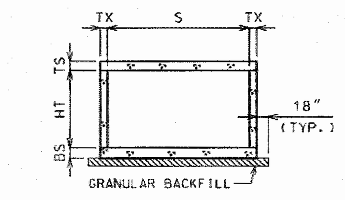
703.10J

SHEET NO. 2 OF 3

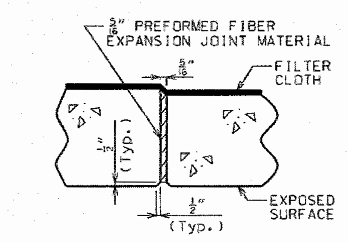


KEYED CONSTRUCTION JOINT

(a) APPROXIMATELY ONE-THIRD OF WALL THICKNESS



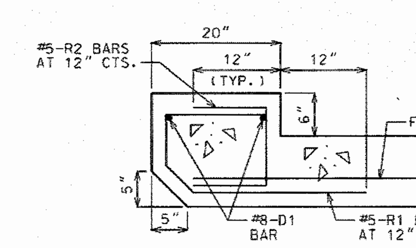
GRANULAR BACKFILL LIMITS AND MEMBER DIMENSIONS



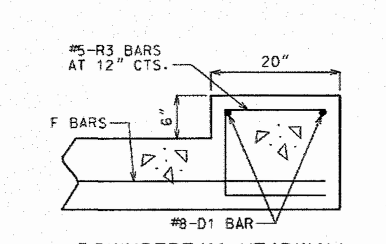
TRANSVERSE JOINT THRU BARREL

PREFORMED FIBER EXPANSION JOINT MATERIAL IN ACCORDANCE WITH SEC 1057 SHALL BE SECURELY STITCHED TO ONE FACE OF THE CONCRETE WITH 10 GAGE COPPER WIRE OR 12 GAGE SOFT DRAWN GALVANIZED STEEL WIRE.

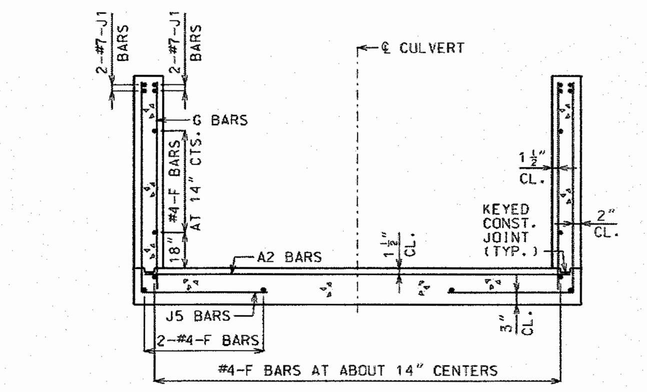
FILTER CLOTH 3 FEET IN WIDTH AND DOUBLE THICKNESS SHALL BE CENTERED ON TRANSVERSE JOINTS IN TOP SLAB AND SIDEWALLS WITH EDGES SEALED WITH MASTIC OR TWO SIDED TAPE. FILTER CLOTH SHALL BE A SUBSURFACE DRAINAGE GEOTEXTILE IN ACCORDANCE WITH SEC 1011. COST OF FURNISHING AND INSTALLING FILTER CLOTH WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR OTHER ITEMS.



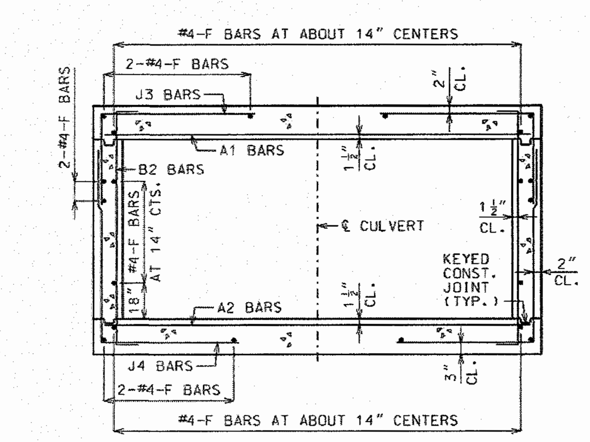
UPSTREAM HEADWALL REINFORCEMENT



DOWNSTREAM HEADWALL REINFORCEMENT

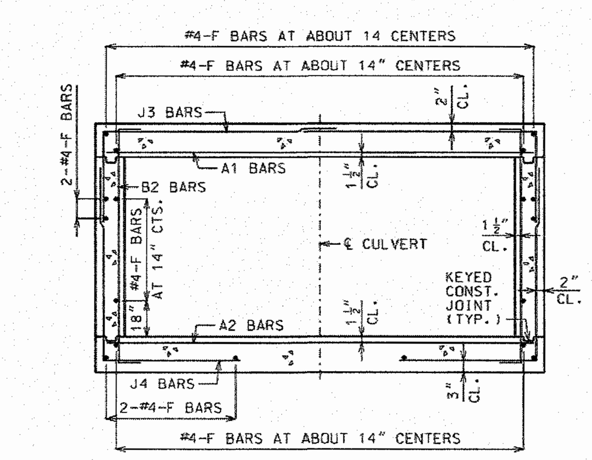


UPSTREAM AND DOWNSTREAM WINGS REINFORCEMENT



BARREL REINFORCEMENT

FOR DESIGN FILLS OVER 2'-0"



BARREL REINFORCEMENT

FOR DESIGN FILLS 2'-0" OR LESS

GENERAL NOTES:

FOR MEMBER THICKNESS AND FOR BAR SIZES, SPACING AND DIMENSIONS OF ALL REINFORCEMENT EXCEPT J5 BARS, SEE 703.17. FOR J5 BARS, SEE 703.37.

BARREL AND WINGS SECTIONS ARE SYMMETRICAL ABOUT AND NORMAL TO ℄ CULVERT. HEADWALL SECTIONS ARE NORMAL TO LONG DIRECTION OF HEADWALL.

DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1½".

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

CONCRETE SINGLE BOX CULVERT

SKEW: SQUARED
WINGS: STRAIGHT

SECTIONS

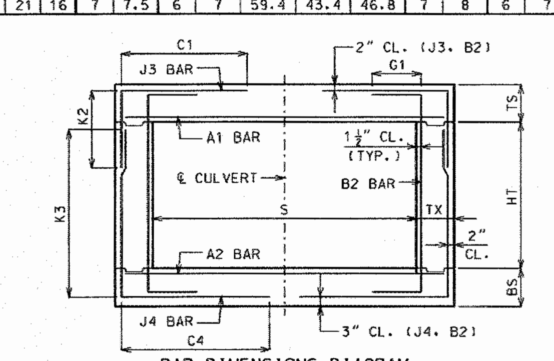
DATE EFFECTIVE: 07/01/2015
DATE PREPARED: 5/13/2015

703.10J

SHEET NO. 3 OF 3

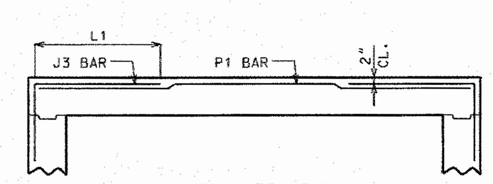
SPAN (S) = 8 FT HEIGHT (HT) = 10 FT OR 11 FT

DESIGN FILL	MEMBER THICKNESS			TOP SLAB BARS: A1 BARS		J3 BARS					BOTTOM SLAB BARS: A2 BARS		J4 BARS					WALL BARS: B2 BARS		
	TS	BS	TX	SIZE	SPA.	SIZE	SPA.	C1	K2 HT=10'	K2 HT=11'	SIZE	SPA.	SIZE	SPA.	C4	K3 HT=10'	K3 HT=11'	SIZE	SPA.	G1
1 FT	11	10	8	5	6.5	5	7.5	65.5	31.3	34.0	5	6.5	6	6.5	66.5	126	138	5	9.5	12
2 FT	11	10	8	5	6.5	5	7	65.5	31.3	34.0	5	6	6	6	66.5	126	138	5	9.5	12
4 FT	8	9	9	5	7.5	6	7	68.3	33.0	36.0	5	6	6	6	68.3	125	137	5	8.5	0
6 FT	8	10	9	5	8.5	6	7	68.3	30.6	33.4	5	7	6	6.5	68.3	126	138	5	8.5	0
8 FT	8	10	9	5	8	6	7	68.3	33.3	36.3	5	7	6	6	68.3	126	138	5	8.5	0
10 FT	8	10	9	5	8.5	6	7	52.5	30.6	33.4	5	7	6	6	68.3	126	138	5	8.5	0
12 FT	8	10	9	5	7.5	6	6.5	50.4	33.3	36.3	5	6.5	6	6	65.1	126	138	5	8.5	0
14 FT	9	11	9	5	7	6	7	52.5	31.0	33.8	5	6.5	6	6	69.3	127	139	5	8.5	0
16 FT	9	11	9	5	6	6	6	50.4	33.8	36.8	6	8	6	6	64.0	127	139	5	8.5	0
18 FT	10	12	9	5	6	6	6	52.5	34.3	37.3	6	8	6	6	68.3	128	140	5	8	0
20 FT	11	12	10	5	6	5	6	48.8	31.8	34.5	6	7.5	6	6.5	58.3	128	140	5	8	0
22 FT	11	13	10	6	8	6	7	50.9	33.4	36.3	6	7.5	6	6.5	60.4	129	141	5	7.5	0
24 FT	12	13	11	6	7.5	6	8	51.4	33.6	36.5	6	7	6	7	56.8	129	141	5	7.5	0
26 FT	12	14	11	6	7	6	7.5	50.3	33.9	36.8	6	7	6	7	57.8	130	142	5	7.5	0
28 FT	13	15	12	6	7.5	6	8	50.8	34.4	37.3	6	7	6	7.5	57.3	131	143	5	7	0
30 FT	14	15	12	6	7	6	7.5	51.9	36.0	39.0	6	6.5	6	7	57.3	131	143	5	7	0
32 FT	14	16	13	6	7	6	8	51.3	36.3	39.3	6	6.5	6	7.5	56.6	132	144	5	6.5	0
34 FT	15	16	13	6	6.5	6	7.5	57.8	36.5	39.5	6	6.5	6	7	55.6	132	144	5	6.5	0
36 FT	15	17	13	6	6.5	6	6.5	57.8	36.8	39.8	6	6.5	6	7	57.8	133	145	5	6.5	0
38 FT	16	18	14	6	6.5	6	7.5	58.3	37.3	40.3	6	6.5	6	7.5	57.3	134	146	5	6	0
40 FT	16	18	14	6	6	6	7	58.3	37.3	40.3	6	6	6	7	57.3	134	146	5	6	0
42 FT	17	19	15	6	6	6	7	58.9	42.3	45.6	6	6	6	7.5	56.6	135	147	6	8	0
44 FT	17	19	15	6	6	6	6.5	57.8	42.3	45.6	6	6	6	7	56.6	135	147	6	8	0
46 FT	18	19	15	6	6	6	7	58.9	42.5	45.9	7	8	6	6	56.6	135	147	6	8	0
48 FT	18	20	16	7	8	6	7	58.3	42.9	46.3	7	8	6	7	56.0	136	148	6	8	0
50 FT	19	21	16	7	7.5	6	7	59.4	43.4	46.8	7	8	6	7	58.3	137	149	6	8	0



BAR DIMENSIONS DIAGRAM

SYMMETRICAL ABOUT ℄ CULVERT.



ALTERNATE J3 BAR

AT CONTRACTOR'S OPTION, ALTERNATE J3 BARS MAY BE USED WHEN THE DISTANCE BETWEEN THE ENDS OF J3 BARS IN THE TOP SLAB IS LESS THAN 2'-0". DIMENSION L1 (NOT C1) SHALL BE USED WITH ALTERNATE J3 BARS, WHERE L1 IS EQUAL TO 18", 22" AND 28" FOR #4, #5 AND #6 BARS, RESPECTIVELY. ADDITIONAL P1 BARS ARE REQUIRED WITH ALTERNATE J3 BARS WITH A LENGTH EQUAL TO A1 BARS, AND SIZE AND SPACING EQUAL TO J3 BARS. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS SUBSTITUTION.

GENERAL NOTES:

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

CONCRETE SINGLE BOX CULVERT

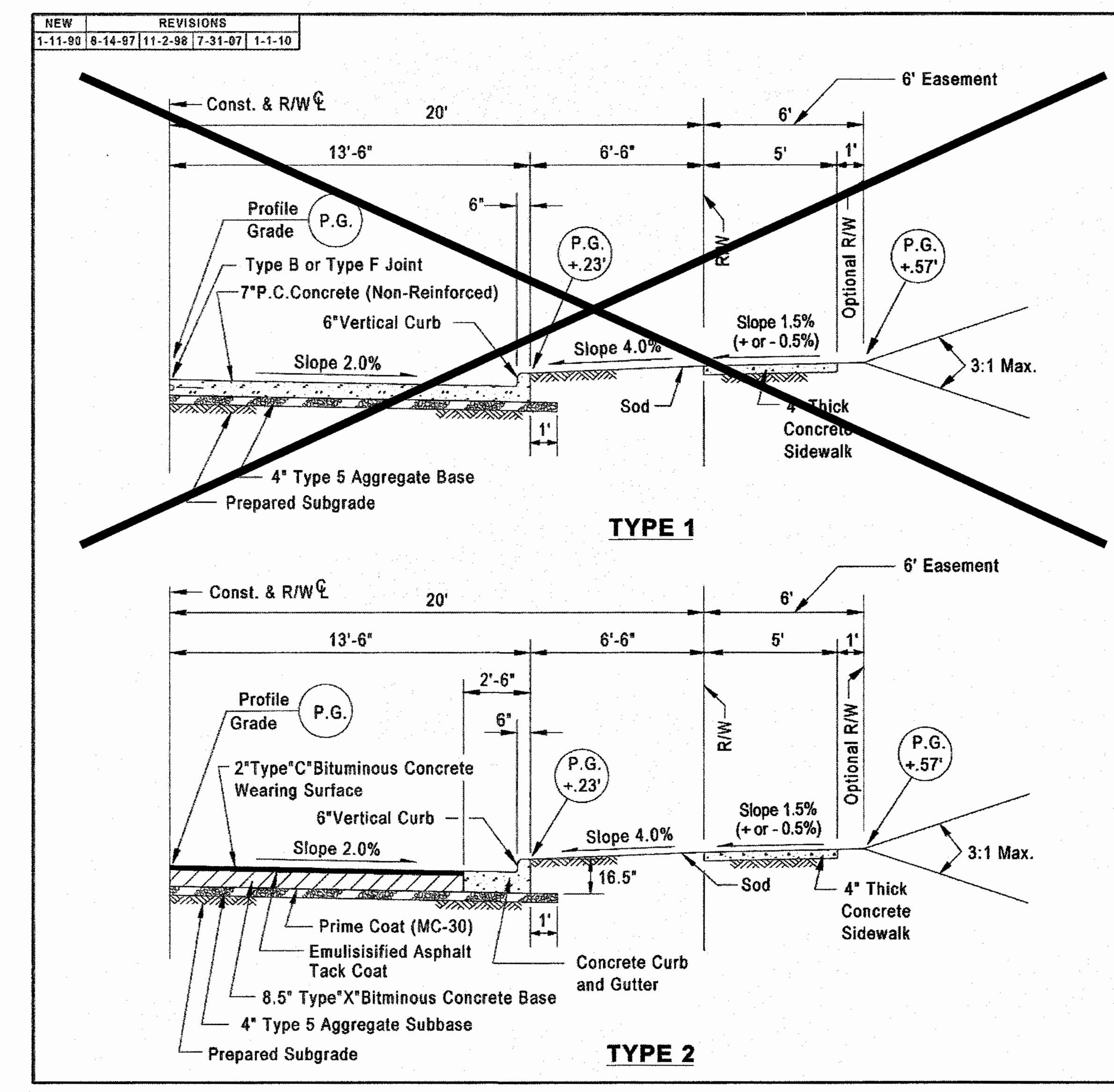
MEMBER THICKNESS
BAR SIZE, SPACING & DIMENSIONS

SPAN (S): 8 FEET
HEIGHT (HT): 4 THRU 11 FEET

DATE EFFECTIVE: 04/01/2011
DATE PREPARED: 4/18/2011

703.17

SHEET NO. 6 OF 14



ST. LOUIS COUNTY PROJ.

GENERAL NOTES

1. Do not scale drawing. Follow dimensions.
2. Sections are symmetrical about construction centerline.
3. For longitudinal and transverse joints, dowel and tie bar requirements and curb dimensions refer to the Pavement Construction Details for "Joints and Curbs", Std. Dwg C502.03.
4. All necessary pavement markings shall be as required by Saint Louis County. For details refer to "Guidelines for Pavement Markings and Lane Striping", Std. Dwg. C902.10.
5. Sections shown may not apply at intersections.
6. Sidewalk thickness increases to 7" at Commercial Driveways. See "Entrance Construction Details".
7. Easement when required shall be established as a "Permanent Roadway Improvement, Maintenance, Utility, Sewer and Sidewalk Easement" and dedicated to Saint Louis County.

SAINT LOUIS COUNTY
DEPARTMENT OF HIGHWAYS AND TRAFFIC
CLAYTON, MISSOURI

STANDARD TYPICAL SECTION

NON-RESIDENTIAL STREET (40' R/W - 27' PVMT.)

REVISION DATE: January 1, 2010

DRAWING C203.90

TYPE 2 ACCESS ROAD TYPICAL SECTION

N.T.S.

(NOT FOR USE WITHIN R.O.W.)

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE:

SITE DETAILS

SHEET NUMBER:

C-5.1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

Plastic Parking Block Installation Instructions

Lag Bolt Method: Recommended for Asphalt or Concrete Traffic Lanes where drilling holes are permitted.

Hardware Supplied:
- ½" x 8" lag bolt for each hole
- (2) ½" washers each
- ½" lag anchor

Tools Required:
- High speed hammer drill with ¾" masonry bit
- Impact wrench or heavy ratchet with ¾" socket

1. Clean the surface so that it is free from dirt.
2. Place the parking block in its installation position and mark the location of each hole using the pre-drilled holes as a template.
3. Remove the parking block. Using a high-speed hammer drill with a ¾" masonry bit, drill a hole at each marked location to a depth of 3 ½" below the surface.
4. Insert lag anchor into each hole (large anchor opening on top). Tap the anchor into the hole with a hammer so that the anchors are set flush with the surface. Place a washer over each anchor hole.
5. Reposition the parking block in its installation position. Slip a washer onto a lag bolt, insert the bolt through a pre-drilled hole in the parking block and tighten the bolt about three quarters of the way with the ¾" socket. Repeat for each hole in the parking block. Finish tightening each bolt until just snug. DO NOT OVER TIGHTEN! Excessive tightening may damage the bump and void the product warranty.

Steel Spike Method: Recommended for use on Asphalt or wood Block Surfaces only.

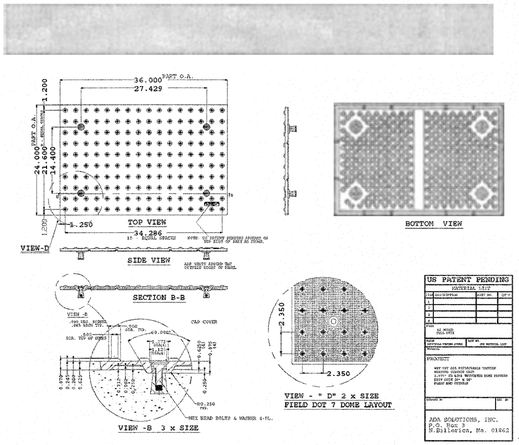
Hardware Supplied:
- ½" x 12" steel spike for each hole

Tools Required:
- High speed hammer drill with 3/8" masonry bit
- Sledge hammer for driving spikes

1. Clean the surface so that it is free from dirt.
2. Place the parking block in its installation position and mark the location of each hole using the pre-drilled holes as a template.
3. Remove the parking block. Using a high-speed hammer drill with a 3/8" masonry bit, drill a hole at each marked location to avoid fracturing the asphalt with the spike.
4. Reposition the parking block in its installation position. Drive the spike through the parking block and into the drilled hole until the spike is snug against the counter bored surface of the speed bump's pre-drilled hole. DO NOT DRIVE BEYOND "SNUG"! If driven too far the spike may damage the speed bump and void the product warranty.

INNOPLAST™
Innovative Polymer Products

10120 Gottschalk Parkway
Chagrin Falls, OH 44023
phone 800-516-9287 fax 440-543-8661
INNOPLAST.com



US PATENT PENDING

ADA SOLUTIONS, INC.
P.O. Box 2
N.Billerica, Ma. 01862

GENERAL NOTES

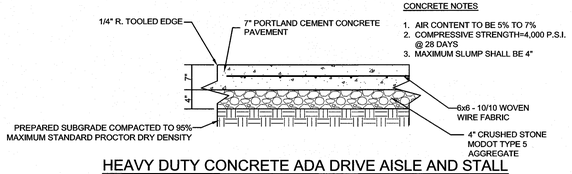
1. PAVEMENT-MARKING PAINT: ALKYD-RESIN TYPE, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH AASHTO M 248; COLORS COMPLYING WITH FS TT-P-1952.
2. COLOR: AS INDICATED.
3. NEW ACCESSIBLE STRIPING FOR STALLS AND ACCESS AISLES SHALL BE OUTLINED IN BLUE PER LOCAL REQUIREMENTS. STRIPING VENDOR SHALL VERIFY LOCAL CODE. ALL OTHER NEW STRIPING SHOULD MATCH EXISTING SCHEME.
4. DO NOT APPLY PAVEMENT-MARKING PAINT UNTIL LAYOUT, COLORS, AND PLACEMENT HAVE BEEN VERIFIED WITH REGISTERED DESIGN PROFESSIONAL. A COLOR SAMPLE AND SKETCH IS TO BE PROVIDED TO DESIGN PROFESSIONAL.
5. SWEEP AND CLEAN SURFACE TO ELIMINATE LOOSE MATERIAL AND DUST DAILY.
6. APPLY PAINT WITH MECHANICAL EQUIPMENT TO PRODUCE PAVEMENT MARKINGS WITH UNIFORM STRAIGHT EDGES. APPLY AT MANUFACTURER'S RECOMMENDED RATES TO PROVIDE MINIMUM WET FILM THICKNESS OF 15 MILS (0.4 MM)
7. 4" WIDE STRIPES IN ACCESS AISLES SHALL BE 3' ON CENTER.

GENERAL RAMP NOTES

1. CURB CUT RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS (CENTERED ON ACCESS AISLES) OR A DIRECTED.
2. SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY COARSE BROOMING, TRANSVERSE TO THE SLOPE OF THE RAMP.
3. CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON ALL RAMPS WITH NO BREAKS IN GRADE.
4. THE NORMAL GUTTER LINE/EXISTING PAVEMENT PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
5. PRE-MOLDED EXPANSION JOINT TO BE PROVIDED AT RAMP EDGES SHALL BE A MAXIMUM 1/2" WIDE. THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH ADJACENT CONCRETE.

"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

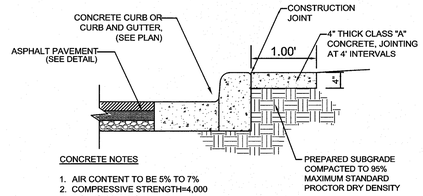


CONCRETE NOTES
1. AIR CONTENT TO BE 5% TO 7%
2. COMPRESSIVE STRENGTH=4,000 P.S.I. @ 28 DAYS
3. MAXIMUM SLUMP SHALL BE 4"

HEAVY DUTY CONCRETE ADA DRIVE AISLE AND STALL PAVEMENT DETAIL AT DRIVING LANE AND LOADING SPACE

N.T.S.

PROVIDE CONTRACTION JOINTS AT 12' MAX. SPACING,
PROVIDE EXPANSION JOINTS AT 30' MAX. SPACING.
SEAL ALL EXPANSION JOINTS.

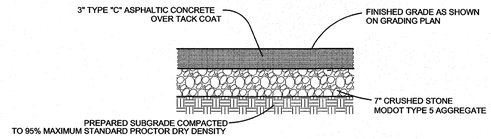


CONCRETE NOTES
1. AIR CONTENT TO BE 5% TO 7%
2. COMPRESSIVE STRENGTH=4,000 P.S.I. @ 28 DAYS
3. MAXIMUM SLUMP SHALL BE 4"

1.0' WIDE CONCRETE STRIP AT LANDSCAPE ISLANDS

N.T.S.

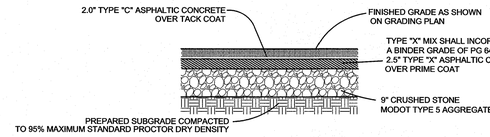
(NOT FOR USE WITHIN R.O.W.)



LIGHT DUTY ASPHALT PAVEMENT DETAIL

N.T.S.

(NOT FOR USE WITHIN R.O.W.)

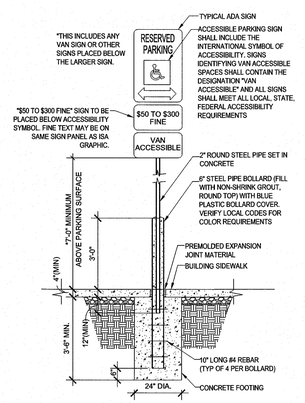


MEDIUM DUTY ASPHALT PAVEMENT DETAIL

N.T.S.

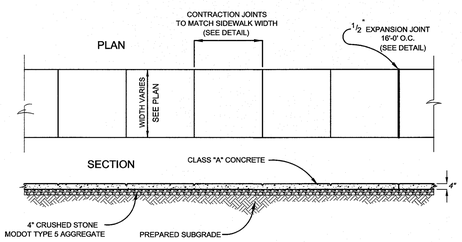
(NOT FOR USE WITHIN R.O.W.)

NOTE: SIGNAGE SHOWN IS AN EXAMPLE, FOR REFERENCE ONLY. SIGN VENDOR SHALL VERIFY ALL SIGN TEXT, COLORS, DIMENSIONS, ETC. WITH LOCAL CODES, TYPICAL.



VAN ACCESSIBLE SIGN DETAIL

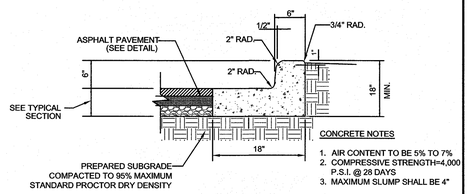
N.T.S.



CONCRETE SIDEWALK DETAIL

N.T.S.

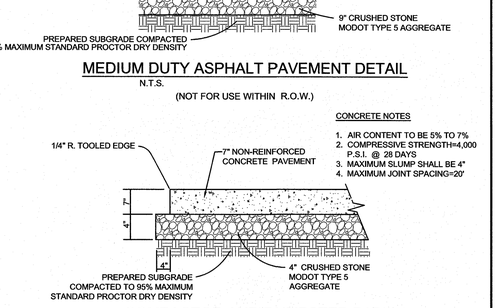
(NOT FOR USE FOR ADA ACCESSIBLE AISLE THRU PARKING LOT)



CONCRETE NOTES
1. AIR CONTENT TO BE 5% TO 7%
2. COMPRESSIVE STRENGTH=4,000 P.S.I. @ 28 DAYS
3. MAXIMUM SLUMP SHALL BE 4"

1.5' CONCRETE CURB & GUTTER

N.T.S.

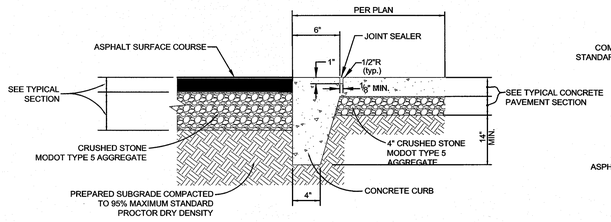


CONCRETE NOTES
1. AIR CONTENT TO BE 5% TO 7%
2. COMPRESSIVE STRENGTH=4,000 P.S.I. @ 28 DAYS
3. MAXIMUM SLUMP SHALL BE 4"
4. MAXIMUM JOINT SPACING=20'

COMPACTOR AND DUMPSTER PAD CONCRETE PAVEMENT DETAIL

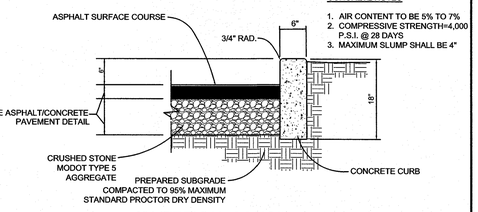
N.T.S.

(NOT FOR USE WITHIN R.O.W.)



THICKENED EDGE AT SIDEWALK AND ADA STALLS

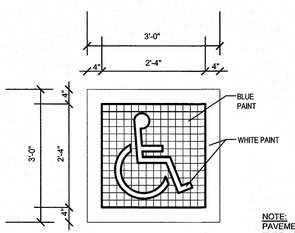
N.T.S.



CONCRETE NOTES
1. AIR CONTENT TO BE 5% TO 7%
2. COMPRESSIVE STRENGTH=4,000 P.S.I. @ 28 DAYS
3. MAXIMUM SLUMP SHALL BE 4"

6" VERTICAL CONCRETE CURB

N.T.S.

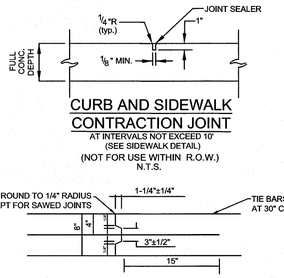


DETAIL NOTE:
GRID SQUARES ARE 2" RE: ANSI A117.1, FIG. 703.6.3.1

NOTE:
PAVEMENT-MARKING PAINT: ALKYD-RESIN TYPE, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH AASHTO M 248; COLORS COMPLYING WITH FS TT-P-1952.
COLOR: AS INDICATED.

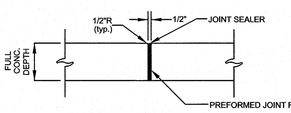
ACCESSIBLE PARKING MARKING

N.T.S.



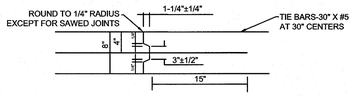
CURB AND SIDEWALK EXPANSION JOINT

AT P.T. & P.C. POINTS OF ROUNDINGS AND AT INTERVALS NOT EXCEED 30'
(SEE SIDEWALK DETAIL)
(NOT FOR USE WITHIN R.O.W.)
N.T.S.



CURB AND SIDEWALK CONTRACTION JOINT

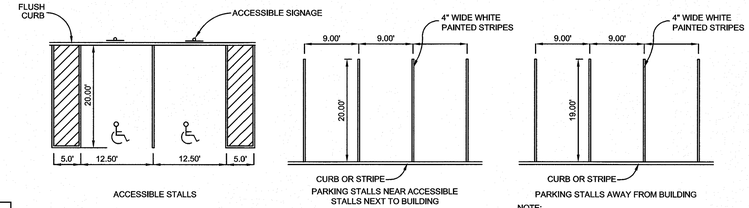
AT INTERVALS NOT EXCEED 10'
(SEE SIDEWALK DETAIL)
(NOT FOR USE WITHIN R.O.W.)
N.T.S.



DETAIL OF CONSTRUCTION JOINT FOR COMPACTOR AND DUMPSTER PAD

N.T.S.

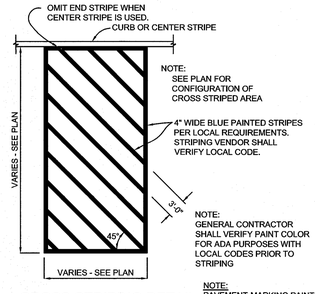
(NOT FOR USE WITHIN R.O.W.)



TYPICAL PARKING DIMENSIONS

N.T.S.

NOTE:
PAVEMENT-MARKING PAINT: ALKYD-RESIN TYPE, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH AASHTO M 248; COLORS COMPLYING WITH FS TT-P-1952.
COLOR: AS INDICATED.



NOTE:
SEE PLAN FOR CONFIGURATION OF CROSS STRIPED AREA

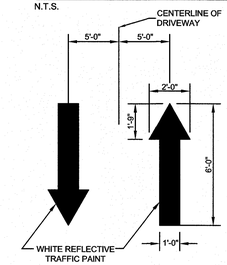
4" WIDE BLUE PAINTED STRIPES PER LOCAL REQUIREMENTS. STRIPING VENDOR SHALL VERIFY LOCAL CODE.

NOTE:
GENERAL CONTRACTOR SHALL VERIFY PAINT COLOR FOR ADA PURPOSES WITH LOCAL CODES PRIOR TO STRIPING

CROSS STRIPING DETAIL

N.T.S.

NOTE:
PAVEMENT-MARKING PAINT: ALKYD-RESIN TYPE, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH AASHTO M 248; COLORS COMPLYING WITH FS TT-P-1952.
COLOR: AS INDICATED.



NOTE:
PAVEMENT-MARKING PAINT: ALKYD-RESIN TYPE, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH AASHTO M 248; COLORS COMPLYING WITH FS TT-P-1952.
COLOR: AS INDICATED.

DRIVEWAY TRAFFIC FLOW DIRECTIONAL ARROW DETAIL

N.T.S.

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifications and revisions after this date unless reauthenticated.

STATE OF MISSOURI
STEVEN MARION
NUMBER
PE2006007195
PROFESSIONAL ENGINEER

STEVEN MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901
TITLE:

SITE DETAILS

SHEET NUMBER:

C-5.2

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

\\Vault-pc\vault\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\SITE PLAN\SITE SECTIONS AND DETAILS.dwg

* Z = LUMINAIRE MOUNTING HEIGHT A.F.G.

Luminaire Location Summary

LumNo	Label	X	Y	Z *	Orient	Tilt
1	A2	618	268	28	51.953	0
2	C	482	343	28	0	0
3	D290	702	254	28	55.008	0
4	D290	763	329	28	55.008	0
5	F	784	248	28	143.746	0
6	OB	560	413	9.33	0	0
7	OB	562	411	9.33	0	0
8	OB	564	417	9.33	0	0
9	OB	566	415	9.33	0	0
10	OC	686	325.1	18	0	0
11	S2	573.42	418.13	16.66	0	0
12	S6	549.27	322.4	16.66	0	0
13	S6	685.47	418.1	16.66	0	0
14	S6	688.62	373.68	16.66	90	0
15	S6	548.11	395.06	16.66	45	0
16	S6	552.32	399.27	16.66	45	0
17	S6	556.56	403.45	16.66	45	0
18	S6	560.81	407.7	16.66	45	0
19	S6	565.08	411.96	16.66	45	0
20	S6	569.3	416.17	16.66	45	0
21	S6	679.47	418.1	16.66	0	0
22	S6	673.47	418.1	16.66	0	0
23	S6	667.47	418.1	16.66	0	0
24	S6	661.47	418.1	16.66	0	0
25	S6	655.47	418.1	16.66	0	0
26	S6	649.47	418.1	16.66	0	0
27	S6	643.47	418.1	16.66	0	0
28	S6	637.47	418.1	16.66	0	0
29	S6	631.47	418.1	16.66	0	0
30	S6	625.47	418.1	16.66	0	0
31	S6	619.47	418.1	16.66	0	0
32	S6	613.47	418.1	16.66	0	0
33	S6	607.47	418.1	16.66	0	0
34	S6	601.47	418.1	16.66	0	0
35	S6	595.47	418.1	16.66	0	0
36	S6	589.47	418.1	16.66	0	0
37	S6	583.47	418.1	16.66	0	0
38	S6	577.47	418.1	16.66	0	0
39	S6	688.62	379.68	16.66	90	0
40	S6	688.62	385.68	16.66	90	0
41	S6	688.62	391.68	16.66	90	0
42	S6	688.62	397.68	16.66	90	0
43	S6	688.62	403.68	16.66	90	0
44	S6	688.62	409.68	16.66	90	0
45	S6	688.62	415.68	16.66	90	0
46	S6	555.27	322.4	16.66	0	0
47	S6	561.27	322.4	16.66	0	0
48	S6	567.27	322.4	16.66	0	0
49	S6	579.27	322.4	16.66	0	0
50	S6	573.27	322.4	16.66	0	0
51	S6	585.27	322.4	16.66	0	0
52	S6	591.27	322.4	16.66	0	0
53	S6	597.27	322.4	16.66	0	0
54	S6	603.27	322.4	16.66	0	0
55	S6	609.27	322.4	16.66	0	0
56	S6	615.27	322.4	16.66	0	0
57	S6	621.27	322.4	16.66	0	0
58	S6	627.27	322.4	16.66	0	0
59	S6	633.27	322.4	16.66	0	0
60	S6	639.27	322.4	16.66	0	0
61	WP	545.9	337.5	12	180	0
62	WP	545.9	362.5	12	180	0
63	WP	545.9	387.5	12	180	0
64	WS	689	329.6	7	315	0
65	WS	681.6	322.3	7	315	0

* HUBBELL IS NOT RESPONSIBLE FOR THE PERFORMANCE OF LUMINAIRE MANUFACTURED BY OTHERS

Luminaire Schedule

Symbol	Label	Qty	Description	Arrangement	Lum. Watts	Lum. Lumens	LMF	LDD	BF	LLF
	A2	1	QTY 2 - CL1-60L-4K-4 (Hubbell Ltg)	TWIN	141	12036	0.950	0.950	1.000	0.903
	C	1	CL1-60L-4K-4-BC (Hubbell Ltg)	SINGLE	140.3	9656	0.950	0.950	1.000	0.903
	D290	2	QTY 2 - CL1-90L-4K-5M (Hubbell Ltg)	BACK-BACK	207.8	18522	0.950	0.950	1.000	0.903
	F	1	CL1-60L-4K-2-BC (Hubbell Ltg)	SINGLE	141.9	7998	0.950	0.950	1.000	0.903
*	OB	4	PT2013-E0155	SINGLE	19.9	1130	0.950	0.900	1.000	0.855
*	OC	1	EVO 41/29 8AR 120	SINGLE	48.9	3108	0.950	0.950	1.000	0.903
*	S2	1	ECVLXWET-2-120-4K-2780	GROUP	N.A.	N.A.	N.A.	N.A.	N.A.	0.903
*	S6	49	ECVLXWET-6-120-4K-2780	GROUP	N.A.	N.A.	N.A.	N.A.	N.A.	0.903
*	WP	3	DSXW1 LED 10C 1000 40K TFTM MVOLT	SINGLE	40	3065	0.950	0.950	1.000	0.903
*	WS	2	AZ-5L-LED75-4K-(2)EBU-BB-CTB-BZ	SINGLE	77.3	5187	0.950	0.950	1.000	0.903

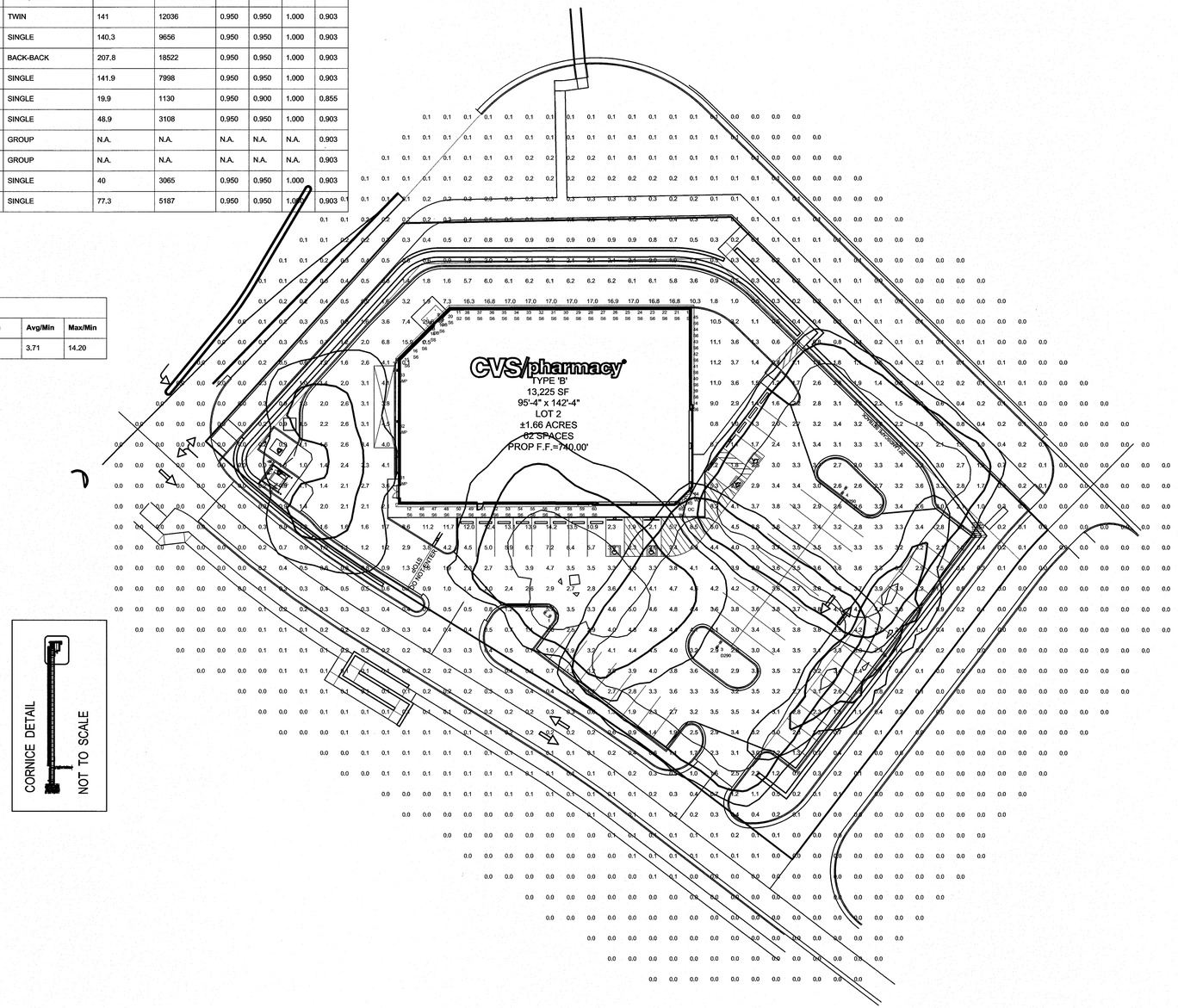
Calculation Summary

Label	Description	Units	Avg	Max	Min	Avg/Min	Max/Min
CVS PARKING	1.0 FC MINIMUM	Fc	3.71	14.2	1.0	3.71	14.20

POLE SPEC FOR CIMARRON:

SINGLE FIXTURE
SSS-XX-XX-X-A2-XX

TWIN FIXTURE 180 DEGREE APART
SSS-XX-XX-X-C2-XX



FOR PRICING CONTACT

Weidenbach-Brown Co., Inc.
315 Norwood Park South
Norwood, MA 02062
Tel: 781-769-9868
Fax: 781-769-9832
E-Mail: CVSSUPPORT@WBLIGHT.COM

1. THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO HUBBELL LIGHTING. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
2. LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
3. CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.

REVISED FROM DRAWING NUMBER(S)	TITLE	SCALE	DATE
X	CVS #10760 WILDWOOD, MO	1" = 30'	9/11/2015
		DRAWN ADC	APVD
		DRAWING NO. 1576170	

Hubbell Lighting, Inc.
701 MILLENNIUM BLVD
GREENVILLE, SC
29607

NOT A CONSTRUCTION DOCUMENT - FOR DESIGN PURPOSES ONLY

"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

N

1" = 30'
30 15 0 30 60
SCALE IN FEET

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

\\wallpchvat\CIVIL 3D PROJECTS\2014143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION\DRAWINGS\PHOTOMETRIC PLAN.dwg

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excludes revisions after this date unless reauthenticated.

STEVE MARION P.E.
ENGINEER
PE2006007196

REVISIONS:

DRAWING BY: M. FOGARTY
DATE: 9-18-2015
JOB NUMBER: 143901

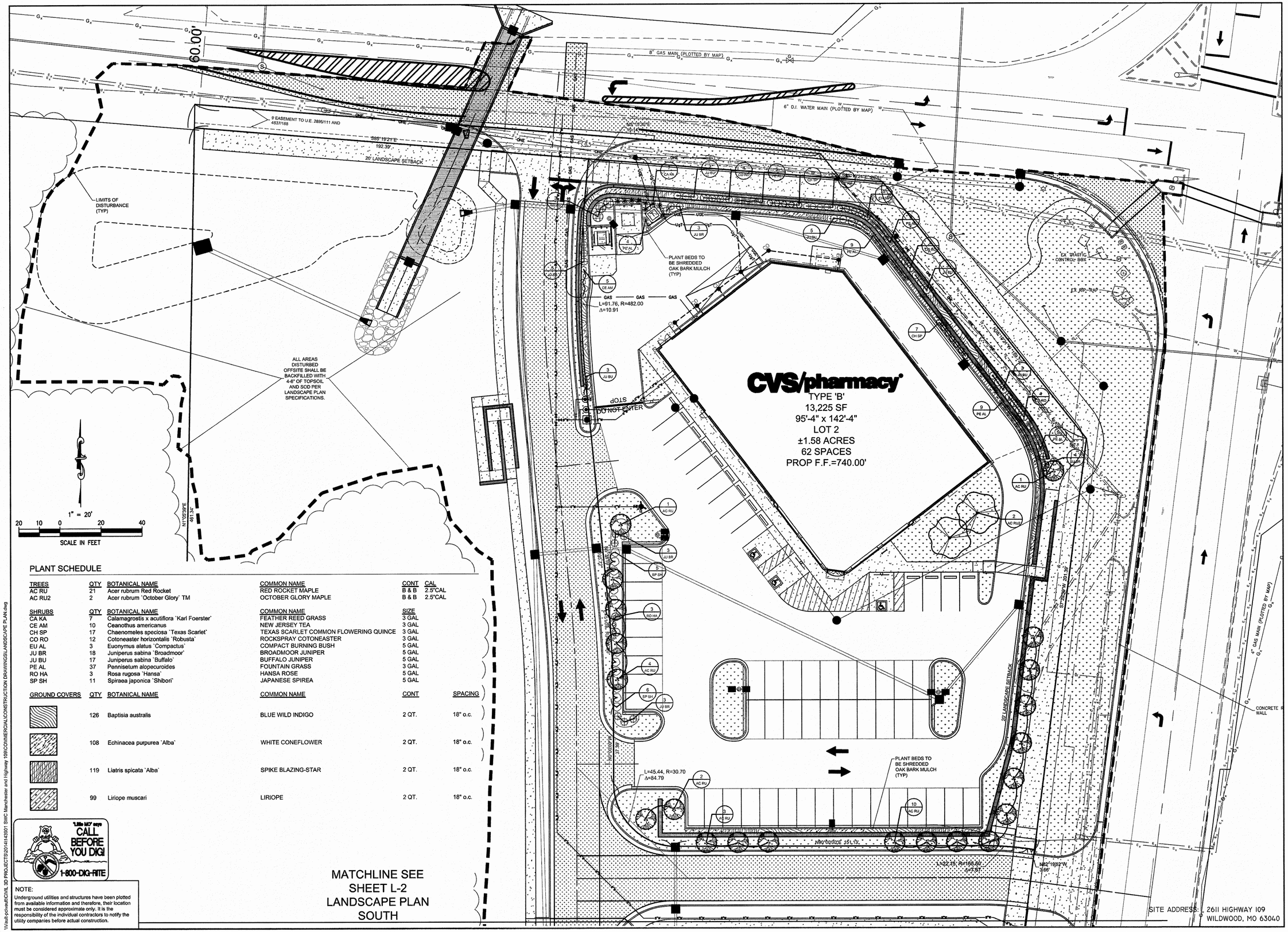
TITLE:

PHOTOMETRICS PLAN

SHEET NUMBER:

PH-1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL
AC RU	21	Acer rubrum Red Rocket	RED ROCKET MAPLE	B & B	2.5"CAL
AC RU2	2	Acer rubrum `October Glory` TM	OCTOBER GLORY MAPLE	B & B	2.5"CAL

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE
CA KA	7	Calamagrostis x acutiflora `Karl Foerster`	FEATHER REED GRASS	3 GAL
CE AM	10	Ceanothus americanus	NEW JERSEY TEA	3 GAL
CH SP	17	Chaenomeles speciosa `Texas Scarlet`	TEXAS SCARLET COMMON FLOWERING QUINCE	3 GAL
CO RO	12	Cotoneaster horizontalis `Robusta`	ROCKSPRAY COTONEASTER	3 GAL
EU AL	3	Euonymus alatus `Compactus`	COMPACT BURNING BUSH	5 GAL
JU BR	18	Juniperus sabina `Broadmoor`	BROADMOOR JUNIPER	5 GAL
JU BU	17	Juniperus sabina `Buffalo`	BUFFALO JUNIPER	5 GAL
PE AL	37	Pennisetum alopecuroides	FOUNTAIN GRASS	3 GAL
RO HA	3	Rosa rugosa `Hansa`	HANSA ROSE	5 GAL
SP SH	11	Spiraea japonica `Shibori`	JAPANESE SPIREA	5 GAL

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING
	126	Baptisia australis	BLUE WILD INDIGO	2 QT.	18" o.c.
	108	Echinacea purpurea `Alba`	WHITE CONEFLOWER	2 QT.	18" o.c.
	119	Liatris spicata `Alba`	SPIKE BLAZING-STAR	2 QT.	18" o.c.
	99	Liriope muscari	LIRIOPE	2 QT.	18" o.c.

"Little MO" says CALL BEFORE YOU DIG! 1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

MATCHLINE SEE SHEET L-2 LANDSCAPE PLAN SOUTH

SITE ADDRESS: 2611 HIGHWAY 109 WILDWOOD, MO 63040

\\vault-pclnvault\CIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\LANDSCAPE PLAN.dwg

CVS pharmacy®

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering fidelity on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excludes sections after this date unless reauthenticated.

STATE OF MISSOURI
STEVE MARION
NUMBER PE2006007195
PROFESSIONAL ENGINEER
STEVEN MARION
NUMBER
PE2006007195

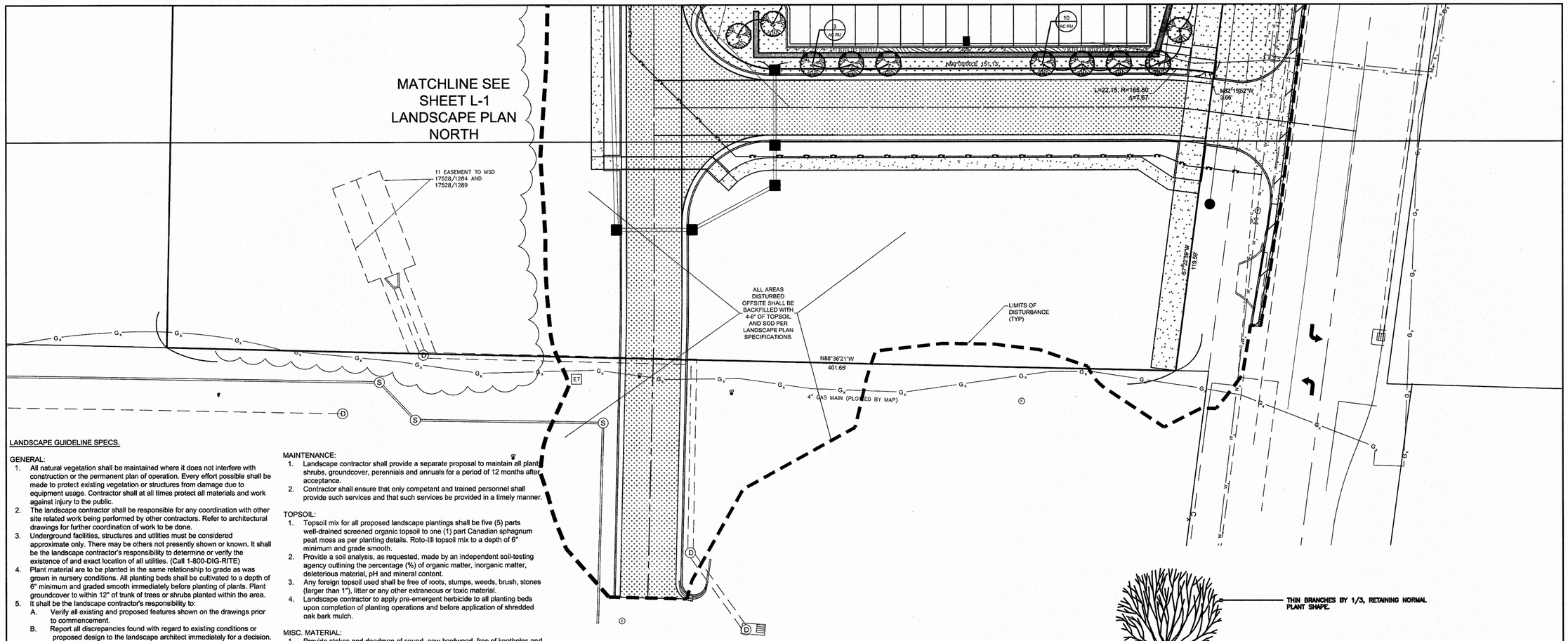
REVISIONS:

DRAWING BY:	M. FOGARTY
DATE:	9-18-2015
JOB NUMBER:	143901

TITLE:
LANDSCAPE PLAN NORTH

SHEET NUMBER:
L-1

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



LANDSCAPE GUIDELINE SPECS.

GENERAL:

1. All natural vegetation shall be maintained where it does not interfere with construction or the permanent plan of operation. Every effort possible shall be made to protect existing vegetation or structures from damage due to equipment usage. Contractor shall at all times protect all materials and work against injury to the public.
2. The landscape contractor shall be responsible for any coordination with other site related work being performed by other contractors. Refer to architectural drawings for further coordination of work to be done.
3. Underground facilities, structures and utilities must be considered approximate only. There may be others not presently shown or known. It shall be the landscape contractor's responsibility to determine or verify the existence of and exact location of all utilities. (Call 1-800-DIG-RITE)
4. Plant material are to be planted in the same relationship to grade as was grown in nursery conditions. All planting beds shall be cultivated to a depth of 6" minimum and graded smooth immediately before planting of plants. Plant groundcover to within 12" of trunk of trees or shrubs planted within the area.
5. It shall be the landscape contractor's responsibility to:
   A. Verify all existing and proposed features shown on the drawings prior to commencement.
   B. Report all discrepancies found with regard to existing conditions or proposed design to the landscape architect immediately for a decision.
   C. Stake the locations of all proposed plant material and obtain the approval of the owner's representative or landscape architect prior to installation.
6. Items shown on this drawing take precedence over the material list. It shall be the landscape contractor's responsibility to verify all quantities and conditions prior to implementation of this plan. No substitutions of types or size of plant materials will be accepted without written approval from the landscape architect.
7. Provide single-stem trees unless otherwise noted in plant schedule.
8. All plant material shall comply with the recommendations and requirements of ANSI Z60.1 "American Standards for Nursery Stock".
9. It shall be the contractor's responsibility to provide for inspection of the plant material by the landscape architect prior to acceptance. Plants not conforming exactly to the plant list will not be accepted and shall be replaced at the landscape contractor's expense.
10. All bids are to have unit prices listed. The owner has the option to delete any portion of the contract prior to signing the contract or beginning work. This will be a unit price contract.
11. All plant material to be transplanted shall be in accordance to guidelines set by AAN standards. Transplanted material will not be guaranteed by the landscape contractor.

INSURANCE:

1. The landscape contractor shall submit certificates of insurance for workman's compensation and general liability.

MULCH:

1. All mulch to be shredded oak bark mulch at 3" depth after compaction (unless otherwise noted). Mulch shall be clean and free of all foreign materials, including weeds, mold, deleterious materials, etc.
2. No plastic sheeting or filter fabric shall be placed beneath shredded oak bark mulch beds. Mirafi fabric shall be used beneath all gravel mulch beds.
3. Landscape beds not bordered by concrete curbing or walks shall be edged with spade-cut edge unless otherwise noted.

MAINTENANCE:

1. Landscape contractor shall provide a separate proposal to maintain all plant shrubs, groundcover, perennials and annuals for a period of 12 months after acceptance.
2. Contractor shall ensure that only competent and trained personnel shall provide such services and that such services be provided in a timely manner.

TOPSOIL:

1. Topsoil mix for all proposed landscape plantings shall be five (5) parts well-drained screened organic topsoil to one (1) part Canadian sphagnum peat moss as per planting details. Roto-till topsoil mix to a depth of 6" minimum and grade smooth.
2. Provide a soil analysis, as requested, made by an independent soil-testing agency outlining the percentage (%) of organic matter, inorganic matter, deleterious material, pH and mineral content.
3. Any foreign topsoil used shall be free of roots, stumps, weeds, brush, stones (larger than 1"), litter or any other extraneous or toxic material.
4. Landscape contractor to apply pre-emergent herbicide to all planting beds upon completion of planting operations and before application of shredded oak bark mulch.

MISC. MATERIAL:

1. Provide stakes and deadman of sound, new hardwood, free of knotholes and defects.
2. Tree wrap tape shall be 4" minimum, designed to prevent borer damage and winter freezing. Additionally, only 3-ply tying material shall be used.

TURF:

1. All disturbed lawn areas to be sodded with a turf-type fescue, cut at a uniform thickness of $\frac{3}{4}$". No broken pieces, irregular pieces or torn pieces will be accepted. Lawn areas shall be unconditionally warranted for a period of 90 days from date of final acceptance
2. Landscape contractor shall offer an alternate price for seed in lieu of sod. Seed shall be a mixture of Turf-Type Fescue (300# per acre) and Bluegrass (18# per acre). Lawn areas shall be unconditionally warranted for a period of 90 days from date of final acceptance. Bare areas more than one square foot per any 50 square feet shall be replaced.
3. Any points carrying concentrated water loads and all slopes of 15% or greater shall be sodded.
4. All sod shall be placed a maximum of 24 hours after harvesting.
5. Recondition existing lawn areas damaged by contractor's operations including equipment/ material storage and movement of vehicles.
6. Sod contractor to ensure sod is placed below sidewalk and all paved area elevations to allow for proper drainage.
7. Off-site land disturbed shall be hydroseeded with mat.

SIGHT TRIANGLES:

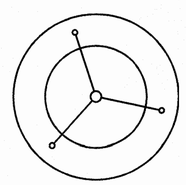
1. No landscape material or other obstructions shall be placed or be maintained within the sight distance area so as not to impede the vision between a height of thirty inches (30") and ten feet (10') above the adjacent street or paving surfaces.
2. The triangle at street intersections shall be formed by measuring from the point of intersection of the two streets a distance of 54' minimum along street centerlines to form the sight triangle area.

WARRANTY:

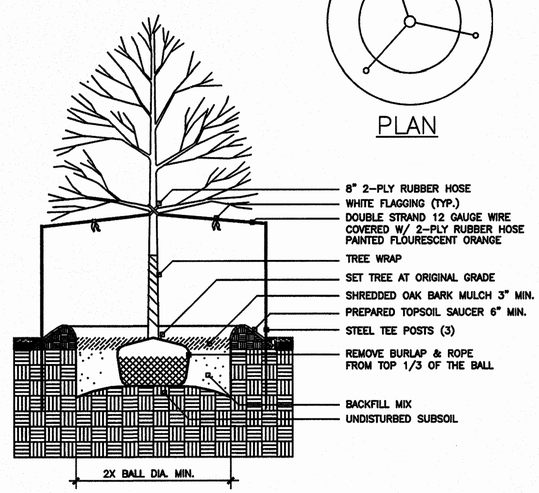
1. All plant material (excluding ground cover, perennials and annuals) are to be warranted for a period of 12 months after installation at 100% of the installed price.
2. Any plant material found to be defective shall be removed and replaced within 30 days of notification or in growth season determined to be best for the plant.
3. Only one replacement per tree or shrub shall be required at the end of the warranty period, unless loss is due to failure to comply with warranty.
4. Lawn establishment period will be in effect once the lawn has been mowed three times. Plant establishment period shall commence on the date of acceptance and 100% completion.

IRRIGATION:

1. All landscape islands and green space, including the right of way, shall be irrigated.
2. Underground irrigation system shall be design-build, location unknown at this time. 4" conduit under pavement per plans. All lawn and landscape areas shall be irrigated with an underground system.
3. All off-site disturbed areas with sod or hyroseed shall be temporarily irrigated for a period of 120 days.

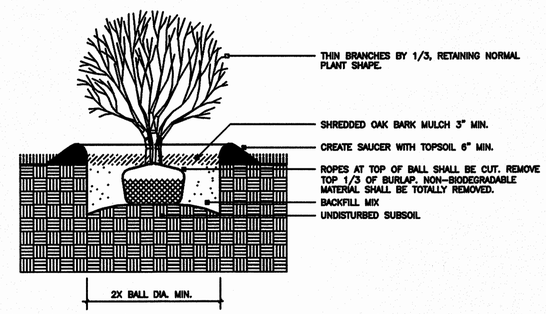


PLAN



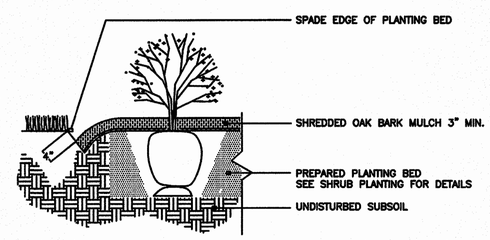
DECIDUOUS TREE PLANTING DETAIL

N.T.S.



SHRUB PLANTING DETAIL

N.T.S.



SPADE-CUT EDGE DETAIL

N.T.S.

1" = 20'

20 10 0 20 40

SCALE IN FEET

SITE ADDRESS: 2611 HIGHWAY 109
WILDWOOD, MO 63040

"Little Mo" says
CALL BEFORE YOU DIG!
1-800-DIG-RITE

NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

W:\all-cvs\mo\MCIVIL 3D PROJECTS\2014\143901 SWC Manchester and Highway 109\COMMERCIAL\CONSTRUCTION DRAWINGS\LANDSCAPE PLAN.dwg

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI

PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION

The responsibility for professional engineering liability on this project is hereby limited to the set of plans authorized by the seal, signature, and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in this project and specifically excluding any revisions made after this date unless resubmitted.

STATE OF MISSOURI
STEVEN J. MARTIN
NUMBER PE2006007195
PROFESSIONAL ENGINEER
STEVEN J. MARTIN, P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY: M. FOGARTY

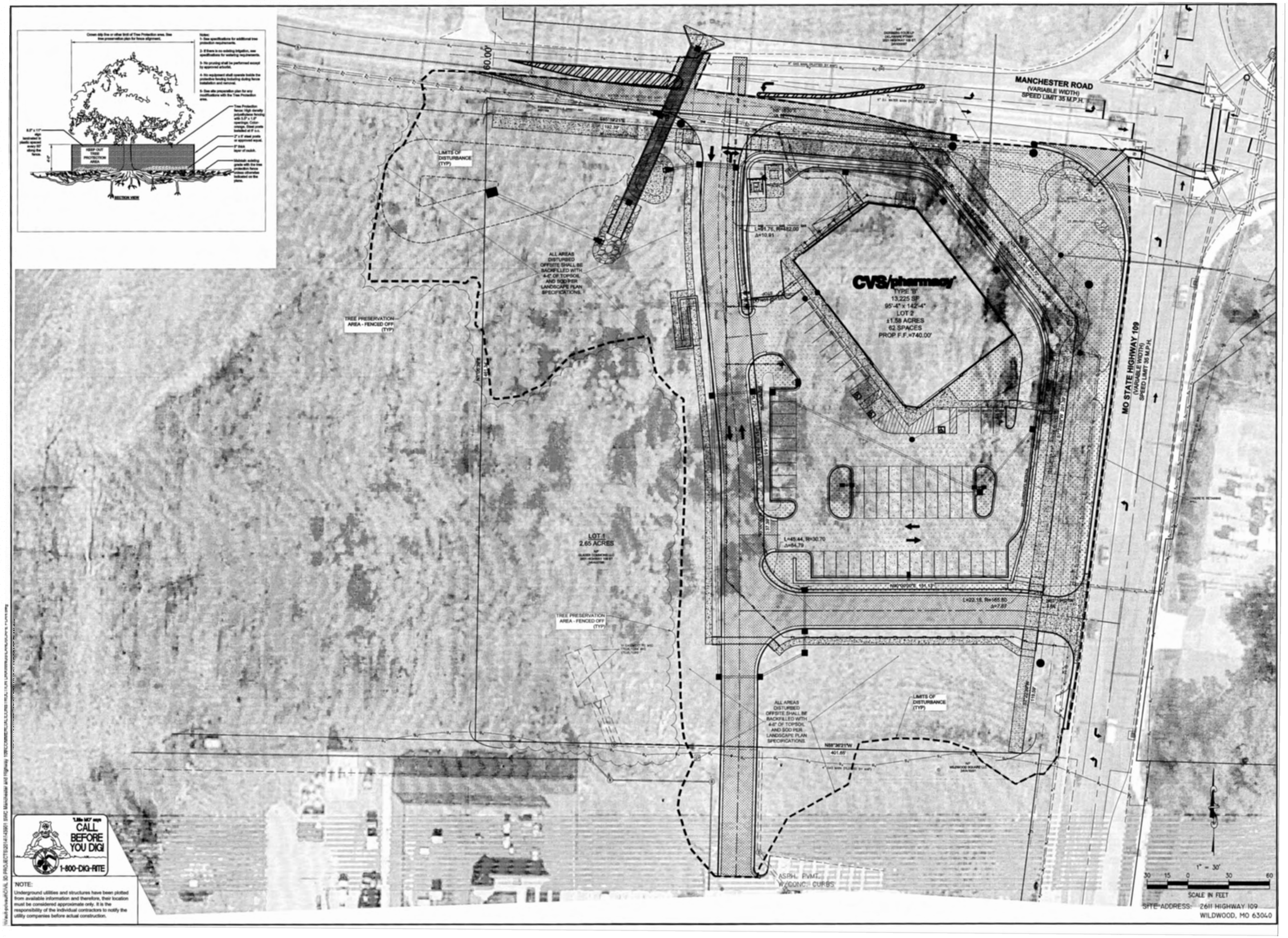
DATE: 9-18-2015

JOB NUMBER: 143901

TITLE: LANDSCAPE PLAN SOUTH

SHEET NUMBER: L-2

COMMENTS:
NOT RELEASED FOR CONSTRUCTION



NOTE:
Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction.

CVS pharmacy

NORTHERN 13,225-LEFT CHAMFER DRIVE-THRU

STORE NUMBER: 10760

MANCHESTER RD AND HIGHWAY 109
WILDWOOD, MISSOURI
PROJECT TYPE: NEW CONSTRUCTION
DEAL TYPE: FEE FOR SERVICE

CS PROJECT NUMBER: 85218

ARCHITECT OF RECORD:

NORR
ARCHITECTS ENGINEERS PLANNERS

CONSULTANT:

PREMIER CIVIL ENGINEERING

Lake Saint Louis
308 TCW Court
Lake Saint Louis, MO 63367
Phone: (314) 925-7444 Fax: (314) 925-7457
Missouri Certificate of Authority # E-2011000031
Missouri Certificate of Authority # LS-2012007849

DEVELOPER:

T.M. CROWLEY & ASSOCIATES

ENGINEERS AUTHENTICATION
The responsibility for professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature, and date hereunder attached. Responsibility is not assumed for other engineering plans involved in this project and specifically excluded are any changes made after date unless reauthenticated.

STATE OF MISSOURI
STEVE MARION
NUMBER
PE2006007195
PROFESSIONAL ENGINEER

STEVE MARION P.E.
ENGINEER
PE2006007195

REVISIONS:

DRAWING BY:	M. FOGARTY
DATE:	9-18-2015
JOB NUMBER:	143901

TITLE:
TREE PRESERVATION PLAN

SHEET NUMBER:
L-3

COMMENTS:
NOT RELEASED FOR CONSTRUCTION

ELEMENTS—Terry Hoffmann

RESIDENTIAL

~~Materials~~

Columns, piers, arches and chimneys shall be made of stone, wood, brick or stucco. The interior chimney flues shall be metal or clay flue tile. Spacing and form shall be proportional.

Porches, posts, spindles, and balusters shall be made of wood, PVC or fiberglass, except railings attached to concrete or brick, which may be made of steel or wrought iron and painted or powder coated ~~a black gloss finish~~. Porches may be enclosed with glass or screens; however, glass enclosures are not permitted at frontages. Porch ceilings may be enclosed with painted wood or beaded vinyl; exposed joists shall be painted.

Porches shall be no less than 8 feet in depth and shall be 18 inches above grade. Porches shall be lit with recessed ceiling fixtures (not wall mounted fixtures) with incandescent or LED lamps. Other illumination sources shall be authorized based upon architectural merit.

Posts shall be no less than 6 x 6 inches ~~thick~~ in section.

Screened porches shall have screens framed in wood or aluminum. Undercrofts of porches and decks shall be skirted with framed wood or vinyl lattice installed between supports with no more than 1 ½ inch spaces between boards.

Railings shall have top and bottom rails. Wood top rails shall be eased at edges and bottom rails shall have a rectangular section. Top and bottom rails shall be centered on the pickets. Spindles and balusters on railings shall not exceed 4 inches on center if made of wood or metal.

Stoops shall be made of wood, brick or concrete. ~~If concrete, a stoop shall have brick or stucco cheek walls. Accessible facilities for commercial uses shall comply with the requirements of this code, where applicable. Otherwise, the Architectural Review Board shall approve these facilities based upon merit and overall code compliance.~~

Decks shall be located in rear yards and where not easily visible from streets or paths. Decks shall be made of unpainted polymer lumber or composite material or shall be painted or stained wood ~~and painted or stained (except walking surfaces which shall be unpainted).~~

~~Bay windows at frontages shall be made of trim lumber.~~

~~Storefronts shall be made of wood. In Commercial/Workplace areas, alternative materials can be considered, such as aluminum/anodized components with approved colors, which replicate a wood character. Steel systems may also be considered.~~

Wood elements must be painted or stained with an opaque stain, except walking surfaces may be left natural.

~~Configurations~~

Chimneys shall be a min. 2:1 proportion in plan and capped to conceal spark arresters. ~~Flues shall be no taller than required by The Building Code.~~ Chimneys are optional within the Town Center.

Arches shall be no less than 12 inches in depth. Keystones ~~shall be functional and not decorative, but~~ must be proportional, if used.

Arcades shall have vertically proportioned openings.

~~Porches shall be no less than 8 feet in depth and shall be 18 inches above grade. Porches shall be lit with recessed ceiling fixtures (not wall mounted fixtures) with incandescent bulbs.~~ Other illumination ~~Illumination sources shall be authorized based upon architectural merit.~~ *(Moved to after porches.)*

~~Screened porches shall have screens framed in wood. Undercrofts of porches and decks shall be skirted with framed wood or vinyl lattice installed between supports with no more than 1 ½ inch spaces between boards.~~ *(Moved to after porches.)*

~~Posts shall be no less than 6 x 6 inches thick.~~ *~~(Moved to after porches.)~~*

~~Railings shall have top and bottom rails. Wood top rails shall be eased at edges and bottom rails shall have a rectangular section. Top and bottom rails shall be centered on the pickets. Spindles and balusters on railings shall not exceed 4 inches on center if made of wood or metal.~~ *(Moved to after porches.)*

Bay windows at frontages shall have a minimum of 3 sides and shall be habitable~~, extending from the height of the interior floor to the appropriate grade at street level~~. Balconies shall not exceed 4 feet in depth. Cantilevers, including balconies and second story bay windows, shall be supported by brackets.

NOTES:

COMMERCIAL

~~Materials~~

Columns, piers, arches and chimneys shall be made of stone, wood, brick or stucco. ~~The interior chimney flues shall be metal or clay flue tile.~~ Spacing and form shall be proportional.

~~Porches, posts, spindles, and balusters shall be made of wood or fiberglass, except railings attached to concrete or brick, which may be made of steel or wrought iron and painted or powder coated a black gloss finish. Porches may be enclosed with glass or screens; however, glass enclosures are not permitted at frontages. Porch ceilings may be enclosed with painted wood or beaded vinyl; exposed joists shall be painted.~~

Stoops shall be made of wood, brick or concrete. ~~If concrete, a stoop shall have brick or stucco cheek walls.~~ Accessible facilities for residential uses shall comply with the requirements of this code, where applicable. Otherwise, the Architectural Review Board shall approve these facilities based upon merit and overall code compliance.

Decks shall be located in rear yards and where not easily visible from streets or paths. Decks shall be made of unpainted polymer lumber or composite material or shall be painted or stained wood ~~and painted or stained (except walking surfaces which shall be unpainted).~~

~~Bay windows at frontages shall be made of trim lumber.~~

Storefronts shall be made of wood or aluminum. In Commercial/Workplace areas, alternative materials can be considered, such as aluminum/anodized components with approved colors~~, which replicate a wood character.~~ Steel systems may also be considered.

Wood elements must be painted or stained with an opaque stain, except walking surfaces may be left natural.

~~Configurations~~

~~Chimneys shall be a min. 2:1 proportion in plan and capped to conceal spark arresters. Flues shall be no taller than required by The Building Code. Chimneys are optional within the Town Center.~~

Arches shall be no less than 12 inches in depth.

Keystones shall be functional and not decorative, but must be proportional, if used.

Arcades shall have vertically proportioned openings.

~~Porches shall be no less than 8 feet in depth and shall be 18 inches above grade. Porches shall be lit with recessed ceiling fixtures (not wall mounted fixtures) with incandescent bulbs. Other illumination sources shall be authorized based upon architectural merit. Screened porches shall have screens framed in wood. Undercrofts of porches and decks shall be skirted with framed wood or vinyl lattice installed between supports with no more than 1 ½ inch spaces between boards.~~

~~Posts~~ Columns shall be no less than 6 x 6 inches thick.

Railings shall have top and bottom rails. Posts, spindles, and balusters shall be made of wood, PVC or fiberglass, except railings attached to concrete or brick, which may be made of steel or wrought iron and painted or powder coated. Wood top rails shall be eased at edges and bottom rails shall have a rectangular section. Top and bottom rails shall be centered on the pickets. Spindles and balusters on railings shall not exceed 4 inches on center if made of wood or metal.

Porches,

Bay windows at frontages shall have a minimum of 3 sides and shall be habitable~~, extending from the height of the interior floor to the appropriate grade at street level~~. Balconies shall not exceed 4 feet in depth. Cantilevers, including balconies and second story bay windows, shall be supported by brackets.

NOTES: