



AGENDA

City of Wildwood's

Site Plan Subcommittee

of the

Planning and Zoning Commission (all members are welcome)

City Hall Community Room - 16860 Main Street

Monday, November 7, 2016

5:45 p.m. to 6:20 p.m.

Re: P.Z. 5 & 5(a)-16 Stonecrest

- I. Welcome To Attendees And Roll Call Of Commission Members
- II. Review Tonight's Agenda/Questions Or Comments
- III. P.Z. 5 & 5(A)-16 Stonecrest – Review And Discussion Of The Site Development Plan (SDP) And Related Items For A Senior Care Facility Consisting Of Up To Ninety-Five (95) Beds; Amended C-8 Planned Commercial District (Town Center “Neighborhood General District”); North Side Of Plaza Drive, South Of State Route 100. (Ward Eight)

Documents:

III. STONECREST.PDF

1. Overview Of Plan And Related Items By Department Of Planning Staff
2. Presentation By Petitioner/Petitioner's Representation

3. Comments And Questions By Subcommittee Members

4. Consensus On Recommendation

IV. Public Comment

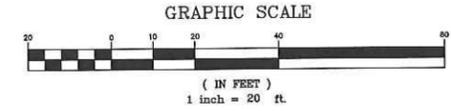
V. Other Matters

VI. Closing Remarks And Adjournment

The Site Plan Subcommittee of the Planning and Zoning Commission will consider and act upon the matters listed above and such other matters as may be presented at the meeting and determined to be appropriate for discussion at that time.

PAVEMENT LEGEND

-  STANDARD DUTY ASPHALT
-  CONCRETE PAVEMENT



MISSOURI STATE HIGHWAY 100 (V.W.)
NO RIGHTS OF DIRECT ACCESS DB. 6564 PG. 1038



PREPARED BY:

STOCK & ASSOCIATES
Consulting Engineers, Inc.

257 Chesterfield Business Parkway
St. Louis, MO 63015 PH: (636) 530-9100 FAX: (636) 530-9130
e-mail: general@stockinc.com
Web: www.stockinc.com

LEGEND

- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING TREE
- EXISTING BUILDING
- EXISTING CONTOUR
- SPOT ELEVATION
- EXISTING UTILITIES
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- DENOTES RECORD INFORMATION
- HANDICAPPED PARKING
- PROPOSED CONTOUR
- PROPOSED SPOT
- PROPOSED STORM
- PROPOSED SANITARY

ABBREVIATIONS

- ATG - ADJUST TO GRADE
- B.C. - BACK OF CURB
- C.O. - CLEANOUT
- DB. - DEED BOOK
- E. - ELECTRIC
- F.C. - FACE OF CURB
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- UP. - UNDER PAVEMENT
- V.C.P. - VITRIFIED CLAY PIPE
- W. - WATER
- (86'W) - RIGHT-OF-WAY WIDTH TO BE REMOVED & REPLACED

PARKING DATA

PROPOSED ASSISTED LIVING FACILITY	19 P.S.
95 BEDS * 1 SPACES/ BEDS	19 P.S.
24 EMPLOYEES * 1 SPACE/2 EMPLOYEES	12 P.S.
2 VISITORS	2 P.S.
TOTAL REQUIRED:	33 P.S.
PROVIDED PARKING (ON LOT):	32 P.S.
PROVIDED PARKING (PLAZA DRIVE)	7 P.S.
TOTAL:	39 P.S. TOTAL

*THE PARKING LOT AREA LOCATED IMMEDIATELY TO THE NORTH OF THE PUBLIC PLAZA HAS BEEN DEDICATED FOR PUBLIC USE AND ACCESS PURPOSES, INCLUDING BY EASEMENT TO THE CITY OF WILDWOOD, PB. 353 PGS. 646-647.

PERTINENT DATA

SITE AREA: 1.648 Acres ± (CONSOLIDATED LOT 1)
EXISTING ZONING: 'AMENDED C-8' (PLANNED COMMERCIAL DISTRICT)
LOTATOR NO.: LOT 1: 23V220233 and LOT 2: 23V220242
SUBDIVISION: WILDWOOD TOWN CENTER PLAT TWO PB. 356 PG. 485 AND 486
ADDRESS: 251 and 261 PLAZA DR. WILDWOOD, MO 63040
FIRE DISTRICT: METRO WEST
SCHOOL DISTRICT: ROCKWOOD R-6
SEWER DISTRICT: METROPOLITAN ST. LOUIS SEWER DISTRICT
WATER SHED: CAULKS CREEK WATERSHED
FEMA MAP: 29189C0235 H, DATE: 08/02/95
ELECTRIC COMPANY: AMEREN UE
GAS COMPANY: LACLEDE GAS COMPANY
PHONE COMPANY: AT-T
WATER COMPANY: MISSOURI AMERICAN WATER COMPANY
POLICE: ST. LOUIS COUNTY WILDWOOD PRECINT
WARD: EIGHT

STORMWATER DETENTION PROVIDED FOR IN OFFSITE BASIN APPROVED UNDER P# 25457; WATER QUALITY IMPROVEMENTS ARE REQUIRED FOR THE USAGE OF THE SUBJECT SITE.

PROPERTY DESCRIPTION

A TRACT OF LAND BEING ADJUSTED LOT 1 AND ADJUSTED LOT 2 OF "WILDWOOD TOWN CENTER PLAT TWO", A SUBDIVISION FILED FOR RECORD IN PLAT BOOK 356, PAGES 485 AND 486 OF THE ST. LOUIS COUNTY, MISSOURI RECORDS, AND BEING PART OF THE SOUTHEAST QUARTER OF SECTION 11 IN TOWNSHIP 44 NORTH, RANGE 3 EAST OF THE FIFTH PRINCIPAL MERIDIAN, CITY OF WILDWOOD, ST. LOUIS COUNTY, MISSOURI AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF ADJUSTED LOT 1 OF "WILDWOOD TOWN CENTER PLAT TWO", A SUBDIVISION FILED FOR RECORD IN PLAT BOOK 356, PAGE 485 AND 486 OF THE ST. LOUIS COUNTY RECORDS; THENCE ALONG THE WESTERN LINE OF SAID ADJUSTED LOT 1 NORTH 00 DEGREES 50 MINUTES 00 SECONDS EAST, 211.49 FEET TO THE NORTHWEST CORNER THEREOF; THENCE ALONG THE NORTHERN LINE OF ADJUSTED LOT 1 AND ADJUSTED LOT 2 THE FOLLOWING: SOUTH 83 DEGREES 02 MINUTES 27 SECONDS EAST, 52.39 FEET TO A POINT; THENCE SOUTH 87 DEGREES 18 MINUTES 21 SECONDS EAST, 319.04 FEET TO THE NORTHEAST CORNER OF ADJUSTED LOT 2; THENCE ALONG THE EASTERN LINE OF ADJUSTED LOT 2 SOUTH 02 DEGREES 41 MINUTES 39 SECONDS WEST, 111.43 FEET TO A POINT; THENCE NORTH 87 DEGREES 18 MINUTES 21 SECONDS WEST, 48.00 FEET TO A POINT; THENCE SOUTH 02 DEGREES 41 MINUTES 39 SECONDS WEST, 96.06 FEET TO A POINT ON THE NORTHERN RIGHT-OF-WAY LINE OF PLAZA DRIVE; THENCE ALONG SAID NORTHERN RIGHT-OF-WAY LINE NORTH 87 DEGREES 18 MINUTES 21 SECONDS WEST, 316.41 FEET TO THE POINT OF BEGINNING AND CONTAINING 71,801 SQUARE FEET OR 1.648 ACRES MORE OR LESS AS PER CALCULATIONS BY STOCK & ASSOCIATES CONSULTING ENGINEERS, INC. DURING FEBRUARY, 2016.

SITE DEVELOPMENT PLAN FOR:

STONECREST AT WILDWOOD
201 PLAZA DR.
WILDWOOD MO



GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000995

REVISIONS:

1	CITY COMMENTS	09/14/16
2	CITY COMMENTS	10/25/16
3	CITY COMMENTS	11/03/16

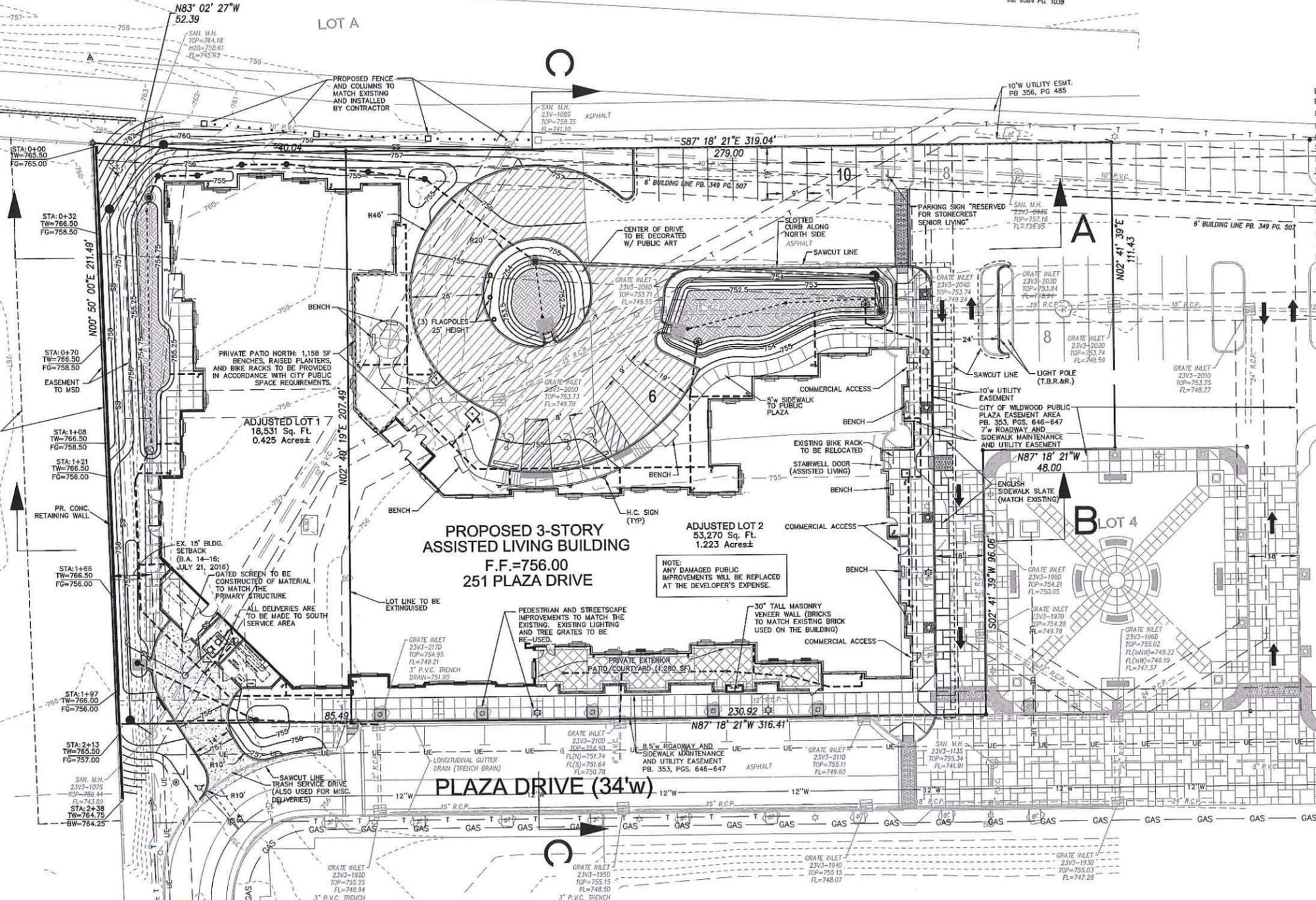
DATE:	08.02.16	JOB NO.:	216-5763
SCALE:	AS SHOWN	DATE:	
SCALE:		DATE:	
SCALE:		DATE:	

SHEET TITLE:

SITE DEVELOPMENT PLAN

SHEET NO.:

C1



BENCHMARK
THE CONTOUR LINES SHOWN HEREON IS 1929 NATIONAL GEODETIC VERTICAL DATUM BASED ON METROPOLITAN ST. LOUIS SEWER DISTRICT BENCHMARK.

MSD BENCHMARK NO. 16-109; ELEV. = 794.70
"1" ON THE WEST SIDE OF A CONCRETE PORCH OF BUILDING AT #16957 MANCHESTER ROAD; 21' EAST OF THE CENTERLINE OF EATHERTON ROAD AND 39' NORTH OF THE CENTERLINE OF MANCHESTER ROAD.

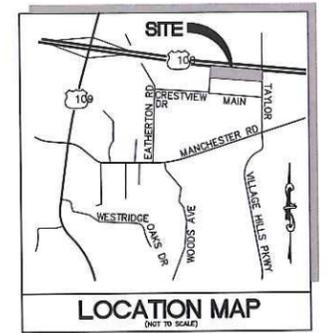
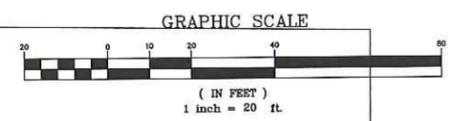
SITE BENCHMARK
SITE BENCHMARK; ELEV. = 756.55
"0" IN THE WORD "OPEN" ON FIRE HYDRANT; APPROXIMATELY 25 FEET WEST OF A GRAVEL DRIVEWAY AT #16904 CRESTVIEW.

ORIGINAL LOT 1: 0.425 Ac.
N/W WILDWOOD CROSSING, INC.
LOC # 23V220233
261 PLAZA DRIVE, WILDWOOD, MO
ZONE: C8

ORIGINAL LOT 2: 1.223 Ac.
N/W WILDWOOD CROSSING, INC.
LOC # 23V220242
251 PLAZA DRIVE, WILDWOOD, MO
ZONE: C8

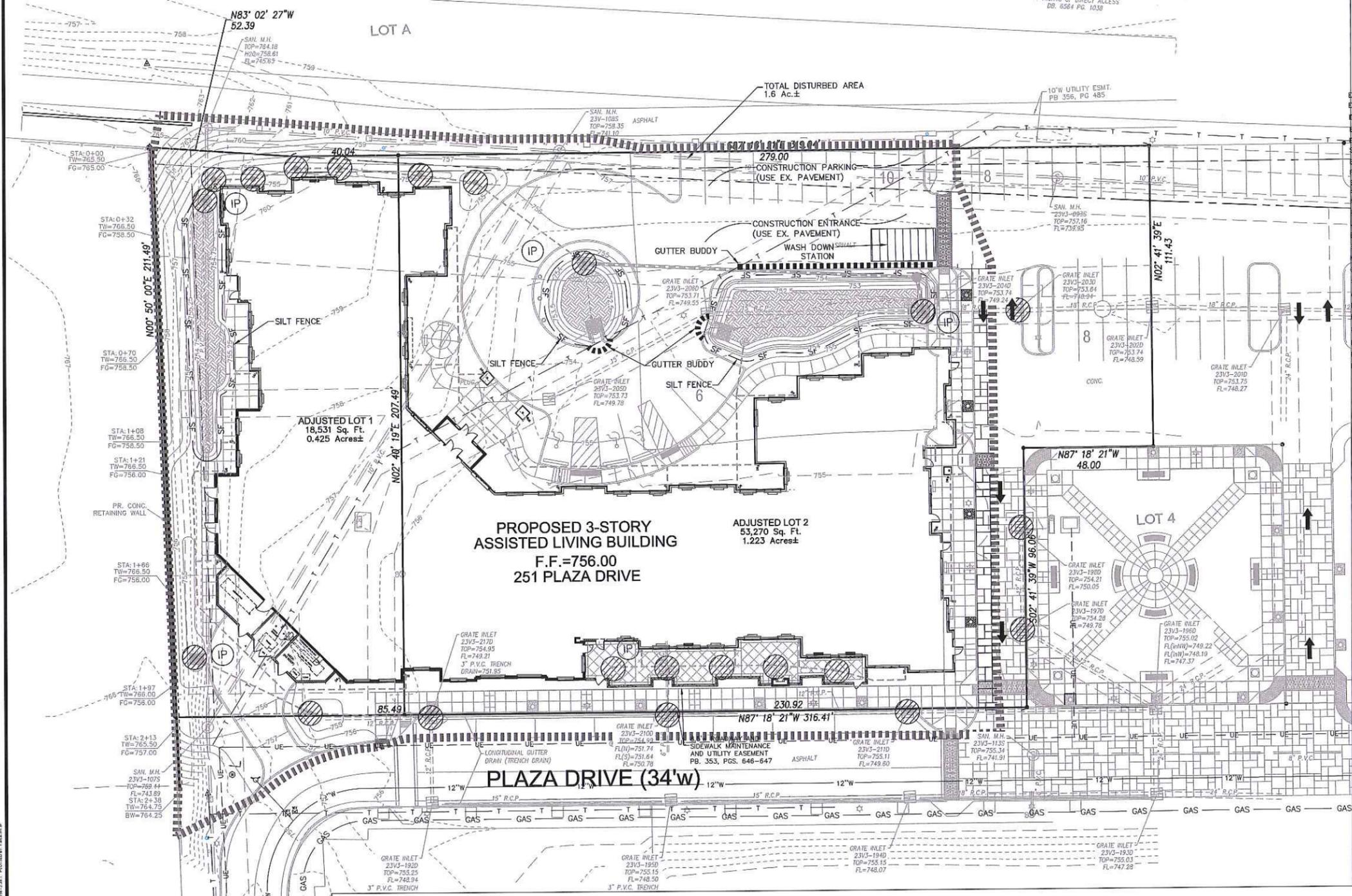
- Number of Provided Parking Spaces: 39 spaces
 Number of Proposed Units: N/A
 Standard for Public Space: 290.4 square feet per parking space
 Amount of Required Public Space: 11,326 square feet
 Amount of Provided Public Space:
- Private Patio South: 1,280 square feet
 - Private Patio North: 1,158 square feet
 - Bio-Retention: 3,997 square feet
- List Installed Improvements:
- Picnic Tables: 0 total number
 - Benches: 8 total number
 - Trash Receptacles: 0 total number
 - Bike Racks: 1 total number
 - Art Pieces: 1 total number

STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. AND THE UNDERSIGNED ENGINEER HAVE NO RESPONSIBILITY FOR SERVICES PROVIDED BY OTHERS TO IMPLEMENT THE IMPROVEMENTS SHOWN ON THIS PLAN AND ALL OTHER DRAWINGS WHERE THE UNDERSIGNED ENGINEER'S SEAL APPEARS. THE CONSTRUCTION MEANS AND METHODS ARE THE SOLE RESPONSIBILITY OF THE OWNER AND CONTRACTOR. STOCK AND ASSOCIATES CONSULTING ENGINEERS, INC. HAS NO RESPONSIBILITY TO VERIFY FINAL IMPROVEMENTS AS SHOWN ON THIS PLAN UNLESS SPECIFICALLY ENGAGED AND AUTHORIZED TO DO SO BY THE OWNER OR CONTRACTOR.



MISSOURI STATE HIGHWAY 100 (V.W.)

NO RIGHTS OF DIRECT ACCESS
DB. 6584 Pg. 1038



LEGEND

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- EXISTING TREE
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EROSION CONTROL LEGEND

- SF - SILTATION CONTROL FENCE
- IP - INLET PROTECTION
- WASHDOWN STATION
- GUTTER BUDDY
- - TOTAL DISTURBED AREA (1.6 Ac.)

STORMWATER POLLUTION PREVENTION PLAN

PREPARED BY:

257 Chesterfield Business Parkway
St. Louis, MO 63025 PH: (636) 530-9100 FAX: (636) 530-9130
e-mail: gstock@stockinc.com
Web: www.stockinc.com

STOCK & ASSOCIATES
Consulting Engineers, Inc.

SITE DEVELOPMENT PLAN FOR:

STONECREST AT WILDWOOD
201 PLAZA DR.
WILDWOOD MO



GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000955

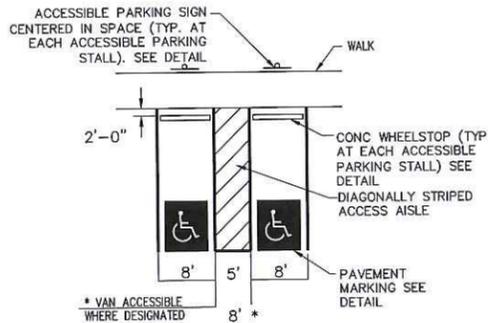
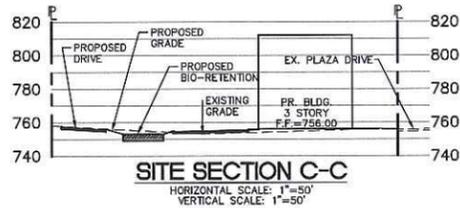
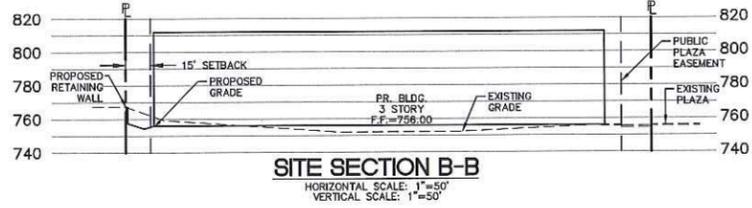
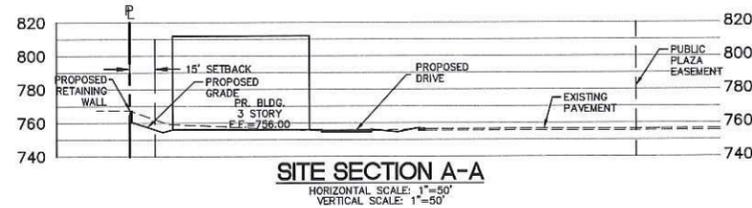
REVISIONS:

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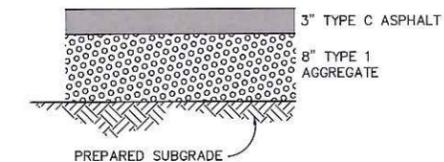
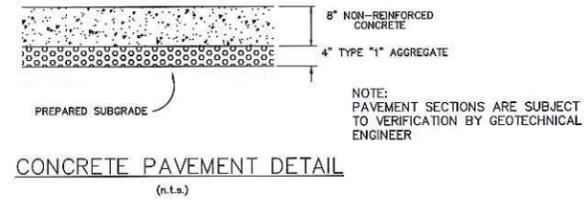
DRAWN BY:	R.E.S.	DESIGNED BY:	G.M.S.
DATE:	08.02.16	JOB NO.:	216-5763
SCALE:	AS SHOWN	SHEET NO.:	
SCALE:		DATE:	
SCALE:		DATE:	
SCALE:		DATE:	

SHEET TITLE:
SITE DEVELOPMENT PLAN

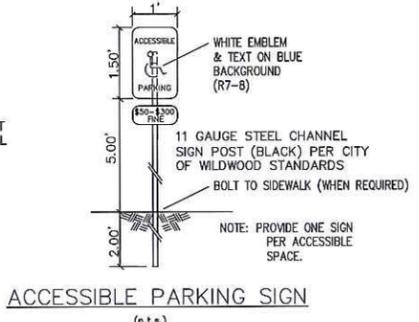
SHEET NO.:
C2



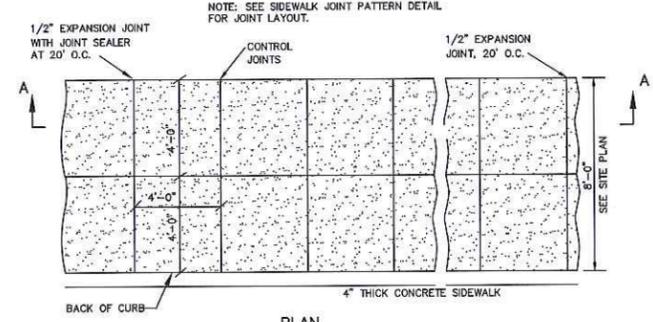
ACCESSIBLE PARKING STALL - ADA



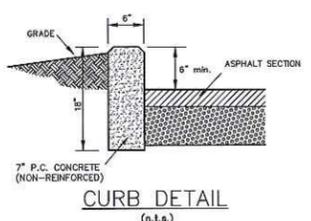
ASPHALT PAVEMENT DETAIL-LIGHT DUTY



ACCESSIBLE PARKING SIGN



CONCRETE SIDEWALK DETAIL (SOUTH AND EAST SIDE OF BUILDING)



CURB DETAIL

Bomanite Pick A Pattern

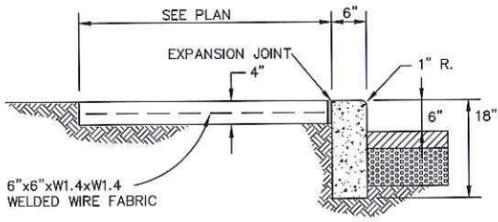
Specifications are not limited to the patterns shown here. New custom patterns can be produced at reasonable cost. Contact your BOMANITE Contractor or BOMANITE Corporation for further information.

Design Considerations
BOMANITE is not usually intended to be an exact simulation of brick, tile or stone, but is often used to achieve a similar general appearance.

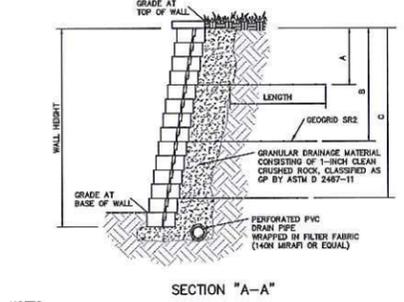
Dimensions
• Dimensions are centerline-to-centerline.
• Overall dimensions are outside dimension of platform-type (including back counter-hand) and used with.
• Drawings are not in scale to each other.

See Bulletin 313 and 314 for BOMANITE patterns with texture.

Ahal CONTRACTING CO., INC.
3746 PENNINGTON DR. - BRIDGETON, MO 63044
(314) 723-1142



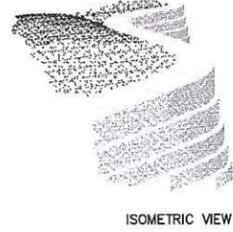
INTEGRAL CONCRETE SIDEWALK AND CURB DETAIL



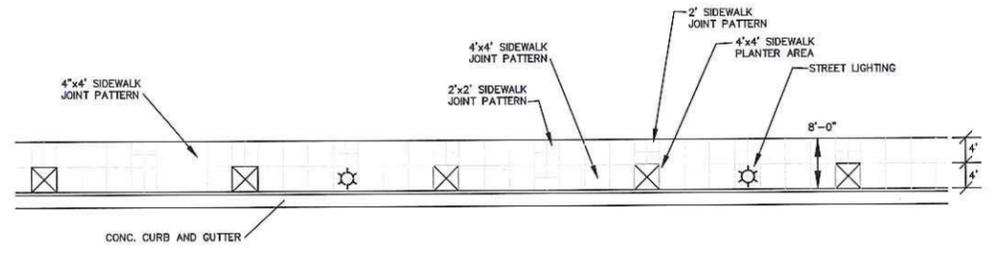
SECTION "A-A"

- NOTES:
- 1.) ALL CONSTRUCTION SHALL BE PER THE MANUFACTURERS RECOMMENDATION.
 - 2.) THE ABOVE INFORMATION IS A CONCEPT ONLY. ACTUAL DESIGN OF RETAINING WALL SHALL BE BY A LICENSED PROFESSIONAL ENGINEER & SUBMITTED TO STOCK AND ASSOCIATES FOR GENERAL COMPLIANCE WITH GRADING PLAN.
 - 3.) ACCEPTED ALTERNATE WALL SYSTEM: VERSA-LOK OR UNLOCK PISA.
 - 4.) TH= TOP OF RETAINING WALL, BH= GRADE AT BASE OF WALL.
 - 5.) VERTICAL WALL SYSTEM ASSUMED FOR THIS PROJECT. ZERO BATTER.
 - 6.) WALL DESIGNER SHALL CONSULT GEOTECHNICAL ENGINEER FOR GLOBAL STABILITY.
 - 7.) RETAINING WALL WILL REQUIRE A SEPARATE PERMIT (BUILDING PERMIT) PRIOR TO CONSTRUCTION

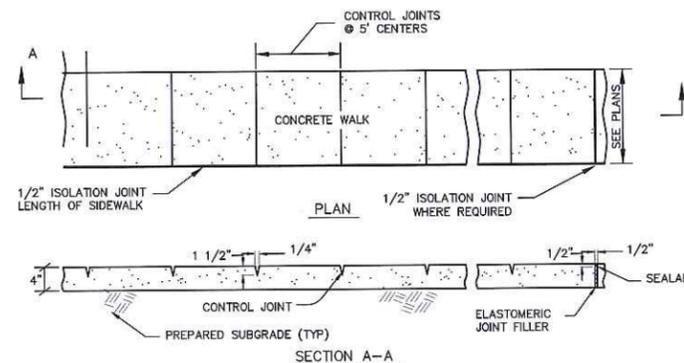
VERSA-LOK RETAINING WALL TYPICAL SECTION



ISOMETRIC VIEW



SIDEWALK JOINT PATTERN DETAIL (SOUTH AND EAST SIDE OF BUILDING)



CONCRETE WALK

PREPARED BY:

SITE DEVELOPMENT PLAN FOR:

STONECREST AT WILDWOOD
201 PLAZA DR.
WILDWOOD MO



GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000996

REVISIONS:

1	CITY COMMENTS	09/14/16
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DATE:	08.02.16	JOB NO.:	216-5763
U.S.A. #:		BASE MAP #:	
S.L.C. NAT. #:		NAT. SUP. #:	
MARK #:	MO-00		

SHEET TITLE:
SITE DEVELOPMENT PLAN

SHEET NO.:
C3

257 Chesterfield Business Parkway
St. Louis, MO 63005 PH: (636) 530-9100 FAX: (636) 530-9130
e-mail: general@stockandassocs.com
Web: www.stockandassocs.com

STOCK & ASSOCIATES
Consulting Engineers, Inc.

AN ORDINANCE OF THE CITY OF WILDWOOD, MISSOURI, APPROVING A CHANGE TO THE TOWN CENTER PLAN'S REGULATING PLAN; AMENDING ORDINANCE #1650 BY DELETING SECTION TWO THEREOF AND ENACTING, IN LIEU THEREOF, A NEW SECTION TWO; AND PROVIDING FOR THE APPROVAL OF AN AMENDED C-8 PLANNED COMMERCIAL DISTRICT FOR A CERTAIN ONE POINT SIX (1.6) ACRE TRACT OF LAND FOR USE AS A RESIDENTIAL SENIOR SERVICE FACILITY. (Ward Eight)

WHEREAS, pursuant to § 89.30, RSMo., "Any municipality in this state may make, adopt, amend, and carry out a city plan and appoint a planning commission with the powers and duties herein set forth;" and

WHEREAS, pursuant to §§ 89.300 to 89.480, RSMo., the Planning and Zoning Commission of the City is tasked with adopting and amending the City's Master Plan and all parts thereof; and

WHEREAS, consistent with §§ 89.300 to 89.480, RSMo., the City has adopted a Town Center Plan and corresponding Final Land Use/Regulating Plan Map (the "Regulating Plan"); and

WHEREAS, the Regulating Plan establishes the permissive land use activities for all properties in the Town Center area of the City of Wildwood; and

WHEREAS, Section 3.0(b) of the City Charter provides that "Zoning ordinances may be adopted or amended only to the extent that such ordinances are consistent with the Comprehensive Zoning Plan;" and

WHEREAS, the Planning and Zoning Commission received a request for a change to the Regulating Plan from Downtown District to Neighborhood General District for a certain 1.6 acre tract of land that is located on the north side of Plaza Drive, west of Fountain Place and more particularly described in Section One of this Ordinance (the "Property") for purposes of allowing a residential senior care facility within Wildwood Town Center; and

WHEREAS, pursuant to Ordinance #1650, the Property was zoned C-8 Planned Commercial District; and

WHEREAS, the Planning and Zoning Commission received a Petition requesting an Amended C-8 Planned Commercial District for the Property for purposes of allowing no less than 3,800 square feet of commercial services on the ground floor of the building and a total number of beds not to exceed ninety-five (95) in total; and

WHEREAS, these requests were considered by the Planning and Zoning Commission at a public hearing on May 2, 2016 and discussion was held on the merits of this type of use in Town Center and the impact it would have, if authorized, on the "Downtown District Area of this location; and

WHEREAS, after the conclusion of the public hearing and responding to the Department of Planning's Information Report, the Planning and Zoning Commission approved the change to the Regulating Plan and designation for the Property from Downtown District to Neighborhood General District, and recommended approval of the Petition requesting the Amended C-8 Planned Commercial District subject to certain terms and conditions the specifics of such approval and recommendation being set forth in the recommendation of the Planning and Zoning Commission submitted to the City Council dated June 20, 2016, and regarding PZ 5 and 5(a)-16, a copy of which is on file in the office of the City Clerk and incorporated by reference herein; and

Total square footage of permitted buildings utilized for commercial uses only shall not to exceed 393,300 square feet in overall gross floor area. If a third and fourth story option is exercised upon Buildings F through N, they shall be residential in use and be approved as part of a Site Development Plan submitted to the Planning and Zoning Commission in terms of size and number of units, provided that required additional parking is provided for such additional stories. Residential square footage in Phase II of this development shall not be more than seventy-five thousand (75,000) eighty thousand (80,000) square feet in gross floor area and as approved by the Planning and Zoning Commission on the Site Development Plan (amended and/or section).

A minimum of two (2) buildings, with the option of a third, must be located abutting the Taylor Road right-of-way, with no more than twenty (20) percent of the frontage not occupied by an arcade, porch, or building facade within the Amended C-8 Planned Commercial District portion of this development (Phase I). The orientation of these buildings shall be as shown on the Preliminary Development Plan submitted by the petitioner as part of the rezoning request. These buildings shall be constructed with glazing to provide a minimum of seventy (70) percent transparency along Taylor Road or as approved by the Architectural Review Board.

All buildings and structures located along Main Street and the internal east/west drive shall be placed at the edge of right-of-way, in any instance where a building facade is absent, a garden or screen wall shall be installed. This wall(s) must complement the appearance of the buildings located within the same block in terms of its design, architecture, color, material, and character. All garden or screen walls located within the Amended C-8 Planned Commercial District (Phase I) and C-8 Planned Commercial District (Phase II) portions of this site shall be reviewed and approved by the Architectural Review Board as part of the Site Development Plan submittal process.

Only two (2) docking areas are authorized within the boundaries of this Amended C-8 Planned Commercial District (Phase I) and C-8 Planned Commercial District (Phase II), which shall serve Buildings E and L. Appropriate screen walls or other comparable measures shall be employed as part of these areas to minimize visual intrusions onto adjoining properties and any roadway right-of-way, including the installation of gates at its opening. All screen walls located within the Amended C-8 Planned Commercial District (Phase I) portion of this site shall be reviewed and approved by the Architectural Review Board as part of the Site Development Plan submittal process.

Only three (3) drive-through facilities shall be authorized in the Amended C-8 Planned Commercial District (Phase I) portion of this development. These facilities shall be in conjunction with the retail stores (Buildings B and E) and the financial institution (Building A). These facilities shall be oriented toward minor streets or the interior locations of adjoining parking lots. Architectural requirements shall be as established

WHEREAS, the City Council held a public hearing to consider the amendment on June 27, 2016, at which interested persons were offered an opportunity to speak; and

WHEREAS, at their meeting on June 27, 2016, the City Council directed the Department of Planning to prepare draft legislation for consideration by the City Council consistent with the Planning and Zoning Commission's recommendation.

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

Section One. The City of Wildwood's Zoning Ordinance, Official Zoning District Maps, and Ordinance # 1650 of the City of Wildwood, Missouri, all made a part hereof and incorporated by reference herein, are hereby amended by designating the Property described below from 'Downtown District to the Neighborhood General District:

A tract of land being Adjacent Lot 1 and Adjacent Lot 2 of 'Wildwood Town Center Plat Two', a subdivision first recorded in Plat Book 206, Page 489 and 490 of the St. Louis County, Missouri records, and being part of the Southeast Quarter of Section 18 in Township 44 North, Range 1 East of the Fifth Principal Meridian, City of Wildwood, St. Louis County, Missouri and being more particularly described as follows:

BEING, at the southeast corner of Adjacent Lot 1 of 'Wildwood Town Center Plat Two', a subdivision first recorded in Plat Book 206, Page 489 and 490 of the St. Louis County Records, there along the Western line of said Adjacent Lot 1 North on degree 50 minutes 00 seconds East, 21.49 feet to the Northwest corner thereof; thence along the Northern line of said Adjacent Lot 1 a distance of 21.49 feet to the Northwest corner thereof; thence South 87 degrees 18 minutes 21 seconds East, 39.24 feet to the Northeast corner of Adjacent Lot 2; thence along the Eastern line of Adjacent Lot 2 South 84 degrees 00 minutes 30 seconds West, 11.43 feet to a point; thence North 84 degrees 00 minutes 30 seconds West, 48.00 feet to a point; thence South 84 degrees 00 minutes 30 seconds West, 90.06 feet to a point on the Northern right-of-way line of Plaza Drive; thence along said Northern right-of-way line North 84 degrees 00 minutes 30 seconds West, 308.41 feet to the Point of Beginning and containing 7,701 square feet or 18.46 acres more or less as per calculation by Stock & Associates Consulting Engineers, Inc. dated February, 2016.

Section Two. This Ordinance # 1650 of the City of Wildwood, Missouri, be and is hereby amended by deleting Sections Two through in their entirety and enacting, in lieu thereof, new Section Two, to read as follows:

Section Two. The zoning authority and approval embodied in this ordinance is granted subject to compliance with the Subdivision and Development Regulations, Zoning Ordinance, and all other City of Wildwood ordinances, rules, and regulations and the conditions of this ordinance, except as may be modified herein, upon the requirement the development and approved Site Development Plan are carried out in accordance with the recommendation of the City Council from its public hearing discussion held on June 27, 2016, which is incorporated herein by reference as if fully set forth in this ordinance. The zoning authority granted herein is further subject to the following conditions:

In the Town Center Plan and be reviewed and acted upon by the City's Architectural Review Board.

f. The integration of a clock tower at the northwest corner of the intersection of Main Street and Taylor Road as a focal point of this development shall be required as part of the construction of Building E and allow for public access and use as part of the public open space/street atmosphere. This architectural feature shall substantially comply with the rendering provided to the Planning and Zoning Commission at its December 18, 2000 Executive Session. The Architectural Review Board shall base approval of the required design upon the character of the proposed built environment within the boundaries of the Amended C-8 Planned Commercial District (Phase I) approved on this site.

g. No structure or building in Phase I shall exceed two (2) stories in overall height, as measured from final finish grade at the adjoining street, excluding the clock tower, unless residential use is requested as part of a third and/or fourth floor design, then a maximum of two (2) additional floors may be added. The clock tower shall not exceed a height of sixty (60) feet. This height requirement shall not apply to rooftop architectural treatments, but will be subject to Architectural Review Board approval in terms of this requirement.

h. All buildings located in Phase II shall be a minimum of two (2) stories in overall height (plus architectural rooftop treatments), as measured from final finish grade at the adjoining street, unless residential uses are requested as part of a third and/or fourth floor design, then a maximum of two (2) additional floors may be added, except as noted below:

i. Building F may be reduced to a single story height, if Building A is authorized and constructed at the same reduced height. If Building F is reduced below a two (2) story height, its ultimate design must be considered and acted upon by the Planning and Zoning Commission on the Site Development Plan, along with the Architectural Review Board. The developer/owner of Building F shall be required to meet the following requirements in its design:

1. A continuous pitched or barrelled flat roof that meets the Architectural Guidelines of the Town Center Development Manual shall only be authorized on this building, unless otherwise approved by the Architectural Review Board. Minimally, architectural style shingles, standing seam metal, or tiles a white material color shall be required for use on this roof.

2. Brick shall constitute one hundred (100) percent of the material to be used on a four (4) elevations of the building (grade to parapet) and of the complementary color to other buildings within a three hundred (300) foot radius of this property, except grade to the waterable (stone may be considered), glazed areas, guttering, and downspouts.

3. Cables, domers, and towers shall not be authorized as components of this building, unless otherwise approved by the Architectural Review Board.

4. Roof penetrations shall not be authorized, unless otherwise authorized by the Architectural Review Board.

5. Openings (windows) shall have equally proportioned lights and awnings shall be used over windows abutting Fountain Place and Plaza Drive, unless otherwise acted upon the City's Architectural Review Board.

6. A porch shall be provided as a component of this building, and it must be a minimum of eight (8) feet in depth and have a metal type of canopy covering it of which its design, extent, and type shall be as reviewed and acted upon by the City's Architectural Review Board (southeast corner facing Plaza Drive and Fountain Place intersection).

ii. Building I and N may be reduced to a single story height, but incorporate additional roof design elements to complement the surrounding built environment in terms of massing, scale, and character. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.

iii. Building L shall be allowed a total of five (5) stories along its Main Street frontage, as measured from the final finish grade of this adjoining street. All other elevation heights shall be no greater than four (4) stories in height. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.

iv. Building M shall be a minimum of three (3) stories in height along its Main Street frontage. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.

l. The area of this Amended C-8 Planned Commercial and C-8 Planned Commercial District (Phases I and II) shall be a minimum of fifteen (15) acres in overall size.

j. All residential units within the boundaries of this Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phases I and II) portions of this site must incorporate a deck, porch, or balcony on their front elevations, except for the proposed live/work units and senior care facility, which can be in sidewalk grade.

k. The proposed architectural design, character, and style of all buildings shall adhere to the City of Wildwood's Town Center Architectural Guidelines, Neighborhood Design Standards, and any other applicable requirements of the Town Center Plan. Particular attention must be paid to the facades of all building and structures located along the Taylor Road and Main Street frontages and all buildings that front or have visibility from a roadway relative to its building materials, openings, elements, and color to ensure their appearance is consistent with the other elevations. All buildings utilized for 'Commercial or Neighborhood Center' District uses, except those structures abutting Taylor Road (see Condition 2(b)), must have a minimum of fifty (50) percent glazing at street level or an amount approved by the Architectural Review Board on the required renderings and models. Approval of the required

PERMITTED USES

a. If the developer anticipates the phasing of the permitted uses authorized for this development, and their related improvements, the following requirements and limits shall apply to the number of residential units and commercial square footage (as defined in Conditions 2(b) and (c)) of this ordinance, which can be authorized within a specific phase:

Table with 2 columns: PHASES and USES. Phase One (Amended C-8 District area) allows a minimum of five (5) commercial buildings not to exceed 83,300 square feet of gross floor area. Phase Two (Amended C-8 and C-8 District area) allows a maximum of seven (7) Downtown District buildings and one (1) Neighborhood General District building.

No Phase II building permits, nor Phase I occupancy permits, shall be issued, until Main Street construction has substantially commenced, the reimbursement of the City for all of its costs associated with the purchase price of this right-of-way area is complete, and the plat for the roadway has been submitted and approved by the City of Wildwood or an acceptable agreement between the developer and the City has been signed regarding these same items.

b. The uses allowed in this Amended C-8 Planned Commercial District (Phase I) shall be limited to all permitted 'Downtown Commercial and Neighborhood Center' District uses, as defined in the Town Center Plan (as amended March 9, 2010) and may be modified here and after by applicable ordinance. The C-8 Planned Commercial District (Phase II) portion of this site shall be limited to all permitted 'Downtown and Neighborhood General' 'Neighborhood Center and Open Space' District uses and may also include a hotel, restaurants (fast food, but no drive-through facilities), and medical and dental offices, with associated parking, but excluding sewage treatment plants, research laboratories and facilities, and office/warehouse units. The 'Neighborhood General' District designation in the Phase II area is limited to two (2) existing lots (Lots 1 and 2), as indicated on the approved Site Development Plan dated March 15, 2010 in the Department of Planning's files) and the proposed location of the allowable senior care facility, which shall be limited to no more than ninety-five (95) beds, as may be set forth within the Certificate of Need (CON) approved/issued by the Missouri Health Facilities Review Board, and shall be

3. Cables, domers, and towers shall not be authorized as components of this building, unless otherwise approved by the Architectural Review Board.

4. Roof penetrations shall not be authorized, unless otherwise authorized by the Architectural Review Board.

5. Openings (windows) shall have equally proportioned lights and awnings shall be used over windows abutting Fountain Place and Plaza Drive, unless otherwise acted upon the City's Architectural Review Board.

6. A porch shall be provided as a component of this building, and it must be a minimum of eight (8) feet in depth and have a metal type of canopy covering it of which its design, extent, and type shall be as reviewed and acted upon by the City's Architectural Review Board (southeast corner facing Plaza Drive and Fountain Place intersection).

ii. Building I and N may be reduced to a single story height, but incorporate additional roof design elements to complement the surrounding built environment in terms of massing, scale, and character. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.

iii. Building L shall be allowed a total of five (5) stories along its Main Street frontage, as measured from the final finish grade of this adjoining street. All other elevation heights shall be no greater than four (4) stories in height. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.

iv. Building M shall be a minimum of three (3) stories in height along its Main Street frontage. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.

l. The area of this Amended C-8 Planned Commercial and C-8 Planned Commercial District (Phases I and II) shall be a minimum of fifteen (15) acres in overall size.

j. All residential units within the boundaries of this Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phases I and II) portions of this site must incorporate a deck, porch, or balcony on their front elevations, except for the proposed live/work units and senior care facility, which can be in sidewalk grade.

k. The proposed architectural design, character, and style of all buildings shall adhere to the City of Wildwood's Town Center Architectural Guidelines, Neighborhood Design Standards, and any other applicable requirements of the Town Center Plan. Particular attention must be paid to the facades of all building and structures located along the Taylor Road and Main Street frontages and all buildings that front or have visibility from a roadway relative to its building materials, openings, elements, and color to ensure their appearance is consistent with the other elevations. All buildings utilized for 'Commercial or Neighborhood Center' District uses, except those structures abutting Taylor Road (see Condition 2(b)), must have a minimum of fifty (50) percent glazing at street level or an amount approved by the Architectural Review Board on the required renderings and models. Approval of the required

provided to the City of Wildwood's City Attorney for verification and acceptance to form and compliance.

i. A minimum of ten (10) percent of the residential units in this development shall be live/work types and shall be located within the 'Downtown District Center' area of the Phase II portion of this project. Additional independent dwelling units shall also be authorized in conjunction with Buildings G and J/K (Lots 3A and 6) (through N), but the combined, and total, number of residential units, whether live/work or independent types, shall be as determined at the time of each Regulating Plan change (Downtown District to Neighborhood General District) and the accompanying amendment of the planned district ordinance for that specific lot or lots being considered for the buildings identified above and shall not exceed one hundred (100) on-site. These additional dwelling units shall be located within a 'Neighborhood General Center' District designated portion of Phase II, as defined by this ordinance. Residential units shall occupy at least one (1) floor of each of the buildings identified above, unless otherwise authorized on the Site Development Plan.

ii. A multiple-level parking structure shall also be constructed in the 'Downtown District' 'Neighborhood Center' District area of the subject site (western half of property) and provide a minimum of two hundred ninety-four (294) spaces, which shall also be available for public parking purposes, as defined in a separate agreement in terms of the overall number of these stalls and other related items. No more than fifty (50) percent of the building square footage can be constructed in Phase I (as defined in Condition 2(a)) without the parking garage commencing construction, with its completion no greater than two hundred seventy (270) days from its start. Completion shall be construed as the issuance of a final occupancy permit.

iii. Buildings J/K shall contain separate underground parking containing not less than sixty (60) total spaces.

c. An area of this site, within the Phase II portion of this development, and of a size not less than as shown on the Preliminary Development Plan, and north of the east-west arterial street within the C-8 Planned Commercial District (Phase II), shall be utilized for 'Public Space' 'Open Space' District permitted uses only. This area of 'Public Space' 'Open Space' District shall incorporate hard and soft improvements in an area of sufficient size to accommodate public events. This area shall be platted and transferred by fee simple title (general warranty deed) to the City of Wildwood, unless otherwise directed by the City Council. The design, improvement, and access to this facility shall be acted upon by the Planning and Zoning Commission and Architectural Review Board, as part of the Site Development Plan submittal and review process. The parking lot area located immediately to the north of this public plaza shall be dedicated for public use and access purposes, including by easement to the City of Wildwood in a form acceptable to the City Attorney, thereby granting the

design shall be by the Architectural Review Board. Minimally, all buildings shall maintain a consistent theme throughout the boundaries of these Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phases I and II) in terms of material, color, and style.

4. SITE DEVELOPMENT PLAN SUBMITTAL REQUIREMENTS

Within twelve (12) months of the date of approval of the Preliminary Development Plan by the City Council and prior to any site disturbance, the developer shall submit to the Planning and Zoning Commission for its review and approval a Site Development Plan. Where due cause is shown by the petitioner, this time interval may be extended through appeal to and approval by the Planning and Zoning Commission for a period not to exceed two (2) years. The Site Development Plan shall include, but not be limited to, the following:

a. Outboundary and legal description of the property.

b. A location map of generalized nature, north arrow, and plan scale.

c. Location and size of all proposed structures, including canopies, arcades, business signs, and any garden and screen or retaining walls.

d. Location and size of all parking areas and corresponding parking calculations.

e. Existing and proposed contours at two (2) foot intervals.

f. Roadways and driveways on and adjacent to the property in question including required right-of-way dedication, pavement widening, cross access easement areas, and public green spaces within these areas.

g. The design, location, and size of all proposed lighting, fences, and dock and trash areas.

h. A landscape plan including, but not limited to, the location, size, and general type of all plant and other materials to be used. (See Landscape Requirements Section of this Ordinance).

i. The approximate location of all stormwater and sanitary sewer facilities.

j. Parking and structure setbacks from adjacent property lines.

k. Location of all existing and proposed easements.

l. A description of the area's (all surrounding properties within one hundred (100) feet of the subject site) infrastructure and site improvements of a general nature. Principally, building locations on individual properties, curb cuts, and driveway locations along the right-of-way, as well as other natural and man-made features, must be shown. This representation shall be supplemented by a recent aerial photograph of the area, which shall include all properties within one thousand (1,000) feet of the subject site and at a scale of 1/4"=100'.

m. Cross-sections through all portions of the site, particularly a minimum of two (2) such representations along Taylor Road and Main Street. These cross-sections must include all buildings and structures, including screen and plant walls and any other similar treatments.

City of Wildwood authority to control access and use of such area; provided the fee owner of this area shall maintain any improvements thereon, while retaining the right to use the area for additional site parking to the extent not inconsistent with the public use as may be authorized by the City.

i. The senior care facility shall provide public art pieces, as part of the development of Lots 1 and 2, for the allowable residential uses, which shall be reviewed and acted upon by the Planning and Zoning Commission, as part of the Amended Site Development Section Plan required for this area.

ii. The development of this senior care facility shall also provide a public/private exterior patio/courtyard area along its Plaza Drive frontage. This patio/courtyard area shall be not less than one thousand (1,000) square feet in size and allow for seating of residents within its defined boundaries. Design details shall be reviewed and acted upon by the Planning and Zoning Commission, as part of its review and consideration of the Amended Site Development Section Plan.

iii. The developer shall construct along the property's State Route 100 frontage the remainder of the system of fencing and columns that currently defines this area to the east of the subject site. The columns and fencing shall match those structures already in place along this roadway frontage. Design and construction details shall be reviewed and acted upon by the Planning and Zoning Commission, as part of its review and consideration of the Amended Site Development Section Plan.

2. FLOOR AREA, HEIGHT, AND BUILDING REQUIREMENTS

a. All phases of this development shall be authorized a total of 393,300 square feet of residential and non-residential uses in maximum allowable building sizes as follows:

Table with 3 columns: BUILDING IDENTIFIER, SIZE - Commercial (Total square footage), and SIZE - Residential (Total square footage). Rows include Financial institution with Drive-through facility, Retail (Building A), Retail (Building B), Mixed Use (Office/Retail (Building D)), Retail with Drive-through Facility (Building E), Mixed Use (Building F), Mixed Use (Building G), Mixed Use (Building H), Mixed Use (Building I), Senior Care Facility (no more than 95 beds), Mixed Use (Building J/K), Mixed Use and/or Hotel (Building L), Mixed Use (Building M), and Child Care Center/Private School (Building N).

n. All other information not mentioned above, but required on a Preliminary Plat in accord with Chapter 420.050 of the City of Wildwood Subdivision and Development Regulations.

4. SITE DEVELOPMENT PLAN DESIGN CRITERIA

The above Site Development Plan shall adhere to the following specific design criteria:

a. All buildings or structures, excluding boundary, garden, screen, and/or retaining walls, or fences, shall adhere to the built-to lines therein established by the City of Wildwood's Town Center Neighborhood Design Standards for the 'Downtown and Neighborhood General' 'Commercial and Neighborhood Center' Districts, unless as otherwise approved on the Site Development Plan by the Planning and Zoning Commission or as noted below:

i. Fifteen (15) feet from the Taylor Road right-of-way line.

Minimum Parking Requirements

c. Minimum parking requirements as set forth in the City of Wildwood's Town Center Neighborhood Design Standards for the 'Downtown and Neighborhood General' 'Commercial and Neighborhood Center' Districts and Chapter 415.180 Parking Regulations of the City of Wildwood's Zoning Code, except that three point three (3.3) spaces per one thousand (1,000) square feet of gross floor area shall be allowed for all retail/offices use. The parking reduction associated with this overall site shall not exceed ten (10) percent of the required parking spaces to be constructed and provided for the purposes of compliance to this site-specific ordinance.

Access and Roadway Improvements, including sidewalks

Main Street

d. The developer's development plan seeks to use, and depends on the use of, the City's property to the south of these districts ("City's Main Street Property") for purpose of access, sidewalks, on street parking, and other Main Street improvements

PREPARED BY:

SITE DEVELOPMENT PLAN FOR:

STONECREST AT WILDWOOD

201 PLAZA DR. WILDWOOD MO

257 Chesterfield Business Parkway St. Louis, MO 63005 PH: (636) 530-9100 FAX: (636) 530-9100 e-mail: gmo@stockandassociates.com Web: www.stockandassociates.com

STOCK & ASSOCIATES Consulting Engineers, Inc.



GEORGE M. STOCK E-25116 CIVIL ENGINEER CERTIFICATE OF AUTHORITY NUMBER: 000986

Table with 3 columns: REVISIONS, CITY COMMENTS, and DATE. Row 1: CITY COMMENTS 09/14/16. Row 2: CITY COMMENTS 10/25/16. Row 3: CITY COMMENTS 11/03/16.

Table with 2 columns: DRAWN BY: R.E.S., CHECKED BY: G.M.S. DATE: 08.02.16, JOB NO.: 216-5763.

Table with 2 columns: SHEET TITLE: SITE DEVELOPMENT PLAN, SHEET NO.: C4.

- Traffic Generation Assessment Contribution
- c. Traffic generation assessment contribution shall be deposited with City of Wildwood in the form of cash prior to the issuance of building permits.
9. VERIFICATION PRIOR TO OCCUPANCY PERMITS
- Subsequent to approval of a Site Development Plan, and prior to issuance of any occupancy permit, the following requirements shall be met:
- a. Roadway Improvements
- b. Road Improvements and right-of-way dedication shall be completed, or the appropriate escrow established, prior to the issuance of an occupancy permit. If development phasing is anticipated, said work, right-of-way dedications, and/or escrow agreements shall be based upon those areas of the defined phases where construction is authorized. As previously noted, the delays due to utility relocation and adjustments will not constitute a cause to allow occupancy prior to completion of road improvements.
10. GENERAL DEVELOPMENT CONDITIONS
- a. A grading permit is required prior to any grading on the site. No change in watersheds shall be permitted. Interim stormwater drainage control in the form of siltation control measures is required.
- b. Provide adequate temporary off-street parking for construction employees. Parking on non-surfaced areas shall be prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions.
- c. If cut and fill operations occur during a season not favorable for immediate establishment of a permanent ground cover, a fast germinating annual, such as Rye or Sudan Grasses, shall be utilized to retain erosion.
- d. Failure to comply with any or all the conditions of this ordinance shall be adequate cause for revocation of permits by issuing City Departments or Commissions.
- e. The Zoning Enforcement Officer of the City of Wildwood, Missouri, shall enforce the conditions of this ordinance in accordance with the Site Development Plan approved by the City of Wildwood Planning and Zoning Commission.
- f. Any other applicable zoning, subdivision, or other regulations or requirements of the City, whether in effect at the adoption of this ordinance or as may be hereinafter adopted, shall further apply to the development of this property as authorized by

this Amended C-8 Planned Commercial and C-8 Planned Commercial District ordinance, except as may be provided by law. Nothing herein shall be deemed a waiver of any subdivision, zoning, or other development regulation of the City whether by implication or reference.

g. Substantial construction shall begin within twenty-four (24) months of the approval of the Site Development Plan for the parcel of ground governed by this Amended C-8 Planned Commercial District and C-8 Planned Commercial District ordinance. Construction shall be deemed to have commenced with the final grading for and installation of roadways necessary for the first approved plot or phase of construction and commencement of installation of the sanitary and storm sewers.

h. As portions of the Main Street roadway improvements may require the acquisition of additional right-of-way and easement from private property, the normal sequence of design, right-of-way acquisition, and construction shall commence immediately on approval of the requested rezoning. If the developer is unable to acquire the necessary right-of-way and easements through negotiation with the particular property owners involved, the City of Wildwood may, at its sole discretion, authorize the acquisition of the same through eminent domain proceedings. The costs of appraisals, negotiations, administrations, court proceedings, and associated costs incurred by the City of Wildwood shall be paid by the developer.

i. This zoning approval is conditioned on compliance with the Zoning Code, Subdivision and Development Regulations, and all applicable laws of the City. Such additional regulations are supplemental to the requirements herein and no modification of any applicable regulations shall result from the Amended C-8 Planned Commercial and C-8 Planned Commercial District ordinance, except where this ordinance has expressly modified such regulations by reference to the applicable provision authorizing such modification.

j. The passage and approval of this ordinance shall constitute the necessary development approval authorizing the Director of Public Works to issue a grading permit in accordance with the procedure and requirements of Chapter 475 of the City's Municipal Code, but not before Condition 1 (c), has been met by the developer.

k. The developer shall provide justification to the City, acceptable to the City Attorney and the City Council, indicating the reasons why a payment in lieu of taxes (PILOT) shall not be required of this project. If these reasons are determined not to be satisfactory, an agreement shall be established between the developer of the site and the City of Wildwood, Missouri, for the payment in lieu of taxes (PILOT), which is satisfactory to the City Attorney in terms of form and content, so as the City will receive appropriate compensation in this regard. This agreement must be in place, before any permits can be issued by the City of Wildwood, Missouri, for this project. In lieu of this agreement, if determined necessary for this project, the developer can

increase the amount of commercial square footage associated with this building's ground floor level from its current area.

Section Three. This ordinance shall be in full force and effect on and after its passage and approval.

Section Four. Nothing contained herein shall in any manner be deemed or construed to alter, modify, supersede, supplant or otherwise nullify any other Ordinance of the City or the requirements thereof whether or not relating to or in any manner connected with the subject matter hereof, unless expressly set forth herein.

Section Five. If any term, condition, or provision of this Ordinance shall, to any extent, be held to be invalid or unenforceable, the remainder hereof shall be valid in all other respects and continue to be effective and each and every remaining provision hereof shall be valid and shall be enforced to the fullest extent permitted by law. It being the intent of the City Council that it would have enacted this Ordinance without the invalid or unenforceable provisions. In the event of a subsequent change in applicable law so that the provision, which had been held invalid, is no longer invalid, said provision shall thereupon return to full force and effect without further action by the City and shall thereafter be binding.

This Bill was passed and approved this _____ day of _____, 2016, by the City Council of the City of Wildwood, Missouri, after having been read by title, or in full, two (2) times prior to its passage.

Presiding Officer: The Honorable James R. Bowen, Mayor
 ATTEST: Elizabeth Weiss, City Clerk

Editor's Note: Changes in Ordinance are indicated by blue and bolded type, while a single strike-through shows deletions.

1. A total of three (3) freestanding monument style signs shall be allowed within the boundaries of the Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phase I and Phase II combined). One (1) of these signs shall be located at the access point into this development from Taylor Road and cannot exceed fifty (50) square feet in overall size. This Taylor Road sign shall be integrated, and be a part of the gateway structure to be constructed at this authorized access point along the Taylor Road frontage. Two (2) signs shall be authorized along the property's State Route 100 frontage and cannot exceed seventy-five (75) square feet in overall size, nor ten (10) feet in height, as measured from adjoining roadway grade. The location of all signage shall be approved by the Planning and Zoning Commission on the Site Development Plan.
2. The three (3) authorized monument signs shall additionally comply with the City of Wildwood Zoning Code, Section 1003.168 Sign Regulations for the C-2 Shopping District, where consistent and applicable to this type of signage.
3. Notwithstanding any other approval to the contrary, all wall signs shall additionally comply with the City of Wildwood Zoning Ordinance - Chapter 415.420 Sign Regulations for the C-2 Shopping District, and all signage shall be externally illuminated according to the Town Center Plan's Architectural Guidelines, or may be backlit, if otherwise in compliance with the Town Center Architectural Guidelines. A third wall sign shall be authorized for the commercial building located on the northwest corner of Taylor Road and Main Street. Signs may only be located on the north, south, and east elevations of this building (Building E, as identified by this ordinance).
4. No advertising, temporary, or portable signs shall be authorized in this Amended C-8 District and C-8 District development (Phases I and II). No other signs shall be authorized, except as may comply with the C-2 Shopping District Regulations of the City of Wildwood Zoning Ordinance and the Town Center Plan's Architectural Guidelines.
- Miscellaneous Conditions
- c. All trash areas shall be enclosed with a six (6) foot high sight-proof wall (with gate) and be appropriately landscaped around its perimeter, if applicable. The location and design of these enclosures shall be shown on the Site Development Plan and approved by the Planning and Zoning Commission and the Architectural Review Board. The design of this enclosure shall reflect the appearance, character, and style. In terms of its color, material, and composition, of the approved architecture of the individual building it serves and adjoins in terms of location.
- d. Handicap parking and access requirements shall comply with Section 512.4 of the City of Wildwood Building Code.

ee. All rooftop mechanical equipment shall be screened from view on all sides of the building's facade in an architecturally consistent manner in terms of color and style of the individual buildings where they are to be constructed. Screening shall be reviewed and considered by the Architectural Review Board at the time of the renderings submitted.

ff. The design, color, material, and location of all garden and screen walls or fences shall be consistent with the requirements of the Town Center Plan's Architectural Guidelines and be shown on the Site Development Plan for review and action by the Planning and Zoning Commission and the Architectural Review Board.

gg. All deliveries and trash pick-up vehicles must access the site from State Route 100, not Manchester Road. No deliveries or trash pick-up shall occur between the hours of 1:00 p.m. and 6:00 a.m., seven (7) days per week.

hh. Improvements associated with public infrastructure, such as roadways, sidewalks, and access points, shall comply with general design principles that will provide for safe and efficient movement of traffic in and around these sites and improve overall circulation in the area. These improvements shall be reviewed and approved by the Department of Public Works.

ii. The developer shall grant the right to the City of Wildwood to utilize areas, buildings, and structures for the installation of wireless antenna and related equipment through the granting of appropriate easements for service to this site.

5. TRAFFIC GENERATION ASSESSMENT FEE CONTRIBUTION

The developer shall contribute to the East Area Corridor Traffic Generation Assessment Road Trust Fund established by Chapter 149 of the City's Codified Ordinances. This contribution shall not exceed an amount established by multiplying the proposed parking spaces by the following rate schedule.

Type of Development	Required Contribution
Apartment/Condominiums	1485.09/Parking Space
Tenlor Loading	1475.99/Parking Space
General Office	174.00/Parking Space
Quality Restaurant	744.00/Parking Space
General Retail	1223.20/Parking Space
Shopping Centers	1223.20/Parking Space
High-Turnover, Sit-Down Restaurants	1223.20/Parking Space
Bank	1444.72/Parking Space
Medical Offices	1223.20/Parking Space
Hotel	11482.22/Parking Space
Loading Space	93383.24/Loading Space

(Parking space as required by Chapter 415.380 of the City of Wildwood Zoning Ordinance)

If types of development proposed differ from those listed, rates shall be provided by the Department of Planning.

A minimum of two hundred twenty-six (226) parking spaces within Phase I of this overall project shall be assessed the required Traffic Generation Assessment Fee under the schedule described above for the East Area Corridor Traffic Generation Assessment Trust Fund. A minimum of six hundred six (606) parking spaces within Phase II of this overall project shall be assessed the required Traffic Generation Assessment Fee under the schedule described above for the East Area Corridor Road Traffic Generation Assessment Road Trust Fund. Allocations of these spaces shall be based upon the required parking ratios for building square footage and types of uses. Changes in uses may require reallocation or different parking requirements. Any final parking allocation shall be further reflected on the final site plan and subdivision plats, including any cross-access easements or other recording of parking rights and responsibilities as may be required due to location of required off-site parking as to a subdivided lot within this development.

Building Id.	Required Parking Spaces (per City Code)	Location(s) of Parking Spaces	TGA Parkin g Spaces	TGA Credit
F	24	Off-Street (24)	24	To be Determined at Zoning Authorization
G	67	On-Street (4)/Off-Street (63)	63	To be Determined at Zoning Authorization
H	78	On-Street (5)/Off-Street (73)	73	To be Determined at Zoning Authorization
I	18	Off-Street (18)	18	To be Determined at Zoning Authorization
J/K	166	Underground (68)/Parking Garage (86)/Off-Street (12)	166	To be Determined at Zoning Authorization
L	228	Parking Garage (189)/On-Street (39)	189	To be Determined at Zoning Authorization
M	61	Parking Garage (52)/On-Street (9)	52	To be Determined at Zoning Authorization
N	28	On-Street (15)/Off-Street (13)	13	To be Determined at Zoning Authorization

Building Id.	Required Parking Spaces (per City Code)	Location(s) of Parking Spaces	TGA Parkin g Spaces	TGA Credit
Total	670	Underground (68)/Parking Garage (189)/On-Street (237)/Off-Street (237)	578	

As this development is located within a trust fund area established by the City of Wildwood, any portion of the traffic generation assessment contribution, which remains, following completion of road improvements required by the development shall be retained in the appropriate trust fund.

The amount of this required contribution, if not submitted by January 1, 2016, shall be adjusted on that date and on the first day of January in each succeeding year thereafter in accordance with the construction cost index as determined by the City of Wildwood Department of Public Works.

6. VERIFICATION PRIOR TO APPROVAL OF THE SITE DEVELOPMENT PLAN
- Prior to the approval of the Site Development Plan, the petitioner shall:
- Stomwwater
- a. Submit to the Planning and Zoning Commission an engineering plan approved by the Department of Public Works and the Metropolitan St. Louis Sewer District (MSD) showing that adequate handling of the stormwater drainage of the site is provided.
1. The developer is required to provide adequate stormwater systems in accordance with the City of Wildwood and Metropolitan St. Louis Sewer District (MSD) Standards.
2. All stormwater shall be discharged at an adequate natural discharge point.
3. Detention or differential runoff of stormwater is at the discretion of Metropolitan St. Louis Sewer District (MSD) and the Department of Public Works. If required by Metropolitan St. Louis Sewer District (MSD) and the Department of Public Works, it shall be provided in permanent detention/retention facilities, such as: dry reservoirs, ponds, or another acceptable alternative. These detention/retention facilities shall be completed and in operation prior to paving of any driveways or parking areas, within any phase of the development where construction activity is authorized.

- regards to the construction of this west one-half (1/2) on the "unnamed street," streetscape requirements, such as trees, etc., shall not be required.
- Landscape Requirements- Specific
- v. Building and parking setbacks shall be landscaped in accordance with Chapter 410 of the City of Wildwood's Codified Ordinances and its accompanying Tree Manual.
- w. All stormwater facilities shall be appropriately landscaped and comply with the Chapter 410 of the City of Wildwood's Codified Ordinances and its accompanying Tree Manual. Wetlands plantings must be used at appropriate locations within the basin themselves as directed by the Department of Public Works, if applicable.
- x. All new landscaping materials shall meet the following criteria: Deciduous Trees - two and one-half (2 1/2) inch minimum caliper; Evergreen Trees - Six (6) feet minimum height; and Shrubs - twenty-four (24) inch minimum height.
- y. Replanting of trees shall conform to the requirements of Chapter 410 of the City of Wildwood's Codified Ordinances and its accompanying Tree Manual to achieve a minimum amount of thirty (30) percent canopy area on this site. Tree selection and location shall be reviewed and acted upon by the Planning and Zoning Commission and the Architectural Review Board as part of the Site Development Plan process. Street tree planting patterns must be based on and comply with the Town Center Streetscape Design.
- z. A Registered Landscape Architect shall prepare and sign all Landscape Plans for this development.
- Lighting Requirements
- aa. Light standards shall not exceed sixteen (16) feet in height. No on-site illumination source shall be so situated that light is cast directly on adjoining properties or public roadways. Illumination levels shall comply with the provisions of the City of Wildwood's Zoning Ordinance - Chapter 415.450 "Outdoor Lighting Requirements." A Lighting Plan shall be submitted in conjunction with the Site Development Plan indicating compliance to these requirements. The Planning and Zoning Commission shall approve the location of all light standards and their design and appearance as part of the Site Development Plan review process.
- Sign Regulations
- bb. All signage shall be in accordance with the requirements of the City of Wildwood's Town Center Architectural Guidelines, subject to the following:

- b. The approved stormwater management plan for this development may include the use of off-site, regional facilities in terms of the retention/detention of runoff from this site, unless otherwise authorized by the Department of Public Works on the Site Development Plan. The developer(s) shall be responsible for all costs associated with the construction and modifications to existing facilities to accomplish this regional stormwater management requirement, if applicable.
- Geotechnical Report
- c. Provide a Geotechnical Report covering development and grading required by improvements involved with this site, as directed by the Department of Public Works. Said report shall verify the adaptability of grading and improvements with soil and geologic conditions, which are susceptible to rapid erosion, landslide, and/or creep. A statement of compliance with this study, signed by the Geotechnical Engineer preparing the report, shall be included on all Site Development Plans. The development and construction plans shall be designed to conform to the requirements and conditions of the Geotechnical Report.
7. RECORDING
- Within sixty (60) days of approval of the Site Development Plan by the Planning and Zoning Commission, the approved plan shall be recorded with the St. Louis County Recorder of Deeds.
8. VERIFICATION PRIOR TO BUILDING PERMITS
- Subsequent to approval of a Site Development Plan, and prior to issuance of any building permit, the following requirements shall be met:
- Notification of Department of Planning
- a. Prior to issuance of foundation or building permits, all approvals from the Department of Public Works, the Missouri Department of Transportation, the Missouri Department of Natural Resources, the U.S. Army Corp. of Engineers (if applicable), the Metro West Fire Protection District and the Metropolitan St. Louis Sewer District (MSD) must be received by the Department of Planning.
- Certification of Plans
- b. Provide verification that construction plans are designed to conform to the requirements and conditions of the Geotechnical Report. The Geotechnical Engineer shall be required to sign and seal all plans.

PREPARED BY:

SITE DEVELOPMENT PLAN FOR:

STONECREST AT WILDWOOD

211 PLAZA DR.
WILDWOOD MO

257 Chesterfield Business Parkway
St. Louis, MO 63105 PH: (636) 530-9100 FAX: (636) 530-9180
e-mail: general@stockandassociates.com
Web: www.stockandassociates.com

STOCK & ASSOCIATES
Consulting Engineers, Inc.



GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY
NUMBER: 000998

REVISIONS:

1	CITY COMMENTS	09/14/16
2	CITY COMMENTS	10/25/16
3	CITY COMMENTS	11/03/16

DATE:	08.02.16	APP. NO.:	216-5763
DES. NO.:		DATE MAP #:	
S.E.C. DIST. #:		INT. SUP. #:	
NSUR. #:	MO-00		

SHEET TITLE:
SITE DEVELOPMENT PLAN

SHEET NO.:
C5

Traffic Generation Assessment Contribution

c. Traffic generation assessment contribution shall be deposited with City of Wildwood in the form of cash prior to the issuance of building permits.

9. VERIFICATION PRIOR TO OCCUPANCY PERMITS

Subsequent to approval of a Site Development Plan, and prior to issuance of any occupancy permit, the following requirement shall be met: Roadway Improvements

a. Road improvements and right-of-way dedication shall be completed, or the appropriate escrow established, prior to the issuance of an occupancy permit. If development phasing is anticipated, said work, right-of-way dedications, and/or escrow agreements shall be based upon those areas of the defined phases where construction is authorized. As previously noted, the delays due to utility relocation and adjustments will not constitute a cause to allow occupancy prior to completion of road improvements.

10. GENERAL DEVELOPMENT CONDITIONS

a. A grading permit is required prior to any grading on the site. No change in watersheds shall be permitted. Interim stormwater drainage control in the form of siltation control measures is required.

b. Provide adequate temporary off street parking for construction employees. Parking on non-surfaced areas shall be prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions.

c. If cut and fill operations occur during a season not favorable for immediate establishment of a permanent ground cover, a fast germinating annual, such as Rye or Sudan Grasses, shall be utilized to retard erosion.

d. Failure to comply with any or all the conditions of this ordinance shall be adequate cause for revocation of permits by issuing City Departments or Commissions.

e. The Zoning Enforcement Officer of the City of Wildwood, Missouri, shall enforce the conditions of this ordinance in accordance with the Site Development Plan approved by the City of Wildwood Planning and Zoning Commission.

f. Any other applicable zoning, subdivision, or other regulations or requirements of the City, whether in effect at the adoption of this ordinance or as may be hereinafter adopted, shall further apply to the development of this property as authorized by

this Amended C-8 Planned Commercial and C-8 Planned Commercial District ordinance, except as may be provided by law. Nothing herein shall be deemed a waiver of any subdivision, zoning, or other development regulation of the City whether by implication or reference.

g. Substantial construction shall begin within twenty-four (24) months of the approval of the Site Development Plan for the parcel of ground governed by this Amended C-8 Planned Commercial District and C-8 Planned Commercial District ordinance. Construction shall be deemed to have commenced with the final grading for and installation of roadways necessary for the first approved plat or phase of construction and commencement of installation of the sanitary and storm sewers.

h. As portions of the Main Street roadway improvements may require the acquisition of additional right-of-way and easement from private property, the normal sequence of design, right-of-way acquisition, and construction shall commence immediately on approval of the requested rezoning. If the developer is unable to acquire the necessary right-of-way and easements through negotiation with the particular property owners involved, the City of Wildwood may, at its sole discretion, authorize the acquisition of the same through eminent domain proceedings. The costs of appraisals, negotiations, administrations, court proceedings, and associated costs incurred by the City of Wildwood shall be paid by the developer.

i. This zoning approval is conditioned on compliance with the Zoning Code, Subdivision and Development Regulations, and all applicable laws of the City. Such additional regulations are supplemental to the requirements herein and no modification of any applicable regulations shall result from the Amended C-8 Planned Commercial and C-8 Planned Commercial District ordinance, except where this ordinance has expressly modified such regulations by reference to the applicable provision authorizing such modification.

j. The passage and approval of this ordinance shall constitute the necessary development approval authorizing the Director of Public Works to issue a grading permit in accordance with the procedure and requirements of Chapter 415 of the City's Municipal Code, but not before Condition (c) has been met by the developer.

k. The developer shall provide justification to the City, acceptable to the City Attorney and the City Council, indicating the reasons why a payment-in-lieu-of-taxes (PILOT) shall not be required of this project. If these reasons are determined not to be satisfactory, an agreement shall be established between the developer of the site and the City of Wildwood, Missouri for the payment-in-lieu-of-taxes (PILOT), which is satisfactory to the City Attorney in terms of form and content, so as the City will receive appropriate compensation in this regard. This agreement must be in place, before any permits can be issued by the City of Wildwood, Missouri for this project in lieu of this agreement, if determined necessary for this project, the developer can

Increase the amount of commercial square footage associated with this building's ground-floor level from its current area.

Section Three. This ordinance shall be in full force and effect on and after its passage and approval.

Section Four. Nothing contained herein shall in any manner be deemed or construed to alter, modify, supersede, supplant or otherwise nullify any other Ordinance of the City or the requirements thereof whether or not relating to or in any manner connected with the subject matter hereof, unless expressly set forth herein.

Section Five. If any term, condition, or provision of this Ordinance shall, to any extent, be held to be invalid or unenforceable, the remainder hereof shall be valid in all other respects and continue to be effective and each and every remaining provision hereof shall be valid and shall be enforced to the fullest extent permitted by law, it being the intent of the City Council that it would have enacted this Ordinance without the invalid or unenforceable provisions. In the event of a subsequent change in applicable law so that the provision, which had been held invalid, is no longer invalid, said provision shall thereupon return to full force and effect without further action by the City and shall thereafter be binding.

This Bill was passed and approved this ___ day of _____, 2016, by the City Council of the City of Wildwood, Missouri, after having been read by title, or in full, two (2) times prior to its passage.

Presiding Officer: The Honorable James R. Bowlin, Mayor

ATTEST: ATTEST:

Elizabeth Weiss, City Clerk Elizabeth Weiss, City Clerk

Editor's Note: Changes to Ordinance are indicated by blue and bolded type, while a single, strike-through line shows deletions.

Owner's Script:

(Owners Name)

_____, the owner(s) of the property shown on this plan for and in consideration of being granted a permit to develop said property under the provisions of Section _____ (applicable subsection) of the City's Zoning Code and the _____ (present zoning), do hereby agree, declare, and covenant that from the date of recording of this plan, the property shall be developed only as shown herein. This covenant shall run with the land, and shall be enforceable pursuant to Sections 67.870 through 67.900 R.S. Mo. by the City of Wildwood or its successor as a plan of development adopted by the City of Wildwood's Planning and Zoning Commission to promote orderly development. This plan may be amended or supersede by the Planning and Zoning Commission or modified by the Department of Planning or voided by order of the City of Wildwood's City Council, each as more particularly authorized by the City of Wildwood's Zoning Code now and hereafter in effect.

Signature: _____

STATE OF MISSOURI }
COUNTY OF ST. LOUIS } SS.

On this ___ day of _____, 20___, before me personally appeared _____, who being by me duly sworn, did say he is the OWNER of _____, L.L.C., a Missouri limited liability company, and that said instrument was signed on behalf of said limited liability company, and that said _____ acknowledged said instrument to be the free act and deed of said limited liability company.

IN WITNESS WHEREOF, I have signed and sealed the foregoing the day and year first above written.

Notary Public

Print Name

My commission expires: _____

GEOTECHNICAL ENGINEER'S STATEMENT

Neither SCI Engineering, Inc. (SCI) nor the undersigned has prepared any part of these plans. My signature and seal are intended to confirm only my personal review and professional opinion that these plans, comply with the Geotechnical Report for the project, dated July 2004; and are compatible with the soil and geologic conditions at the site, as anticipated during the exploration data.

Conditions may vary from those encountered during the exploration or can change due to construction activities, weather, or other conditions. Therefore, SCI must be involved during the construction of this project to observe the actual subsurface conditions and implementation of our recommendations relative to construction. Construction means and methods shall be left to the Contractor.

SCI ENGINEERING, INC.

SHAWNNA LUKIER, P.E.

Date:

PROPERTY DESCRIPTION

A tract of land being Adjusted Lot 1 and Adjusted Lot 2 of "Wildwood Town Center Plat Two", a subdivision filed for record in Plat Book 356, Pages 465 and 466 of the St. Louis County, Missouri records, and being part of the Southeast Quarter of Section 11 in Township 44 North, Range 3 East of the Fifth Principal Meridian, City of Wildwood, St. Louis County, Missouri and being more particularly described as follows:

BEGINNING at the Southwest corner of Adjusted Lot 1 of "Wildwood Town Center Plat Two", a subdivision filed for record in Plat Book 356, Page 465 and 466 of the St. Louis County Records; thence along the Western line of said Adjusted Lot 1 North 00 degrees 50 minutes 00 seconds East, 211.49 feet to the Northwest corner thereof; thence along the Northern line of Adjusted Lot 1 and Adjusted Lot 2 the following: South 83 degrees 02 minutes 27 seconds East, 52.39 feet to a point; thence South 87 degrees 18 minutes 21 seconds East, 319.04 feet to the Northeast corner of Adjusted Lot 2; thence along the Eastern line of Adjusted Lot 2 South 02 degrees 41 minutes 39 seconds West, 111.43 feet to a point; thence North 87 degrees 18 minutes 21 seconds West, 48.00 feet to a point; thence South 02 degrees 41 minutes 39 seconds West, 96.06 feet to a point on the Northern right-of-way line of Plaza Drive; thence along said Northern right-of-way line North 87 degrees 18 minutes 21 seconds west, 316.41 feet to the Point of Beginning and containing 71,801 square feet or 1.646 acres more or less as per calculations by Stock & Associates Consulting Engineers, Inc. during February, 2016.

This plan was approved by the City of Wildwood's Planning and Zoning Commission in accordance with the provisions of Section _____ of the Zoning Code. This plan shall be developed under the conditions herein prescribed by Ordinance _____, which was approved by the City Council of the City of Wildwood, Missouri on _____.

Joe Vujnich, Director of Planning

Date

I, Elizabeth Weiss, City Clerk of the City of Wildwood, St. Louis County, Missouri do hereby certify the Site Development Plan submitted for this commercial development is required under Ordinance _____, which was approved by the City Council on _____, said ordinance of the same appears on record in my office as testimony whereof, I hereunto now set my hand and affix the official seal of the City of Wildwood, Missouri, St. Louis County on this _____ day of _____, 20___.

Elizabeth Weiss, City Clerk

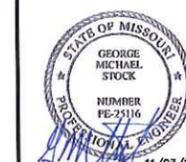
PREPARED BY:



SITE DEVELOPMENT PLAN FOR:

STONECREST AT WILDWOOD

201 PLAZA DR. WILDWOOD MO



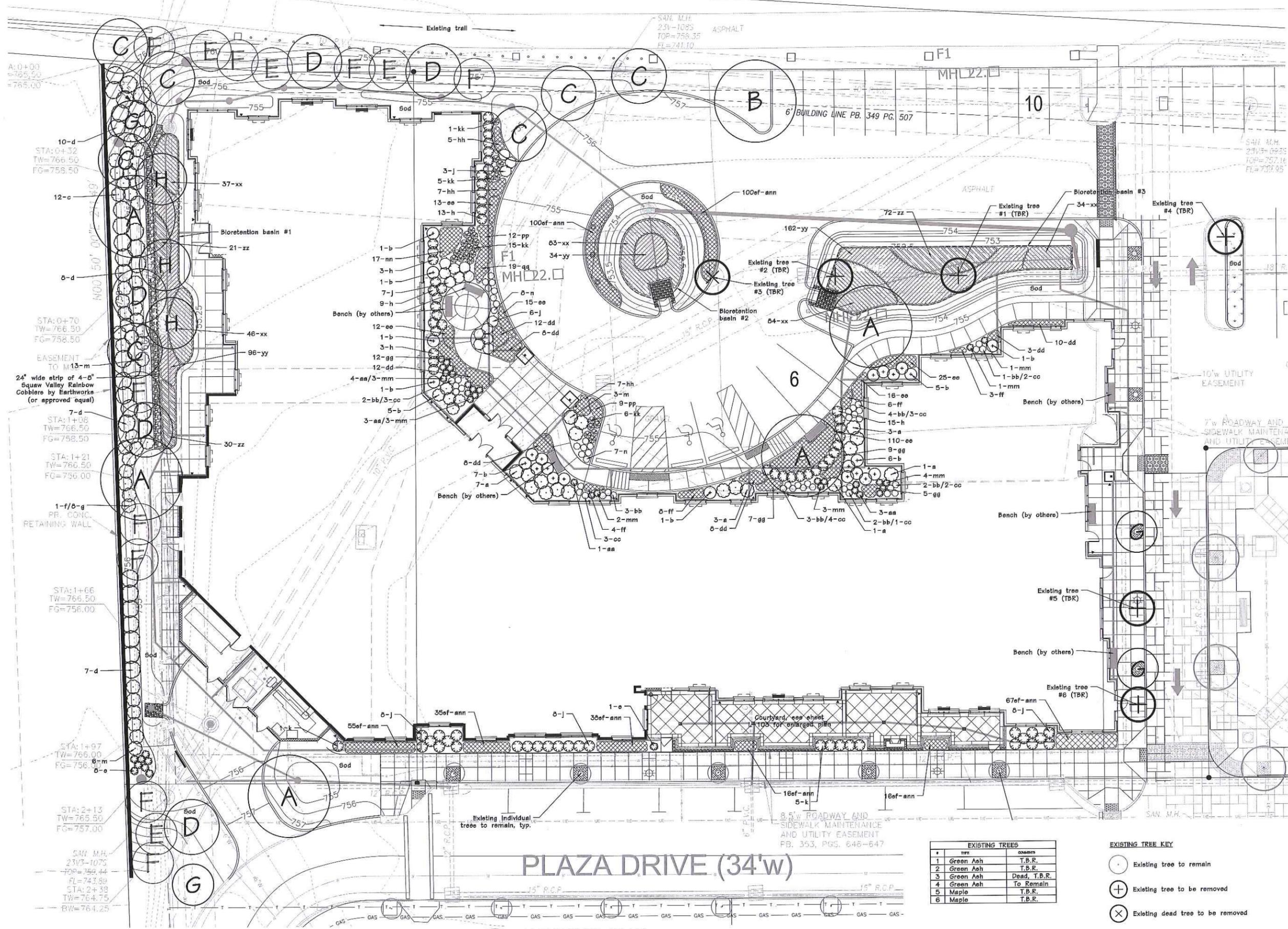
GEORGE M. STOCK E-25116 CIVIL ENGINEER CERTIFICATE OF AUTHORITY NUMBER: 000996

Table with 2 columns: REVISIONS, and 3 rows of revision details including City Comments and dates.

Table with 2 columns: DRAWN BY, CHECKED BY, DATE, JOB NO., and other project details.

SHEET TITLE: SITE DEVELOPMENT PLAN

SHEET NO.: C6



loomisAssociates
 landscape architects/planners
 707 South 40 West Drive, Suite 100
 Provo, UT 84601
 P: 801.734.5543 Fax: 801.734.0997
 e-mail: info@loomis-associates.com
 LAC 000019
 Missouri State Certified Landscape Architect

STATE OF MISSOURI
 JERRI SAUNDERS
 LANDSCAPE ARCHITECT
 LICENSE NUMBER LA-7
 11/1/16
 Jerri Saunders - Landscape Architect
 MO License LA-007

STONECREST OF WILDWOOD
 251 PLAZA DRIVE, WILDWOOD, MO

SHEET TITLE
 LANDSCAPE PLAN - OVERALL

PROJECT NUMBER: 16030

SHEET NUMBER:

L-101

DRAWN BY: LWH CHECKED BY: JAS

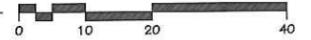
#	TYPE	COMMENT
1	Green Ash	T.B.R.
2	Green Ash	T.B.R.
3	Green Ash	Dead, T.B.R.
4	Green Ash	To Remain
5	Maple	T.B.R.
6	Maple	T.B.R.

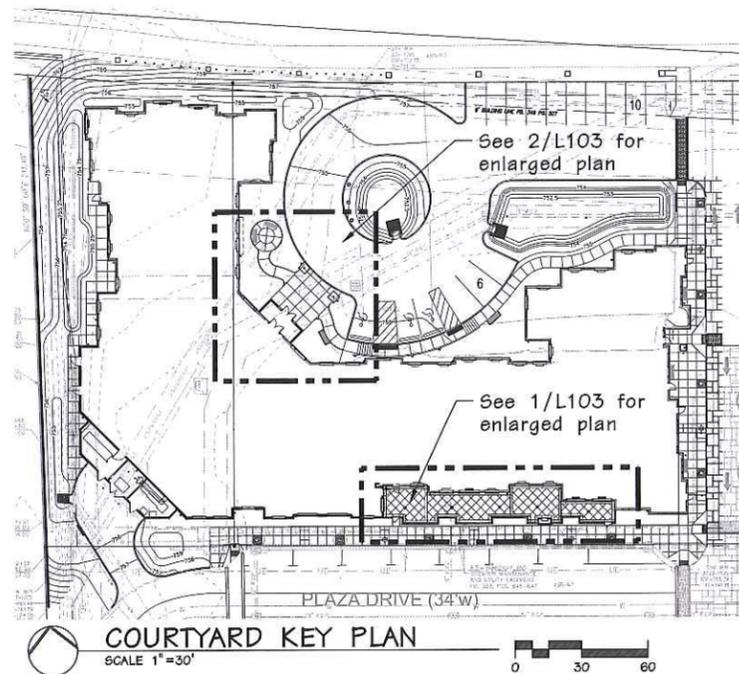
- EXISTING TREE KEY**
- Existing tree to remain
 - ⊕ Existing tree to be removed
 - ⊗ Existing dead tree to be removed

PLAZA DRIVE (34'w)

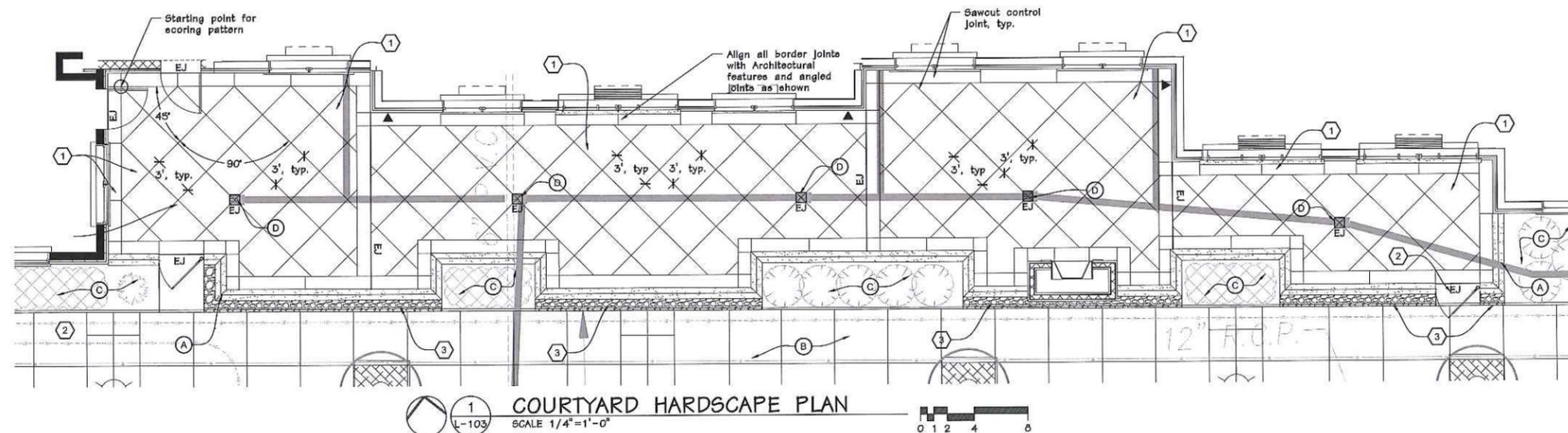
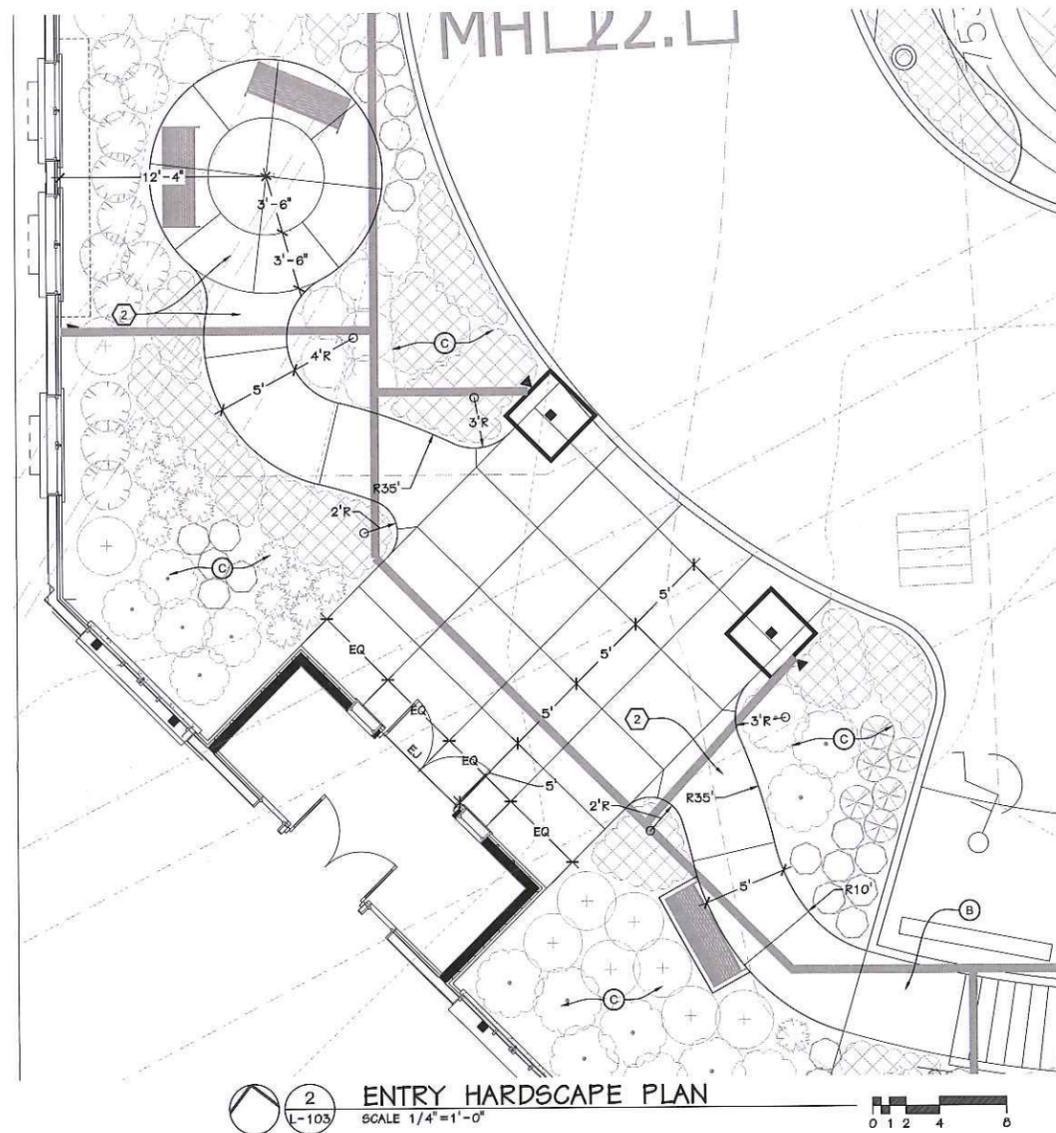
LANDSCAPE PLAN

SCALE 1"=10'





- THE FOLLOWING ITEMS FOR REFERENCE ONLY:**
- (A) STONE VENEER FREESTANDING WALL PER ARCHITECTURAL DRAWINGS
 - (B) SIDEWALK PER CIVIL DRAWINGS
 - (C) LANDSCAPING, SEE SHEETS L-101 AND L-102
 - (D) PATIO DRAIN PER CIVIL DRAWINGS (ELEVATIONS PROVIDED BY CIVIL)
- LEGEND**
- (1) LIGHT DUTY COLORED CONCRETE PAVEMENT
MEDIUM BROOM FINISH. CONTRACTOR TO COORDINATE LOCATION OF ALL JOINTS WITH LANDSCAPE ARCHITECT. COLOR TO BE SCOFIELD CHROMIX ADMIXTURE 'WINTER BEIGE' OR APPROVED EQUAL. SEE CIVIL FOR CONCRETE DETAILS AND GRADING.
 - (2) LIGHT DUTY CONCRETE PAVEMENT
MEDIUM BROOM FINISH. COLOR TO MATCH SIDEWALK. SEE CIVIL FOR CONCRETE DETAILS AND GRADING.
 - (3) DECORATIVE PEBBLES
S. UAW VALLEY 2-3" RAINBOW SKIPPERS BY EARTHWORKS (OR APPROVED EQUAL).



PRINTS ISSUED:
09/22/16 100% CD SET
09/23/16 45% CD SET
10/20/16 95% CD SET
11/04/16 100% CD SET

REVISIONS:

loomisAssociates
landscapearchitects/planners
202 South 40 West Drive, Suite B55
Overland Park, Missouri 66205-1154
660.331.1999
loomisassociates.com

Lead: Jerold Saunders, LAC
Missouri State Council on Architecture: LAC 000019



Jerold Saunders - Landscape Architect
Missouri License: LA-007

STONECREST OF WILDWOOD
251 PLAZA DRIVE, WILDWOOD, MO

SHEET TITLE
PATIO LAYOUT

PROJECT NUMBER: 16030

SHEET NUMBER:

L-103

DRAWN BY: LWH CHECKED BY: JAS

loomisAssociates
 landscape architects/planners
 207 Spruce 40 Park Drive, Suite 105
 Wildwood, MO 64095
 P: 660.554.8588 F: 660.559.0787
 e-mail: info@loomis-associates.com
 Loo: 16 Also listed in:
 Missouri State Civil Code Authority LAC 000019



Jerald Saunders - Landscape Architect
 Missouri State License - LA-007

STONECREST OF WILDWOOD
 251 PLAZA DRIVE, WILDWOOD, MO

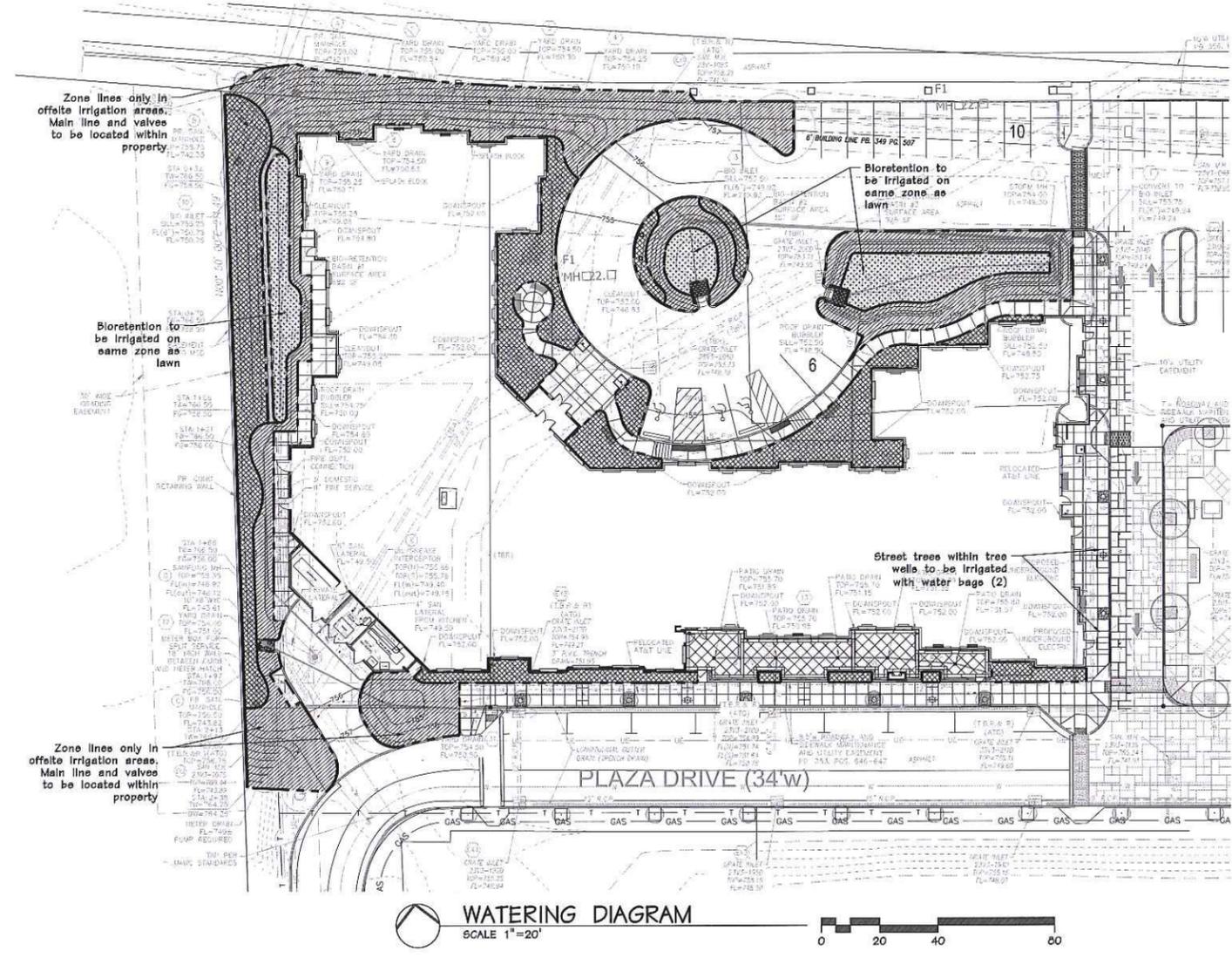
SHEET TITLE
 WATERING DIAGRAM

PROJECT NUMBER: 16030

SHEET NUMBER:

L-104

DRAWN BY: LWH CHECKED BY: JAS



WATERING DIAGRAM
 SCALE 1"=20'
 0 20 40 60

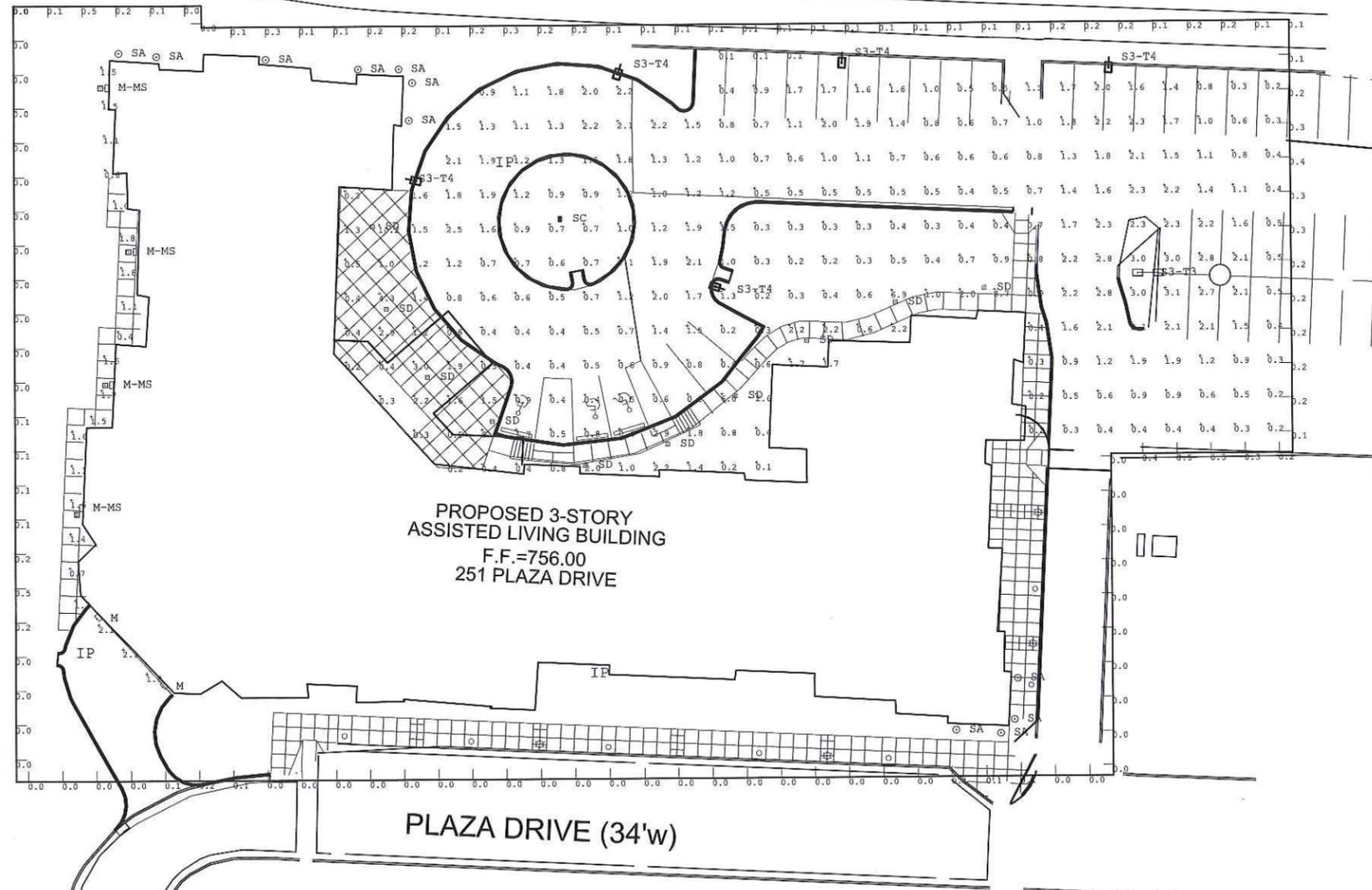
- IRRIGATION KEY:**
- SOD AREAS: 100% COVERAGE WITH 4" POP-UP SPRAY HEADS
 - BIORETENTIONS: 100% COVERAGE WITH 12" POP-UP SPRAY HEADS (UNLESS NOTED OTHERWISE ON PLANS)
 - SHRUB BEDS: 100% COVERAGE WITH 12" POP-UP SPRAY HEADS

IRRIGATION NOTES:

- 1) Contractor to provide a design/build Irrigation system. The contractor is responsible for the design and performance of the system, based on this plan and the specifications. Submit drawings of Irrigation system and cut sheets of all Irrigation equipment to Landscape Architect for approval prior to start of work.
- 2) Show all sleeve locations on shop drawing for review by Landscape Architect.
- 3) Irrigation contractor to supply and install backflow preventer (sized as required, location coordinated with Owner). Irrigation contractor to coordinate stub-out location within landscape area for connection to system.
- 4) Irrigation contractor shall be responsible to obtain all permits required by state, city, and local authorities and conform to all codes regarding Irrigation systems.
- 5) Civil and utility information shown for reference only. See civil drawings and field locate utilities prior to start of work.
- 6) Irrigation contractor is responsible for coordination with Plumbing and Electrical Contractors.
- 7) Irrigation contractor shall coordinate watering requirements with landscape contractor to insure proper level of water is provided.
- 8) Contractor to coordinate location of mainline tap with Owner.
- 9) No spraying across pavement (Roadway and Sidewalks)

MISSOURI STATE HIGHWAY 100 (V.W.)

PRINTS ISSUED
10/20/2016 85% O.A.O.C SET
REVISIONS:



PROPOSED 3-STORY
ASSISTED LIVING BUILDING
F.F.=756.00
251 PLAZA DRIVE

PLAZA DRIVE (34'w)

1 SITE PHOTOMETRIC PLAN
SCALE: 1/8" = 1'-0"

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING AND WALKWAYS	Illuminance	Fc	1.24	10.2	0.1	12.40	102.00
VERTICAL CALCS @ 5 FT AFG	Illuminance	Fc	0.10	0.5	0.0	N.A.	N.A.
WEST SIDE PERIMETER	Illuminance	Fc	1.42	2.1	0.4	3.55	5.25

Symbol	Qty	Label	Description	Arrangement	Arr. Lum. Lumens	LLF	Arr. Watts
[Symbol]	2	M	LNC-7LU-4K-3 WALL MOUNTED @ 10' AFF	SINGLE	1539	0.900	17
[Symbol]	11	SA	LTV81FF-SP-36L4K (INGRADE UPLIGHTING FACADE)	SINGLE	3067	0.900	40.9
[Symbol]	1	SC	ARF2-X-20L4K-070-M-U-XX (FLAG LIGHTING)	SINGLE	4265	0.900	48.5
[Symbol]	10	SD	FN1-24LU-3K-DB (BOLLARDS)	SINGLE	1468	0.900	45.9
[Symbol]	1	S3-T3	TWIN VP-S-24NB-55-4K-T3 ON 14' POLE	BACK-BACK	11108	0.900	110
[Symbol]	5	S3-T4	VP-S-24NB-55-4K-T4-BLC ON 14' POLE	SINGLE	3709	0.900	55.8
[Symbol]	4	M-MS	LNC-7LU-4K-3 WALL MOUNTED @ 10' AFF	SINGLE	1539	0.900	17

GENERAL NOTES

- EXTERIOR LIGHT FIXTURE LAYOUT DESIGNED PER CITY OF WILDWOOD STANDARDS.
- EXCEPT AS NOTED OTHERWISE, EXTERIOR LIGHTING SHALL BE CONTROLLED BY A PHOTO-CELL & TIMECLOCK SYSTEM.

KEYED NOTES

- WALL PACKS ALONG WEST FACADE SHALL BE CONTROLLED BY INTEGRAL MOTION SENSOR AND BUILDING PHOTO-CELL/TIMECLOCK.

habco partnership, inc.
electrical contractors
a smart local energy provider in commercial and industrial settings
10420 Blair Blvd.
St. Louis, MO 63132
Phone: (314) 429-8996
Fax: (314) 427-1484

STONECREST OF WILDWOOD
251 PLAZA DRIVE, WILDWOOD, MO

SHEET TITLE
SITE PHOTOMETRIC PLAN

PROJECT NUMBER: 16030
SHEET NUMBER:

E1.2

DRAWN BY: CAG CHECKED BY: CKF

ARF2 LED DECORATIVE FLOOD

Cat.#

Job

Type

SC



Approvals

SPECIFICATIONS

Intended Use:

Compact flood with a variety of NEMA distributions for lighting applications such as safety/security, accent, flag pole, columns, facade, area, or signs; Operating temperature of -35°C to 40°C

Construction:

- Rugged die-cast aluminum housing with powder coat finish
- High impact UV stabilized acrylic outer lens protects LEDs and allows for cleaning and debris removal
- Vented housing isolates LED module from driver, maximizing product life and performance
- Visor and vandal lens available

LED:

- 20 high powered LEDs deliver up to 4,692 lumens
- 5000K CCT 67 CRI, 4000K 70 CRI, 3000K 80 CRI

Optical/Electrical

- Variety of NEMA distributions - N (3x3), M (4x4), RM (5x4) and W (6x6) - for wide range of lighting applications
- 120-277V operation, 50/60Hz, 52w, 700mA, 81 LPW

- Driver RoHS compliant and IP66
- 0-10V dimming driver standard, order as special to have dimming leads pulled
- 20KA surge protector (over current device) option available

Installation:

- Traditional 1/2" x 14 NPS threaded adjustable knuckle mounting
- Easy maintenance access to electrical components with removal of 4 screws from back of fixture housing

Listings:

- IP65
- Listed to UL1598 for use in wet locations
- DLC Qualified (4200K and 5100K models only); Consult DLC website for more details: <http://www.designlights.org/QPL>

Warranty:

5 year limited warranty, for more information visit: <http://www.hubbelloutdoor.com/resources/warranty/>

PRODUCT IMAGE(S)

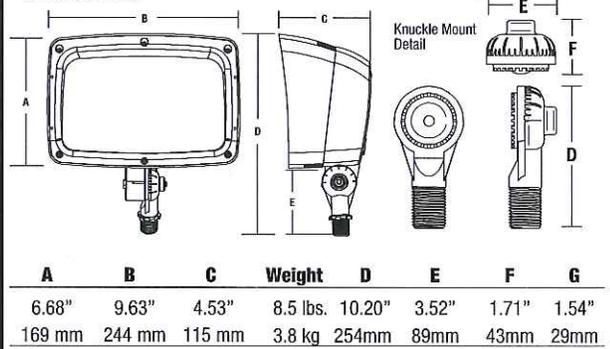
ARCEOS™ **NEW**



Knuckle aiming detail



DIMENSIONS



SHIPPING INFORMATION

Catalog Number	G.W(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
ARF2 (Single carton 1 pc.)	3.81	11.81"	9.45"	7.48"

Carton dimensions for shipping purposes only

CERTIFICATIONS/LISTINGS



ORDERING INFORMATION

FAMILY	MOUNTING	# LEDS	LED CCT	DRIVE CURRENT	BEAM	VOLTAGE	FINISH	CONTROL OPTION	OPTIONS
ARF2 Arceos™ Flood Medium	K Knuckle	20L 20 LEDS	3K ¹ 3000K 4K 4000K 5K 5000K	070 700mA	N 3x3 M 4x4 RM 5x4 W 6x6	U 120V-277V 1 120V 2 208V 3 240V 4 277V	DB Bronze BL Black WH White GR Gray PS Platinum FG Forest Green (premium color) RD Red (premium color) CC ² Custom Color	PC Photocontrol (voltage specified and determined by voltage field)	F Fusing, 120 or 277V only (voltage specified and determined by voltage field) SP 20KA/ KV Surge Protector

¹ DLC qualification 4K and 5K models only
² Custom colors available, contact factory



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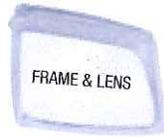


SPA14-SPEC 10/15

ACCESSORIES/REPLACEMENT PARTS - Order Separately

Catalog Number	Description
FML-SPC	Polycarbonate lens (Replaces existing acrylic outer frame)
FML-VISOR-XX ¹	Top/Bottom visor (Tap holes in lens frame for field installation)
93047961AC	Acrylic lens w/ gasket
93043808	25w, 120-277V Dimming driver
20750110264	Knuckle mount Dark Bronze finish. Contact factory for additional finishes
S-302	Slipfits 1 1/2" or 2" pipe (1.9" OD or 2 3/8" OD) with 1/2" N.P.S.M. hub; Gray
S-302-M51	Slipfits 1 1/2" or 2" pipe (1.9" OD or 2 3/8" OD) with 1/2" N.P.S.M. hub; Bronze
S-302-M52	Slipfits 1 1/2" or 2" pipe (1.9" OD or 2 3/8" OD) with 1/2" N.P.S.M. hub; White
TRN-XX ¹	Trunnion adaptor for 1/2" threaded knuckle mount

¹ Specify finish color to match fixture, e.g. DB - Bronze.



FML-SPC



FML-VISOR - 3/4 View



Front View



Top or Bottom
Visor Mount
Detail

TRN-XX

S-302-XX

PERFORMANCE DATA

# OF LEDS	DRIVE CURRENT	SYSTEM WATTS	DIST. TYPE	NEMA	FIELD ANGLE H° X V°	5K (5000K nominal, 67 CRI)			4K (4000K nominal, 70 CRI)			3K (3000K nominal, 80 CRI)		
						LUMENS	LPW ¹	MAX BEAM CANDLEPOWER	LUMENS	LPW ¹	MAX BEAM CANDLEPOWER	LUMENS	LPW ¹	MAX BEAM CANDLEPOWER
20	700mA	52w	N	3 x 3	32 x 32	4692	91.5	37,587	4231	87	35,025	3274	67	28,248
			M	4 x 4	54 x 54	4600	89	13,625	4265	88	12,313	3274	67	9,411
			RM	5 x 4	83 x 66	3926	76	6,582	3636	75	5,921	2835	58	5,002
			W	6 x 6	107 x 107	4486	87	2,978	4119	85	2,851	3234	66	2,306

¹ - Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

PROJECTED LUMEN MAINTENANCE

AMBIENT TEMP.	OPERATING HOURS					Calculated L70 (HOURS)
	0	25,000	50,000	¹ TM-21-11 60,000	100,000	
25°C / 77°F	1.00	0.98	0.96	0.96	0.94	>696,000
40°C / 104°F	0.99	0.96	0.95	0.94	0.92	>565,000

ELECTRICAL DATA

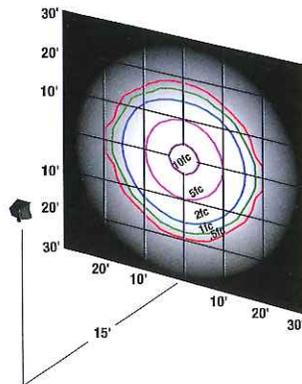
# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	CURRENT (Amps)	SYSTEM POWER (W)
20	2	700mA	120	0.56	50
			277	0.26	50

LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

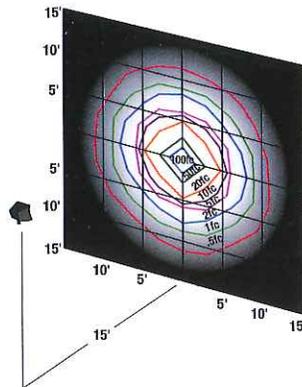
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	1.00
40°C	104°F	0.99
50°C	122°F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

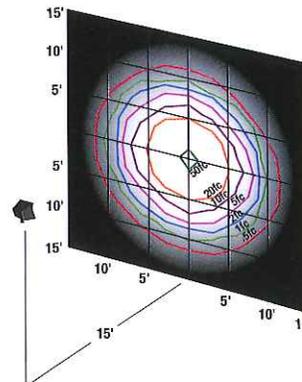
PHOTOMETRICS For additional photometric information and IES downloads, visit our web site at www.spauldinglighting.com



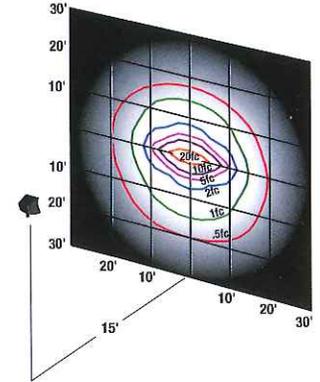
6x6 Wide



3x3 Narrow



4x4 Medium



5 x 4 Rectangular Medium



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SPA14-SPEC 10/15

JOB _____ TYPE **SA**
NOTES _____ APPROVALS _____

FEATURES

- Sealed IP68 LED light engine
- Bluetooth connectivity for remote control aiming and dimming
- Free Mobile App for Android and iOS
- Easy to install and pair devices
- Advanced thermal management provides long life in excess of 100,000+ hours
- Runs cool to the touch - less than 40°C

Certifications



SPECIFICATIONS

Pour Box rough-in housing ships separately and as a quick-ship if requested.



LTV82SS



LTV81SS



LTV83SS

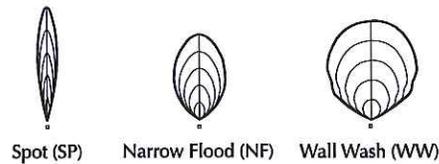


DEBRIS SHIELDS



LIGHT DISTRIBUTIONS:

LTV81SS, LTV82SS, LTV83SS



ORDERING CODE

Fixture Size	Distribution*	Source	Electrical Module	Lens Options ¹	Rebar Cage Anchor
LTV81SS	13" Dia.	SP, NF, WW	36L 36 LEDs	SR Slip-Resistant Lens	RCA81 for LTV81
LTV82SS	10-3/8" Dia.	SP, NF	18L 18 LEDs	PL Prismatic Lens	RCA82 for LTV82
LTV82SS	10-3/8" Dia.	WW	16L 16 LEDs		RCA83 for LTV83
LTV83SS	7-15/16" Dia.	SP, NF, WW	12L 12 LEDs		

* SP = Spot, NF = Narrow Flood, WW = Wall Wash

¹ All lens options are integral parts of component module and must be installed at factory.

Kim Lighting reserves the right to change specifications without notice.

LTV81SS

Optical Module	Source	Color Temperature	Absolute Lumens	Center Beam Candle Power*	Voltage	Total System Watts	Max. Amps	Beam Angle (50%) H x V	Field Angle (10%) H x V	NEMA Type
SP	36L	3K	2426	29469	UV	44W	.367 for 120V	12.9 x 12.9	27.3 x 27.3	2H X 2V
		4K	3041	36773			.212 for 208V			
		5K	3324	41827			.183 for 240V .159 for 277V			
NF	36L	3K	2171	2422	UV	44W	.367 for 120V	46.1 x 54.7	79.9 x 83.7	5H X 5V
		4K	2726	3022			.212 for 208V			
		5K	2745	3071			.183 for 240V .159 for 277V			
WW	36L	3K	2574	4188	UV	44W	.367 for 120V	53.1 x 28.2	102.5 x 61.1	6H X 4V
		4K	3209	5220			.212 for 208V			
		5K	3526	5736			.183 for 240V .159 for 277V			

LTV82SS

Optical Module	Source	Color Temperature	Absolute Lumens	Center Beam Candle Power*	Voltage	Total System Watts	Max. Amps	Beam Angle (50%) H x V	Field Angle (10%) H x V	NEMA Type
SP	18L	3K	1285	16787	UV	23W	.192 for 120V	13.4 x 13.4	26.9 x 26.9	2H X 2V
		4K	1633	20282			.111 for 208V			
		5K	1705	22899			.096 for 240V .083 for 277V			
NF	18L	3K	1049	1272	UV	23W	.192 for 120V	43.9 x 52.8	76.4 x 81.3	5H X 5V
		4K	1410	1687			.111 for 208V			
		5K	1470	1758			.096 for 240V .083 for 277V			
WW	16L	3K	1083	2336	UV	20W	.167 for 120V	58.9x21.3	93.3 x 53.9	5H X 4V
		4K	1389	2992			.091 for 208V			
		5K	1549	3336			.079 for 240V .069 for 277V			

LTV83SS

Optical Module	Source	Color Temperature	Absolute Lumens	Center Beam Candle Power*	Voltage	Total System Watts	Max. Amps	Beam Angle (50%) H x V	Field Angle (10%) H x V	NEMA Type
SP	12L	3K	825	10750	UV	14W	.117 for 120V	12.7 x 12.7	26.3 x 26.3	2H X 2V
		4K	998	13008			.067 for 208V			
		5K	1085	14144			.058 for 240V .051 for 277V			
NF	12L	3K	709	863	UV	14W	.117 for 120V	50.3 x 50.3	81.2 x 81.2	5H X 5V
		4K	888	1082			.067 for 208V			
		5K	932	1136			.058 for 240V .051 for 277V			
WW	12L	3K	806	1724	UV	14W	.117 for 120V	52.3 x 20.8	93 x 53.6	5H X 4V
		4K	1034	2210			.067 for 208V			
		5K	1152	2463			.058 for 240V .051 for 277V			

KEY: SS = Flat Frame, SP = Spot, NF = Narrow Flood, WW = Wall Wash (PicoPrism™), 36L = 36 LEDs, 18L = 18 LEDs, 16L = 16 LEDs, 12L = 12 LEDs, 3K = 2800K to 3175K, 4K = 3800K to 4600K, 5K = 4600K to 5600K, UV = Universal Voltage shall range from 120V-277V with a ±10% tolerance.

* The SP and NF are based on Candela exiting unit straight up. The WW is for highest candela angle.

Spectroradiometric

	3K	4K	5K
Correlated Color Temp. CCT (K)	2800K to 3175K	3800K to 4600K	4600K to 5600K
Color Rendering Index (CRI)	≤80	≤80	≤70
Power Factor	>.90	>.90	>.90

L70 Data

	Calculated	Reported*
350 mA	100,000	60,000

*Based on test duration.

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SPECIFICATIONS

Housing:

- Pour Box rough-in housing for installation below grade.
- High temperature UV resistant thermal plastic, F" minimum wall, black.
- Includes a splice box with molded plastic splice cover and silicone gasket.
- Three 1" NPT in bottom for through wiring on LTV81 and LTV82.
- Two 1" NPT in bottom for through wiring on LTV83. 107 cu. in. splice area for LTV81.
- 52 cu. in. splice area for LTV82. 24 cu. in. splice area for LTV83.
- Supplied with protective aluminum debris shield mask with orientation label for proper installation alignment for clean and easy installation in concrete pad or soil. Ships separately and as a quick-ship if requested.

Component Module:

- One-piece impregnated cast bronze, fully sealed component module secured to the face trims from the underside.
- A high temperature, anti-siphon, IP67 sealed cable extends from the component module to the splice box inside the housing.
- The fully assembled component module is secured to the housing with (4) ¼-20 tamper-resistant high grade stainless steel fasteners.

Face Trim:

- 1/16" 304 stainless steel plate with M33 brushed finish shall cover the cast bronze Lens Frame and provide a flat surface.

Optical Modules:

- Spot (SP), Narrow Flood (NF), and Wall Wash (WW) optical modules are adjustable up to 15° utilizing a Bluetooth enabled motor assembly.

Bluetooth:

- Integral Bluetooth module used to adjust optics and dim fixture to desired setting when paired with KIM LTV8 Remote App via cellular/tablet device.
- Fully qualified Bluetooth 1.1, 1.2, 2.0, 2.1. Bluetooth v2.0+EDR compatible with Android devices running Android Gingerbread API level 9 forward. Bluetooth 4.0 LE compatible with iOS devices - iPhone 4S and later, 5th generation iPod touch, the iPad Mini and the 3rd generation and later of the full size iPad with iOS 5 or later.
- Bluetooth Apps are available for Apple iOS and Google Android mobile devices and are downloadable via the internet at Apple App Store or Google Play.

Lens:

- Clear 5/16" thick tempered glass lens and silicone gasket is retained securely within the component module.

Options:

- Slip Resistant Lens (SR), Prismatic Lens (PL), Rebar Cage Anchor (RCA8x).

Electrical Equipment:

- All electronic components are UL and CSA recognized and mounted directly to the component module for maximum heat dissipation and modularity. Driver is IP67 with -30°C minimum temperature rating.

Drive-Over Durability:

- When installed in concrete, fixture will withstand drive-over by vehicles weighing up to 4,500 lbs.

Certification:

- (UL1598, UL8750). 25°C ambient operation.
- SASO Certified for LTV82/83.
- IEC 66262 Mechanical Impact Code IK09.

Warranty:

- For full warranty see <http://www.hubbellighting.com/resources/warranty>
- Opening of Component Module on site will void warranty.



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FRESNO SERIES

Cat.#

Job

Type

SD



Approvals

INTENDED USE:

- Fresno series bollards are designed to illuminate walkways and courtyards

CONSTRUCTION:

- Extruded aluminum square or round housing, with tamper resistant hardware; Flat top, for round FN2. Single screw access for top relamping
- Sealed one-piece, clear acrylic lens; Specular, anodized aluminum optical systems; dual reflector, tube optics, or internal louvers (HID or CFL)
- Concealed, galvanized steel anchor base; Four 1/2" x 10" anchor bolts
- Durable Lektrocote® TGIC thermoset polyester powder coat paint finish assures long life and maintenance-free service

ELECTRICAL:

HID

- HPF ballast, starting rated at -20°F (-40°F for HPS); Pulse Start Metal Halide is CWA or Super CWA type HPS is CWA, HR, or Reactor type
- Medium porcelain socket, pulse rated, with spring-loaded, nickel-plated center contact and reinforced lamp grip screw shell

FLUORESCENT

- Programmed Start electronic ballast with end of life protection and universal voltage: 26/32/42w
- One Lamp – CFTR/GX24Q – Triple Tube 4-Pin

LED

- Universal voltage (120-277V) drivers with +/- 10% tolerance, starting temperature rated at -20°F
- Optional continuous dimming to 10% (0-10V)
- Rotatable LED assembly adjustment for ideal placement and aiming of asymmetric light pattern
- 24 high brightness LEDs at 500 mA deliver symmetric distribution at 46w
- 12 high brightness LEDs at 700 mA deliver asymmetric distribution at 31w
- Available in two color correlated temperatures (3500K and 5000K)
- Long life 50,000 hour L70 rated at 25°C

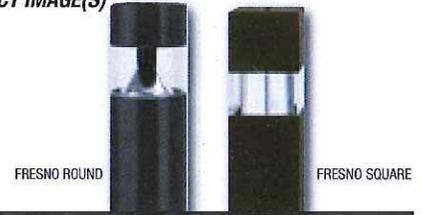
LISTINGS:

- Listed to UL1598 for use in wet locations

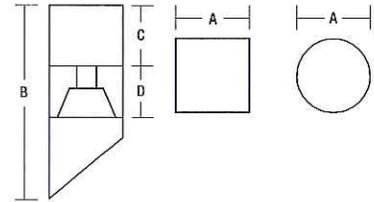
WARRANTY

- 5 year limited warranty for LED system, visit <http://www.spauldinglighting.com/resources/warranty/>

PRODUCT IMAGE(S)



DIMENSIONS



	A	B	C	D	Weight
FN1	6.75" sq. 171 mm	42.0" 1067 mm	6.0" 152 mm	4.0" 102 mm	41 lbs 19 kg
FN2	7.0" dia 178 mm	42.0" 1067 mm	6.0" 152 mm	4.0" 102 mm	41 lbs 19 kg

CERTIFICATIONS/LISTINGS



ORDERING INFORMATION

ORDERING EXAMPLES: FN1-P50-DO-Q-DB-L, FN2-24LU-3K-U-DB

SERIES	SOURCE/WATTAGE/LED	OPTICS	VOLTAGE	COLOR	OPTIONS
FN1 Fresno Square	PULSE START METAL HALIDE	DO ⁷ Dual reflector with cone (standard)	Q ¹ Quad-Tap® 120/208/240/277V	DB Dark Bronze	F(X) Fusing (replace X with voltage: 1-120V, 2-208V, 3-240V, 4-277V
FN2 Fresno Round	P50 50w (ED-17)	TO ^{3,7} Tube optics	T ^{1,4} Tri-Tap® 120/277/347V (CSA)	BL Black	F5 ^{6,7} Fusing 480V
	P70 70w (ED-17)	IL ⁷ Internal horizontal louvers	U ⁵ Universal 120 - 277V, 50/60 Hz	WH White	F6 ^{6,7} Fusing 347V
	P10 100w (ED-17)		1 120V	GR Gray	P(X) Photo button (replace X with voltage: 1-120V, 2-208V, 3-240V, 4-277V
	HIGH PRESSURE SODIUM		5 ^{6,7} 480V	PS Platinum Silver	P6 ^{6,7} Photo button - 347V
	S35 ² 35w (ED-17)			RD Red (premium color)	24 24" luminaire height
	S50 50w (ED-17)			FG Forest Green (premium color)	30 30" luminaire height
	S70 70w (ED-17)			CC Custom Color (consult factory)	36 36" luminaire height
	S10 100w (ED-17)				HS90 ⁷ Internal shield - 90° (FN1 Only)
	FLUORESCENT				HS160 ⁷ Internal shield - 160°
	F26 26w CFL (G24q Base)				HS180 ⁷ Internal shield - 180° (FN2 only)
	F32 32w CFL (G24q Base)				L ⁷ Lamp
	F42 42w CFL (G24q Base)				CD ⁸ Continuous dimming
	LED				
	12LU-3K 12 LEDs, 31w, asymmetric distribution, 3500K, 120-277V, 50/60 Hz				
	12LU-5K 12 LEDs, 31w, asymmetric distribution, 5000K, 120-277V, 50/60 Hz				
	24LU-3K 24 LEDs, 46w, symmetric distribution, 3500K, 120-277V, 50/60 Hz				
	24LU-5K 24 LEDs, 46w, symmetric distribution, 5000K, 120-277V, 50/60 Hz				

1 Factory wired for highest voltage unless specified, HID only
 2 120V only
 3 Upper reflector with no lower cone
 4 70 or 100w system only
 5 CFL or LED only
 6 Not available with CFL
 7 Not available with LED units
 8 LED only

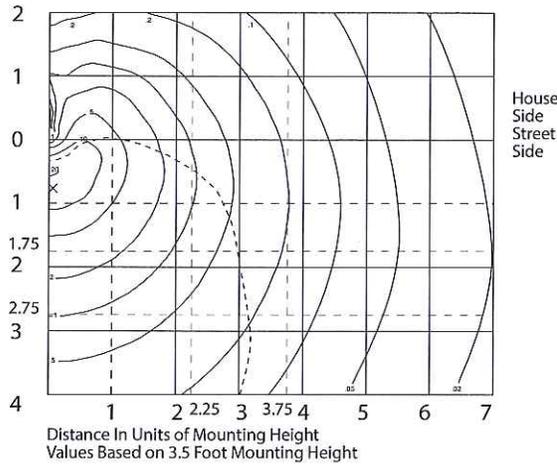


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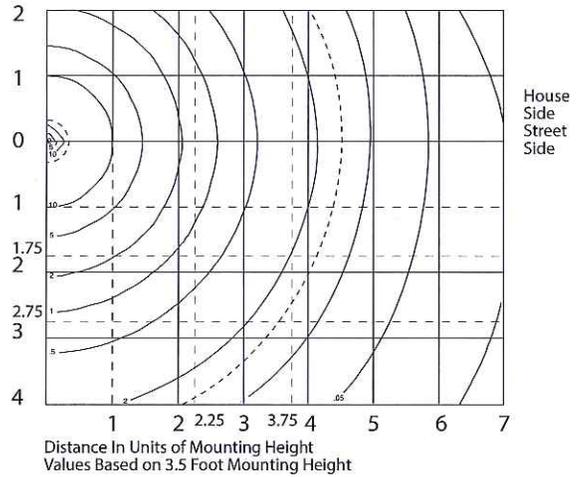


PHOTOMETRIC DATA

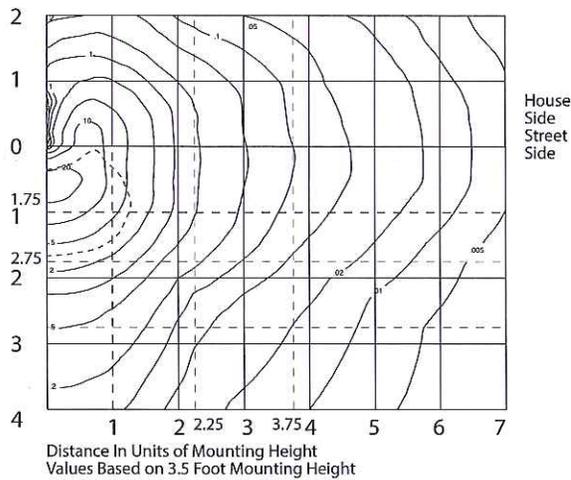
FN2-12LU-3K: 12 LEDS
ASYMMETRIC DISTRIBUTION, 3500K



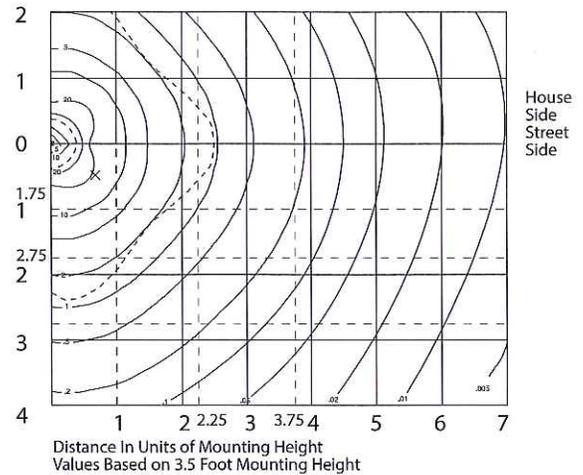
FN2-24LU-3K: 24 LEDS
SYMMETRIC DISTRIBUTION, 3500K



FN1-12LU-5K: 12 LEDS
ASYMMETRIC DISTRIBUTION, 5000K



FN1-24LU-5K: 24 LEDS
SYMMETRIC DISTRIBUTION, 5000K



VIPER S SERIES

SMALL VIPER LUMINAIRE

Cat.#

Job

S3-T3



Approvals

SPECIFICATIONS

Intended Use:

The Beacon Viper luminaire is available with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 400W MH or HPS.

Construction:

- Manufactured with a low copper content, die cast aluminum.
- Coated with a polyester finish that meets ASTM B117 corrosion test requirements and ASTM D522 cracking and loss of adhesion test requirements.
- External hardware is corrosion resistant.
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

LED/Optics:

- 100V through 277V, 50 Hz to 60 Hz (UNV), or 347V or 480V input.
- Power factor is .92 at full load.
- All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL- 217F Notice 2.
- Dimming drivers are standard with connections for external dimming equipment available upon request.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher.
- Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.

Electrical:

- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- The housing is designed for an optional twist lock photo control receptacle.
- Ambient operating temperature -40°C to 40°C
- Surge protection - 20KA; shuts off at end of life.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Lifeshield™ Circuit - protects luminaire from excessive temperature. The device shall activate at a specific, factory-preset temperature, and progressively reduce power over a finite temperature range. A luminaire equipped with the device may be reliably operated in any ambient temperature up to 55°C (131°F). Operation shall be smooth and undetectable to the eye. Thermal circuit is designed to "fail on", allowing the luminaire

to revert to full power in the event of an interruption of its power supply, or faulty wiring connection to the drivers. The device shall be able to co-exist with other 0-10V control devices (occupancy sensors, external dimmers, etc.).

Controls/Options:

- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the Wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full Wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on hours of operation or time of night (see www.beaconproducts.com/products/energeni).
- Also available with **Beaconconnect** Wireless Control System (see **Beaconconnect** product page for more details www.beaconproducts.com/products/beaconconnect).

Installation:

- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.

Finish:

- Beacote V polyester powder-coat electrostatically applied and thermocured.
- Beacote V finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

Listings:

- DesignLights Consortium (DLC) qualified, consult DLC website for more details: <http://www.designlights.org/QPL>
- Listed to UL1598 and CSA22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 3G rated for ANSI C136.31 high vibration applications
- IDA approved

Warranty:

Five year limited warranty (for more information visit: www.hubbellighting.com/resources/warranty).

PRODUCT IMAGE(S)

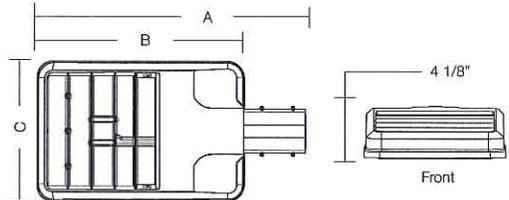


rectangular arm



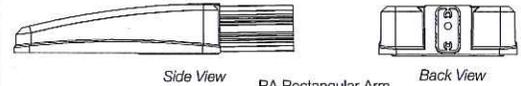
decorative arm

DIMENSIONS



A	B	C	Weight:	EPA
22.75"	16.75"	11.25"	15.0 lbs	.67 ft ²
(578 mm)	(425 mm)	(286 mm)	(6.8 kg)	

MOUNTING OPTIONS



Side View

RA Rectangular Arm

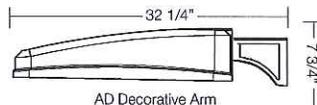
Back View



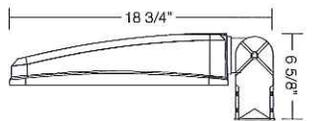
Side View

SF2 2-3/8" OD Slip Fitter

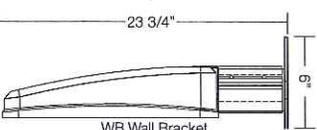
Back View



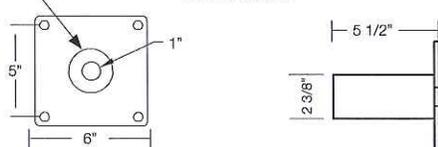
AD Decorative Arm



PK2 2-3/8" Adjustable Knuckle



WB Wall Bracket



CERTIFICATIONS/LISTINGS



*3000K and warmer CCTs only



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ORDERING INFORMATION ORDERING EXAMPLE: VPS/36NB-80/5K/T4/UNV/PCR-TL/BCW/BLC/RA/BBT

SERIES	ENGINE-WATTS	LED COLOR	VOLTAGE	ELECTRICAL OPTIONS	HOUSE SIDE SHIELD OPTIONS	FINISH
VPS viper-small	24NB-55 55W, LED array 30NB-70 70W, LED array 36NB-80 80W, LED array 48NB-110 110W, LED array 60NB-136 136W, LED array	3K 3000K 4K 4000K 5K 5000K	UNV 120-277V 347V 347V 480V 480V	PCR-TL Twist lock receptacle with photo control PCR-SC Twist lock receptacle with short-throw cap PCR-U Twist lock receptacle 2PF ⁷ dual power feed	HSS-90 house side shield 90° HSS-180 house side shield 180° BLC ³ backlight control	BBT basic black textured BMT black matte textured WHT white textured MBT metallic bronze textured BZT bronze textured DBT dark bronze textured GYS gray smooth DPS dark platinum smooth GNT green textured MST metallic silver textured MTT metallic titanium textured OWI old world iron RAL _____
		OPTICS⁴				
		T1 type I T2 type II T3 type III T4 type IV T5R type V, rectangular T5QM type V, square medium T5W type V, round wide FR front row auto optic				
		CONTROL OPTIONS				
		GENI-XX ⁶ energeni BCW ^{1,5,8} beaconnect				
		SENSOR OPTIONS				
		BMD ^{1,2,5} motion sensor for beaconnect MDD ^{2,5} motion dimming detector				
		MOUNTING OPTIONS				
		RA rectangular arm for round or square pole mount. RPA included. SF2 2 3/8" OD slip-fitter PK2 2 3/8" adjustable knuckle AD decorative arm with universal mounting slot. RPA ordered separately. See referenced table. WB wall bracket (use with SF2 or PK2), SF2 standard				

MDD ORDERING INFORMATION: When ordering a fixture with the motion detection option (MDD), please specify the appropriate information. These settings are specified in the ordering as shown in the example below.

VPS / 36NB-135 / 5K / T5W / UNV / MDD - 1 to 30 min. - 33% or 50% - ?? / MT

High to Dim Delay Low Level Mounting Height (ft.)

BEACON ORDERING INFORMATION: When ordering a fixture with the Beconnect lighting control options please specify the appropriate group and sensor information. Please provide dimming schedule information in either the Beconnect excel spreadsheet or Beconnect software. For more detailed information please visit www.beaconproducts.com/beaconnect or contact beacon tech support at (800) 345-4928. These settings are specified in the ordering as shown in the example below, (Family) / 24NB-55 / 5K/T3 / UNV / BCW-(Group 1-16)_____- (Optional Zone 1-250)_____/BMD - ___Time Delay(1 to 255)_____- ___Dimming% (1 to 100)_____- ___mounting height(1-20ft)_____/ Example: TRV/24NB-55/5K/T3/UNV/BCW-G1 /BMD-30M-50%-10F/DBT for luminaires without sensors in the group omit the BMD ordering logic Example: TRV/24NB-55/5K/T3/UNV/BCW-G1 /DBT

¹ Must specify group and zone information at time of order. See www.beaconproducts.com/controls/beaconnect for further details.
² Specify time delay, dimming level and mounting height.
³ T4 optic only.
⁴ To rotate optics left or right 90 degrees, specify L or R after the optical distribution example T4L.
⁵ Not available with either control or sensor options.
⁶ When ordering Energini, specify the routine setting code (example GENI 04). See Energini brochure and instructions for setting table and options. Not available with sensor options.
⁷ Not available for 347V or 480V input.
⁸ Not available with 30NB-70.

Catalog Number	Description
VPS-AD-RPA3	3.5" - 4.125"
VPS-AD-RPA4	4.188" - 5.25"
VPS-AD-RPA5	5.5" - 6.5"

Order Separately

Catalog Number	Description
ASM-USB-BCW	Beaconnect Software loaded on USB flash drive* (Windows based only)
ASM-TABLET-BCW	Beaconnect 7" Windows Tablet*

*Includes USB Radio



DesignLights Consortium qualified. Consult DLC website for more details: <http://www.designlights.org/QPL>



PERFORMANCE DATA

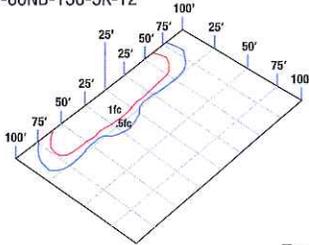
# LED'S	DRIVE CURRENT (MILLIAMPS)	SYSTEM WATTS	DISTRIBUTION TYPE	5K (5000K nominal, 70 CRI)					4K (4000K nominal, 70 CRI)					3K (3000K nominal, 70 CRI)				
				LUMENS	LPW'	B	U	G	LUMENS	LPW'	B	U	G	LUMENS	LPW'	B	U	G
24	700 mA	55 W	FR/T1	6339	114	1	0	1	6276	112	1	0	1	5389	97	1	0	1
			T2	5666	102	2	0	2	5610	101	2	0	2	4816	86	1	0	2
			T3	5610	101	1	0	2	5554	100	1	0	2	4784	86	1	0	2
			T4	6171	111	1	0	2	6110	109	1	0	2	5245	94	1	0	2
			T5R	6283	113	3	0	3	6221	111	3	0	3	5341	96	3	0	3
			T5QM	6171	111	3	0	1	6110	109	3	0	1	5245	94	2	0	1
			T5W	6087	109	3	0	1	6027	108	3	0	1	5201	93	3	0	1
30	700 mA	70 W	FR/T1	8096	113	1	0	1	8016	112	1	0	1	6882	96	1	0	1
			T2	7204	101	2	0	2	7133	100	2	0	2	6123	86	2	0	2
			T3	7743	108	2	0	2	7666	107	2	0	2	6659	93	2	0	2
			T4	7896	111	1	0	2	7817	110	1	0	2	6791	95	1	0	2
			T5R	8035	112	3	0	3	7954	111	3	0	3	6829	95	3	0	3
			T5QM	7846	110	3	0	1	7768	109	3	0	1	6669	93	3	0	1
			T5W	8305	116	3	0	2	8222	115	3	0	2	7142	100	3	0	2
36	700 mA	80 W	FR/T1	9515	114	1	0	1	9414	112	1	0	1	8083	96	1	0	1
			T2	8505	101	2	0	3	8415	100	2	0	3	7224	87	2	0	2
			T3	8415	100	2	0	2	8331	99	2	0	2	7175	86	2	0	2
			T4	9256	110	1	0	3	9164	109	1	0	3	7868	94	1	0	3
			T5R	9425	112	3	0	3	9331	111	3	0	3	8011	96	3	0	3
			T5QM	9257	110	3	0	1	9164	109	3	0	1	7868	94	3	0	1
			T5W	9131	109	3	0	2	9040	108	3	0	2	7801	93	3	0	2
48	700 mA	110 W	FR/T1	12679	114	2	0	1	15522	113	2	0	1	10777	97	1	0	1
			T2	11332	102	3	0	3	11220	101	3	0	3	9633	87	2	0	3
			T3	11220	101	2	0	3	11108	100	2	0	3	9567	86	2	0	3
			T4	12342	111	2	0	3	12219	110	2	0	3	10491	95	2	0	3
			T5R	12567	113	4	0	4	12441	112	4	0	4	10682	96	3	0	3
			T5QM	12342	111	3	0	2	12219	111	3	0	2	10491	95	3	0	2
			T5W	12175	110	4	0	2	12053	109	4	0	2	10402	94	4	0	2
60	700 mA	136 W	FR/T1	15848	116	2	0	1	15690	115	2	0	1	13471	98	2	0	1
			T2	14165	103	3	0	3	14025	102	3	0	3	12041	88	3	0	3
			T3	14025	102	3	0	3	13885	101	3	0	3	11959	87	3	0	3
			T4	15427	113	2	0	3	15274	111	2	0	3	13114	96	2	0	3
			T5R	15708	115	4	0	4	15259	111	4	0	4	13352	97	4	0	4
			T5QM	15427	113	4	0	2	15274	111	4	0	2	13314	96	3	0	2
			T5W	15218	111	4	0	2	15066	111	4	0	2	13002	95	4	0	2

*Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

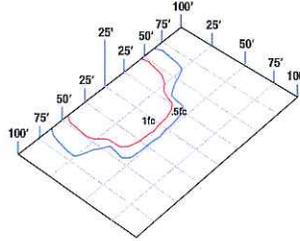


PHOTOMETRICS

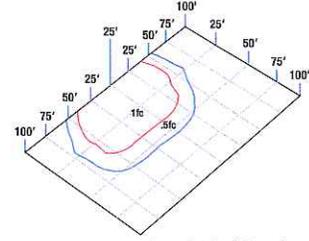
Type II
VP-S-60NB-136-5K-T2



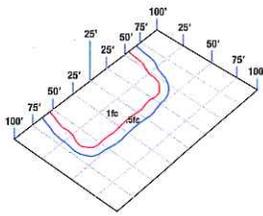
Type III
VP-S-60NB-136-5K-T3



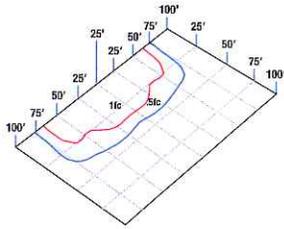
Type IV
VP-S-60NB-136-5K-T4



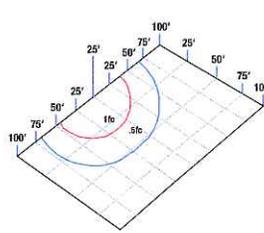
Type V Square Medium
VP-S-60NB-136-5K-T5QM



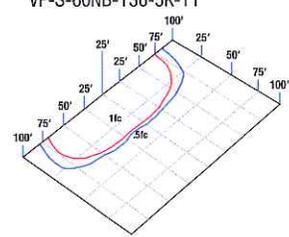
Type V Rectangular
VP-S-60NB-136-5K-T5R



Type V Round Wide
VP-S-60NB-136-5K-T5W



Front Row Auto Optic / Type I
VP-S-60NB-136-5K-FR
VP-S-60NB-136-5K-T1



ELECTRICAL DATA

# OF LEDS	NUMBER OF DRIVERS	DRIVE CURRENT (mA)	INPUT VOLTAGE (V)	SYSTEM POWER (w)	CURRENT (Amps)
24	2	700 mA	120	55	0.5
			277		0.2
			347		0.2
			480		0.1
30	2	700 mA	120	70	0.6
			277		0.3
			347		0.2
			480		0.1
36	1	700 mA	120	80	0.7
			277		0.3
			347		0.2
			480		0.2
48	1	700 mA	120	110	0.9
			277		0.4
			347		0.3
			480		0.2
60	1	700 mA	120	136	1.1
			277		0.5
			347		0.4
			480		0.3

PROJECTED LUMEN MAINTENANCE

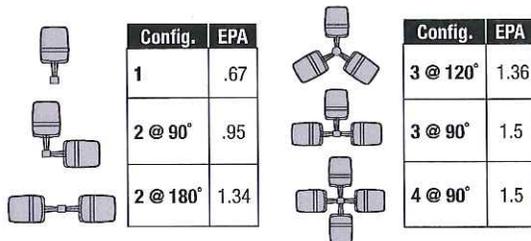
AMBIENT TEMP.	0	25,000	50,000	'TM-21-11 60,000	100,000	Calculated L70 (HOURS)
25°C / 77°C	1.00	0.97	0.95	0.95	0.92	>470,000

¹ Projected per IESNA TM-21-11
Data references the extrapolated performance projections for the base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08.

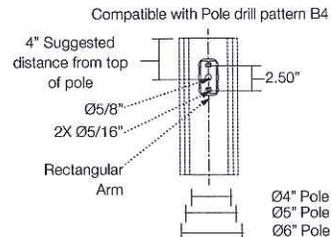
AMBIENT TEMPERATURE		LUMEN MULTIPLIER
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
25°C	77°F	1.00
30°C	86°F	0.98
40°C	104°F	0.98

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

EPA



DRILL PATTERN



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AN ORDINANCE OF THE CITY OF WILDWOOD, MISSOURI, APPROVING A CHANGE TO THE TOWN CENTER PLAN'S REGULATING PLAN; AMENDING ORDINANCE #1650 BY DELETING SECTION TWO THEREOF AND ENACTING, IN LIEU THEREOF, A NEW SECTION TWO; AND PROVIDING FOR THE APPROVAL OF AN AMENDED C-8 PLANNED COMMERCIAL DISTRICT FOR A CERTAIN ONE POINT SIX (1.6) ACRE TRACT OF LAND FOR USE AS A RESIDENTIAL SENIOR SERVICE FACILITY. (Ward Eight)

WHEREAS, pursuant to § 89.310, RSMo., “Any municipality in this state may make, adopt, amend, and carry out a city plan and appoint a planning commission with the powers and duties herein set forth;” and

WHEREAS, pursuant to §§ 89.300 to 89.480, RSMo., the Planning and Zoning Commission of the City is tasked with adopting and amending the City’s Master Plan and all parts thereof; and

WHEREAS, consistent with §§ 89.300 to 89.480, RSMo., the City has adopted a Town Center Plan and corresponding Final Land Use/Regulating Plan Map (the “Regulating Plan”); and

WHEREAS, the Regulating Plan establishes the permissive land use activities for all properties in the Town Center area of the City of Wildwood; and

WHEREAS, Section 3.9(b) of the City Charter provides that “Zoning ordinances may be adopted or amended only to the extent that such ordinances are consistent with the Comprehensive Zoning Plan;” and

WHEREAS, the Planning and Zoning Commission received a request for a change to the Regulating Plan from Downtown District to Neighborhood General District for a certain 1.6 acre tract of land that is located on the north side of Plaza Drive, west of Fountain Place and more particularly described in Section One of this Ordinance (the “Property”) for purposes of allowing a residential senior care facility within Wildwood Town Center; and

WHEREAS, pursuant to Ordinance #1650, the Property was zoned C-8 Planned Commercial District; and

WHEREAS, the Planning and Zoning Commission received a Petition requesting an Amended C-8 Planned Commercial District for the Property for purposes of allowing no less than 2,800 square feet of commercial services on the ground floor of the building and a total number of beds not to exceed ninety-five (95) in total; and

WHEREAS, these requests were considered by the Planning and Zoning Commission at a public hearing on May 2, 2016 and discussion was held on the merits of this type of use in Town Center and the impact it would have, if authorized, on the ‘Downtown’ District Area of this location; and

WHEREAS, after the conclusion of the public hearing and responding to the Department of Planning’s Information Report, the Planning and Zoning Commission approved the change to the Regulating Plan designation for the Property from Downtown District to Neighborhood General District, and recommended approval of the Petition requesting the Amended C-8 Planned Commercial District subject to certain terms and conditions, the specifics of such approval and recommendation being set forth in the recommendation of the Planning and Zoning Commission submitted to the City Council dated June 20, 2016, and regarding PZ 5 and 5(a)-16, a copy of which is on file in the office of the City Clerk and incorporated by reference herein; and

WHEREAS, the City Council held a public hearing to consider the amendment on June 27, 2016, at which interested persons were offered an opportunity to speak; and

WHEREAS, at their meeting on June 27, 2016, the City Council directed the Department of Planning to prepare draft legislation for consideration by the City Council consistent with the Planning and Zoning Commission's recommendation.

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

Section One. The City of Wildwood's Zoning Ordinance, Official Zoning District Maps, and Ordinance # 1650 of the City of Wildwood, Missouri, all made a part hereof and incorporated by reference herein, are hereby amended by designating the Property described below from 'Downtown' District to the 'Neighborhood General' District:

A tract of land being Adjusted Lot 1 and Adjusted Lot 2 of "Wildwood Town Center Plat Two", a subdivision filed for record in Plat Book 356, Pages 485 and 486 of the St. Louis County, Missouri records, and being part of the Southeast Quarter of Section 11 in Township 44 North, Range 3 East of the Fifth Principal Meridian, City of Wildwood, St. Louis County, Missouri and being more particularly described as follows:

BEGINNING at the Southwest corner of Adjusted Lot 1 of "Wildwood Town Center Plat Two", a subdivision filed for record in Plat Book 356, Page 485 and 486 of the St. Louis County Records; thence along the Western line of said Adjusted Lot 1 North 00 degrees 50 minutes 00 seconds East, 211.49 feet to the Northwest corner thereof; thence along the Northern line of Adjusted Lot 1 and Adjusted Lot 2 the following: South 83 degrees 02 minutes 27 seconds East, 52.39 feet to a point; thence South 87 degrees 18 minutes 21 seconds East, 319.04 feet to the Northeast corner of Adjusted Lot 2; thence along the Eastern line of Adjusted Lot 2 South 02 degrees 41 minutes 39 seconds West, 111.43 feet to a point; thence North 87 degrees 18 minutes 21 seconds West, 48.00 feet to a point; thence South 02 degrees 41 minutes 39 seconds West, 96.06 feet to a point on the Northern right-of-way line of Plaza Drive; thence along said Northern right-of-way line North 87 degrees 18 minutes 21 seconds west, 316.41 feet to the Point of Beginning and containing 71,801 square feet or 1.646 acres more or less as per calculations by Stock & Associates Consulting Engineers, Inc. during February, 2016.

Section Two. That Ordinance # 1650 of the City of Wildwood, Missouri, be and is hereby amended by deleting Sections Two thereof in their entirety and enacting, in lieu thereof, new Section Two, to read as follows:

Section Two. The zoning authority and approval embodied in this ordinance is granted subject to compliance with the Subdivision and Development Regulations, Zoning Ordinance, and all other City of Wildwood ordinances, rules, and regulations and the conditions of this ordinance, except as may be modified herein, upon the requirement the development and approved Site Development Plan are carried out in accordance with the recommendation of the City Council from its public hearing discussion held on June 27, 2016, which is incorporated herein by reference as if fully set forth in this ordinance. The zoning authority granted herein is further subject to the following conditions:

1. **PERMITTED USES**

- a. If the developer anticipates the phasing of the permitted uses authorized for this development, and their related improvements, the following requirements and limits shall apply to the number of residential units and commercial square footage (as defined in Conditions 1(b.) and 1(c.) of this ordinance), which can be authorized within a specific phase:

PHASES	USES
One (Amended C-8 District area)	A minimum of five (5) commercial buildings not to exceed 88,300 square feet of gross floor area. Any building housing residential units shall also be required to utilize its first floor for commercial users.
Two (Amended C-8 and C-8 District area)	A maximum of seven (7) Downtown District buildings and one (1) Neighborhood General District building (Lots 1 and 2) nine (9) Neighborhood Center , with all not to be less than 167,000 square feet of gross floor area including the required live/work units, but not any other residential units added to these existing buildings to accommodate an authorized third or fourth floor option. Any building housing residential units shall also be required to utilize a portion of its first floor for commercial users, as approved by the Planning and Zoning Commission on the Site Development Plan.

No Phase II building permits, nor Phase I occupancy permits, shall be issued, until Main Street construction has substantially commenced, the reimbursement of the City for all of its costs associated with the purchase price of this right-of-way area is complete, and the plat for the roadway has been submitted and approved by the City of Wildwood or an acceptable agreement between the developer and the City has been signed regarding these same items.

- b. The uses allowed in this Amended C-8 Planned Commercial District (Phase I) shall be limited to all permitted **'Downtown' Commercial and Neighborhood Center'** District uses, as defined in the Town Center Plan (as amended March 1, 2010 ~~2, 1998~~ and may be modified here and after by applicable ordinance). The C-8 Planned Commercial District (Phase II) portion of this site shall be limited to all permitted **'Downtown and Neighborhood General' Neighborhood Center and Open Space'** District uses and may also include a hotel, restaurants (fast-food, but no drive-through facilities), and medical and dental offices, with associated parking, but excluding sewage treatment plants, research laboratories and facilities, and office/warehouse units. **The 'Neighborhood General' District designation in the Phase II area is limited to two (2) existing lots (Lots 1 and 2, as indicated on the approved Site Development Plan dated March 15, 2010 in the Department of Planning's files) and the proposed location of the allowable senior care facility, which shall be limited to no more than ninety-five (95) beds, as may be set forth within the Certificate of Need (CON) approved/issued by the Missouri Health Facilities Review Board, and shall be**

provided to the City of Wildwood's City Attorney for verification and acceptance to form and compliance.

- i. A minimum of ten (10) percent of the residential units in this development shall be live/work types and **shall be located within** the '**Downtown District Center**' area of the Phase II portion of this project. Additional independent dwelling units shall also be authorized **be required** in conjunction with **Buildings G and J/K (Lots 3A and 6) F through N**, but the combined, and total, number of residential units, whether live/work or independent types, **shall be as determined at the time of each Regulating Plan change (Downtown District to Neighborhood General District) and the accompanying amendment of the planned district ordinance for that specific lot or lots being considered for the buildings identified above** and shall not exceed one hundred (100) on the site. These additional dwelling units shall be located within a '**Neighborhood General Center**' District designated portion of Phase II, as defined by this ordinance. Residential units shall occupy at least one (1) floor of **each of the buildings identified above**, unless otherwise authorized on the Site Development Plan.
 - ii. A multiple-level parking structure shall also be constructed in the '**Downtown District**' '**Neighborhood Center**' District area of the subject site (western half of property) and provide a minimum of two hundred ninety-four (294) spaces, which shall also be available for public parking purposes, as defined in a separate agreement in terms of the overall number of these stalls and other related items. No more than fifty (50) percent of the building square footage can be constructed in Phase II (as defined in Condition 1(a.)) without the parking garage commencing construction, with its completion no greater than two hundred seventy (270) days from its start. Completion shall be construed as the issuance of a final occupancy permit.
 - iii. Buildings J/K shall contain separate underground parking containing not less than sixty (60) total spaces.
- c. An area of this site, within the Phase II portion of this development, and of a size not less than as shown on the Preliminary Development Plan, and north of the east-west arterial street within the C-8 Planned Commercial District (Phase II), shall be utilized for '**Public Space**' '~~Open Space~~' District permitted uses only. This area of '**Public Space**' '~~Open Space~~' District shall incorporate hard and soft improvements in an area of sufficient size to accommodate public events. This area shall be platted and transferred by fee simple title (general warranty deed) to the City of Wildwood, unless otherwise directed by the City Council. The design, improvements, and parking access for this facility shall be acted upon by the Planning and Zoning Commission and Architectural Review Board, as part of the Site Development Plan submittal and review process. The parking lot area located immediately to the north of this public plaza shall be dedicated for public use and access purposes, including by easement to the City of Wildwood in a form acceptable to the City Attorney, thereby granting the

City of Wildwood authority to control access and use of such area; provided the fee owner of this area shall maintain any improvements thereon, while retaining the right to use the area for additional site parking to the extent not inconsistent with the public use as may be authorized by the City.

- i. The senior care facility shall provide public art pieces, as part of the development of Lots 1 and 2, for the allowable residential uses, which shall be reviewed and acted upon by the Planning and Zoning Commission, as part of the Amended Site Development Section Plan required for this area.
- ii. The development of this senior care facility shall also provide a public/private exterior patio/courtyard area along its Plaza Drive frontage. This patio/courtyard area shall be not less than one thousand (1,000) square feet in size and allow for seating of residents within its defined boundaries. Design details shall be reviewed and acted upon by the Planning and Zoning Commission, as part of its review and consideration of the Amended Site Development Section Plan.
- iii. The developer shall construct along the property's State Route 100 frontage the remainder of the system of fencing and columns that currently defines this area to the east of the subject site. The columns and fencing shall match those structures already in place along this roadway frontage. Design and construction details shall be reviewed and acted upon by the Planning and Zoning Commission, as part of its review and consideration of the Amended Site Development Section Plan.

2. FLOOR AREA, HEIGHT, AND BUILDING REQUIREMENTS

- a. All phases of this development shall be authorized a total of 393,300 square feet of residential and non-residential users in maximum allowable building sizes as follows:

BUILDING IDENTIFIER	SIZE - Commercial (Total square footage)	SIZE - Residential (Total square footage)
Financial Institution with Drive-through facility (Building A)	17,800	
Retail (Building B)	9,900	
Retail (Building C)	5,400	
Mixed-Use/Office/Retail (Building D)	40,000	
Retail with Drive-through facility (Building E)	15,200	
Mixed-Use (Building F)	20,000	
Mixed-Use (Building G)	30,000	
Mixed-Use (Building H)	30,000	
Mixed-Use (Building I)	40,000	
Senior Care Facility (no more than 95 beds)	No less than 2,700	No more than 75,000
Mixed-Use (Building J/K)	20,000	60,000
Mixed-Use and/or Hotel (Building L)	85,000	
Mixed-Use (Building M)	20,000	
Child Care Center/Private School (Building N)	10,000	

Total square footage of permitted buildings utilized for commercial uses only shall not to exceed 313,300 square feet in overall gross floor area. If a third and fourth story option is exercised upon Buildings F through N, they shall be residential in use and be approved as part of a Site Development Plan submittal to the Planning and Zoning Commission in terms of size and number of units, provided that required additional parking is provided for such addition stories. Residential square footage in Phase II of this development shall not be more than **seventy-five thousand (75,000)** ~~eighty thousand (80,000)~~ square feet in gross floor area and as approved by the Planning and Zoning Commission on the Site Development Plan (**amended and/or section**).

- b. A minimum of two (2) buildings, with the option of a third, must be located abutting the Taylor Road right-of-way, with no more than twenty (20) percent of the frontage not occupied by an arcade, porch, or building façade within the Amended C-8 Planned Commercial District portion of this development (Phase I). The orientation of these buildings shall be as shown on the Preliminary Development Plan submitted by the petitioner as part of the rezoning request. These buildings shall be constructed with glazing to provide a minimum of seventy (70) percent transparency along Taylor Road or as approved by the Architectural Review Board.
- c. All buildings and structures located along Main Street and the internal east/west drive shall be placed at the edge of right-of-way. In any instance where a building façade is absent, a garden or screen wall shall be installed. This wall(s) must complement the appearance of the buildings located within the same block in terms of its design, architecture, color, material, and character. All garden or screen walls located within the Amended C-8 Planned Commercial District (Phase I) and C-8 Planned Commercial District (Phase II) portions of this site shall be reviewed and approved by the Architectural Review Board as part of the Site Development Plan submittal process.
- d. Only two (2) docking areas are authorized within the boundaries of this Amended C-8 Planned Commercial District (Phase I) and C-8 Planned Commercial District (Phase II), which shall serve Buildings E and L. Appropriate screen walls or other comparable measures shall be employed as part of these areas to minimize visual intrusions onto adjoining properties and any roadway right-of-way, including the installation of gates at its opening. All screen walls located within the Amended C-8 Planned Commercial (Phase I) portion of this site shall be reviewed and approved by the Architectural Review Board as part of the Site Development Plan submittal process.
- e. Only three (3) drive-through facilities shall be authorized in the Amended C-8 Planned Commercial District (Phase I) portion of this development. These facilities shall be in conjunction with the retail stores (Buildings B and E) and the financial institution (Building A). These facilities shall be oriented toward minor streets or the interior locations of adjoining parking lots. Architectural requirements shall be as established

in the Town Center Plan and be reviewed and acted upon by the City's Architectural Review Board.

- f. The integration of a clock tower at the northwest corner of the intersection of Main Street and Taylor Road as a focal point of this development shall be required as part of the construction of Building E and allow for public access and use as part of the public open space/street atmosphere. This architectural feature shall substantially comply with the rendering provided to the Planning and Zoning Commission at its December 18, 2000 Executive Session. The Architectural Review Board shall base approval of the required design upon the character of the proposed built environment within the boundaries of the Amended C-8 Planned Commercial District (Phase I) approved on this site.
- g. No structure or building in Phase I shall exceed two (2) stories in overall height, as measured from final finish grade at the adjoining street, excluding the clock tower, unless residential uses are requested as part of a third and/or fourth floor design, then a maximum of two (2) additional floors may be added. The clock tower shall not exceed a height of sixty (60) feet. This height requirement shall not apply to rooftop architectural treatments, but will be subject to Architectural Review Board approval in terms of this requirement.
- h. All buildings located in Phase II shall be a minimum of two (2) stories in overall height (plus architectural rooftop treatments), as measured from final finish grade at the adjoining street, unless residential uses are requested as part of a third and/or fourth floor design, then a maximum of two (2) additional floors may be added, except as noted below:
 - i. Building F may be reduced to a single story height, if Building A is authorized and constructed at the same reduced height. If Building F is reduced below a two (2) story height, its ultimate design must be considered and acted upon by the Planning and Zoning Commission on the Site Development Plan, along with the Architectural Review Board. The developer/owner of Building F shall be required to meet the following requirements in its design:
 - 1. A continuous pitched or barreled flat roof that meets the Architectural Guidelines of the Town Center Development Manual shall only be authorized on this building, unless otherwise approved by the Architectural Review Board. Minimally, architectural style shingles, standing seam metal, or tiles a white material color shall be required for use on this roof.
 - 2. Brick shall constitute one hundred (100) percent of the material to be used on all four (4) elevations of the building (grade to parapet) and of a complementary color to other buildings within a three hundred (300) foot radius of this property, except grade to the watertable (stone may be considered), glazed areas, guttering, and downspouts.

3. Gables, dormers, and towers shall not be authorized as components of this building, unless otherwise approved by the Architectural Review Board.
 4. Roof penetrations shall not be authorized, unless otherwise authorized by the Architectural Review Board.
 5. Openings (windows) shall have equally proportioned lights and awnings shall be used over windows abutting Fountain Place and Plaza Drive, unless otherwise acted upon the City's Architectural Review Board.
 6. A porch shall be provided as a component of this building, and it must be a minimum of eight (8) feet in depth and have a metal type of canopy covering it of which its design, extent, and type shall be as reviewed and acted upon by the City's Architectural Review Board (southeast corner facing Plaza Drive and Fountain Place intersection).
- ii. Building ~~L~~ and N may be reduced to a single story height, but incorporate additional roof design elements to complement the surrounding built environment in terms of massing, scale, and character. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.
 - iii. Building L shall be allowed a total of five (5) stories along its Main Street frontage, as measured from the final finish grade of this adjoining street. All other elevation heights shall be no greater than four (4) stories in height. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.
 - iv. Building M shall be a minimum of three (3) stories in height along its Main Street frontage. This height requirement shall be measured from final finish grade at the adjoining street, if applicable.
- i. The area of this Amended C-8 Planned Commercial and C-8 Planned Commercial District (Phases I and II) shall be a minimum of fifteen (15) acres in overall size.
 - j. All residential units within the boundaries of this Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phases I and II) portions of this site must incorporate a deck, porch, or balcony on their front elevations, except for the proposed live/work units and **senior care facility**, which can be at sidewalk grade.
 - k. The proposed architectural design, character, and style of all buildings shall adhere to the City of Wildwood's Town Center Architectural Guidelines, Neighborhood Design Standards, and any other applicable requirements of the Town Center Plan. Particular attention must be paid to the facades of all building and structures located along the Taylor Road and Main Street frontages and all buildings that front or have visibility from a roadway relative to its building materials, openings, elements, and color to ensure their appearance is consistent with the other elevations. All buildings utilized for 'Commercial or Neighborhood Center' District uses, except those structures abutting Taylor Road (see Condition 2(b.)), must have a minimum of fifty (50) percent glazing at street level or an amount approved by the Architectural Review Board on the required renderings and models. Approval of the required

design shall be by the Architectural Review Board. Minimally, all buildings shall maintain a consistent theme throughout the boundaries of these Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phases I and II) in terms of material, color, and style.

3. **SITE DEVELOPMENT PLAN SUBMITTAL REQUIREMENTS**

Within twelve (12) months of the date of approval of the Preliminary Development Plan by the City Council and prior to any site disturbance, the developer shall submit to the Planning and Zoning Commission for its review and approval a Site Development Plan. Where due cause is shown by the petitioner, this time interval may be extended through appeal to and approval by the Planning and Zoning Commission for a period not to exceed two (2) years. The Site Development Plan shall include, but not be limited to, the following:

- a. Outboundary and legal description of the property.
- b. A location map of generalized nature, north arrow, and plan scale.
- c. Location and size of all proposed structures, including canopies, arcades, business signage, and any garden and screen or retaining walls.
- d. Location and size of all parking areas and corresponding parking calculations.
- e. Existing and proposed contours at two (2) foot intervals.
- f. Roadways and driveways on and adjacent to the property in question including required right-of-way dedication, pavement widening, cross access easement areas, and public green spaces within these areas.
- g. The design, location, and size of all proposed lighting, fences, and dock and trash areas.
- h. A landscape plan including, but not limited to, the location, size, and general type of all plant and other materials to be used. (See Landscape Requirements Section of this Ordinance).
- i. The approximate location of all stormwater and sanitary sewer facilities.
- j. Parking and structure setbacks from adjacent property lines.
- k. Location of all existing and proposed easements.
- l. A description of the area's (all surrounding properties within one hundred (100) feet of the subject site) infrastructure and site improvements of a general nature. Principally, building locations on individual properties, curb cuts, and driveway locations along the right-of-way, as well as other natural and man-made features, must be shown. This representation shall be supplemented by a recent aerial photograph of the area, which shall include all properties within one thousand (1,000) feet of the subject site and at a scale of 1:100.
- m. Cross-sections through all portions of the site, particularly a minimum of two (2) such representations along Taylor Road and Main Street. These cross-sections must include all buildings and structures, including screen and plant walls and any other similar treatments.

- n. All other information not mentioned above, but required on a Preliminary Plat in accord with Chapter 420.060 of the City of Wildwood Subdivision and Development Regulations.

4. **SITE DEVELOPMENT PLAN DESIGN CRITERIA**

The above Site Development Plan shall adhere to the following specific design criteria:

Build-to Requirements

- a. All buildings or structures, excluding boundary, garden, screen, and/or retaining walls, or fences, shall adhere to the build-to lines therein established by the City of Wildwood's Town Center Neighborhood Design Standards for the '**Downtown and Neighborhood General**' ~~Commercial and Neighborhood Center~~ Districts.

Parking Setbacks

- b. All parking stalls, loading spaces, internal drives, excluding points of ingress and egress and public or private roadways, shall adhere to the City of Wildwood's Town Center Neighborhood Design Standards for the '**Downtown and Neighborhood General**' ~~Commercial and Neighborhood Center~~ Districts, unless as otherwise approved on the Site Development Plan by the Planning and Zoning Commission or as noted below:
 - i. Fifteen (15) feet from the Taylor Road right-of-way line.

Minimum Parking Requirements

- c. Minimum parking requirements as set forth in the City of Wildwood's Town Center Neighborhood Design Standards for the '**Downtown and Neighborhood General**' ~~Commercial and Neighborhood Center~~ Districts and Chapter 415.280 Parking Regulations of the City of Wildwood's Zoning Code, except that three point three (3.3) spaces per one thousand (1,000) square feet of gross floor area shall be allowed for all retail/office uses. The parking reduction associated with this overall site shall not exceed ten (10) percent of the required parking spaces to be constructed and provided for the purposes of compliance to this site-specific ordinance.

Access and Roadway Improvements, including sidewalks

Main Street

- d. The developer's development plan seeks to use, and depends on the use of, the City's property to the south of these districts ("City's Main Street Property") for purpose of access, sidewalks, on-street parking, and other Main Street improvements

to which this development is dependent and conditioned. Before the issuance of any building or construction permit, the developer shall have reached a mutually binding development agreement with the City authorizing and providing for the use of the City's property for such purposes and providing the terms, including reimbursement or compensation to the City, for such use. The developer and development authorized by this ordinance shall be responsible for the acquisition of land and installation thereon of the northern one-half (1/2) of the total Main Street improvements (of a one hundred four (104) foot right-of-way or improvement width) adjacent to this development necessary for primary access to the development. These improvements shall be the responsibility of the developer to complete and must conform to the requirements of the City of Wildwood's Street Specifications of the Town Center Plan as directed and approved by the Department of Public Works, when the necessary land area for its construction is available for use as required herein. All streetscape requirements (street trees, lights, and signs, waste receptacles, benches, and other items shall consist of approved materials) shall be installed as required by the City of Wildwood's Town Center Plan within the right-of-way of Main Street and be approved by the Department of Public Works. Certain requirements may be escrowed with the City of Wildwood for future installation at the discretion of the Department of Planning and the Department of Public Works. Traffic Generation Assessment Fee credits shall be granted for installation of improvements on the south one-half of Main Street, as such installation may be approved by the City, unless the City and Developer mutually agree to other reimbursement terms for that portion of the improvements. No building permit shall be issued in these districts, until the developer has obtained authority for use of the City's Main Street property by an approved development agreement. In the event the developer is unable or unwilling to enter into a development agreement acceptable to the City authorizing this use of the public property and terms thereof, this zoning approval shall authorize no building construction or other use approved herein until this ordinance has been revised to reflect and authorize a modified development and uses that are not dependent or conditioned on the use or access from the City's Main Street property.

- e. Access to this development from Main Street shall be limited to four (4) curb cuts and two (2) garage entry/exit access points and designed in accordance with the City of Wildwood's Street Specifications of the Town Center and as directed by the Department of Public Works. These access points shall be coordinated with the dedication of roadway right-of-way along the southern property line of this development.

State Route 100

- f. Dedicate all the right-of-way, easements, and licenses within the subject site as necessary for the improvement of State Route 100 and its intersection with the proposed Taylor Road as directed by the Missouri Department of Transportation and

the City of Wildwood. Verification of the ownership of any excess right-of-way, which exists along State Route 100 that is to be used as part of this development, must be provided in the form of a Purchase Agreement signed by the Missouri Department of Transportation prior to approval of the Site Development Plan by the Planning and Zoning Commission.

- g. Conform to all of the requirements of the Missouri Department of Transportation and the City of Wildwood regarding the required State Route 100 roadway improvements. Improvements shall be as directed by the Missouri Department of Transportation.
- h. Provide a variable width easement no less than ten (10) foot wide along or within State Route 100 right-of-way, and complete finish grading thereof, for the installation of a multiple use trail which conforms with the City of Wildwood's ADA requirements as directed by the Department of Public Works. The installation of this trail will also be the responsibility of the developer and be reviewed and acted upon as part of the Site Development Plan process. This improvement is considered as one (1) of the green space and public space requirements of the Town Center Plan's Commercial District and Neighborhood Center District designations and the construction cost will be a creditable charge against the developer's required Traffic Generation Assessment Fee contribution to the East Area Fund of the City of Wildwood for any portion of it located outside the subject site and within the State of Missouri's right-of-way area. Determinations regarding credits shall be made by the Departments of Planning and Public Works and completed prior to the issuance of any building permit for the Phase II portion of this overall project.
- i. No vehicular access shall be allowed from this development to State Route 100, except as directed or previously authorized by the Missouri Department of Transportation and approved by the City of Wildwood.

Taylor Road

- j. Dedicate the remaining portion of an eighty (80) foot right-of-way for Taylor Road and construct said roadway, sidewalks, and improvements in conformance with the requirements of the City of Wildwood's Street Specifications of the Town Center Plan and as directed by the Department of Public Works. All streetscape requirements (street trees, lights, signs, waste receptacles, benches, and other items shall consist of approved materials) shall be installed as required by the City of Wildwood's Town Center Plan within the right-of-way of Taylor Road and be approved by the Department of Public Works.
- k. Access to this development from Taylor Road shall be limited to one (1) commercial entrance designed in accordance with the City of Wildwood's Street Specifications of the Town Center and be as directed by the Department of Public Works. This

entrance along Taylor Road shall maintain a minimum distance of two hundred twenty (220) feet from State Route 100 (as measured from edge of proposed pavement of State Route 100 to the centerline of the access point) and be restricted to a right-in/right-out configuration.

- I. Dedicate all the right-of-way, easements, and licenses within the subject site as necessary for the improvement of the proposed Taylor Road as directed by the Department of Public Works.

- m. Provide the necessary infrastructure and conduits for the coordination of the traffic signals at the Taylor Road/Main Street intersection as directed by the Department of Public Works. The installation of this equipment and infrastructure will be a creditable charge against the developer's required Traffic Generation Assessment contribution to the East Area Fund of the City of Wildwood and based upon a fair share determination of the overall improvement cost at this intersection.

Miscellaneous Roadway Requirements

- n. Sidewalks shall be required on all public and private streets and provide for a continuous and logical layout of this pedestrian network. Design and construction requirements for all sidewalks within the entire development shall be as established in the Street Specifications and Streetscape Elements of the Town Center Plan. Approval of their location, design, and material shall be by the Planning and Zoning Commission and the Architectural Review Board as part of the Site Development Plan review process.

- o. Provide cross access easement and temporary slope construction license, or other appropriate legal instrument or agreement guaranteeing permanent access between this site and adjacent properties, as directed by the Departments of Planning and Public Works. Any contractor utilizing these easements or license areas shall be required to replace all improvements, plantings, or other items damaged or disturbed to their original condition and restore the entire area to its pre-development condition. This replacement and restoration shall be accomplished in sixty (60) days or less from the completion of construction as determined by the City of Wildwood.

- p. Parking lot aisles, where possible, should intersect the main and minor driveways at right angles and be logically located opposite minor driveways and other parking lot aisles. Minor driveways shall not intersect the main east/west drive aisle closer than two hundred (200) feet of the centerline of the proposed Taylor Road right-of-way.

- q. Installation of identification signage and landscaping shall be reviewed by the Department of Public Works for sight distance considerations and approved prior to installation.

- r. The developer is advised that utility companies will require compensation for relocation of their utility facilities within public road right-of-way. Utility relocation cost shall not be considered as an allowable credit against the petitioner's traffic generation assessment contributions. The developer should also be aware of extensive delays in utility company relocation and adjustments. Such delays will not constitute a cause to allow occupancy prior to completion of road improvements. All utilities within these districts and on rights-of-way otherwise constructed pursuant to this authorization shall be installed and placed underground in locations as approved by the Director of Public Works.
- s. All internal streets, access drives, or lanes, whether public or private, shall comply with the Streetscape Requirements of the Town Center Plan in terms of improvements, such as drive lane widths, sidewalks, stormwater drainage facilities, garden walls, street trees and lights, and pedestrian furniture. If certain streets, drives, or lanes are to be private, an easement shall be provided to the City granting public use of them for pedestrian and vehicular purposes. These easements shall be granted at the time of the Record Plat approval by the City Council.
- t. A traffic circle shall be incorporated into the design of the internal roadway system serving this mixed-use development. The location, design, and appearance of this circle shall be as directed by the Department of Public Works. Final approval of the circle's location, design, and appearance shall be by the Planning and Zoning Commission as part of the Site Development Plan review process. Building placement and design around the circle shall reflect its character and complement its inclusion. Building placement within the proximity of the traffic circle shall be indicated on the Site Development Plan.
- u. Dedicate a land area, forty (40) feet in width, for public right-of-way purposes along the western boundary of the site, as determined by the Departments of Public Works and Planning on the Site Development Plan for a future "street" at this location. The petitioner/developer shall be responsible to construct the roadway, sidewalk, and other improvements, including on-street parking spaces, within this "street" in conformance with the requirements of the City of Wildwood's Street Specifications of the Town Center Plan for one-half (1/2) of this public right-of-way area, with all design components reviewed and approved by the Department of Public Works. All streetscape requirements (street trees, lights, signs, waste receptacles, benches), and other items shall consist of approved materials and shall be installed, as required by the City of Wildwood's Town Center Plan within the right-of-way of "unnamed street," and also be reviewed and approved by the Department of Public Works. Developer shall also construct the remaining pavement width, including curb and gutter, and on-street parking spaces, within the remaining west one-half (1/2) of the right-of-way of this "unnamed street," in accord with the requirements of the Town Center Street Specifications and as directed by the Department of Public Works. In

regards to the construction of this west one-half (1/2) on the "unnamed street," streetscape requirements, such as trees, etc., shall not be required.

Landscape Requirements - Specific

- v. Building and parking setbacks shall be landscaped in accordance with Chapter 410 of the City of Wildwood's Codified Ordinances and its accompanying Tree Manual.
- w. All stormwater facilities shall be appropriately landscaped and comply with the Chapter 410 of the City of Wildwood's Codified Ordinances and its accompanying Tree Manual. Wetlands plantings must be used at appropriate locations within the basins themselves as directed by the Department of Public Works, if applicable.
- x. All new landscaping materials shall meet the following criteria: Deciduous Trees - two and one-half (2 1/2) inch minimum caliper; Evergreen Trees - Six (6) feet minimum height; and Shrubs - twenty-four (24) inch minimum height.
- y. Replanting of trees shall conform to the requirements of Chapter 410 of the City of Wildwood's Codified Ordinances and its accompanying Tree Manual to achieve a minimum amount of thirty (30) percent canopy area on this site. Tree selection and location shall be reviewed and acted upon by the Planning and Zoning Commission and the Architectural Review Board as part of the Site Development Plan process. Street tree planting patterns must be based on and comply with the Town Center Streetscape Design.
- z. A Registered Landscape Architect shall prepare and sign all Landscape Plans for this development.

Lighting Requirements

- aa. Light standards shall not exceed sixteen (16) feet in height. No on-site illumination source shall be so situated that light is cast directly on adjoining properties or public roadways. Illumination levels shall comply with the provisions of the City of Wildwood's Zoning Ordinance - Chapter 415.450 "Outdoor Lighting Requirements." A Lighting Plan shall be submitted in conjunction with the Site Development Plan indicating compliance to these requirements. The Planning and Zoning Commission shall approve the location of all light standards and their design and appearance as part of the Site Development Plan review process.

Sign Regulations

- bb. All signage shall be in accordance with the requirements of the City of Wildwood's Town Center Architectural Guidelines, subject to the following:

1. A total of three (3) freestanding monument style signs shall be allowed within the boundaries of the Amended C-8 Planned Commercial District and C-8 Planned Commercial District (Phase I and Phase II combined). One (1) of these signs shall be located at the access point into this development from Taylor Road and cannot exceed fifty (50) square feet in overall size. This Taylor Road sign shall be integrated, and be a part of the gateway structure to be constructed at this authorized access point along the Taylor Road frontage. Two (2) signs shall be authorized along the property's State Route 100 frontage and cannot exceed seventy-five (75) square feet in overall size, nor ten (10) feet in height, as measured from adjoining roadway grade. The location of all signage shall be as approved by the Planning and Zoning Commission on the Site Development Plan.
2. The three (3) authorized monument signs shall additionally comply with the City of Wildwood Zoning Code, Section 1003.168 Sign Regulations for the C-2 Shopping District, where consistent and applicable to this type of signage.
3. Notwithstanding any other approval to the contrary, all wall signs shall additionally comply with the City of Wildwood Zoning Ordinance – Chapter 415.420 Sign Regulations for the C-2 Shopping District, and all signage shall be externally illuminated according to the Town Center Plan's Architectural Guidelines, or may be backlit, if otherwise in compliance with the Town Center Architectural Guidelines. A third wall sign shall be authorized for the commercial building located on the northwest corner of Taylor Road and Main Street. Signs may only be located on the north, south, and east elevations of this building (Building E, as identified by this ordinance).
4. No advertising, temporary, or portable signs shall be authorized in this Amended C-8 District and C-8 District development (Phases I and II). No other signs shall be authorized, except as may comply with the C-2 Shopping District Regulations of the City of Wildwood Zoning Ordinance and the Town Center Plan's Architectural Guidelines.

Miscellaneous Conditions

- cc. All trash areas shall be enclosed with a six (6) foot high sight-proof wall (with gate) and be appropriately landscaped around its perimeter, if applicable. The location and design of these enclosures shall be shown on the Site Development Plan and approved by the Planning and Zoning Commission and the Architectural Review Board. The design of this enclosure shall reflect the appearance, character, and style, in terms of its color, material, and composition, of the approved architecture of the individual building it serves and adjoins in terms of location.
- dd. Handicap parking and access requirements shall comply with Section 512.4 of the City of Wildwood Building Code.

- ee. All rooftop mechanical equipment shall be screened from view on all sides of the building's facade in an architecturally consistent manner in terms of color and style of the individual buildings where they are to be constructed. Screening shall be reviewed and considered by the Architectural Review Board at the time of the renderings submittal.
- ff. The design, color, material, and location of all garden and screen walls or fences shall be consistent with the requirements of the Town Center Plan's Architectural Guidelines and be shown on the Site Development Plan for review and action by the Planning and Zoning Commission and the Architectural Review Board.
- gg. All deliveries and trash pick-up vehicles must access the site from State Route 100, not Manchester Road. No deliveries or trash pick-up shall occur between the hours of 11:00 p.m. and 6:00 a.m., seven (7) days per week.
- hh. Improvements associated with public infrastructure, such as roadways, sidewalks, and access points, shall comply with general design principles that will provide for safe and efficient movement of traffic in and around these sites and improve overall circulation in the area. These improvements shall be reviewed and approved by the Department of Public Works.
- ii. The developer shall grant the right to the City of Wildwood to utilize areas, buildings, and structures for the installation of wireless antenna and related equipment through the granting of appropriate easements for service to this site.

5. TRAFFIC GENERATION ASSESSMENT FEE CONTRIBUTION

The developer shall contribute to the East Area Corridor Traffic Generation Assessment Road Trust Fund established by Chapter 140 of the City's Codified Ordinances. This contribution shall not exceed an amount established by multiplying the proposed parking spaces by the following rate schedule.

Type of Development	Required Contribution
Apartments/Condominiums	\$485.09/Parking Space
Senior Housing	\$485.09/Parking Space
General Office	\$741.06/Parking Space
Quality Restaurant	741.06/Parking Space
General Retail	\$2,223.29/Parking Space
Shopping Centers	\$2,223.29/Parking Space
High-Turnover, Sit-Down Restaurants	\$2,223.29/Parking Space
Bank	\$4,446.75/Parking Space
Medical Offices	\$2,223.29/Parking Space
Hotel	\$1,482.25/Parking Space
Loading Space	\$3,3638.14/Loading Space

(Parking space as required by Chapter 415.280 of the City of Wildwood Zoning Ordinance.)

If types of development proposed differ from those listed, rates shall be provided by the Department of Planning.

A minimum of two hundred twenty-six (226) parking spaces within Phase I of this overall project shall be assessed the required Traffic Generation Assessment Fee under the schedule described above for the East Area Corridor Traffic Generation Assessment Trust Fund. A minimum of six hundred six (606) parking spaces within Phase II of this overall project shall be assessed the required Traffic Generation Assessment Fee under the schedule described above for the East Area Corridor Road Traffic Generation Assessment Road Trust Fund. Allocations of these spaces shall be based upon the required parking ratios for building square footage and types of uses. Changes in uses may require reallocation or different parking requirements. Any final parking allocation shall be further reflected on the final site plan and subdivision plats, including any cross-access easements or other recording of parking rights and responsibilities as may be required due to location of required off-site parking as to a subdivided lot within this development.

Building Id.	Required Parking Spaces (per City Code)	Location(s) of Parking Spaces	TGA Parking Spaces	TGA Credit
F	24	Off-Street (24)	24	To be Determined at Zoning Authorization
G	67	On-Street (4)/Off-Street (63)	63	To be Determined at Zoning Authorization
H	78	On-Street (5)/Off-Street (73)	73	To be Determined at Zoning Authorization
I	18	Off-Street (18)	18	To be Determined at Zoning Authorization
J/K	166	Underground (68)/Parking Garage (86)/Off-Street (12)	166	To be Determined at Zoning Authorization
L	228	Parking Garage (189)/On-Street (39)	189	To be Determined at Zoning Authorization
M	61	Parking Garage (32)/On-Street (29)	32	To be Determined at Zoning Authorization
N	28	On-Street (15)/Off-Street (13)	13	To be Determined at Zoning Authorization

Building Id.	Required Parking Spaces (per City Code)	Location(s) of Parking Spaces	TGA Parking Spaces	TGA Credit
Total	670	Underground Parking (68)/Parking Garage (307)/On-Street Parking (92)/Off-Street Parking (231)	578	

As this development is located within a trust fund area established by the City of Wildwood, any portion of the traffic generation assessment contribution, which remains, following completion of road improvements required by the development shall be retained in the appropriate trust fund.

The amount of this required contribution, if not submitted by January 1, 2016, shall be adjusted on that date and on the first day of January in each succeeding year thereafter in accordance with the construction cost index as determined by the City of Wildwood Department of Public Works.

6. VERIFICATION PRIOR TO APPROVAL OF THE SITE DEVELOPMENT PLAN

Prior to the approval of the Site Development Plan, the petitioner shall:

Stormwater

- a. Submit to the Planning and Zoning Commission an engineering plan approved by the Department of Public Works and the Metropolitan St. Louis Sewer District (MSD) showing that adequate handling of the stormwater drainage of the site is provided.
 - 1. The developer is required to provide adequate stormwater systems in accordance with the City of Wildwood and Metropolitan St. Louis Sewer District (MSD) Standards.
 - 2. All stormwater shall be discharged at an adequate natural discharge point.
 - 3. Detention or differential runoff of stormwater is at the discretion of Metropolitan St. Louis Sewer District and the City of Wildwood. If required by Metropolitan St. Louis Sewer District (MSD) and the Department of Public Works, it shall be provided in permanent detention/retention facilities, such as: dry reservoirs, ponds, or another acceptable alternative. These detention/retention facilities shall be completed and in operation prior to paving of any driveways or parking areas, within any phase of the development where construction activity is authorized.

- b. The approved stormwater management plan for this development may include the use of off-site, regional facilities in terms of the retention/detention of runoff from this site, unless otherwise authorized by the Department of Public Works on the Site Development Plan. The developer(s) shall be responsible for all costs associated with the construction and modifications to existing facilities to accomplish this regional stormwater management requirement, if applicable.

Geotechnical Report

- c. Provide a Geotechnical Report covering development and grading required by improvements involved with this site, as directed by the Department of Public Works. Said report shall verify the adaptability of grading and improvements with soil and geologic conditions, which are susceptible to rapid erosion, landslide, and/or creep. A statement of compliance with this study, signed by the Geotechnical Engineer preparing the report, shall be included on all Site Development Plans. The development and construction plans shall be designed to conform to the requirements and conditions of the Geotechnical Report.

7. RECORDING

Within sixty (60) days of approval of the Site Development Plan by the Planning and Zoning Commission, the approved plan shall be recorded with the St. Louis County Recorder of Deeds.

8. VERIFICATION PRIOR TO BUILDING PERMITS

Subsequent to approval of a Site Development Plan, and prior to issuance of any building permit, the following requirements shall be met:

Notification of Department of Planning

- a. Prior to issuance of foundation or building permits, all approvals from the Department of Public Works, the Missouri Department of Transportation, the Missouri Department of Natural Resources, the U.S. Army Corp. of Engineers (if applicable), the Metro West Fire Protection District and the Metropolitan St. Louis Sewer District (MSD) must be received by the Department of Planning.

Certification of Plans

- b. Provide verification that construction plans are designed to conform to the requirements and conditions of the Geotechnical Report. The Geotechnical Engineer shall be required to sign and seal all plans.

Traffic Generation Assessment Contribution

- c. Traffic generation assessment contribution shall be deposited with City of Wildwood in the form of cash prior to the issuance of building permits.

9. VERIFICATION PRIOR TO OCCUPANCY PERMITS

Subsequent to approval of a Site Development Plan, and prior to issuance of any occupancy permit, the following requirement shall be met:

Roadway Improvements

- a. Road improvements and right-of-way dedication shall be completed, or the appropriate escrow established, prior to the issuance of an occupancy permit. If development phasing is anticipated, said work, right-of-way dedications, and/or escrow agreements shall be based upon those areas of the defined phases where construction is authorized. As previously noted, the delays due to utility relocation and adjustments will not constitute a cause to allow occupancy prior to completion of road improvements.

10. GENERAL DEVELOPMENT CONDITIONS

- a. A grading permit is required prior to any grading on the site. No change in watersheds shall be permitted. Interim stormwater drainage control in the form of siltation control measures is required.
- b. Provide adequate temporary off-street parking for construction employees. Parking on non-surfaced areas shall be prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions.
- c. If cut and fill operations occur during a season not favorable for immediate establishment of a permanent ground cover, a fast germinating annual, such as Rye or Sudan Grasses, shall be utilized to retard erosion.
- d. Failure to comply with any or all the conditions of this ordinance shall be adequate cause for revocation of permits by issuing City Departments or Commissions.
- e. The Zoning Enforcement Officer of the City of Wildwood, Missouri, shall enforce the conditions of this ordinance in accordance with the Site Development Plan approved by the City of Wildwood Planning and Zoning Commission.
- f. Any other applicable zoning, subdivision, or other regulations or requirements of the City, whether in effect at the adoption of this ordinance or as may be hereinafter adopted, shall further apply to the development of this property as authorized by

this Amended C-8 Planned Commercial and C-8 Planned Commercial District ordinance, except as may be provided by law. Nothing herein shall be deemed a waiver of any subdivision, zoning, or other development regulation of the City whether by implication or reference.

- g. Substantial construction shall begin within twenty-four (24) months of the approval of the Site Development Plan for the parcel of ground governed by this Amended C-8 Planned Commercial District and C-8 Planned Commercial District ordinance. Construction shall be deemed to have commenced with the final grading for and installation of roadways necessary for the first approved plat or phase of construction and commencement of installation of the sanitary and storm sewers.
- h. As portions of the Main Street roadway improvements may require the acquisition of additional right-of-way and easement from private property, the normal sequence of design, right-of-way acquisition, and construction shall commence immediately on approval of the requested rezoning. If the developer is unable to acquire the necessary right-of-way and easements through negotiation with the particular property owners involved, the City of Wildwood may, at its sole discretion, authorize the acquisition of the same through eminent domain proceedings. The costs of appraisals, negotiations, administrations, court proceedings, and associated costs incurred by the City of Wildwood shall be paid by the developer.
- i. This zoning approval is conditioned on compliance with the Zoning Code, Subdivision and Development Regulations, and all applicable laws of the City. Such additional regulations are supplemental to the requirements herein and no modification of any applicable regulations shall result from the Amended C-8 Planned Commercial and C-8 Planned Commercial District ordinance, except where this ordinance has expressly modified such regulations by reference to the applicable provision authorizing such modification.
- j. The passage and approval of this ordinance shall constitute the necessary development approval authorizing the Director of Public Works to issue a grading permit in accordance with the procedure and requirements of Chapter 425 of the City's Municipal Code, but not before Condition 1 (c.) has been met by the developer.
- ~~k. The developer shall provide justification to the City, acceptable to the City Attorney and the City Council, indicating the reasons why a payment in lieu of taxes (PILOT) shall not be required of this project. If these reasons are determined not to be satisfactory, an agreement shall be established between the developer of the site and the City of Wildwood, Missouri for the payment in lieu of taxes (PILOT), which is satisfactory to the City Attorney in terms of form and content, so as the City will received appropriate compensation in this regard. This agreement must be in place, before any permits can be issued by the City of Wildwood, Missouri for this project. In lieu of this agreement, if determined necessary for this project, the developer can~~

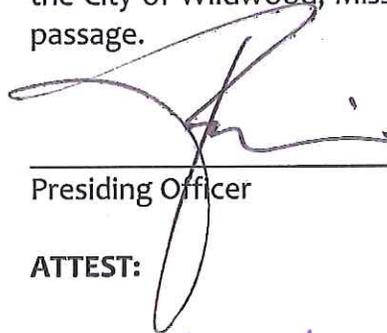
~~increase the amount of commercial square footage associated with this building's ground floor level from its current area.~~

Section Three. This ordinance shall be in full force and effect on and after its passage and approval.

Section Four. Nothing contained herein shall in any manner be deemed or construed to alter, modify, supersede, supplant or otherwise nullify any other Ordinance of the City or the requirements thereof whether or not relating to or in any manner connected with the subject matter hereof, unless expressly set forth herein.

Section Five. If any term, condition, or provision of this Ordinance shall, to any extent, be held to be invalid or unenforceable, the remainder hereof shall be valid in all other respects and continue to be effective and each and every remaining provision hereof shall be valid and shall be enforced to the fullest extent permitted by law, it being the intent of the City Council that it would have enacted this Ordinance without the invalid or unenforceable provisions. In the event of a subsequent change in applicable law so that the provision, which had been held invalid, is no longer invalid, said provision shall thereupon return to full force and effect without further action by the City and shall thereafter be binding.

This Bill was passed and approved this 25 day of July, 2016, by the City Council of the City of Wildwood, Missouri, after having been read by title, or in full, two (2) times prior to its passage.

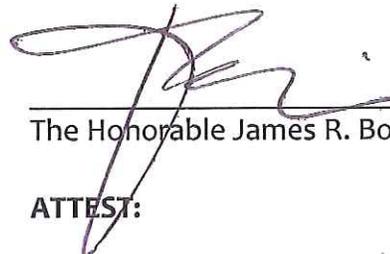


Presiding Officer

ATTEST:

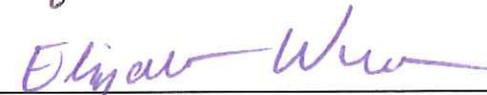


Elizabeth Weiss, City Clerk



The Honorable James R. Bowlin, Mayor

ATTEST:



Elizabeth Weiss, City Clerk

Editor's Note: Changes to Ordinance are indicated by blue and bolded type, while a single, strike-through line shows deletions.

STOCK & ASSOCIATES
Consulting Engineers, Inc.

October 25, 2016

Via E-Mail: (joe@cityofwildwood.com)

City of Wildwood
16860 Main Street
Wildwood, MO 63040



Attention: Mr. Joe Vujnich, Director-Department of Planning

Re: 2nd Review Site Development Plan for 251 & 261 Plaza Drive, Wildwood Town Center
(Stock Project No. 216-5763)

Dear Mr. Vujnich:

The following are written responses to your comments regarding your 2nd review of the Site Development Plan in association with an approved Amended C-8 Planned Commercial District for a residential senior service facility dated 9/9/16.

Comment 1. Please correct the following information under "Pertinent Data":

a.) Locator Numbers

Response: Updated

b.) Subdivision Information and plat book reference

Response: Updated

c.) Please edit the note regarding stormwater detention to read: "Stormwater detention provided for in offsite basin approved under P# 25457; water quality improvements are required for the usage of the subject site."

Response: Updated

Comment 2. Please provide a landscape plan prepared by a licensed landscape architect.

Response: Provided.

Comment 3. Please provide a circulation analysis for tractor trailers within the parking lot area and internal circle drive.

Response: Note added to plan that all deliveries to south service area.

Comment 4. Please be advised the City's consultant is reviewing the Stormwater Pollution Prevention Plan (SWPP).

Response: Noted.

Comment 5. Please show the dedication of land area for public right-of-way for the extension of Plaza Drive to the west and construct a stub street to the property line. Be advised this off-site work is creditable to the project's Traffic Generation Assessment (TGA) fee.

Response: Extension not required as discussed in meeting with City on 10/24/16.

Comment 6. Please outline any Improvements (benches, raised planters, bike racks, etc.) that are planned for the main entrance area.

Response: Notes added to the plan.

Comment 7. Please provide details regarding the three (3) proposed flagpoles.

Response: Notes added to plan.

Comment 8. Please clarify if the bike rack located on the existing sidewalk immediately west of the public plaza is to remain and indicate such on the Site Development Plan (SDP).

Response: The bike rack will be relocated.

Comment 9. Please clarify if the retaining wall along the western property line is to be poured-in-place concrete type or the Versa-Lok System shown on Sheet C3.

Response: The developer is working with the adjacent property owner to provide an offsite grading easement. If the easement is obtained, the wall may be a modular block wall or may be removed and graded. If the easement is not obtained, the wall will be poured-in-place.

Comment 10. Please clarify if the service area at the southwest corner of the building, as well as the public plaza area, will have outdoor lighting. If so, please indicate such on the lighting plan and provide details regarding the proposed fixtures and lamps.

Response: Lighting Plan provided.

Comment 11. Please indicate an easement to the MSD for the sanitary sewer line along the west side of the building.

Response: Provided.

Comment 12. Please edit the note referring to the trash service area screening to read: "Gated screen to be constructed of material to match the primary structure."

Response: Provided.

Comment 13. Please edit the Parking Data to show provided parking (on lot) is thirty-two (32) spaces, and remove the reference to public plaza.

Response: Provided.

Comment 14. Please update the public space chart to accurately reflect the number of provided parking spaces, which is thirty-nine (39.)

Response: Provided.

Comment 15. Please note the existing multiple use trail cannot be counted toward public space requirements for this project.

Response: Updated.

Comment 16. Please note only fifty (50) percent of the required public space can be satisfied with privately held common ground.

Response: Noted.

Comment 17. Please indicate the square footage of the public/private exterior patio area that is to be used for creditable public space.

Response: Updated.

Comment 18. Please be advised, in order to calculate the public space credited for the proposed public art, the City will require information regarding what is planned for this location.

Response: To be provided.

Comment 19. Please provide a sheet indicating the first level floor plan's dimensions of the proposed commercial space, in order for the Planning and Zoning Commission to review its adequacy.

Response: Provided.

Comment 20. Please clarify if the three (3) doors on the north side of the east elevation are for commercial access and, if so, indicate as such.

Response: Notes added to plan.

Comment 21. Please maintain a minimum eight (8) foot wide sidewalk along the east side of the building, to its terminus at the drive aisle.

Response: Provided with the exception of a bump out portion of the building at 7'.

Comment 22. Please provide themed street lights, tree grates, and trees along the entire length of this walk.

Response: Provided.

Comment 23. Please indicate a stained and stamped concrete cross-walk, to match the existing, accessing the City's current trail. Please provide an 8.5 foot wide roadway and sidewalk maintenance and utility easement for this area.

Response: Provided. A 7' wide roadway and sidewalk maintenance and utility easement is shown.

Comment 24. Please add a note stating, "Any damaged public improvements will be replaced in kind at the developer's expense."

Response: Note added to plan (in building footprint).

Should you have any further comments and/or questions, please feel free to contact me.

Sincerely,

Ryan Schriber

Ryan E. Schriber, P.E.,
Associate

CC:

Mr. George M. Stock, P.E., President



WILDWOOD®

October 18, 2016

NorthPoint Development
Attn: Mark Pomeranke
5015 Northwest Canal Street
Suite 200
Riverside, Missouri 64150

Re: Stonecrest at Wildwood, an Amended C-8 Planned Commercial District for a residential senior service facility on the south side of State Route 100, north of Plaza Drive, and west of Fountain Place

Dear Mr. Pomeranke:

The Department of Planning, in conjunction with the Department of Public Works, has completed its second review of the Site Development Plan in association with an approved Amended C-8 Planned Commercial District for a residential senior service facility. These two (2) lots are located on the north side of Plaza Drive, at Market Avenue. This review centered on the plan's compliance with the applicable sections of the City's Zoning Ordinance, the site-specific governing ordinance for the tract of land (Ordinance #2200), and other related requirements and design criteria of the City of Wildwood. In this comparison, a number of items were identified that must be addressed, before this matter can be scheduled for review by the Site Plan Subcommittee of the Planning and Zoning Commission. These items are as follows:

1. Please correct the following information under "Pertinent Data":
 - a. Locator Numbers
 - b. Subdivision information and plat book reference
 - c. Please edit the note regarding stormwater detention to read: "Stormwater detention provided for in offsite basin approved under P# 25457; water quality improvements are required for the usage of the subject site."
2. Please provide a landscape plan prepared by a licensed landscape architect.
3. Please provide a circulation analysis for tractor trailers within the parking lot area and internal circle drive.
4. Please be advised the City's consultant is reviewing the Stormwater Pollution Prevention Plan (SWPP).
5. Please show the dedication of land area for public right-of-way for the extension of Plaza Drive to the west and construct a stub street to the property line. Be advised this off-site work is creditable to the project's Traffic Generation Assessment (TGA) fee.
6. Please outline any improvements (benches, raised planters, bike racks, etc.) that are planned for the main entrance area.
7. Please provide details regarding the three (3) proposed flagpoles.
8. Please clarify if the bike rack located on the existing sidewalk immediately west of the public plaza is to remain and indicate such on the Site Development Plan (SDP).
9. Please clarify if the retaining wall along the western property line is to be poured-in-place concrete type or the Versa-Lok System shown on Sheet C3.
10. Please clarify if the service area at the southwest corner of the building, as well as the public plaza area, will have outdoor lighting. If so, please indicate such on the lighting plan and provide details regarding the proposed fixtures and lamps.
11. Please indicate an easement to MSD for the sanitary sewer line along the west side of the building.

12. Please edit the note referring to the trash service area screening to read: "Gated screen to be constructed of material to match the primary structure."
13. Please edit the Parking Data to show provided parking (on lot) is thirty-two (32) spaces, and remove the reference to public plaza.
14. Please update the public space chart to accurately reflect the number of provided parking spaces, which is thirty-nine (39).
15. Please note the existing multiple use trail cannot be counted toward public space requirements for this project.
16. Please note only fifty (50) percent of the required public space can be satisfied with privately held common ground.
17. Please indicate the square footage of the public/private exterior patio area that is to be used for creditable public space.
18. Please be advised, in order to calculate the public space credited for the proposed public art, the City will require information regarding what is planned for this location.
19. Please provide a sheet indicating the first level floor plan's dimensions of the proposed commercial space, in order for the Planning and Zoning Commission to review its adequacy.
20. Please clarify if the three (3) doors on the north side of the east elevation are for commercial access and, if so, indicate as such.
21. Please maintain a minimum eight (8) foot wide sidewalk along the east side of the building, to its terminus at the drive aisle.
22. Please provide themed street lights, tree grates, and trees along the entire length of this walk.
23. Please indicate a stained and stamped concrete cross-walk, to match the existing, accessing the City's current trail. Please provide an 8.5 foot wide roadway and sidewalk maintenance and utility easement for this area.
24. Please add a note stating, "Any damaged public improvements will be replaced in kind at the developer's expense."

Once the revisions are completed, please resubmit five (5) full sets of the revised Preliminary Development Plan and other requested items to the Department of Planning for further review. Please be advised that additional comments may follow after this resubmittal, given the extent of information being sought. If you should have any questions or comments in this regard, please feel free to contact the Departments of Public Works and/or Planning at (636) 458-0440.

Sincerely,
CITY OF WILDWOOD


Joe Vujnich, Director
Department of Planning and Parks

Cc: The Honorable James R. Bowlin, Mayor
The Honorable City Council of the City of Wildwood
Ryan S. Thomas, P.E., City Administrator
John A. Young, City Attorney
Rick Brown, P.E. and P.T.O.E., Director of Public Works
Kathy Arnett, Assistant Director of Planning and Parks
Travis Newberry, Planner
George Stock, Stock and Associates

STOCK & ASSOCIATES
Consulting Engineers, Inc.



September 14, 2016

Via E-Mail: (joe@cityofwildwood.com)

City of Wildwood
16860 Main Street
Wildwood, MO 63040

Attention: Mr. Joe Vujnich, Director-Department of Planning

Re: Initial Review Site Development Plan for 251 & 261 Plaza Drive, Wildwood Town Center (Stock Project No. 216-5763)

Dear Mr. Vujnich:

The following are written responses to your comments regarding your initial review of the Site Development Plan in association with an approved Amended C-8 Planned Commercial District for a residential senior service facility dated 9/9/16.

Comment 1. Please be advised a Lot consolidation Plat will be needed for these two (2) lots.

Response: The Lot Consolidation Plat has been submitted and plan comments are being addressed.

Comment 2. Please add the reference to the variance that permits the fifteen (15) foot setback along the property's western boundary, by case number and date (**B.A. 14-16; July 21, 2016**).

Response: Provided on C1.

Comment 3. Please identify the required Public Space information on the Preliminary Development Plan sheet and the Department has attached a table to assist in this regard.

Response: Provided on C1.

Comment 4. Please provide dimensions for the radius of the circular drive and landscaped island.

Response: Provided on C1.

Comment 5. Please indicate the extension of the fence and columns, along the northern boundary of the site are to be installed by the developer.

Response: Provided on C1.

Comment 6. Please address how the proposed retaining wall on the western boundary of the site is to be constructed so as not to encroach on the adjacent property, along with any future access considerations for its maintenance and upkeep.

Response: A proposed grading easement has been shown on the plan and the developer is working with the adjacent property owner on the construction of the wall.

Comment 7. Please indicate commercial accesses to the proposed tenant spaces on the east side of the building.

Response: Provided on C1.

Comment 8. Please provide dimensions and typical cross-section, including radius and taper details, for the proposed curb cut and drive aisle accessing the dumpster area.

Response: Provided on C1, details on C2.

Comment 9. Please show the Public Plaza improvements in detail.

Response: Provided on C1.

Comment 10. Please review the Parking Data shown, and revise the provided parking table to accurately reflect what is indicated on the Site Development Plan.

Response: Updated on C1.

Comment 11. Please provide applicable notes on the Site Development Plan Sheet identifying the easement rights granted to others by the cross access and cross parking agreements associated with this tract of land.

Response: A note has been added below the "Parking Data" and the City of Wildwood Public Plaza Easement noted on the plan.

Comment 12. Please indicate the pedestrian improvements and streetscape improvements are to match the existing, and include catalog cut sheets for the tree grates and street lights. Please note these improvements on the Landscape Plan and Lighting Plan.

Response: Provided on C1.

Comment 13. Please indicate the area around the parking island proposed to be altered will be restored to match the existing stamped concrete treatment.

Response: Provided on C1.

Comment 14. Please provide a cross section detail for the planned pedestrian improvements on the east side of the building.

Response: Details provided on C2.

Comment 15. Please indicate the sign posts for the handicap accessible parking area on the plan and provide catalog cut sheets of them.

Response: Provided on C1, detail on C2.

Comment 16. Please indicate the drive lane on the east side of the Public Plaza as One Way ingress to the north and the drive lane on the west side as One Way egress to the south..

Response: Provided on C1.

Comment 17. Please provide dimensions of the drive lanes on the east and west side of the Public Plaza Area.

Response: Provided on C1.

Comment 18. Please be advised, the Lighting Plan for the new parking areas and circular drive is being reviewed by the City's lighting consultant to ensure the plan meets the City of Wildwood's Outdoor Lighting Requirements.

Response: Noted.

Comment 19. Please provide catalog cut sheets and details of the light standards, fixtures, and bulbs proposed for the improved streetscape, parking lot, and for exterior lighting for the building.

Response: Provided. It is the developer's intent to reuse the existing street lighting along the south and east side of the building.

Comment 20. Please be advised, the Landscape Plan is being reviewed by the City's landscape consultant to ensure compliance with the City's Tree Manual and Sustainable Plantings Guide.

Response: Noted.

Comment 21. Please provide conceptual approval of this Site Development Plan from the Missouri Department of Transportation (MODOT).

Response: Provided.

Comment 22. Please provide conceptual approval of this Site Development Plan from the Metropolitan St. Louis Sewer District (MSD).

Response: To be provided.

Comment 23. Please provide a Storm Water Pollution Prevention Plan (SWPP).

Response: Provided, Sheet C2.

Comment 24. Please provide a Geotechnical Report and Phase I Environmental Assessment for this 1.6 acre tract of land.

September 14, 2016
CITY OF WILDWOOD
Page 4 of 4

Response: Provided.

Comment 25. Please add "Police: St. Louis County Wildwood Precinct" and "Ward: Eight" to the Pertinent Data section on Sheet C1.

Response: Provided on C1.

Should you have any further comments and/or questions, please feel free to contact me.

Sincerely,

Ryan E. Schriber, P.E.,
Associate

CC:
Mr. George M. Stock, P.E., President



WILDWOOD®

September 9, 2016

NorthPoint Development
Attn: Mark Pomerence
5015 Northwest Canal Street
Suite 200
Riverside, Missouri 64150

Re: Stonecrest at Wildwood, an Amended C-8 Planned Commercial District for a residential senior service facility on the south side of State Route 100, north of Plaza Drive, and west of Fountain Place

Dear Mr. Pomerence:

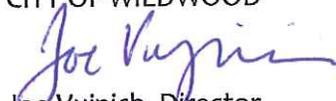
The Department of Planning, in conjunction with the Department of Public Works, has completed its initial review of the Site Development Plan in association with an approved Amended C-8 Planned Commercial District for a residential senior service facility. These two (2) lots are located on the north side of Plaza Drive, at Market Avenue. This review centered on the plan's compliance with the applicable sections of the City's Zoning Ordinance, the site-specific governing ordinance for the tract of land (Ordinance #2200), and other related requirements and design criteria of the City of Wildwood. In this comparison, a number of items were identified that must be addressed, before this matter can be scheduled for review by the Site Plan Subcommittee of the Planning and Zoning Commission. These items are as follows:

1. Please be advised a Lot Consolidation Plat will be needed for these two (2) lots.
2. Please add the reference to the variance that permits the fifteen (15) foot setback along the property's western boundary, by case number and date (**B.A. 14-16; July 21, 2016**).
3. Please identify the required Public Space information on the Preliminary Development Plan sheet and the Department has attached a table to assist in this regard.
4. Please provide dimensions for the radius of the circular drive and landscaped island.
5. Please indicate the extension of the fence and columns, along the norther boundary of the site are to be installed by the developer.
6. Please address how the proposed retaining wall on the western boundary of the site is to be constructed so as not to encroach on the adjacent property, along with any future access considerations for its maintenance and upkeep.
7. Please indicate commercial accesses to the proposed tenant spaces on the east side of the building.
8. Please provide dimensions and typical cross-section, including radius and taper details, for the proposed curb cut and drive aisle accessing the dumpster area.
9. Please show the Public Plaza improvements in detail.
10. Please review the Parking Data shown, and revise the provided parking table to accurately reflect what is indicated on the Site Development Plan.
11. Please provide applicable notes on the Site Development Plan Sheet identifying the easement rights granted to others by the cross access and cross parking agreements associated with this tract of land.
12. Please indicate the pedestrian improvements and streetscape improvements are to match the existing, and include catalog cut sheets for the tree grates and street lights. Please note these improvements on the Landscape Plan and Lighting Plan.
13. Please indicate the area around the parking island proposed to be altered will be restored to match the existing stamped concrete treatment.

14. Please provide a cross section detail for the planned pedestrian improvements on the east side of the building.
15. Please indicate the sign posts for the handicap accessible parking area on the plan and provide catalog cut sheets of them.
16. Please indicate the drive lane on the east side of the Public Plaza as a One Way ingress to the north and the drive lane on the west side as a One Way egress to the south.
17. Please provide dimensions of the drive lanes on the east and west side of the Public Plaza Area.
18. Please be advised, the Lighting Plan for the new parking areas and circular drive is being reviewed by the City's lighting consultant to ensure the plan meets the City of Wildwood's Outdoor Lighting Requirements.
19. Please provide catalog cut sheets and details of the light standards, fixtures, and bulbs proposed for the improved streetscape, parking lot, and for exterior lighting for the building.
20. Please be advised, the Landscape Plan is being reviewed by the City's landscape consultant to ensure compliance with the City's Tree Manual and Sustainable Plantings Guide.
21. Please provide conceptual approval of this Site Development Plan from the Missouri Department of Transportation (MODOT).
22. Please provide conceptual approval of this Site Development Plan from the Metropolitan St. Louis Sewer District (MSD).
23. Please provide a Storm Water Pollution Prevention Plan (SWPP).
24. Please provide a Geotechnical Report and Phase I Environmental Assessment for this 1.6 acre tract of land.
25. Please add "Police: St. Louis County Wildwood Precinct" and "Ward: Eight" to the Pertinent Data section on Sheet C1.

Once the revisions are completed, please resubmit five (5) full sets of the revised Preliminary Development Plan and other requested items to the Department of Planning for further review. Please be advised that additional comments may follow after this resubmittal, given the extent of information being sought. If you should have any questions or comments in this regard, please feel free to contact the Departments of Public Works and/or Planning at (636) 458-0440.

Sincerely,
CITY OF WILDWOOD



Joe Vujnich, Director
Department of Planning and Parks

Cc: The Honorable James R. Bowlin, Mayor
The Honorable City Council of the City of Wildwood
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John A. Young, City Attorney
Rick Brown, P.E. and P.T.O.E., Director of Public Works
Kathy Arnett, Assistant Director of Planning and Parks
Travis Newberry, Planner
George Stock, Stock and Associates



Metropolitan St. Louis Sewer District

2350 Market Street
St. Louis, MO 63103-2555
(314) 768-6200

TITLE: 425' W OF PLAZA/FOUNTAIN PLAZA (STONECREST ASSISTED LIVING - 251 PLAZA DR)

216-5763

APPROVAL DATE: November 1, 2016
MSD Reference No.: P-0027187-03
County PAC No.:

RECEIVED

NOV 01 2016

Site Address: 251 Plaza Dr

Plan Status: Addendum to Plans Approved 1/31/2007

Stock and Associates
Consulting Engineers, Inc

On this date the above referenced plans have been approved for construction work relating to these items:

- Storm Sewers Combined Sewers Sanitary Sewers Miscellaneous MSD Inspection
- Detention Basin Pump Station and Force Main House Connection Only BMP

The following Permit will be required from MSD for this work:

- Construction House Connection Misc. MSD Inspection No MSD Permit

(X) NO OCCUPANCY PERMITS ARE TO BE ISSUED UNTIL MSD CONSTRUCTION APPROVAL OF THIS WORK

Prior to the issuance of the required Permit the following fees must be paid and documents executed by the Project Owner:

- As-Built Deposit in the amount of **\$1,500.00**.
(Deposit may be paid by cash or personal check made payable to the Metropolitan St. Louis Sewer District).
- Construction Escrow Deposit in the amount of **\$1,200.00**.
(Deposit must be in a form of cash or a cashier's check payable to the Metropolitan St. Louis Sewer District).
- Pump Station Construction Escrow Deposit in the amount of **N/A**.
(Deposit must be in a form of cash or a cashier's check payable to the Metropolitan St. Louis Sewer District).
- Cash Deposit Agreement (two copies enclosed, execute and return both).
- BMP Escrow Deposit in the amount of **\$19,000.00**.
(Deposit must be in a form of cash or a cashier's check payable to the Metropolitan St. Louis Sewer District).
- BMP Escrow Cash Deposit Agreement (two copies enclosed, execute and return both).

CITY OF WILDWOOD
NOV 01 2016
DEPT OF PLANNING & PARKS

Please refer to Chapter 8 of the District's "Rules and Regulation and Engineering Design Requirements for Sanitary Sewage and Stormwater Drainage Facilities" for and explanation of these requirements. Questions regarding the deposits or agreement should be directed to Keith Milson, Escrow Group (314-768-6206).

Construction Permitting Information

1. Permits will only be issued to licensed and bonded drainlayers for all work related to sewer construction.
2. The Construction Permit fee is \$195.00 and must be paid at the time of the issuance of permits. The Construction Inspection fee is \$3.39 per lineal foot of sanitary sewer and \$2.50 per lineal foot of storm/combined sewer.
3. The House Connection Permit and Misc. MSD Inspection fees are \$50.00 for each connection or point of inspection. Where a Machine Tap is required, an additional fee of \$300.00 will be required.
4. All fees must be paid by the drainlayer, prior to issuance of the permits. Please refer to Chapter 10 of the District's "Rules and Regulations and Engineering Design Requirements for Sanitary Sewage and Stormwater Drainage Facilities" for additional information regarding the Construction Permits.
5. Questions regarding Permits should be directed to the Permit Section at 314-768-6286.
6. The approved plans will remain active for one year. If permits have not been applied for within the year a new set of plans will have to be submitted for approval.

NOTE: THIS APPROVAL IS SUBJECT TO STATE HIGHWAY REGULATIONS AND U.S. ARMY CORPS OF ENGINEERS REQUIREMENTS WHERE APPLICABLE.

John C. Grimm, P.E.
Manager of Plan Review

Consulting Engineer
Owner
Environmental Compliance
Municipality-Wildwood
Edward Earl/Senior Site Development Specialist
Vernon Phillips/Dept. of Public Works

St. Louis County Public Works
Office of Plumbing and Inspection
Permit



Metropolitan St. Louis Sewer District

2350 Market Street
St. Louis, MO 63103-2555
(314) 768-6200

PUBLIC SANITARY SEWER

DESCRIPTION	UNITS/ FOOTAGE	COST
10 PVC PIPE	355 LF	\$7,100.00
STRUCT Manhole Sanitary	3 EA	\$2,850.00
WYE6X10 6" Connection into 10" Sewer	1 EA	\$75.00
FULLY GROUT FILL AND ABANDON SEWER	0 EA	\$0.00

PUBLIC STORM SEWER

DESCRIPTION	UNITS/ FOOTAGE	COST
Removal of existing sewer	0 EA	\$0.00

PRIVATE UNDER MSD INSPECTION

SANITARY SEWER

DESCRIPTION	UNITS/ FOOTAGE	COST
FULLY GROUT FILL AND ABANDON SEWER	0 EA	\$0.00
SAMPLING MANHOLE	0 EA	\$0.00

PRIVATE UNDER MSD INSPECTION

STORM SEWER

DESCRIPTION	UNITS/ FOOTAGE	COST
Bioretention/Raingarden (Small) (A)	3 EA	\$0.00
BMP UNDERDRAIN (U)	2 EA	\$0.00

GRAND TOTAL

\$10,025.00



**Metropolitan St. Louis
Sewer District**

2350 Market Street
St. Louis, MO 63103

March 31, 2016

Stock and Associates
Attn: Mr. Ryan Schriber, P.E.
257 Chesterfield Business Parkway
St. Louis, MO 63005

RE: Stonecrest at Wildwood
261 Plaza Dr. (Loc# 23V220233)
251 Plaza Dr. (Loc# 23V220242)
Preliminary Development Plan

Dear Mr. Schriber,

MSD has reviewed the Preliminary Development Plan dated 3/4/16 for the above referenced site and offers the following preliminary comments:

- Formal MSD review, approval, and permits are required prior to construction.
- Detention for the 2yr 24 hour and 100yr 24 hour storms has been provided for the site in an existing offsite basin approved and permitted by MSD under Ref# P-25457-00 in 2004. However, Channel Protection (extended detention of the 1yr-24 hour storm) adopted into MSD's Rules and Regulations in 2006 was not factored into the design of the existing offsite basin at the time of its design, and will need to be addressed for this project's improvement area, likely in an onsite facility.
- If the project's disturbed area equals or exceeds one acre, post construction Best Management Practices (BMPs) for water quality are required to treat the extents of the disturbed area. BMPs that provide a volume reduction component (such as bioretention, pervious pavements, soil amendments, etc.) should be the emphasis of the post construction water quality strategy, and applied to the maximum extent practicable. Water Quality and Channel Protection volumes may be nested within the same volume reducing BMPs. Non-volume reducing BMPs may be implemented on the site if it would reduce the extents of the project's disturbed area or if unfavorable topography or insurmountable utility conflicts factor in.
- Existing sewers and easements may need to be relocated and/or vacated under this currently proposed site configuration. Current mapping records indicate that

the western wing of the proposed building would encroach upon an existing 8" public sanitary sewer and other easements. Please field-verify the location of the existing sanitary sewer. Encroachments shall be avoided.

- Based on the property line configuration depicted on the plan, the existing storm sewer system upstream from EX56G may revert to a private storm sewer system since it will only serve the assisted living center's property. MSD would vacate its rights and interests in the existing easement upstream of the structure after construction approval of this project.
- Peak and average daily sanitary flow estimates should be provided with formal plan review. MSD will evaluate planning models for capacity during formal plan review. Downstream improvements may be required of the developer if current capacity levels within the existing sanitary sewer system cannot accommodate the additional sanitary loading generated by the development.

This review is subject to the requirements of detailed formal review of final design plans and is subordinate to the review and approval of final design plans. Please call me at (314) 768-2773 if you have any questions.

Sincerely,



Jason Peterein, P.E.
Principal Engineer
Engineering/Planning-Development Review

Zach Stutz

Subject: RE: 03-15-16 - Stonecrest at Wildwood - MoDOT comments

From: JOHN "JAY JAY" BRADEN [<mailto:John.Braden@modot.mo.gov>]
Sent: Tuesday, March 15, 2016 10:56 AM
To: Ryan Schriber
Cc: Federico Lagos
Subject: 03-15-16 - Stonecrest at Wildwood - MoDOT comments
Importance: High

Ryan,

After review of your proposed preliminary plans for Stonecrest at Wildwood on route 100, located in St. Louis County, we find the proposal to be feasible. Final approval will be in the form of a permit issued from this office subject to the following items:

- Show the property line along MO 100.
- Fill out the attached *request for permit v3.pdf* and return it to me.
- A separate permit will be required for the water & sewer taps and they need to be applied for through the plumber.
- MoDOT will not allow pavement cuts for utility connections.
- If there is going to be a tower crane on site for the completion of this building we will need to enter into an airspace agreement which we will need:
 - a. Proof of Insurance for the required coverage amount, naming MHTC as an additional insured
 - b. Copy of the request from leasee/licensee – to be over our right of way. Loads are not permitted to be swung over MoDOT right of way but due to the nature of tower cranes needing to be placed in weather vane mode (no brake) during times of nonuse it is possible the crane will end up over MoDOT right of way.

Please revise your plans and send us two hard copies and a pdf copy of your detailed plans for further review. Should you have any questions or comments, you may contact me at via email at john.braden@modot.mo.gov .

Jay-Jay Braden

Missouri Department of Transportation
Sr. Traffic Specialist - SW St. Louis County
601 Salt Mill Road, Chesterfield, MO 63017
Fax: 573.522.6491 **Mobile:** 314.380.0074
www.modot.mo.gov/stlouis/news_and_information/Permits.htm

Zach Stutz

From: Dave Phipps [<mailto:daveph@metrowest-fire.org>]
Sent: Thursday, April 07, 2016 9:24 AM
To: Zach Stutz
Subject: RE: Stonecrest @ Wildwood Review

The Bureau of Fire Prevention has reviewed Stonecrest and there are no additional fire district requirements.

David E. Phipps
Fire Marshal
Métro West Fire Protection District
(636) 821-5806

216-5763

SPIRIT

**Of St. Louis
Airport**

SINCE 1964

**Business Aviation
Center of the U.S.**

Steven V. Stenger
County Executive

John D. Bales, C.M.
Director of Aviation

March 10, 2016

RECEIVED

MAR 14 2016

**Stock and Associates
Consulting Engineers, Inc**

Stock and Associates, Inc
Attn.: Ryan Schriber, P.E.
257 Chesterfield Business Parkway
Chesterfield, MO 63005

RE: Preliminary Development Plan – Stone crest at Wildwood, 251 Plaza Drive

Dear Mr. Schriber,

We have reviewed the above referenced documents dated 03/08/16 and have no objections. No further review is required by the Airport.

Feel free to call should you need further information.

Sincerely,

SPIRIT OF ST. LOUIS AIRPORT



Robert S. Heine, P.E.
Airport Engineer

CC John D. Bales, CM, Director of Aviation
David Schubert, Deputy Director of Aviation
File





SCI ENGINEERING, INC.

130 Point West Boulevard
St. Charles, Missouri 63301
636-949-8200 Fax 636-949-8269
www.sciengineering.com

Geotechnical Report

**STONECREST AT WILDWOOD
WILDWOOD, MISSOURI**

August 2016

**NORTHPOINT DEVELOPMENT
Owner**

**STOCK & ASSOCIATES CONSULTING ENGINEERS, INC.
Civil Engineer/Surveyor**



SCI No. 2016-0607.10





SCI ENGINEERING, INC.

CONSULTANTS IN DEVELOPMENT,
DESIGN AND CONSTRUCTION
GEOTECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

August 17, 2016

Mr. Jed Momot
Project Manager
NorthPoint Development
5015 NW Canal Street, Suite 200
Riverside, Missouri 64050

RE: Geotechnical Report
Stonecrest at Wildwood
Wildwood, Missouri
SCI No. 2016-0607.10

Dear Mr. Momot:

Attached is our *Geotechnical Report*, dated August 2016. It should be read in its entirety, and our recommendations applied to the design and construction of the project. Issues of concern for this project include expansive soils and existing fill. Selected excerpts from the report are highlighted below:

- Based on the soils encountered in the borings, shallow spread footing foundations may be designed for maximum net allowable soil bearing pressures of 2,500 pounds per square foot (psf) for strip footings and 3,000 psf for column footings, as discussed in the report.
- The expansive clay soils will require remediation if present within 3 feet of the bottom of the floor slab, 2 feet beneath the footings, or 18 inches below the bottom of pavements, as described in the report.
- Based on the soils encountered and the depth to rock, Site Class C should be used for foundation design, with seismic design parameters for the site as follows: $F_a = 1.20$, $F_v = 1.65$, $S_{DS} = 0.40$ and $S_{D1} = 0.17$. The Seismic Design Category (SDC) for the site is C.

We appreciate the opportunity to be of service, and look forward to working with you during the construction phase of the project. SCI should participate in a meeting prior to clearing/grading of the site. Such meetings are valuable in reviewing and clarifying project requirements and responsibilities.

Mr. Jed Momot
NorthPoint Development

2

August 17, 2016
SCI No. 2016-0607.10

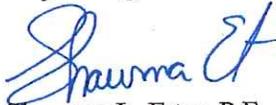
If you have any questions or comments, please call.

Respectfully,

SCI ENGINEERING, INC.



Christopher L. Mathews, P.E.
Project Engineer



Shawna L. Erter, P.E.
Vice President

SMS/CLM/SLE/tlw

Enclosure
Geotechnical Report

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- Appendix A - Boring Log Legend and Nomenclature, Boring Logs
- Appendix B - Global Stability Output Plots

Geotechnical Report

STONECREST AT WILDWOOD WILDWOOD, MISSOURI

1.0 INTRODUCTION

At the request of Mr. Jed Momot, Project Manager with NorthPoint Development, SCI Engineering, Inc. (SCI) conducted a geotechnical exploration for the proposed assisted living facility. The purpose of our exploration was to characterize and evaluate the subsurface conditions, provide recommendations for foundations, and address other geotechnical aspects. Our services were provided in general accordance with our proposal dated July 20, 2016, as authorized by Mr. Momot on the same date.

2.0 SITE AND PROJECT DESCRIPTION

SCI understands that an assisted living facility is proposed for a site located at 251 Plaza Drive in Wildwood, Missouri. The location of the site is shown on the *Vicinity and Topographic Map*, Figure 1. The approximate 1.65-acre project site is currently undeveloped with no structures; however, a portion of the property contains a concrete slab. The existing conditions are shown on the *Aerial Photograph*, Figure 2. The proposed project will feature construction of a three-story building with a finished floor elevation of 756. Cuts and fill of up to 5 feet will be required to meet the proposed grades. In addition, a retaining wall is proposed along the western edge of the site with a maximum height of 9 feet. The proposed construction is shown on the *Site Plan*, Figure 2.

Structural loads were not available at the time of this report; however, we anticipate that the building will be moderately loaded, with column loads of less than 200 kips and wall loads of less than 5 kips per lineal foot. If these loads will be exceeded, then SCI should be contacted to review our recommendations.

We have not reviewed, nor are we aware of, any previous studies on this specific site, by SCI or others, that would affect the preparation of this report. However, SCI is currently completing a Phase One Environmental Site Assessment and a Natural Resource Delineation report for the subject site.

3.0 SUBSURFACE CONDITIONS

A total of eight borings, designated B-1 through B-8, were drilled at the approximate locations shown on the *Site Plan*. The boring locations were staked in the field by SCI personnel using a global positioning system unit. Ground surface elevations at the boring locations were interpolated from the *Preliminary*

Development Plan prepared by Stock & Associates Consulting Engineers, Inc., and dated March 4, 2016. Detailed information regarding the nature and thickness of the soils and rock encountered, and the results of the field sampling and laboratory testing are shown on the Boring Logs in Appendix A.

3.1 Surficial Materials

In B-6 and B-8, pavement materials consisting of 2 to 3 inches of asphalt over 3 to 4 inches of crushed rock were encountered. In each boring except B-3 and B-6, existing fill was encountered to a depth of 3 feet. The fill consisted of crushed rock, lean clay, and fat clay, with varying amounts of sand and gravel. SCI has been present throughout the majority of development in the area to monitor grading and test compaction. Based on our experience, as well as the results of the field exploration, it appears the fill was placed in a controlled manner.

3.2 Natural Soil Profile

The natural soils predominately consist of fat clay (CH in accordance with the Unified Soil Classification System and ASTM D 2488-06) with varying amounts of gravel. Standard Penetrations Tests (SPT) performed within the natural clay soils resulted in N-values ranging from 5 to 13 blows per foot (bpf). The fat clay was underlain by gravelly fat clay (CH), shaley fat clay (CH), and gravelly shaley fat clay (CH). Standard Penetrations Tests (SPT) performed within the gravelly and shaley clay soils resulted in N-values ranging from 20 blows per foot (bpf) to 50 blows per 3 inches of penetration. An SPT N-value of greater than 15 bpf classifies the soil as very stiff to hard in consistency. SPTs resulting in 50 blows for less than 6 inches of penetration is considered sampler refusal and is usually indicative of soils containing increased quantities of gravel or weathered rock. Materials encountered upon sampler refusal may require significant effort to excavate.

3.3 Bedrock Geology

Documented geology, including *2003 Bedrock Geologic Map of Missouri*, indicates that the bedrock geology at the site consists of the Keokuk and Burlington Limestones, which consist of medium to coarsely crystalline limestone with erratically stratified layers of chert and fossils. The Fern Glen Formation typically consists of red and green calcareous shale, shaley limestone and massive dolomitic limestone.

Auger refusal on apparent bedrock was encountered in B-3 and B-6 during drilling at depths of 23.3 and 20.5 feet, respectively. Auger refusal is a designation applied to any material that cannot be further penetrated by the power auger without extraordinary effort. This designation is usually indicative of a very hard or very dense material, such as boulders or bedrock.

3.4 Groundwater

Groundwater was encountered at a depth of 3 feet in B-8 during drilling. However, based on the topography of the site, we anticipate that the natural groundwater level is located near the top of bedrock. We anticipate the groundwater encountered in B-8 is an isolated pocket of perched (i.e. trapped) water within the existing fill. Groundwater was not encountered in the remaining of the borings

The groundwater level depends on seasonal and climatic variations, and may be present at different depths in the future. In addition, without extended periods of observation, accurate groundwater level measurements may not be possible, particularly in low permeability soils. We do not anticipate that groundwater will significantly influence the building construction or installation of deep utilities. If encountered, small amounts of groundwater seepage into shallow excavations can typically be handled by means of gravity ditching and a sump pump. If greater flows are experienced, SCI should be retained to provide additional consultation.

4.0 DESIGN RECOMMENDATIONS

4.1 Shallow Foundations

Shallow spread footing foundations bearing in existing lean clay fill; remediated fat clay; or newly placed low plastic structural fill are appropriate for support of the proposed assisted living facility. Based on the soils encountered during our exploration, shallow foundations can be sized for maximum net allowable bearing pressures of 2,500 pounds per square foot (psf) for continuous wall footings and 3,000 psf for isolated column footings. We anticipate that some localized areas of inadequate bearing materials may be encountered during construction; therefore, we recommend that an allowance be made in the construction budget for selected footing overexcavations.

Exterior footings and foundations in unheated areas of the buildings should be provided with at least 30 inches of soil cover for frost protection. Interior footings in heated areas can be located at nominal depths below the finished floor. For footings designed and constructed in accordance with our recommendations, total settlement should be less than 1 inch, and differential settlement between adjacent footings should be less than $\frac{3}{4}$ inch.

4.2 Expansive Clay Remediation

Expansive clay was encountered at the anticipated floor slab and foundation bearing elevations across the majority of the site; therefore, remediation of the expansive soils will likely be required for the entire building pad and a majority of the pavements. Where the bearing soils consist of fat clay, we recommend

that they be removed to minimum depths of 2 feet beneath the bearing level of the footings, 3 feet beneath the bottom of the floor slab, and 1.5 feet beneath the bottom of the pavement. The overexcavation depths should extend at least 2 feet beyond the outside edge of the footings and building footprint to facilitate uniform compaction of the replacement materials, and may require additional widening at the building corners to allow equipment access for proper compaction. The overexcavation should be backfilled with properly compacted low plastic soil or 1-inch minus crushed limestone. As an alternate, the footing overexcavation may be backfilled with lean concrete. With this option, widening of the footing excavation is not required. If clean rock is used as backfill material, it must be drained to daylight or to a sump with a pump. The footings and floor slab would then be constructed on the newly placed fill.

As an alternative to overexcavation and replacement, the fat clay may be remediated by the addition of lime in combination with a recompaction operation. If lime stabilization is performed, we recommend thoroughly mixing in "Code L" (a locally available calcium oxide by-product also known as lime kiln dust) at a rate of 7 percent, or approximately 8 pounds of Code L per cubic foot of soil, to the depths and lateral limits described in the preceding paragraph. Water may need to be added during mixing to allow for proper hydration of the lime. Pulverizing and tilling equipment, such as "gators," are preferred for mixing the lime into the soil. The treated soil should be placed in compacted lifts as discussed in the "Fill Materials and Compaction" section.

The methods of treatment described above are based on generally accepted standards in the local engineering community; however, swell pressures and volume change potential greater than can be mitigated by these methods may exist. Consequently, the owner should recognize that there is an inherent, but reduced risk that foundation and floor slab damage may occur, even after remedial treatment of the subgrade soil.

4.3 Seismic Considerations

Ground shaking at the foundation of structures and liquefaction of the soil under the foundation are the principle seismic hazards to be considered in design of earthquake-resistant structures. Liquefaction occurs when a rapid buildup in water pressure, caused by the ground motion, pushes sand particles apart, resulting in a loss of strength and later densification as the water pressure dissipates. This loss of strength can cause bearing capacity failure while the densification can cause excessive settlement. Potential earthquake damage can be mitigated by structural and/or geotechnical measures or procedures common to earthquake resistant design.

4.3.1 Design Earthquake

According to International Building Code (2009 edition) (IBC 2009), structures such as those proposed for this project are required to be designed to a design earthquake with a 2 percent Probability of Exceedance (PE) over a 50-year exposure period (i.e. a 2,475-year design earthquake). The 2 percent PE in 50-year design earthquake has a Moment Magnitude (M_w) of 7.7 and a Peak Ground Acceleration (PGA) of 0.12g, as determined from data provided by the IBC 2009 and the United States Geological Survey (USGS) National Seismic Hazard Mapping Project.

4.3.2 International Building Code Site Classification

Based on procedures outlined in the IBC 2009 and our geotechnical explorations for the subject site, including the borings through predominantly medium stiff near surface cohesive soil and the depth to bedrock, the site can be classified as Site Class C for foundation design. Seismic design parameters for the site are as follows: $F_a = 1.20$, $F_v = 1.65$, $S_{DS} = 0.40$ and $S_{D1} = 0.17$. The Seismic Design Category (SDC) for the site is C.

4.3.3 Liquefaction Potential Analysis

The liquefaction potential analysis for the site was conducted using data from the field exploration and laboratory test results and the techniques outlined in the National Center for Earthquake Engineering (NCEER) Technical Report NCEER-97-0022.

Based on our analyses, the soils at the project site have sufficient strength values to resist liquefaction and/or a fines content that make the threat of liquefaction minimal during the design earthquake.

While the amount of the seismically induced settlement is dependent on the magnitude and distance from the seismic event, we estimate that the settlements from the design earthquake will be negligible and relatively uniform in nature so liquefaction mitigation techniques are not required.

4.4 Floor Slabs

We recommend that the floor slabs be designed using a modulus of subgrade reaction (k) of 150 pounds per square inch per inch of deflection (pci) if bearing on recompacted lean fill or remediated fat clay. Floor slabs should be supported on a minimum 4-inch-thick layer of crushed stone. This will help to distribute concentrated loads and equalize moisture conditions beneath the slab.

It is generally preferable to maintain structural separation between the floor slab and the foundation walls and column pads using isolation joints. We also suggest that joints be placed in the floor slabs on no more than 15-foot intervals in any direction. Such joints permit slight movements of the independent elements and help reduce random cracking that might otherwise be caused by restraint of shrinkage, slight rotations, heave, or settlement.

We recommend that 6-mil-thick polyethylene sheeting be placed immediately beneath the floor slab and above the crushed rock or gravel, to reduce the transfer of capillary moisture to the slab. However, without careful attention to curing of the floor slab, the polyethylene sheeting can cause excessive shrinkage cracking and "curling."

4.5 Global Stability Analysis

A retaining wall with a maximum height of 9 feet is proposed for the western boundary of the site. Based on the plans provided, global stability analysis was performed at one apparent critical cross section at the tallest wall location. Although preliminary plans for the proposed retaining wall were not available at the time of this report we anticipate the wall will be a modular block retaining wall. The retaining wall was modeled with a reinforced backfill zone extending a minimum length equal to 0.70 times the height of the wall and a minimum wall embedment of 2 feet for the modular block configuration. We assumed that the reinforced backfill zone is stable for purposes of our analyses, as it will be designed by others.

The location of the analyzed cross-section is shown on the *Site Plan*. The global stability analysis were conducted using limit equilibrium slope stability methods and the commercially available software program Slope/W (part of the GeoStudio 2012 software package developed by Geo-Slope International). A Morgenstern-Price analysis was used to search for a circular failure to calculate the critical factors of safety for each cross section analyzed. End of construction (short-term), long-term and pseudo-static seismic soil parameters, developed from our borings, as well as our experience with similar soils in the area, were used in our analyses and are summarized shown on the attached *Global Stability Outputs Plots* in Appendix B. **For the purpose of our analyses, it was assumed that satisfactory surface water controls will be properly designed and to ensure proper surface drainage above and around the wall.**

Under end of construction and long-term conditions, a minimum factor of safety (FS) of 1.3 is typically required if the failure arc does not intersect a permanent structure, or 1.5 if the failure arc does intersect a permanent structure. Under seismic conditions a minimum FS of 1.0 is typically required. **The results of**

our analyses indicate sufficient factors of safety for the proposed retaining wall as shown on the output plots in Appendix B. SCI must be retained to review the preliminary retaining wall plans, to assess the impact on the planned renovations and to determine if additional analysis is necessary.

Water was not shown on the borings logs nor included in the analyses; therefore, proper surficial and internal drainage of the wall in its entirety is critical in order to achieve the calculated factors of safety.

4.6 Below-Grade Walls

Below-grade walls required at this site may include retaining walls designed to accommodate surface grade changes around the building and paved areas. The maximum toe pressure for below-grade walls should not exceed the bearing pressure previously given for continuous strip footings. Retaining walls may be designed with an allowable coefficient of friction between the base of the concrete footing and the soil subgrade of 0.3.

Below-grade walls should also be designed to withstand lateral earth pressures caused by the weight of the backfill, including slopes behind the walls; and any surcharge, such as adjacent floor loads. We recommend the equivalent fluid unit weights tabulated below for lateral earth pressures, in pounds per cubic foot (pcf), be used in the design of below-grade walls. The indicated values assume that positive drainage is provided to prevent buildup of hydrostatic pressure. Expansive soils should not be used to backfill the wall excavations. Values for granular material should only be used if the granular backfill extends upwards and outwards the full height of the wall at a slope of 45 degrees or flatter from its base. In this case, exterior granular backfill should be capped with approximately 2 feet of cohesive soil to reduce the potential for surface water infiltration into the granular backfill. With clean granular backfill, filter fabric, such as Mirafi 140N, should be placed along the interface between the soil and granular backfill to reduce the potential for infiltration of the soil into the granular material.

Table 4.1 - Recommended Lateral Earth Pressures

Backfill Type	Equivalent Fluid Unit Weights	
	At-Rest Earth Pressures (pcf)	Active Earth Pressures (pcf)
Cohesive Soil	70	50
Granular Material (1-inch minus)	60	40
Free-Draining Granular Material (1-inch clean)	50	30

At-rest earth pressures should be used for restrained or fixed-headed walls that are restricted from rotation, such as loading dock or basement walls connected to floor joists or beams, or a wing wall attached to a basement wall. Active earth pressures should be used for free-headed walls where the base remains fixed and deflection at the top of the wall of approximately 1 inch for each 10 feet of wall height is allowed, such as a retaining wall.

The above values are applicable when the surface of the backfill behind the wall is horizontal. Upward sloped or loaded backfill will result in increased values. In addition to lateral earth pressures, below-grade walls should be designed to resist any surcharge loads, including shallow building foundations and traffic. These surface loads can be modeled as uniform lateral loads, equivalent to one-half of the surface load, acting at the halfway point on the wall.

A passive soil resistance modeled by an equivalent fluid unit weight of 250 pcf may be used for natural soil against the face of the exterior base or a key below the base of the wall. The upper 2 feet of soil backfilled against the exterior face of the walls and uncontrolled backfill soils should be ignored when calculating the lateral resistance. Lower passive pressure should be used if the ground surface slopes downward away from the face of the wall.

We recommend that all below-grade walls be provided with a drainage system. A minimum 4-inch diameter, perforated drainpipe should be used, and placed at foundation level. Granular drainage material, consisting of 1-inch clean crushed rock, classified as GP by ASTM D 2487-11, with less than 5 percent of the rock passing the No. 200 sieve, should be placed a minimum of 6 inches in all directions around the drainage pipe. Synthetic filter fabric, such as Mirafi 140N or equivalent, should encapsulate the drainpipe and granular drainage material. The pipe should be sloped to drain by gravity or through weepholes located on approximately 10-foot centers for above-grade retaining walls, or to a sump with a pump for below-grade walls where positive drainage by gravity cannot be achieved. Alternately, drainage can be provided directly through the weepholes without a drain pipe, provided that filter fabric is used or

other measures are taken to prevent the granular backfill from migrating out through the weepholes. Any interior sumps must be isolated "watertight" from the interior subgrade to prevent the movement of moisture from the sump into the underlying soils.

4.7 Pinnacled Bedrock

Though not indicated by the conditions encountered in the borings, our previous experience in the vicinity of the project site indicates that the bedrock profile can be considered unconformable in the area. As such, shallow rock pinnacles or deeper rock valleys may be encountered between the widely spaced boring locations. We anticipate the likelihood of encountering shallow rock pinnacles is low. However, if shallow bedrock, weathered rock or shale is encountered beneath foundations, it is recommended that the rock be overexcavated to a minimum depth of 1 foot below the foundations and backfilled with clean crushed limestone. As an alternative, all of the foundations of an individual structure could be extended so that they all bear on bedrock. SCI should be provided with final development and grading plans, once they are available, to review our recommendations and assess the influence of bedrock on the proposed grading and site improvements.

4.8 Site Grading and Drainage

Positive site drainage should be provided to reduce surface water infiltration around the perimeter of the buildings and beneath the floor slabs. All grades should be sloped away from the buildings. Roof and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill of the buildings.

Large trees and shrubs should be planted away from exterior footings as they may cause drying and shrinkage of the foundation soils and, with the passage of time, potentially detrimental settlement of the building floor slabs and foundations. A minimum distance of 20 feet or the mature tree's dripline, whichever is greater, is suggested.

We recommend that all final slopes have a maximum inclination of 3 horizontal to 1 vertical (3H:1V), and that a crest of at least 10 feet in width or a distance equivalent to the total height of the slope, whichever is less, be provided around the building before the surface slopes down and away. Cut slopes and properly compacted fill slopes of less than 15 feet in total height should perform satisfactorily at this inclination, or flatter. We do not anticipate that steeper or taller slopes will be required. However, if they are proposed, the slopes should be brought to our attention and individually addressed and evaluated by SCI on a case-by-case basis.

4.9 Underground Utilities

Underground utilities can provide a pathway for water to migrate below the floor slab. Drain and utility pipes beneath floors should have tight joints to prevent leakage. If utility excavations are backfilled with free-draining granular materials, then cutoffs should be provided at the exterior walls to reduce the potential for water to migrate beneath the building. Impermeable cutoffs may consist of a 3-foot-long "plug" of cohesive soil or bentonite soil mix, or a 1-foot-long plug of lean concrete. Soil may be used for the balance of the backfill.

With the exception of individual service lines to the buildings that intersect foundations perpendicularly, below-grade utilities should not be located within the stress influence zone of the building foundations. Accordingly, below-grade utilities should be located outside a zone extending 45 degrees downward and outward from the edge of the footings.

4.10 Pavements

Selection of the pavement section is dependent on the design life, traffic loads, subgrade strength, drainage characteristics, and the desired level of maintenance. Neither CBR testing nor formal pavement design was a part of our scope for this project. However, for planning purposes, the following recommendations typically result in pavements that perform satisfactorily on similar subgrades under automobile and pickup truck loads. They are intended to roughly provide a pavement requiring routine maintenance for a 5-year period, minor repair and maintenance during the 5- to 10-year life of the pavement, and possibly major repairs and restoration after a 10-year service life.

A flexible pavement section may be used for the parking lot and driveways. Parking areas for automobiles and light trucks should consist of a minimum 6-inch-thick crushed stone base with a minimum 3-inch-thick asphaltic concrete wearing surface. The crushed stone base should be thickened to at least 8 inches in drive areas. Care should be taken to provide drains or drainable transition at locations where pavement sections of varying thickness abut, so as not to trap water within the crushed stone base, which could saturate and soften the subgrade.

Alternately, a rigid concrete pavement section may be used, with less anticipated long-term maintenance. Parking areas for automobiles and light trucks should consist of a minimum 6-inch-thick, non-reinforced concrete pavement. Crushed stone base is not required under this light-duty pavement section. For more heavily trafficked areas, we recommend that the section consist of an 8-inch-thick, non-reinforced concrete pavement, over 4 inches of compacted base rock. This concrete pavement section should also be

used to support concentrated wheel loads for trash dumpster pads, approaches, and other areas where trucks will maneuver. To provide resistance against salt and freeze-thaw cycles, we recommend the concrete have a minimum 28-day compressive strength of 4,000 pounds per square inch (psi) and air entrainment of 5 to 7 percent by volume. We also recommend that the maximum joint spacing be approximately 15 feet.

The existing fat clay could cause some heave distress in the pavement. To reduce long-term maintenance, consideration could be given to remediating the upper 18 inches of subgrade. Alternatives include removal and replacement with crushed stone or low plastic soil, or lime treatment. However, proper construction, along with periodic patching and overlaying, are likely more economical than remediation of the fat clay. Locally, most owners do not choose to remediate fat clay beneath pavements.

5.0 SITE DEVELOPMENT AND CONSTRUCTION CONSIDERATIONS

5.1 Site Preparation

Within the construction area, any existing structures, including the concrete slab located at the site, and related below-grade components found during construction must be properly demolished and the debris removed from the site. Existing foundation walls and footings, floor slabs, pavements, cisterns and septic fields, and utilities, as well as their associated backfill, should be removed from below and at least 10 feet beyond the proposed building footprint. As an exception, deep utilities may be grouted in place rather than being removed. However, the existing backfill associated with deep utilities should be removed and replaced or recompacted. Outside this area, existing foundation walls and footings deeper than 3 feet below the proposed subgrade may be left in place. Excavations resulting from the removal of existing site improvements should be backfilled with properly compacted fill.

Areas to be cut or to receive fill should be stripped of any surface vegetation or organic topsoil. The strippings should be removed and stockpiled for later placement in landscaped or common ground areas, as appropriate. Topsoil can be reused as fill, if thoroughly mixed with other, acceptable, non-organic fill materials, as approved by SCI.

After stripping, the site should be proofrolled by systematically passing over the subgrade to achieve complete coverage with proper compaction or loaded construction equipment, and observing the subgrade for pockets of excessively soft, wet, or disturbed soil, or otherwise unacceptable materials. Soft areas or

otherwise unacceptable materials, if encountered, should be removed and replaced with structural fill or stabilized prior to placing additional fill. If removal of soft soils is impractical due to their excessive depth, they should be stabilized or "bridged over" in a manner approved by SCI.

Soft soils may be encountered in the lower-lying areas of the site. If organic or soft areas are encountered, they should be removed and replaced with properly compacted fill or otherwise stabilized as approved by SCI. "Bridging" of the soft soils can often be accomplished by working 2- to 4-inch clean crushed rock into the softer soils and then placing a geofabric, such as Mirafi 600X or equivalent, prior to placing additional fill.

Natural slopes to receive fill which are steeper than 5H:1V should be benched prior to the placement of fill. Benching will provide level surfaces for compaction and reduce the potential for development of inclined planes of weakness between the natural soil and compacted fill. The benches should be spaced such that the height of the cut at the up-slope end of the bench is less than 5 feet.

5.2 Fill Materials and Compaction

Structural fill should be placed in maximum 8-inch-thick loose lifts and mechanically compacted to at least 90 percent of its modified Proctor maximum dry density (ASTM D 1557). Aggregate base course should be compacted to at least 95 percent modified Proctor. We recommend that any fill placed in building areas have a liquid limit less than 45 and a plasticity index less than 25. If higher plasticity soils are placed within 3 feet of the floor slab subgrade, or 2 feet of the bottom of the footings, then remediation will be required. Acceptable non-organic fill soils include materials designated CL, ML, CL-ML, SP, SW, GP, and GW by ASTM D 2487-11. Masonry rubble and pavement broken to less than 4 inches in maximum dimension may be used as fill, if properly blended with acceptable soil and placed as approved by SCI.

Prior to compaction, the soil may require moisture adjustment. During warm weather, moisture reduction can generally be accomplished by disking or otherwise aerating the soil. When air drying is not feasible, a moisture reducing chemical additive, such as hydrated lime, could be incorporated into the soil. During dry weather, some addition of moisture may be required to facilitate compaction. This should also be done in a controlled manner using a tank truck with a spray bar. The moistened soil should be thoroughly blended with a disk or pulverizer to produce a uniform moisture content. If construction is performed during the winter season, fill materials should be carefully observed to see that no frozen soil is placed as fill or remains in the base materials upon which fill is placed.

Backfill for foundation walls and retaining walls may consist of lean clay or 1-inch minus crushed limestone. We advise performing field density tests on at least every other lift to monitor compaction. As an alternate, we suggest using 1-inch clean crushed limestone to provide improved drainage and to reduce lateral pressures on the walls. Due to a slight risk of migration of soil fines into the clean rock, a synthetic filter fabric, such as Mirafi 140N or equivalent, should be placed between the soil face of the excavation and the crushed limestone. If clean rock is used, it may be placed in 2-foot-thick lifts and tamped or tracked to achieve adequate densification. Exterior clean rock backfill should be capped with cohesive soil to reduce the potential for surface water infiltration.

Backfill placed next to walls should be compacted with hand operated equipment and not large self-propelled or machine operated equipment, which could result in potential overcompaction and higher lateral pressures. Compaction should be reduced within approximately 1 foot of the walls, and the walls should be observed periodically for signs of movement. If movement is detected, it may be necessary to provide bracing and/or change backfill procedures.

In addition to the minimum density requirements listed above, the soil must be stable, i.e., not “pumping” or rutting excessively under construction traffic, prior to placing additional fill or constructing foundations, floor slabs, or pavements. Field density tests should be performed on each lift of fill to document that proper compaction is achieved.

5.4 Shallow Foundation Excavations

SCI should observe all footing and floor slab excavations for problem areas, such as soft zones or areas of untreated fat clay or existing fill, prior to placing concrete. Excessive disturbance of siltier soils in footing excavations should be avoided and could complicate construction. The potential for such disturbance will increase during wetter times of the year. Footing excavations that have been excessively disturbed should be overdeepened to approved undisturbed soils. Overexcavation and replacement with structural fill should be performed where inadequate bearing materials are present in footing excavations.

The base of all excavations should be clean, free of loose soil or uncompacted fill, relatively dry and maintained near their optimum moisture content. Excavations should be protected from extreme temperatures, precipitation, and construction disturbances. To reduce the possibility of desiccation or saturation of the foundation soils, we recommend that the concrete be placed as soon as possible after excavations are made.

Groundwater is not anticipated to be encountered in the footing excavations. However, in most situations, small amounts of groundwater seepage into the excavations can be handled by means of gravity ditching and a sump pump. If greater flows are experienced, SCI should be retained to provide additional consultation.

5.5 Subgrade Considerations

Floor slab and pavement subgrades may be subjected to construction traffic and exposure to weather for an extended period and significant problems may be incurred. It may be necessary to proofroll the subgrade, in both cut and fill areas, and recompact the subgrade immediately prior to placing base rock for the floor slab or pavement. In addition, subgrades covered with base rock may be very slow to dry if precipitation occurs after placing the base rock. Therefore, we recommend that proofrolling and placement of the base rock be done as close to the time of pouring the floor slab or paving as is practical. Proofroll passes should be limited, particularly on silty subgrades, to reduce the potential for pumping of moisture from deeper within the soil profile.

Special measures may be required to facilitate construction during wet or cold weather, or where excessive areas of soft soils are identified. These measures may include, but are not limited to, the addition of lime to the subgrade soils for drying purposes, or the removal of soft spongy soils and their replacement with crushed limestone. Soft areas should be selectively undercut and backfilled with properly compacted cohesive soil. A geotextile, such as Mirafi 600X, or geogrid, such as Tensar TriAx-140, or equivalents, may be used to help stabilize particularly soft areas. Where possible, the subgrade should be sloped to provide drainage.

5.6 Excavation Bracing Requirements

In the *Federal Register*, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P." This document was issued to provide for the safety of workers entering excavations, including utility trenches, basements, footings, and others. All operations should be performed under the supervision of qualified site personnel in accordance with OSHA regulations.

5.7 Erosion Control and Land Disturbance Monitoring Program

Appropriate erosion and sediment control measures, such as proper contouring during site grading activities, the installation of siltation fences, and/or inlet protection, should be used during construction to keep eroded materials from being carried onto adjacent properties or waterbodies. Depending on the length of time the subgrade is exposed and the amount of siltation that occurs, it may be necessary to periodically remove materials collected by the sediment control systems. Timely sodding and/or seeding of sloped surfaces will help reduce this potential problem.

SCI recommends following the procedures detailed in the Stormwater Pollution Prevention Plan (SWPPP). Any site disturbing more than one acre of ground must obtain a Land Disturbance Permit from the Missouri Department of Natural Resources (MDNR). As part of the permit compliance procedures, weekly and rain-event site observations must be performed to document the changing site conditions and maintenance of control measures.

6.0 CONSTRUCTION MONITORING PROGRAM

The following list summarizes SCI's recommendations for a construction monitoring program. These services are recommended to provide quality assurance in assessing design assumptions and to document earth-related construction procedures for compliance with plans, specifications, and good engineering practice. SCI should be retained to:

- Review plans for the proposed retaining wall.
- Participate in a formal preconstruction meeting with the Owner's Representative, Civil Engineer, and Contractor, prior to construction at the site.
- Observe site preparation activities prior to construction, including stripping and proofrolling.
- Conduct and document weekly and rain-event observations at the site, maintain and update on-site paperwork, and provide submittals required by the SWPPP and Land Disturbance Permit.
- Assess the suitability of potential fill materials, including both on-site and off-site sources.
- Monitor placement and compaction of structural fill and backfill.
- Observe foundation excavations and the floor slab subgrade to assess the impact of existing fill and fat clay, and to recommend the extent of remedial measures.
- Observe footing excavations for adequacy of bearing materials.

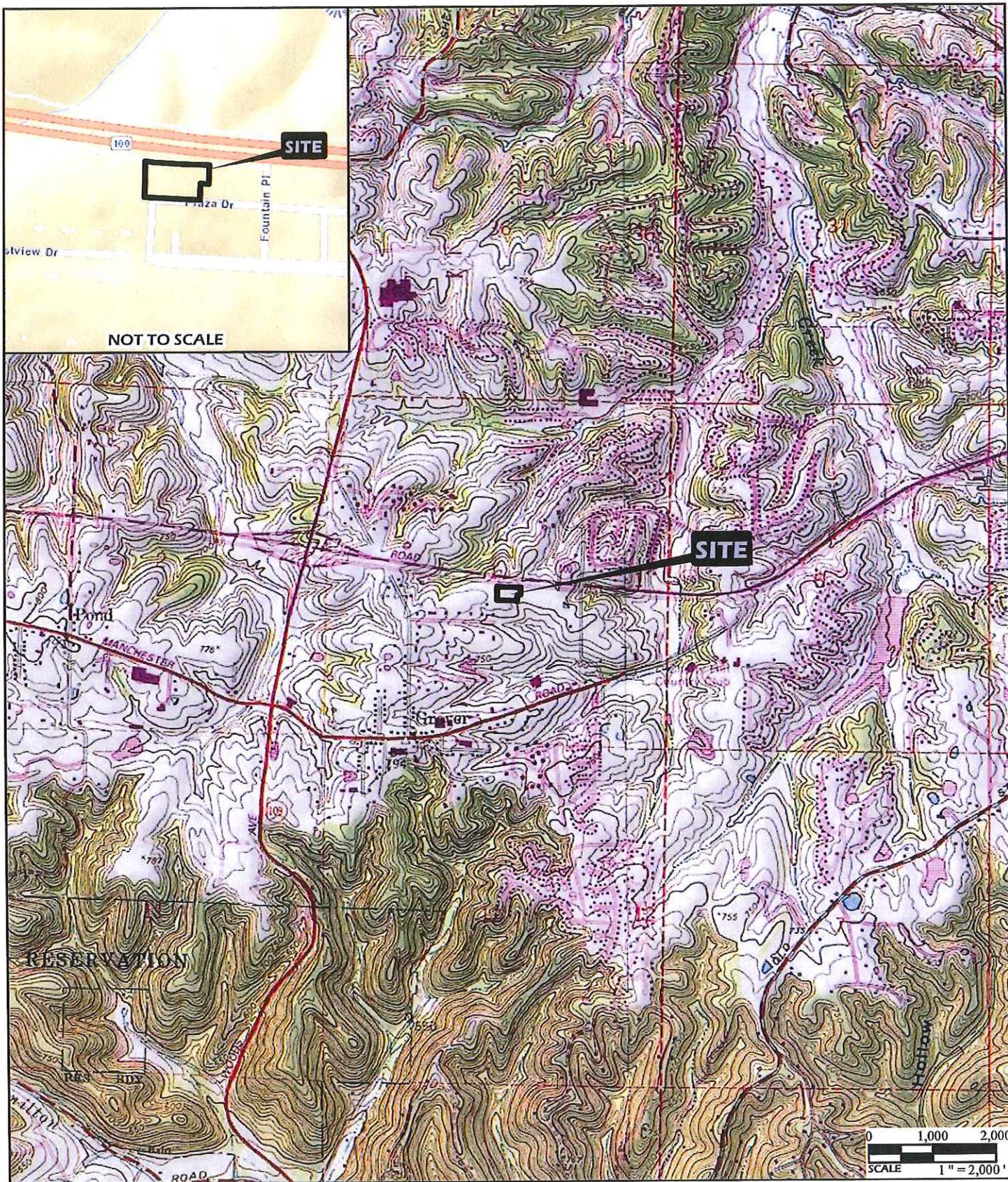
- Observe the floor slab subgrade prior to placing base rock.
- Observe backfilling of below-grade utility excavations.
- Observe pavement subgrade preparation and provide observation and testing services for the base course and pavement section.
- Check the thickness of pavement sections and, for asphaltic concrete, its density.
- Provide quality assurance testing of structural concrete and pavement materials.

7.0 LIMITATIONS

The recommendations provided herein are for the exclusive use of our client. It is imperative that SCI be contacted by any third-party interests to evaluate the applicability of this report relative to use by anyone other than our client. Our recommendations are specific only to the project described, and are not meant to supercede more stringent requirements of local ordinances. They are based on subsurface information obtained at eight specific boring locations within the project area; our understanding of the project as presented in Section 2.0, "Site and Project Description"; and geotechnical engineering practice consistent with the standard of care. No other warranty is expressed or implied. SCI should be contacted if conditions encountered are not consistent with those described.

We should also be provided with a set of final development plans, once they are available, to review whether our recommendations have been understood and applied correctly, and to assess the need for additional exploration or analysis. Failure to provide these documents to SCI may nullify some or all of the recommendations provided herein. In addition, any changes in the planned project or changed site conditions may require revised or additional recommendations on our part.

The final part of our geotechnical service should consist of direct observation during construction, to observe that conditions actually encountered are consistent with those described in this report, and to assess the appropriateness of the analyses and recommendations contained herein. SCI cannot assume responsibility or liability for the adequacy of its recommendations without being retained to observe construction.



<p align="center">PROJECT NAME STONECREST AT WILDWOOD WILDWOOD, MISSOURI</p>			
<p align="center">VICINITY AND TOPOGRAPHIC MAP</p>			
DRAWN BY	RCV	DATE	JOB NUMBER
CHECKED BY	CLM	08/2016	2016-0607.10

GENERAL NOTES/LEGEND
 USGS TOPOGRAPHIC MAP
 EUREKA, MISSOURI QUADRANGLE
 MANCHESTER, MISSOURI QUADRANGLE
 DATED 1954, PHOTO REVISED 1993
 10' CONTOURS

STREET MAP
http://goto.arcgisonline.com/maps/World_Street_Map

FIGURE
1

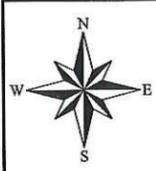


GENERAL NOTES/LEGEND

- INDICATES APPROXIMATE SOIL BORING LOCATIONS.
- AERIAL PHOTOGRAPH OBTAINED FROM BING MAPS.
- ©2011 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.

PROJECT NAME
 STONECREST AT WILDWOOD
 WILDWOOD, MISSOURI

AERIAL PHOTOGRAPH



JOB NUMBER
2016-0607.10

DATE
08/2016

DRAWN BY
RCV

CHECKED BY
CLM

FIGURE
2



PROPOSED RETAINING WALL

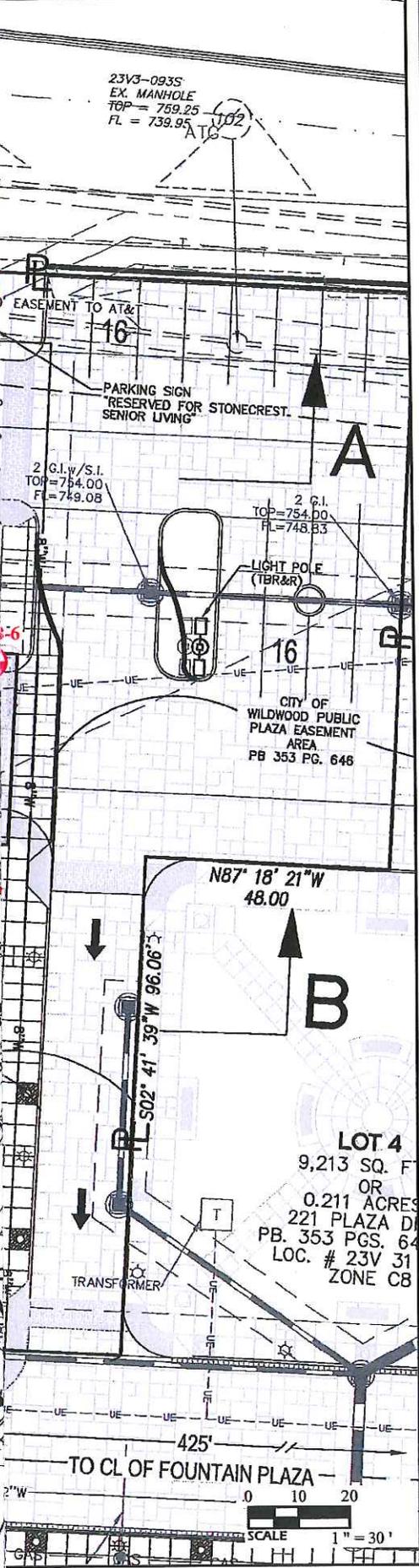
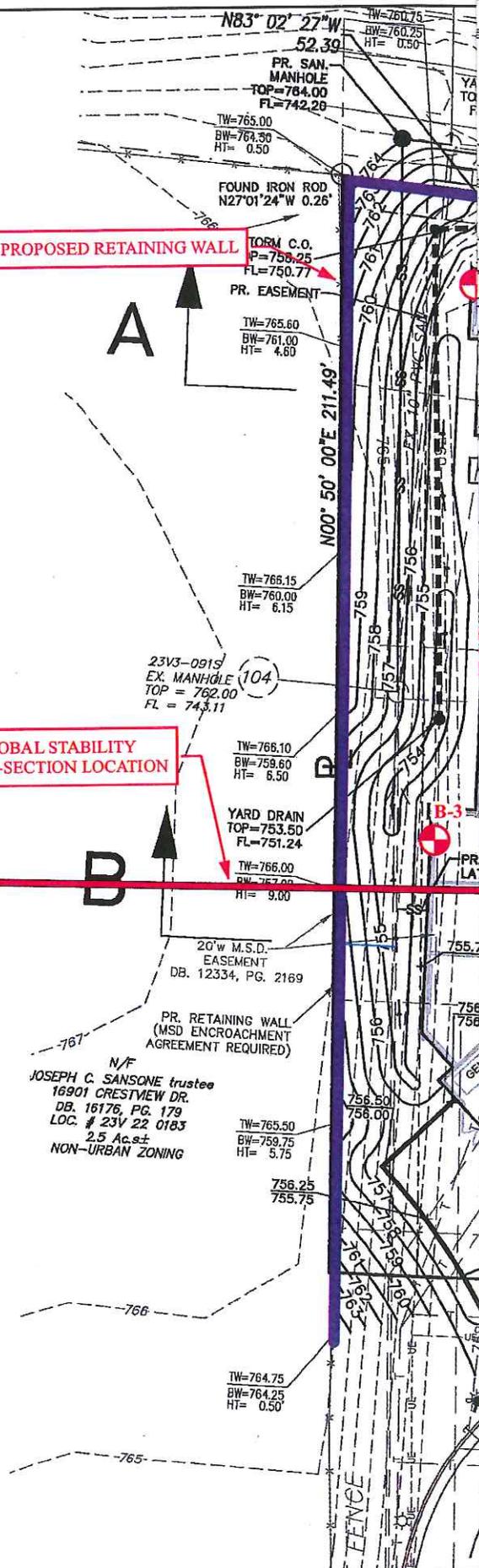
GLOBAL STABILITY CROSS-SECTION LOCATION

A

B

A

B



GENERAL NOTES/LEGEND

INDICATES APPROXIMATE SOIL BORING LOCATION.

PLAN DATED 4/15/2016 BY STOCK & ASSOCIATES. DIMENSIONS AND LOCATIONS ARE APPROXIMATE. ACTUAL MAY VARY. DRAWING SHALL NOT BE USED OUTSIDE THE CONTEXT OF THE REPORT FOR WHICH IT WAS GENERATED.

PROJECT NAME

STONECREST AT WILDWOOD
WILDWOOD, MISSOURI

SITE PLAN

JOB NUMBER

2016-0607.10

DATE

08/2016

DRAWN BY

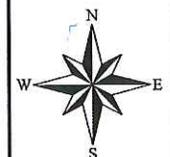
RCV

CHECKED BY

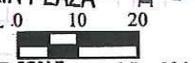
CLM

FIGURE

3



TO CL OF FOUNTAIN PLAZA



SCALE 1" = 30'

N/F
JOSEPH C. SANSONE trustee
16901 CRESTVIEW DR.
DB. 16176, PG. 179
LOC. # 23V 22 0183
2.5 Ac.±
NON-URBAN ZONING

LOT 4
9,213 SQ. FT.
OR
0.211 ACRES
221 PLAZA DR.
PB. 353 PGS. 64
LOC. # 23V 31
ZONE C8

TRANSFORMER

20'w M.S.D. EASEMENT
DB. 12334, PG. 2169

PR. RETAINING WALL
(MSD ENCROACHMENT
AGREEMENT REQUIRED)

TW=765.50
BW=759.75
HT= 5.75

TW=764.75
BW=764.25
HT= 0.50'

TW=766.10
BW=759.60
HT= 6.50

TW=766.15
BW=760.00
HT= 6.15

TW=765.60
BW=761.00
HT= 4.60

TW=765.00
BW=764.30
HT= 0.50

TW=760.75
BW=760.25
HT= 0.50'

23V3-093S
EX. MANHOLE
TOP = 759.25
FL = 739.95

23V3-091S
EX. MANHOLE
TOP = 762.00
FL = 743.11

TORM C.O.
P=750.25
FL=750.77

FOUND IRON ROD
N27°01'24"W 0.26'

N83° 02' 27"W
52.39'

N87° 18' 21"W
48.00'

S02° 41' 39"W 96.06'

N00° 50' 00"E 211.49'

EASEMENT TO AT&T

PARKING SIGN
RESERVED FOR STONECREST.
SENIOR LIVING

LIGHT P.O.E
(TBR&R)

2 G.I.
TOP=754.00
FL=748.53

2 G.I.w/S.I.
TOP=754.00
FL=749.08

CITY OF WILDWOOD PUBLIC PLAZA EASEMENT AREA
PB 353 PG. 648

20'w M.S.D. EASEMENT
DB. 12334, PG. 2169

PR. RETAINING WALL
(MSD ENCROACHMENT
AGREEMENT REQUIRED)

N/F
JOSEPH C. SANSONE trustee
16901 CRESTVIEW DR.
DB. 16176, PG. 179
LOC. # 23V 22 0183
2.5 Ac.±
NON-URBAN ZONING

TW=765.50
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CITY OF WILDWOOD PUBLIC PLAZA EASEMENT AREA
PB 353 PG. 648

20'w M.S.D. EASEMENT
DB. 12334, PG. 2169

PR. RETAINING WALL
(MSD ENCROACHMENT
AGREEMENT REQUIRED)

N/F
JOSEPH C. SANSONE trustee
16901 CRESTVIEW DR.
DB. 16176, PG. 179
LOC. # 23V 22 0183
2.5 Ac.±
NON-URBAN ZONING

TW=765.50
BW=759.75
HT= 5.75

TW=764.75
BW=764.25
HT= 0.50'

TW=766.10
BW=759.60
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CITY OF WILDWOOD PUBLIC PLAZA EASEMENT AREA
PB 353 PG. 648

20'w M.S.D. EASEMENT
DB. 12334, PG. 2169

PR. RETAINING WALL
(MSD ENCROACHMENT
AGREEMENT REQUIRED)

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DB. 16176, PG. 179
LOC. # 23V 22 0183
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NON-URBAN ZONING

TW=765.50
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BW=764.25
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HT= 6.15

TW=765.60
BW=761.00
HT= 4.60

TW=765.00
BW=764.30
HT= 0.50

TW=760.75
BW=760.25
HT= 0.50'

23V3-093S
EX. MANHOLE
TOP = 759.25
FL = 739.95

23V3-091S
EX. MANHOLE
TOP = 762.00
FL = 743.11

TORM C.O.
P=750.25
FL=750.77

FOUND IRON ROD
N27°01'24"W 0.26'

N83° 02' 27"W
52.39'

N87° 18' 21"W
48.00'

S02° 41' 39"W 96.06'

N00° 50' 00"E 211.49'

EASEMENT TO AT&T

PARKING SIGN
RESERVED FOR STONECREST.
SENIOR LIVING

LIGHT P.O.E
(TBR&R)

2 G.I.
TOP=754.00
FL=748.53

2 G.I.w/S.I.
TOP=754.00
FL=749.08

CITY OF WILDWOOD PUBLIC PLAZA EASEMENT AREA
PB 353 PG. 648

20'w M.S.D. EASEMENT
DB. 12334, PG. 2169

PR. RETAINING WALL
(MSD ENCROACHMENT
AGREEMENT REQUIRED)

N/F
JOSEPH C. SANSONE trustee
16901 CRESTVIEW DR.
DB. 16176, PG. 179
LOC. # 23V 22 0183
2.5 Ac.±
NON-URBAN ZONING

TW=765.50
BW=759.75
HT= 5.75

TW=764.75
BW=764.25
HT= 0.50'

TW=766.10
BW=759.60
HT= 6.50

TW=766.15
BW=760.00
HT= 6.15

TW=765.60
BW=761.00
HT= 4.60

TW=765.00
BW=764.30
HT= 0.50

TW=760.75
BW=760.25
HT= 0.50'

23V3-093S
EX. MANHOLE
TOP = 759.25
FL = 739.95

23V3-091S
EX. MANHOLE
TOP = 762.00
FL = 743.11

TORM C.O.
P=750.25
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FOUND IRON ROD
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N83° 02' 27"W
52.39'

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48.00'

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CITY OF WILDWOOD PUBLIC PLAZA EASEMENT AREA
PB 353 PG. 648

20'w M.S.D. EASEMENT
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PR. RETAINING WALL
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JOSEPH C. SANSONE trustee
16901 CRESTVIEW DR.
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LOC. # 23V 22 0183
2.5 Ac.±
NON-URBAN ZONING

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HT= 5.75

TW=764.75
BW=764.25
HT= 0.50'

TW=766.10
BW=759.60
HT= 6.50

TW=766.15
BW=760.00
HT= 6.15

TW=765.60
BW=761.00
HT= 4.60

TW=765.00
BW=764.30
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23V3-093S
EX. MANHOLE
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FL = 739.95

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EX. MANHOLE
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FL = 743.11

TORM C.O.
P=750.25
FL=750.77

FOUND IRON ROD
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N83° 02' 27"W
52.39'

N87° 18' 21"W
48.00'

S02° 41' 39"W 96.06'

N00° 50' 00"E 211.49'

EASEMENT TO AT&T

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LIGHT P.O.E
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2 G.I.
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2 G.I.w/S.I.
TOP=754.00
FL=749.08

CITY OF WILDWOOD PUBLIC PLAZA EASEMENT AREA
PB 353 PG. 648

20'w M.S.D. EASEMENT
DB. 12334, PG. 2169

PR. RETAINING WALL
(MSD ENCROACHMENT
AGREEMENT REQUIRED)

N/F
JOSEPH C. SANSONE trustee
16901 CRESTVIEW DR.
DB. 16176, PG. 179
LOC. # 23V 22 0183
2.5 Ac.±
NON-URBAN ZONING

TW=765.50
BW=759.75
HT= 5.75

TW=764.75
BW=764.25
HT= 0.50'

TW=766.10
BW=759.60
HT= 6.50

TW=766.15
BW=760.00
HT= 6.15

TW=765.60
BW=761.00
HT= 4.60

TW=765.00
BW=764.30
HT= 0.50

TW=760.75
BW=760.25
HT= 0.50'

23V3-093S
EX. MANHOLE
TOP = 759.25
FL = 739.95

23V3-091S
EX. MANHOLE
TOP = 762.00
FL = 743.11

TORM C.O.
P=750.25
FL=750.77

FOUND IRON ROD
N27°01'24"W 0.26'

N83° 02' 27"W
52.39'

Appendix A



SCI ENGINEERING, INC.

130 Point West Boulevard
St. Charles, Missouri 63301
636-949-8200 Fax 636-949-8269
www.sciengineering.com

BORING LOG LEGEND AND NOMENCLATURE

Depth is in feet below ground surface. **Elevation** is in feet mean sea level, site datum, or as otherwise noted.

Sample Type

- SS** Split-spoon sample, disturbed, obtained by driving a 2-inch-O.D. split-spoon sampler (ASTM D 1586).
- NX** Diamond core bit, nominal 2-inch-diameter rock sample (ASTM D 2113).
- ST** Thin-walled (Shelby) tube sample, relatively undisturbed, obtained by pushing a 3-inch-diameter, tube (ASTM D 1587).
- CS** Continuous sample tube system, relatively undisturbed, obtained by split-barrel sampler in conjunction with auger advancement.
- SV** Shear vane, field test to determine strength of cohesive soil by pushing or driving a 2-inch-diameter vane, and then shearing by torquing soil in existing and remolded states (ASTM D 2573).
- BS** Bag sample, disturbed, obtained from cuttings.

Recovery is expressed as a ratio of the length recovered to the total length pushed, driven, cored.

Blows Numbers indicate blows per 6 inches of split-spoon sampler penetration when driven with a 140-pound hammer falling freely 30 inches. The number of total blows obtained for the second and third 6-inch increments is the N value (Standard Penetration Test or SPT) in blows per foot (ASTM D 1586). Practical refusal is considered to be 50 or more blows without achieving 6 inches of penetration, and is expressed as a ratio of 50 to actual penetration, e.g., 50/2 (50 blows for 2 inches).

For analysis, the N value is used when obtained by a cathead and rope system. When obtained by an automatic hammer, the N value may be increased by a factor of 1.3.

Vane Shear Strength is expressed as the peak strength (existing state) / the residual strength (remolded state).

Description indicates soil constituents and other classification characteristics (ASTM D 2488) and the Unified Soil Classification (ASTM D 2487). Secondary soil constituents (expressed as a percentage) are described as follows:

Trace	<5
Few	5-15
With	>15-30

Stratigraphic Breaks may be observed or interpreted, and are indicated by a dashed line. Transition between described materials may be gradual.

Laboratory Test Results

- Natural moisture content (ASTM D 2216) in percent.
- Dry density in pounds per cubic foot (pcf).
- Hand penetrometer value of apparently intact cohesive sample in kips per square foot (ksf).
- Unconfined compressive strength (ASTM D 2166) in kips per square foot (ksf).
- Liquid and Plastic Limits (ASTM D 4318) in percent.

RQD (Rock Quality Designation) is the ratio between the total length of core segments 4 inches or more in length and the total length of core drilled. RQD (expressed as a percentage) indicates insitu rock quality as follows:

Excellent	90 to 100
Good	75 to 90
Fair	50 to 75
Poor	25 to 50
Very Poor	0 to 25



BORING LOG

PROJECT Stonecrest at Wildwood

BORING NUMBER B-1

LOCATION Wildwood, Missouri

SHEET 1 of 1

DRILLER Midwest Drilling, Inc.

HAMMER Auto

PROJECT NO. 2016-0607.10

EQUIPMENT CME-750 w/CFA

ELEVATION 761±

DATE DRILLED 07/27/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX	
1	1	SS	9/18	2	FILL: Brown and gray, lean clay, with crushed rock			20	2.5				760	
				3										
5	2	SS	18/18	3	FAT CLAY (CH): Brown and gray			25	5.5				755	
				5										
10	3	SS	18/18	3	GRAVELLY FAT CLAY (CH): Reddish brown, gravel is fine chert fragments			19	8.5				750	
				5										
15	4	SS	18/18	5	Boring terminated at 15 feet.			31	6.5				745	
				6										
20	5	SS	12/18	13				15	9.0				740	
				44										
				50/3"										

WATER LEVEL:

X NONE OBSERVED WHILE DRILLING
 _____ ft WHILE DRILLING
 _____ ft _____ HRS AFTER DRILLING
 _____ ft _____ DAYS AFTER DRILLING

REMARKS:



BORING LOG

PROJECT Stonecrest at Wildwood **BORING NUMBER** B-2
LOCATION Wildwood, Missouri **SHEET** 1 of 1
DRILLER Midwest Drilling, Inc. **HAMMER** Auto **PROJECT NO.** 2016-0607.10
EQUIPMENT CME-750 w/CFA **ELEVATION** 758± **DATE DRILLED** 07/27/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)	
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX		
5	1	SS	13/18	3 3 5	FILL: Brown, gray, and reddish brown fat clay, with fine to coarse sand and fine gravel			15		6.0					755
	2	SS	18/18	3 4 5	FAT CLAY (CH): Brown and gray			25		6.0		71	53		
	3	SS	18/18	3 5 6	Trace fine to coarse sand			26		6.0					750
	4	SS	18/18	3 5 6				26		5.0					
	5	SS	18/18	7 13 33	GRAVELLY SHALEY FAT CLAY (CH): Reddish brown and gray, gravel is fine chert fragments			13		9.0					745
15					Boring terminated at 15 feet.										740
20															735

WATER LEVEL:

NONE OBSERVED WHILE DRILLING
 _____ ft WHILE DRILLING
 _____ ft _____ HRS AFTER DRILLING
 _____ ft _____ DAYS AFTER DRILLING

REMARKS:



BORING LOG

PROJECT Stonecrest at Wildwood

BORING NUMBER B-3

LOCATION Wildwood, Missouri

SHEET 1 of 1

DRILLER Midwest Drilling, Inc.

HAMMER Auto

PROJECT NO. 2016-0607.10

EQUIPMENT CME-750 w/CFA

ELEVATION 760±

DATE DRILLED 07/26/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX	
5	1	SS	18/18	2 3 6	FAT CLAY (CH): Brown and gray			21	9.0				755	
	2	SS	18/18	4 6 8										
10	3	ST	19/24		Becomes gray, trace tan, trace fine to coarse chert gravel			27	95				750	
	4	SS	15/18	19 31 44	GRAVELLY FAT CLAY (CH): Reddish brown, gravel is fine chert fragments									
15					SHALEY FAT CLAY (CH): Reddish brown and gray, with fine chert fragments			13	9.0				745	
	5	SS	13/18	9 15 23										
20					GRAVELLY SHALEY FAT CLAY (CH): Gray with brown, gravel is fine chert fragments			11	9.0				740	
	6	SS	14/18	8 10 12										
					Auger refusal at 23.3 feet.									

WATER LEVEL:

X NONE OBSERVED WHILE DRILLING
 _____ ft WHILE DRILLING
 _____ ft _____ HRS AFTER DRILLING
 _____ ft _____ DAYS AFTER DRILLING

REMARKS:



BORING LOG

PROJECT Stonecrest at Wildwood **BORING NUMBER** B-4
LOCATION Wildwood, Missouri **SHEET** 1 of 1
DRILLER Midwest Drilling, Inc. **HAMMER** Auto **PROJECT NO.** 2016-0607.10
EQUIPMENT CME-750 w/CFA **ELEVATION** 756± **DATE DRILLED** 07/27/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX	
5	1	SS	15/18	1	FILL: Gray, clay with rock fragments		1	30	1.5				755	
				2	FILL: Brown and gray, fat clay									
5	2	SS	16/18	2	FAT CLAY (CH): Brown and gray, trace fine to coarse gravel			30	2.5				750	
				3										
10	3	SS	18/18	3	Trace reddish brown			32	6.5				745	
				4										
10	4	SS	11/18	12	GRAVELLY FAT CLAY (CH): Brown, gravel is fine chert, with fine to coarse sand			9					745	
				13										
15	5	SS	9/18	13	GRAVELLY SHALEY FAT CLAY (CH): Tan and gray, gravel is fine chert fragments			12					740	
				27										
15				45	Boring terminated at 15 feet.								740	
20													735	

WATER LEVEL: <input checked="" type="checkbox"/> NONE OBSERVED WHILE DRILLING _____ ft WHILE DRILLING _____ ft _____ HRS AFTER DRILLING _____ ft _____ DAYS AFTER DRILLING	REMARKS: 1) Driller's observation.
---	--



BORING LOG

PROJECT Stonecrest at Wildwood

BORING NUMBER B-5

LOCATION Wildwood, Missouri

SHEET 1 of 1

DRILLER Midwest Drilling, Inc.

HAMMER Auto

PROJECT NO. 2016-0607.10

EQUIPMENT CME-750 w/CFA

ELEVATION 755±

DATE DRILLED 07/28/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)	
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX		
5	1	SS	13/18	4 6	FILL: Brown and gray, fat clay, with fine to coarse sand, fine gravel, and asphalt			13		9.0					
	2	SS	18/18	2 4	FAT CLAY (CH): Brown and gray, trace fine gravel			26		5.5					750
	3	SS	18/18	3 4				32		4.0					
	4	SS	18/18	2 3				24		7.0					745
	5	SS	11/18	30 27	GRAVELLY SHALEY FAT CLAY (CH): Brown and gray, gravel is fine chert fragments			9							740
15				39	Boring terminated at 15 feet.									740	
20														735	

WATER LEVEL:

X NONE OBSERVED WHILE DRILLING
 _____ ft WHILE DRILLING
 _____ ft _____ HRS AFTER DRILLING
 _____ ft _____ DAYS AFTER DRILLING

REMARKS:



BORING LOG

PROJECT Stonecrest at Wildwood BORING NUMBER B-6
 LOCATION Wildwood, Missouri SHEET 1 of 1
 DRILLER Midwest Drilling, Inc. HAMMER Auto PROJECT NO. 2016-0607.10
 EQUIPMENT CME-750 w/CFA ELEVATION 754± DATE DRILLED 07/26/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)
	NUMBER	TYPE	RECOVERY (in/ft)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX	
5	1	SS	18/18	2	3	3" ASPHALT		25	94	5.5	2.6	60	43	750
				3	3	4" CRUSHED ROCK								
	2	ST	22/24			Trace fine to coarse chert gravel								
	3	SS	12/18	2	3	Trace fine chert gravel								
	4	SS	11/18	4	12	GRAVELLY FAT CLAY (CH): Brown and gray, gravel is fine chert fragments								
	5	SS	18/18	4	9	SHALEY FAT CLAY (CH): Brown and gray								
20	6	SS	12/18	10	16		15	18	9.0					745
				50/4"	11	11		14	9.0					740
						Auger refusal at 20.5 feet.								735
														730

WATER LEVEL: <input checked="" type="checkbox"/> NONE OBSERVED WHILE DRILLING <input type="checkbox"/> ft WHILE DRILLING <input type="checkbox"/> ft _____ HRS AFTER DRILLING <input type="checkbox"/> ft _____ DAYS AFTER DRILLING	REMARKS:
--	-------------------------



BORING LOG

PROJECT Stonecrest at Wildwood **BORING NUMBER** B-7
LOCATION Wildwood, Missouri **SHEET** 1 of 1
DRILLER Midwest Drilling, Inc. **HAMMER** Auto **PROJECT NO.** 2016-0607.10
EQUIPMENT CME-750 w/CFA **ELEVATION** 754± **DATE DRILLED** 07/28/16

DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX	
1	1	SS	5/18	1	CRUSHED ROCK		13							
				2										FILL: Crushed rock and brown, lean clay
2	2	SS	17/18	3	FAT CLAY (CH): Brown and gray		32		2.5				750	
				5										
3	3	SS	17/18	4	With fine chert fragments		27		3.5					
				7										
4	4	SS	13/18	20	CLAYEY GRAVEL (GC): Brown and gray, gravel is fine chert fragments		9						745	
				17										
10					Boring terminated at 10 feet.									
15													740	
20													735	
													730	

WATER LEVEL: <input checked="" type="checkbox"/> NONE OBSERVED WHILE DRILLING <input type="checkbox"/> ft WHILE DRILLING <input type="checkbox"/> ft _____ HRS AFTER DRILLING <input type="checkbox"/> ft _____ DAYS AFTER DRILLING	REMARKS:
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BORING LOG

PROJECT Stonecrest at Wildwood BORING NUMBER B-8
 LOCATION Wildwood, Missouri SHEET 1 of 1
 DRILLER Midwest Drilling, Inc. HAMMER Auto PROJECT NO. 2016-0607.10
 EQUIPMENT CME-750 w/CFA ELEVATION 756± DATE DRILLED 07/28/16

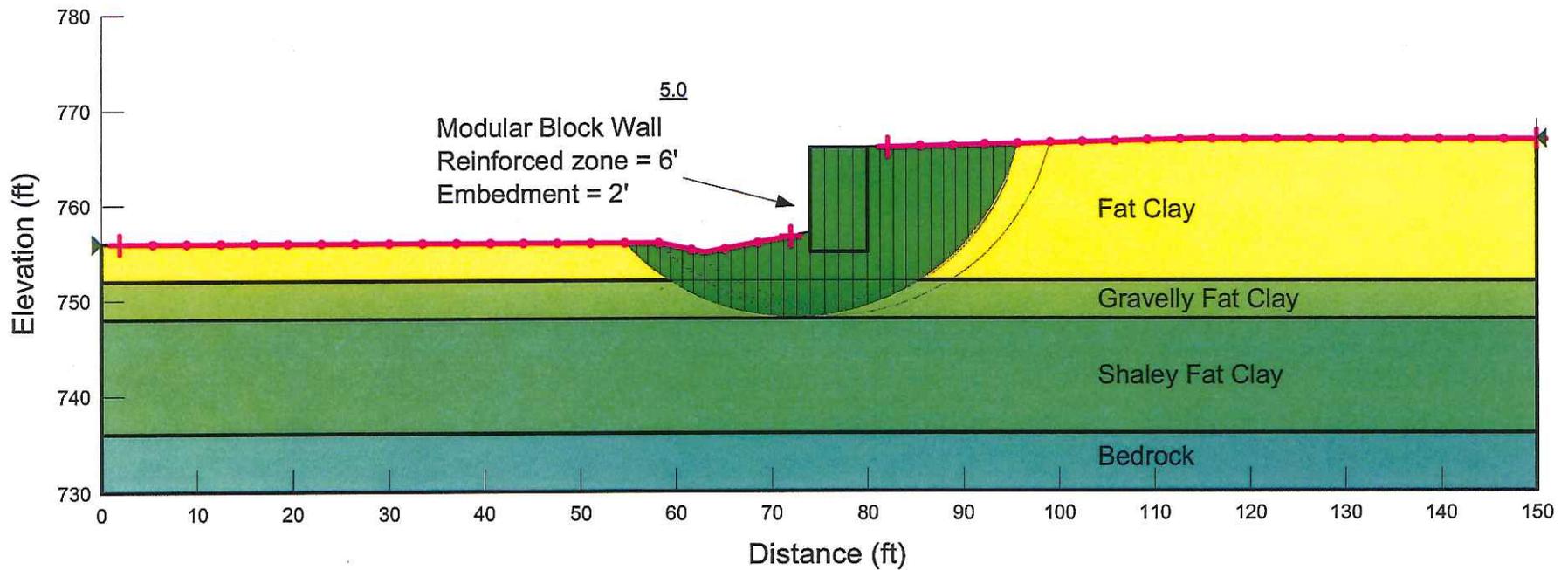
DEPTH (ft)	SAMPLE				DESCRIPTION (UNIFIED SOIL CLASSIFICATION)	GRAPHIC	SEE REMARK NO.	LABORATORY TEST RESULTS						ELEVATION (ft)
	NUMBER	TYPE	RECOVERY (in/in)	BLOWS (per 6 in)				MOISTURE CONTENT (%)	DIRY DENSITY (pcf)	HAND PENETROMETER (ksf)	UNCONFINED COMPRESSIVE STRENGTH (ksf)	LIQUID LIMIT	PLASTICITY INDEX	
5	1	SS	6/18	38 50/2"	2" ASPHALT 3" CRUSHED ROCK FILL: Crushed rock and grayish brown, lean clay			7		4.0				755
	2	SS	18/18	1 2 4	FAT CLAY (CH): Brown and gray			32		3.0				750
	3	SS	18/18	3 4 5				24		5.5				
	4	SS	18/18	3 3 5				29		3.5				
10					Boring terminated at 10 feet.									745
15														740
20														735

WATER LEVEL: _____ NONE OBSERVED WHILE DRILLING _____ 3.0 ft WHILE DRILLING _____ ft _____ HRS AFTER DRILLING _____ ft _____ DAYS AFTER DRILLING	REMARKS:
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Appendix B

2016-0607.10: Stonecrest at Wildwood

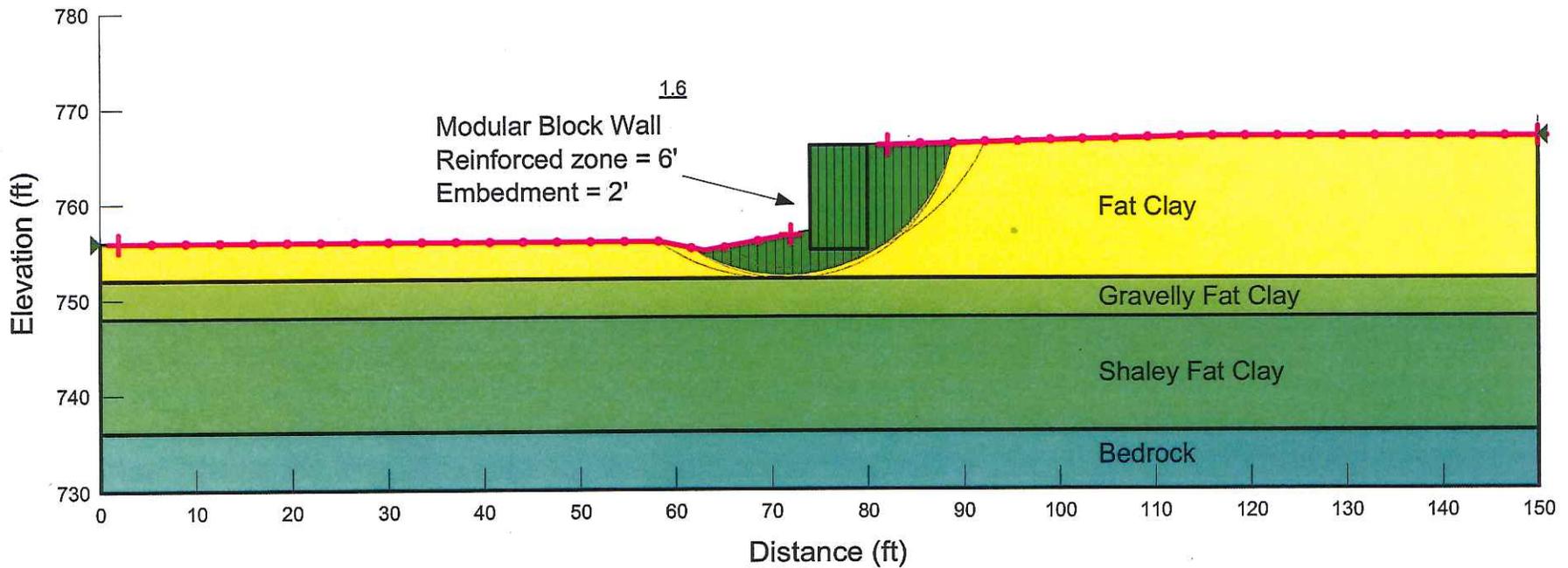
Cross Section A-A: Short Term



- Name: Fat Clay Unit Weight: 121 pcf Cohesion': 1,300 psf
- Name: Gravelly Fat Clay Unit Weight: 121 pcf Cohesion': 1,000 psf
- Name: Shaley Fat Clay Unit Weight: 125 pcf Cohesion': 1,500 psf
- Name: Bedrock
- Name: Reinforced Zone Unit Weight: 135 pcf

2016-0607.10: Stonecrest at Wildwood

Cross Section A-A: Long Term

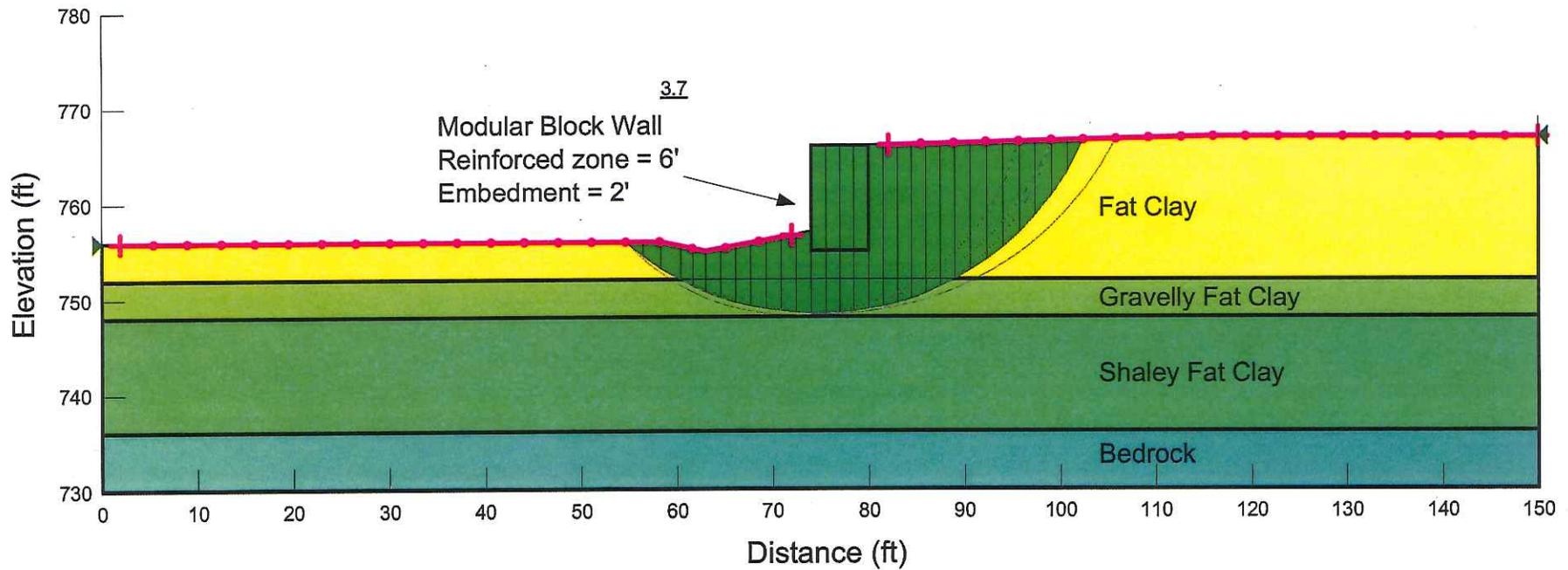


Name: Fat Clay Unit Weight: 121 pcf Cohesion': 150 psf Phi': 19 °
Name: Gravelly Fat Clay Unit Weight: 121 pcf Cohesion': 100 psf Phi': 22 °
Name: Shaley Fat Clay Unit Weight: 125 pcf Cohesion': 250 psf Phi': 12 °
Name: Bedrock
Name: Reinforced Zone Unit Weight: 135 pcf

2016-0607.10: Stonecrest at Wildwood

Cross Section A-A: Seismic

PGA = 0.08 g



Name: Fat Clay	Unit Weight: 121 pcf	Cohesion': 1,040 psf	Phi': 6 °
Name: Gravelly Fat Clay	Unit Weight: 121 pcf	Cohesion': 800 psf	Phi': 7 °
Name: Shaley Fat Clay	Unit Weight: 125 pcf	Cohesion': 1,200 psf	Phi': 6 °
Name: Bedrock			
Name: Reinforced Zone	Unit Weight: 135 pcf		

Important Information about Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time to perform additional study.* Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.* *Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/THE BEST PEOPLE ON EARTH exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

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SCI ENGINEERING, INC.

130 Point West Boulevard
St. Charles, Missouri 63301
636-949-8200 Fax 636-919-8769
www.sciengineering.com

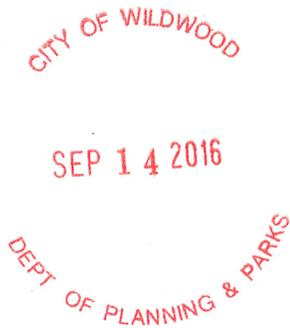
Phase One Environmental Site Assessment

**STONECREST AT WILDWOOD
WILDWOOD, MISSOURI**

August 17, 2016

Prepared for:

NORTHPOINT DEVELOPMENT



SCI No. 2016-0607.20



SCI ENGINEERING, INC.

CONSULTANTS IN DEVELOPMENT,
DESIGN AND CONSTRUCTION
GEO TECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

August 17, 2016

Mr. Jed Momot
NorthPoint Development
5015 NW Canal Street, Ste. 200
Riverside, Missouri 64050

RE: Phase One Environmental Site Assessment
Stonecrest at Wildwood
Wildwood, Missouri
SCI No. 2016-0607.20

Dear Mr. Momot:

SCI Engineering, Inc. (SCI) has completed the Phase One Environmental Site Assessment at the above-referenced site, the report of which is contained herein. Phase One activities consisted of historical and public records research, historical review, interviews, and a reconnaissance survey.

Based on the activities which were performed in general accordance with the ASTM Practice E 1527-13 for Phase One Environmental Site Assessments, SCI identified no evidence of Recognized Environmental Conditions in connection with the subject site.

SCI appreciates being of service to you on this project. Please contact us if you have any questions or comments regarding this report.

Respectfully,

SCI ENGINEERING, INC.

A handwritten signature in blue ink that reads "David L. Forseth".

David L. Forseth
Staff Scientist

DLF/EPG/hmm

Enclosure

One additional copy submitted

A handwritten signature in blue ink that reads "Edwin P. Grimmer".

Edwin P. Grimmer, P.E.
Vice President

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Phase One Environmental Site Assessment

STONECREST AT WILDWOOD WILDWOOD, MISSOURI

1.0 INTRODUCTION

SCI Engineering, Inc. (SCI) was retained by Mr. Jed Momot, NorthPoint Development, to perform a Phase One Environmental Site Assessment (Phase One) on a 1.648-acre undeveloped parcel addressed at 251 Plaza Drive in the city of Wildwood, Missouri (site or subject site). These services were performed in accordance with our proposal dated July 20, 2016.

The purpose of this assessment was to explore for evidence of the presence of Recognized Environmental Conditions (RECs), in accordance with the ASTM Practice E 1527-13 for Phase One Environmental Site Assessments. An REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of the appropriate governmental agencies.

The performance of this assessment may also identify Historical Recognized Environmental Conditions (HRECs) and/or Controlled Recognized Environmental Conditions (CRECs). An HREC is defined as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority, or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (for example property use restrictions, Activity and Use Limitations, Institutional Controls, or Engineering Controls). A CREC is identified as a Recognized Environmental Condition, which involves a past release of hazardous substances, or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority and that is subject to activity and use limitations.

Phase One activities included historical and public records research, interviews, and a reconnaissance (walkover) survey. The details of these activities are outlined herein.

2.0 SITE RECONNAISSANCE

A site reconnaissance was conducted by Mr. David L. Forseth, of SCI on August 4, 2016, under the direction of Environmental Professional, Mr. Edwin P. Grimmer, P.E., of SCI. The reconnaissance was performed by walking the perimeter and across portions of the remainder of the site. The purpose of the site reconnaissance was to assess the physical conditions at and adjacent to the site. A *Vicinity and Topographic Map*, Figure 1, a *Site/Surrounding Properties Map*, Figure 2, and an *Aerial Photograph*, Figure 3, are enclosed. Photographic documentation is enclosed in Appendix A.

2.1 Site Use

At the time of SCI's site reconnaissance, the subject site consisted of an undeveloped grass-covered lot and a portion of a parking lot. No structures were present on-site. No evidence of stressed vegetation, stained soil or pavement, or wastewater was observed on-site.

2.2 Heating and Cooling Systems

No structures were found to be present during SCI's site reconnaissance. Therefore, no heating or cooling systems were found on-site.

2.3 Water and Sewage Systems

No structures were observed on the subject site during SCI's site reconnaissance. Therefore, no water or sewage systems were observed. However, a small concrete pad was noted on the west-central portion of the site with two PVC pipes protruding from its center. According to the current owner, Mr. Scott Haley, these pipes are connected to the sewer system. SCI does not consider the sewer system on the subject site to represent an REC.

2.4 Wastewater Systems

No structures were observed on the subject site during SCI's site reconnaissance. Therefore, no wastewater system was observed.

2.5 Adjacent Property Use

The subject site was bound to the north by undeveloped land, beyond which was Missouri Highway 100. Adjacent to the east of the site was a parking lot, beyond which was a commercial structure that hosted Wildwood Vision Specialists and a dentist office. Adjacent to the south of the site was Plaza Drive, beyond which was a public parking garage and The Wildwood Hotel. Adjacent to the west of the site was undeveloped land, beyond which was a residence.

2.6 Aboveground Storage Tanks (ASTs)/Underground Storage Tanks (USTs)

No evidence of ASTs or USTs were observed on the subject site during the site reconnaissance. However, as further discussed in Section 5.9, two LUST listings were identified within the ASTM-prescribed minimum search distance.

2.7 Polychlorinated Biphenyl (PCB) Survey

SCI conducted a survey of the subject site for evidence of PCB-containing transformers, equipment, drums, storage containers, etc. A pad-mounted transformer was observed in the general vicinity of the subject site. This transformer appeared to be in good condition with no signs of staining or leakage, and therefore, does not represent an REC to the subject site. No other suspect PCB-containing equipment was observed on-site.

Under EPA rules, transformers are assumed to contain fluid containing 50 to 499 parts per million (ppm) PCBs unless tested. The local utility company should be consulted should leakage from any of the transformers in the vicinity of the subject site be observed in the future. Any impact resulting from these transformers would be the responsibility of the utility company which owns them.

2.8 Solid Waste/Hazardous Waste/Chemical Use

During SCI's reconnaissance, no solid waste, hazardous waste, or chemical use was observed on-site.

3.0 PHYSICAL SETTING

3.1 Topography

The elevation of the subject site is approximately 760 feet above mean sea level (msl), according to the *Vicinity and Topographic Map*, contained as Figure 1. This map is a reproduction of a portion of the United States Geological Survey (USGS) topographic map for the Eureka and Manchester, Missouri quadrangle dated 1954 (photo revised 1993). The subject site appeared to slope downgradient to the south/southeast during the site reconnaissance, which is consistent with the topographic map.

SCI was not provided with a boundary survey for the subject site in which topographic contours are depicted. Therefore, SCI was unable to compare the actual topography to that on the USGS map, which is useful in determining whether substantial filling has occurred.

3.2 Hydrology and Hydrogeology

SCI did not observe evidence of ponds, lakes, rivers, or streams during the site reconnaissance. Surface runoff on the subject site flowed primarily in a south/southeastern direction. Due to the curbing and guttering of adjacent properties, it is unlikely for the subject site to receive surface runoff.

The presence and flow direction of a perched groundwater table can only be conclusively verified by subsurface investigation. However, if present, its flow direction would normally parallel the undisturbed surface topography. Therefore, groundwater flow on the subject site would likely be to the south/southeast. The site will likely receive groundwater flow from the adjoining property to the north/northwest, which consisted of Missouri Highway 100 and residences. Current groundwater flow is not an REC.

According to *Water Resources of the St. Louis Area, Missouri*, prepared by the Missouri Geological Survey, the site is located in the post-Maquoketa aquifer group. This group includes all bedrock units above the Maquoketa shale. This bedrock aquifer receives recharge from direct precipitation in the area. Movement of water from the soil and subsoil into the bedrock takes place along fractures and openings in the rock. Mississippian system rocks at the upper boundary of this group are relatively impermeable and yield very little water to wells.

4.0 HISTORICAL USE INFORMATION

Historical records are used to determine past uses of the subject site and whether these past uses may be an environmental concern. The standard to which this report was conducted requires the identification of all past uses of the site, from the present to the first developed use. SCI used as many practically reviewable sources as necessary to identify the past uses of the subject site.

4.1 Owner Interview

SCI submitted an *Environmental Assessment Questionnaire* (EAQ) to Mr. Scott Haley, Wildwood Crossing, Inc., the current owner of the subject site. Mr. Haley indicated Wildwood Crossing, Inc. acquired the site in approximately 1998. According to Mr. Haley, ATC Associates, Inc. previously conducted a Phase One on the subject site. In addition, he stated SCI previously conducted a geotechnical study for the site in 2004. These reports are further discussed in Section 7.0. To the best of his knowledge, Mr. Haley was not aware of any hazardous substances, petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials that have been discharged, dumped above grade, buried, disposed, and/or burned on the subject site. A copy of the completed EAQ is contained in Appendix B.

4.2 Key Site Manager Interview

Please refer to Section 4.1.

4.3 User Interview

SCI interviewed and submitted an *Assessment User Questionnaire* (AUQ) to Mr. Jed Momot, Project Manager, North Point Development, the user of this report. Mr. Momot indicated that he was requesting the Phase One to qualify for the following Landowner Liability Protection: bona fide prospective purchaser. SCI questioned Mr. Momot concerning any specialized knowledge or actual knowledge, regarding the usage of the property, which is material in identifying RECs. Mr. Momot indicated that he did not possess any such knowledge. SCI also questioned Mr. Momot concerning any environmental liens and activity and use limitations (AULs). Mr. Momot indicated he was unaware of any environmental liens or AULs. SCI also questioned Mr. Momot concerning the proposed sale price and its relationship to the fair market value. Mr. Momot indicated that he believed that the proposed purchase price reflected fair market value. A copy of the completed user questionnaire is contained in Appendix B.

4.4 Past Owner Interview

As mentioned above, the current owner of the subject site acquired the property in approximately 1998. However, they were unable to provide any contact information. SCI attempted to locate information about the previous owners; however, these attempts were unsuccessful. This issue is further discussed in Section 9.0.

4.5 Local Fire Department Interview

SCI submitted a letter of request to the Metro West Fire Protection District regarding storage or spillage of petroleum, toxic, or hazardous materials on or adjacent to the subject site. SCI received a response from Battalion Chief, Fire Marshal J Rodney Cook. Mr. Cook states the fire department does not have any records of any hazardous materials, chemicals or petroleum products for the subject site or surrounding properties. A copy of SCI's request to the fire department, and their response, is contained in Appendix C.

4.6 Sanborn Map Review

Sanborn fire insurance maps were produced for the insurance industry starting in the late 1800s to assist in evaluating the fire risks of a building or area. Sanborn maps show structure locations and typically indicate the usage of the structure, whether it be a dwelling, store, or a manufacturing plant. The actual name of the company operating the facility is also sometimes given. These maps show the type of construction of buildings, and show locations of USTs and ASTs used for the storage of highly flammable materials including solvents, paint, and motor fuels. The identification of USTs on Sanborn maps often makes them one of the only ways to identify past UST sites. Most large older towns and cities have some Sanborn coverage. Typically, the larger and older the area, the better the coverage.

SCI obtained a Certified Sanborn® Map Report for the subject site and surrounding properties from Environmental Data Resources, Inc. (EDR). The EDR report indicated that there were no fire insurance maps available.

4.7 Historical Aerial Photograph Review

Aerial photographs are an important source for showing past conditions on a site. Vegetation and developments like structures, water bodies, or land disturbance are generally readily apparent. However, vegetation can often obscure from view activities taking place under the canopy of trees. The aerial photographs typically available for review as part of a Phase One are usually large-scale black and white photographs. For these reasons, small details may be difficult to discern.

SCI reviewed aerial photographs at the St. Louis County GIS Mapping Services for the years 2015, 2014, 2012, 2010, 2008, 2006, 2004, 2002, 2000, 1997, 1981, 1970, 1966, 1955 and 1937. A summary of this review is contained in Table 4.1.

Table 4.1 - Historical Aerial Photograph Summary

Year	Observations
2015	The subject site appeared similar to that observed during the site reconnaissance. The site hosted a partially grass-covered lot and a partial asphalt parking lot. Adjacent to the north of the site was undeveloped land, beyond which was a highway. Adjacent to the east of the site was a parking lot, beyond which was a commercial structure. Adjacent to the south of the site was a roadway, beyond which was undeveloped land and a parking lot. Adjacent to the west of the site was undeveloped land and a residence.
2014, 2012, 2010 and 2008	The subject site and surrounding properties appeared similar to the 2015 aerial photograph.

Table 4.1 - Historical Aerial Photograph Summary (continued)

Year	Observations
2006	The subject site and adjacent properties to the east and south appeared to be undeveloped recently graded land. Adjacent properties to the north and west appeared similar to the 2008 aerial photograph.
2004	The subject site and surrounding properties to the east and south appeared to be undeveloped grass-covered land. Adjacent properties to the north and west appeared similar to the 2006 aerial photograph.
2002, 2000, 1997 and 1981	The subject site and surrounding properties appeared similar to the 2004 aerial photograph.
1970	The subject site and surrounding properties appeared similar to the 1981 aerial photograph, with the exception that adjacent to the north was undeveloped land.
1966	The subject site and surrounding properties appeared similar to the 1970 aerial photograph.
1955	The subject site and surrounding properties appeared similar to the 1966 aerial photograph, with the exception that the residence to the west was no longer present.
1937	The subject site and surrounding properties appeared similar to the 1955 aerial photograph.

This review of historical aerial photographs identified no additional evidence of environmental conditions in connection with the subject site. The grading noted on the 2006 indicates the potential for fill materials to be present on-site. This is further discussed in Section 7.0. Furthermore, it is noted that the subject site was undeveloped in 1937. Copies of the aerial photographs are contained in Appendix D.

4.8 City Directory Review

City directories, such as Polk or Hanes Criss-Cross directories are useful tools in determining the past use of urban properties. Most larger urban areas have had city directories published. City directories were published from the late 1800s until today. The most useful portion of the city directory for property research is the criss-cross directory, which lists each street within the municipality, and what is located at each address on that street. City directories are only useful for urban areas and are generally not published for rural or small municipalities.

SCI obtained a *City Directory Image Report* for the subject site and surrounding properties from Environmental Data Resources, Inc. (EDR). A copy of the EDR report is contained in Appendix E. City directories were reviewed on approximate five-year intervals between the years 1965 and 2010 for the subject site and adjacent properties. In review of the city directories, there were no listings for the subject site. Surrounding properties include National City Bank and City of Wildwood City Hall, which are not of concern.

4.9 Historical Topographic Map Review

Historical topographic maps can be used to identify changes in site topography as well as site development and usage. Differences in the topographic lines on the maps from one edition to the next can indicate areas where fill may have been placed on the subject site or show areas where soil may have been removed or cut. Most topographic maps depict man-made structures as well as natural features including wooded areas, streams, rivers, lakes, and ponds. However, if a property is located in an urban setting, the topographic map may not show individual structures.

SCI obtained *The EDR Historical Topographic Map Report* from EDR for the subject site and adjacent properties. A copy of the EDR report is contained in Appendix F. SCI reviewed 7.5-minute topographic maps for the years 2015, 1993, 1982, 1974, 1968, 1954, 1944 and 1940. SCI also reviewed a 30-minute topographic map for the year 1903. A summary of this review is contained in Table 4.2.

Table 4.2 - Historical Topographic Map Summary

Year	Observations
2015	The elevation of the subject site is approximately 760 feet above mean sea level (msl). Adjacent to the north of the site was a highway. Adjacent to the south of the site was a roadway. No structures were depicted on the topographic map.
1993	The subject site appeared similar to the 2015 topographic map. Adjacent to the north of the site was a highway. Adjacent to the east, south and west appeared to be undeveloped land.
1982	The subject site and surrounding properties appeared similar to the 1993 topographic map, with the exception that adjacent to the north of the site was undeveloped land, beyond which was a highway.
1974	The subject site and surrounding properties appeared similar to the 1982 topographic map, with the exception that the highway to the north of the site, beyond the undeveloped land, was no longer present.
1968	The subject site and surrounding properties appeared similar to the 1974 topographic map.
1954	The subject site and surrounding properties appeared similar to the 1968 topographic map.
1944, 1940 and 1903 (30-minute)	The subject site and surrounding properties appeared similar to the 1954 topographic map.

This historical topographic map review has revealed no additional evidence of environmental conditions in connection with the subject site. Furthermore, it is noted the subject site has been undeveloped since at least 1903.

4.10 Title Review

Land title records contain information about historical fee ownership, which may include leases, contracts, and/or AULs. This information is recorded in the place where land title records are, by law or custom, recorded for the local jurisdiction in which the property is located. Often this source will provide only names of previous owners, lessees, easement holders, etc. but when employed in combination with another source may provide helpful information about uses of the property.

SCI was not provided with the current title for the subject site. However, as indicated in the attached Assessment User Questionnaire, Mr. Jed Momot, NorthPoint Development, indicated that he is not aware of any environmental cleanup liens against the subject site that were filed under federal, tribal, state, or local law. Mr. Momot also indicated that he is not aware of AULs, engineering controls, or land use restrictions that have been recorded on the title for the property.

5.0 REGULATORY AGENCY RECORDS REVIEW

SCI reviewed environmental records obtained from EDR. A copy of the report is contained in Appendix G. This search covered all lists required by ASTM E 1527-13 to the required approximate minimum search distance as shown on Table 5.1.

Table 5.1 - Environmental Record Sources

Records Sources ¹	Approximate Minimum Search Distance	Properties Identified
Federal National Priorities List (NPL)	1.0 mile	0
Federal Delisted NPL	0.5 mile	0
Federal Comprehensive Environmental Response, Compensation, & Liability Information System (CERCLIS)	0.5 mile	0
Federal CERCLIS No Further Remedial Action Planned (NFRAP)	0.5 mile	0
Federal Resource Conservation & Recovery Information System (RCRIS): - Treatment, Storage, and Disposal (TSD)	0.5 mile	0
Federal Resource Conservation & Recovery Information System (RCRIS): - Facilities List and Generators List	Site and adjacent properties	0
Federal RCRA TSD Facilities with Corrective Action Activities (CORRACTS)	1.0 mile	0
Federal Emergency Response Notification System (ERNS)	Site only	0

¹SCI is not aware of any environmental tribal records in the St. Louis area.

²Missouri confirmed dioxin sites, former manufactured gas plants, former USDA grain bins, lead and zinc smelters, wood treatment sites, and Voluntary Cleanup Program sites.

Table 5.1 - Environmental Record Sources (continued)

Records Sources ¹	Approximate Minimum Search Distance	Properties Identified
Federal Institutional/Engineering Control (IC/EC) Registries	Property only	0
Missouri Hazardous Waste Sites List	1.0 mile	0
Missouri Solid Waste Landfill List	0.5 mile	0
Missouri Leaking Underground Storage Tank (LUST) List	0.5 mile	2
Missouri Registered UST List	Site and adjacent properties	0
Missouri Institutional/Engineering Control (IC/EC) Registries	Property only	0
Additional Environmental Record Sources ²	1.0 mile	3

¹SCI is not aware of any environmental tribal records in the St. Louis area.

²Missouri confirmed dioxin sites, former manufactured gas plants, former USDA grain bins, lead and zinc smelters, wood treatment sites, and Voluntary Cleanup Program sites.

5.1 Federal NPL

Section 105(a)(8)(B) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requires the preparation of the NPL. The NPL is a list of national priorities among the known or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The identification of a site for the NPL is intended to guide the USEPA in: determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with a site; identifying what CERCLA-financed remedial actions may be appropriate; notifying the public of sites USEPA believes warrant further investigation; and serving notice to potentially responsible parties that USEPA may initiate CERCLA-financed remedial action.

No listings were encountered during the review of the NPL database within the ASTM-prescribed minimum search distance of the subject site.

5.1.1 Federal Delisted NPL

The National Oil and Hazardous Substance Pollution Contingency Act (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425(e), sites may be deleted from the NPL where no further response is appropriate.

No listings were encountered during the review of the delisted NPL database within the ASTM-prescribed minimum search distance of the subject site.

5.2 Federal CERCLIS

The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is the official repository for site and non-site specific Superfund data in support of CERCLA. It contains information on hazardous waste site assessments and remediation from 1983 to the present. In 2016, the CERCLIS database was retired in favor of the Superfund Enterprise Management System (SEMS), which combines existing CERCLIS data with other resources.

No listings were encountered during the review of the CERCLIS database within the ASTM-prescribed minimum search distance of the subject site.

5.2.1 Federal NFRAP

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. In 2016, the CERCLIS database was retired in favor of the SEMS, which combines existing CERCLIS data with other resources.

No listings were encountered on the NFRAP list within the ASTM-prescribed minimum search distance of the subject site.

5.3 Federal RCRIS

Hazardous waste data is contained in the Resource Conservation and Recovery Information System (RCRIS) in support of the Resource Conservation and Recovery Act (RCRA). RCRA requires that generators and transporters of hazardous waste, as well as hazardous waste treatment, storage and disposal (TSD) facilities provide information concerning their activities to state environmental agencies. These agencies then provide information to regional and national USEPA offices. RCRIS is used by the USEPA to support its implementation of RCRA.

No listings were encountered during the review of the RCRIS database within the ASTM-prescribed minimum search distance of the subject site.

5.4 Federal CORRACTS

The EPA maintains this database of RCRA TSD facilities that are undergoing corrective action. A corrective action order is issued pursuant to RCRA section 3008(h) if there has been a release of hazardous waste into the environment from a RCRA facility.

No listings were encountered during the review of the CORRACTS database within the ASTM-prescribed minimum search distance of the subject site.

5.5 Federal ERNS

The Emergency Response Notification System (ERNS) is a database used to store information on notifications of oil discharges and hazardous substance releases. The ERNS program is a cooperative data sharing effort among the USEPA, the Department of Transportation, and the National Response Center. ERNS provides the most comprehensive data compiled on notifications of oil discharges and hazardous substance releases in the United States.

No listings were encountered during the review of the ERNS database within the ASTM-prescribed minimum search distance of the subject site.

5.6 Federal IC/EC

Databases of institutional controls or engineering controls maintained by a federal agency for purposes of tracking sites that may contain residual contamination and activity and use limitations (AULs).

No listings were encountered during review of the IC/EC database within the ASTM-prescribed minimum search distance of the subject site.

5.7 Missouri Hazardous Waste Sites List

The Missouri "Superfund Law" requires the Missouri Department of Natural Resources (MDNR) to annually publish a registry entitled *Missouri Registry Annual Report: Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri*. The most current Registry was the Fiscal Year 2015 annual report.

No listings were encountered during the review of the Registry within the ASTM-prescribed minimum search distance of the subject site.

5.8 Missouri Solid Waste Landfill List

The MDNR Solid Waste Management Program publishes and regularly updates the List of Sanitary Landfill Contacts in Missouri; the List of Demolition, Utility Waste and Special Waste Landfill Contacts (last updated February 2016); the List of Transfer Station Contacts in Missouri; the List of Inactive Facilities; and the List of Closed Facilities.

No listings were encountered during the review of the landfill lists within the prescribed minimum search distance of the subject site.

5.9 Missouri LUST List

The MDNR Hazardous Waste Program publishes and regularly updates a List of Leaking Underground Storage Tanks Active Sites. This list was last published in March 2016.

Two listings were encountered during the review of the LUST database within the ASTM-prescribed minimum search distance of the subject site. These two listings were located more than 1,000 feet from the subject site. Due to the distance of these listings from the subject site, SCI does not consider them to represent an REC.

5.10 Missouri Registered UST List

The MDNR maintains a regularly updated database of Registered USTs. This database was last updated in March 2016.

No listings were encountered during the review of the registered UST database within the ASTM-prescribed minimum search distance of the subject site.

5.11 Missouri IC/EC

Databases of institutional controls or engineering controls maintained by a state agency for purposes of tracking sites that may contain residual contamination and AULs.

No listings were encountered during review of the IC/EC database within the ASTM-prescribed minimum search distance of the subject site.

5.12 Additional Environmental Record Sources

A review of the latest listing of *Confirmed Dioxin Sites Tracking List*, January 1999, supplied by the MDNR, revealed no known dioxin-contaminated properties within a one-mile radius of the subject site.

SCI also reviewed listings of wood treatment sites, former manufactured gas plants, lead and zinc treatment facilities, drycleaners, and VCP sites. One LAST, one VCP and one SMARS listings were identified within a one-mile radius of the subject site. These three listings were located more than 1,000 feet from the subject site. Due to the distance of these listings from the subject site, SCI does not consider them to represent an REC.

6.0 VAPOR ENCROACHMENT SCREENING

In accordance with ASTM Practice E 1527-13, SCI conducted an initial vapor encroachment screening to determine if there is a potential for vapors to occur in the subsurface below existing and/or proposed on-site structures, as a result of the presence of petroleum, hazardous or toxic materials that may contain volatile or semi-volatile organic compounds (VOCs/SVOCs). The initial vapor encroachment screening was performed using a “non-invasive” screening process, which consists of a site reconnaissance as well as a review of regulatory database and historical resources. If the initial vapor encroachment screening determines that there is a potential vapor encroachment condition (pVEC) the pVEC should be identified as an REC to the subject site.

SCI has performed the vapor encroachment screening as part of the Phase One activities outlined herein. No pVECs were identified during the initial vapor encroachment screening.

7.0 ADDITIONAL INVESTIGATIONS

SCI was provided with a previous Phase One performed on a larger parcel of land, which included the current subject site, completed by ATC in 2001. This report did not identify any concerns on the larger parcel of land.

As previously discussed, SCI completed a geotechnical investigation on a larger parcel of land which included the current subject site. This investigation included the advancement of 17 soil borings. No indications of petroleum, toxic or hazardous materials were noted in any of these borings.

Additionally, SCI is concurrently conducting a geotechnical investigation on the subject site. After review of the preliminary boring logs, fill materials were noted in six of the eight soil borings, ranging from 3 to 3 ½ feet below ground surface (bgs). However, SCI screened the soil borings with a photo-ionization detector (PID) which is capable of detecting variations in concentrations of various organic trace gases. No unusual odors, PID readings, or staining were noted. Therefore, SCI does not consider the fill to represent an REC.

8.0 FINDINGS

In the course of SCI's scope of service, we have identified the following environmental conditions in connection with the subject site:

- A small concrete pad was noted on the west central portion of the site with two PVC pipes protruding from its center. According to the current owner, Mr. Scott Haley, these pipes are connected to the sewer system. SCI does not consider the sewer system on the subject site to represent an REC. (Section 2.3)
- Previous grading activities were noted on the 2006 aerial photograph, which indicate the potential for fill materials to be present on-site. However, SCI concurrently conducted a geotechnical investigation on-site. This investigation included the advancement of eight soil borings. Fill materials were noted in six of these eight borings. SCI screened the soil borings with a photo-ionization detector (PID) which is capable of detecting variations in concentrations of various organic trace gases. No unusual odors, PID readings, or staining were noted. Therefore, SCI does not consider the fill to represent an REC. (Sections 4.7 and 7.0)
- Two listings were encountered during the review of the LUST database within the ASTM-prescribed minimum search distance of the subject site. These two listings were located more than 1,000 feet from the subject site. Due to the distance of these listings from the subject site, SCI does not consider them to represent an REC. (Section 5.9)
- One LAST, one VCP and one SMARS listings were identified within a one-mile radius of the subject site. These three listings were located more than 1,000 feet from the subject site. Due to the distance of these listings from the subject site, SCI does not consider them to represent an REC. (Section 5.12)

9.0 DATA GAPS

A data gap is a lack of or inability to obtain information required by this practice despite good faith efforts to gather such data. In completing this Phase One, SCI encountered no significant data gaps with the exception that SCI was unable to obtain an interview with the previous property owner. However, based on the historical review of aerial photographs and topographic maps the subject site appears to have always been undeveloped land. Therefore, SCI does not consider this data gap significant, as it is unlikely that the previous owner would provide any information that would lead to an REC.

10.0 CONCLUSIONS

Phase One activities consisted of historical and public records research, historical review, interviews, and a reconnaissance survey. Based on the activities that were performed in general accordance with the ASTM Practice E 1527-13 for Phase One Environmental Site Assessments, SCI has identified no evidence of RECs in connection with the subject site.

11.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of *Environmental Professional* as defined in 312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. Resumes for myself, and Mr. David Foresth, who performed the site reconnaissance, are contained in Appendix H.

12.0 REFERENCES CITED

- ASTM International, 2013, *Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process*, "Designation: E 1527-13," West Conshohocken, PA.
- Environmental Data Resources, Inc., July 25, 2016, *Certified Sanborn® Map Report*.
- Environmental Data Resources, Inc., July 27, 2016, *The EDR-City Directory Abstract*.
- Environmental Data Resources, Inc., July 25, 2016, *EDR Historical Topographic Map Report*.
- Environmental Data Resources, Inc., July 27, 2016, *The EDR Radius Map™ Report*.
- St. Louis County GIS Mapping Services, electronic document <http://map.stlouisco.com>, 2015, 2014, 2012, 2010, 2008, 2006, 2004, 2002, 2000, 1997, 1981, 1970, 1966, 1955, and 1937 (Aerial Photographs), accessed July 22, 2016.
- Haines' St. Louis City and County Criss-Cross Directories, 2008, 2004, 1999, 1994, 1989, 1983, 1979, and 1976, St. Louis County Public Library, Missouri.
- Miller, Don E., et al., 1974, *Water Resources of the St. Louis Area, Missouri*, Missouri Geological Survey and Water Resources, Water Resources Report No. 30, pp. 1-22.
- Missouri, *Missouri Registry Annual Report: Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri*, Fiscal Year 2008, Jefferson City, Mo: Missouri Dept. of Natural Resources, Division of Environmental Quality, Hazardous Waste Program.

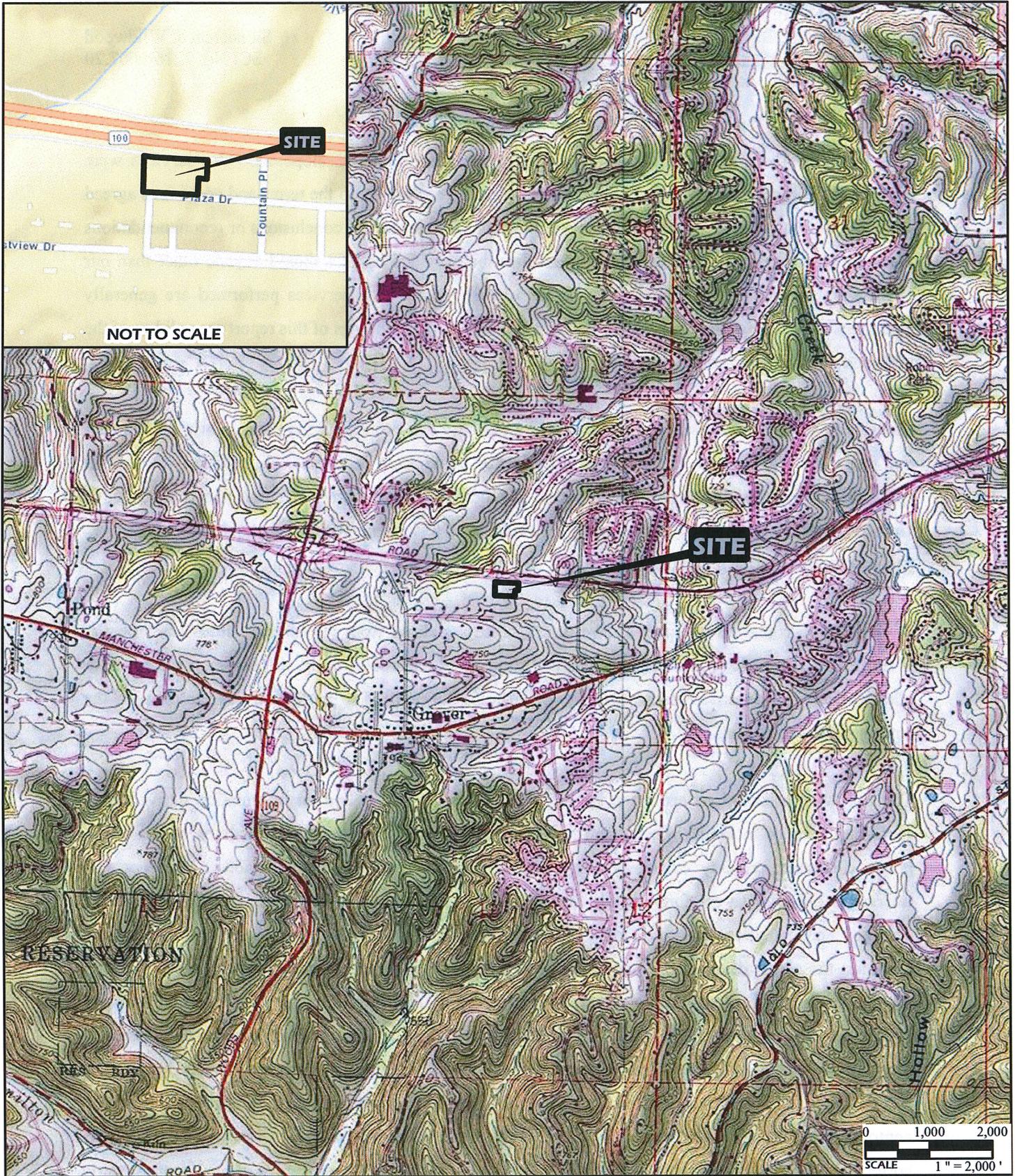
13.0 LIMITATIONS

This report has been prepared for the exclusive use of NorthPoint Development. Our services were performed in accordance with a specific scope of work and are subject to the terms and conditions agreed to as part of that scope of work. SCI is not responsible for independent conclusions or recommendations made by others. Furthermore, written consent must be provided by SCI should anyone other than our client wish to excerpt, or rely on, the contents of this report. The services performed are generally consistent with those outlined in ASTM Practice E 1527-13. The findings of this report are valid as of the present date of the assessment.

Changes in surface and subsurface conditions of a property can occur with the passage of time, whether due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation, the broadening of knowledge, or other reasons. Accordingly, the findings of this report may be invalidated in whole or in part by changes outside our control.

SCI should be contacted with any known or suspected variations from the conditions described herein. If further development of this site indicates the presence of hazardous, toxic, or petroleum materials, or other concerns of an environmental nature, SCI should be notified to perform a re-evaluation of the environmental conditions.

The following assumptions are made by SCI in this report. SCI relied on information derived from secondary sources including government agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, and personal interviews. Except as set forth in this report, SCI has made no independent investigation as to the accuracy and completeness of the information derived from secondary sources including government agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, or personal interviews and has assumed that such information is accurate and complete. SCI assumes information provided by or obtained from governmental agencies including information obtained from government websites is accurate and complete. Groundwater flow and depth to groundwater, unless otherwise specified by on-property well data, are assumed based on contours depicted on the United States Geological Survey topographic maps. SCI assumes the property correctly and accurately has been identified by the client, designated representative of the client, property contact, property owner, and property owner's representatives.



PROJECT NAME
STONECREST AT WILDWOOD
WILDWOOD, MISSOURI

VICINITY AND TOPOGRAPHIC MAP

DRAWN BY	RCV	DATE	JOB NUMBER
CHECKED BY	DLF	08/2016	2016-0607.20

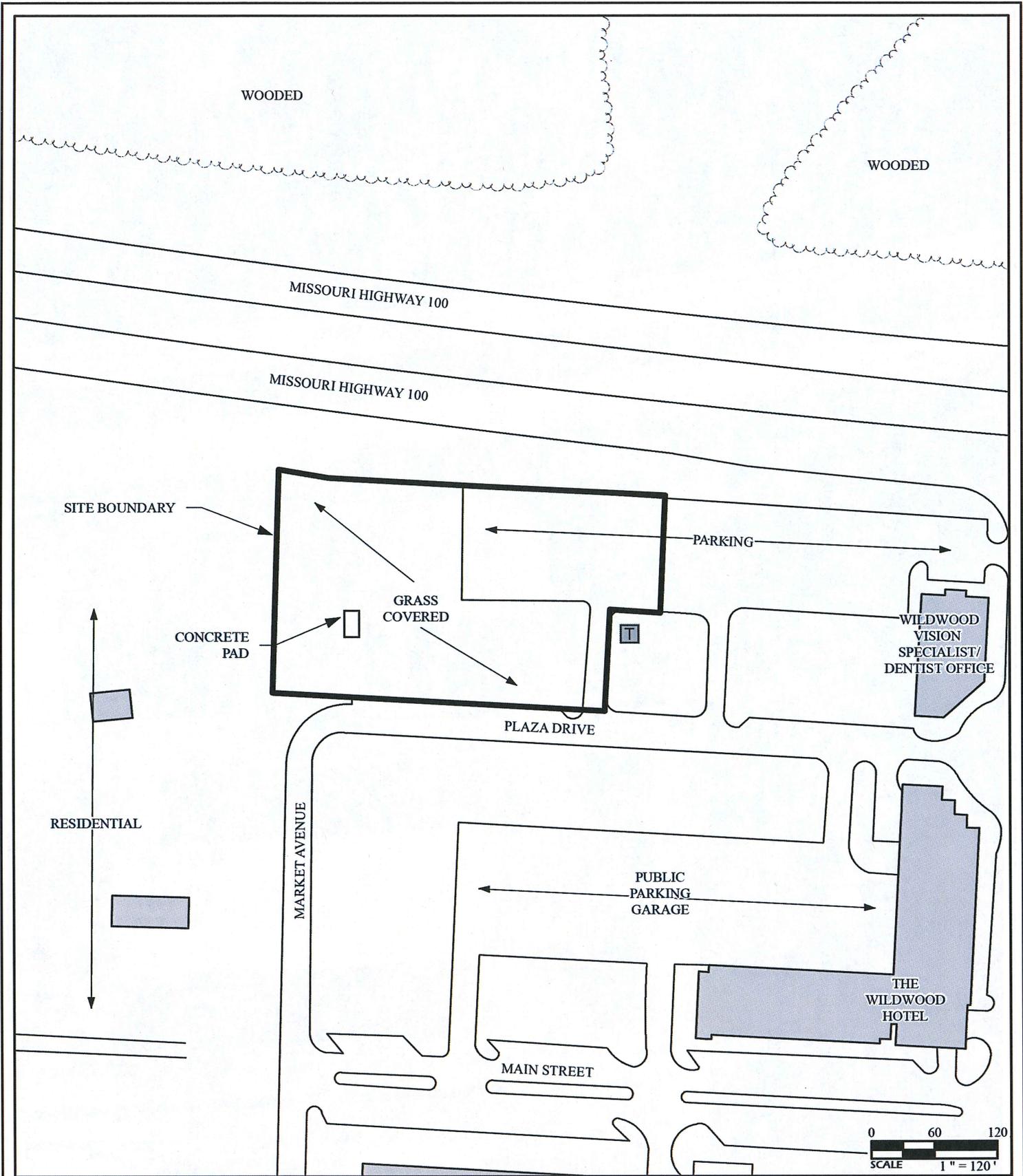
GENERAL NOTES/LEGEND

USGS TOPOGRAPHIC MAP
 EUREKA, MISSOURI QUADRANGLE
 MANCHESTER, MISSOURI QUADRANGLE
 DATED 1954, PHOTO REVISED 1993
 10' CONTOURS

STREET MAP
http://goto.arcgisonline.com/maps/World_Street_Map



FIGURE
1



PROJECT NAME
**STONECREST AT WILDWOOD
 WILDWOOD, MISSOURI**

SITE/SURROUNDING PROPERTIES MAP

DRAWN BY	RCV	DATE	JOB NUMBER
CHECKED BY	DLF	08/2016	2016-0607.20

GENERAL NOTES/LEGEND

T INDICATES APPROXIMATE LOCATION OF PAD-MOUNTED TRANSFORMER

DIMENSIONS AND LOCATIONS ARE APPROXIMATE; ACTUAL MAY VARY.
 DRAWING SHALL NOT BE USED OUTSIDE THE CONTEXT OF THE REPORT
 FOR WHICH IT WAS GENERATED.



FIGURE
2



bing™

© 2016 Microsoft Corporation SCALE 1" = 120'

	PROJECT NAME STONECREST AT WILDWOOD WILDWOOD, MISSOURI			GENERAL NOTES/LEGEND AERIAL PHOTOGRAPH OBTAINED FROM BING MAPS. ©2011 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.	 FIGURE 3
	AERIAL PHOTOGRAPH				
	DRAWN BY RCV CHECKED BY DLF	DATE 08/2016	JOB NUMBER 2016-0607.20		

Appendix A

1850



Photo 1. View of the subject site, facing east.



Photo 2. View of the subject site, facing south.



Photo 3. View to the north from the subject site.



Photo 4. View to the east from the subject site.



Photo 5. View to the south from the subject site.

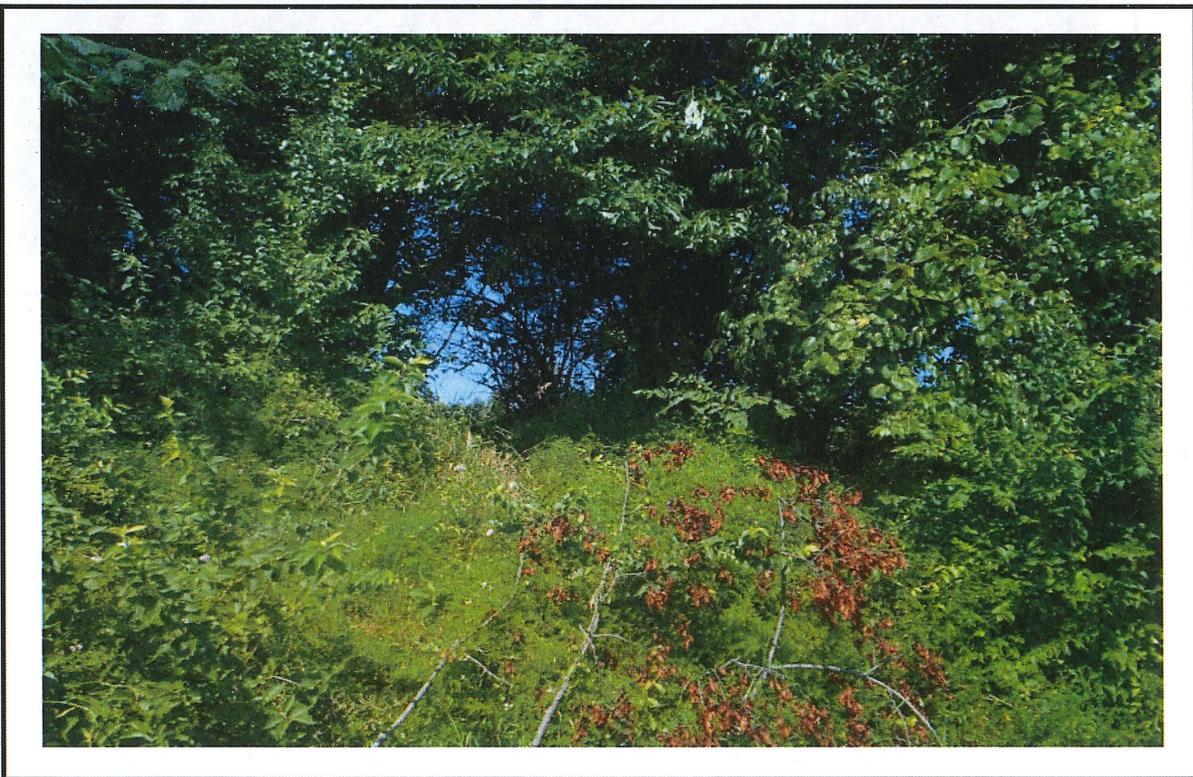


Photo 6. View to the west from the subject site.



Photo 7. View of a pad-mounted transformer.

Appendix B

Appendix B



SCI ENGINEERING, INC.

CONSULTANTS IN DEVELOPMENT
DESIGN AND CONSTRUCTION
GEO TECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

August 2, 2016

Mr. Scott Haley
Wildwood Crossing, Inc.
C/o Koman Properties, Inc.
8025 Forsyth Boulevard
Clayton, Missouri 63105

RE: Environmental Assessment Questionnaire
Property at 251 Plaza Drive
Wildwood, Missouri
SCI No. 2016-0607.20

Dear Mr. Haley:

Please complete the following questionnaire to the best of your knowledge regarding the above-referenced site. The questionnaire is being provided to obtain information needed to complete an environmental assessment being performed at the above-reference location. Please attach copies of any documents or additional pages as needed. Completion of this questionnaire is necessary to finalize our environmental assessment, which is in turn necessary for the impending property transfer (if applicable). Therefore, it is necessary that this form be completed and returned to me as soon as possible. Your cooperation is greatly appreciated.

1. Are any other environmental site assessments currently being performed or have previously been performed for this property? If so, please detail below.

YES. ATC ASSOCIATES, INC. PHASE I ENV. SITE ASSESSMENT
ATC PROJ NO. 11.18067.0609B

2. Have any environmental permits (for example, solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, land disturbance permits) been issued or requested? If so, please detail below.

No.

3. If a permit has been obtained for the site, who will be responsible for maintaining it after the transaction is complete?

n/a

4. Are there any and/or have there ever been any underground or above-ground storage tanks on the property or on adjoining properties? If so, please provide information regarding location, contents, and storage capacities.

None that I am aware of.

5. Have any reports regarding hydrogeologic or geotechnical conditions (soil borings, foundation studies, water movement, etc.) on the property been performed? If so, please detail below.

Geotech Report - SCI, July 2004 SCI NO. 2001-0164.11
Wildwood Town Center - Western Parcel

6. Are there any notices or other correspondence from any government agency relating to past or current violations or environmental laws with respect to the property or relating to environmental liens encumbering the property? If so, please detail below.

NO

7. Are there any hazardous waste generator notices or reports? If so, please detail below.

NO

8. Is there any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property? If so, please detail below.

NO

9. Are there any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property? If so, please detail below.

NO

10. Are there any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products? If so, please detail below.

NO

11. Are there currently or to the best of your knowledge have there ever been any damaged or discarded automotive or industrial batteries, or pesticides, paints, or other chemicals in individual containers of greater than 5 gallons in volume or 50 gallons in the aggregate stored on the property or at the facility? If so, please detail below.

None to my knowledge

12. Are there currently, or to the best of your knowledge have there ever been any drums (typically 55 gallon) or sacks of chemicals (fertilizer, pesticide, etc.) located on the property or at the facility? If so, please detail below.

None to my knowledge

13. Missouri State Law (RSMO 260.213) requires anyone selling, conveying, or transferring property that contains construction and demolition waste or other solid waste (whether buried or not) to disclose the existence and location of the waste disposal site early in the negotiation process. Have fill materials (soil, rock, concrete rubble, garbage, yard waste, etc.) been placed on the property? (If this is affirmative, you will be contacted by an SCI representative to ascertain the source, location, and depth of this material.)

NO

14. Have fill materials (Soil, rock, concrete, rubble, garbage, yard waste, etc.) been moved from one portion of the property to another?

NO

15. Are there currently, or to the best of your knowledge have there ever been, any burn pits located on the property?

None to the best of my knowledge

16. Are there currently, or to the best of your knowledge, is there or has there ever been any soil, flooring drains, or walls located on the property that are stained by substances other than water or are emitting foul odors? If so, please detail below.

None to the best of my knowledge.

17. To the best of your knowledge, have any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries or any other waste materials been discharged, dumped above grade, buried, disposed, and/or burned on the property? If so, please detail below.

No

18. Is there or has there ever been a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs? If so, please detail below.

NO

19. Are there currently, or to the best of your knowledge have there ever been, any hydraulic lifts or oil/water separators located on the property? If so, during what years were they in service?

NO

20. If you are the owner or partial owner, how long have you owned the subject site and from whom did you acquire it?

Approximately 1998.

21. If you are a partial owner, please indicate the names of the other owners.

n/a

22. If you are the owner or partial owner, please indicate the legal ownership name as presented on the property deed.

Wildwood Crossing, Inc.

23. Are there any wells or cisterns located on the subject site? If so, please detail below.

No

24. Are you aware of a pipeline crossing the property? If so, have you, any of your employees, or equipment ever come in contact with the pipe? If so, please detail below.
No
25. Have there ever been any structures on the site which are no longer present? If so, please detail below.
No
26. How long has the current structure been on-site?
parcel is vacant of buildings
vacant
27. How is/was the structure heated and describe its water/sewage system (e.g. well/septic tank)?
n/a
28. Are you aware that any of the current or former structures on the site utilized heating oil? If so, please describe how the heating oil was stored.
n/a
29. Please describe the locations and anticipated depths of current/former farm dumps. Farm dumps include areas where household garbage/refuse were placed as well as any demolition debris, farming implements, scrap lumber/metal, etc.
n/a
30. Are there currently, or to the best of your knowledge have there ever been, any sink holes located on the property? If yes, please describe.
None to the best of my knowledge
31. Please indicate whether you have any reason to suspect dioxin may have been applied on-site. For instance, indicate whether any form of waste oil or other compounds were used for dust control.
No reason to suspect
32. If the site has a structure or structures, are you aware of any sampling or remediation relative to mold that has previously been performed?
n/a
33. Please include a statement that describes the current and/or past (if known) use of the site or any structures located on the site.
The site is vacant, but developed w/
infrastructure to the parcels.

Mr. Scott Haley
Wildwood Crossing, Inc.

5

August 2, 2016
SCI No. 2016-0607.20

34. Please indicate the fire department/district servicing your property.

Metro West Fire Protection District

35. Please indicate the electric utility/cooperative utility servicing your property.

Amenon

36. Are you aware of any current or former water distribution systems on site? If so, are you aware of it containing any asbestos containing materials?

Not aware

Completed By:

Scott Haley *Scott Haley*

Date:

8/2/16

Phone:

314.261.7352

Title:

Managing Director

Fax:

Respectfully,

SCI ENGINEERING, INC.

David L. Forseth

David L. Forseth
Staff Scientist

DLF/hmm



SCI ENGINEERING, INC.

CONSULTANTS IN DEVELOPMENT,
DESIGN AND CONSTRUCTION
GEOTECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

July 21, 2016

Mr. Jed Momot
NorthPoint Development
5015 NW Canal Street, Ste. 200
Riverside, Missouri 64050

RE: Assessment User Questionnaire
Stonecrest at Wildwood
251 Plaza Drive
Wildwood, Missouri
SCI No. 2016-0607.20

Dear Mr. Momot:

Please complete the following questionnaire to the best of your knowledge regarding the above-referenced site. The questionnaire is being provided to obtain information needed to complete an environmental assessment being performed at the above-referenced location. Please attach copies of any documents or additional pages as needed. Completion of this questionnaire is necessary to finalize our environmental assessment, which is in turn necessary for the impending property transfer (if applicable). Therefore, it is necessary that this form be completed and returned to me as soon as possible. Your cooperation is greatly appreciated.

In order to qualify for one of the Landowner Liability Protections (LLPs) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments") the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

1. Why is the Phase One required and/or which of the following Landowner Liability Protections do you seek?

Circle one: , Innocent landowner¹, contiguous property owner², bona fide prospective purchaser³ or other (if other, please explain).

¹ Innocent landowner – a person may qualify as one of three types of innocent landowners (i) a person who "did not know and had no reason to know" that contamination existed on the *property* at the time the purchaser acquired the *property*; (ii) a government entity which acquired the *property* by escheat, or through any other involuntary transfer or acquisition, or through the exercise of eminent domain authority by purchase or condemnation; and (iii) a person who "acquired the facility by inheritance or bequest." To qualify for the first type of innocent landowner LLP, such person must have made *all appropriate inquiry* on or before the date of purchase. Furthermore, the *all appropriate inquiry* must not have resulted in knowledge of the contamination. If it does, then such person did "know" or "had reason to know" of contamination and would not be eligible for the *innocent landowner defense*.

² Contiguous property owner – a person may qualify if such person owns real *property* that is contiguous to, and that is or may be contaminated by *hazardous substances* from other real *property* and did not know or have reason to know that the *property* was or could be contaminated by a release or threatened release from the contiguous *property*. The *all appropriate inquiry* must not result in knowledge of contamination.

³ Bona fide prospective purchaser – a person may qualify if such person made "all appropriate inquiries" into the previous ownership and use of the facility in accordance with generally accepted good commercial and customary standards and practices." Knowledge of contamination resulting from *all appropriate inquiry* would not generally preclude this liability protection. (The Bona Fide Prospective Purchaser LLP indicates that you may have knowledge of environmental impacts on the property.)

2. Based on your review of the title, are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

Unknown

3. Are you aware of any activity and use limitations (AULs) such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

Unknown

4. As the user of this environmental site assessment (ESA) do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

No

5. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

Purchase price is fair

6. Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

- a. Do you know the past use of the property? Unknown

- b. Do you know of any specific chemicals that are present or once were present at the property?

Unknown

- c. Do you know of spills or other chemical releases that have taken place at the property?

Unknown

- d. Do you know of any environmental cleanups that have taken place at the property?

Unknown

7. As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

Unknown

8. Do you have any other knowledge of experience with the *property* that may be pertinent to the *environmental professional* (for example, copies of any available prior *environmental site assessment reports*, documents, correspondence, etc., concerning the property and its environmental condition)?

Unknown

Completed By: Jed Momot

Date: 7/21/16

Phone: 573.366.8829

Title: Project Manager

Fax: Email: jmomot@northpointkc.com

Respectfully,

SCI ENGINEERING, INC.



David L. Forseth
Staff Scientist

DLF/hmm

Appendix C

Хитунгунд

From: [Rod Cook](#)
To: [Heather Martin](#)
Cc: [David Forseth](#)
Subject: RE: Information Request - Stonecrest at Wildwood - SCI No. 16-0607.20
Date: Friday, July 22, 2016 9:25:53 AM

David,

After review of our records, I found no calls for service involving spills of hazardous materials, chemicals or petroleum products to the listed or surrounding properties.

Our electronic record search dates back to January 1, 1998

Regards,

J. Rodney Cook
Battalion Chief, Fire Marshal
Division of Community Risk Reduction
Metro West Fire Protection District
636.458.2100
636.821.5806 Direct
RodCo@MetroWest-Fire.org
www.MetroWest-Fire.org



From: Heather Martin [mailto:HMartin@sciengineering.com]
Sent: Thursday, July 21, 2016 2:49 PM
To: Rod Cook <rodco@metrowest-fire.org>
Cc: David Forseth <DForseth@sciengineering.com>
Subject: Information Request - Stonecrest at Wildwood - SCI No. 16-0607.20

Good afternoon!

SCI Engineering, Inc. is currently conducting an environmental investigation on the above-referenced property.

Please find attached a Fire Information Request and site map.

We would appreciate any information you could provide regarding chemical spills, hazardous materials incidents, or releases of petroleum products on the subject site or adjoining properties.

If you have any questions or require further clarification, please do not hesitate to contact Mr. David Forseth at (636) 949-8200 or dforseth@sciengineering.com at your earliest convenience.

Thank you in advance for your cooperation.

Respectfully,

SCI ENGINEERING, INC.



Heather Martin | Administrative Assistant
Direct: 636-757-1056 | Fax: 636-949-8269
<http://www.sciengineering.com>

"Now serving clients with our new office in San Antonio, Texas!"

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SCI ENGINEERING, INC.

CONSULTANTS IN DEVELOPMENT,
DESIGN, AND CONSTRUCTION
GEOTECHNICAL
ENVIRONMENTAL
NATURAL RESOURCES
CULTURAL RESOURCES
CONSTRUCTION SERVICES

July 21, 2016

Emailed 7-21-16 HMM

Fire Marshal J. Rodney Cook
Metro West Fire Protection District
P.O. Box 310
Wildwood, Missouri 63040
rodco@metrowest-fire.org

RE: Information Request
251 Plaza Drive
Wildwood, Missouri
SCI No. 2016-0607.20

Dear Fire Marshal Cook:

SCI Engineering, Inc. is currently conducting an environmental investigation on the above-referenced property and would appreciate any information you could provide regarding chemical spills, hazardous materials incidents, or releases of petroleum products on the subject site and/or any adjoining properties.

Please fax or email your response to (636) 949-8269 or hmartin@sciengineering.com at your earliest convenience.

Thank you in advance for your cooperation!

Respectfully,

SCI ENGINEERING, INC.

A handwritten signature in blue ink that reads "David L. Forseth".

David L. Forseth
Staff Scientist

DLF/hmm

Enclosure
Site Map

\\scieng\shared\StCharles\shared\soils\1NEWPROJECT FILES\2016 PROJECTS\2016-0607 Stonecrest at Wildwood\ES\20\Stonecrest at Wildwood-Fire Letter.doc

Page 10 of 11



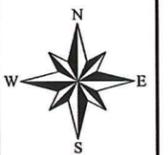


GENERAL NOTES/LEGEND

 INDICATES APPROXIMATE SOIL BORING LOCATIONS.
 AERIAL PHOTOGRAPH OBTAINED FROM BING MAPS.
 ©2011 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.

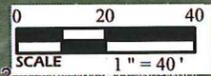
PROJECT NAME
 STONECREST AT WILDWOOD
 WILDWOOD, MISSOURI

AERIAL PHOTOGRAPH



JOB NUMBER
 2016-0607.10
DATE
 07/2016
DRAWN BY
 RCV
CHECKED BY
 CLM

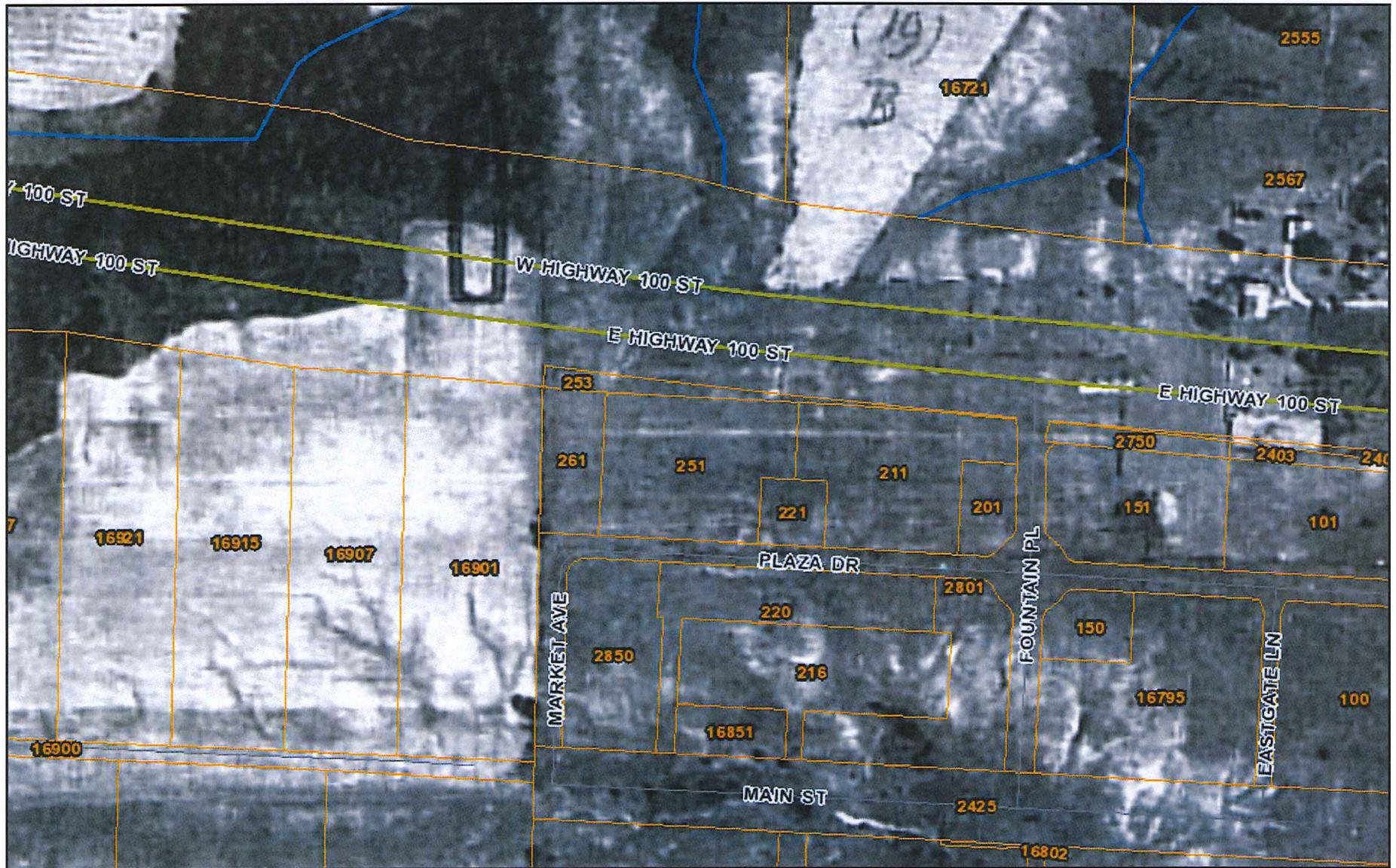
FIGURE
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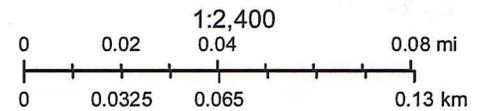
Appendix D

Appendix B

Stonecrest at Wildwood - 1937



July 22, 2016



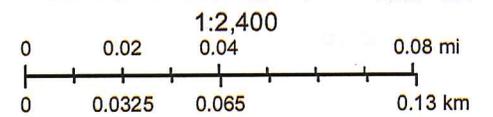
St. Louis County GIS Service Center

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Stonecrest at Wildwood - 1955



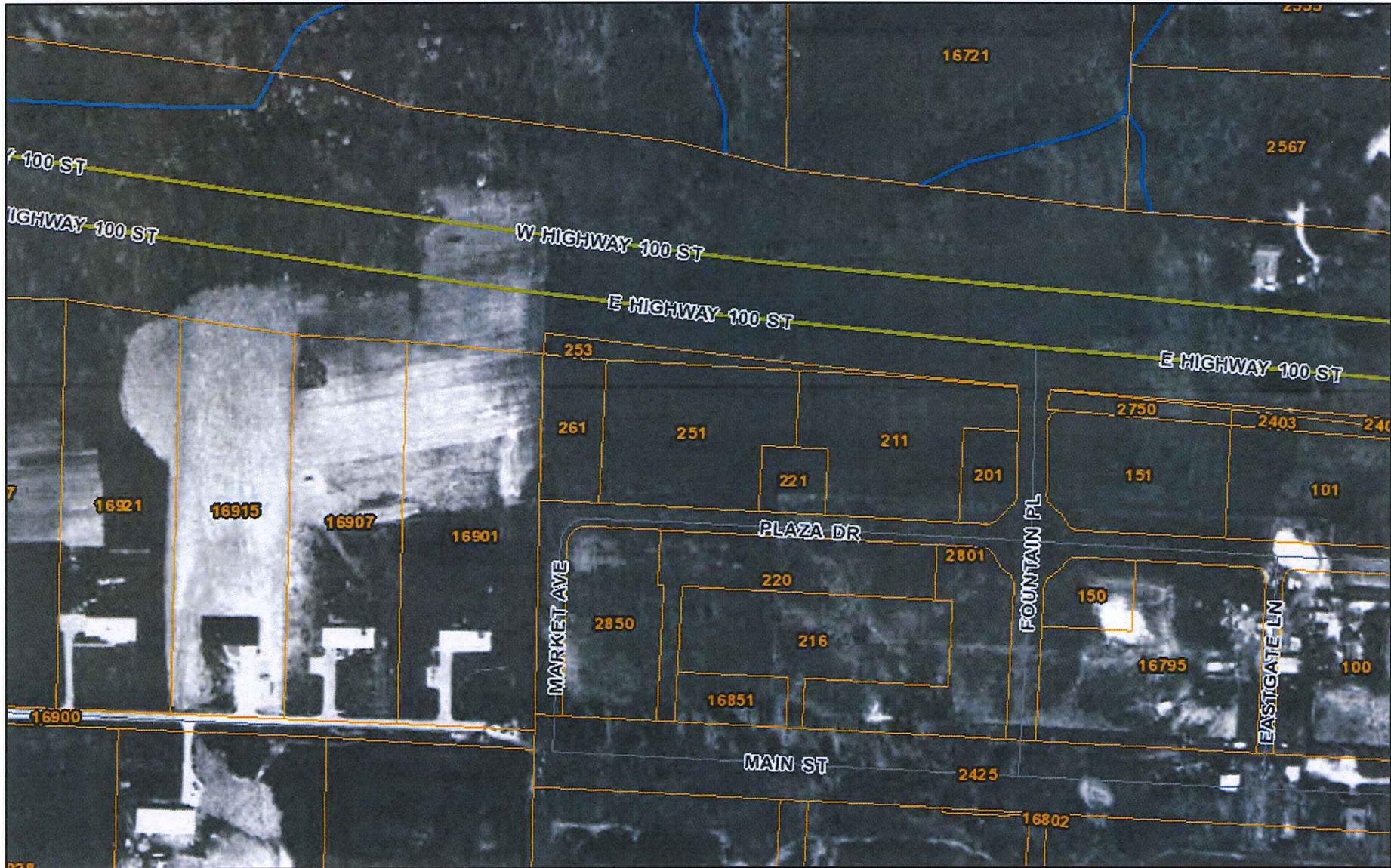
July 22, 2016



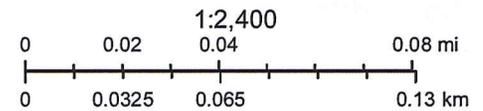
St. Louis County GIS Service Center

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Stonecrest at Wildwood - 1966



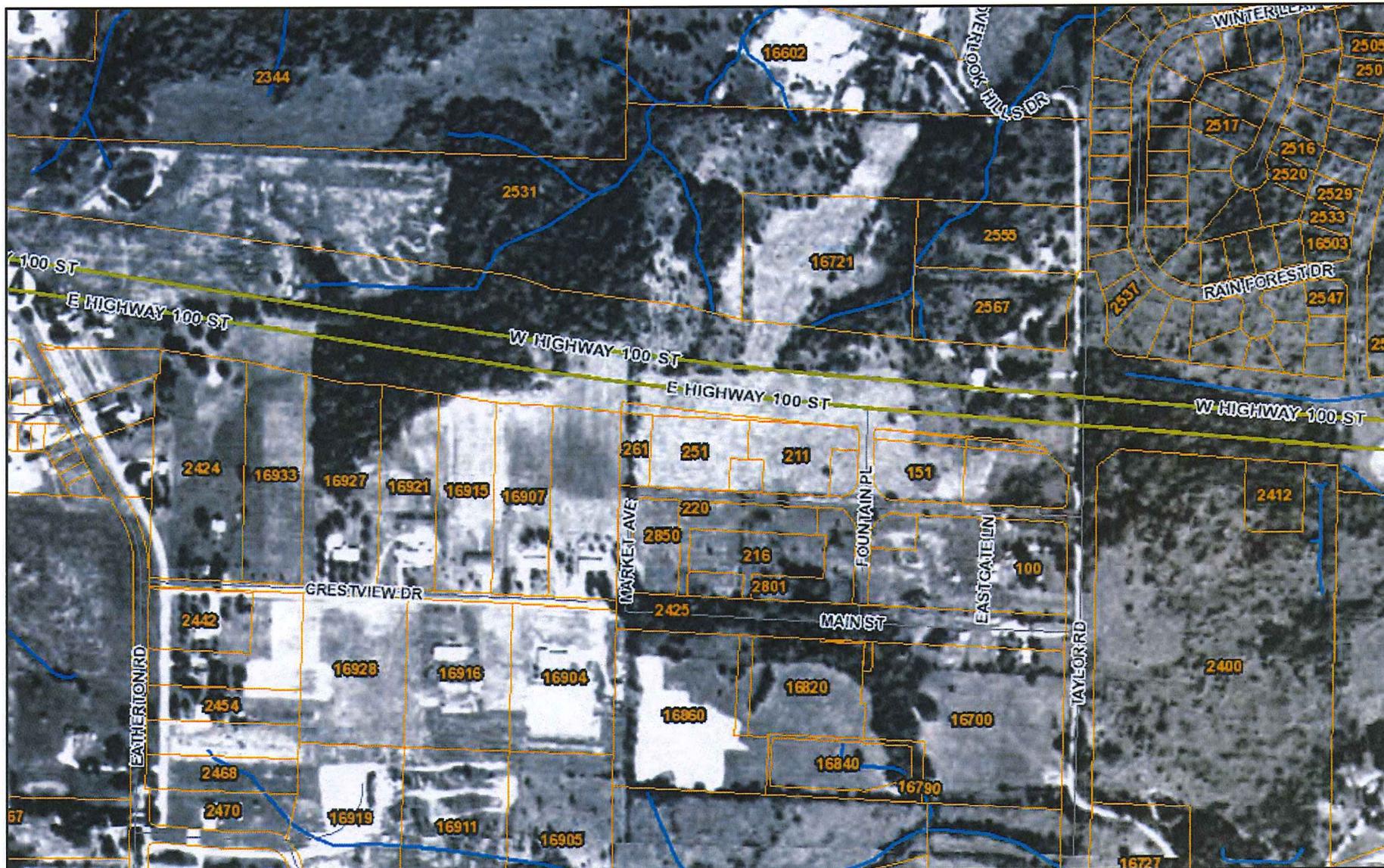
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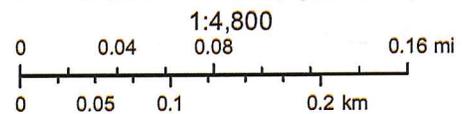
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Stonecrest at Wildwood - 1970



July 22, 2016



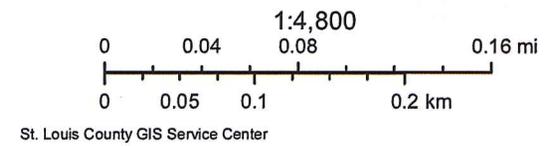
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Stonecrest at Wildwood - 1981



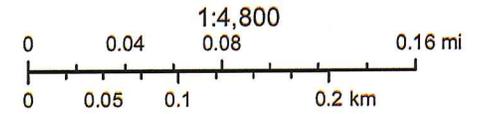
July 22, 2016



Stonecrest at Wildwood - 1997



July 22, 2016



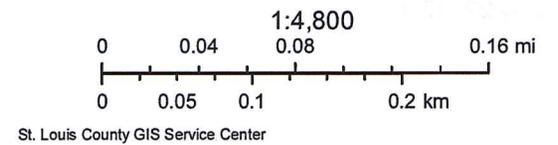
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Stonecrest at Wildwood - 2000



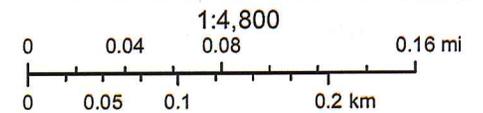
July 22, 2016



Stonecrest at Wildwood - 2002



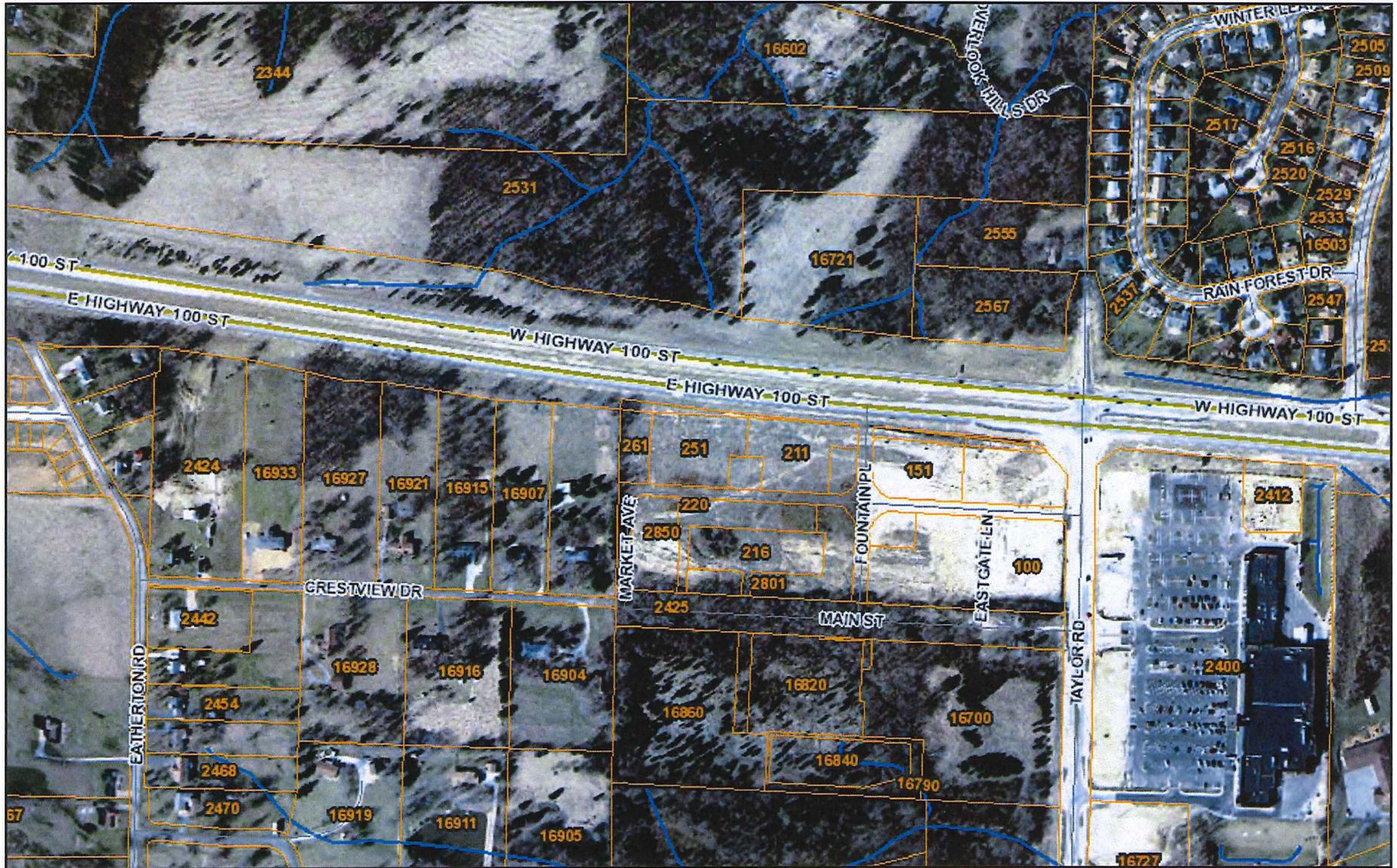
July 22, 2016



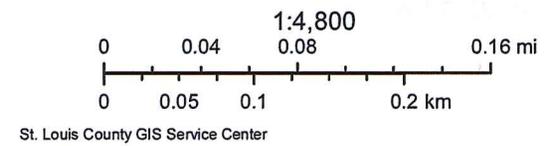
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Stonecrest at Wildwood - 2004



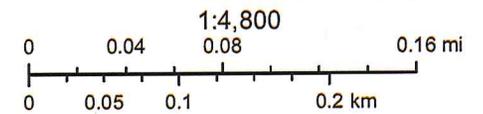
July 22, 2016



Stonecrest at Wildwood - 2006



July 22, 2016

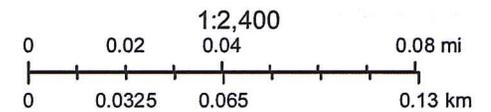


St. Louis County GIS Service Center

Stonecrest at Wildwood - 2008



July 22, 2016



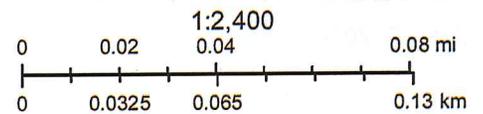
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Stonecrest at Wildwood - 2010



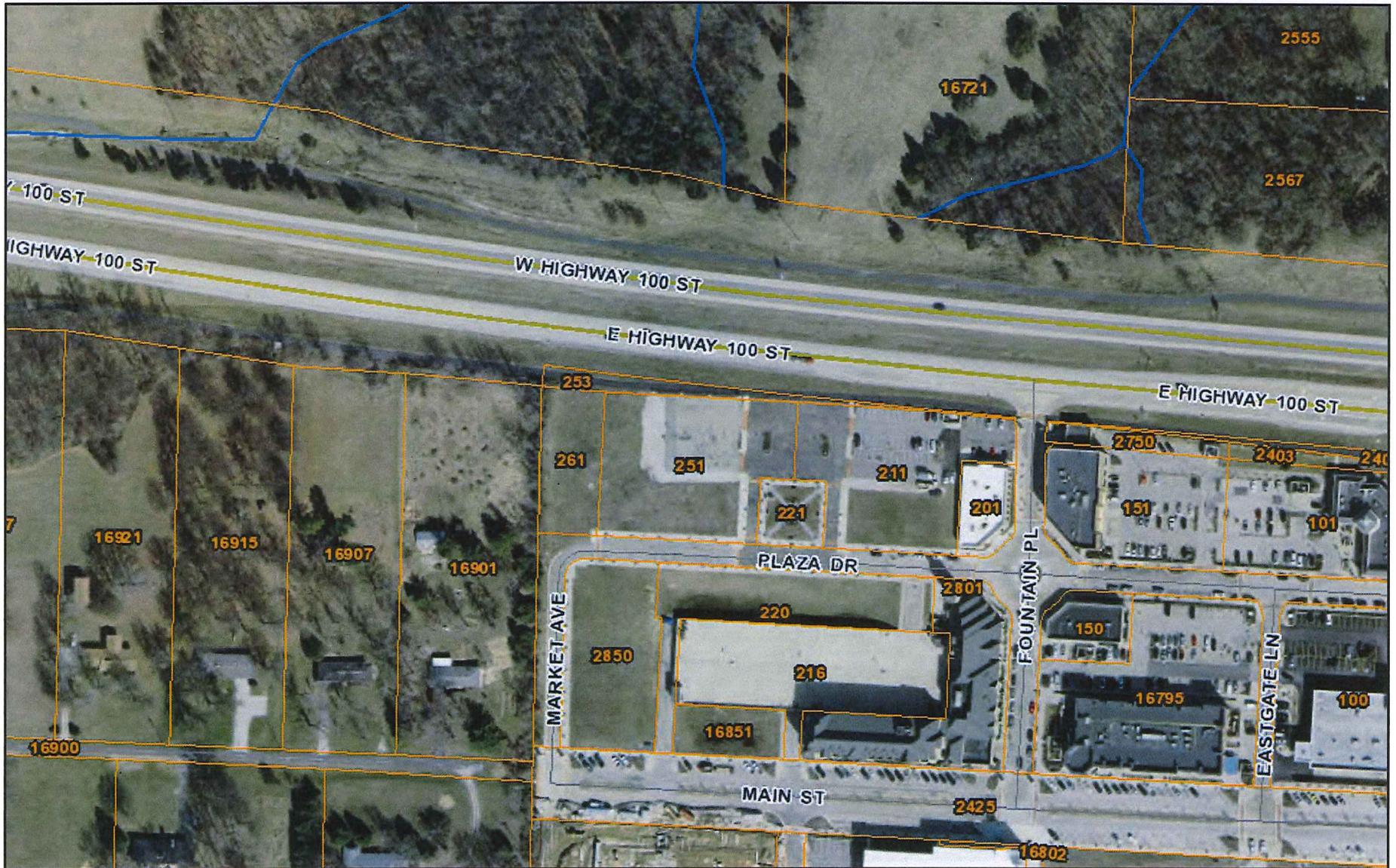
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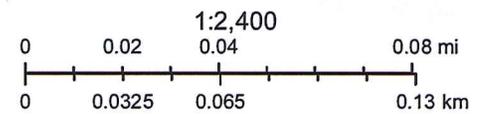
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Stonecrest at Wildwood - 2012



July 22, 2016



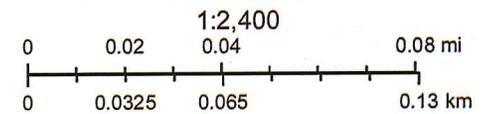
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Stonecrest at Wildwood - 2014



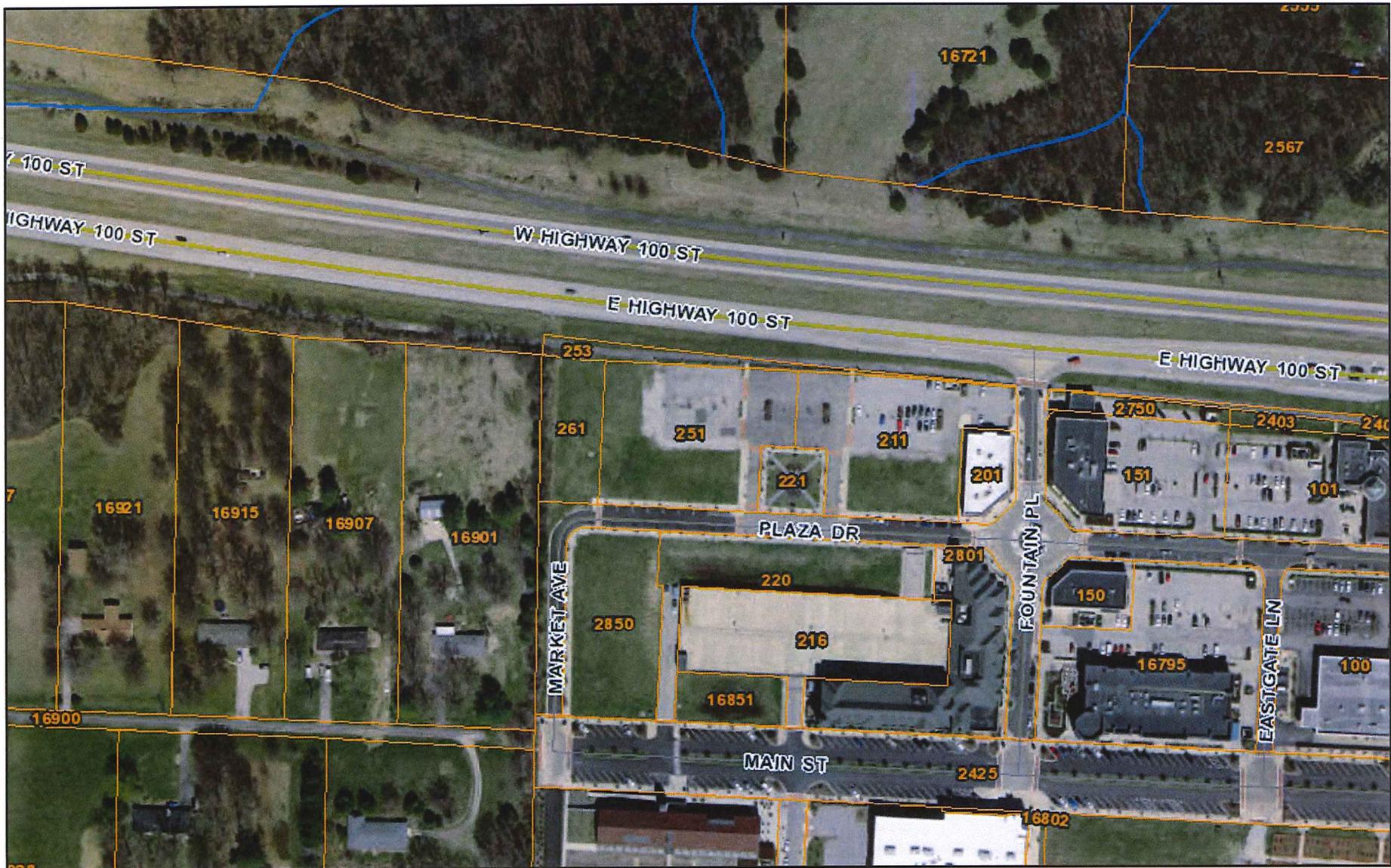
July 22, 2016



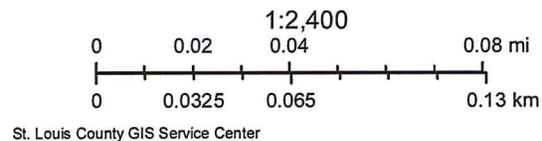
St. Louis County GIS Service Center

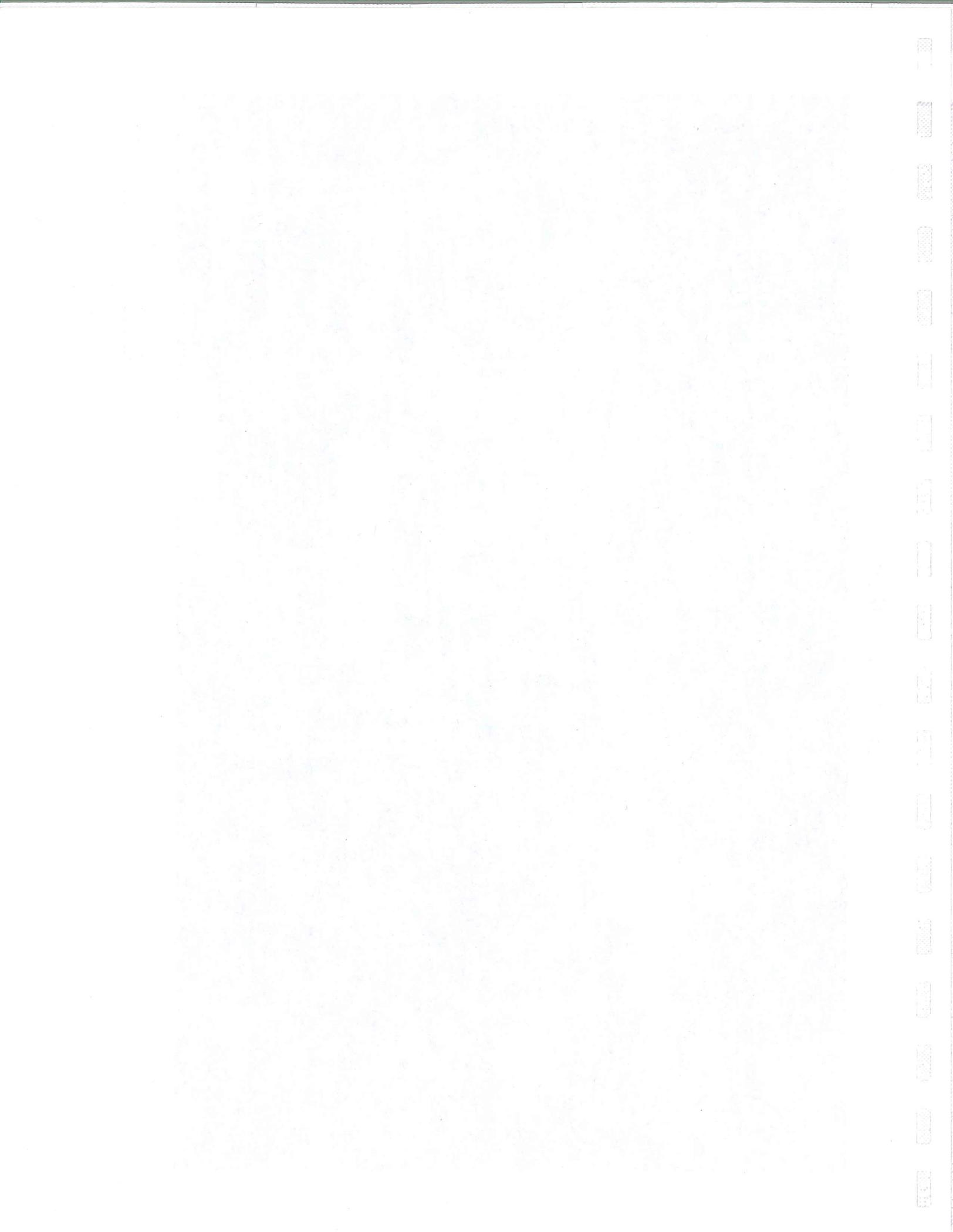
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Stonecrest at Wildwood - 2015



July 22, 2016





Appendix E

Stonecrest At Wildwood

251 Plaza Drive
Grover, MO 63040

Inquiry Number: 4682481.5
July 27, 2016

The EDR-City Directory Abstract

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>	<u>Text Abstract</u>	<u>Source Image</u>
2010	Haines Criss-Cross Directory	-	X	X	-
2005	Haines Criss-Cross Directory	-	-	-	-
1999	Haines Criss-Cross Directory	-	-	-	-
1994	Haines Criss-Cross Directory	-	-	-	-
1990	Haines Criss-Cross Directory	-	-	-	-
1986	Haines Criss-Cross Directory	-	-	-	-
1979	Haines Criss-Cross Directory	-	-	-	-
1975	Haines Criss-Cross Directory	-	-	-	-
1969	Haines Criss-Cross Directory	-	-	-	-
1965	Haines Criss-Cross Directory	-	-	-	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

251 Plaza Drive
Grover, MO 63040

FINDINGS DETAIL

Target Property research detail.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

Plaza Drive

Plaza Drive

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2010	No address listings beyond the Target Property	Haines Criss-Cross Directory

174 Plaza Drive

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2010	No Return	Haines Criss-Cross Directory

179 Plaza Drive

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2010	National City Bank	Haines Criss-Cross Directory

183 Plaza Drive

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2010	City Of Wildwood City Hall	Haines Criss-Cross Directory

FINDINGS

STREET NOT IDENTIFIED IN RESEARCH SOURCE

The following Streets were researched for this report, and the Streets were not identified in the research source.

Street Researched

Market Ave

Plaza Drive

Street Not Identified in Research Source

2010, 2005, 1999, 1994, 1990, 1986, 1979, 1975, 1969, 1965

2005, 1999, 1994, 1990, 1986, 1979, 1975, 1969, 1965

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched

251 Plaza Drive

Address Not Identified in Research Source

2010

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched

Market Ave

Plaza Drive

174 Plaza Drive

179 Plaza Drive

183 Plaza Drive

Address Not Identified in Research Source

No Years Found

Appendix F

11/11/2007



Stonecrest At Wildwood
251 Plaza Drive
Grover, MO 63040

Inquiry Number: 4682481.8
July 25, 2016

EDR Historical Topo Map Report

with QuadMatch™



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

07/25/16

Site Name:

Stonecrest At Wildwood
251 Plaza Drive
Grover, MO 63040
EDR Inquiry # 4682481.8

Client Name:

SCI Engineering, Inc.
130 Point West Blvd
St. Charles, MO 63301
Contact: Heather Martin



EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by SCI Engineering, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

Coordinates:

P.O.#	SCI No. 2016-0607.20	Latitude:	38.582354 38° 34' 56" North
Project:	Stonecrest at Wildwood	Longitude:	-90.631362 -90° 37' 53" West
		UTM Zone:	Zone 15 North
		UTM X Meters:	706318.00
		UTM Y Meters:	4273092.07
		Elevation:	762.00' above sea level

Maps Provided:

2015	1903
1993	
1982	
1974	
1968	
1954	
1944, 1945	
1940	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2015 Source Sheets



Eureka

7.5-minute, 24000



Manchester

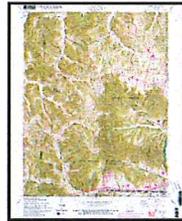
7.5-minute, 24000

1993 Source Sheets



Manchester

7.5-minute, 24000
Photo Revised 1993
Aerial Photo Revised 1990



Eureka

7.5-minute, 24000
Photo Revised 1993
Aerial Photo Revised 1990

1982 Source Sheets



Manchester

7.5-minute, 24000
Photo Revised 1982
Aerial Photo Revised 1979



Eureka

7.5-minute, 24000
Photo Revised 1982
Aerial Photo Revised 1979

1974 Source Sheets



Eureka

7.5-minute, 24000
Photo Revised 1974
Aerial Photo Revised 1974



Manchester

7.5-minute, 24000
Photo Revised 1974
Aerial Photo Revised 1974

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1968 Source Sheets



Eureka

7.5-minute, 24000
Photo Revised 1968
Aerial Photo Revised 1968



Manchester

7.5-minute, 24000
Photo Revised 1968
Aerial Photo Revised 1968

1954 Source Sheets



Manchester

7.5-minute, 24000
Aerial Photo Revised 1952



Eureka

7.5-minute, 24000
Aerial Photo Revised 1952

1944, 1945 Source Sheets



Eureka

7.5-minute, 24000



Manchester

7.5-minute, 24000

1940 Source Sheets



Eureka

7.5-minute, 24000

Topo Sheet Key

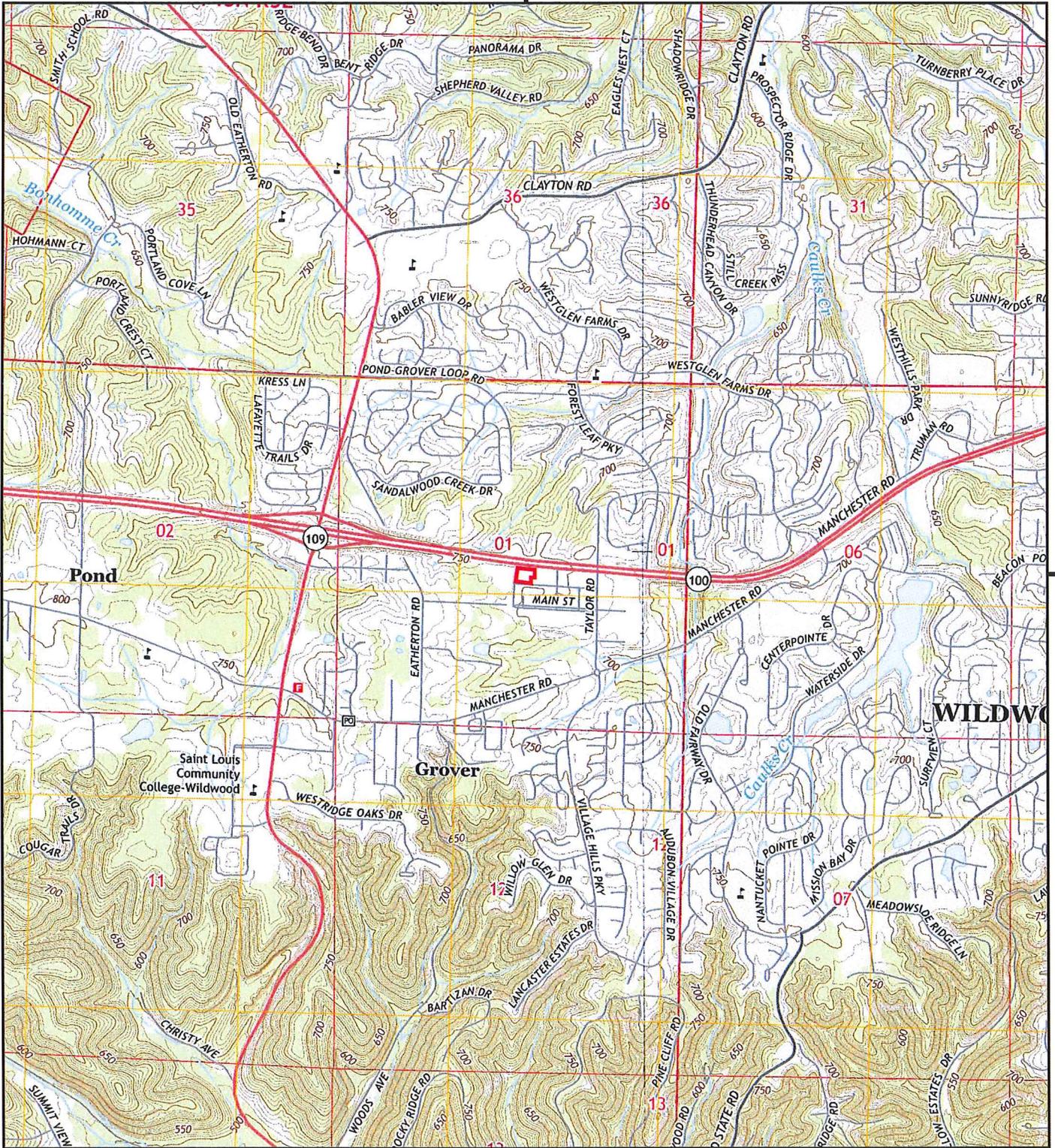
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1903 Source Sheets

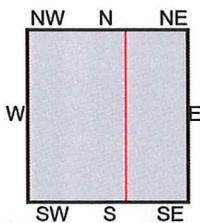
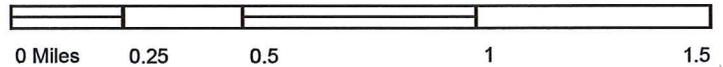


O'Fallon

30-minute, 125000



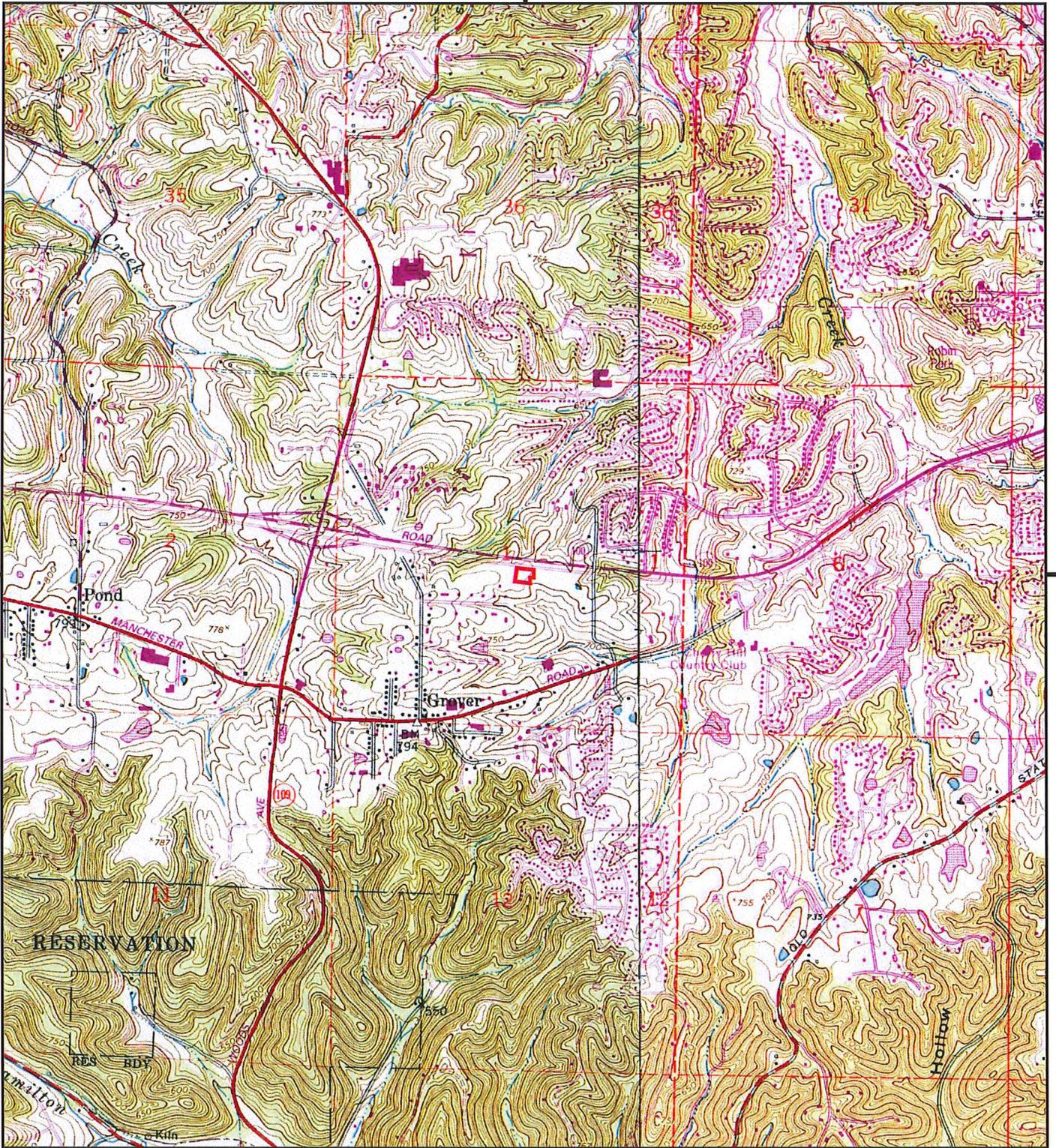
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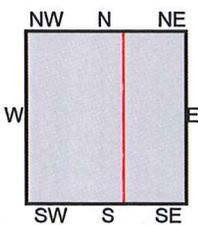
TP, Eureka, 2015, 7.5-minute
E, Manchester, 2015, 7.5-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.





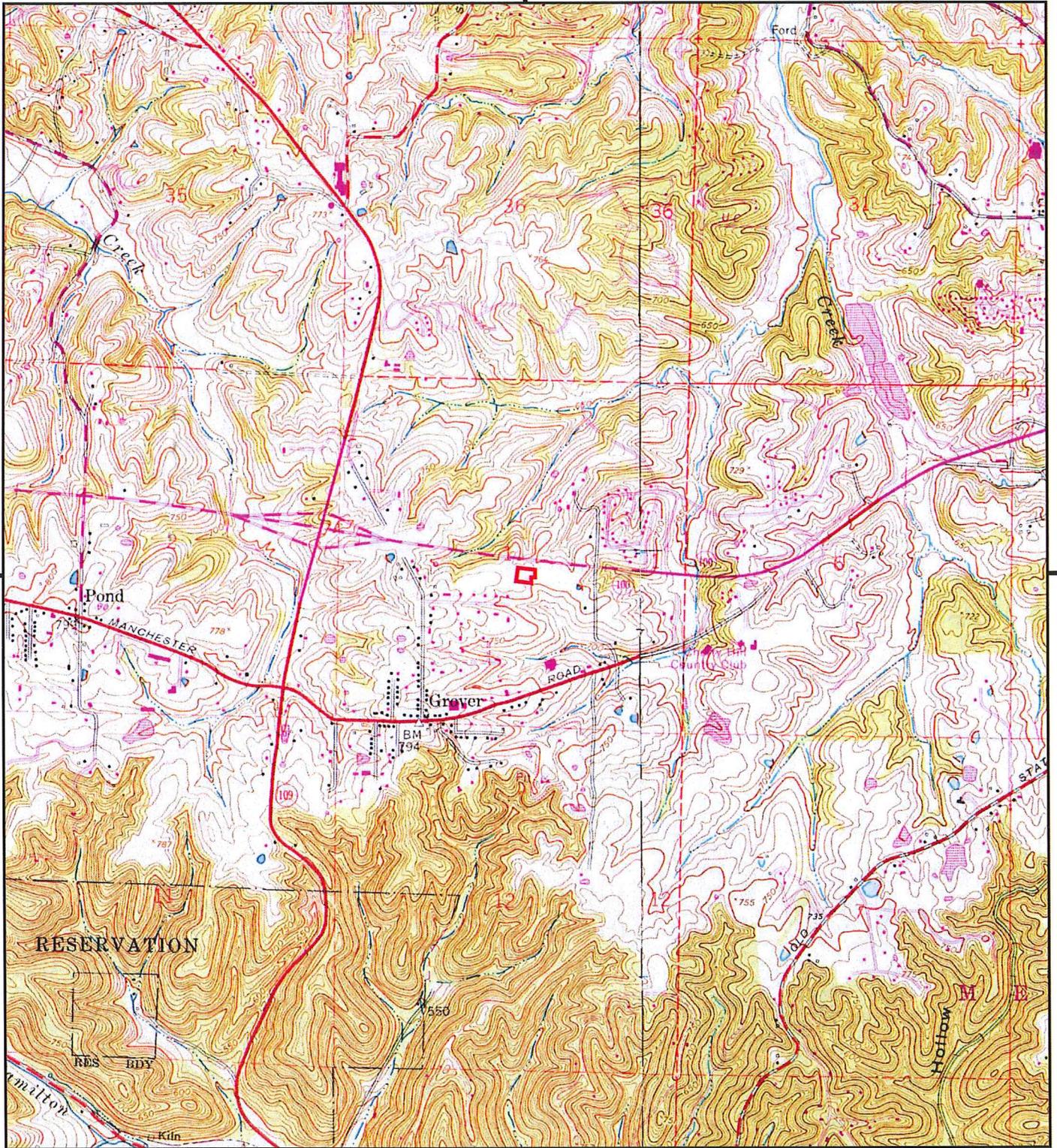
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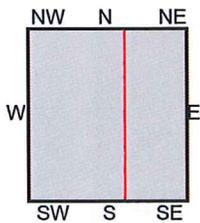
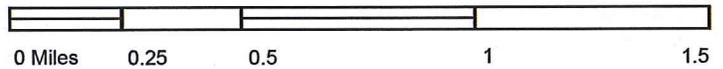
TP, Eureka, 1993, 7.5-minute
E, Manchester, 1993, 7.5-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.





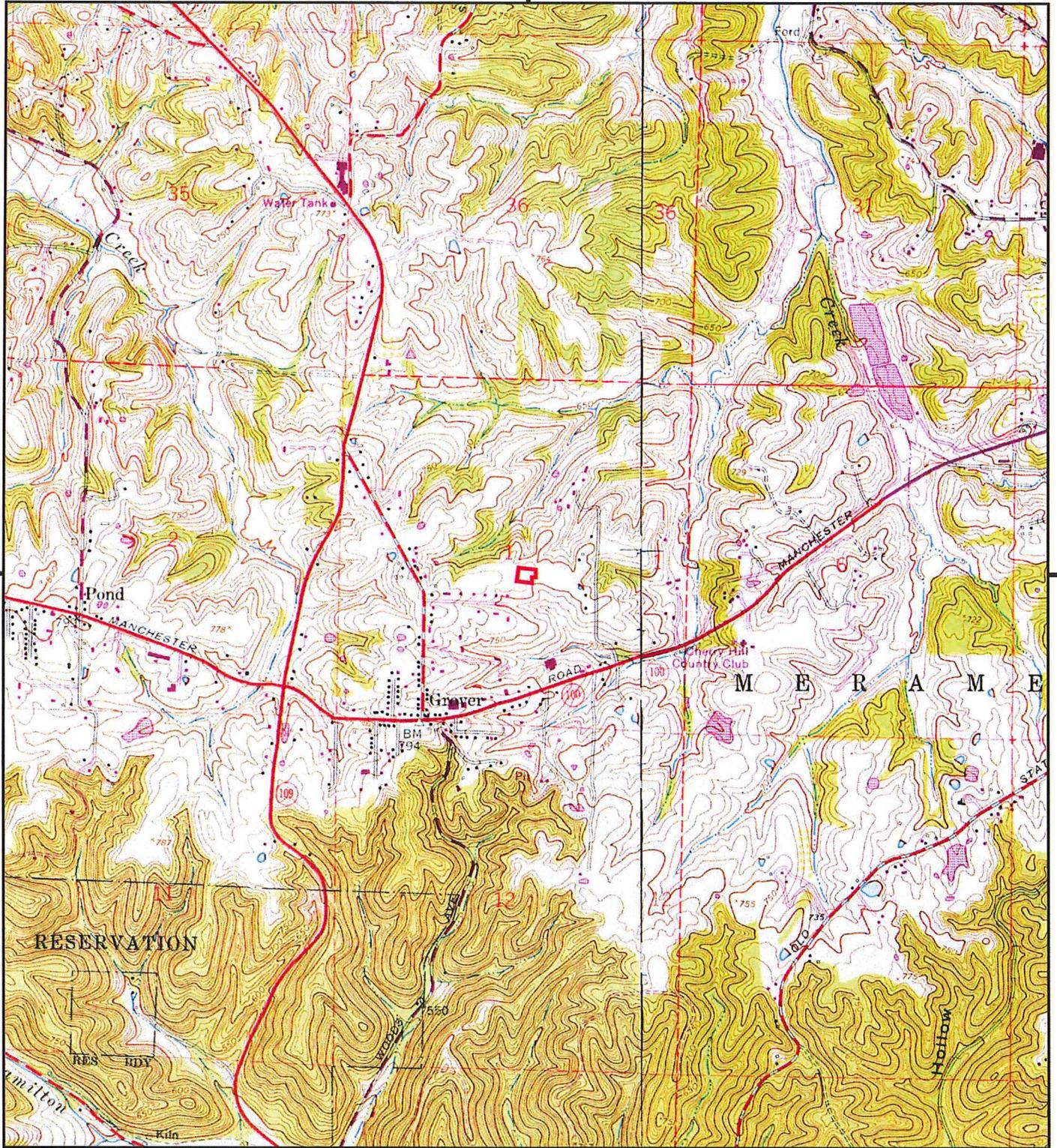
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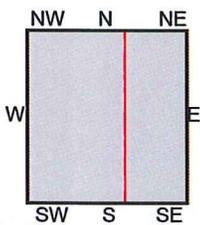
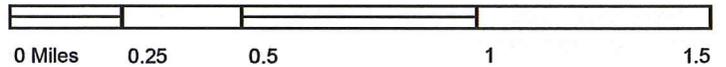
TP, Eureka, 1982, 7.5-minute
E, Manchester, 1982, 7.5-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.





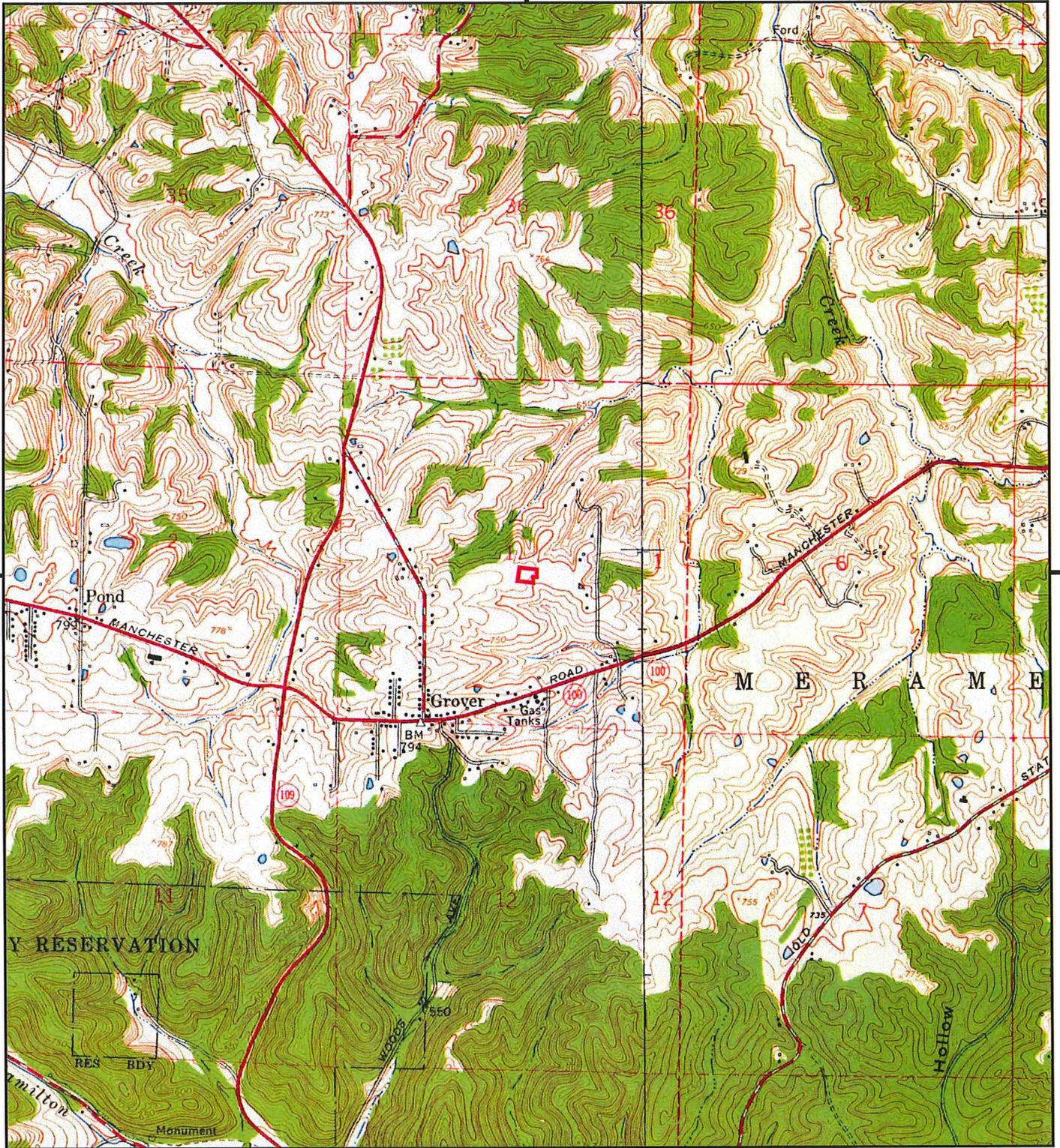
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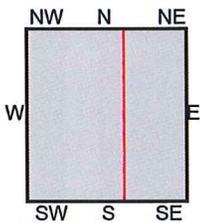
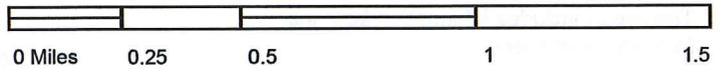
TP, Eureka, 1974, 7.5-minute
E, Manchester, 1974, 7.5-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.





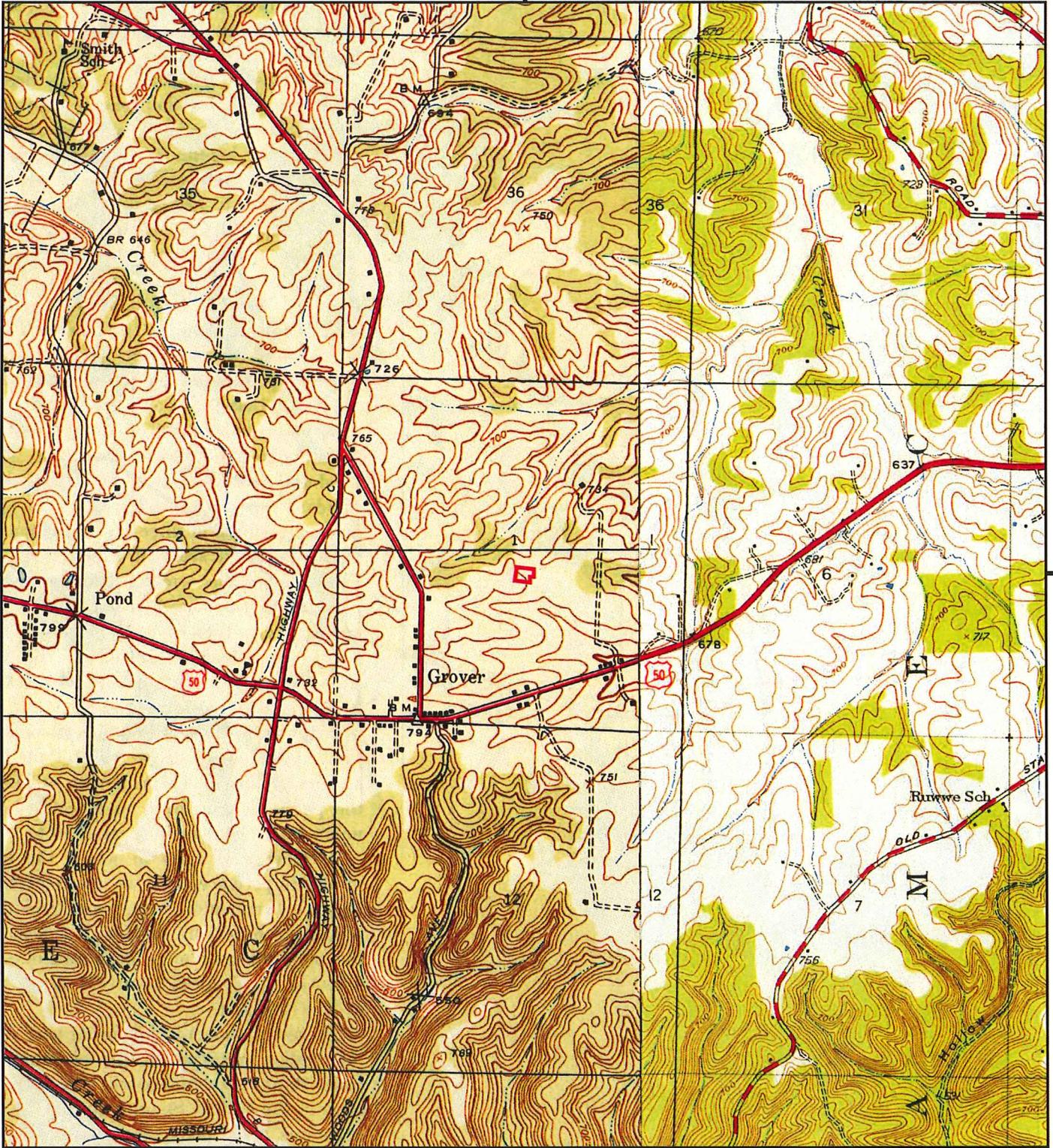
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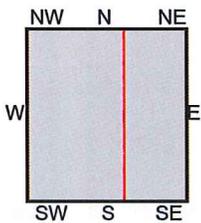
TP, Eureka, 1954, 7.5-minute
E, Manchester, 1954, 7.5-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.





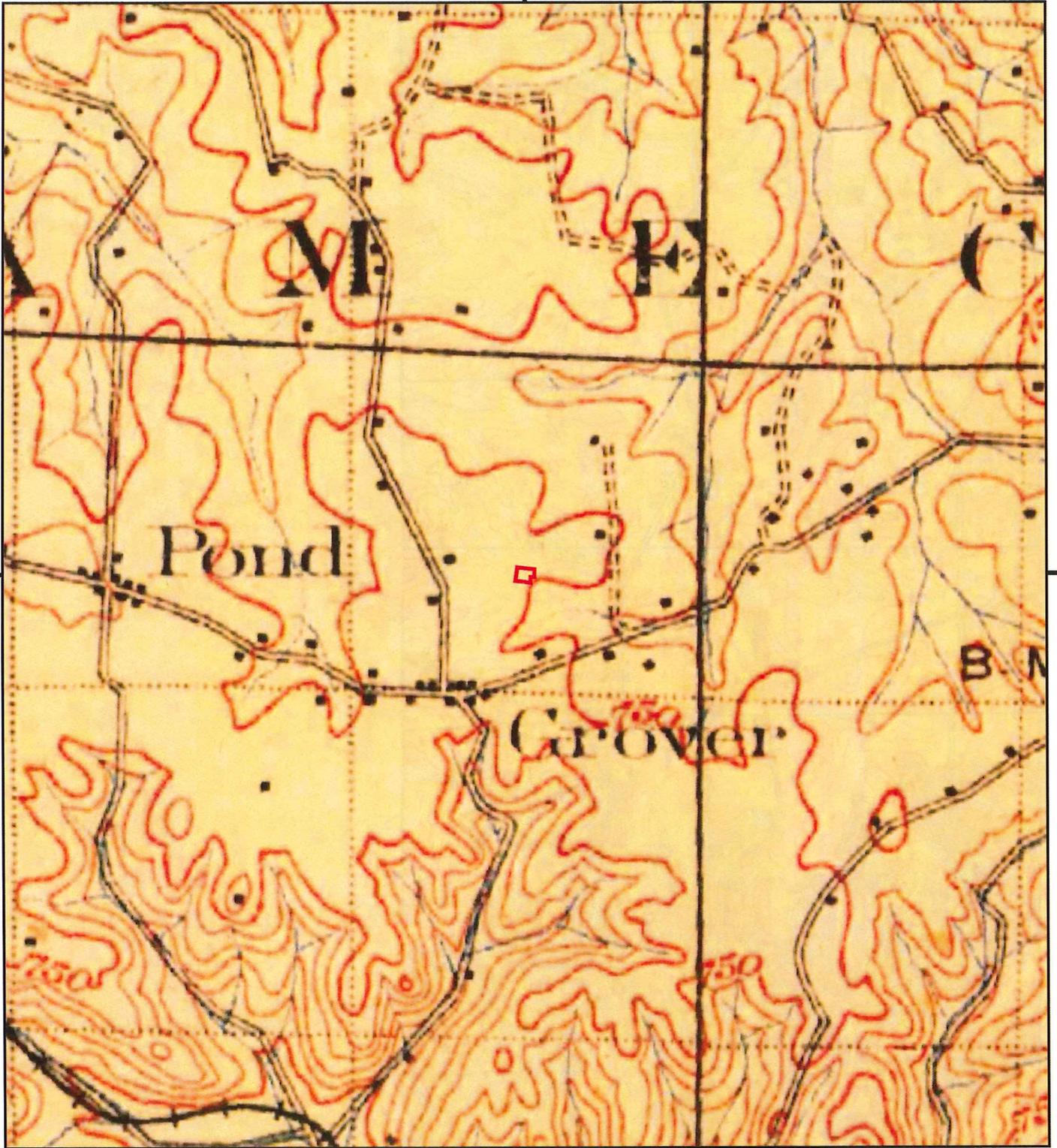
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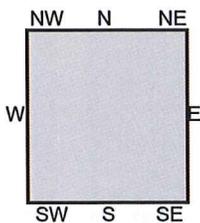
TP, Eureka, 1944, 7.5-minute
E, Manchester, 1945, 7.5-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.





This report includes information from the following map sheet(s).



TP, O'Fallon, 1903, 30-minute

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover, MO 63040
CLIENT: SCI Engineering, Inc.



Appendix G

APPENDIX B

Stonecrest At Wildwood

251 Plaza Drive
Grover, MO 63040

Inquiry Number: 4682481.2s
July 27, 2016

The EDR Radius Map™ Report with GeoCheck®

Prepared using the EDR FieldCheck® System



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

A search of the environmental records was conducted by Environmental Data Resources, Inc. (EDR). SCI ENGINEERING, INC. used the EDR FieldCheck System to review and/or revise the results of this search, based on independent data verification by SCI ENGINEERING, INC.. The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

251 PLAZA DRIVE
GROVER, MO 63040

COORDINATES

Latitude (North): 38.5823540 - 38° 34' 56.47"
Longitude (West): 90.6313620 - 90° 37' 52.90"
Universal Transverse Mercator: Zone 15
UTM X (Meters): 706323.2
UTM Y (Meters): 4272885.0
Elevation: 762 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 6727156 EUREKA, MO
Version Date: 2015

East Map: 6725263 MANCHESTER, MO
Version Date: 2015

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from: 20140720
Source: USDA

MAPPED SITES SUMMARY

Target Property Address:
251 PLAZA DRIVE
GROVER, MO 63040

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	CHERRY HILL COUNTRY	16700 MANCHESTER RD	LUST, UST, VCP, SMARS	Lower	1674, 0.317, SSE
2	FORMER CROSS OIL BUL	16832 MANCHESTER ROA	LAST, SPILLS	Higher	1786, 0.338, Sou
3	LAKE CHESTERFIELD AU	16944 MANCHESTER RD	LUST, UST	Higher	2491, 0.472, SSV.

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were identified in following databases.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-SQG..... RCRA - Small Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

EXECUTIVE SUMMARY

State- and tribal - equivalent CERCLIS

SHWS..... Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... Permitted Facility List

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing

UST..... Petroleum Storage Tanks

AST..... Aboveground Petroleum Storage Tanks

INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

AUL..... Sites with Controls

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Site List

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY..... Solid Waste Recycling Facilities

HIST LF..... Solid Waste Facility Database List

INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands

ODI..... Open Dump Inventory

DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL..... Delisted National Clandestine Laboratory Register

CDL..... Environmental Emergency Response System

DEL SHWS..... Registry Sites Withdrawn or Deleted

US CDL..... National Clandestine Laboratory Register

Local Land Records

LIENS 2..... CERCLA Lien Information

EXECUTIVE SUMMARY

Records of Emergency Release Reports

HMIRS..... Hazardous Materials Information Reporting System
SPILLS..... Environmental Response Tracking Database
SPILLS 90..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR..... RCRA - Non Generators / No Longer Regulated
FUDS..... Formerly Used Defense Sites
DOD..... Department of Defense Sites
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR..... Financial Assurance Information
EPA WATCH LIST..... EPA WATCH LIST
2020 COR ACTION..... 2020 Corrective Action Program List
TSCA..... Toxic Substances Control Act
TRIS..... Toxic Chemical Release Inventory System
SSTS..... Section 7 Tracking Systems
ROD..... Records Of Decision
RMP..... Risk Management Plans
RAATS..... RCRA Administrative Action Tracking System
PRP..... Potentially Responsible Parties
PADS..... PCB Activity Database System
ICIS..... Integrated Compliance Information System
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS..... Material Licensing Tracking System
COAL ASH DOE..... Steam-Electric Plant Operation Data
COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER..... PCB Transformer Registration Database
RADINFO..... Radiation Information Database
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS..... Incident and Accident Data
CONSENT..... Superfund (CERCLA) Consent Decrees
INDIAN RESERV..... Indian Reservations
FUSRAP..... Formerly Utilized Sites Remedial Action Program
UMTRA..... Uranium Mill Tailings Sites
LEAD SMELTERS..... Lead Smelter Sites
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
US MINES..... Mines Master Index File
FINDS..... Facility Index System/Facility Registry System
DOCKET HWC..... Hazardous Waste Compliance Docket Listing
UXO..... Unexploded Ordnance Sites
AIRS..... Permit Facility Listing
COAL ASH..... Coal Ash Disposal Sites
DRYCLEANERS..... Drycleaners in Missouri Listing
Financial Assurance..... Financial Assurance Information Listing
MINES..... Industrial Mineral Mines Database
NPDES..... Permitted Facility Listing
MO RRC..... Certified Hazardous Waste Resource Recovery Facilities
UIC..... Underground Injection Wells Database
FUELS PROGRAM..... EPA Fuels Program Registered Listing
ECHO..... Enforcement & Compliance History Information

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR Hist Auto..... EDR Exclusive Historic Gas Stations
 EDR Hist Cleaner..... EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS..... Recovered Government Archive State Hazardous Waste Facilities List
 RGA LF..... Recovered Government Archive Solid Waste Facilities List
 RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tanks.

An online review and analysis by SCI ENGINEERING, INC. of the LUST list, as provided by EDR, and dated 03/15/2016 has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>LAKE CHESTERFIELD AU</i> Facility Id: ST0007105	<i>16944 MANCHESTER RD</i>	<i>SSW 1/4 - 1/2 (0.472 mi.)</i>	<i>3</i>	<i>12</i>
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
<i>CHERRY HILL COUNTRY</i> Facility Id: ST0002165	<i>16700 MANCHESTER RD</i>	<i>SSE 1/4 - 1/2 (0.317 mi.)</i>	<i>1</i>	<i>8</i>

EXECUTIVE SUMMARY

LAST: A listing of leaking aboveground storage tanks.

An online review and analysis by SCI ENGINEERING, INC. of the LAST list, as provided by EDR, and dated 03/15/2016 has revealed that there is 1 LAST site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
FORMER CROSS OIL BUL Facility Id: ST3004872 Date Of NFA Letter From DNR: 2009-03-06 00:00:00	16832 MANCHESTER ROA	S 1/4 - 1/2 (0.338 mi.)	2	11

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Site Listing.

An online review and analysis by SCI ENGINEERING, INC. of the VCP list, as provided by EDR, and dated 01/08/2016 has revealed that there is 1 VCP site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CHERRY HILL COUNTRY Facility Status: Cert. of Completion Issued	16700 MANCHESTER RD	SSE 1/4 - 1/2 (0.317 mi.)	1	8

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

SMARS: SMARS currently houses information for Superfund, Federal Facility, Brownfields Voluntary Cleanup Program and Missouri's other state response programs.

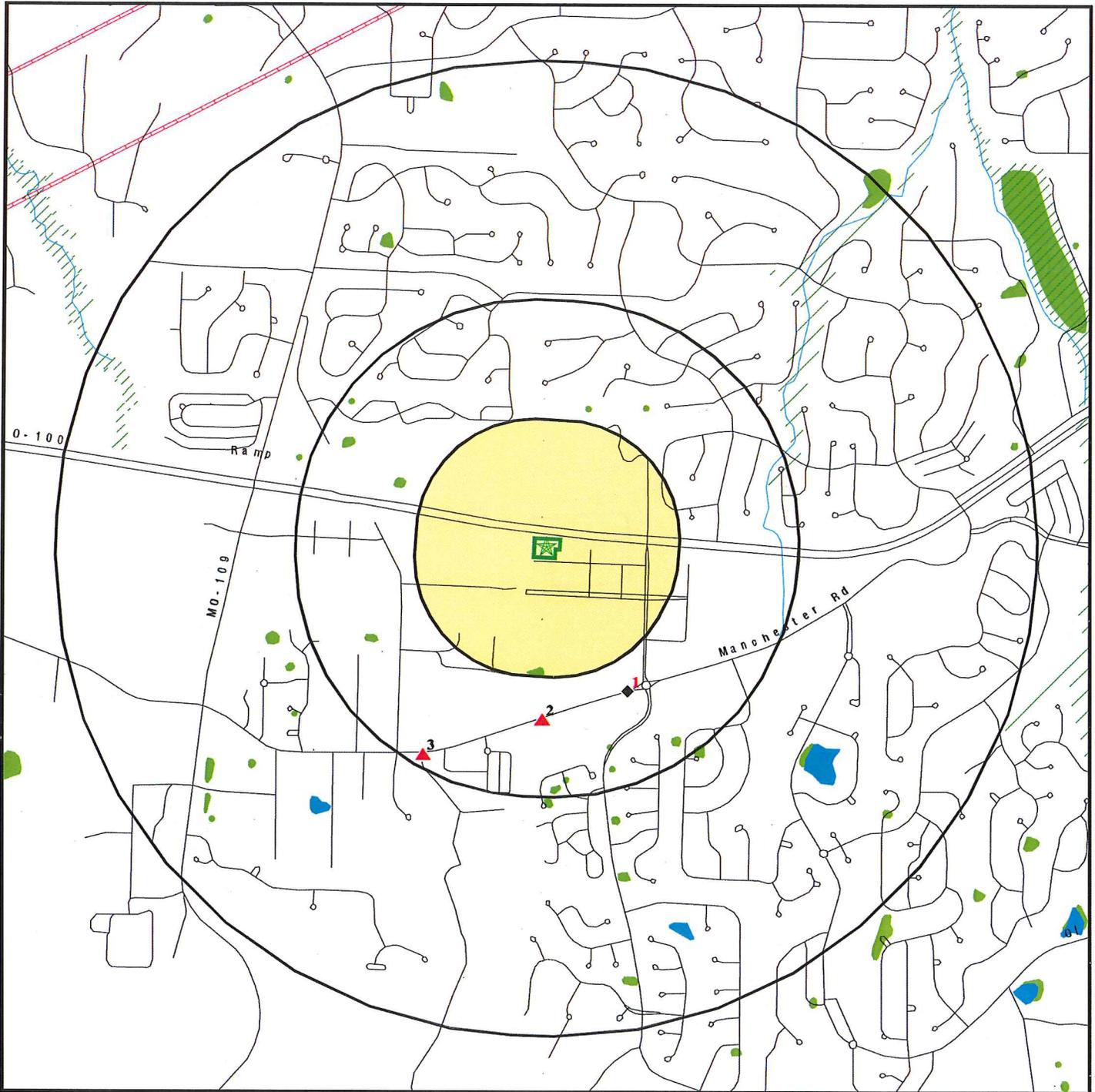
An online review and analysis by SCI ENGINEERING, INC. of the SMARS list, as provided by EDR, and dated 04/12/2016 has revealed that there is 1 SMARS site within approximately 0.5 miles of the target property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction / Distance</u>	<u>Map ID</u>	<u>Page</u>
CHERRY HILL COUNTRY	16700 MANCHESTER RD	SSE 1/4 - 1/2 (0.317 mi.)	1	8

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4682481.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  National Priority List Sites
-  Dept. Defense Sites
-  Indian Reservations BIA
-  Pipelines
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
 Grover MO 63040
LAT/LONG: 38.582354 / 90.631362

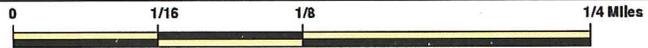
CLIENT: SCI Engineering, Inc.
CONTACT: Heather Martin
INQUIRY #: 4682481.2s
DATE: July 27, 2016 11:31 am

DETAIL MAP - 4682481.2S



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

<p>SITE NAME: Stonecrest At Wildwood ADDRESS: 251 Plaza Drive Grover MO 63040 LAT/LONG: 38.582354 / 90.631362</p>	<p>CLIENT: SCI Engineering, Inc. CONTACT: Heather Martin INQUIRY #: 4682481.2s DATE: July 27, 2016 11:31 am</p>
---	--

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
<i>Federal NPL site list</i>								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
<i>Federal Delisted NPL site list</i>								
Delisted NPL	1.000		0	0	0	0	NR	0
<i>Federal CERCLIS list</i>								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
<i>Federal CERCLIS NFRAP site list</i>								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
<i>Federal RCRA CORRACTS facilities list</i>								
CORRACTS	1.000		0	0	0	0	NR	0
<i>Federal RCRA non-CORRACTS TSD facilities list</i>								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
<i>Federal RCRA generators list</i>								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
<i>Federal institutional controls / engineering controls registries</i>								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
<i>Federal ERNS list</i>								
ERNS	TP		NR	NR	NR	NR	NR	0
<i>State- and tribal - equivalent CERCLIS</i>								
SHWS	1.000		0	0	0	0	NR	0
<i>State and tribal landfill and/or solid waste disposal site lists</i>								
SWF/LF	0.500		0	0	0	NR	NR	0
<i>State and tribal leaking storage tank lists</i>								
LUST	0.500		0	0	2	NR	NR	2
LAST	0.500		0	0	1	NR	NR	1
INDIAN LUST	0.500		0	0	0	NR	NR	0
<i>State and tribal registered storage tank lists</i>								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	1	NR	NR	1
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
DEL SHWS	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
MO RRC	TP		NR	NR	NR	NR	NR	0
SMARS	0.500		0	0	1	NR	NR	1
UIC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS	TP		NR	NR	NR	NR	NR	0
---------	----	--	----	----	----	----	----	---

MAP FINDINGS SUMMARY

<u>Database</u>	<u>Search Distance (Miles)</u>	<u>Target Property</u>	<u>< 1/8</u>	<u>1/8 - 1/4</u>	<u>1/4 - 1/2</u>	<u>1/2 - 1</u>	<u>> 1</u>	<u>Total Plotted</u>
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	5	0	0	5

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID
Direction
Distance
Elevation

Site

Database(s)

EDR ID Number
EPA ID Number

1
SSE
1/4-1/2
0.317 mi.
1674 ft.

CHERRY HILL COUNTRY CLUB
16700 MANCHESTER RD
GROVER, MO 63040

LUST **U000281542**
UST **N/A**
VCP
SMARS

Relative:
Lower

Actual:
731 ft.

LUST:
Facility ID: ST0002165
Region: SL - St. Louis Regional Office
Lat/Long (dms): Not reported
Spill Number: Not reported
Release Date: 11/01/1989
Release Type: UNDERGROUND STORAGE TANK
Date Cleanup Started: 02/11/1989
Date Cleanup Finished: 11/16/1990
Expedited: No
Expedited Date: Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009: No
Reopened Date: Not reported
Number Of Remediation Monitoring Wells: 0
Active: No
Date Of NFA Letter From DNR: Not reported
Date Record Meets Archive Criteria: Not reported
Remediation ID: R001863
Rank: Not reported
Emergency Response Date: Not reported
Emergency Cleanup Start: Not reported
Referred To DGLS for Investigation: Not reported
Contractor Performing Clean Up: Not reported
RBCA NFA: No
Project Manager: L
Next Correspondence/Update With Fac: Not reported
Date Added: 06/30/1995
Date Record Edited: 12/29/1998
Person Adding Or Editing Record: NREQHW-PEARJ
Facility Sent To State Archive: Yes
Date Remediation Unit Closed The File: Not reported
Site Affectd By Funding Level From PSTIF: No
General Comments: Not reported

UST:

Facility ID: ST0002165
Region: SL
Easting: 707395.660
Northing: 4272886.26
Owner Of Geospatial Data: Hazardous Waste Program
Geospatial Data Collected By: VANCE, S
Date GIS Data Collected: 08/27/2013
Lat/Long: 38.5781163 / -90.628284
Lat/Long (dms): Not reported

Tanks:

Owner:

Owner ID: OW00498
Owner Name: CHERRY HILL CONTROL CORPORATION
Owner Address: PO BOX 340 []
Owner City,St,Zip: GROVER, MO 63040
Owner County Code: Not reported
Owner Phone: 4583060

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CHERRY HILL COUNTRY CLUB (Continued)

U000281542

Mail Was Not Deliverable: Yes
Is Owner Active?: No
Date Registration Received: Not reported
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: Not reported
Name of Person Editing Record: Not reported

Tank ID: 1
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: Removed
Meet 98 Update Requirements: No
Date Tank Installed: Not reported
Tank Material: Steel
Code for Tank Material Manufacturer: Not reported
Code for Tank Installer: Not reported
Other Type Of Tank Material: Not reported
Tank Internal Protection: No
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Unknown
Other Type Tank Extrn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: 11/16/1990
Date Tank Permanently Closed/ Removed: 12/01/1989
Dt Tk Exp Brought InUse/Internal Tracking: Not reported
Tank Fees Waived: No
Expedite Closure On Tank?: No
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: 06/30/1995
Date Record Edited: Not reported
Person Adding/Editing Record: Not reported
Date Of NFA Letter: 12/01/1989
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 10/06/1989
Date Of Approval Letter: 1989-12-01 00:00:00
Firm Closing Tank: SITEX ENVIR, INC
Date Closure Report Received: Not reported
Registration End Date: Not reported
LockOut Flag: No
Comments: APPROVED BY LAB.

Tank Compartment:

Tanks Use: False
Compartment No: 1
Tank Compartment PK: 5473
Tank PK: 5473
Case Number: Not reported
Compartment Status: Removed
Compartment Temp Verified Dt: Not reported
Capacity: 1000
Substance: Gasoline, Including Blends
Substance Other: Not reported
Hazardous Substance: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

CHERRY HILL COUNTRY CLUB (Continued)

U000281542

Mixture: False
Date of Last Use: 1990-11-16 00:00:00
Pipe Installation Date: Not reported
Pipe System: Not reported
Pipe Material: 0
Pipe Material Other: Not reported
Pipe Protection: Not reported
Pipe Protection Date: Not reported
Pipe Double Wall: 0
Spill Protection: False

Tank Aug 2011:

Facility Id: ST0002165
Tank Id: 1
Site Usage: Not reported
Risk Type: Not reported
Soil Type: Not reported
GW Flow: Not reported
Offsite Impact: Not reported
Free Product: Not reported
Drinking Water: Not reported
Closed Under: Not reported
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

VCP:

Northing: 4272909.9039
Easting: 706592.2469
Facility Status: Cert. of Completion Issued
Activity Use: Not reported
Manager: Stephen Hall
Cert. of completion issued: 2/21/2008
Application Received: 10/11/2002
State Funded: Not reported
Federal Funded: Not reported
Acreage: 157.16
Operable Unit: Cherry Hills Golf Course
Site Description:

The property has been operated as a golf course since 1964. A developer, John Berra, Jr., (JMB#2, LLC) bought it in 1997 with the intention to redevelop the property to residential homes and a public school. In 2002, sampling of the greens and fairways revealed minor contamination with arsenic and mercury, presumably a result of pesticide use. Although the contamination was at fairly low levels, the developer intended to remediate the property to unrestricted use standards to alleviate any safety concerns. A gasoline underground storage tank (UST) was removed from the property in 1990.

Contaminant: Not reported

SMARS:

SM Number: 11055

Map ID
 Direction
 Distance
 Elevation

MAP FINDINGS

Site _____ Database(s) _____ EDR ID Number
 _____ EPA ID Number _____

CHERRY HILL COUNTRY CLUB (Continued)

U000281542

CERCLIS: Not reported
 Ownership: VCP
 Superfund Ownership: False
 Voluntary Cleanup Ownership: True
 Federal Facilities Ownership: False
 Permits Ownership: False
 NPL Date: Not reported
 Tank Site Identification #: Not reported
 Tank Remediation #: Not reported
 Registry: False
 Site Code: Not reported
 Other Site Code: Not reported

2
South
1/4-1/2
0.338 mi.
1786 ft.

FORMER CROSS OIL BULK FACILITY
16832 MANCHESTER ROAD
WILDWOOD, MO 63040

LAST **S109523463**
SPILLS **N/A**

Relative:
Higher

Actual:
763 ft.

LAST:
 Facility ID: ST3004872
 Lat/Long (dms): Not reported
 Lat/Long: Not reported
 Region: SL
 Remediation ID: R008268
 Expedited: No
 Expedited Date: Not reported
 Expenditures From The American Recovery and Reinvestment Act of 2009: No
 Reopened Date: Not reported
 Number Of Remediation Monitoring Wells: 0
 Active: No
 Rank: Not reported
 Spill Number: Not reported
 Release Date: 08/06/2008
 Emergency Reponse Date: Not reported
 Emergency Cleanup Start: Not reported
 Release Type: ABOVEGROUND STORAGE TANK
 Date Cleanup Started: 08/06/2008
 Date Cleanup Finished: 03/02/2009
 Referred To DGLS for Investigation: Not reported
 Contractor Performing Clean Up: 254
 RBCA NFA: Yes
 Date Of NFA Letter From DNR: 2009-03-06 00:00:00
 Project Manager: D
 Next Correspondence/Update With Fac: Not reported
 Date Added: 03/02/2009
 Date Record Edited: 03/06/2009
 Person Adding Or Editing Record: KOON, K
 Facility Sent To State Archive: Not reported
 Date Remediation Unit Closed The File: Not reported
 Site Affectd By Funding Level From PSTIF: Not reported
 Date Record Meets Archive Criteria: Not reported
 General Comments: 03/02/09 - Reviewed AST closure report. Contaminated soils discovered under several ASTs. Excavated and disposed of soils. Confirmation samples < DTLs. Issuing NFRA for unrestricted use. - MW

MO SPILLS:

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

FORMER CROSS OIL BULK FACILITY (Continued)

S109523463

Facility ID: 0901281259ADC
Regional Office: SLRO
Spill Number: 0901281259ADC
Date Reported: 01/28/2009
Call Date/time: 12:59:00
Lat/Long: 38.5798 -90.632858
UTM Zone For GPS: 15
Discovery Date: 12/29/2008
Email: False
Is This A Continuous Release To Be Monitored?: False
Cause: Leaking Tank System
Contact Name: Michael Noenigg
Contact Phone #: 3142275355
Contact Id: {D0B8EC57-1EAC-448E-A5FE-70B82B8F08CC}
Organization Name: Cross Oil Company
Organization Address1: PO Box 4012
Organization Address2: Not reported
Organization City: Ballwin
Organization State: MO
Organization Zip: 63027
Entity Phone #: 3142275355
Date Of Incident Search: 01/28/2009
Property Code Description: Conv. Store/Gas Station
Property Sub Category: Not reported
Cause Description: Leaking Tank System
Cause Sub Category: AST
Description: Address Matching - Other Address Matching
Job Code: Not reported
Additional Info: The caller was completing a removal at an AST site. Contaminated soil was removed from under the tank and confirmatory samples have been taken. ST# 3004872

Spill Num: 0901281259ADC
Agent Code: 566
Agency Receiving Copy of Incident Report: Private - Responsible Party Contractor
Immediate Or Delayed: D
User Name: Private - Responsible Party Contractor

3
SSW
1/4-1/2
0.472 mi.
2491 ft.

LAKE CHESTERFIELD AUTOMOTIVE
16944 MANCHESTER RD
GROVER, MO 63040

LUST U000283051
UST N/A

Relative:
Higher

LUST:
Facility ID: ST0007105
Region: SL - St. Louis Regional Office
Lat/Long (dms): Not reported
Spill Number: Not reported
Release Date: 09/11/1992
Release Type: UNDERGROUND STORAGE TANK
Date Cleanup Started: 08/28/1992
Date Cleanup Finished: 10/23/1992
Expedited: No
Expedited Date: Not reported
Expenditures From The American Recovery and Reinvestment Act of 2009: No
Reopened Date: Not reported
Number Of Remediation Monitoring Wells: 0

Actual:
781 ft.

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Active: No
Date Of NFA Letter From DNR: Not reported
Date Record Meets Archive Criteria: Not reported
Remediation ID: R003419
Rank: Not reported
Emergency Response Date: Not reported
Emergency Cleanup Start: Not reported
Referred To DGLS for Investigation: Not reported
Contractor Performing Clean Up: Not reported
RBCA NFA: No
Project Manager: L
Next Correspondence/Update With Fac: Not reported
Date Added: 06/30/1995
Date Record Edited: 08/17/1999
Person Adding Or Editing Record: NREQHW-GARRV
Facility Sent To State Archive: Yes
Date Remediation Unit Closed The File: Not reported
Site Affectd By Funding Level From PSTIF: No
General Comments: Not reported

UST:

Facility ID: ST0007105
Region: SL
Easting: 705936.469
Northing: 4272386.67
Owner Of Geospatial Data: Hazardous Waste Program
Geospatial Data Collected By: VANCE, S
Date GIS Data Collected: 08/26/2013
Lat/Long: 38.5763243 / -90.639724
Lat/Long (dms): Not reported

Tanks:

Owner:

Owner ID: OW02521
Owner Name: MC KINNON MARKETPLACT PARTNERSHIP
Owner Address: 251 WHITE TREE LANE []
Owner City,St,Zip: BALLWIN, MO 63011
Owner County Code: Not reported
Owner Phone: 3910360
Mail Was Not Deliverable: Yes
Is Owner Active?: No
Date Registration Received: Not reported
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: Not reported
Name of Person Editing Record: Not reported

Tank ID: 1
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: Removed
Meet 98 Update Requirements: No
Date Tank Installed: 01/01/1970
Tank Material: Steel
Code for Tank Material Manufacturer: Not reported
Code for Tank Installer: Not reported
Other Type Of Tank Material: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Tank Internal Protection: No
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Unknown
Other Type Tank Extn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: 11/15/1990
Date Tank Permanently Closed/ Removed: 11/19/1990
Dt Tk Exp Brought InUse/Internal Tracking: Not reported
Tank Fees Waived: No
Expedite Closure On Tank?: No
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: 06/30/1995
Date Record Edited: 07/23/1999
Person Adding/Editing Record: NREQHW-FASTT
Date Of NFA Letter: 11/19/1990
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 05/30/1990
Date Of Approval Letter: 1990-11-19 00:00:00
Firm Closing Tank: Not reported
Date Closure Report Received: 1990-10-19 00:00:00
Registration End Date: Not reported
LockOut Flag: No
Comments: SENT TO MS. MCFERREN FOR REVISION

Tank Compartment:

Tanks Use: False
Compartment No: 1
Tank Compartment PK: 17963
Tank PK: 17963
Case Number: Not reported
Compartment Status: Removed
Compartment Temp Verified Dt: Not reported
Capacity: 200
Substance: Used Oil
Substance Other: Not reported
Hazardous Substance: Not reported
Mixture: False
Date of Last Use: 1990-11-15 00:00:00
Pipe Installation Date: Not reported
Pipe System: 4
Pipe Material: 0
Pipe Material Other: Not reported
Pipe Protection: Not reported
Pipe Protection Date: Not reported
Pipe Double Wall: 0
Spill Protection: False

Owner:

Owner ID: OW02521
Owner Name: MC KINNON MARKETPLACT PARTNERSHIP
Owner Address: 251 WHITE TREE LANE []
Owner City,St,Zip: BALLWIN, MO 63011

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Owner County Code: Not reported
Owner Phone: 3910360
Mail Was Not Deliverable: Yes
Is Owner Active?: No
Date Registration Received: Not reported
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: Not reported
Name of Person Editing Record: Not reported

Tank ID: 2
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: Removed
Meet 98 Update Requirements: No
Date Tank Installed: 01/01/1970
Tank Material: Steel
Code for Tank Material Manufacturer: Not reported
Code for Tank Installer: Not reported
Other Type Of Tank Material: Not reported
Tank Internal Protection: No
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Unknown
Other Type Tank Extrn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: 11/15/1990
Date Tank Permanently Closed/ Removed: 11/19/1990
Dt Tk Exp Brought InUse/Internal Tracking: Not reported
Tank Fees Waived: No
Expedite Closure On Tank?: No
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: 06/30/1995
Date Record Edited: 07/23/1999
Person Adding/Editing Record: NREQHW-FASTT
Date Of NFA Letter: 11/19/1990
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 05/30/1990
Date Of Approval Letter: 1990-11-19 00:00:00
Firm Closing Tank: Not reported
Date Closure Report Received: 1990-10-19 00:00:00
Registration End Date: Not reported
LockOut Flag: No
Comments: SENT TO MS. MCFERREN FOR REVISION

Tank Compartment:

Tanks Use: False
Compartment No: 1
Tank Compartment PK: 17964
Tank PK: 17964
Case Number: Not reported
Compartment Status: Removed
Compartment Temp Verified Dt: Not reported
Capacity: 1000
Substance: Used Oil

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Substance Other: Not reported
Hazardous Substance: Not reported
Mixture: False
Date of Last Use: 1990-11-15 00:00:00
Pipe Installation Date: Not reported
Pipe System: 4
Pipe Material: 0
Pipe Material Other: Not reported
Pipe Protection: Not reported
Pipe Protection Date: Not reported
Pipe Double Wall: 0
Spill Protection: False

Owner:

Owner ID: OW02521
Owner Name: MC KINNON MARKETPLACT PARTNERSHIP
Owner Address: 251 WHITE TREE LANE []
Owner City,St,Zip: BALLWIN, MO 63011
Owner County Code: Not reported
Owner Phone: 3910360
Mail Was Not Deliverable: Yes
Is Owner Active?: No
Date Registration Received: Not reported
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: Not reported
Name of Person Editing Record: Not reported

Tank ID: 3
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: Removed
Meet 98 Update Requirements: No
Date Tank Installed: 01/01/1970
Tank Material: Steel
Code for Tank Material Manufacturer: Not reported
Code for Tank Installer: Not reported
Other Type Of Tank Material: Not reported
Tank Internal Protection: No
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Unknown
Other Type Tank Extrn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: 11/15/1990
Date Tank Permanently Closed/ Removed: 11/19/1990
Dt Tk Exp Brought InUse/Internal Tracking: Not reported
Tank Fees Waived: No
Expedite Closure On Tank?: No
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: 06/30/1995
Date Record Edited: 07/23/1999
Person Adding/Editing Record: NREQHW-FASTT

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Date Of NFA Letter: 11/19/1990
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 05/30/1990
Date Of Approval Letter: 1990-11-19 00:00:00
Firm Closing Tank: Not reported
Date Closure Report Received: 1990-10-19 00:00:00
Registration End Date: Not reported
LockOut Flag: No
Comments: SENT TO MS. MCFERREN FOR REVISION

Tank Compartment:

Tanks Use: False
Compartment No: 1
Tank Compartment PK: 17965
Tank PK: 17965
Case Number: Not reported
Compartment Status: Removed
Compartment Temp Verified Dt: Not reported
Capacity: 500
Substance: Kerosene
Substance Other: Not reported
Hazardous Substance: Not reported
Mixture: False
Date of Last Use: 1990-11-15 00:00:00
Pipe Installation Date: Not reported
Pipe System: Not reported
Pipe Material: 0
Pipe Material Other: Not reported
Pipe Protection: Not reported
Pipe Protection Date: Not reported
Pipe Double Wall: 0
Spill Protection: False

Owner:

Owner ID: OW02521
Owner Name: MC KINNON MARKETPLACT PARTNERSHIP
Owner Address: 251 WHITE TREE LANE []
Owner City,St,Zip: BALLWIN, MO 63011
Owner County Code: Not reported
Owner Phone: 3910360
Mail Was Not Deliverable: Yes
Is Owner Active?: No
Date Registration Received: Not reported
Date Record Added: 1995-06-30 00:00:00
Date Record Edited: Not reported
Name of Person Editing Record: Not reported

Tank ID: 4
Tank Double Wall: 0
Tank Type: Below Ground
Tank Status: Removed
Meet 98 Update Requirements: No
Date Tank Installed: 01/01/1976
Tank Material: Steel
Code for Tank Material Manufacturer: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Code for Tank Installer: Not reported
Other Type Of Tank Material: Not reported
Tank Internal Protection: No
Other Tank Internal Protection: Not reported
Tank Internal Protection Date: Not reported
Tank External Protection: Unknown
Other Type Tank Extrn Protec: Not reported
Tank External Protec Date: Not reported
Date Tank Last Used: 10/27/1992
Date Tank Permanently Closed/ Removed: 10/27/1992
Dt Tk Exp Brought InUse/Internal Tracking: Not reported
Tank Fees Waived: No
Expedite Closure On Tank?: No
Responsible Person Expediting Closure: Not reported
Temporary Status Verified Date: Not reported
Admin Fee 585: Not reported
Date Administratively Closed: Not reported
Date Record Added: 06/30/1995
Date Record Edited: 07/23/1999
Person Adding/Editing Record: NREQHW-FASTT
Date Of NFA Letter: 10/27/1992
Is Tank Used For Emergency Generator: No
Date Closure Notice Received: 10/26/1992
Date Of Approval Letter: 1992-10-27 00:00:00
Firm Closing Tank: Not reported
Date Closure Report Received: 1992-09-17 00:00:00
Registration End Date: Not reported
LockOut Flag: No
Comments: 1-1000 GAL GAS

Tank Compartment:

Tanks Use: False
Compartment No: 1
Tank Compartment PK: 17966
Tank PK: 17966
Case Number: Not reported
Compartment Status: Removed
Compartment Temp Verified Dt: Not reported
Capacity: 500
Substance: Gasoline, Including Blends
Substance Other: Not reported
Hazardous Substance: Not reported
Mixture: False
Date of Last Use: 1992-10-27 00:00:00
Pipe Installation Date: Not reported
Pipe System: Not reported
Pipe Material: Not reported
Pipe Material Other: Not reported
Pipe Protection: Not reported
Pipe Protection Date: Not reported
Pipe Double Wall: 0
Spill Protection: False

Tank Aug 2011:

Facility Id: ST0007105
Tank Id: 1

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

Site Usage: Not reported
Risk Type: Not reported
Soil Type: Not reported
GW Flow: Not reported
Offsite Impact: Not reported
Free Product: Not reported
Drinking Water: Not reported
Closed Under: Not reported
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

Facility Id: ST0007105
Tank Id: 2
Site Usage: Not reported
Risk Type: Not reported
Soil Type: Not reported
GW Flow: Not reported
Offsite Impact: Not reported
Free Product: Not reported
Drinking Water: Not reported
Closed Under: Not reported
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

Facility Id: ST0007105
Tank Id: 3
Site Usage: Not reported
Risk Type: Not reported
Soil Type: Not reported
GW Flow: Not reported
Offsite Impact: Not reported
Free Product: Not reported
Drinking Water: Not reported
Closed Under: Not reported
No Drinking Wells: No
No Buildings: No
Vapor Barrier: 0
St Louis Mo: No
Special Well Area: No
Surface Cap: No
No Excavation: No

Facility Id: ST0007105
Tank Id: 4
Site Usage: Not reported
Risk Type: Not reported
Soil Type: Not reported

Map ID
Direction
Distance
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

LAKE CHESTERFIELD AUTOMOTIVE (Continued)

U000283051

GW Flow:	Not reported
Offsite Impact:	Not reported
Free Product:	Not reported
Drinking Water:	Not reported
Closed Under:	Not reported
No Drinking Wells:	No
No Buildings:	No
Vapor Barrier:	0
St Louis Mo:	No
Special Well Area:	No
Surface Cap:	No
No Excavation:	No



Count: 0 records.

ORPHAN SUMMARY

<u>City</u>	<u>EDR ID</u>	<u>Site Name</u>	<u>Site Address</u>	<u>Zip</u>	<u>Database(s)</u>
NO SITES FOUND					



GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 07/07/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 07/07/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 08/15/2011
Number of Days to Update: 56	Next Scheduled EDR Contact: 11/28/2011
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: N/A
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 07/07/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/13/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/06/2016	Telephone: 703-603-8704
Date Made Active in Reports: 05/20/2016	Last EDR Contact: 07/06/2016
Number of Days to Update: 135	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/01/2016
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/07/2016	Source: EPA
Date Data Arrived at EDR: 04/05/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 04/05/2016
Number of Days to Update: 10	Next Scheduled EDR Contact: 08/01/2016
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2015	Source: EPA
Date Data Arrived at EDR: 03/02/2016	Telephone: 800-424-9346
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/30/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/10/2016
	Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2016	Telephone: 913-551-7003
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/30/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2016	Telephone: 913-551-7003
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/30/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2016	Telephone: 913-551-7003
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/30/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2016	Telephone: 913-551-7003
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/30/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015	Source: Department of the Navy
Date Data Arrived at EDR: 05/29/2015	Telephone: 843-820-7326
Date Made Active in Reports: 06/11/2015	Last EDR Contact: 05/16/2016
Number of Days to Update: 13	Next Scheduled EDR Contact: 08/29/2016
	Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/10/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/11/2015	Telephone: 703-603-0695
Date Made Active in Reports: 11/03/2015	Last EDR Contact: 05/25/2016
Number of Days to Update: 53	Next Scheduled EDR Contact: 09/12/2016
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/10/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/11/2015	Telephone: 703-603-0695
Date Made Active in Reports: 11/03/2015	Last EDR Contact: 05/25/2016
Number of Days to Update: 53	Next Scheduled EDR Contact: 09/12/2016
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/28/2016
Date Data Arrived at EDR: 03/30/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 51

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/28/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: Annually

State- and tribal - equivalent CERCLIS

SHWS: Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 11/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/19/2016
Number of Days to Update: 45

Source: Department of Natural Resources
Telephone: 573-751-1990
Last EDR Contact: 07/11/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Quarterly

HWS DETAIL: Registry Annual Report

Each site is described in detail in this annual report and includes the following information: a general description of the site; a summary of any significant environmental problems at and near the site; a summary of any serious health problems in the immediate vicinity of the site; the status of any testing, monitoring or remedial actions in progress or recommended by the department.

Date of Government Version: 06/30/2014
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/19/2015
Number of Days to Update: 9

Source: Department of Natural Resources
Telephone: 573-751-3176
Last EDR Contact: 05/31/2016
Next Scheduled EDR Contact: 07/02/5007
Data Release Frequency: Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facility List

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/20/2016
Date Data Arrived at EDR: 02/23/2016
Date Made Active in Reports: 04/07/2016
Number of Days to Update: 44

Source: Department of Natural Resources
Telephone: 573-751-5401
Last EDR Contact: 05/17/2016
Next Scheduled EDR Contact: 08/29/2016
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tanks

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 03/15/2016
Date Data Arrived at EDR: 03/17/2016
Date Made Active in Reports: 05/09/2016
Number of Days to Update: 53

Source: Department of Natural Resources
Telephone: 573-751-0135
Last EDR Contact: 06/14/2016
Next Scheduled EDR Contact: 09/26/2016
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LAST: Leaking Aboveground Storage Tanks

A listing of leaking aboveground storage tanks.

Date of Government Version: 03/15/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 03/17/2016	Telephone: 573-751-6822
Date Made Active in Reports: 05/09/2016	Last EDR Contact: 06/14/2016
Number of Days to Update: 53	Next Scheduled EDR Contact: 09/26/2016
	Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 12/11/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/19/2016	Telephone: 214-665-6597
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 105	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 02/05/2016	Source: EPA Region 4
Date Data Arrived at EDR: 04/29/2016	Telephone: 404-562-8677
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/26/2016
Number of Days to Update: 35	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/09/2015	Source: EPA Region 7
Date Data Arrived at EDR: 02/12/2016	Telephone: 913-551-7003
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 112	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015	Source: EPA Region 8
Date Data Arrived at EDR: 10/23/2015	Telephone: 303-312-6271
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 04/27/2016
Number of Days to Update: 118	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 02/25/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/27/2016	Telephone: 415-972-3372
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/27/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015	Source: EPA Region 1
Date Data Arrived at EDR: 10/29/2015	Telephone: 617-918-1313
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 67	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 02/17/2016	Source: EPA, Region 5
Date Data Arrived at EDR: 04/27/2016	Telephone: 312-886-7439
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/27/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016	Source: EPA Region 10
Date Data Arrived at EDR: 01/08/2016	Telephone: 206-553-2857
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 41	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Quarterly

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010	Source: FEMA
Date Data Arrived at EDR: 02/16/2010	Telephone: 202-646-5797
Date Made Active in Reports: 04/12/2010	Last EDR Contact: 07/07/2016
Number of Days to Update: 55	Next Scheduled EDR Contact: 10/24/2016
	Data Release Frequency: Varies

UST: Petroleum Storage Tanks

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 03/15/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 03/17/2016	Telephone: 573-751-0135
Date Made Active in Reports: 05/09/2016	Last EDR Contact: 06/14/2016
Number of Days to Update: 53	Next Scheduled EDR Contact: 09/26/2016
	Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tanks Registered Aboveground Storage Tanks.

Date of Government Version: 03/07/2016	Source: Department of Agriculture
Date Data Arrived at EDR: 03/18/2016	Telephone: 573-751-7062
Date Made Active in Reports: 05/09/2016	Last EDR Contact: 06/06/2016
Number of Days to Update: 52	Next Scheduled EDR Contact: 09/19/2016
	Data Release Frequency: Semi-Annually

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/26/2016	Source: EPA Region 8
Date Data Arrived at EDR: 02/05/2016	Telephone: 303-312-6137
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 119	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015	Source: EPA Region 5
Date Data Arrived at EDR: 11/13/2015	Telephone: 312-886-6136
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 04/27/2016
Number of Days to Update: 52	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016	Source: EPA Region 10
Date Data Arrived at EDR: 01/08/2016	Telephone: 206-553-2857
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 41	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 10/29/2015	Telephone: 617-918-1313
Date Made Active in Reports: 01/04/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 67	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014	Source: EPA Region 7
Date Data Arrived at EDR: 11/25/2014	Telephone: 913-551-7003
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 04/29/2016
Number of Days to Update: 65	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 12/03/2015	Source: EPA Region 6
Date Data Arrived at EDR: 02/04/2016	Telephone: 214-665-7591
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/29/2016
Number of Days to Update: 120	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Semi-Annually

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 02/25/2016	Source: EPA Region 9
Date Data Arrived at EDR: 04/27/2016	Telephone: 415-972-3368
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/27/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 02/05/2016	Source: EPA Region 4
Date Data Arrived at EDR: 04/29/2016	Telephone: 404-562-9424
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 04/26/2016
Number of Days to Update: 35	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Semi-Annually

State and tribal institutional control / engineering control registries

AUL: Sites with Controls

Activity and use limitations include both engineering controls and institutional controls.

Date of Government Version: 01/08/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 02/18/2016	Telephone: 573-751-3176
Date Made Active in Reports: 04/07/2016	Last EDR Contact: 05/19/2016
Number of Days to Update: 49	Next Scheduled EDR Contact: 08/29/2016
	Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008	Source: EPA, Region 7
Date Data Arrived at EDR: 04/22/2008	Telephone: 913-551-7365
Date Made Active in Reports: 05/19/2008	Last EDR Contact: 04/20/2009
Number of Days to Update: 27	Next Scheduled EDR Contact: 07/20/2009
	Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015	Source: EPA, Region 1
Date Data Arrived at EDR: 09/29/2015	Telephone: 617-918-1102
Date Made Active in Reports: 02/18/2016	Last EDR Contact: 07/01/2016
Number of Days to Update: 142	Next Scheduled EDR Contact: 10/10/2016
	Data Release Frequency: Varies

VCP: Sites Participating in the Voluntary Cleanup Program

Sites participating in the Voluntary Cleanup Program.

Date of Government Version: 01/08/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 02/18/2016	Telephone: 573-526-8913
Date Made Active in Reports: 04/07/2016	Last EDR Contact: 05/19/2016
Number of Days to Update: 49	Next Scheduled EDR Contact: 08/29/2016
	Data Release Frequency: Semi-Annually

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Site List

Brownfields are sites where redevelopment and reuse is hampered by known or suspected contamination with hazardous substances. While many brownfield sites are minimally contaminated, potential environmental liability can be a problem for owners, operators, prospective buyers and financial institutions. Because of the large number of these sites, their economic impact especially in heavily industrial areas is substantial.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/08/2016
Date Data Arrived at EDR: 02/18/2016
Date Made Active in Reports: 04/07/2016
Number of Days to Update: 49

Source: Department of Natural Resources
Telephone: 573-526-8913
Last EDR Contact: 05/19/2016
Next Scheduled EDR Contact: 08/29/2016
Data Release Frequency: Semi-Annually

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/21/2016
Date Data Arrived at EDR: 03/22/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 113

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/22/2016
Next Scheduled EDR Contact: 10/03/2016
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF: Solid Waste Facility Database List

This database contains detailed information per site. It is no longer maintained by the Department of Natural Resources. For current information on solid waste facilities/landfills see the SWF/LF database.

Date of Government Version: 04/12/2005
Date Data Arrived at EDR: 07/19/2006
Date Made Active in Reports: 08/18/2006
Number of Days to Update: 30

Source: Department of Natural Resources
Telephone: 573-751-5401
Last EDR Contact: 01/12/2009
Next Scheduled EDR Contact: 04/13/2009
Data Release Frequency: No Update Planned

SWRCY: Solid Waste Recycling Facilities

A listing of recycling center locations.

Date of Government Version: 03/29/2016
Date Data Arrived at EDR: 03/31/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 40

Source: Department of Natural Resources
Telephone: 573-526-3944
Last EDR Contact: 05/27/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/27/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/20/2016
Next Scheduled EDR Contact: 10/07/2016
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/04/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 40

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/31/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

CDL: Environmental Emergency Response System

Incidents reported to the Department of Natural Resources where drug lab materials were involved.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 03/17/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 54

Source: Department of Natural Resources
Telephone: 573-751-3443
Last EDR Contact: 06/24/2016
Next Scheduled EDR Contact: 09/26/2016
Data Release Frequency: Varies

DEL SHWS: Registry Sites Withdrawn or Deleted

A list of sites that were removed from the Registry or for which Registry action was suspended due to cleanup.

Date of Government Version: 11/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/19/2016
Number of Days to Update: 45

Source: Department of Natural Resources
Telephone: 573-522-3710
Last EDR Contact: 06/24/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Annually

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/04/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 40

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/31/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Quarterly

Local Land Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/18/2014	Telephone: 202-564-6023
Date Made Active in Reports: 04/24/2014	Last EDR Contact: 04/26/2016
Number of Days to Update: 37	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 06/26/2015	Telephone: 202-366-4555
Date Made Active in Reports: 09/02/2015	Last EDR Contact: 06/28/2016
Number of Days to Update: 68	Next Scheduled EDR Contact: 10/10/2016
	Data Release Frequency: Annually

SPILLS: Environmental Response Tracking Database

Releases of hazardous substances reported to the department's Environmental Emergency Response (EER) section.

Date of Government Version: 02/05/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 03/17/2016	Telephone: 573-526-3349
Date Made Active in Reports: 05/10/2016	Last EDR Contact: 06/24/2016
Number of Days to Update: 54	Next Scheduled EDR Contact: 09/26/2016
	Data Release Frequency: Semi-Annually

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/27/2012	Source: FirstSearch
Date Data Arrived at EDR: 01/03/2013	Telephone: N/A
Date Made Active in Reports: 02/22/2013	Last EDR Contact: 01/03/2013
Number of Days to Update: 50	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/02/2016	Telephone: 913-551-7003
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/30/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/10/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/24/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/20/2016
Next Scheduled EDR Contact: 08/29/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/18/2016
Next Scheduled EDR Contact: 08/29/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/09/2016
Next Scheduled EDR Contact: 08/22/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/12/2016
Next Scheduled EDR Contact: 08/22/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/24/2016
Next Scheduled EDR Contact: 10/03/2016
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/24/2016
Next Scheduled EDR Contact: 09/05/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/25/2016
Next Scheduled EDR Contact: 08/08/2016
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/07/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/26/2015	Telephone: 202-564-8600
Date Made Active in Reports: 11/03/2015	Last EDR Contact: 04/25/2016
Number of Days to Update: 69	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/02/2008
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/01/2008
	Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013	Source: EPA
Date Data Arrived at EDR: 10/17/2014	Telephone: 202-564-6023
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 05/12/2016
Number of Days to Update: 3	Next Scheduled EDR Contact: 08/22/2016
	Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014	Source: EPA
Date Data Arrived at EDR: 10/15/2014	Telephone: 202-566-0500
Date Made Active in Reports: 11/17/2014	Last EDR Contact: 07/15/2016
Number of Days to Update: 33	Next Scheduled EDR Contact: 10/24/2016
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/06/2015	Telephone: 202-564-5088
Date Made Active in Reports: 03/09/2015	Last EDR Contact: 07/07/2016
Number of Days to Update: 31	Next Scheduled EDR Contact: 10/24/2016
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 05/20/2016
Number of Days to Update: 25	Next Scheduled EDR Contact: 09/05/2016
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009	Source: EPA
Date Data Arrived at EDR: 04/16/2009	Telephone: 202-566-1667
Date Made Active in Reports: 05/11/2009	Last EDR Contact: 05/20/2016
Number of Days to Update: 25	Next Scheduled EDR Contact: 09/05/2016
	Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/07/2016	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 03/18/2016	Telephone: 301-415-7169
Date Made Active in Reports: 04/15/2016	Last EDR Contact: 05/06/2016
Number of Days to Update: 28	Next Scheduled EDR Contact: 08/22/2016
	Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005	Source: Department of Energy
Date Data Arrived at EDR: 08/07/2009	Telephone: 202-586-8719
Date Made Active in Reports: 10/22/2009	Last EDR Contact: 06/09/2016
Number of Days to Update: 76	Next Scheduled EDR Contact: 09/19/2016
	Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 09/10/2014	Telephone: N/A
Date Made Active in Reports: 10/20/2014	Last EDR Contact: 06/10/2016
Number of Days to Update: 40	Next Scheduled EDR Contact: 09/19/2016
	Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database

The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011	Source: Environmental Protection Agency
Date Data Arrived at EDR: 10/19/2011	Telephone: 202-566-0517
Date Made Active in Reports: 01/10/2012	Last EDR Contact: 04/26/2016
Number of Days to Update: 83	Next Scheduled EDR Contact: 08/08/2016
	Data Release Frequency: Varies

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 07/07/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transportation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transportation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/04/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/15/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/27/2016
Next Scheduled EDR Contact: 09/05/2016
Data Release Frequency: Biennially

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005	Source: USGS
Date Data Arrived at EDR: 12/08/2006	Telephone: 202-208-3710
Date Made Active in Reports: 01/11/2007	Last EDR Contact: 07/15/2016
Number of Days to Update: 34	Next Scheduled EDR Contact: 10/24/2016
	Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/11/2016	Source: Department of Energy
Date Data Arrived at EDR: 03/15/2016	Telephone: 202-586-3559
Date Made Active in Reports: 06/03/2016	Last EDR Contact: 05/09/2016
Number of Days to Update: 80	Next Scheduled EDR Contact: 08/22/2016
	Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010	Source: Department of Energy
Date Data Arrived at EDR: 10/07/2011	Telephone: 505-845-0011
Date Made Active in Reports: 03/01/2012	Last EDR Contact: 05/23/2016
Number of Days to Update: 146	Next Scheduled EDR Contact: 09/05/2016
	Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014	Source: Environmental Protection Agency
Date Data Arrived at EDR: 11/26/2014	Telephone: 703-603-8787
Date Made Active in Reports: 01/29/2015	Last EDR Contact: 07/08/2016
Number of Days to Update: 64	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931 and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001	Source: American Journal of Public Health
Date Data Arrived at EDR: 10/27/2010	Telephone: 703-305-6451
Date Made Active in Reports: 12/02/2010	Last EDR Contact: 12/02/2009
Number of Days to Update: 36	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/22/2016
Next Scheduled EDR Contact: 10/10/2016
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2016
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/15/2016
Number of Days to Update: 44

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 06/02/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 06/03/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 06/03/2016
Next Scheduled EDR Contact: 09/12/2016
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (913) 551-7003
Last EDR Contact: 06/08/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 03/01/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/03/2016	Telephone: 202-564-0527
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 05/25/2016
Number of Days to Update: 33	Next Scheduled EDR Contact: 09/12/2016
	Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015	Source: Department of Defense
Date Data Arrived at EDR: 01/29/2016	Telephone: 571-373-0407
Date Made Active in Reports: 04/05/2016	Last EDR Contact: 06/20/2016
Number of Days to Update: 67	Next Scheduled EDR Contact: 10/03/2016
	Data Release Frequency: Varies

AIRS: Permit Facility Listing

A listing of Air Pollution Control Program permits.

Date of Government Version: 03/31/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 04/01/2016	Telephone: 573-751-4817
Date Made Active in Reports: 05/10/2016	Last EDR Contact: 06/13/2016
Number of Days to Update: 39	Next Scheduled EDR Contact: 09/26/2016
	Data Release Frequency: Varies

COAL ASH: Coal Ash Disposal Sites

A listing of power plants with coal ash ponds.

Date of Government Version: 01/14/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 04/08/2016	Telephone: 573-526-1825
Date Made Active in Reports: 05/10/2016	Last EDR Contact: 07/01/2016
Number of Days to Update: 32	Next Scheduled EDR Contact: 10/17/2016
	Data Release Frequency: Varies

DRYCLEANERS: Drycleaners in Missouri Listing

A listing of drycleaner facilities that are potentially eligible for reimbursement of department approved cleanup costs under the Drycleaning Environmental Response Trust Fund.

Date of Government Version: 11/13/2015	Source: Department of Natural Resources
Date Data Arrived at EDR: 12/21/2015	Telephone: 573-526-8913
Date Made Active in Reports: 02/19/2016	Last EDR Contact: 06/16/2016
Number of Days to Update: 60	Next Scheduled EDR Contact: 09/26/2016
	Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information.

Date of Government Version: 03/09/2016	Source: Department of Natural Resources
Date Data Arrived at EDR: 03/11/2016	Telephone: 573-751-3553
Date Made Active in Reports: 05/10/2016	Last EDR Contact: 06/06/2016
Number of Days to Update: 60	Next Scheduled EDR Contact: 09/19/2016
	Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

Financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 03/08/2016
Date Data Arrived at EDR: 03/09/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 62

Source: Department of Natural Resources
Telephone: 573-751-5401
Last EDR Contact: 06/08/2016
Next Scheduled EDR Contact: 09/19/2016
Data Release Frequency: Varies

MINES: Industrial Mineral Mines Database

This data set contains names, locations and additional data for active Industrial Mineral Mines permitted with the Missouri Department of Natural Resources, Division of Environmental Quality, Land Reclamation Program. Industrial Mineral Mines permitted are rock quarries, clay pits, sand and gravel pits, or in-stream sand and gravel operations.

Date of Government Version: 09/12/2014
Date Data Arrived at EDR: 10/23/2014
Date Made Active in Reports: 12/01/2014
Number of Days to Update: 39

Source: Department of Natural Resources
Telephone: 573-751-4041
Last EDR Contact: 04/22/2016
Next Scheduled EDR Contact: 08/01/2016
Data Release Frequency: Varies

NPDES: Permitted Facility Listing

A listing of permitted facilities from the Water Pollution Branch.

Date of Government Version: 04/05/2016
Date Data Arrived at EDR: 04/08/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 32

Source: Department of Natural Resources
Telephone: 573-751-7023
Last EDR Contact: 07/05/2016
Next Scheduled EDR Contact: 10/17/2016
Data Release Frequency: Varies

RRC: Certified Hazardous Waste Resource Recovery Facilities

Facilities that take hazardous waste material, either from on-site or off-site, and make it re-usable.

Date of Government Version: 03/11/2016
Date Data Arrived at EDR: 03/16/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 55

Source: Department of Natural Resources
Telephone: 573-751-3176
Last EDR Contact: 06/13/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

SMARS: Site Management and Reporting System

SMARS currently houses information for Superfund, Federal Facility, Brownfields Voluntary Cleanup Program and Missouri's other state response programs.

Date of Government Version: 04/12/2016
Date Data Arrived at EDR: 05/04/2016
Date Made Active in Reports: 05/20/2016
Number of Days to Update: 16

Source: Department of Natural Resources
Telephone: 573-751-3043
Last EDR Contact: 05/04/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Varies

UIC: Underground Injection Wells Database

A listing of underground injection well locations. The UIC Program is responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.

Date of Government Version: 02/29/2016
Date Data Arrived at EDR: 03/18/2016
Date Made Active in Reports: 05/10/2016
Number of Days to Update: 53

Source: Department of Natural Resources
Telephone: 573-368-2183
Last EDR Contact: 05/27/2016
Next Scheduled EDR Contact: 09/05/2016
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 05/24/2016
Date Data Arrived at EDR: 05/25/2016
Date Made Active in Reports: 07/13/2016
Number of Days to Update: 49

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/25/2016
Next Scheduled EDR Contact: 09/05/2016
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/22/2016
Next Scheduled EDR Contact: 10/03/2016
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Missouri.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Missouri.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/15/2014
Number of Days to Update: 198

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Natural Resources in Missouri.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/03/2014
Number of Days to Update: 186

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data

Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/13/2016
Next Scheduled EDR Contact: 08/29/2016
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 05/01/2016
Date Data Arrived at EDR: 05/06/2016
Date Made Active in Reports: 06/17/2016
Number of Days to Update: 42

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/06/2016
Next Scheduled EDR Contact: 08/15/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/18/2016
Next Scheduled EDR Contact: 10/31/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 06/06/2016
Next Scheduled EDR Contact: 09/05/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/13/2016
Next Scheduled EDR Contact: 09/26/2016
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Child Care Facilities

Source: Department of Health & Senior Services

Telephone: 573-751-2450

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: National Wetland Inventory of Missouri

Source: Department of Natural Resources

Telephone: 573-751-5110

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK® - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

STONECREST AT WILDWOOD
251 PLAZA DRIVE
GROVER, MO 63040

TARGET PROPERTY COORDINATES

Latitude (North): 38.582354 - 38° 34' 56.47"
Longitude (West): 90.631362 - 90° 37' 52.90"
Universal Tranverse Mercator: Zone 15
UTM X (Meters): 706323.2
UTM Y (Meters): 4272885.0
Elevation: 762 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map: 6727156 EUREKA, MO
Version Date: 2015

East Map: 6725263 MANCHESTER, MO
Version Date: 2015

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

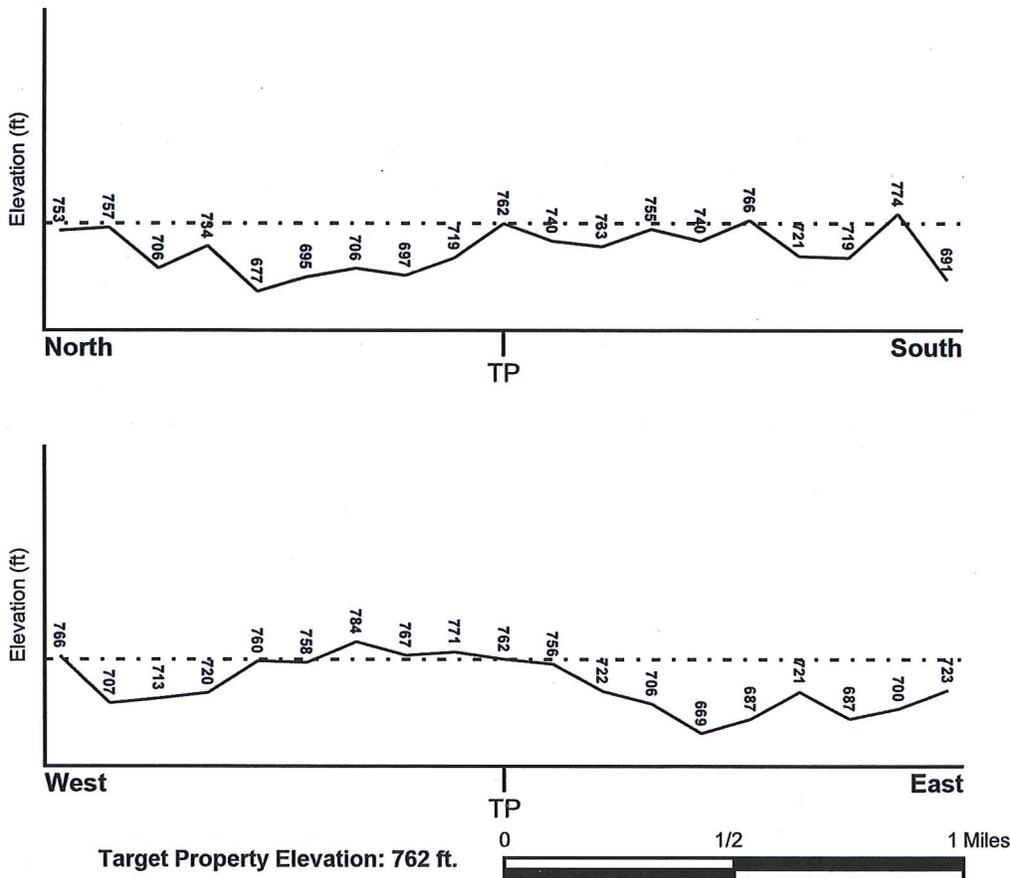
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County
ST LOUIS, MO

FEMA Flood
Electronic Data
YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 29189C0235H - FEMA Q3 Flood data

Additional Panels in search area: 29189C0251H - FEMA Q3 Flood data
29189C0253H - FEMA Q3 Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property
EUREKA

NWI Electronic
Data Coverage
YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION</u>	<u>GENERAL DIRECTION</u>
<u>Not Reported</u>	<u>FROM TP</u>	<u>GROUNDWATER FLOW</u>

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

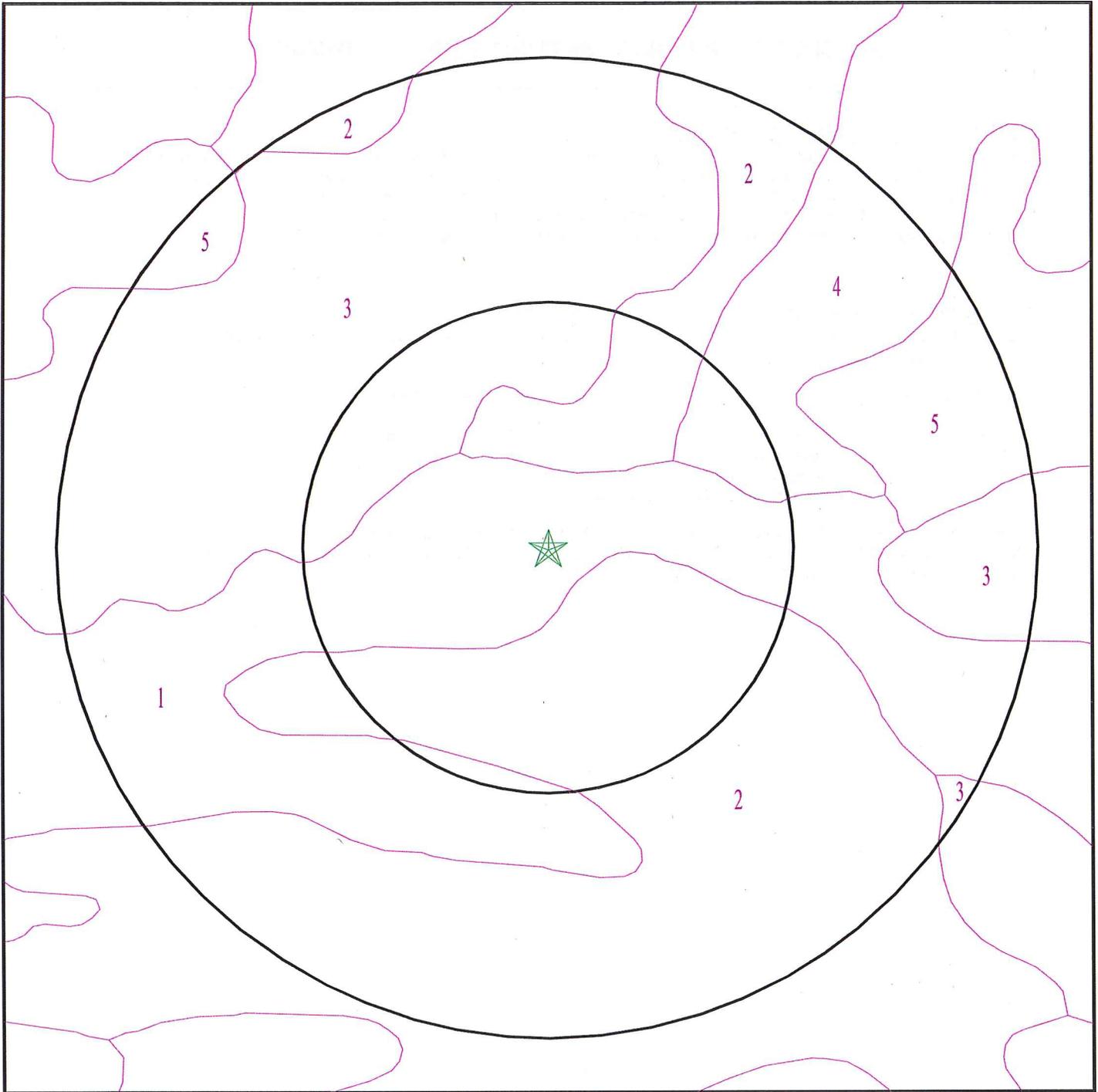
Era: Paleozoic
System: Mississippian
Series: Osagean and Kinderhookian Series
Code: M1 (decoded above as Era, System & Series)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 4682481.2s



- ★ Target Property
- ∩ SSURGO Soil
- ∩ Water



SITE NAME: Stonecrest At Wildwood
ADDRESS: 251 Plaza Drive
Grover MO 63040
LAT/LONG: 38.582354 / 90.631362

CLIENT: SCI Engineering, Inc.
CONTACT: Heather Martin
INQUIRY #: 4682481.2s
DATE: July 27, 2016 11:31 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Iva

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat poorly drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 61 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.1
2	12 inches	55 inches	silty clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 6 Min: 4.5
3	55 inches	59 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6

Soil Map ID: 2

Soil Component Name: Winfield

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 99 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6
2	9 inches	16 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6
3	16 inches	48 inches	silty clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 4.5
4	48 inches	59 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.1

Soil Map ID: 3

Soil Component Name: Goss

Soil Surface Texture: silty clay loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	9 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 42 Min: 14	Max: 7.3 Min: 4.5

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
2	0 inches	9 inches	silt loam	Not reported	Not reported	Max: 42 Min: 14	Max: 7.3 Min: 4.5
3	20 inches	66 inches	extremely gravelly silty clay	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 4.5

Soil Map ID: 4

Soil Component Name: Menfro

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	12 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.1
2	12 inches	16 inches	silty clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.1
3	16 inches	55 inches	silty clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.1
4	55 inches	59 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 5

Soil Component Name: Winfield

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 99 inches

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6
2	9 inches	16 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.6
3	16 inches	48 inches	silty clay loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 4.5
4	48 inches	59 inches	silt loam	Not reported	Not reported	Max: 14 Min: 4	Max: 7.3 Min: 5.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000694537	1/2 - 1 Mile East
B4	USGS40000694520	1/2 - 1 Mile ESE
C5	USGS40000694562	1/2 - 1 Mile WNW
9	USGS40000694493	1/2 - 1 Mile SE
11	USGS40000694494	1/2 - 1 Mile SW
D12	USGS40000694609	1/2 - 1 Mile NW
E16	USGS40000694487	1/2 - 1 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

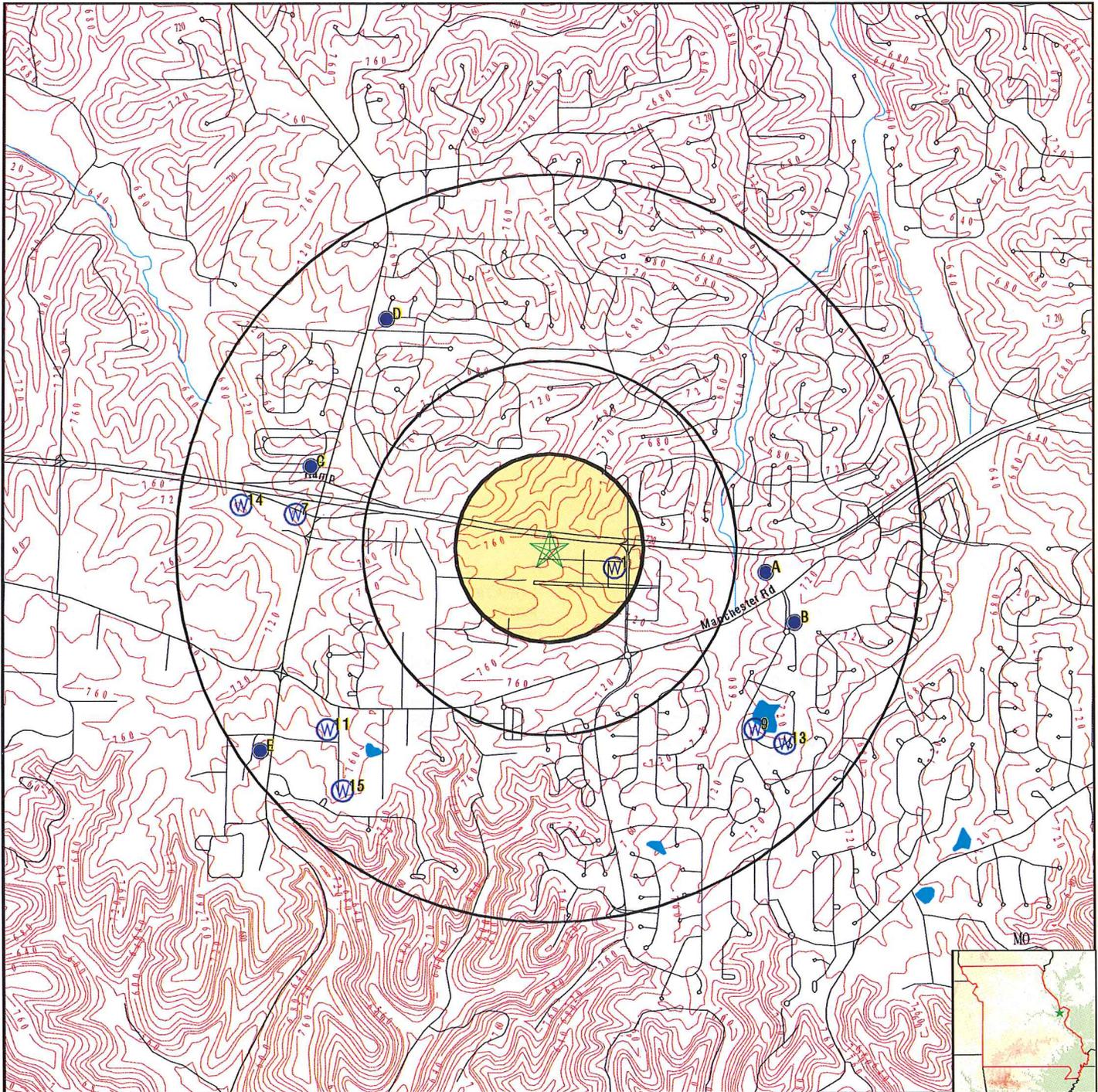
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	MOLOG1000017799	1/8 - 1/4 Mile ESE
A3	MOLOG1000017795	1/2 - 1 Mile East
C6	MOLOG1000017844	1/2 - 1 Mile WNW
7	MO6000000004831	1/2 - 1 Mile West
B8	MOLOG1000017770	1/2 - 1 Mile ESE
D10	MOLOG1000017890	1/2 - 1 Mile NW
13	MOLOG1000017726	1/2 - 1 Mile SE
14	MO6000000004833	1/2 - 1 Mile West
15	MOLOG1000017704	1/2 - 1 Mile SW
E17	MOLOG1000017719	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 4682481.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons

- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Oil, gas or related wells

<p>SITE NAME: Stonecrest At Wildwood ADDRESS: 251 Plaza Drive Grover MO 63040 LAT/LONG: 38.582354 / 90.631362</p>	<p>CLIENT: SCI Engineering, Inc. CONTACT: Heather Martin INQUIRY #: 4682481.2s DATE: July 27, 2016 11:31 am</p>
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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
 Direction
 Distance
 Elevation

Database EDR ID Number

1 ESE 1/8 - 1/4 Mile Lower	MO WELLS MOLOG1000017799
---	-------------------------------

Id:	024942	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Stname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	706605.75006		
Utm y:	4272807.49987		
Latitude:	38.58159		
Longitude:	-90.62814		
Qtr3:	NE	Qtr2:	NW
Qtr1:	SE		
Section:	1		
Tnsp:	44		
Tnspdir:	Not Reported		
Rng:	3		
Rngdir:	E		
Plssx:	706274		
Plssy:	4272975		
Location p:	147		
Elev:	752		
Idnum:	24942		
Swl:	308		
Quadrangle:	EUREKA	Site id:	MOLOG1000017799

Header Information:

Id:	024942	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Stname:	MISSOURI
Stabbrev:	MO	Qtr3:	NE
Qtr2:	NW	Qtr1:	SE
Section:	01	Tnsp:	44
Tnspdir:	N	Rng:	03
Rngdir:	E		
Latitude:	38.58159		
Longitude:	-90.62814		
Utm x:	706605.75006		
Utm y:	4272807.49987		
Quadmap na:	EUREKA	Ohio code:	38090E6
Llmeas:	D	Scale:	24k
Locator:	Interpolated	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	0	Owner:	Wilson, Donald J.
Leasenam:	Not Reported	Driller:	St. Charles Drig Co
Drldate:	1966/10/21	Permit:	Not Reported
Logdate:	1968/10/01	Logger:	Thacker, J.
Elev:	752		
Elevbase:	S	Prodyld:	25
Gpmcfs:	G		
Depthbed:	65		
Sampsav:	0	Swla:	308
Swlb:	Not Reported		
Water at:	220-230',465',480-495', 555',565'		
Totdepth:	565	Formation :	BURLINGTON LIMESTONE
Formation1:	ST. PETER SANDSTONE		
Intcrdtp:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Intcrdbt:	0	Aquclass:	Not Reported
Drawdown:	Not Reported	Reldate:	Not Reported
Confind:	0	Probind2:	Not Reported
Probind1:	Not Reported	Additional:	Not Reported
Probind3:	Not Reported	Add databa:	Not Reported
Alagency1:	Not Reported	Add data 1:	Not Reported
Addition 1:	Not Reported	Add data 2:	Not Reported
Alnum2:	Not Reported	Rmkind:	N
Add data 3:	Not Reported	C plugind:	N
Remarks:	NEAR GLENCOE - CHERRY HILLS		
C total:	125		
C remarks:	Not Reported		

Construction Information:

Id:	024942	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	196610
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	125		
Cas1diam:	5.5		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		
Cas4dpth:	0		
Cas4diam:	0		
Inout1:	0	Typgrr1:	Not Reported
Typgrr2:	Not Reported	Typgrr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcashol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumptdh:	0		
Pumpset:	0		
Typecomp:	Not Reported		
Perfintt:	0		
Perfintb:	0		
Oilprod:	Not Reported	Gasprod:	Not Reported
Tubepres:	Not Reported	Remarks:	Not Reported
Other data:	Not Reported	Formation :	FERN GLEN FORMATION
Formation1:	ST. PETER SANDSTONE		

Strata Information:

Id:	024942	Stratordr:	0
Fmtop:	200		
Fmbot:	565		
Formation :	MIDDLE ORDOVICIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024942	Stratordr:	0
Fmtop:	0		
Fmbot:	65		
Formation :	NO SAMPLES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	0
Fmtop:	85		
Fmbot:	125		
Formation :	NO SAMPLES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	28400
Fmtop:	65		
Fmbot:	185		
Formation :	MISSISSIPPIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	32300
Fmtop:	65		
Fmbot:	85		
Formation :	BURLINGTON LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: SAMPLES MISSING

Strata Information:

Id:	024942	Stratordr:	32300
Fmtop:	65		
Fmbot:	85		
Formation :	BURLINGTON LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	SAMPLES MISSING		

Strata Information:

Id:	024942	Stratordr:	33400
Fmtop:	125		
Fmbot:	185		
Formation :	FERN GLEN FORMATION		
Primlith:	CHERT		
Seclith:	LIMESTONE	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	35100
Fmtop:	185		
Fmbot:	200		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	35200
Fmtop:	185		
Fmbot:	200		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024942	Stratordr:	36000
Fmtop:	185		
Fmbot:	200		
Formation :	BUSHBERG SANDSTONE		
Primlith:	SANDSTONE		
Seclith:	Not Reported	Minlith:	LIMESTONE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	39000
Fmtop:	200		
Fmbot:	565		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	40100
Fmtop:	200		
Fmbot:	565		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	40100
Fmtop:	200		
Fmbot:	565		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024942	Stratordr:	40100
Fmtp:	200		
Fmbot:	565		
Formation :	MOHAWKIAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	40200
Fmtp:	200		
Fmbot:	295		
Formation :	KIMMSWICK LIMESTONE		
Prmlith:	LIMESTONE	Minlith:	SHALE
Seclith:	CHERT		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	40300
Fmtp:	295		
Fmbot:	320		
Formation :	DECORAH GROUP		
Prmlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	SAND		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	41000
Fmtp:	320		
Fmbot:	455		
Formation :	PLATTIN LIMESTONE		
Prmlith:	LIMESTONE	Minlith:	SHALE
Seclith:	DOLOMITE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024942	Stratordr:	42800
Fmtop:	455		
Fmbot:	560		
Formation :	JOACHIM DOLOMITE		
Primlith:	DOLOMITE		
Seclith:	SHALE	Minlith:	SAND
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	43900
Fmtop:	560		
Fmbot:	565		
Formation :	ST. PETER SANDSTONE		
Primlith:	SANDSTONE		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024942	Stratordr:	99900
Fmtop:	565		
Fmbot:	565		
Formation :	TOTAL DEPTH		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

A2
East
1/2 - 1 Mile
Lower

FED USGS USGS40000694537

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-383453090371401		
Monloc name:	T44N R04E 06CBA1		
Monloc type:	Well		
Monloc desc:	Not Reported	Drainagearea value:	Not Reported
Huc code:	10300200	Contrib drainagearea:	Not Reported
Drainagearea Units:	Not Reported	Latitude:	38.5814422
Contrib drainagearea units:	Not Reported	Sourcemap scale:	24000
Longitude:	-90.620681	Horiz Acc measure units:	seconds
Horiz Acc measure:	1	Vert measure val:	727
Horiz Collection method:	Interpolated from map	Vertacc measure val:	10
Horiz coord refsys:	NAD83	Countrycode:	US
Vert measure units:	feet	Aquifername:	Ozark Plateaus aquifer system
Vert accmeasure units:	feet	Formation type:	Joachim Dolomite
Vertcollection method:	Interpolated from topographic map	Aquifer type:	Not Reported
Vert coord refsys:	NGVD29	Construction date:	19360000
Welldepth units:	ft	Welldepth:	525
Wellholeddepth units:	Not Reported	Wellholeddepth:	Not Reported

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1936-08-01	200	

A3
East
1/2 - 1 Mile
Lower

MO WELLS MOLOG1000017795

Id:	003743	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Stname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	707257.06248		
Utm y:	4272799.87503		
Latitude:	38.58137		
Longitude:	-90.62068		
Qtr3:	C	Qtr2:	NW
Qtr1:	SW		
Section:	6		
Tnsp:	44		
Tnspdir:	Not Reported		
Rng:	4		
Rngdir:	E		
Plssx:	707865		
Plssy:	4272984		
Location p:	282		
Elev:	727		
Idnum:	3743		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Swl:	200	Site id:	MOLOG1000017795
Quadrangle:	MANCHESTER		
Header Information:			
Id:	003743	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Stname:	MISSOURI
Stabbrev:	MO	Qtr3:	C
Qtr2:	NW	Qtr1:	SW
Section:	06	Tnsp:	44
Tnspdir:	N	Rng:	04
Rngdir:	E		
Latitude:	38.58137		
Longitude:	-90.62068		
Utm x:	707257.06248		
Utm y:	4272799.87503		
Quadmap na:	MANCHESTER	Ohio code:	38090E5
Limeas:	D	Scale:	24k
Locator:	Interpolated	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	0	Owner:	Muckmann, E.L. - Well #1
Leasenam:	Not Reported	Driller:	Hawkins, Elmer
Dridate:	1936/08/10	Permit:	Not Reported
Logdate:	Not Reported	Logger:	Hundhausen / Grohskopf
Elev:	727		
Elevbase:	S	Prodyld:	10
Gpmcfs:	G		
Depthbed:	70		
Sampsav:	0	Swla:	200
Swlb:	Not Reported		
Water at:	210+'		
Totdepth:	525	Formation :	BURLINGTON LIMESTONE
Formation1:	JOACHIM DOLOMITE		
Intcrdtp:	0		
Intcrdbt:	0		
Drawdown:	Not Reported	Aquclass:	Not Reported
Confind:	0	Reidate:	Not Reported
Probind1:	Not Reported	Probind2:	Not Reported
Probind3:	Not Reported	Additional:	Not Reported
Alagncy1:	Not Reported	Add databa:	Not Reported
Addition 1:	Not Reported	Add data 1:	Not Reported
Alnum2:	Not Reported	Add data 2:	Not Reported
Add data 3:	Not Reported	Rmkind:	N
C total:	127	C plugind:	N
C remarks:	Not Reported		
Construction Information:			
Id:	003743	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	193608
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	127		
Cas1diam:	6.25		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Cas4dpth:	0		
Cas4diam:	0		
Inout1:	0	Typgrr1:	Not Reported
Typgrr2:	Not Reported	Typgrr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcashol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumpthd:	0		
Pumpset:	0		
Typecomp:	Not Reported		
Perfintt:	0		
Perfintb:	0		
Oilprod:	Not Reported	Gasprod:	Not Reported
TubePRES:	Not Reported	Remarks:	Not Reported
Other data:	Not Reported	Formation :	BURLINGTON LIMESTONE
Formation1:	JOACHIM DOLOMITE		
Strata Information:			
Id:	003743	Stratordr:	0
Fmtp:	0		
Fmbot:	70		
Formation :	NO SAMPLES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		
Strata Information:			
Id:	003743	Stratordr:	0
Fmtp:	210		
Fmbot:	525		
Formation :	MIDDLE ORDOVICIAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003743	Stratordr:	28400
Fmtop:	70		
Fmbot:	185		
Formation :	MISSISSIPPIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	31800
Fmtop:	70		
Fmbot:	185		
Formation :	OSAGEAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	32300
Fmtop:	70		
Fmbot:	140		
Formation :	BURLINGTON LIMESTONE		
Primlith:	CHERT		
Seclith:	LIMESTONE	Minlith:	Not Reported
Primmin:	ZnS		
Primocc:	1		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	32300
Fmtop:	70		
Fmbot:	140		
Formation :	BURLINGTON LIMESTONE		
Primlith:	CHERT		
Seclith:	LIMESTONE	Minlith:	Not Reported
Primmin:	ZnS		
Primocc:	1		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003743	Stratordr:	33400
Fmtop:	140		
Fmbot:	185		
Formation :	FERN GLEN FORMATION		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	35100
Fmtop:	185		
Fmbot:	200		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	35200
Fmtop:	185		
Fmbot:	200		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	35900
Fmtop:	185		
Fmbot:	200		
Formation :	SULPHUR SPRINGS GROUP		
Primlith:	SANDSTONE		
Seclith:	LIMESTONE	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003743	Stratordr:	39000
Fmtop:	200		
Fmbot:	525		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	39100
Fmtop:	200		
Fmbot:	210		
Formation :	CINCINNATIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	39500
Fmtop:	200		
Fmbot:	210		
Formation :	MAQUOKETA SHALE		
Primlith:	SHALE		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	40100
Fmtop:	210		
Fmbot:	525		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003743	Stratordr:	40100
Fmtop:	210		
Fmbot:	525		
Formation :	MOHAWKIAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	40100
Fmtop:	210		
Fmbot:	525		
Formation :	MOHAWKIAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	40200
Fmtop:	210		
Fmbot:	295		
Formation :	KIMMSWICK LIMESTONE		
Prmlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	CHERT		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	40300
Fmtop:	295		
Fmbot:	330		
Formation :	DECORAH GROUP		
Prmlith:	LIMESTONE	Minlith:	SHALE
Seclith:	DOLOMITE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003743	Stratordr:	41000
Fmtop:	330		
Fmbot:	460		
Formation :	PLATTIN GROUP		
Primlith:	LIMESTONE		
Seclith:	DOLOMITE	Minlith:	CHERT
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	41900
Fmtop:	450		
Fmbot:	465		
Formation :	BLOOMSDALE LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	SHALE	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	42800
Fmtop:	460		
Fmbot:	525		
Formation :	JOACHIM DOLOMITE		
Primlith:	DOLOMITE		
Seclith:	Not Reported	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003743	Stratordr:	99900
Fmtop:	525		
Fmbot:	525		
Formation :	TOTAL DEPTH		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

B4
ESE
1/2 - 1 Mile
Lower

FED USGS USGS40000694520

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-383445090371101		
Monloc name:	T44N R04E 06CCA1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	10300200	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.57922
Longitude:	-90.6198477	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	730
Vert measure units:	feet	Vertacc measure val:	20
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Ozark Plateaus aquifer system		
Formation type:	St Peter Sandstone		
Aquifer type:	Not Reported		
Construction date:	19620000	Welldepth:	710
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

	Feet below	Feet to
Date	Surface	Sealevel

1962-09-01	240	

C5
WNW
1/2 - 1 Mile
Lower

FED USGS USGS40000694562

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-383507090383501		
Monloc name:	T44N R03E 02ADA1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	10300200	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.585331
Longitude:	-90.6431817	Sourcemap scale:	24000

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refs:	NAD83	Vert measure val:	751
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refs:	NGVD29	Countrycode:	US
Aquifername:	Ozark Plateaus aquifer system		
Formation type:	St Peter Sandstone		
Aquifer type:	Not Reported		
Construction date:	19360000	Welldepth:	511
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1936-10-01	275	

**C6
WNW
1/2 - 1 Mile
Lower**

MO WELLS MOLOG1000017844

Id:	003888	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Sname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	705287.46863		
Utm y:	4273232.56236		
Latitude:	38.58572		
Longitude:	-90.64314		
Qtr3:	NE	Qtr2:	SE
Qtr1:	NE		
Section:	2		
Tnsp:	44		
Tnspdir:	Not Reported		
Rng:	3		
Rngdir:	E		
Plssx:	704647		
Plssy:	4272995		
Location p:	146		
Elev:	751		
Idnum:	3888		
Swl:	275		
Quadrangle:	EUREKA	Site id:	MOLOG1000017844

Header Information:

Id:	003888	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Sname:	MISSOURI
Stabbrev:	MO	Qtr3:	NE
Qtr2:	SE	Qtr1:	NE
Section:	02	Tnsp:	44
Tnspdir:	N	Rng:	03
Rngdir:	E		
Latitude:	38.58572		
Longitude:	-90.64314		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Utm x:	705287.46863	Ohio code:	38090E6
Utm y:	4273232.56236	Scale:	24k
Quadmap na:	EUREKA	Typelog1:	S
Llmeas:	D	Typelog3:	Not Reported
Locator:	Interpolated	Owner:	Schieble, J.F.
Typelog2:	Not Reported	Driller:	Clark Brothers
Ownerind:	0	Permit:	Not Reported
Leasenam:	Not Reported	Logger:	Grohskopf
Drldate:	1936/10/01	Prodyld:	8
Logdate:	Not Reported	Swla:	275
Elev:	751	Formation :	FERN GLEN FORMATION
Elevbase:	S	Aquclass:	Not Reported
Gpmcfs:	G	Reldate:	Not Reported
Depthbed:	60	Probind2:	Not Reported
Sampsav:	0	Additional:	Not Reported
Swlb:	Not Reported	Add databa:	Not Reported
Water at:	11-120', 470'	Add data 1:	Not Reported
Totdepth:	511	Add data 2:	Not Reported
Formation1:	ST. PETER SANDSTONE	Rmkind:	N
Intcrdtp:	0	C plugind:	N
Intcrdbt:	0		
Drawdown:	Not Reported		
Confind:	0		
Probind1:	Not Reported		
Probind3:	Not Reported		
Alagency1:	Not Reported		
Addition 1:	Not Reported		
Alnum2:	Not Reported		
Add data 3:	Not Reported		
Remarks:	IN WOODS 0.45 MI W, 0.5 MI N OF TTR @ GROVER		
C total:	69		
C remarks:	Not Reported		
Construction Information:			
Id:	003888	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	193610
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	69		
Cas1diam:	6.25		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		
Cas4dpth:	0		
Cas4diam:	0		
Inout1:	0	Typgtr1:	Not Reported
Typgtr2:	Not Reported	Typgtr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Szcashol:	0				
Szbelcas:	0				
Sizscrn:	0				
Slotsize:	0				
Lenscrn:	0				
Typescrn:	Not Reported	Typedev:		Not Reported	
Typepump:	Not Reported				
Pumpcap:	0				
Pumptdh:	0				
Pumpset:	0				
Typecomp:	Not Reported				
Perfintt:	0				
Perfintb:	0				
Oilprod:	Not Reported	Gasprod:		Not Reported	
TubePRES:	Not Reported	Remarks:		Not Reported	
Other data:	Not Reported	Formation :		FERN GLEN FORMATION	
Formation1:	ST. PETER SANDSTONE				

Strata Information:					
Id:	003888	Stratordr:			0
Fmtop:	125				
Fmbot:	511				
Formation :	MIDDLE ORDOVICIAN SERIES				
Primlith:	Not Reported				
Seclith:	Not Reported	Minlith:		Not Reported	
Primmin:	Not Reported				
Primocc:	0				
Secmin:	Not Reported				
Secocc:	0				
Minrmin:	Not Reported				
Minrocc:	0				
Rmk20:	Not Reported				

Strata Information:					
Id:	003888	Stratordr:			0
Fmtop:	0				
Fmbot:	60				
Formation :	NO SAMPLES				
Primlith:	Not Reported				
Seclith:	Not Reported	Minlith:		Not Reported	
Primmin:	Not Reported				
Primocc:	0				
Secmin:	Not Reported				
Secocc:	0				
Minrmin:	Not Reported				
Minrocc:	0				
Rmk20:	Not Reported				

Strata Information:					
Id:	003888	Stratordr:			28400
Fmtop:	60				
Fmbot:	110				
Formation :	MISSISSIPPIAN SYSTEM				
Primlith:	Not Reported				
Seclith:	Not Reported	Minlith:		Not Reported	
Primmin:	Not Reported				
Primocc:	0				
Secmin:	Not Reported				
Secocc:	0				
Minrmin:	Not Reported				

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003888	Stratordr:	35100
Fmtp:	110		
Fmbot:	125		
Formation :	DEVONIAN SYSTEM		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	35200
Fmtp:	110		
Fmbot:	125		
Formation :	UPPER DEVONIAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	35900
Fmtp:	110		
Fmbot:	125		
Formation :	SULPHUR SPRINGS GROUP		
Prmlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	SANDSTONE		
Primmin:	ZnS		
Primocc:	1		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	36000
Fmtp:	110		
Fmbot:	120		
Formation :	BUSHBERG SANDSTONE		
Prmlith:	SANDSTONE	Minlith:	Not Reported
Seclith:	LIMESTONE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003888	Stratordr:	36100
Fmtop:	120		
Fmbot:	125		
Formation :	GLEN PARK LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	ZnS		
Primocc:	1		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	39000
Fmtop:	125		
Fmbot:	511		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	40100
Fmtop:	125		
Fmbot:	511		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	40100
Fmtop:	125		
Fmbot:	511		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003888	Stratordr:	40100
Fmtop:	125		
Fmbot:	511		
Formation :	MOHAWKIAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	40200
Fmtop:	125		
Fmbot:	190		
Formation :	KIMMSWICK LIMESTONE		
Prmlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	CHERT		
Primmin:	ZnS		
Primocc:	1		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	40300
Fmtop:	190		
Fmbot:	220		
Formation :	DECORAH GROUP		
Prmlith:	LIMESTONE	Minlith:	CHERT
Seclith:	SHALE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	41000
Fmtop:	220		
Fmbot:	340		
Formation :	PLATTIN LIMESTONE		
Prmlith:	LIMESTONE	Minlith:	SHALE
Seclith:	CHERT		
Primmin:	ZnS		
Primocc:	1		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	003888	Stratordr:	42100
Fmtop:	335		
Fmbot:	340		
Formation :	BRICKEYS MEMBER		
Prmlith:	LIMESTONE		
Seclith:	Not Reported	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	42800
Fmtop:	340		
Fmbot:	465		
Formation :	JOACHIM DOLOMITE		
Prmlith:	DOLOMITE		
Seclith:	SHALE	Minlith:	SAND
Primmin:	ZnS		
Primocc:	4		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	43900
Fmtop:	465		
Fmbot:	511		
Formation :	ST. PETER SANDSTONE		
Prmlith:	SANDSTONE		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	003888	Stratordr:	99900
Fmtop:	511		
Fmbot:	511		
Formation :	TOTAL DEPTH		
Prmlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

7
West
1/2 - 1 Mile
Lower

MO WELLS MO600000004831

Objectid:	5747	Uniqueid:	105974
Logid:	Not Reported	Wwimsid:	00236285
Pwssname:	Glaser Commons Shopping Center	Pwssid:	6182822
Pwssidext:	6182822101	Ipws:	MO6182822
Ipwsxt:	MO6182822101	Wellnum:	1
Localname:	Well #1	Wellid:	18010
Factype:	Restaurant	Fed type:	NP
Status:	Proposed		
Ddlat:	38.583667		
Ddlong:	-90.643944		
Mapname:	Eureka	Fips:	29189
County:	St. Louis	Mdnrreg:	St. Louis
Mdnrnum:	6	Drilldate:	2000
Aban:	0	Plug:	0
Material:	Consolidated		
Form cd:	Kimmswick		
Form td:	St. Peter		
Totdepth:	613	Grndelev:	0
Topseal:	Cement Slurry	Botseal:	Cement Slurry
Casedepth:	202	Casesize:	6
Casetype:	Steel		
Topcaseelv:	0		
Caseheight:	0	Outcasedep:	0
Outcasesiz:	0	Scrnlengh:	-9999
Scrnsize:	-9999	Staticleve:	296
Yield:	40	Head:	0
Drawdown:	0	Pumptestda:	0
Pumptype:	Not Reported	Pumpmanuf:	Not Reported
Pumpdepth:	504	Pumpcapaci:	40
Meter:	Not Reported	Stdbypr:	Not Reported
Voc:	Not Reported	Nitrate:	Not Reported
Chlor:	Not Reported	Filter:	Not Reported
Gwudisw:	Not Reported	Stappr:	Not Reported
Surfdrain:	Not Reported	Entry:	Not Reported
Method:	GPS	Accuracy:	12
Locstatus:	Not Verified	Verloc:	N
Lastupdate:	2007/03/21	Tweyrswa:	230
Welldist:	0	Site id:	MO600000004831

B8
ESE
1/2 - 1 Mile
Lower

MO WELLS MOLOG1000017770

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Id: Notenough: Locator: Stabbrev: Utm x: Utm y: Latitude: Longitude: Qtr3: Qtr1: Section: Tnsp: Tnspdir: Rng: Rngdir: Plssx: Plssy: Location p: Elev: Idnum: Swl: Quadrangle:	021219 Not Reported Michael Lemon - Interpolated MO 707436.43764 4272620.71882 38.57971 -90.61867 E2 SW 6 44 Not Reported 4 E 707865 4272984 141 719 21219 240 MANCHESTER	Located: Scale: Sname: County: Qtr2: Site id:	Y 24k MISSOURI ST. LOUIS W2 MOLOG1000017770
--	--	--	--

Header Information:

Id: Agencyname: Fips: Stabbrev: Qtr2: Section: Tnspdir: Rngdir: Latitude: Longitude: Utm x: Utm y: Quadmap na: Limeas: Locator: Typelog2: Ownerind: Leasenam: Drldate: Logdate: Elev: Elevbase: Gpmcfs: Depthbed: Sampsav: Swlb: Water at: Totdepth: Formation1: Intcrdtp:	021219 GEOLOGICAL SURVEY (DGLS) 189 MO W2 06 N E 38.57971 -90.61867 707436.43764 4272620.71882 MANCHESTER D Interpolated Not Reported 1 Not Reported 1962/09/ 1962/09/13 719 S G 55 0 Not Reported Not Reported 710 ST. PETER SANDSTONE 0	Well type: County: Sname: Qtr3: Qtr1: Tnsp: Rng: Ohio code: Scale: Typelog1: Typelog3: Owner: Driller: Permit: Logger: Prodyld: Swla: Formation :	Private Well ST. LOUIS MISSOURI E2 SW 44 04 38090E5 24k S Not Reported Cherry Hill Country Club Clark & Clark Not Reported Groves, H.M. 22 240 KEOKUK-BURLINGTON-FERN GLEN
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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Intcrdbt:	0	Aquadclass:	Not Reported
Drawdown:	Not Reported	Reldate:	Not Reported
Confind:	0	Probind2:	Not Reported
Probind1:	Not Reported	Additional:	Not Reported
Probind3:	Not Reported	Add databa:	Not Reported
Alagency1:	Not Reported	Add data 1:	Not Reported
Addition 1:	Not Reported	Add data 2:	Not Reported
Alnum2:	Not Reported	Rmkind:	N
Add data 3:	Not Reported	C plugind:	N
Remarks:	YIELD - 22 GPM @ 265'		
C total:	340		
C remarks:	Not Reported		

Construction Information:

Id:	021219	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	196209
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	340		
Cas1diam:	6		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		
Cas4dpth:	0		
Cas4diam:	0		
Inout1:	O	Typgtr1:	Not Reported
Typgtr2:	Not Reported	Typgtr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcaschol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumptdh:	0		
Pumpset:	0		
Typecomp:	Not Reported		
Perfintt:	0		
Perfintb:	0		
Oilprod:	Not Reported	Gasprod:	Not Reported
Tubepras:	Not Reported	Remarks:	Not Reported
Other data:	Not Reported	Formation :	PLATTIN GROUP
Formation1:	ST. PETER SANDSTONE		

Strata Information:

Id:	021219	Stratordr:	0
Fmtop:	0		
Fmbot:	15		
Formation :	NO SAMPLES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	021219	Stratordr:	0
Fmtop:	205		
Fmbot:	710		
Formation :	MIDDLE ORDOVICIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	100
Fmtop:	15		
Fmbot:	55		
Formation :	RESIDUUM & TOP SOIL		
Primlith:	CHERT		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	28400
Fmtop:	55		
Fmbot:	175		
Formation :	MISSISSIPPIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	31800
Fmtop:	55		
Fmbot:	175		
Formation :	OSAGEAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	021219	Stratordr:	32200
Fmtop:	55		
Fmbot:	175		
Formation :	KEOKUK-BURLINGTON-FERN GLEN		
Primlith:	CHERT		
Seclith:	LIMESTONE	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	35100
Fmtop:	175		
Fmbot:	195		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	35200
Fmtop:	175		
Fmbot:	195		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	35900
Fmtop:	175		
Fmbot:	195		
Formation :	SULPHUR SPRINGS GROUP		
Primlith:	DOLOMITE		
Seclith:	SAND	Minlith:	LIMESTONE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	021219	Stratordr:	39000
Fmtp:	195		
Fmbot:	710		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	39100
Fmtp:	195		
Fmbot:	205		
Formation :	CINCINNATIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	39500
Fmtp:	195		
Fmbot:	205		
Formation :	MAQUOKETA SHALE		
Primlith:	SHALE	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	40100
Fmtp:	205		
Fmbot:	710		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	021219	Stratordr:	40100
Fmtp:	205		
Fmbot:	710		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	40100
Fmtp:	205		
Fmbot:	710		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	40200
Fmtp:	205		
Fmbot:	295		
Formation :	KIMMSWICK LIMESTONE		
Primlith:	LIMESTONE	Minlith:	DOLOMITE
Seclith:	CHERT		
Primmin:	ZnS		
Primocc:	2		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	40300
Fmtp:	295		
Fmbot:	320		
Formation :	DECORAH GROUP		
Primlith:	LIMESTONE	Minlith:	DOLOMITE
Seclith:	SHALE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	021219	Stratordr:	41000
Fmtp:	320		
Fmbot:	450		
Formation :	PLATTIN GROUP		
Primlith:	LIMESTONE		
Seclith:	DOLOMITE	Minlith:	CHERT
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	42100
Fmtp:	440		
Fmbot:	450		
Formation :	BRICKEYS MEMBER		
Primlith:	LIMESTONE		
Seclith:	DOLOMITE	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	42800
Fmtp:	450		
Fmbot:	570		
Formation :	JOACHIM DOLOMITE		
Primlith:	DOLOMITE		
Seclith:	SAND	Minlith:	SHALE
Primmin:	ZnS		
Primocc:	7		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	021219	Stratordr:	43900
Fmtp:	570		
Fmbot:	710		
Formation :	ST. PETER SANDSTONE		
Primlith:	SANDSTONE		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	021219	Stratordr:	99900
Fmtp:	710		
Fmbot:	710		
Formation :	TOTAL DEPTH		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

9
SE
1/2 - 1 Mile
Lower

FED USGS USGS40000694493

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-383431090371601		
Monloc name:	T44N R04E 07BBB1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	10300200	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.5753311
Longitude:	-90.6212366	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refs:	NAD83	Vert measure val:	715
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refs:	NGVD29	Countrycode:	US
Aquifername:	Ozark Plateaus aquifer system		
Formation type:	Joachim Dolomite		
Aquifer type:	Not Reported		
Construction date:	19660000	Welldepth:	565
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

D10
NW
1/2 - 1 Mile
Lower

MO WELLS MOLOG1000017890

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Id:	007447	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Sname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	705607.56261		
Utm y:	4273832.31242		
Latitude:	38.59105		
Longitude:	-90.63929		
Qtr3:	SW	Qtr2:	SW
Qtr1:	SW		
Section:	36		
Tnsp:	45		
Tnspdir:	Not Reported		
Rng:	3		
Rngdir:	E		
Plssx:	706252		
Plssy:	4274608		
Location p:	149		
Elev:	732		
Idnum:	7447		
Swl:	60		
Quadrangle:	EUREKA	Site id:	MOLOG1000017890
Header Information:			
Id:	007447	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Sname:	MISSOURI
Stabbrev:	MO	Qtr3:	SW
Qtr2:	SW	Qtr1:	SW
Section:	36	Tnsp:	45
Tnspdir:	N	Rng:	03
Rngdir:	E		
Latitude:	38.59105		
Longitude:	-90.63929		
Utm x:	705607.56261		
Utm y:	4273832.31242		
Quadmap na:	EUREKA	Ohio code:	38090E6
Llmeas:	D	Scale:	24k
Locator:	Interpolated	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	0	Owner:	Francis, E.C.
Leasenam:	Not Reported	Driller:	Clark Brothers
Drldate:	1941//	Permit:	Not Reported
Logdate:	1941/01/10	Logger:	Grohskopf
Elev:	0		
Elevbase:	S	Prodyld:	6
Gpmcfs:	G		
Depthbed:	50		
Sampsav:	0	Swla:	60
Swlb:	Not Reported		
Water at:	Not Reported		
Totdepth:	295	Formation :	BURLINGTON LIMESTONE
Formation1:	PLATTIN LIMESTONE		
Intcrdtp:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Intcrdbt:	0	Aquaclass:	Not Reported
Drawdown:	Not Reported	Reldate:	Not Reported
Confind:	0	Probind2:	Not Reported
Probind1:	Not Reported	Additional:	Not Reported
Probind3:	Not Reported	Add databa:	Not Reported
Alagency1:	Not Reported	Add data 1:	Not Reported
Addition 1:	Not Reported	Add data 2:	Not Reported
Alnum2:	Not Reported	Rmkind:	N
Add data 3:	Not Reported	C plugind:	N
C total:	56		
C remarks:	Not Reported		

Construction Information:

Id:	007447	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	194100
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	56		
Cas1diam:	6.25		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		
Cas4dpth:	0		
Cas4diam:	0		
Inout1:	O	Typgtr1:	Not Reported
Typgtr2:	Not Reported	Typgtr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcashol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumpthd:	0		
Pumpset:	0		
Typecomp:	Not Reported		
Perfintt:	0		
Perfintb:	0		
Oilprod:	Not Reported	Gasprod:	Not Reported
Tubeprs:	Not Reported	Remarks:	Not Reported
Other data:	Not Reported	Formation :	BURLINGTON LIMESTONE
Formation1:	PLATTIN LIMESTONE		

Strata Information:

Id:	007447	Stratordr:	0
Fmtp:	0		
Fmbot:	50		
Formation :	NO SAMPLES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	007447	Stratordr:	0
Fmtop:	160		
Fmbot:	295		
Formation :	MIDDLE ORDOVICIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	28400
Fmtop:	50		
Fmbot:	145		
Formation :	MISSISSIPPIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	32300
Fmtop:	50		
Fmbot:	105		
Formation :	BURLINGTON LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	32300
Fmtop:	50		
Fmbot:	105		
Formation :	BURLINGTON LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	007447	Stratordr:	33400
Fmtop:	105		
Fmbot:	145		
Formation :	FERN GLEN FORMATION		
Primlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	CHERT		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	35100
Fmtop:	145		
Fmbot:	160		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	35200
Fmtop:	145		
Fmbot:	160		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	35900
Fmtop:	145		
Fmbot:	160		
Formation :	SULPHUR SPRINGS GROUP		
Primlith:	LIMESTONE	Minlith:	CHERT
Seclith:	SAND		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	007447	Stratordr:	39000
Fmtop:	160		
Fmbot:	295		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	40200
Fmtop:	160		
Fmbot:	240		
Formation :	KIMMSWICK LIMESTONE		
Primlith:	LIMESTONE	Minlith:	CHERT
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	40300
Fmtop:	240		
Fmbot:	260		
Formation :	DECORAH GROUP		
Primlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	SHALE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	007447	Stratordr:	41000
Fmtop:	260		
Fmbot:	295		
Formation :	PLATTIN LIMESTONE		
Primlith:	LIMESTONE	Minlith:	CHERT
Seclith:	DOLOMITE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	007447	Stratordr:	99900
Fmtop:	295		
Fmbot:	295		
Formation :	TOTAL DEPTH		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

11
SW
1/2 - 1 Mile
Lower

FED USGS USGS40000694494

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-383431090383201		
Monloc name:	T44N R03E 11AAA1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	10300200	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.5753311
Longitude:	-90.6423485	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refs:	NAD83	Vert measure val:	757
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refs:	NGVD29	Countrycode:	US
Aquifername:	Ozark Plateaus aquifer system		
Formation type:	St Peter Sandstone		
Aquifer type:	Not Reported		
Construction date:	19630000	Welldepth:	505
Welldepth units:	ft	Wellholeddepth:	Not Reported
Wellholeddepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel

1963-09-01	275	

D12
NW
1/2 - 1 Mile
Lower

FED USGS USGS40000694609

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Org. Identifier:	USGS-MO		
Formal name:	USGS Missouri Water Science Center		
Monloc Identifier:	USGS-383529090382201		
Monloc name:	T45N R03E 36CCC1		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	10300200	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.5914421
Longitude:	-90.6395704	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	729
Vert measure units:	feet	Vertacc measure val:	5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Ozark Plateaus aquifer system		
Formation type:	Plattin Limestone		
Aquifer type:	Not Reported		
Construction date:	19410000	Welldepth:	295
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1941-01-01	60	

13
SE
1/2 - 1 Mile
Lower

MO WELLS MOLOG1000017726

Id:	024175	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Stname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	707356.71908		
Utm y:	4272070.75006		
Latitude:	38.57478		
Longitude:	-90.61975		
Qtr3:	NW	Qtr2:	NW
Qtr1:	NW		
Section:	7		
Tnsp:	44		
Tnspdir:	Not Reported		
Rng:	4		
Rngdir:	E		
Plssx:	707894		
Plssy:	4271348		
Location p:	139		
Elev:	715		
Idnum:	24175		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Swl:	0	Site id:	MOLOG1000017726
Quadrangle:	MANCHESTER		
Header Information:			
Id:	024175	Well type:	Noncommunity Public Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Sname:	MISSOURI
Stabbrev:	MO	Qtr3:	NW
Qtr2:	NW	Qtr1:	NW
Section:	07	Tnsp:	44
Tnspdir:	N	Rng:	04
Rngdir:	E		
Latitude:	38.57478		
Longitude:	-90.61975		
Utm x:	707356.71908		
Utm y:	4272070.75006		
Quadmap na:	MANCHESTER	Ohio code:	38090E5
Llmeas:	D	Scale:	24k
Locator:	Interpolated	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	1	Owner:	Cherry Hills Country Club Well #1
Leasename:	Not Reported	Driller:	St. Charles Drlg Co
Drldate:	1966/03/23	Permit:	Not Reported
Logdate:	1967/01/	Logger:	Robertson, C.E.
Elev:	715		
Elevbase:	S	Prodyld:	50
Gpmcfs:	G		
Depthbed:	25		
Sampsav:	0	Swla:	Not Reported
Swlb:	Not Reported		
Water at:	Not Reported		
Totdepth:	565	Formation :	BURLINGTON LIMESTONE
Formation1:	JOACHIM DOLOMITE		
Intcrdtp:	0		
Intcrdbt:	0		
Drawdown:	Not Reported	Aquclass:	Not Reported
Confind:	0	Reldate:	Not Reported
Probind1:	Not Reported	Probind2:	Not Reported
Probind3:	Not Reported	Additional:	Not Reported
Alagency1:	Not Reported	Add databa:	Not Reported
Addition 1:	Not Reported	Add data 1:	Not Reported
Alnum2:	Not Reported	Add data 2:	Not Reported
Add data 3:	Not Reported	Rmkind:	N
Remarks:	WELL #1	C plugind:	N
C total:	101		
C remarks:	Not Reported		
Construction Information:			
Id:	024175	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	196603
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	101		
Cas1diam:	0		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Cas4dpth:	0		
Cas4diam:	0		
Inout1:	0	Typgtr1:	Not Reported
Typgtr2:	Not Reported	Typgtr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcashol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumpthd:	0		
Pumpset:	0		
Typecomp:	Not Reported		
Perfintt:	0		
Perfintb:	0		
Oilprod:	Not Reported	Gasprod:	Not Reported
Tubeptes:	Not Reported	Remarks:	Not Reported
Other data:	Not Reported	Formation :	FERN GLEN FORMATION
Formation1:	JOACHIM DOLOMITE		

Strata Information:			
Id:	024175	Stratordr:	0
Fmtp:	198		
Fmbot:	565		
Formation :	MIDDLE ORDOVICIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:			
Id:	024175	Stratordr:	100
Fmtp:	0		
Fmbot:	25		
Formation :	RESIDUUM & TOP SOIL		
Primlith:	CLAY		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024175	Stratordr:	28400
Fmtp:	25		
Fmbot:	170		
Formation :	MISSISSIPPIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	31800
Fmtp:	25		
Fmbot:	170		
Formation :	OSAGEAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	32300
Fmtp:	25		
Fmbot:	90		
Formation :	BURLINGTON LIMESTONE		
Primlith:	CHERT	Minlith:	Not Reported
Seclith:	DOLOMITE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	32300
Fmtp:	25		
Fmbot:	90		
Formation :	BURLINGTON LIMESTONE		
Primlith:	CHERT	Minlith:	Not Reported
Seclith:	DOLOMITE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024175	Stratordr:	33400
Fmtop:	90		
Fmbot:	170		
Formation :	FERN GLEN FORMATION		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	35100
Fmtop:	170		
Fmbot:	198		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	35200
Fmtop:	170		
Fmbot:	198		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	35900
Fmtop:	170		
Fmbot:	198		
Formation :	SULPHUR SPRINGS GROUP		
Primlith:	SANDSTONE		
Seclith:	LIMESTONE	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024175	Stratordr:	39000
Fmtp:	198		
Fmbot:	565		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	40100
Fmtp:	198		
Fmbot:	565		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	40100
Fmtp:	198		
Fmbot:	565		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	40100
Fmtp:	198		
Fmbot:	565		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024175	Stratordr:	40200
Fmtp:	198		
Fmbot:	282		
Formation :	KIMMSWICK LIMESTONE		
Prmlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	40300
Fmtp:	282		
Fmbot:	307		
Formation :	DECORAH GROUP		
Prmlith:	SHALE		
Seclith:	LIMESTONE	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	41000
Fmtp:	307		
Fmbot:	445		
Formation :	PLATTIN GROUP		
Prmlith:	LIMESTONE		
Seclith:	DOLOMITE	Minlith:	CHERT
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	024175	Stratordr:	42800
Fmtp:	445		
Fmbot:	565		
Formation :	JOACHIM DOLOMITE		
Prmlith:	DOLOMITE		
Seclith:	SHALE	Minlith:	SAND
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	024175	Stratordr:	99900
Fmtop:	565		
Fmbot:	565		
Formation :	TOTAL DEPTH		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

**14
West
1/2 - 1 Mile
Lower**

MO WELLS MO600000004833

Objectid:	4947	Uniqueid:	104959
Logid:	Not Reported	Wwimsid:	Not Reported
Pwssname:	Wildwood Auto Village	Pwssid:	6182498
Pwssidext:	6182498101	Ipws:	MO6182498
Ipwsxt:	MO6182498101	Wellnum:	1
Localname:	Well #1	Wellid:	16130
Factype:	Indus. & Lg Business	Fed type:	NC
Status:	Active		
Ddlat:	38.58403		
Ddlong:	-90.6466		
Mapname:	Eureka	Fips:	29189
County:	St. Louis	Mdnrreg:	St. Louis
Mdnnum:	6	Drilldate:	0
Aban:	0	Plug:	0
Material:	Consolidated		
Form cd:	Not Reported		
Form td:	Not Reported		
Totdepth:	0	Grndelev:	0
Topseal:	Cement Grout	Botseal:	Cement Grout
Casedepth:	0	Casesize:	0
Casetype:	Steel		
Topcaseelv:	0		
Caseheight:	0	Outcasedep:	0
Outcasesiz:	0	Scrnlengh:	-9999
Scrnsiz:	-9999	Staticleve:	0
Yield:	0	Head:	0
Drawdown:	0	Pumptestda:	0
Pumptype:	Submersible	Pumpmanuf:	Not Reported
Pumpdepth:	0	Pumpcapaci:	0
Meter:	Y	Stdbypwr:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Voc:	N	Nitrate:	N
Chlor:	Not Reported	Filter:	Not Reported
Gwudisw:	Not Reported	Stappr:	Y
Surfdrain:	Not Reported	Entry:	Not Reported
Method:	PLSS	Accuracy:	0
Locstatus:	Not Verified	Verloc:	N
Lastupdate:	2002/06/18	Tweyrswa:	300
Welldist:	0	Site id:	MO6000000004833

**15
SW
1/2 - 1 Mile
Higher**

MO WELLS MOLOG1000017704

Id:	022358	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Sname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	705456.21895		
Utm y:	4271819.03073		
Latitude:	38.57296		
Longitude:	-90.64162		
Qtr3:	NE	Qtr2:	NE
Qtr1:	NE		
Section:	11		
Tnsp:	44		
Tnspdir:	Not Reported		
Rng:	3		
Rngdir:	E		
Plssx:	704657		
Plssy:	4271356		
Location p:	146		
Elev:	767		
Idnum:	22358		
Swl:	275		
Quadrangle:	EUREKA	Site id:	MOLOG1000017704

Header Information:

Id:	022358	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Sname:	MISSOURI
Stabbrev:	MO	Qtr3:	NE
Qtr2:	NE	Qtr1:	NE
Section:	11	Tnsp:	44
Tnspdir:	N	Rng:	03
Rngdir:	E		
Latitude:	38.57296		
Longitude:	-90.64162		
Utm x:	705456.21895		
Utm y:	4271819.03073		
Quadmap na:	EUREKA	Ohio code:	38090E6
Llmeas:	D	Scale:	24k
Locator:	Interpolated	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	0	Owner:	Boyer, Joe
Leasenam:	Not Reported	Driller:	Shepard Well Drlg Co
Drldate:	1963/09/18	Permit:	Not Reported
Logdate:	1964/03/31	Logger:	Wells, J.

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Elev:	767	Prodyld:	12
Elevbase:	S		
Gpmcfs:	G		
Depthbed:	75	Swla:	275
Sampsav:	0		
Swlb:	Not Reported		
Water at:	300'	Formation :	FERN GLEN FORMATION
Totdepth:	505		
Formation1:	ST. PETER SANDSTONE		
Intcrdtp:	0		
Intcrdbt:	0		
Drawdown:	Not Reported	Aquclass:	Not Reported
Confind:	0	Reldate:	Not Reported
Probind1:	Not Reported	Probind2:	Not Reported
Probind3:	Not Reported	Additional:	Not Reported
Alagency1:	Not Reported	Add databa:	Not Reported
Addition 1:	Not Reported	Add data 1:	Not Reported
Alnum2:	Not Reported	Add data 2:	Not Reported
Add data 3:	Not Reported	Rmkind:	N
Remarks:	GROVER	C plugind:	N
C total:	117		
C remarks:	Not Reported		
Construction Information:			
Id:	022358	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	196309
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	76		
Cas1diam:	6.25		
Cas2dpth:	41		
Cas2diam:	5		
Cas3dpth:	0		
Cas3diam:	0		
Cas4dpth:	0		
Cas4diam:	0		
Inout1:	0	Typgtr1:	Not Reported
Typgtr2:	Not Reported	Typgtr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcashol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumpthd:	0		
Pumpset:	0		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Typecomp:	Not Reported	Gasprod:	Not Reported
Perfintt:	0	Remarks:	Not Reported
Perfintb:	0	Formation :	KIMMSWICK LIMESTONE
Oilprod:	Not Reported		
Tubepres:	Not Reported		
Other data:	Not Reported		
Formation1:	ST. PETER SANDSTONE		

Strata Information:			
Id:	022358	Stratordr:	0
Fmtop:	0		
Fmbot:	75		
Formation :	NO SAMPLES		
Primlith:	Not Reported	Minlith:	Not Reported
Secclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:			
Id:	022358	Stratordr:	0
Fmtop:	115		
Fmbot:	505		
Formation :	MIDDLE ORDOVICIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Secclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:			
Id:	022358	Stratordr:	28400
Fmtop:	75		
Fmbot:	110		
Formation :	MISSISSIPPIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Secclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:			
Id:	022358	Stratordr:	31800
Fmtop:	75		
Fmbot:	110		
Formation :	OSAGEAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Secclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	022358	Stratordr:	33400
Fmtp:	75		
Fmbot:	110		
Formation :	FERN GLEN FORMATION		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	35100
Fmtp:	110		
Fmbot:	115		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	35200
Fmtp:	110		
Fmbot:	115		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	35900
Fmtp:	110		
Fmbot:	115		
Formation :	SULPHUR SPRINGS GROUP		
Primlith:	SAND		
Seclith:	LIMESTONE	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	022358	Stratordr:	39000
Fmtop:	115		
Fmbot:	505		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	40100
Fmtop:	115		
Fmbot:	505		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	40100
Fmtop:	115		
Fmbot:	505		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	40100
Fmtop:	115		
Fmbot:	505		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported		
Seclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	022358	Stratordr:	40200
Fmtp:	115		
Fmbot:	200		
Formation :	KIMMSWICK LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	CHERT	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	40300
Fmtp:	200		
Fmbot:	220		
Formation :	DECORAH GROUP		
Primlith:	LIMESTONE		
Seclith:	SHALE	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	41000
Fmtp:	220		
Fmbot:	350		
Formation :	PLATTIN GROUP		
Primlith:	LIMESTONE		
Seclith:	DOLOMITE	Minlith:	CHERT
Primmin:	ZnS		
Primocc:	3		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	41900
Fmtp:	340		
Fmbot:	350		
Formation :	BLOOMSDALE LIMESTONE		
Primlith:	LIMESTONE		
Seclith:	SHALE	Minlith:	DOLOMITE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	022358	Stratordr:	42300
Fmtp:	350		
Fmbot:	420		
Formation :	"ROCK LEVEE FORMATION"		
Primlith:	DOLOMITE		
Secclith:	SHALE	Minlith:	Not Reported
Primmin:	ZnS		
Primocc:	4		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	42800
Fmtp:	350		
Fmbot:	470		
Formation :	JOACHIM DOLOMITE		
Primlith:	DOLOMITE		
Secclith:	SAND	Minlith:	SHALE
Primmin:	ZnS		
Primocc:	4		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	43900
Fmtp:	470		
Fmbot:	505		
Formation :	ST. PETER SANDSTONE		
Primlith:	SANDSTONE		
Secclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	022358	Stratordr:	99900
Fmtp:	505		
Fmbot:	505		
Formation :	TOTAL DEPTH		
Primlith:	Not Reported		
Secclith:	Not Reported	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

E16
SW
1/2 - 1 Mile
Higher

FED USGS USGS40000694487

Org. Identifier:	USGS-MO			
Formal name:	USGS Missouri Water Science Center			
Monloc Identifier:	USGS-383429090384301			
Monloc name:	T44N R03E 11AAB1			
Monloc type:	Well			
Monloc desc:	Not Reported			
Huc code:	10300200	Drainagearea value:	Not Reported	
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported	
Contrib drainagearea units:	Not Reported	Latitude:	38.5747755	
Longitude:	-90.6454041	Sourcemap scale:	24000	
Horiz Acc measure:	1	Horiz Acc measure units:	seconds	
Horiz Collection method:	Interpolated from map			
Horiz coord refsys:	NAD83	Vert measure val:	779	
Vert measure units:	feet	Vertacc measure val:	5	
Vert accmeasure units:	feet			
Vertcollection method:	Interpolated from topographic map			
Vert coord refsys:	NGVD29	Countrycode:	US	
Aquifername:	Ozark Plateaus aquifer system			
Formation type:	St Peter Sandstone			
Aquifer type:	Not Reported			
Construction date:	19640000	Welldepth:	480	
Welldepth units:	ft	Wellholedepth:	Not Reported	
Wellholedepth units:	Not Reported			

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1964-09-01	330	

E17
SW
1/2 - 1 Mile
Higher

MO WELLS MOLOG1000017719

Id:	023183	Located:	Y
Notenough:	Not Reported	Scale:	24k
Locator:	Michael Lemon - Interpolated	Sname:	MISSOURI
Stabbrev:	MO	County:	ST. LOUIS
Utm x:	705077.62484		
Utm y:	4271953.9685		
Latitude:	38.57426		
Longitude:	-90.64592		
Qtr3:	NW	Qtr2:	NE
Qtr1:	NE		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Section:	11		
Tnsp:	44		
Tnspdir:	Not Reported		
Rng:	3		
Rngdir:	E		
Plssx:	704657		
Plssy:	4271356		
Location p:	146		
Elev:	775		
Idnum:	23183		
Swl:	330		
Quadrangle:	EUREKA	Site id:	MOLOG1000017719
 Header Information:			
Id:	023183	Well type:	Noncommunity Public Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	County:	ST. LOUIS
Fips:	189	Sname:	MISSOURI
Stabbrev:	MO	Qtr3:	NW
Qtr2:	NE	Qtr1:	NE
Section:	11	Tnsp:	44
Tnspdir:	N	Rng:	03
Rngdir:	E		
Latitude:	38.57426		
Longitude:	-90.64592		
Utm x:	705077.62484		
Utm y:	4271953.9685		
Quadmap na:	EUREKA	Ohio code:	38090E6
Llmeas:	D	Scale:	24k
Locator:	Interpolated	Typelog1:	S
Typelog2:	Not Reported	Typelog3:	Not Reported
Ownerind:	1	Owner:	Wright Family
Leasenam:	Not Reported	Driller:	Shepard Well Drlg
Drldate:	1964/09/22	Permit:	Not Reported
Logdate:	1965/03/03	Logger:	Groves, H.M.
Elev:	775		
Elevbase:	S	Prodyld:	15
Gpmcfs:	G		
Depthbed:	45		
Sampsav:	0	Swla:	330
Swlb:	Not Reported		
Water at:	360'		
Totdepth:	480	Formation :	KEOKUK-BURLINGTON-FERN GLEN
Formation1:	ST. PETER SANDSTONE		
Intcrdtp:	0		
Intcrdbt:	0		
Drawdown:	Not Reported	Aquclass:	Not Reported
Confind:	0	Reldate:	Not Reported
Probind1:	Not Reported	Probind2:	Not Reported
Probind3:	Not Reported	Additional:	Not Reported
Alagency1:	Not Reported	Add databa:	Not Reported
Addition 1:	Not Reported	Add data 1:	Not Reported
Alnum2:	Not Reported	Add data 2:	Not Reported
Add data 3:	Not Reported	Rmkind:	N
Remarks:	WRIGHT STORE NEAR JCT HWYS 100 & 109		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

C total:	87	C plugind:	N
C remarks:	Not Reported		
Construction Information:			
Id:	023183	Well type:	Private Well
Agencyname:	GEOLOGICAL SURVEY (DGLS)	Datecomp:	196409
Plugind:	N	Dateplug:	Not Reported
Casemat1:	Not Reported	Casemat2:	Not Reported
Cas1dpth:	87		
Cas1diam:	6.25		
Cas2dpth:	0		
Cas2diam:	0		
Cas3dpth:	0		
Cas3diam:	0		
Cas4dpth:	0		
Cas4diam:	0		
Inout1:	0	Typgrr1:	Not Reported
Typgrr2:	Not Reported	Typgrr3:	Not Reported
Mthgrout:	Not Reported	Rigtype:	Not Reported
Weltreat:	Not Reported	Rmkind:	Not Reported
Dateabnd:	Not Reported		
Plgdpt1b:	0		
Plgdpt1t:	0		
Multcase:	N		
Szcashol:	0		
Szbelcas:	0		
Sizscrn:	0		
Slotsize:	0		
Lenscrn:	0		
Typescrn:	Not Reported	Typedev:	Not Reported
Typepump:	Not Reported		
Pumpcap:	0		
Pumptdh:	0		
Pumpset:	0		
Typecomp:	Not Reported		
Perfintt:	0		
Perfintb:	0		
Oilprod:	Not Reported	Gasprod:	Not Reported
Tubepres:	Not Reported	Remarks:	Not Reported
Other data:	Not Reported	Formation :	KEOKUK-BURLINGTON-FERN GLEN
Formation1:	ST. PETER SANDSTONE		
Strata Information:			
Id:	023183	Stratordr:	0
Fmtp:	130		
Fmbot:	480		
Formation :	MIDDLE ORDOVICIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	023183	Stratordr:	0
Fmtp:	0		
Fmbot:	45		
Formation :	NO SAMPLES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	28400
Fmtp:	45		
Fmbot:	115		
Formation :	MISSISSIPPIAN SYSTEM		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	31800
Fmtp:	45		
Fmbot:	115		
Formation :	OSAGEAN SERIES		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	32200
Fmtp:	45		
Fmbot:	115		
Formation :	KEOKUK-BURLINGTON-FERN GLEN		
Prmlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	CHERT		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	023183	Stratordr:	35100
Fmtop:	115		
Fmbot:	130		
Formation :	DEVONIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	35200
Fmtop:	115		
Fmbot:	130		
Formation :	UPPER DEVONIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	35900
Fmtop:	115		
Fmbot:	130		
Formation :	SULPHUR SPRINGS GROUP		
Primlith:	LIMESTONE	Minlith:	Not Reported
Seclith:	SAND		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	39000
Fmtop:	130		
Fmbot:	480		
Formation :	ORDOVICIAN SYSTEM		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	023183	Stratordr:	40100
Fmtp:	130		
Fmbot:	480		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	40100
Fmtp:	130		
Fmbot:	480		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	40100
Fmtp:	130		
Fmbot:	480		
Formation :	MOHAWKIAN SERIES		
Primlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	40200
Fmtp:	130		
Fmbot:	205		
Formation :	KIMMSWICK LIMESTONE		
Primlith:	LIMESTONE	Minlith:	CHERT
Seclith:	DOLOMITE		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minrmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	023183	Stratordr:	40300
Fmtp:	205		
Fmbot:	220		
Formation :	DECORAH GROUP		
Prmlith:	LIMESTONE		
Seclith:	SHALE	Minlith:	Not Reported
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	41000
Fmtp:	220		
Fmbot:	350		
Formation :	PLATTIN GROUP		
Prmlith:	DOLOMITE		
Seclith:	LIMESTONE	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	42100
Fmtp:	340		
Fmbot:	350		
Formation :	BRICKEYS MEMBER		
Prmlith:	LIMESTONE		
Seclith:	DOLOMITE	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	42800
Fmtp:	350		
Fmbot:	470		
Formation :	JOACHIM DOLOMITE		
Prmlith:	DOLOMITE		
Seclith:	SAND	Minlith:	SHALE
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Minrocc: 0
Rmk20: Not Reported

Strata Information:

Id:	023183	Stratordr:	43900
Fmtop:	470		
Fmbot:	480		
Formation :	ST. PETER SANDSTONE		
Prmlith:	SANDSTONE	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

Strata Information:

Id:	023183	Stratordr:	99900
Fmtop:	480		
Fmbot:	480		
Formation :	TOTAL DEPTH		
Prmlith:	Not Reported	Minlith:	Not Reported
Seclith:	Not Reported		
Primmin:	Not Reported		
Primocc:	0		
Secmin:	Not Reported		
Secocc:	0		
Minmin:	Not Reported		
Minrocc:	0		
Rmk20:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

State Database: MO Radon

Radon Test Results

Zipcode	Test Date	Result
63040	01/31/09	5.6
63040	04/15/08	1.8
63040	03/07/08	< 0.3
63040	03/10/09	1.3
63040	03/16/09	5
63040	08/17/05	1

Federal EPA Radon Zone for ST. LOUIS County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level \geq 2 pCi/L and \leq 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: National Wetland Inventory of Missouri

Source: Department of Natural Resources

Telephone: 573-751-5110

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Missouri Public Drinking Water Wells

Source: Department of Natural Resources

Telephone: 573-526-5448

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Database

Source: Department of Natural Resources

Telephone: 573-368-2143

RADON

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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Appendix H

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Professional Summary

Mr. Forseth joined SCI in March 2014 to conduct Phase One Environmental Site Assessments (Phase One ESA), and Phase Two Environmental Site Assessments.

Phase One ESAs for property transactions involve industrial, commercial, and residential properties throughout the Midwest. Responsibilities include environmental field inspections; historic research of site usage; potential contamination identification; interpretation of analytical results; asbestos, radon, and hazardous material surveys; Resource Conservation and Recovery Act (RCRA) waste characterization; and extensive technical report writing.

Phase Two limited subsurface investigations and risk assessment activities include coordinating drilling operations, installing soil borings and monitoring wells, soil and groundwater sampling, analytical analysis, comparing analytical results to state specific cleanup guidelines, report preparation, and mapping and modeling activities.

His previous experience includes working as an interpreter/naturalist at Babler State Park. Responsibilities included hosting presentations on wildlife and their natural habitats as well as the upkeep of the parks resources.

Project Experience

- **4960 Ambs Road** – [St. Louis, Missouri] – Conducted an environmental site assessment to document current site conditions. Produced a Phase One ESA report, which included a review of historical information related to the subject site as well as determinations about current and historic uses of the site as they relate to potential Recognized Environmental Conditions.
- **4823-4835 Highway 109** – [Eureka, Missouri] – Conducted an environmental site assessment to document current site conditions. Produced a Phase One ESA report, which included a review of historical information related to the subject site as well as determinations about current and historic uses of the site as they relate to potential Recognized Environmental Conditions
- **QuikTrip Sump Inspection** [St. Louis, Missouri] – Assisted in the inspection of the sumps on the

Education

B.A., Environmental Studies,
Ripon College, 2013

Certifications

OSHA 10-Hour Safety and Health

MoDOT Concrete Field

OSHA 40-Hour Hazardous Waste Operations
and Emergency Response (HAZWOPER)

underground storage tanks looking for corrosion or leaking product.

- **917 Locust Street** [St. Louis, Missouri] – Collected samples of cinders to be tested for lead and arsenic.
- **The Manors at Dames Park** [O'Fallon, Missouri] – Conducted site reconnaissance.
- **501 Jeffco** [Arnold, Missouri] – Assisted in the sampling of water from monitoring wells.
- **1161 Jody Industrial Court** [Overland, Missouri] – Conducted a limited subsurface investigation associated with a Phase Two ESA. Logged borings and collected soil samples to be analyzed in an environmental laboratory for metals and hazardous substances.



Professional Summary

Mr. Grimmer began working with SCI Engineering in June 1999. His previous professional experience includes more than 6 years of environmental engineering consulting. He has been responsible for projects throughout the United States with most of his experience focused in Missouri, Illinois, Indiana and Kansas. His experience is focused in the following areas:

- Phase One/Two Environmental Site Assessments
- Air Quality, including Transportation
- Cellular Towers
- Hazardous Waste, Soil and Groundwater
- Spill Prevention Control Plans (SPCC)

Project Experience

Environmental Site Assessments

- **Amboy Healthcare & Rehabilitation Center** [Amboy, IL] – Senior Engineer for a Phase I Environmental Site Assessment of a 1.5 acre skilled nursing facility. Phase One performed in accordance with Housing and Urban Development (HUD) Multifamily Accelerated Processing (MAP) Guide.
- **Fountains at Stone Canyon** [Hollister, MO] – Senior Engineer for a Phase I Environmental Site Assessment of a 12-acre vacant parcel with a proposed apartment complex. Phase One performed in accordance with Housing and Urban Development (HUD) Multifamily Accelerated Processing (MAP) Guide and included an assessment of Approximate Safe Distance (ASD) from high pressure tanks according to HUD guidelines.
- **Sullivan Drive 100 Acre Tract** [Belleville, IL] – Senior Engineer to perform a Phase I Environmental Site Assessment of an approximate 100-acre parcel of undeveloped agricultural land with several aboveground storage tanks (ASTs).
- **Ries Road Tract** [Ballwin, MO] – Senior Engineer for a Phase I Environmental Site Assessment of three separate parcels on an approximate 10.44-acre site.

Education

B.S., Chemical Engineering, University of Missouri – Rolla, 1992

Transportation Officer Advanced Course (RC), U.S. Army Transportation School, Commandant's List, 1996

Chemical Officer Basic Course, U.S. Army Chemical School, Honor Graduate, 1993

Registrations and Certifications

Professional Engineer
Missouri 029254 (1998)
Illinois 062-052661 (1998)

40-Hour OSHA 29 CFR Hazardous Materials Course, 1993

8-Hour OSHA 29 CFR Hazardous Materials Supervisor Course, 1993

40-Hour Hazardous Waste Operations and Emergency Response Course

Affiliations

Regional Chamber and Growth Association, Environmental Council

Society of American Military Engineers

Air and Waste Management Association

- **Monroe County YMCA – HTC Center** [Columbia, IL] – Senior Engineer for a Phase I Environmental Site Assessment and Test Pitting of an approximate 192-acre site, which will host a \$5.2 million, 39,613-square-foot fitness center.
- **Tri City Port District** [Granite City, IL] – Senior Engineer for Phase I and Limited Phase II Environmental Site Assessments on an approximate 22-acre parcel located on a closed Department of Defense facility.
- **Twin Hollows Tract** [Oakville, MO] – Senior Engineer for a Phase I Environmental Site Assessment of an approximate 360-acre parcel of undeveloped agricultural and wooded property.



- **1109 & 1121 East Ferguson** [Wood River, IL] – Senior Engineer for a Phase I Environmental Site Assessment of two vacant lots located near several petroleum refineries.
- **Cambridge House of Maryville** [Maryville, IL] – Senior Engineer for a Phase I Environmental Site Assessment and the completion of a U.S. Department of Housing and Urban Development (HUD) Environmental Assessment (EA) for an approximate 55-acre tract that will host a \$7.3 million, 87,500-square-foot senior living center.
- **Benbow Field** [Wood River, IL] – Senior Engineer for a Phase II Environmental Site Assessment of an approximate 2-acre, vacant parcel of land located in close proximity to petroleum refineries.
- **Madison Senior Housing** [Madison, IL] – Senior Engineer for a Phase I and Limited Phase II Environmental Site Assessment. Three previously unidentified underground storage tanks (USTs) were encountered and removed.
- **Fountain Place First Addition** [Fairview Heights, IL] – Senior Engineer for a Phase I Environmental Site Assessment of an approximate 170-acre parcel of undeveloped agricultural land. Also later performed a Phase I Assessment on a 4-acre parcel adjacent to this site.
- **Siemer Enterprises Warehouse** [East St. Louis, IL] – Senior Engineer for a Phase I Environmental Site Assessment of a 20,000-square-foot vacant warehouse building on a 7.6-acre parcel.
- **Prairie Village** [Monroe County, IL] – Senior Engineer for a Phase I Environmental Site Assessment of an approximate 70-acre parcel with three recently-constructed unoccupied houses, two stormwater basins, landscaped berms, subdivision roads, and graded areas.
- **The Shoppes at Green Mount** [O'Fallon, IL] – Senior Engineer for a Phase I Environmental Site Assessment of an approximately 37-acre tract of undeveloped agricultural land with a pond, a tributary, and an occupied residence with two outbuildings.
- **Westhaven Golf Course** [Belleville, IL] – Senior Engineer for a Phase I and a Limited Phase II

Environmental Site Assessment of an approximately 62-acre golf course with a maintenance building and a club house. The golf course was constructed in the 1940s.

Hazardous Waste, Soil and Groundwater

- Illinois Site Remediation Program projects
- Underground Storage Tank removal projects
- **Kettle River Creosote** [Village of Glen Carbon, IL] – Project Manager for the grant to complete environmental site assessment and work with the IEPA SRP for this brownfield project.
- **Madison Metal Services** [Madison, IL] – Senior Engineer to guide the facility through the Illinois Environmental Protection Agency's (IEPA) Site Remediation Program (SRP) with the goal of receiving a No Further Remediation (NFR) letter.
- **Former Wilson Aluminum** [O'Fallon, IL] – Senior Engineer for environmental consulting services at this facility to obtain a "No Further Remediation" (NFR) letter. Also performed low-flow purging and sampling of four on-site perimeter monitoring wells in accordance with IEPA procedures.

Air Quality

- Preparation of air construction and operating permit applications
- Air emission inventories and annual reporting
- EPCRA Form R and Tier I/II reporting
- Environmental Assessments (EAs)
- Title V Applications
- Construction permit applications
- Emergency Planning and Community Right-To-Know Act (EPCRA)
- Air and EPCRA compliance audits
- EPCRA and air permitting presentations
- **Southern Metal Processing** [St. Louis, MO] – Senior Engineer for the preparation of a Emission Inventory Questionnaire, from 1995 through 2004, which included a facility-wide emissions inventory of criteria and hazardous air pollutants.
- **Building Products Corporation** [Belleville, IL] – Senior Engineer for development of a facility-wide emission inventory and preparation of a joint operating permit amendment.

Edwin P. Grimmer, P.E.
Vice President



-
- **Governors' Parkway** [Madison County, IL] – Senior Engineer to prepare the air quality portion of an Environmental Assessment.

 - **Vehicle Assembly Plant** [Kansas City, MO] – Project Engineer to develop a Title V Application. The scope of services included identification of emission sources for reporting in the application, a detailed review of the facility's air permits, assessment of applicable federal and state regulation, determination of compliance status, and preparation of the Title V application package, including technical support documentation.

 - **Chemical Plant** [Danville, IL] – Project Engineer to prepare a Title V Operating Permit Application and Emission Inventory for a chemical plant that produces various types of resins, catalysts and acids. The facility conducts batch operations with numerous reaction vessels and raw material storage tanks. An air compliance audit also was performed that included a thorough review for applicability and compliance with New Source Performance Standards for storage tanks containing volatile liquids.