PRELIMINARY DESIGN CHECK

OAKLAND GRAVEL ROAD SIDEWALK

TAP 2101513

UTILITY CONTACTS	
ELECTRIC CITY OF COLUMBIA, WATER & LIGHT 701 E. BROADWAY COLUMBIA, MISSOURI 65201 573-874-2489	NATURAL GAS AMEREN MISSOURI 2001 MAGUIRE BLVD. COLUMBIA, MISSOURI 65201 573-876-3028
ELECTRIC BOONE ELECTRIC COOPERATIVE 1413 RANGELINE STREET COLUMBIA, MO 65201 573-449-4181	SEWER CITY OF COLUMBIA, SEWER UTILITY 701 E. BROADWAY COLUMBIA, MISSOURI 65201 573-874-2489
WATER CITY OF COLUMBIA, WATER & LIGHT 701 E. BROADWAY COLUMBIA, MISSOURI 65201 573-874-2489	SEWER BOONE COUNTY REGIONAL SEWER DISTRICT 1314 N. 7TH STREET COLUMBIA, MO 65201 573-443-2774
WATER PUBLIC WATER SUPPLY DISTRICT #9 391 E. BROADWAY COLUMBIA, MISSOURI 65201 573-474-9521	TELECOMMUNICATION SOCKET TELECOM 2703 CLARK LANE COLUMBIA, MISSOURI 65202 573-817-0000
TELECOMMUNICATION AT&T TRANSMISSION 800-252-1113	TELECOMMUNICATION BRIGHTSPEED 833-363-2360

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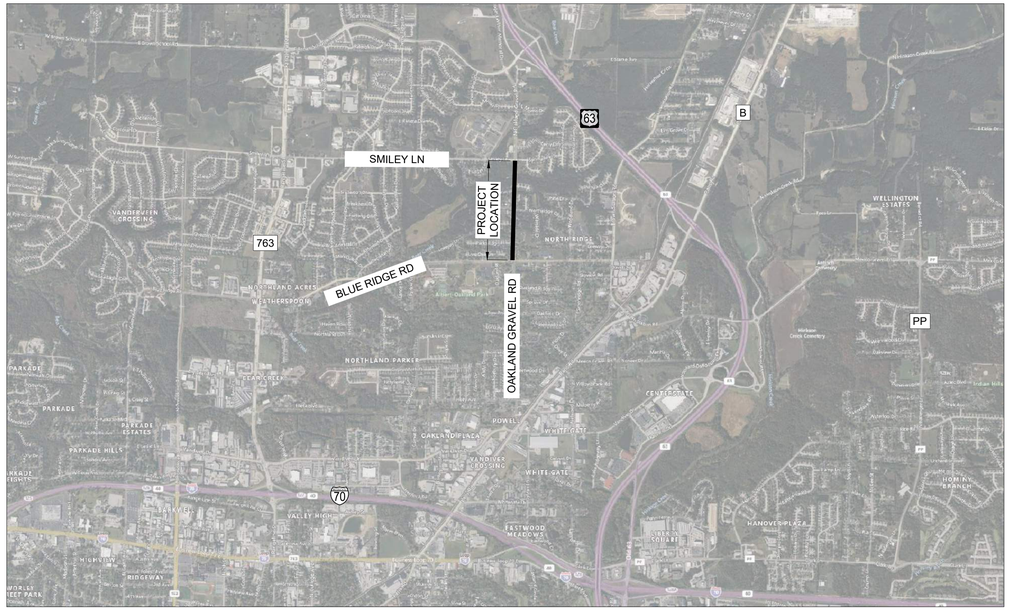
5	PRELIMINARY DESIGN-DETAILS 1
6	PRELIMINARY DESIGN-DETAILS 2



KEY MAP

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH "CITY OF COLUMBIA STREET, STORM DRAIN AND SANITARY SEWER SPECIFICATIONS AND STANDARDS" (CURRENT EDITION).
2. KNOWN UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. OTHER UTILITIES MAY EXIST.
3. ALL EXCAVATION TO BE IN ACCORDANCE WITH SECTIONS 319.010-319.050, REVISED STATUTES OF THE STATE OF MISSOURI. SUCH COMPLIANCE SHALL NOT, HOWEVER, EXCUSE ANY PERSON MAKING ANY EXCAVATION FROM DOING SO IN A CAREFUL AND PRUDENT MANNER, NOR SHALL IT EXCUSE SUCH PERSON FROM LIABILITY FOR ANY DAMAGE OR INJURY TO UNDERGROUND UTILITIES RESULTING FROM THE EXCAVATION.
4. ALL DISTURBED EARTH AREAS SHALL BE RESTORED AS PER TS-__ SEEDING AND TS-__ EROSION CONTROL.
5. REMOVE ALL PAVEMENT SURFACES, INLETS, PIPES AND SIDEWALKS WITHIN THE CONSTRUCTION LIMITS AS PER TS-__, EXCEPT THOSE NOTED TO REMAIN. THE FIELD INSPECTOR SHALL VERIFY REMOVALS.
6. REMOVAL OF TREES AND BUSHES SHALL BE VERIFIED BY FIELD INSPECTORS. EXERCISE CAUTION WHEN WORKING NEAR THE CONSTRUCTION LIMITS TO MINIMIZE DISTURBANCE TO ADJACENT TREES AND SHRUBS THAT ARE NOT BEING REMOVED BY CONSTRUCTION ACTIVITIES.
7. NO OPEN TRENCHES WILL BE ALLOWED OVERNIGHT. ASPHALTIC "COLD MIX" SHALL BE USED AS A TEMPORARY PATCH OVERNIGHT. TEMPORARY PATCHING SHALL BE CONSIDERED INCIDENTAL TO THE WORK.
8. ALL BARRICADES, SIGNS, OTHER TRAFFIC CONTROL DEVICES AND PLACEMENT THEREOF SHALL CONFORM TO THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). SIGNING SHOWN AS MINIMUM REQUIREMENTS FOR ADJACENT ROADWAYS SHALL BE INSTALLED PRIOR TO IMPROVEMENTS. CONTRACTOR RESPONSIBLE FOR ADDITIONAL SIGNING, MARKING, OR DELINEATORS FOR SITE SPECIFIC CONSTRUCTION PHASING TO COMPLY WITH MUTCD GUIDELINES.

EXISTING SURVEY LEGEND

LINEWORK

- SANITARY SEWER
- SANITARY SEWER FORCE MAIN
- STORM SEWER
- WATER
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- UNDERGROUND COMMUNICATIONS
- OVERHEAD COMMUNICATIONS
- UNDERGROUND TELEPHONE
- OVERHEAD TELEPHONE
- UNDERGROUND FIBER OPTIC
- OVERHEAD FIBER OPTIC
- UNDERGROUND TV/CABLE
- OVERHEAD TV/CABLE
- GAS
- TRAFFIC
- INTERMEDIATE CONTOUR
- INDEX CONTOUR
- PROPERTY LINE
- RIGHT OF WAY
- SECTION LINE
- EASEMENT
- GUARD RAIL
- FIELD FENCE
- CHAIN LINK FENCE
- WOODEN FENCE
- SILT FENCE
- AGRICULTURE LINE
- EDGE OF TREES
- TOP/BOTTOM OF SLOPE
- ROAD CENTERLINE
- WATERWAY FLOWLINE
- LIMITS OF DISTURBANCE

UTILITY QUALITY LEVELS:
UTILITY QUALITY LEVELS ARE BASED ON THE CI/ASCE 38-02 STANDARD.

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

ADDITIONALLY IN THE CASE OF MULTIPLE OWNERS OF THE SAME UTILITY TYPE SAID UTILITIES WILL BE ABBREVIATED WITH AN OWNER NUMBER (1, 2, 3, ETC) AND REFERENCED IN THE IOWA ONE CALL UTILITY INFORMATION SECTION.

EXAMPLES:
- C1(B) — UNDERGROUND COMMUNICATIONS- OWNER 1
- C2(B) — UNDERGROUND COMMUNICATIONS- OWNER 2

TYPICAL HATCHING

- SIDEWALK (MATERIAL NOTED)
- CONCRETE
- ASPHALT
- RIP RAP
- GRAVEL
- GRASS
- PERMEABLE PAVER
- WATER
- BUILDING OUTLINE
- LANDSCAPING
- MULCH LANDSCAPING
- ROCK LANDSCAPING

ABBREVIATIONS

CP	CONTROL POINT	CI	CAST IRON PIPE
BM	BENCHMARK	DI	DUCTILE IRON PIPE
ROW	RIGHT-OF-WAY	CMP	CORRUGATED METAL PIPE
GU	GUTTER	HDPE	HIGH-DENSITY POLYETHYLENE PIPE
CL	CENTERLINE	VCP	VITRIFIED CLAY PIPE
ASPH	ASPHALT	PVC	POLYVINYL CHLORIDE PIPE
PCC	CONCRETE	RCP	REINFORCED CONCRETE PIPE
FL	FLOWLINE	UNK	UNKNOWN
RIM	ELEVATION AT RIM	DH	DRILL HOLE
W	WITH	RBC	REBAR W/ PLASTIC CAP
TYP	TYPICAL	IPC	IRON PIPE W/ PLASTIC CAP
FND	FOUND	MON	MONUMENT
FF	FINISHED FLOOR	PK	PK NAIL

ONE CALL UTILITY INFORMATION:

LOCATE TICKET #'S: 240440288, 240440288

CALL OR CLICK 3 DAYS BEFORE YOU DIG!
MISSOURI ONE CALL SYSTEM 1-800-DIG-RITE OR 811
www.mo1call.com

ELECTRIC

- AIR CONDITIONING UNIT
- BREAKER BOX
- ELECTRIC MANHOLE
- ELECTRIC METER
- ELECTRIC PEDESTAL
- HEAT PUMP

GAS

- GAS MARKER
- GAS METER
- GAS VALVE

GENERAL SITE FEATURES

- BOLLARD
- FLAGPOLE
- FLOOD LIGHT
- GUY WIRE
- MAILBOX
- SIGN- DOUBLE POST
- SIGN- SINGLE POST
- SOILBORE
- STREET LIGHT
- UTILITY POLE
- UTILITY POLE W/STREET LIGHT
- UNKNOWN MANHOLE

MONUMENTS

- BENCHMARK
- BENCHMARK (TEMPORARY)
- CONTROL POINT
- CUT X FOUND
- CUT X SET
- MONUMENT FOUND (FIRST TYPE)
- MONUMENT FOUND (SECOND TYPE)
- MONUMENT SET (FIRST TYPE)
- MONUMENT SET (SECOND TYPE)
- SECTION CORNER FOUND
- SECTION CORNER SET
- T POST
- WOODEN POST

RAILROAD

- MAINLINE MILE MARKER
- POINT OF SWITCH
- RAILROAD SIGNAL

SANITARY SEWER

- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- SEPTIC TANK LID

STORM SEWER

- BEEHIVE INLET
- DOUBLE CURB INLET
- SINGLE CURB INLET
- AREA DRAINAGE INLET
- FLARED END SECTION
- STORM MANHOLE
- STAND PIPE
- STORM SEWER CLEANOUT
- SIDE OPENING AREA INLET

TELECOMMUNICATIONS

- COMPOSITE HANDHOLE
- FIBER OPTIC MARKER
- SATELLITE DISH
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- TV/CABLE BOX
- TV/CABLE MANHOLE

TRAFFIC

- PEDESTRIAL SIGNAL
- SIGNAL CONTROL CABINET
- TRAFFIC BOX
- TRAFFIC HANDHOLE
- TRAFFIC MANHOLE
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL W/STREET LIGHT

VEGETATION

- CONIFEROUS TREE
- DECIDUOUS TREE
- SHRUB
- TREE STUMP

WATER

- CURB STOP
- FIRE HYDRANT
- IRRIGATION VALVE
- MONITORING WELL
- POST INDICATOR VALVE
- SPRINKLER BOX
- WATER MANHOLE
- WATER MARKER
- WATER METER
- WATER SPIGOT
- WATER VALVE
- WATER VALVE MANHOLE
- YARD HYDRANT

DEMOLITION

- REMOVE TREE

UTILITY WARNING

THE UTILITIES DEPICTED ON THIS DOCUMENT HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED AS QUALITY LEVEL A.

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MISSOURI CERTIFICATE OF AUTHORITY NO. E-2006023253
EXPIRES: DECEMBER 31, 2024

** PRELIMINARY ** NOT FOR CONSTRUCTION

Ryan Fuller
MO PE-2016001250
December 9, 2024

REVISIONS

PROJECT INFO
2023002047

ENGINEER	DRAWN BY	CHECKED BY
JHT	SMH	RAF

OAKLAND GRAVEL ROAD SISEWALK
COLUMBIA, MISSOURI
TAP 2101513

PRELIMINARY DESIGN-COVER

Shane Steven Creech
Registered Professional Engineer
PE–2007011061

city of Columbia
Public Works

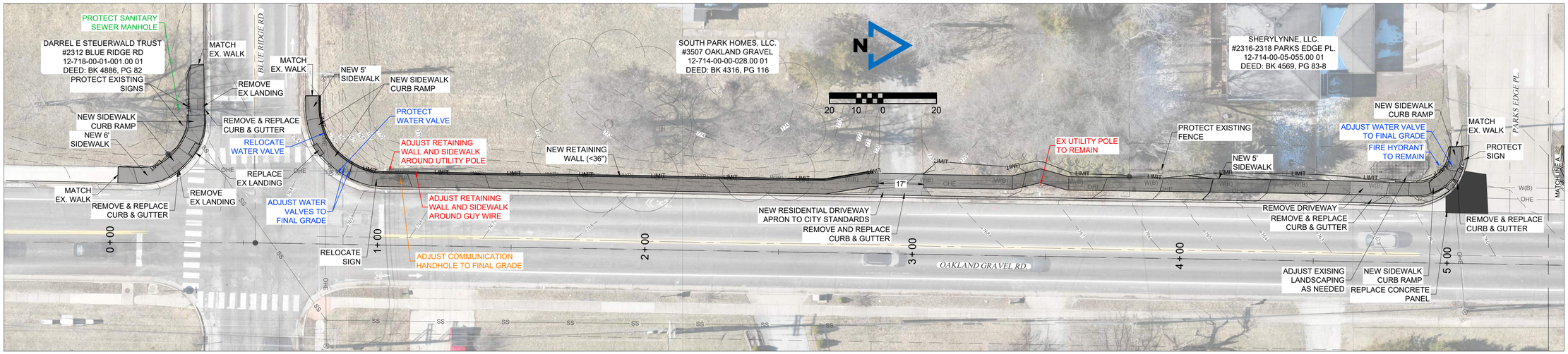
Mission
Provide safe, sustainable Infrastructure that promotes positive communities.

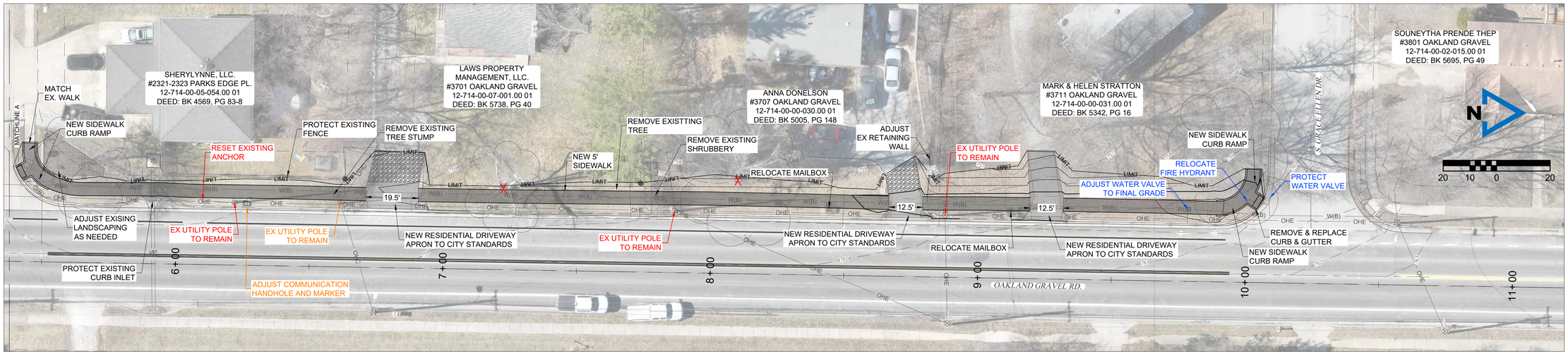
701 East Broadway
P.O. Box 6015
Columbia, MO 65205
(573) 875-2489

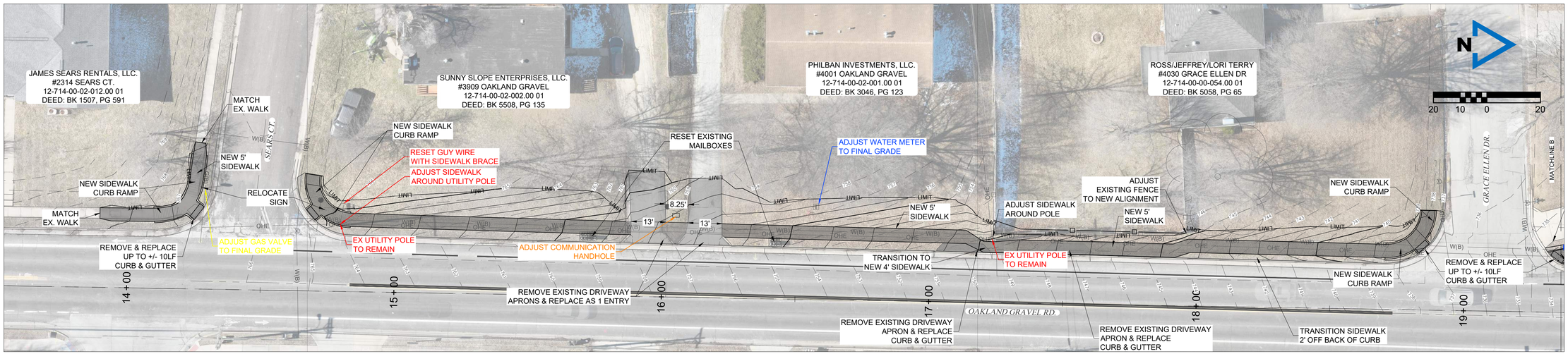
Approved By
Director of Public Works
Date

DRAWING NO.
1

P:\2023\2023047\04-DRAWINGS\03-EXHIBITS-CONCEPTS\2023002047 PRELIMINARY-CHECK PLANS.DWG







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December 9, 2024

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ENGINEER	DRAWN BY	CHECKED BY
###	###	###

OAKLAND GRAVEL SIDEWALK
COLUMBIA, MISSOURI
TAP 2101513

PRELIMINARY DESIGN-PLAN 1

DRAWING NO.
2

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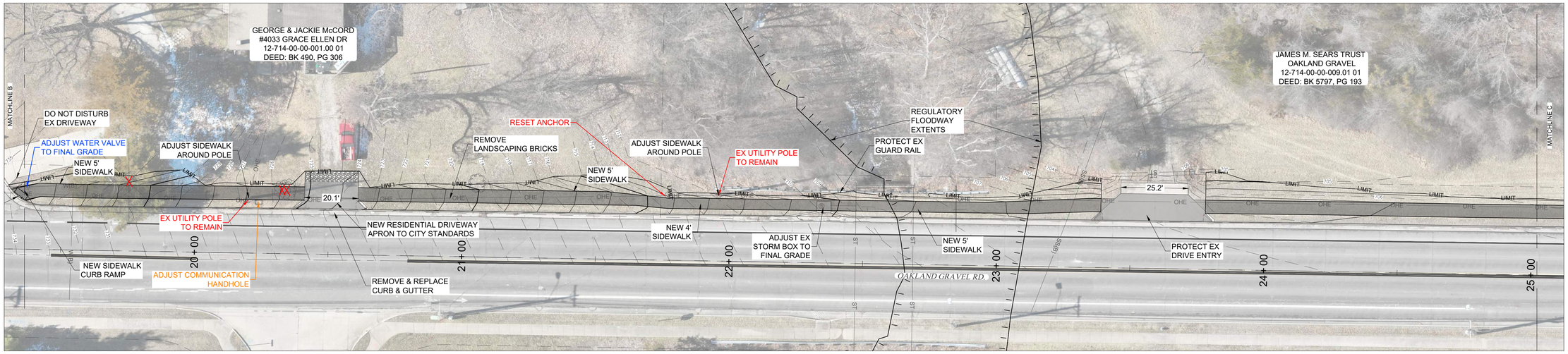

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Ryan Fuller
MO PE-2016001250
December 9, 2024

REVISIONS

PROJECT INFO
2023002047

ENGINEER	DRAWN BY	CHECKED BY
###	###	###

OAKLAND GRAVEL SIDEWALK
COLUMBIA, MISSOURI
TAP 2101513

PRELIMINARY DESIGN-PLAN 2

DRAWING NO.
3

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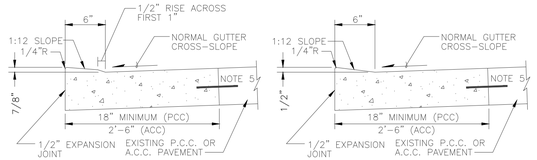


SIDEWALK RAMP CURB
(Alternate)

SIDEWALK RAMP CURB

PCC PAVEMENT NOTES:

1. CONCRETE SHALL BE MoDOT PAVEMENT CONCRETE.
2. PAVEMENT THICKNESS SHALL MATCH EXISTING. BASE SHALL MATCH EXISTING
3. EXPANSION JOINTS AND CONTRACTION JOINTS SHALL BE PLACED AT LOCATIONS SIMILAR TO THE PAVEMENT WHICH WAS REMOVED.
4. CURB EDGE SHALL BE TOOLED WITH 1/4" RADIUS
5. WHERE EXISTING PAVEMENT IS P.C.C., LOW CURB REPLACEMENT SHALL BE DOWELLED INTO EXISTING. 12" LONG #4 BARS AT 24" CTR. ALL DRILLED DOWEL BARS SHALL BE EXPOXIED.

ACC PAVEMENT NOTES:

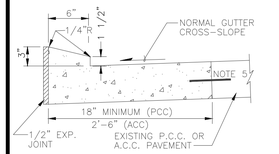
1. CONCRETE SHALL BE MoDOT PAVEMENT CONCRETE.
2. GUTTER THICKNESS SHALL MATCH EXISTING, BASE SHALL MATCH EXISTING
3. EXPANSION JOINTS AND CONTRACTION JOINTS SHALL BE PLACED AT LOCATIONS SIMILAR TO THE CURB AND GUTTER WHICH WAS REMOVED.
4. CURB EDGE SHALL BE TOOLED WITH 1/4" RADIUS

Approved 10/01/16 Date
Revisions

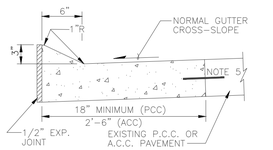
City of Columbia Public Works Department

CURB DETAILS
(Sidewalk Ramp)

400.01



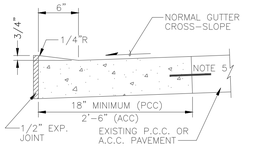
RESIDENTIAL DRIVEWAY CURB
MAXIMUM RISE (PREFERED)



RESIDENTIAL DRIVEWAY CURB
MAXIMUM RISE (ALTERNATE)

GENERAL NOTES:

1. ELEVATION OF DRIVEWAY AT R.O.W. LINE REQUIRED TO BE A MINIMUM OF 6" ABOVE GUTTER ELEVATION. VERIFY R.O.W. WIDTH AND ALLOWABLE DRIVEWAY SLOPES PRIOR TO CONSTRUCTING MINIMUM RISE DRIVEWAY CURB.
2. ALTERNATE CURB PROFILES WHICH FALL WITHIN THE MINIMUM RISE AND MAXIMUM RISE CURBS SHOWN WILL BE APPROVED. SLOPE ACROSS RESIDENTIAL DRIVEWAY CURB TOP MUST BE AT LEAST 1/2" IN 6" TOWARD THE STREET.
3. HORIZONTAL SAWING OF CURB IS ALLOWED AS AN ALTERNATIVE TO REMOVING AND REPLACING STANDARD CURB. HORIZONTAL SAWING MACHINE AND METHOD REQUIRES PRIOR APPROVAL. HORIZONTAL SAWING IS NOT ALLOWED ON CITY BID PROJECTS.



RESIDENTIAL DRIVEWAY CURB
MINIMUM RISE

PCC PAVEMENT NOTES:

1. CONCRETE SHALL BE MoDOT PAVEMENT CONCRETE.
2. PAVEMENT THICKNESS SHALL MATCH EXISTING.
3. EXPANSION JOINTS AND CONTRACTION JOINTS SHALL BE PLACED AT LOCATIONS SIMILAR TO THE PAVEMENT WHICH WAS REMOVED.
4. CURB EDGE SHALL BE TOOLED WITH 1/4" RADIUS
5. WHERE EXISTING PAVEMENT IS P.C.C., LOW CURB REPLACEMENT SHALL BE DOWELLED INTO EXISTING. 12" LONG #4 BARS AT 24" CTR. ALL DRILLED DOWEL BARS SHALL BE EXPOXIED.

ACC PAVEMENT NOTES:

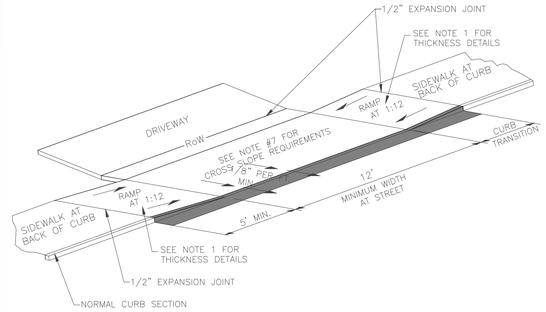
1. CONCRETE SHALL BE MoDOT PAVEMENT CONCRETE.
2. GUTTER THICKNESS SHALL MATCH EXISTING, BASE SHALL MATCH EXISTING
3. EXPANSION JOINTS AND CONTRACTION JOINTS SHALL BE PLACED AT LOCATIONS SIMILAR TO THE CURB AND GUTTER WHICH WAS REMOVED.
4. CURB EDGE SHALL BE TOOLED WITH 1/4" RADIUS

Approved 10/01/16 Date
Revisions

City of Columbia Public Works Department

CURB DETAILS
(Residential Driveway)

400.02



NOTE:

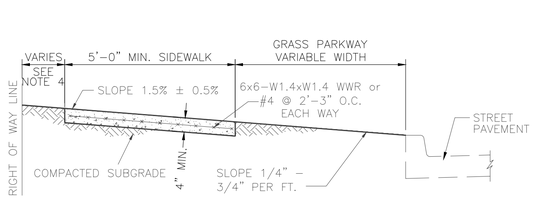
1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE FOR RESIDENTIAL, 7" THICK MoDOT PAVEMENT CONCRETE FOR COMMERCIAL.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. DRIVEWAY CROSS SLOPE SHALL NOT EXCEED 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION DRIVEWAY CURB SECTION – DETAIL 400.02 OR 400.03
6. RAMP LENGTH IS DEPENDENT UPON 1:12 MAX. SLOPE AT 5' MINIMUM TRANSITION AREA. USE FLATTER WHEN POSSIBLE.
7. A PEDESTRIAN ACCESSIBLE ROUTE SHALL BE PROVIDED THAT IS 4'-0" WIDE MINIMUM WITH A CROSS SLOPE OF 1.5% ± 0.5% (MAXIMUM CROSS SLOPE OF 2.0%).
8. DRIVEWAY MAY BE REINFORCED AT OWNERS OPTION. ON CITY BID PROJECTS DO NOT REINFORCE.

Approved 07/01/20 Date
Revisions

City of Columbia Public Works Department

SIDEWALK DRIVEWAY DETAIL
Sidewalk at Back of Curb

410.07



SIDEWALK WITH GRASS PARKWAY

NOTE:

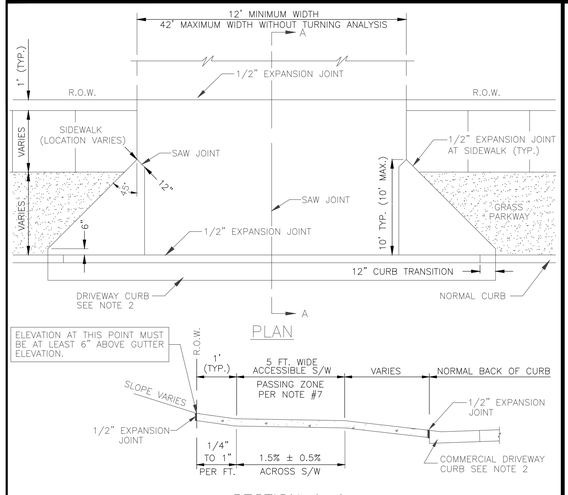
1. SIDEWALK SHALL BE 4" THICK MoDOT PAVEMENT CONCRETE.
2. INSTALL 1/2" EXPANSION JOINTS AT INTERSECTIONS, RAMPS, STRUCTURES, DRIVEWAY APPROACHES, OR EVERY 100'.
3. INSTALL TRANSVERSE SAW JOINTS AT SPACING EQUAL TO SIDEWALK WIDTH.
4. STANDARD SIDEWALK PLACEMENT IS 12" FROM RIGHT OF WAY LINE.
5. NO STEEL TO BE PLACED THROUGH EXPANSION JOINT.
6. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.00%.
7. DAMAGED SIDEWALK MUST BE PINNED TO EXISTING SIDEWALK.
8. WWR OR REBAR SHALL BE ACCURATELY PLACED AND FIRMLY HELD IN PLACE DURING CONCRETE PLACEMENT BY APPROVED METHODS, SEE SECTION 238.9.

Approved 07/01/20 Date
Revisions

City of Columbia Public Works Department

SIDEWALK

420.01



SECTION A–A

NOTES:

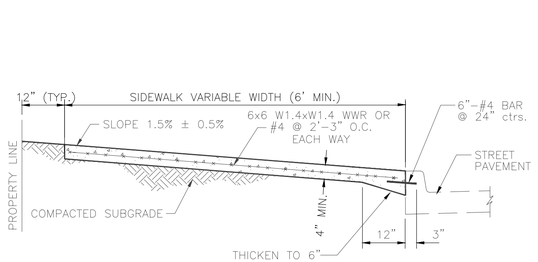
1. DRIVEWAY APPROACH SHALL BE 7" THICK MoDOT PAVEMENT CONCRETE.
2. REPLACE STANDARD CURB & GUTTER SECTION WITH DRIVEWAY CURB SECTION. SEE DETAIL 400.03.
3. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
4. ALL DRIVEWAY APPROACHES SHALL SLOPE TOWARD THE STREET.
5. ALL DRIVEWAY APPROACHES SHALL BE CONSTRUCTED TO ACCOMMODATE SIDEWALKS. (EXISTING AND FUTURE) STANDARD SIDEWALK LOCATION IS 1 FOOT OFF OF RIGHT OF WAY LINE.
6. DRIVEWAY APPROACH SHALL PROVIDE A MINIMUM 5' WIDE ACCESSIBLE SIDEWALK PASSING ZONE.
7. DRIVEWAY SLOPE ACROSS ACCESSIBLE SIDEWALK PASSING ZONE IS 1.5% ± 0.5%. CROSS SLOPE SHALL NOT EXCEED 2.00%.
8. MINIMIZE SIDEWALK WARPING ADJACENT TO DRIVEWAY APPROACH.
9. GREENSPACE SLOPE WITHIN RIGHT OF WAY SHALL NOT EXCEED 3/4" PER FOOT.
10. DRIVEWAY MAY BE REINFORCED AT OWNER'S OPTION. ON CITY BID PROJECTS DO NOT REINFORCE.
11. MEASURE FROM TOP OF CURB.

Approved 07/01/20 Date
Revisions

City of Columbia Public Works Department

DRIVE APPROACH
(Commercial)

410.03



NOTE:

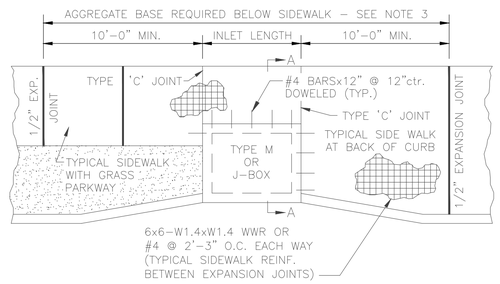
1. SIDEWALK SHALL BE 4" THICK MoDOT PAVEMENT CONCRETE.
2. INSTALL 1/2" TRANSVERSE EXPANSION JOINTS TO MATCH STREET OR CURB AND GUTTER EXPANSION JOINTS AND AT ALL DRIVEWAY APPROACHES, AND SIDEWALK RAMPS.
3. INSTALL TRANSVERSE SAW JOINTS AT SPACING EQUAL TO SIDEWALK WIDTH.
4. FOR DOWNTOWN SIDEWALK DETAIL SEE SECTION 1000.
5. NO STEEL TO BE PLACED THROUGH EXPANSION JOINT
6. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2.00%.
7. NEW SIDEWALK MUST BE PINNED TO EXISTING SIDEWALK.
8. WWR OR REBAR SHALL BE ACCURATELY PLACED AND FIRMLY HELD IN PLACE DURING CONCRETE PLACEMENT BY APPROVED METHODS, SEE SECTION 238.9.

Approved 07/01/20 Date
Revisions

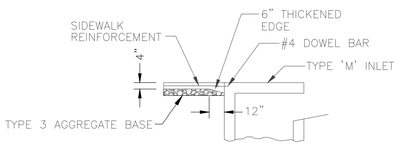
City of Columbia Public Works Department

SIDEWALK AT BACK OF CURB

420.02



PLAN VIEW



SECTION A–A

NOTES:

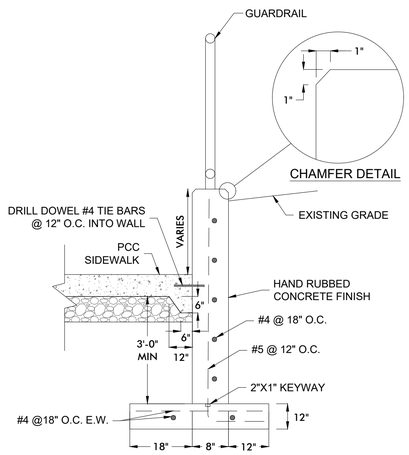
1. SIDEWALK SHALL BE 4" THICK MoDOT PAVEMENT CONCRETE
2. REINFORCING STEEL SHALL BE GRADE 60
3. 4" THICK PROPERLY PLACED TYPE 3 AGGREGATE BASE
4. ALL DRILLED DOWEL BARS SHALL BE EXPOXIED.

Approved 10/01/16 Date
Revisions

City of Columbia Public Works Department

SIDEWALK REINFORCEMENT AT DRAINAGE STRUCTURE

420.03



RETAINING WALL DETAIL

McCLURE™
2001 W. Broadway
Columbia, MO 65203
P 573-814-1568
F 573-814-1128

Ankeny,IA | Carroll,IA
Cedar Rapids,IA | Clive,IA
Coralville,IA | Council Bluffs,IA
Fort Dodge,IA | Sioux City,IA

Columbia,MO | Macon,MO
North Kansas City,MO | Springfield,MO

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NOTICE:
McClure Engineering Co. is not responsible or liable for any issues, claims, damages, or losses (collectively, "Losses") which arise from failure to follow these Plans, Specifications, and the engineering intent they convey, or for Losses which arise from failure to obtain and/or follow the engineers' or surveyors' guidance with respect to any alleged errors, omissions, inconsistences, ambiguities, or conflicts contained within the Plans and Specifications.

MISSOURI CERTIFICATE OF AUTHORITY NO. E-2006023253
EXPIRES: DECEMBER 31, 2024

** PRELIMINARY ** NOT FOR CONSTRUCTION

Ryan Fuller
MO PE-2016001250
December 9, 2024

REVISIONS

PROJECT INFO
2023002047

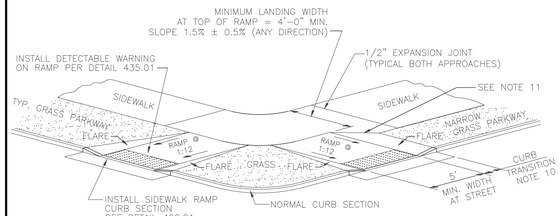
ENGINEER	DRAWN BY	CHECKED BY
###	###	###

OAKLAND GRAVEL SIDEWALK
COLUMBIA, MISSOURI
TAP 2101513

PRELIMINARY DESIGN-DETAILS 1

DRAWING NO.
4

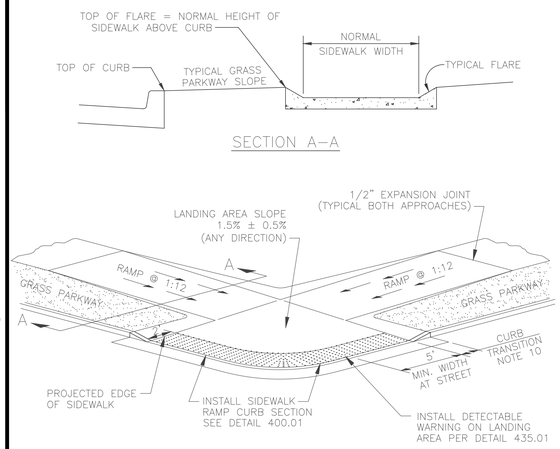
P:\2023002047\04-DRAWINGS\03-EXHIBITS-CONCEPTS\2023002047 PRELIMINARY-CHECK PLANS.DWG



NOTE:

1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS @ 12" O.C. EACH WAY.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA AT TOP OF RAMP SHALL BE 4'-0" MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%, INCREASE SIDEWALK RADIUS TO OBTAIN MINIMUM 4'-0" LANDING.
8. TYPE "A" RAMP NOT APPLICABLE IF SIDEWALK AND PARKWAY WIDTH DOES NOT PROVIDE 4'-0" LANDING AT TOP OF RAMP.
9. FLARES ARE REQUIRED AT RAMPS TO KEEP GRASS PARKWAY SLOPES IN CONFORMANCE WITH THE TYPICAL CROSS SECTION.
10. CURB TRANSITION LENGTH IS DEPENDENT ON FLARE SLOPE.
11. IF RAMP EXTENDS INTO NORMAL SIDEWALK, FLARE SLOPE MUST NOT EXCEED 1:10. A LANDING IS REQUIRED, SEE NOTE 7.

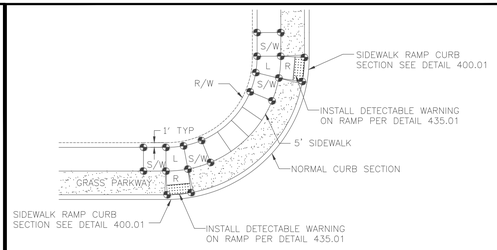
Approved 07/01/20 Date / Revisions	City of Columbia Public Works Department	SIDEWALK RAMP Sidewalk with Grass Parkway (Type A)	430.01



NOTES:

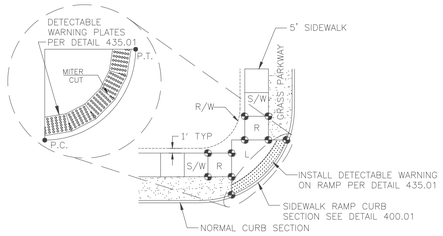
1. RAMP AND LANDING SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS AT 12" O.C. E.W.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA SHALL BE 4'-0" MIN WIDTH. MAXIMUM RAMP SLOPE 2.0% ANY DIRECTION.
8. USE TYPE "B" RAMP ONLY IF TYPE "A" IS NOT FEASIBLE.
9. FLARES ARE REQUIRED AT RAMPS TO KEEP GRASS PARKWAY SLOPES IN CONFORMANCE WITH THE TYPICAL CROSS SECTION. (SEE SECTION A–A)
10. CURB TRANSITION LENGTH IS DEPENDENT ON FLARE SLOPE.

Approved 07/01/20 Date / Revisions	City of Columbia Public Works Department	SIDEWALK RAMP Sidewalk with Grass Parkway (Type B)	430.02



1. DENOTES SPOT ELEVATION REQUIRED

TYPE "A" SIDEWALK WITH GRASS PARKWAY



1. DENOTES SPOT ELEVATION REQUIRED
2. DETECTABLE WARNING PLATES ARE TO BE MITERED EQUALLY ON BOTH SIDES TO BE FLUSH.

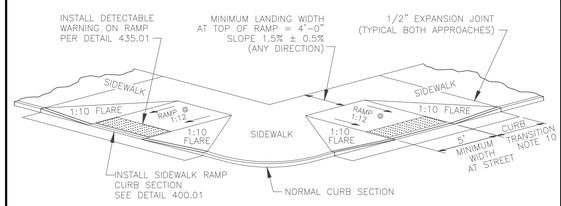
TYPE "B" SIDEWALK WITH GRASS PARKWAY

R = RAMP RUNNING SLOPE 1:12 (8.3%) MAXIMUM

L = LANDING SLOPE 1.5% ± 0.5% (2.0% SLOPE MAXIMUM ANY DIRECTION)

S/W = SIDEWALK CROSS SLOPE 1.5% ± 0.5% (2.0% CROSS SLOPE MAXIMUM)

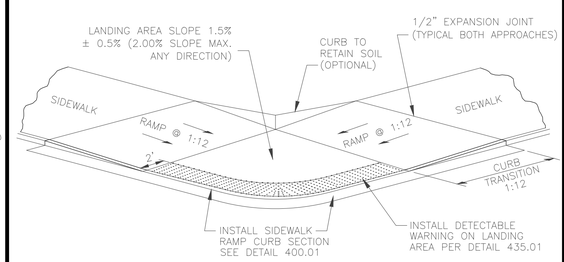
Approved 07/01/20 Date / Revisions	City of Columbia Public Works Department	SIDEWALK RAMP PLAN VIEW Sidewalk with Grass Parkway (Type A &B)	430.03



NOTE:

1. RAMP SHALL BE 6" THICK MoDOT PAVEMENT CONCRETE WITH #4 BARS AT 12" O.C. E.W.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA AT TOP OF RAMP SHALL BE 4'-0" MIN WIDTH, CROSS SLOPE OF LANDING SHALL NOT EXCEED 2.00%.
8. TYPE "A" RAMP NOT APPLICABLE IF SIDEWALK WIDTH DOES NOT PROVIDE 4'-0" LANDING AT THE TOP OF RAMP. USE TYPE "B" RAMP.
9. RAMP EXTENDS INTO SIDEWALK, FLARE SLOPE MUST NOT EXCEED 1:10.
10. CURB TRANSITION LENGTH IS DEPENDENT ON 1:10 FLARE SLOPE

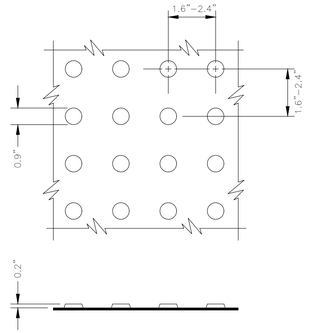
Approved 07/01/20 Date / Revisions	City of Columbia Public Works Department	SIDEWALK RAMP Sidewalk at Back of Curb (Type A)	432.01



NOTES:

1. RAMP AND LANDING SHALL BE 6" THICK REINFORCED MoDOT PAVEMENT CONCRETE W/#4 BARS @ 12" O.C.
2. EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
3. MAXIMUM RAMP CROSS SLOPE IS 2.00%.
4. ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
5. REPLACE STANDARD CURB SECTION WITH SIDEWALK RAMP CURB SECTION – DETAIL 400.01
6. RAMP LENGTH IS DEPENDENT ON 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.
7. LANDING AREA SHALL BE 4'-0" MIN WIDTH.
8. USE TYPE "B" RAMP ONLY IF TYPE "A" IS NOT FEASIBLE.

Approved 07/01/20 Date / Revisions	City of Columbia Public Works Department	SIDEWALK RAMP Sidewalk at Back of Curb (Type B)	432.02



NOTE:

1. DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9", A HEIGHT OF NOMINAL 0.2", AND A CENTER–TO–CENTER SPACING OF NOMINAL 2.35", AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, ACHIEVED BY THE INSTALLATION OF ADA SOLUTIONS 2436 REPBR, 2448 REPBR, OR 2460 REPBR (OR APPROVED EQUAL) AND SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
2. ADA SOLUTIONS 24RADREPBR OR APPROVED EQUAL TO BE USED WITH DETAIL 430.02, 432.02, AND 1000.08.
3. STAMPED CONCRETE IS NOT AN APPROVED EQUAL.
4. DOWNTOWN DETECTABLE WARNINGS MAY BE ADA 2004 COMPLIANT DETECTABLE WARNING PAVERS.
5. DETECTABLE WARNING PLATES ARE TO BE COLONIAL OR BRICK RED IN COLOR OR APPROVED EQUAL.
6. DETECTABLE WARNING SURFACES SHALL BE 24" WIDE AND EXTEND THE FULL LENGTH OF THE PUBLIC USE AREA.

Approved 10/01/16 Date / Revisions	City of Columbia Public Works Department	DETECTABLE WARNING	435.01

McCLURE™
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Portsmouth, NH

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MISSOURI CERTIFICATE OF AUTHORITY NO. E-2006023253
EXPIRES: DECEMBER 31, 2024

** PRELIMINARY ** NOT FOR CONSTRUCTION

Ryan Fuller
MO PE-2016001250
December 9, 2024

REVISIONS

PROJECT INFO
2023002047

ENGINEER	DRAWN BY	CHECKED BY
###	###	###

OAKLAND GRAVEL SIDEWALK
COLUMBIA, MISSOURI
TAP 2101513

PRELIMINARY DESIGN-DETAILS 2

DRAWING NO.
5

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