FINAL PLANS FOR
PUBLIC ROADWAY IMPROVEMENTS
OLDHAM PARKWAY & PRINCETON DRIVE
LEE'S SUMMIT, MISSOURI

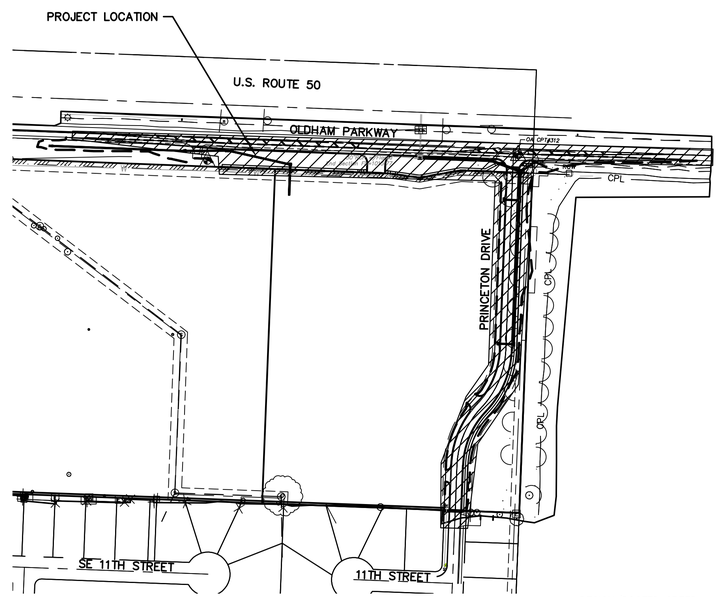
LEGEND

CTL	SURVEY CONTROL POINT	TS	TRAFFIC SIGNAL BOX
	SURVEY BENCHMARK	TS	TRAFFIC SIGNAL MANHOLE
TBM	SURVEY TEMPORARY BEMCHMARK		TRAFFIC SIGNAL POLE W/ ARM
GM	GAS METER		TRAFFIC SIGNAL POLE
GAR	GAS RISER	TC	TRAFFIC SIGNAL CONTROL BOX
	GAS MANHOLE	TS	TRAFFIC SIGNAL PEDESTAL
GR	GAS REGULATOR	E	ELECTRIC MANHOLE
TVP	TELEVISION PEDESTAL	EM	ELECTRIC METER
F	FIBER BOX	ER	ELECTRIC RISER
	FIBER PEDESTAL	E	ELECTRIC BOX
C	CABLE BOX		ELECTRIC CABINET
CV	CABLE VAULT		ELECTRIC JUNCTION BOX
TP	TELEPHONE PEDESTAL	SPH	SPRINKLER HEAD
	STORM MANHOLE	SCV	SPRINKLER CONTROL VALVE
	STORM GRATE		WATER METER PIT
S	SANITARY MANHOLE		FIRE HYDRANT
YL	YARD LIGHT	WM	WATER METER
LTP	LIGHT POLE	WV	WATER VALVE
	POWER POLE	FP	FLAG POLE
LPPP	POWER POLE W/ LIGHT		SIGN
	GUY WIRE		BOLLARD
BU	STUMP		WOOD POST
	BUSH		STEEL POST
	EVERGREEN TREE	COL	COLUMN
	DECIDUOUS TREE		BORE HOLE

- SECTION LINE
- PROPERTY LINE
- CENTER LINE
- PROPOSED ROW LINE
- EXISTING ROW LINE
- UTILITY EASEMENT
- 1371 EXISTING CONTOUR
- 1371 EXISTING CONTOUR
- 1371 PROPOSED MINOR CONTOUR
- 1371 PROPOSED MAJOR CONTOUR
- TEL EXISTING TELEPHONE LINE
- EXISTING SANITARY LINE
- EXISTING STORM LINE
- G EXISTING GAS LINE
- W EXISTING WATER LINE
- X EXISTING CHAIN LINK FENCE
- P-OH EXISTING OVERHEAD ELECTRIC
- P EXISTING PIPE LINE
- GRADING LIMITS
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED UTILITY OVERHEAD EASEMENT
- PROPOSED PERMANENT DRAINAGE EASEMENT
- X PROPOSED CHAIN LINK FENCE
- PROPOSED WOOD PRIVACY FENCE
- EXISTING TREELINE

ABBREVIATION TABLE

M.G.	MATCH GRADE
BOC	BACK OF CURB
EOP	EDGE OF PAVEMENT
R/W	RIGHT-OF-WAY
D/E	DRAINAGE EASEMENT
S/E	SANITARY EASEMENT
S/W	SIDEWALK
TCE	TEMPORARY CONSTRUCTION EASEMENT
UOHE	UTILITY OVERHEAD EASEMENT
PDE	PERMANENT DRAINAGE EASEMENT
PROP.	PROPOSED
EXIST.	EXISTING
TYP.	TYPICAL
CONST.	CONSTRUCT
TBM	TEMPORARY BENCMARK
C.P.	CONTROL POINT
D.N.D.	DO NOT DISTURB
U.I.P.	USE IN PLACE
ADJ.	ADJUST
EL.	ELEVATION
ESMT.	EASEMENT
BK.CB.	BACK OF CURB
BK.SWK.	BACK OF SIDEWALK



LOCATION MAP
SEC. 10, TWP. 47N, RNG. 31W

DESIGN/POSTED SPEED:
OLDHAM PARKWAY = 40 MPH
PRINCETON DRIVE = 25 MPH

INDEX OF SHEETS

PUBLIC STORM WATER

PUBLIC WATER LINE PLANS

*PROPOSED UTILITIES

- [ATT] PROPOSED AT&T
- [FO] PROPOSED FIBER
- [G] PROPOSED GAS
- [W] PROPOSED WATERLINE
- [UTL OH] PROPOSED OVERHEAD UTILITIES
- [SL] PROPOSED STREET LIGHT CONDUIT
- [CCI] PROPOSED CONSOLIDATED

**The utilities as shown in this legend represent the intended construction or relocation of utilities. These plans do not take into account the construction schedule or "As-Constructed Plans" of utility construction or relocations. Therefore, the Contractor shall notify all utility agencies before beginning work and shall cooperate with them in locating and protecting their utilities. The Engineer and Owner make no guarantee as to accuracy or completeness of information shown.*

AT&T
RON GIPFERT
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EMAIL: RG7910@ATT.COM

KANSAS CITY POWER & LIGHT
JEFF R. WILLIAMS, ENGINEER - CENTRAL DESIGN
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EMAIL: JEFF.WILLIAMS@KCPL.COM

CONSOLIDATED COMMUNICATIONS
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GOOGLE FIBER
LAUREN MARCUCCI
PHONE: (913) 663-1900
EMAIL: LMARCUCCI@GOOGLE.COM

LEE'S SUMMIT R-7 SCHOOL DISTRICT
KINZIE WOODERSON
301 NE TUDOR ROAD
LEE'S SUMMIT, MO 64086
PHONE: (816) 986-1050
EMAIL: KINZIE.WOODERSON@LSR7.NET

LEE'S SUMMIT WATER UTILITIES
DAVID LOHE
PHONE: (816) 969-1800
EMAIL: DAVID.LOHE@CITYOFLS.NET

SPIRE GAS
RICHARD FROCK
3025 SE CLOVER DRIVE
LEE'S SUMMIT, MO 64082
PHONE: (816) 472-3489
EMAIL: RICHARD.FROCK@SPIREENERGY.COM

CHARTER/SPECTRUM CABLE
TROY PREWITT
8221 W. 119TH STREET
OVERLAND PARK, KS 66213
PHONE: (816) 401-3573
EMAIL: TROY.PREWITT@CHARTER.COM

MISSOURI ONE CALL SYSTEM

1-800-DIG-RITE or 811

www.mo1call.com

THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1-800-DIG-RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!

PREPARED & SUBMITTED BY:
OLSSON ASSOCIATES
7301 W. 133RD STREET, SUITE 200
OVERLAND PARK, KANSAS 66213

RYAN B. FLEMING — DATE

I CERTIFY THESE PLANS WERE PREPARED BY ME OR UNDER MY IMMEDIATE PERSONAL SUPERVISION.

olsson
Olsson Engineering - MO State Certificate of Authority #001592
7301 West 133rd Street, Suite 200 TEL 913.381.1170
Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

STATE OF MISSOURI — RYAN B. FLEMING — NUMBER PE-2002003161 — 6-11-19 — PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

TITLE SHEET

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS
LEE'S SUMMIT, MISSOURI
2019

C.O.A. NO.:	001592
DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_TTL_81450
DATE:	06.11.2019

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\GENERAL\T_TTL_81450.dwg USER: asaavedra
DATE: Jun 13, 2019 9:45am XREFS: t_pbase_81450 t_ptblk_81450 V_XBOU_81450 V_TOPO_81450

U.S. ROUTE 50

STA: 15+90.15 ℄ OLDHAM PARKWAY BASELINE =
STA: 40+60.00 ℄ FIELD ENTRANCE STA: 15+90.15

STA: 19+95.51 ℄ OLDHAM PARKWAY BASELINE =
STA: 30+90.00 ℄ DRIVE STA: 19+95.51

STA: 23+05.13 ℄ OLDHAM PARKWAY BASELINE =
STA: 100+00.00 ℄ PRINCETON DRIVE

OLDHAM PARKWAY

℄ MODOT 1999 PROJECT NO. J4P1191

OA CPT#311

OA CPT#312

EXIST. R/W

EXIST. 10' TEMPORARY CONSTRUCTION EASEMENT DOC. NO. 2016E0073914

PROP. 10' WATER MAIN EASEMENT

FIELD ENTRANCE STA: 15+90.15

DRIVE STA: 19+95.51

PROP. R/W

PROPERTY LINE

PRINCETON DRIVE

℄ PRINCETON DRIVE

PROP. 10' WATER EASEMENT

PC: 104+56.08

DRIVE STA: 106+02.30

STA: 106+02.30 ℄ PRINCETON DRIVE =
STA: 20+40.00 ℄ DRIVE STA: 106+02.30

PC: 106+00.85

PT: 107+45.59

DRIVE STA: 107+70.59

STA: 107+70.59 ℄ PRINCETON DRIVE =
STA: 10+50.00 ℄ DRIVE STA: 107+70.59

10' PROP. TCE

PROP. R/W

PROPERTY ID# 60-430-98-01-00-0-00-000
OWNER: METCALF BANK
OWNER ADDRESS: 609 NE 291 HWY.
LEE'S SUMMIT, MO. 64086
PROPERTY ADDRESS: NO ADDRESS ASSIGNED BY CITY
LEE'S SUMMIT, MO. 64081
LAND USE TYPE: 4100
ZONING: PLANNED COMMUNITY COMMERCIAL

PROPERTY ID# 60-430-98-01-00-0-00-000
OWNER: METCALF BANK
OWNER ADDRESS: 1701 S.E. OLDHAM PARWAY
LEE'S SUMMIT, MO. 64086
PROPERTY ADDRESS: NO ADDRESS ASSIGNED BY CITY
LEE'S SUMMIT, MO. 64081
LAND USE TYPE: 4100
ZONING: PLANNED COMMUNITY COMMERCIAL

Unplatted
1,089,001 S.F.
25.0000 AC. ±
No Site Address Available
"No Buildings"
Current Zoning CP-2

PROPERTY ID# 60-400-04-00-00-0-00-000
OWNER: BARBER & SONS CO.
OWNER ADDRESS: 27210 E. 50 HWY.
LEE'S SUMMIT, MO. 64086
PROPERTY ADDRESS: NO ADDRESS ASSIGNED BY CITY
LEE'S SUMMIT, MO. 64086
LAND USE TYPE: 4100
ZONING: RURAL DENSITY RESIDENTIAL

LEGEND

ASPHALT

CONCRETE

N

0' 25' 50' 100'
SCALE IN FEET

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\GENERAL\T_GENL_81450.dwg USER: asaavedra
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Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
6-11-19

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

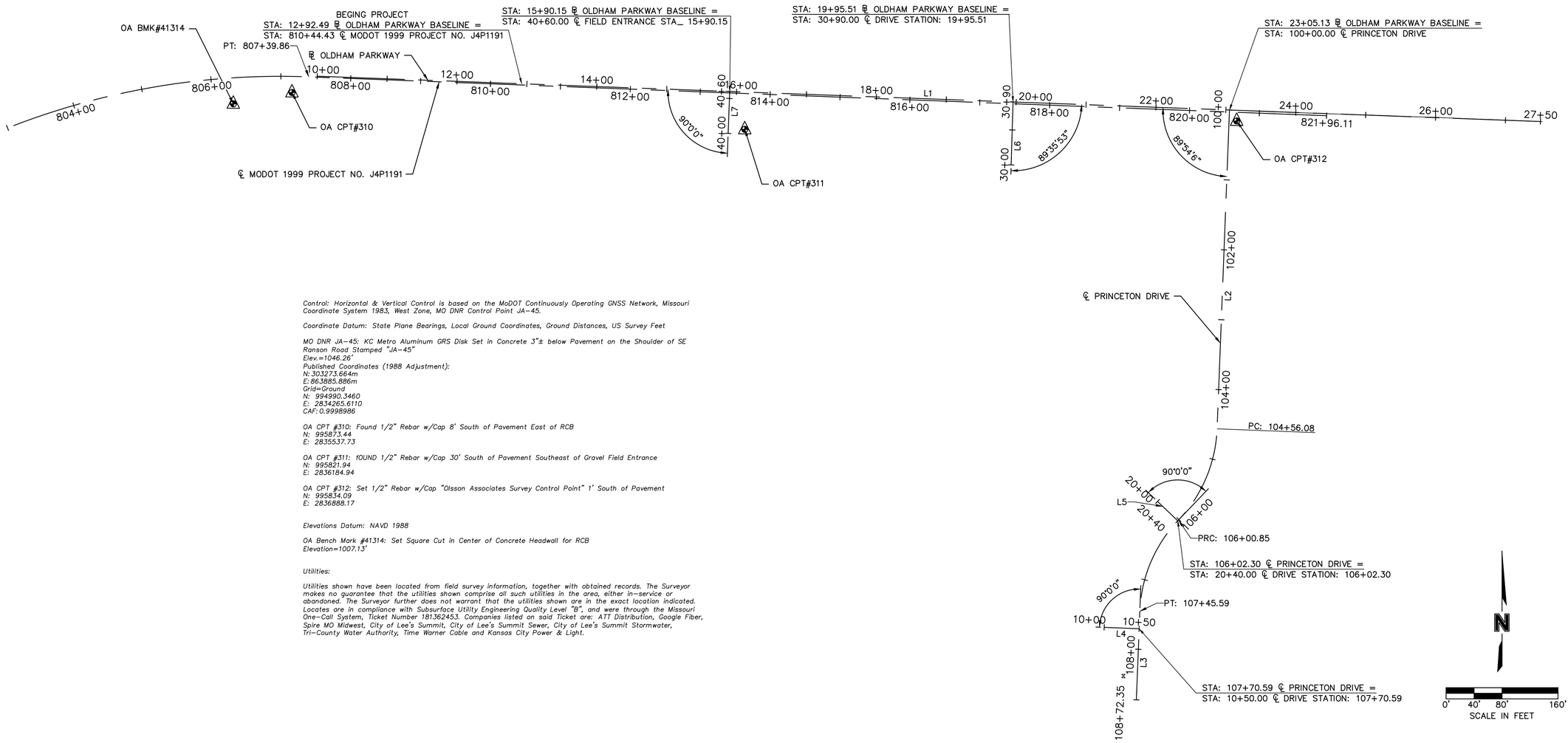
GENERAL LAYOUT

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_GENL_81450
DATE: 06.11.2019



Control: Horizontal & Vertical Control is based on the MoDOT Continuously Operating GNSS Network, Missouri Coordinate System 1983, West Zone, MO DNR Control Point JA-45.

Coordinate Datum: State Plane Bearings, Local Ground Coordinates, Ground Distances, US Survey Feet

MO DNR JA-45: KC Metro Aluminum GRS Disk Set in Concrete 3"± below Pavement on the Shoulder of SE Ranson Road Stamped "JA-45"
Elev.=1046.26'
Published Coordinates (1988 Adjustment):
N: 303273.664m
E: 863885.886m
Grid=Ground
N: 994990.3460
E: 2834265.6110
CAF: 0.9998986

OA CPT #310: Found 1/2" Rebar w/Cap 8' South of Pavement East of RCB
N: 995873.44
E: 2835537.73

OA CPT #311: fOUND 1/2" Rebar w/Cap 30' South of Pavement Southeast of Gravel Field Entrance
N: 995821.94
E: 2836184.94

OA CPT #312: Set 1/2" Rebar w/Cap "Olsson Associates Survey Control Point" 1' South of Pavement
N: 995834.09
E: 2836888.17

Elevations Datum: NAVD 1988

OA Bench Mark #41314: Set Square Cut in Center of Concrete Headwall for RCB
Elevation=1007.13'

Utilities:

Utilities shown have been located from field survey information, together with obtained records. The Surveyor makes no guarantee that the utilities shown comprise all such utilities in the area, either in-service or abandoned. The Surveyor further does not warrant that the utilities shown are in the exact location indicated. Locates are in compliance with Subsurface Utility Engineering Quality Level "B", and were through the Missouri One-Call System, Ticket Number 181362453. Companies listed on said Ticket are: ATT Distribution, Google Fiber, Spire MO Midwest, City of Lee's Summit, City of Lee's Summit Sewer, City of Lee's Summit Stormwater, Tri-County Water Authority, Time Warner Cable and Kansas City Power & Light.

OLDHAM PARKWAY BASELINE								
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L1	10+00 27+50	N: 995897.33 E: 2835573.57	N: 995832.52 E: 2837322.37			1750.00	S87°52'39"E	

PRINCETON DRIVE								
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L2	100+00 104+56.08	N: 995849.00 E: 2836877.81	N: 995393.27 E: 2836860.13			456.08	S2°13'14"W	
L3	107+45.59 108+72.35	N: 995132.47 E: 2836749.65	N: 995005.80 E: 2836744.72			126.77	S2°13'49"W	

DRIVE STATION: 107+70.59								
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L4	10+00 10+50	N: 995109.43 E: 2836698.71	N: 995107.48 E: 2836748.68			50.00	S87°46'11"E	

DRIVE STATION: 106+02.30								
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L5	20+00 20+40	N: 995289.44 E: 2836774.98	N: 995261.80 E: 2836803.89			40.00	S46°17'14"E	

DRIVE STATION: 19+95.51								
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L6	30+00 30+90	N: 995770.51 E: 2836565.70	N: 995860.47 E: 2836568.40			90.00	N1°43'14"E	

FIELD ENTRANCE STA_ 15+90.15								
ID #	STATION RANGE	START COORD.	END COORD.	PI STATION	PI COORD.	LINE/CHORD LENGTH (FT)	LINE/CHORD BEARING	RADIUS (FT)
L7	40+00 40+60	N: 995815.52 E: 2836161.09	N: 995875.48 E: 2836163.31			60.00	N2°07'21"E	

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

ALIGNMENT DATA & SURVEY CONTROL

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
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APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_ALGN_81450
DATE: 06.11.2019

SHEET
T3 OF 70

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GENERAL NOTES FOR CAPITAL IMPROVEMENTS PROJECTS
(REV. FEBRUARY 10, 2010)

1) PRELIMINARY INFORMATION:

a) CONSULT PARAGRAPH 6.12 OF THE EJCDC GENERAL CONDITIONS (C-700) FOR A COMPLETE LIST OF RECORD DOCUMENTS THAT THE CONTRACTOR SHALL MAINTAIN ON SITE.

b) PERMITS REQUIRED FOR THE WORK CAN BE FOUND IN SECTION 1010 OF THE GENERAL REQUIREMENTS (DIVISION 1).

c) CONSTRUCTION OF THE WORK SHOWN OR IMPLIED BY THIS SET OF DRAWINGS SHALL NOT BE INITIATED UNLESS ALL PRELIMINARY CONTRACT OBLIGATIONS ARE MET, AND THE OWNER IS NOTIFIED OF THE INTENT TO START THE WORK. SEE SECTION 1020 OF DIVISION 1.

d) ALL WORK SHALL BE CONFINED WITHIN THE CONSTRUCTION LIMITS OR AS OTHERWISE DIRECTED BY THE OWNER.

e) ANY WORK PERFORMED PRIOR TO ENGINEER'S REVIEW AND APPROVAL OF THE PERTINENT SUBMITTAL WILL BE AT THE SOLE EXPENSE AND RESPONSIBILITY OF CONTRACTOR. SUBMITTAL PROCEDURES AND REQUIREMENTS CAN BE FOUND IN PARAGRAPH 6.17 OF C-700 AND SECTIONS 1115 AND 1116 OF DIVISION 1.

f) OWNER IS DEFINED AS THE CITY OF LEE'S SUMMIT.

2) COORDINATION AND NOTIFICATIONS:

a) ANY TIME REFERENCES LISTED IN PARAGRAPH 2 ARE TYPICAL TIMELINES. CONSULT SECTION 1105 OF DIVISION 1 FOR PROJECT SPECIFIC TIMELINES, COORDINATION AND NOTIFICATION PROCESSES.

b) PRIOR TO ANY STREET CLOSURES, APPROPRIATE NOTIFICATIONS WILL BE DISTRIBUTED. THE CLOSURES OF ARTERIAL AND COLLECTOR STREETS WILL TYPICALLY CAUSE THE OWNER TO GENERATE A PRESS RELEASE AND DETOUR MAP. THIS IS TYPICALLY 14 CALENDAR DAYS.

c) THE REMOVAL OF TREES, SHEDS, FENCING OR OTHER ITEMS ON PRIVATE PROPERTY ARE NOT AUTHORIZED ON THIS PROJECT. CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ANY SUCH WORK IS PROPOSED. THE OWNER REQUIRES AT LEAST 14 CALENDAR DAYS TO NOTIFY PROPERTY OWNER RESIDENT, IN ORDER TO GIVE THEM OPPORTUNITY TO SALVAGE THESE ITEMS.

d) PRIOR TO DRIVEWAY DEMOLITION AND RECONSTRUCTION, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE PROPERTY OWNER OR RESIDENT. THIS IS TYPICALLY 2 WORKING DAYS.

e) PRIOR TO SHUTTING DOWN A WATER MAIN, CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE PROPERTY OWNER OR RESIDENT. THIS IS TYPICALLY 2 WORKING DAYS.

f) CONTRACTOR SHALL NOT BE ALLOWED TO WORK WEEKENDS OR HOLIDAYS WITHOUT REQUESTING PRIOR APPROVAL FROM OWNER THREE WORKING DAYS IN ADVANCE.

g) BY ORDINANCE 17-42, WORKING HOURS WITHIN THE CITY OF LEE'S SUMMIT ARE 7:00 A.M. TO 10:00 P.M. REQUESTS TO WORK BEYOND THESE HOURS MUST BE FILED WITH THE OWNER ONE WEEK IN ADVANCE.

3) SURVEY:

a) IN ACCORDANCE WITH PARAGRAPH 4.05 OF C-700, OWNER OR ENGINEER SHALL PROVIDE ENGINEERING SURVEYS TO ESTABLISH REFERENCE POINTS FOR CONSTRUCTION WHICH IN THEIR JUDGMENT ARE NECESSARY TO ENABLE CONTRACTOR TO PERFORM THE WORK. CONTRACTOR IS RESPONSIBLE FOR LAYING OUT THE WORK AND SHALL SET THOSE STAKES NECESSARY TO CONSTRUCT THIS PROJECT. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

b) IN ACCORDANCE WITH PARAGRAPH 4.05 OF C-700, CONTRACTOR SHALL RESET ANY PERMANENT REFERENCE POINTS, PROPERTY CORNERS AND PROPERTY MONUMENTS THAT ARE DISTURBED DURING CONSTRUCTION. THESE POINTS AND MONUMENTS SHALL BE RESET BY A REGISTERED LAND SURVEYOR IN ACCORDANCE WITH STATE LAW. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.

4) UNDERGROUND FACILITIES:

a) INFORMATION REGARDING UNDERGROUND FACILITIES IS APPROXIMATE AND WAS COMPILED USING INFORMATION PROVIDED BY THE FACILITY OWNER. CONSULT PARAGRAPH 4.04 OF C-700 FOR FURTHER INFORMATION.

b) UNLESS BORED, ALL UNDERGROUND UTILITIES (INCLUDING THE CONTRACTOR'S WORK) THAT CROSS UNDER PROPOSED STREET PAVEMENTS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF THE NEW PAVEMENT.

5) WATER, STORM & SANITARY SEWER:

a) WATER CAN BE PURCHASED FROM THE CITY'S WATER UTILITIES DEPARTMENT.

b) ALL MANHOLES, VALVE LIDS, METER LIDS, FIRE HYDRANTS AND AIR RELIEF ASSEMBLIES WITHIN THE CONSTRUCTION LIMITS SHALL BE RELOCATED OR ADJUSTED TO GRADE BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS. ALL VALVE RISERS IN PAVEMENT (WHETHER ADJUSTED, REPLACED OR PLACED) SHALL BE CAST IRON AND CONFORM TO THE SPECIFICATIONS. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

c) CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE FLOWS AROUND EACH SEGMENT OF PIPE THAT IS TO BE REPLACED OR REFURBISHED. CONTRACTOR SHALL HAVE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE WORK ON THE PIPE SEGMENT PRIOR TO ISOLATING THE SEWER SEGMENT AND BEGINNING BYPASS PUMPING OPERATIONS. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

6) ENVIRONMENTAL & SAFETY:

a) CONTRACTOR SHALL USE ADEQUATE DUST CONTROL MEASURES DURING ALL PHASES OF THE WORK. CONSULT SECTION 1145 IN DIVISION 1.

b) SILTATION AND EROSION CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL SYSTEMS, REPLACING DAMAGED OR FAILED EROSION CONTROL DEVICES AND INSPECTING THE SITE IN ORDER TO REPAIR THE EROSION CONTROL SYSTEMS WITHIN 24 HOURS AFTER A SIGNIFICATION RAIN EVENT. GRADING ADJACENT TO PAVEMENTS SHALL BE LEFT THREE INCHES BELOW THE TOP OF PAVEMENT UNTIL IMMEDIATELY BEFORE SOD OR SEED IS PLACED. EROSION AND SEDIMENT CONTROL MUST BE IN PLACE PRIOR TO THE DISTURBANCE OF THE GROUND. FIELD ADJUSTMENTS TO EROSION AND SEDIMENT CONTROL MAY BE REQUIRED DEPENDING ON THE SITE CONDITIONS.

c) UNLESS WAIVED IN SECTION 1010, CONTRACTOR SHALL MAINTAIN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE IN ACCORDANCE WITH DNR REGULATIONS.

d) PROPERTY MAINTENANCE INFORMATION CAN BE FOUND IN SECTION 1145 OF DIVISION 1.

7) GRADING, REMOVALS & DAMAGED ITEMS:

a) INFORMATION ON SALVAGED MATERIAL CAN BE FOUND IN SECTION 1150 OF DIVISION 1.

b) NO BURNING IS ALLOWED ON THE SITE.

c) DRIVEWAYS, PARKING LOTS, SIDEWALKS, FENCES, IRRIGATION SYSTEMS AND OTHER ITEMS DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN EXISTING BEFORE DAMAGE OCCURRED. UNLESS WAIVED BY OWNER, ALL ITEMS REQUIRING REPLACEMENT SHALL BE REPLACED WITH NEW MATERIALS, AND ALL MATERIALS ARE SUBJECT TO OWNER'S APPROVAL. NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK, UNLESS LISTED IN THE BID TAB.

d) ALL FENCE REPLACEMENT SHOULD BE RELOCATED TO THE PROPERTY LINES, UNLESS THE EXISTING FENCE WAS LOCATED INSIDE OF THE PROPERTY LINES. FENCE INSIDE OF PROPERTY LINES SHOULD BE PLACED IN ITS ORIGINAL LOCATION. GATES AND FENCE CORNERS SHALL BE RE-ESTABLISHED AT THE ORIGINAL LOCATIONS, UNLESS INDICATED BY THE DRAWINGS. REMOVALS SHALL BE AS SHOWN ON THE DRAWINGS OR AS APPROVED BY OWNER. REMOVALS NOT APPROVED BY OWNER WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

e) ROOF DRAINS, UNDER DRAINS, SEPTIC LINES AND OTHER SMALL DRAINAGE LINES NOT SHOWN ON THE DRAWINGS THAT ARE UNCOVERED OR DAMAGED SHALL BE REPAIRED, AND THE POINT OF DISCHARGE SHALL BE PLACED NO CLOSER THAN FIVE FEET TO ANY ADJOINING PROPERTY LINE INCLUDING THE RIGHT-OF-WAY LINE (SECTION 16-413 OF THE CODE OF ORDINANCES). UNLESS DIRECTED BY THE CITY ENGINEER, NO DRAIN LINES SHALL BE CONNECTED TO THE STORM SEWER SYSTEM. MATERIALS AND LOCATION ARE SUBJECT TO OWNER'S APPROVAL. IF NO UNIT PRICE IS IN THE BID, THEN PAYMENT WILL BE NEGOTIATED PER THE CONTRACT DOCUMENTS.

f) MATERIALS THAT MAY BE CLASSIFIED AS UNSUITABLE OR REQUIRE UNDERGRADING SHALL BE DETERMINED BY THE OWNER OR THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL NOT MAKE THIS DETERMINATION.

8) TRAFFIC:

a) UNLESS DIRECTED IN THE CONTRACT DOCUMENTS OR DRAWINGS, CONTRACTOR SHALL MAINTAIN TRAFFIC AND PEDESTRIAN ACCESS AT ALL TIMES.

b) APPROPRIATE TRAFFIC CONTROL DEVICES, SIGNAGE AND PAVEMENT MARKINGS SHALL BE ESTABLISHED AND MAINTAINED THROUGHOUT THE PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE MUTCD.

ADDITIONAL GENERAL NOTES:

1) ALL TREES TO BE GRUBBED ARE MARKED THUS "X". SPARE ALL TREES THAT ARE MARKED DND (DO NOT DISTURB) OR ANY TREES NOT MARKED AT ALL. EXCEPTIONALLY GOOD TREES SHALL BE SPARED BY ADJUSTING BACKSLOPE LINES DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. ALL TREES WITHIN THE CONSTRUCTION LIMITS TO BE SAVED SHALL HAVE HEIR TRUNKS AND ROOT ZONE PHYSICALLY PROTECTED PRIOR TO CONSTRUCTION OPERATIONS BY METHODS APPROVED BY THE ENGINEER.

2) THE CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION OF ANY PORTION OF THE STORM SEWER, UNDERDRAINS, CONDUIT, AND ANY OTHER SUBSURFACE ELEMENTS OF THE PROJECT. THIS SURVEY INFORMATION SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW. THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION ON ANY SUBSURFACE ELEMENT ON THE PROJECT WITHOUT THE APPROVAL OF THE ENGINEER. THIS ITEM SHALL BE SUBSIDIARY TO OTHER BID ITEMS.

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

GENERAL NOTES

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_GEN_81450
DATE: 06.11.2019

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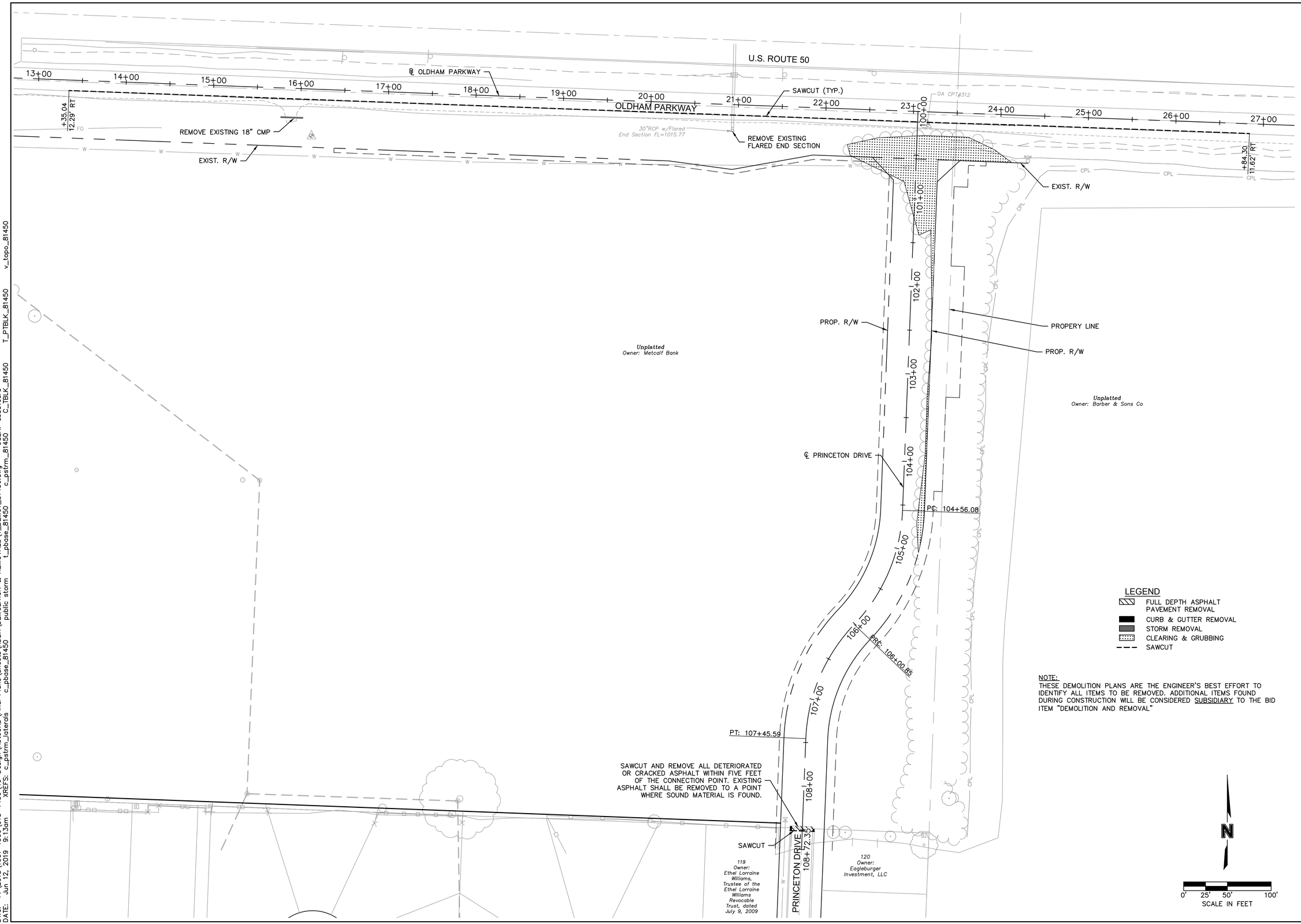

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DEMOLITION & REMOVALS

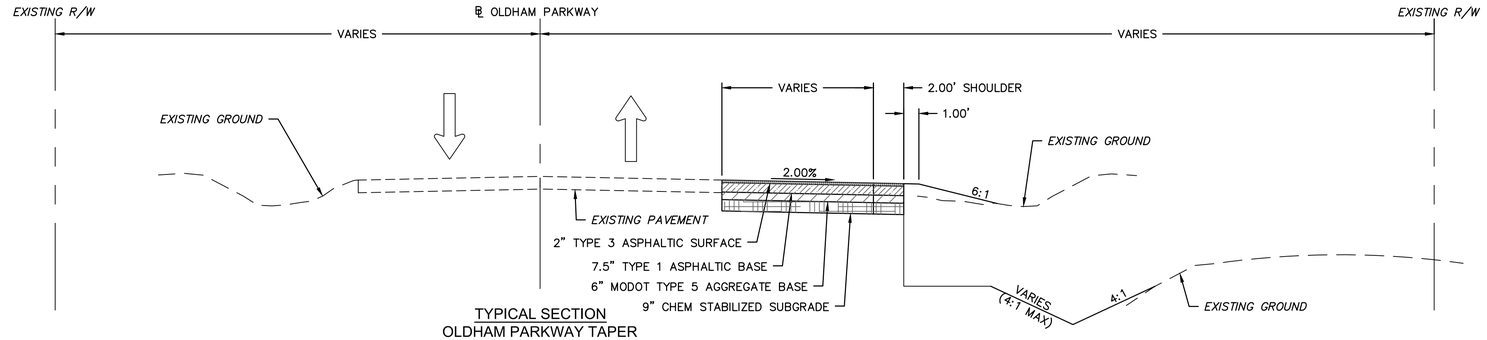
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

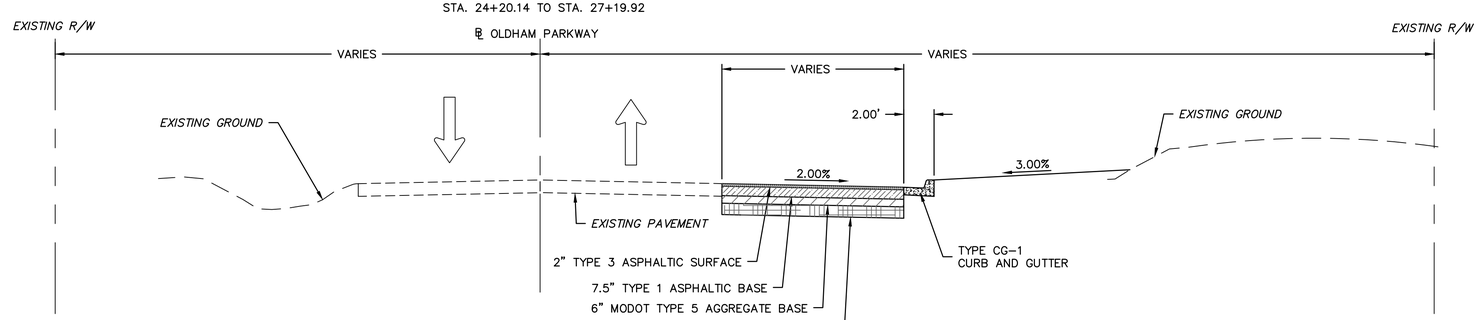
C.O.A. NO.:	001592
DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_DEM01_81450
DATE:	06.11.2019

SHEET
T5 OF 70

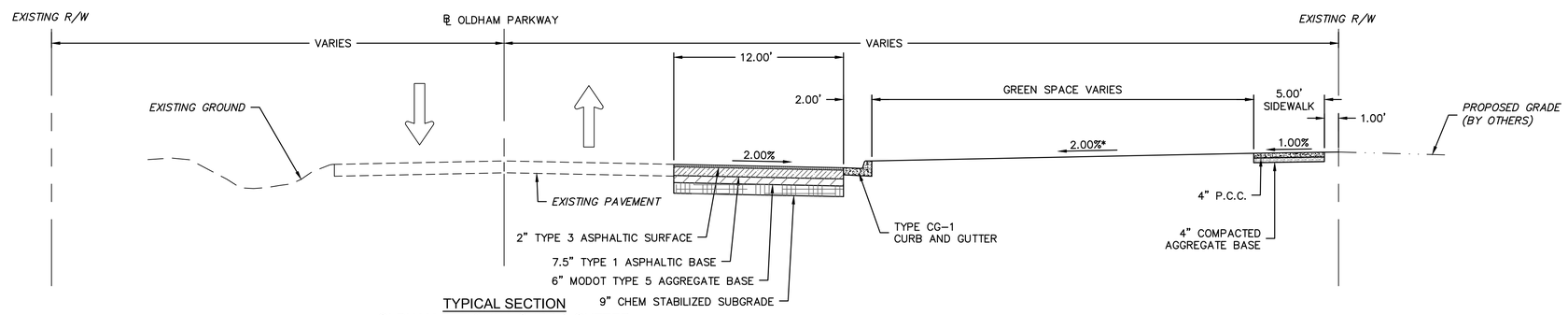


TYPICAL SECTION
OLDHAM PARKWAY TAPER
NOT TO SCALE
STA. 12+92.49 TO STA. 14+51.69
STA. 15+72.91 TO STA. 16+03.17
STA. 23+71.04 TO STA. 23+80.74
STA. 24+20.14 TO STA. 27+19.92

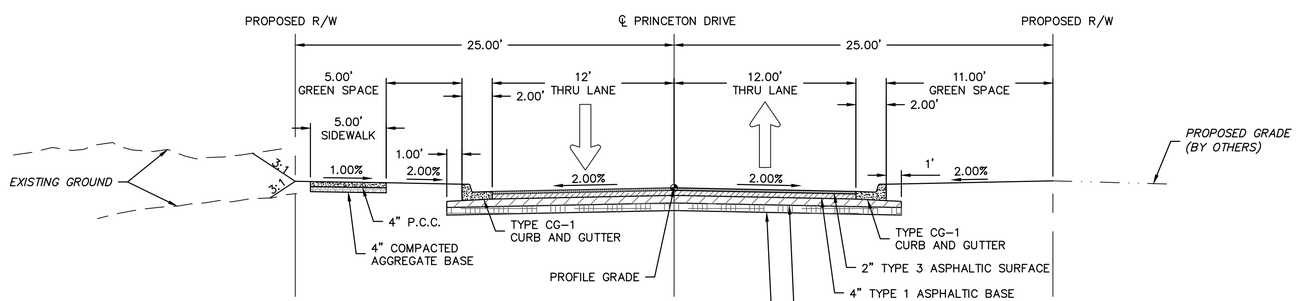
STA. 14+51.69 TO STA. 15+72.91
STA. 23+80.74 TO STA. 24+20.14



TYPICAL SECTION
OLDHAM PARKWAY CURB & GUTTER
NOT TO SCALE
STA. 16+03.17 TO STA. 16+47.39



TYPICAL SECTION
OLDHAM PARKWAY CURB & GUTTER
NOT TO SCALE
* 3.00% FROM STA. 16+47.39 TO STA. 19+54.84
STA. 19+54.84 TO STA. 23+54.27



TYPICAL SECTION
PRINCETON DRIVE
NOT TO SCALE
STA. 100+51.07 TO STA. 108+51.26

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6-11-19

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TYPICAL SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

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DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_TYP_81450
DATE:	06.11.2019

SHEET
T6 OF 70

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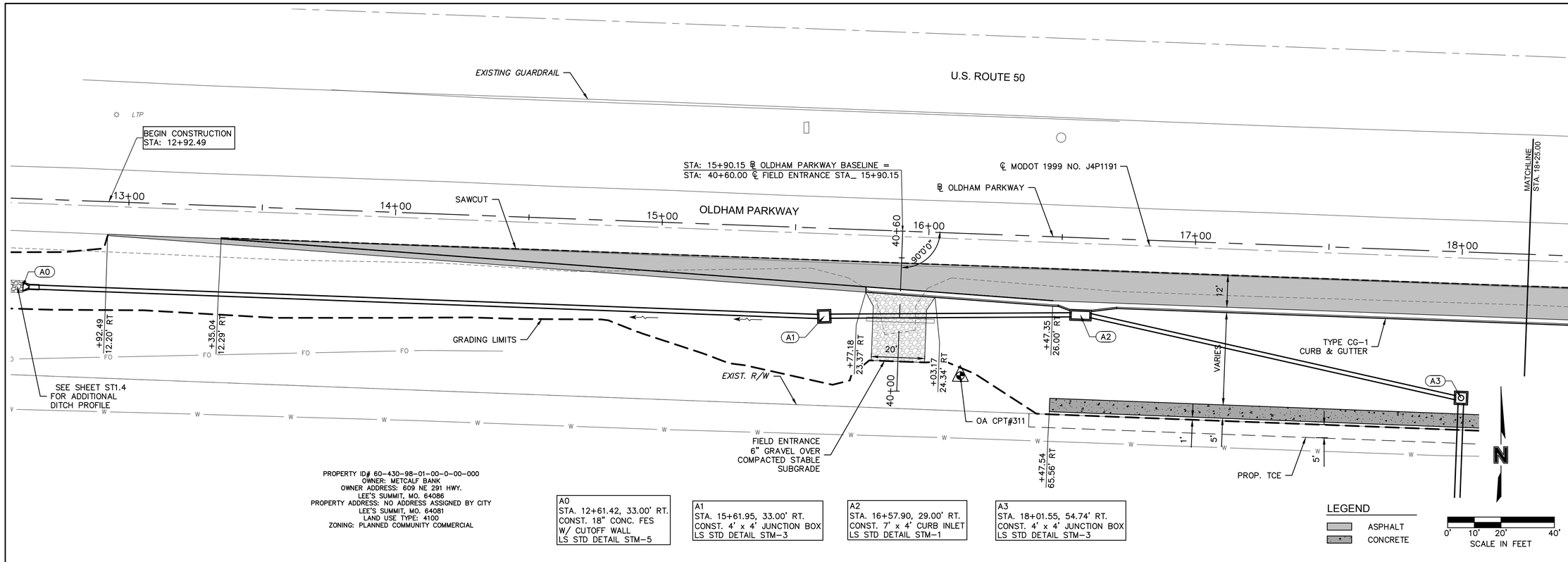
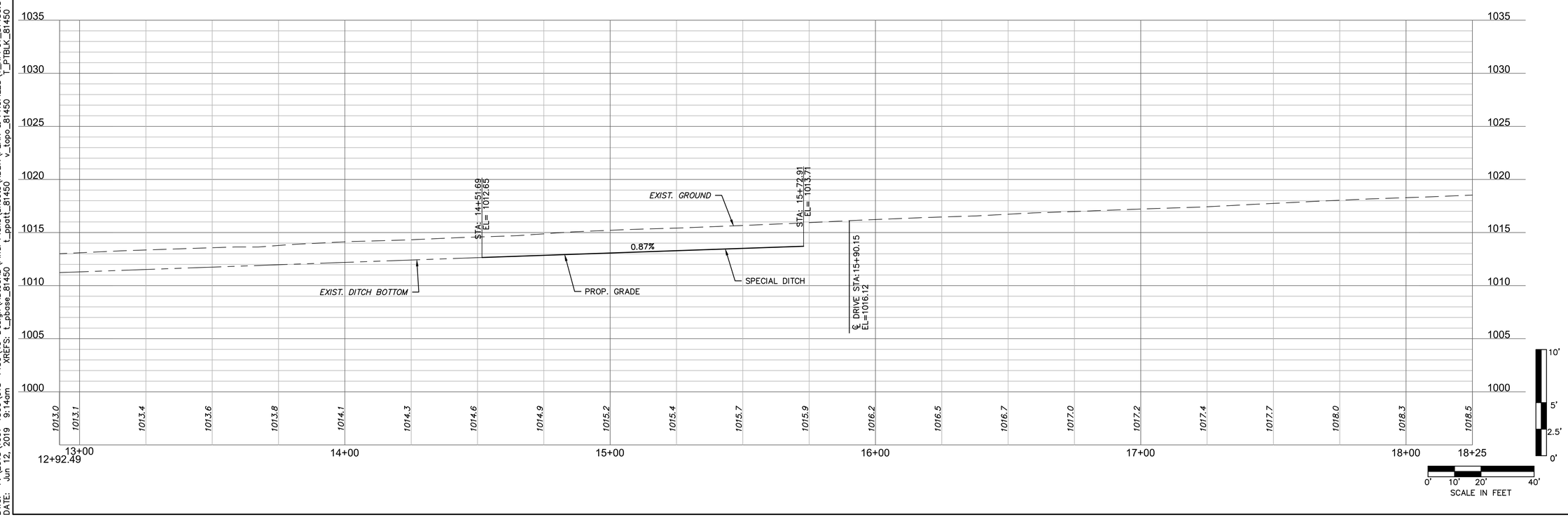


PROPERTY ID# 60-430-98-01-00-0-00-000
OWNER: METCALF BANK
OWNER ADDRESS: 609 NE 291 HWY.
LEE'S SUMMIT, MO. 64086
PROPERTY ADDRESS: NO ADDRESS ASSIGNED BY CITY
LEE'S SUMMIT, MO. 64081
LAND USE TYPE: 4100
ZONING: PLANNED COMMUNITY COMMERCIAL

A0	A1	A2	A3
STA. 12+61.42, 33.00' RT.	STA. 15+61.95, 33.00' RT.	STA. 16+57.90, 29.00' RT.	STA. 18+01.55, 54.74' RT.
CONST. 18" CONC. FES W/ CUTOFF WALL	CONST. 4' x 4' JUNCTION BOX	CONST. 7' x 4' CURB INLET	CONST. 4' x 4' JUNCTION BOX
LS STD DETAIL STM-5	LS STD DETAIL STM-3	LS STD DETAIL STM-1	LS STD DETAIL STM-3

OLDHAM PARKWAY BASELINE (12+92.49 - 18+25)



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STATE OF MISSOURI
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OLDHAM PARKWAY
PLAN & PROFILE

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
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APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_RPP01_81450
DATE: 06.11.2019

SHEET
T7 OF 70

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\PLAN & PROFILES\T_RPP01_81450.dwg USER: asaavedra
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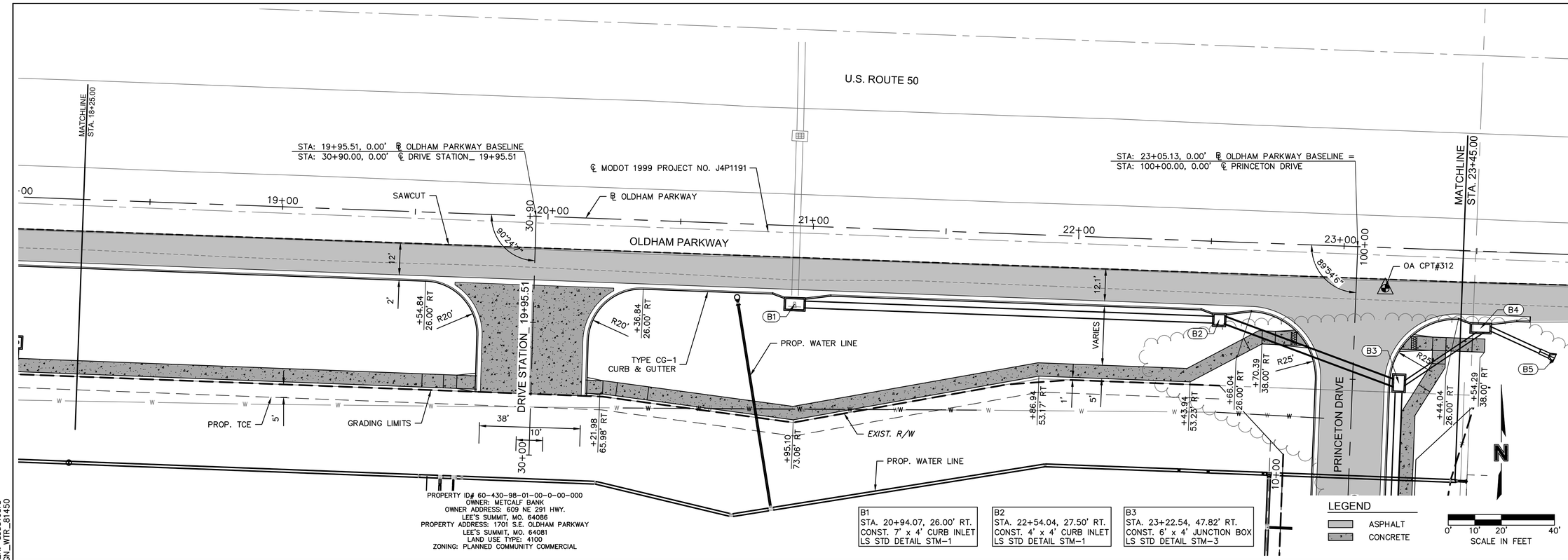
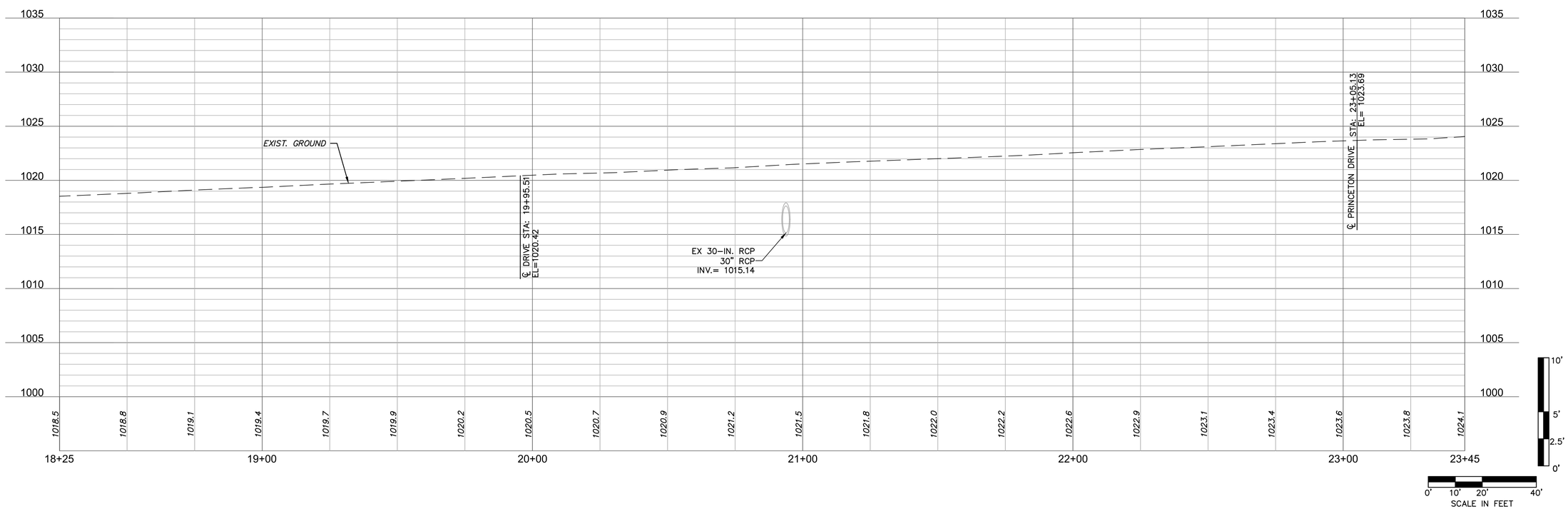


OLDHAM PARKWAY BASELINE (18+25 - 23+45)



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OLDHAM PARKWAY
PLAN & PROFILE

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

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2019

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QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_RPP02_81450
DATE: 06.11.2019

SHEET
T8 OF 70

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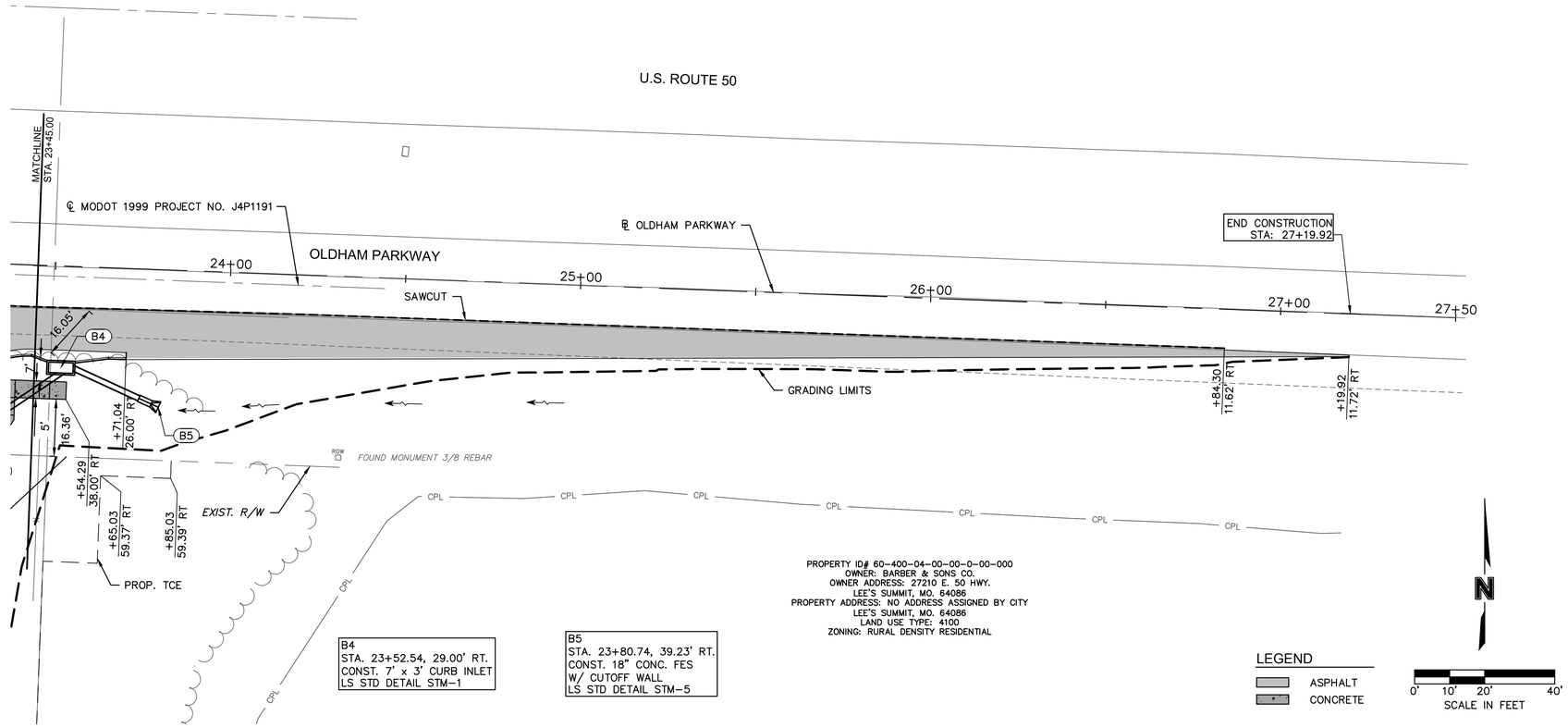
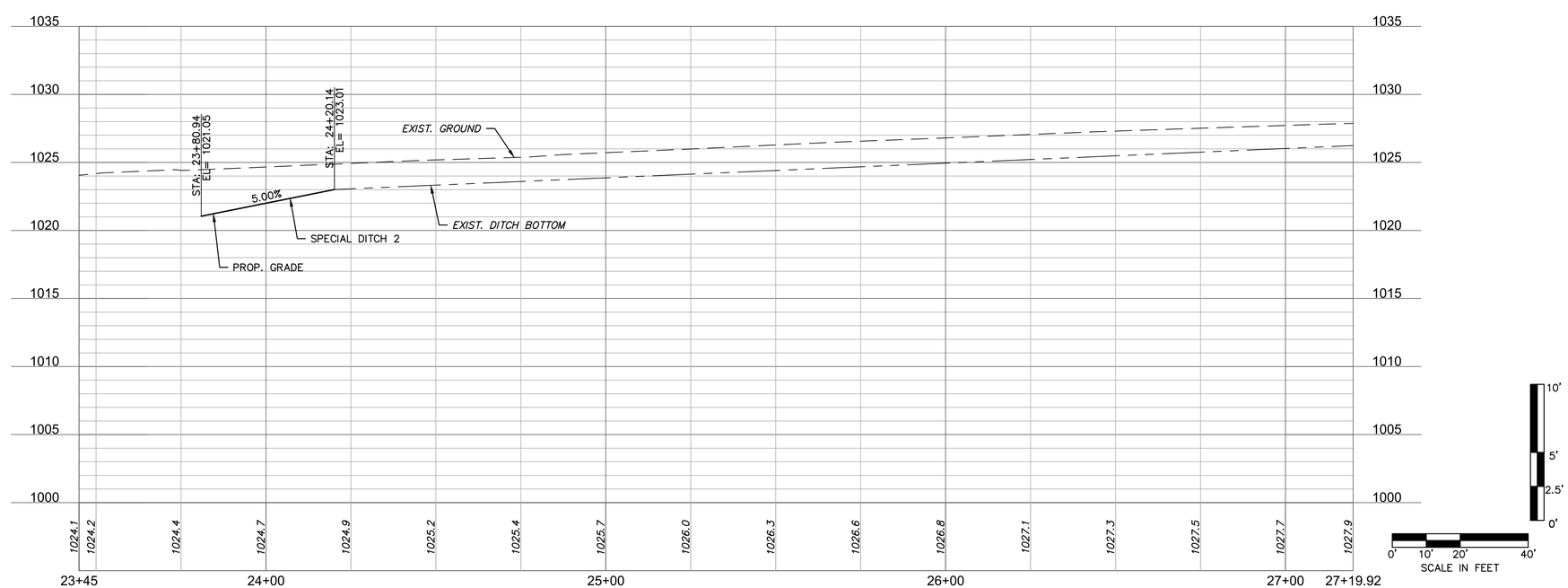


OLDHAM PARKWAY BASELINE (23+45 - 27+19.92)



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OLDHAM PARKWAY
PLAN & PROFILE

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
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APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_RPP03_81450
DATE: 06.11.2019

SHEET
T9 OF 70

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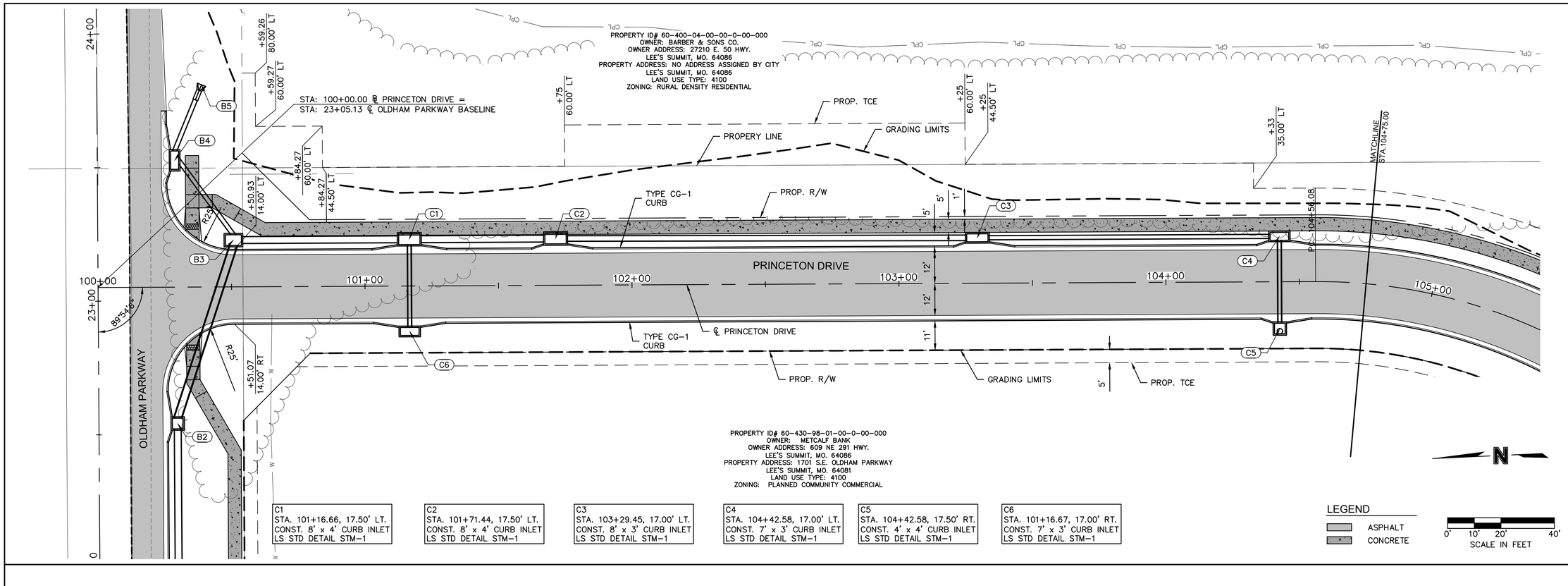
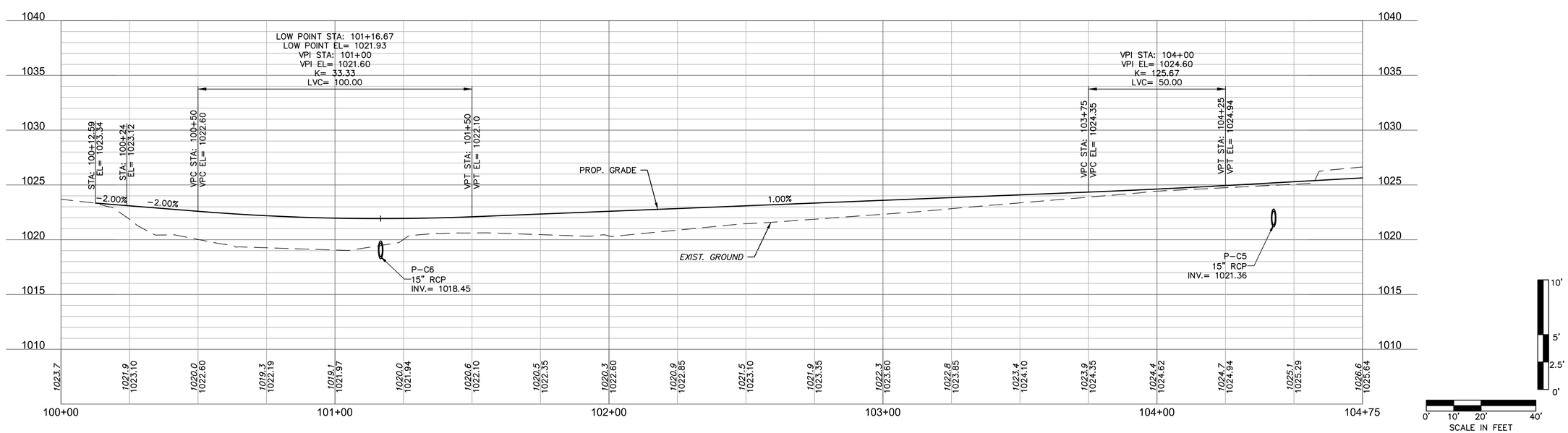


PRINCETON DRIVE (100+00 - 104+75)



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STATE OF MISSOURI — RYAN B. FLEMING — NUMBER PE-2002003161 — PROFESSIONAL ENGINEER — 6-11-19

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

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PRINCETON DRIVE
PLAN & PROFILE

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.:	001592
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PROJECT NO.:	018-1450
DWG NO.:	T_RPP04_81450
DATE:	06.11.2019

SHEET
T10 OF 70

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\PLAN & PROFILES\T_RPP04_81450.dwg USER: asaavedra
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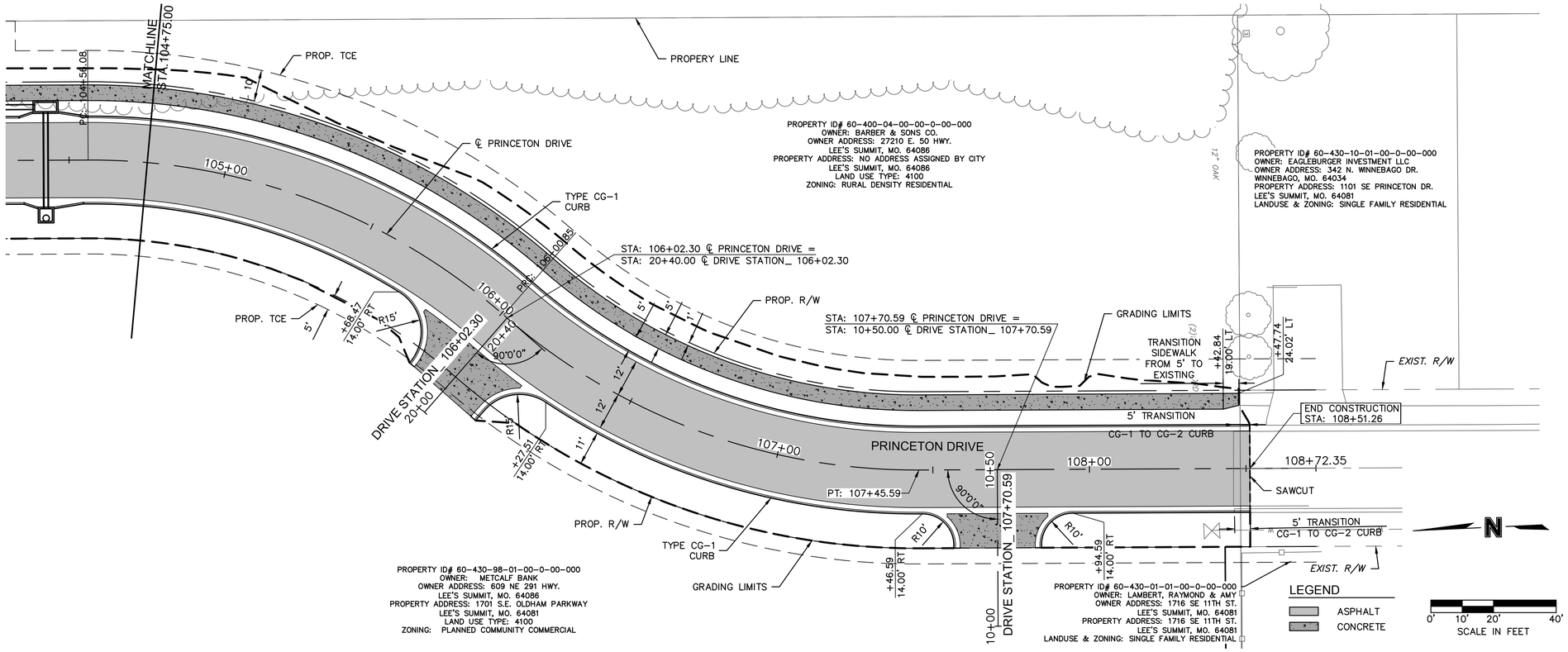
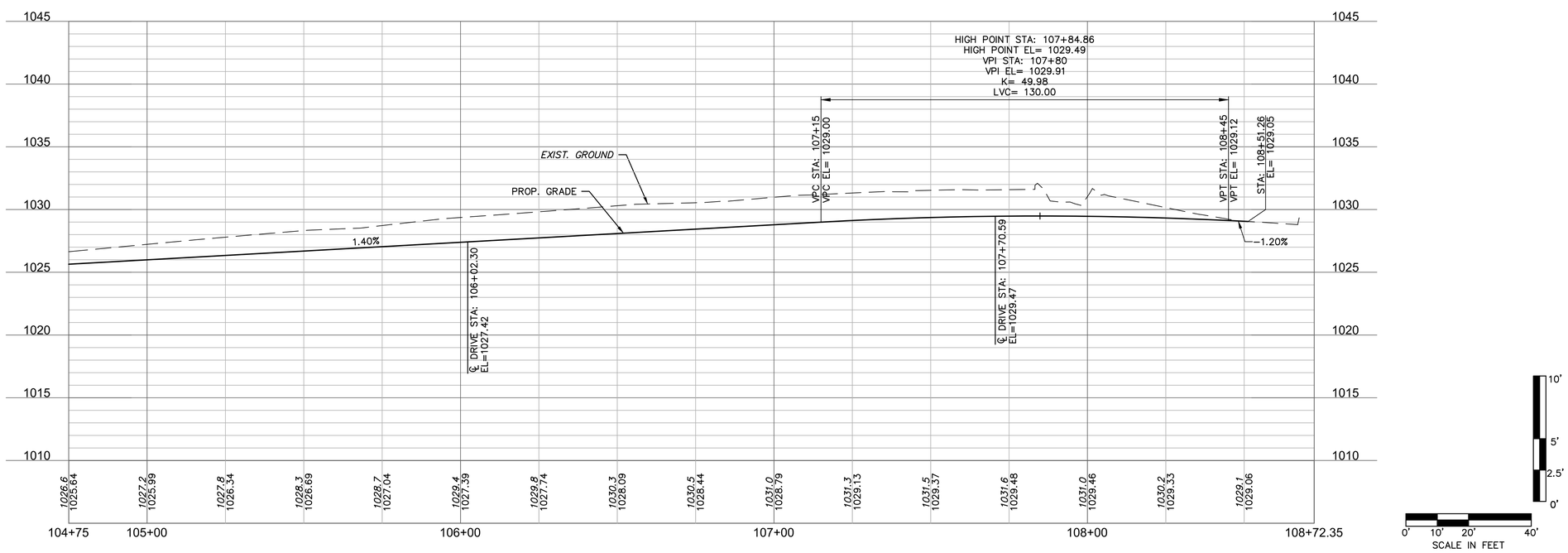


PRINCETON DRIVE (104+75 - 108+72.35)



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OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

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PROJECT NO.:	018-1450
DWG NO.:	T_RPP05_81450
DATE:	06.11.2019

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T11 OF 70

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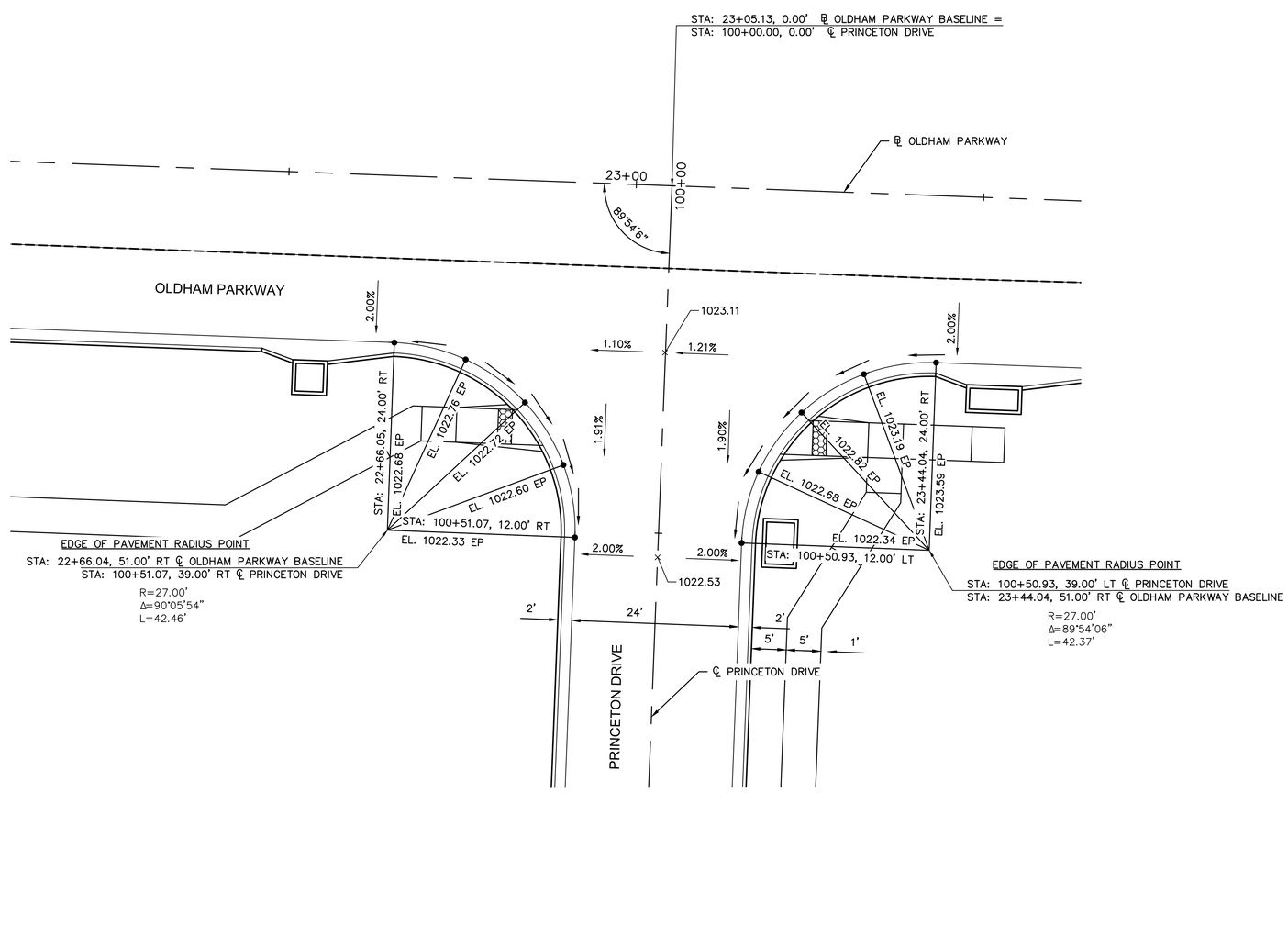

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DATE: Jun 12, 2019 9:22am XREFS: t_pbase_81450 T_PTBLK_81450 PUBLIC STORM

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RYAN B. FLEMING
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INTERSECTION LAYOUT

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.:	001592
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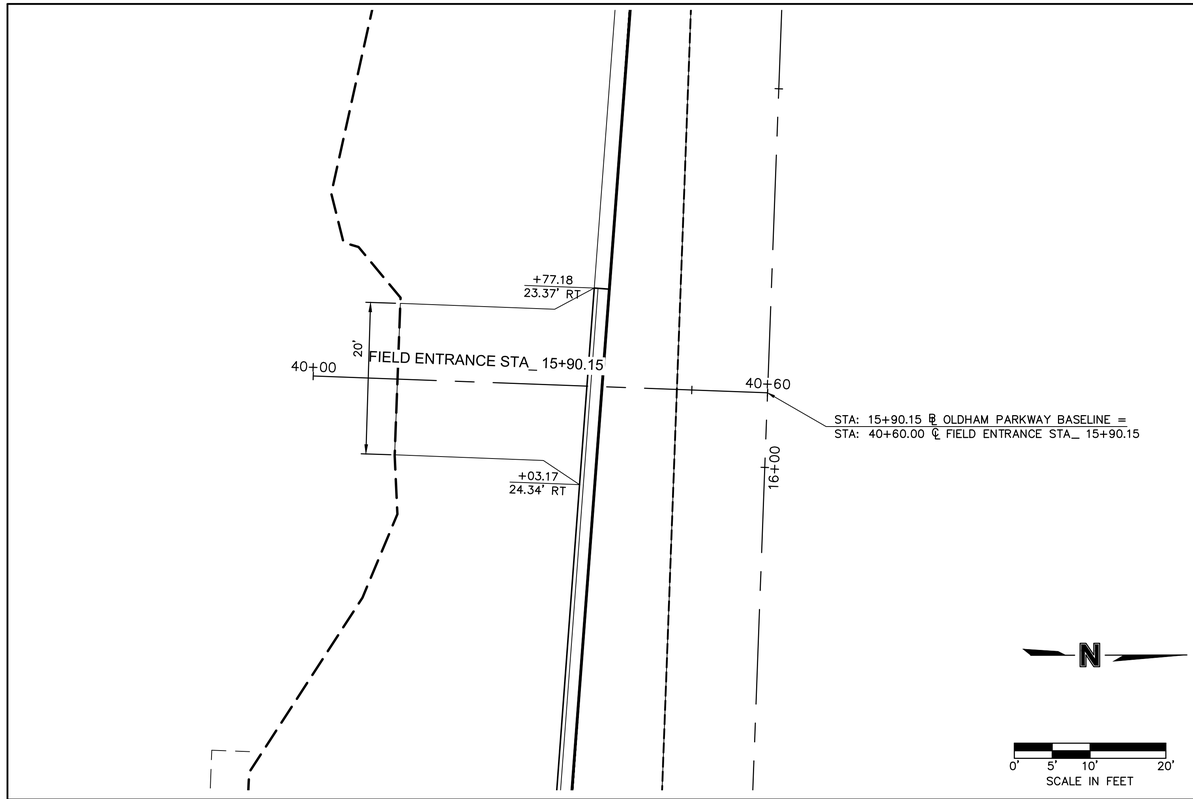
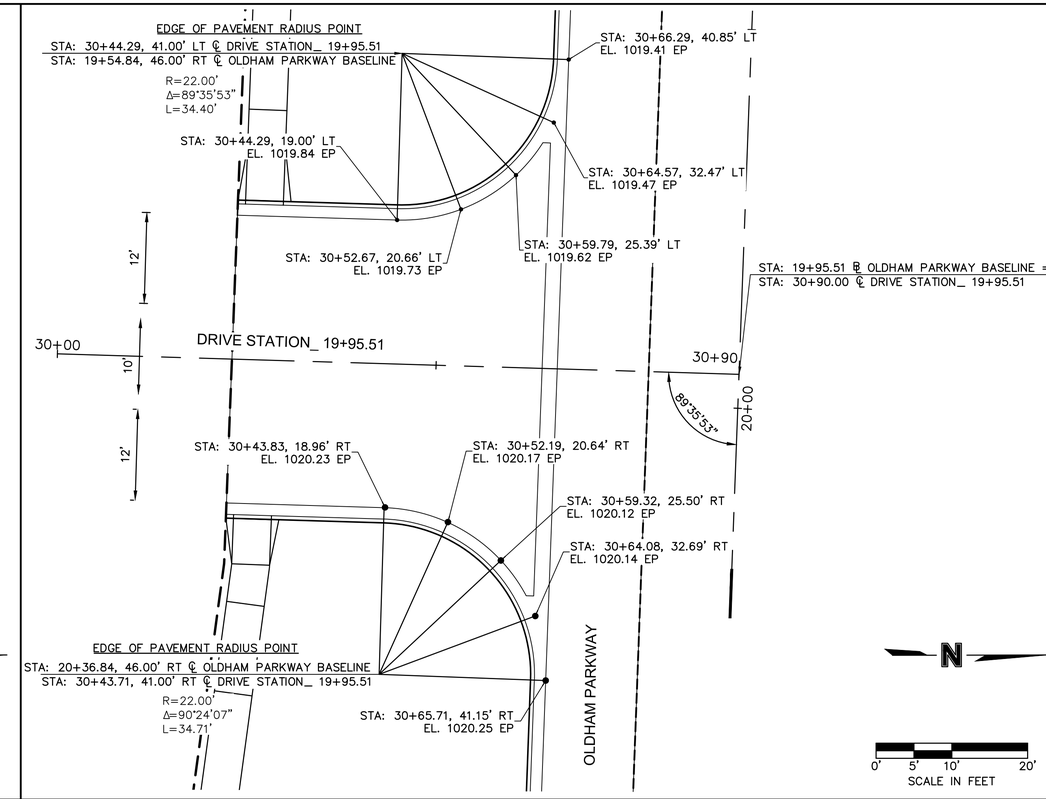
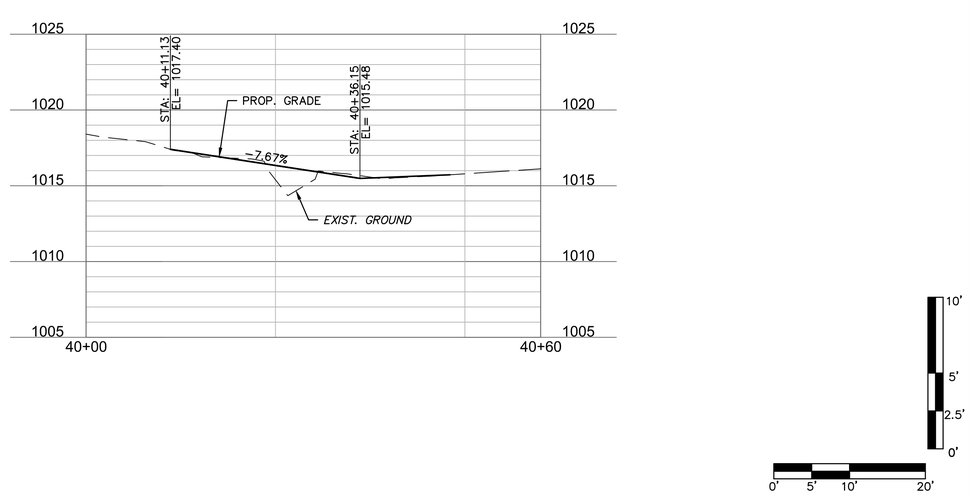
DWG NO.:	T_INT01_81450
DATE:	06.11.2019

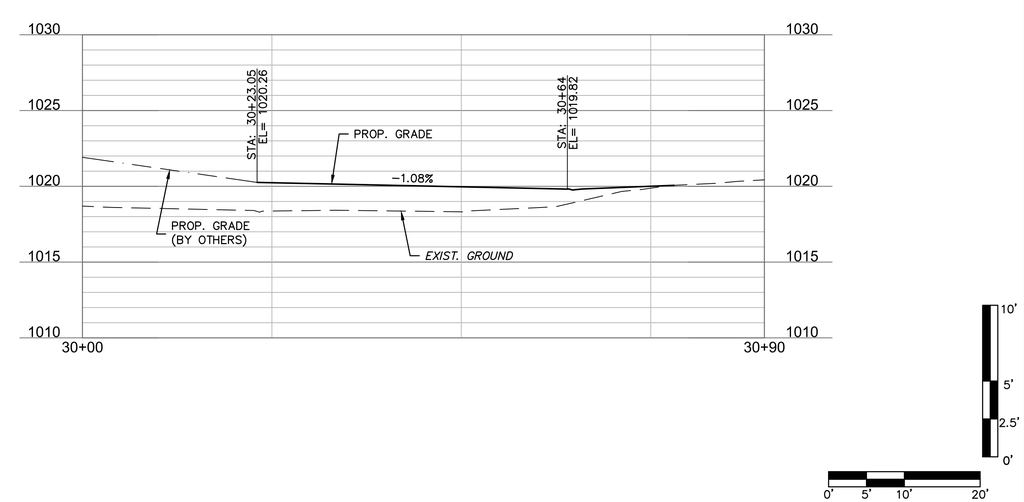




FIELD ENTRANCE STA_ 15+90.15 (40+00 - 40+60)



DRIVE STATION_ 19+95.51 (30+00 - 30+90)



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6-11-19

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DRIVE LAYOUTS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
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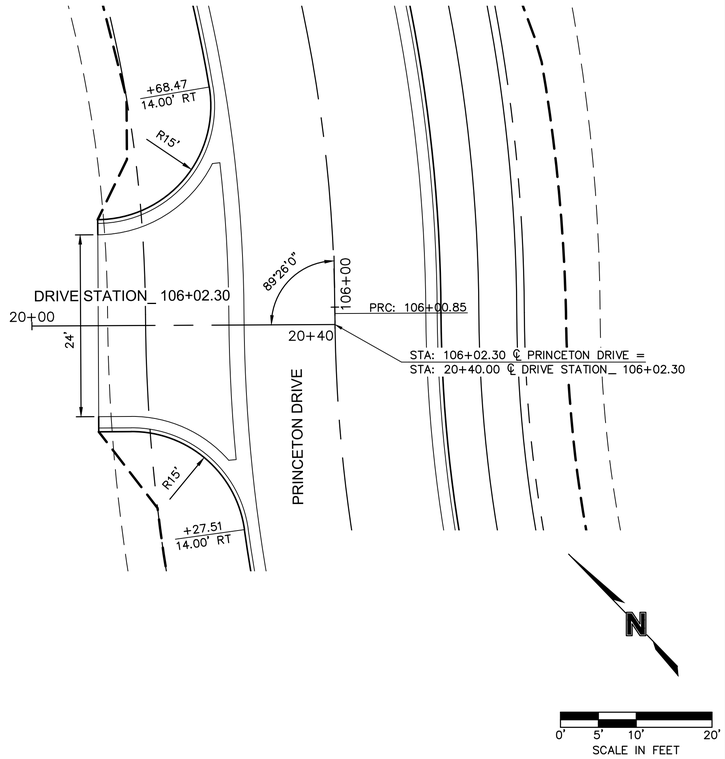
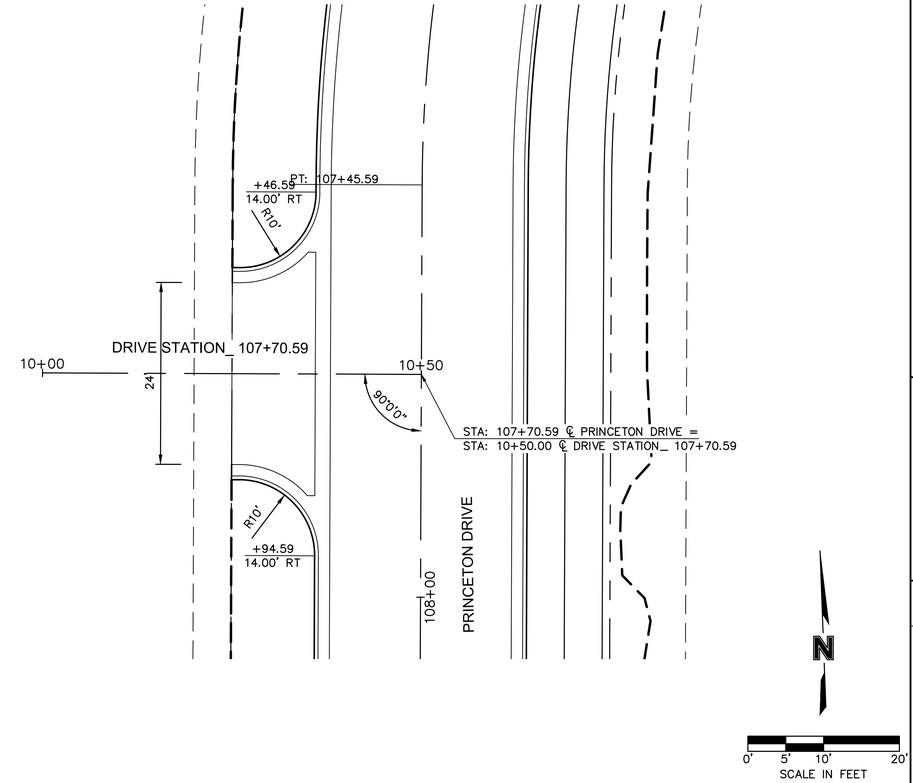
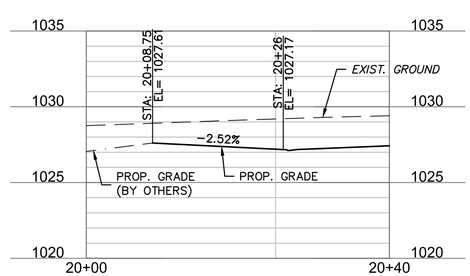
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_DRV01_81450
DATE:	06.11.2019

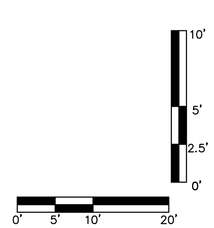
DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DRIVE LAYOUTS\T_DRV01_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:22am XREFS: t_pbase_81450 T_PTBLK_81450 PUBLIC STORM



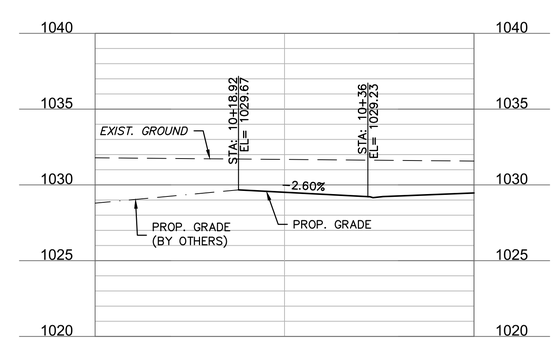


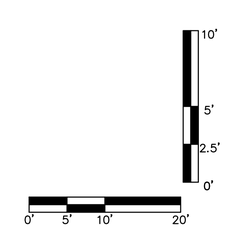
DRIVE STATION_ 106+02.30 (20+00 - 20+40)





DRIVE STATION_ 107+70.59 (10+00 - 10+50)





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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
6-11-19

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

DRIVE LAYOUTS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_DRV01_81450
DATE: 06.11.2019

SHEET
T14 OF 70

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DRIVE LAYOUTS\T_DRV01_81450.dwg USER: asaavedra
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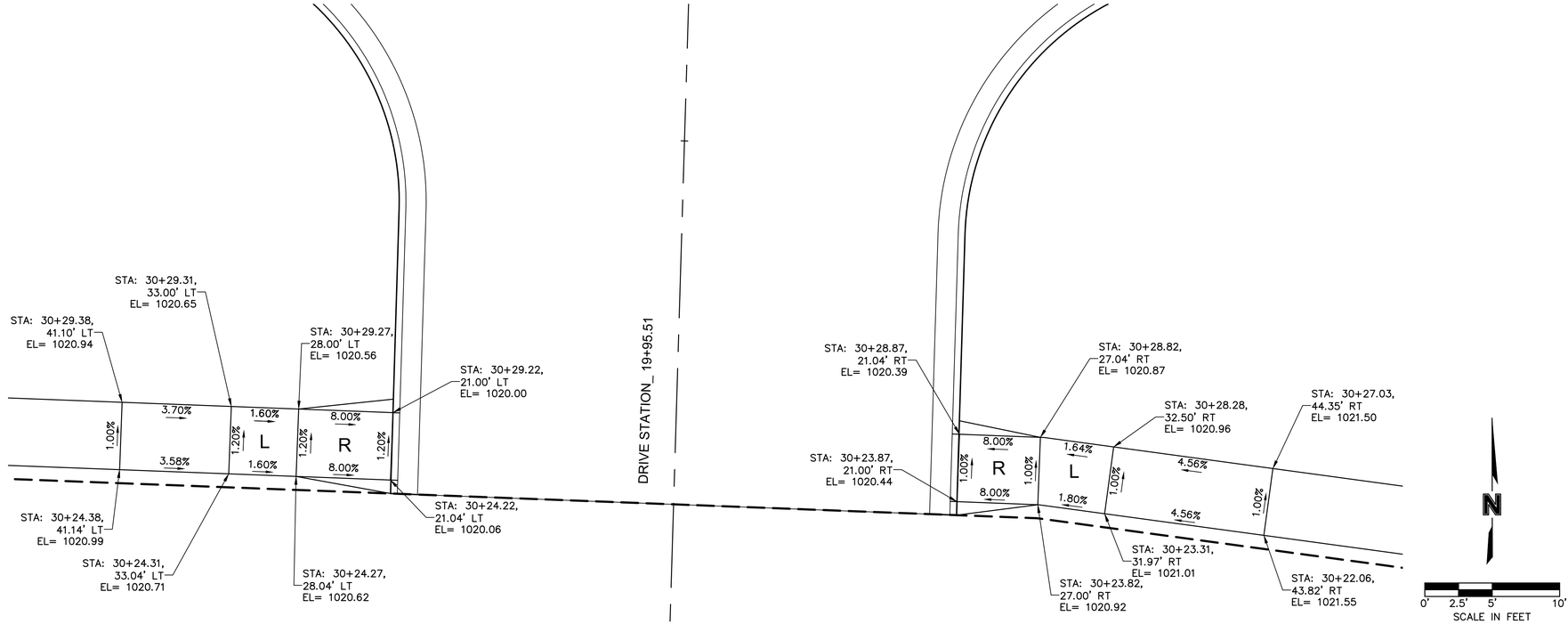

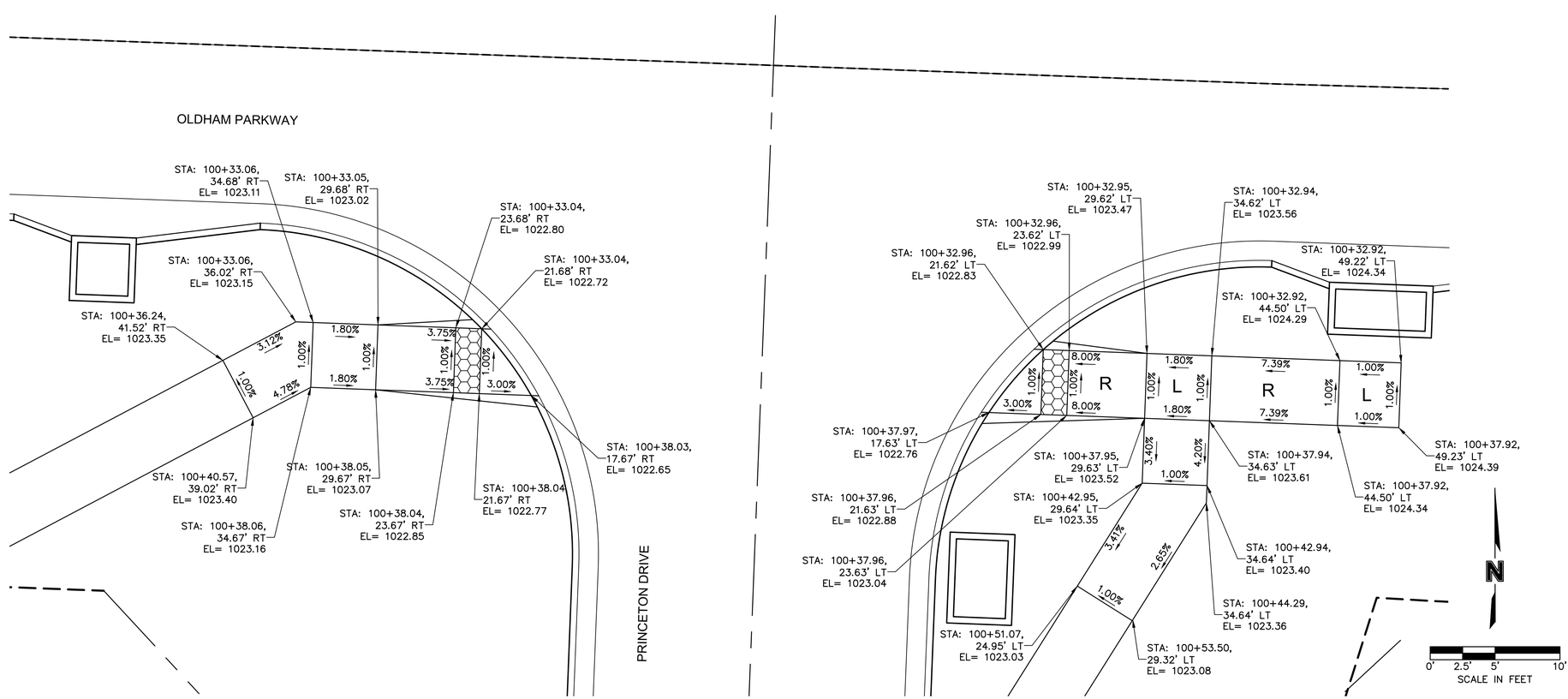

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RYAN B. FLEMING
NUMBER PE-2002003161
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6-11-19

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SIDEWALK RAMP LAYOUT

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.:	001592
DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_SWK01_81450
DATE:	06.11.2019

SHEET
T15 OF 70

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\SIDEWALK RAMP LAYOUTS\T_SWK01_81450.dwg USER: asaavedra
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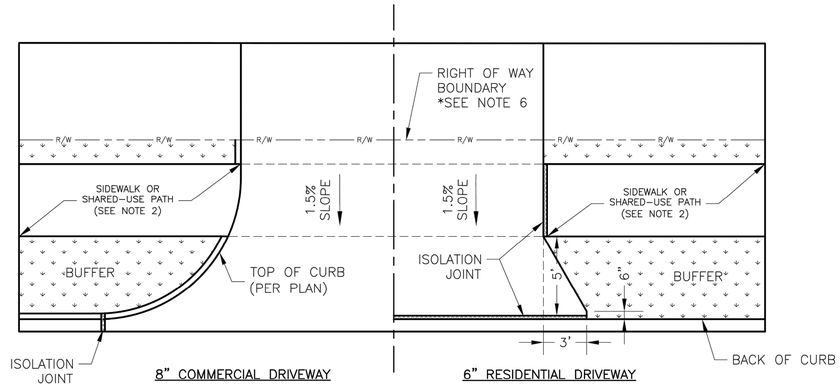
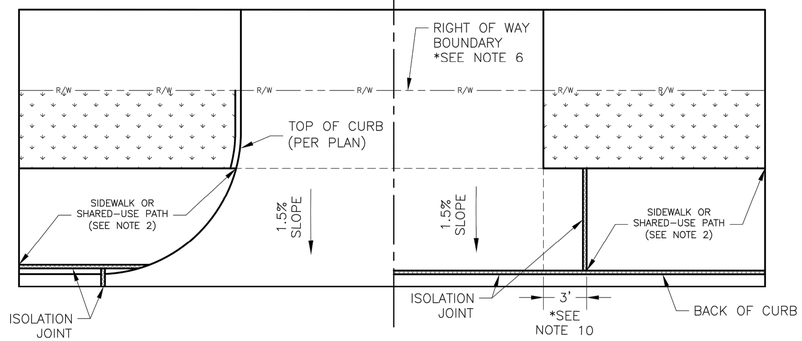


8" COMMERCIAL DRIVEWAY

6" RESIDENTIAL DRIVEWAY

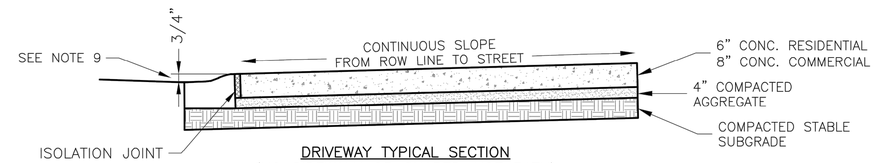
DRIVEWAY WITH BUFFER
NOT TO SCALE



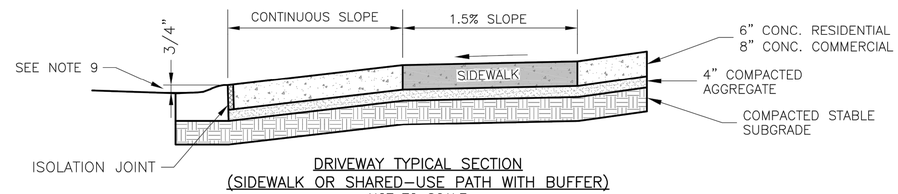
8" COMMERCIAL DRIVEWAY

6" RESIDENTIAL DRIVEWAY

DRIVEWAY WITHOUT BUFFER
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(NO SIDEWALK OR SHARED-USE PATH)
NOT TO SCALE



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITH BUFFER)
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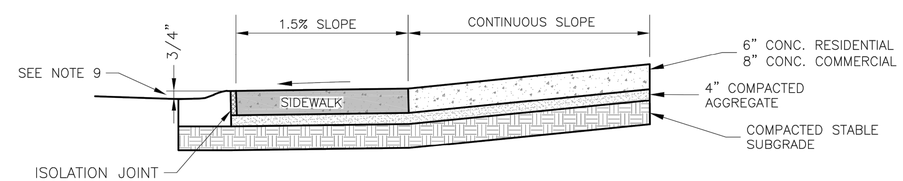

DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITHOUT BUFFER)
NOT TO SCALE

GENERAL NOTES

1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED USE PATH RAMP AT DRIVEWAY DETAIL).
3. JOINT AT BACK OF CURB LINE SHALL BE AN ISOLATION JOINT FOR RESIDENTIAL DRIVEWAYS.
4. KCMMB 4K CONCRETE MIX IS REQUIRED FOR ALL CURBS.
5. COMMERCIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, SHALL BE KCMMB 4K CONCRETE MIX.
6. RESIDENTIAL DRIVEWAYS, IN THE PUBLIC RIGHT OF WAY, KCMMB 4K CONCRETE MIX IS RECOMMENDED. OTHER CONCRETE MIXES NEEDS TO BE APPROVED BY CITY INSPECTOR.
7. A JOINT MUST BE INSTALLED AT THE RIGHT OF WAY BOUNDARY FOR PROPERTY DELINEATION.
8. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.
9. ¾" FROM TOP OF CURB TO FLOWLINE AT DRIVEWAY (TYPE CG-1 CURB ONLY). MUST MAINTAIN ORIGINAL FLOWLINE OF CURB.
10. SIDEWALK ADJOINING CURB SHALL BE 6" THICK, EXTENDING 3' FROM THE DRIVEWAY.
11. THE MAXIMUM WIDTH OF A RESIDENTIAL DRIVEWAY IS 36 FEET WITHIN THE RIGHT OF WAY.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: DRIVEWAY DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Project:

GEN-1

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STATE OF MISSOURI RYAN B. FLEMING NUMBER PE-2002003161 6-11-19 PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STANDARD DETAILS

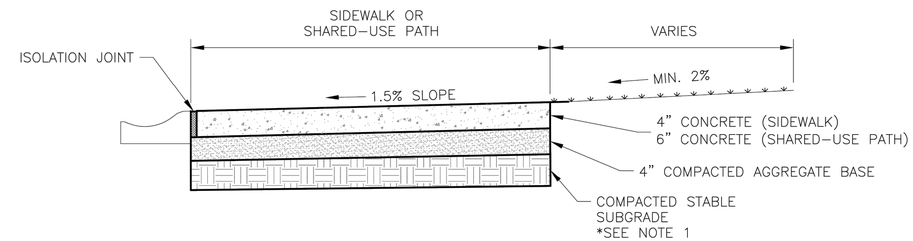
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

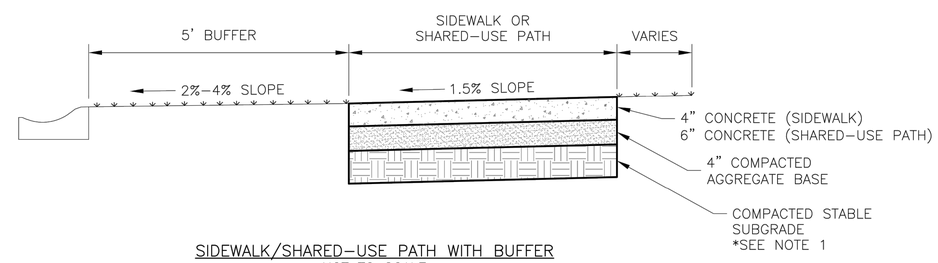
2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 06.11.2019

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DETAILS\STANDARD DETAILS\T_STD1_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:23am XREFS: t_ptblk_81450



SIDEWALK/SHARED–USE PATH WITHOUT BUFFER
NOT TO SCALE



SIDEWALK/SHARED–USE PATH WITH BUFFER
NOT TO SCALE

GENERAL NOTES:

1. SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
3. KCMMB 4K CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS/SHARED–USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
4. ALL SIDEWALK/SHARED–USE PATHS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. AN ISOLATION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK/SHARED–USE PATHS, BUT NO GREATER THAN 10 FT.
6. AN ISOLATION JOINT SHALL BE PLACED WHERE THE SIDEWALK/SHARED–USE PATHS MEETS A RESIDENTIAL DRIVEWAY.
7. SHARED–USE PATHS WIDTH SHALL BE 10 FT. WIDE.
8. SIDEWALK/SHARED–USE PATHS FINISHING SHALL BE FULL BROOM FINISH OR AS DIRECTED BY CITY INSPECTOR.
9. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SIDEWALK/SHARED-USE PATH DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

GEN-2

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STANDARD DETAILS

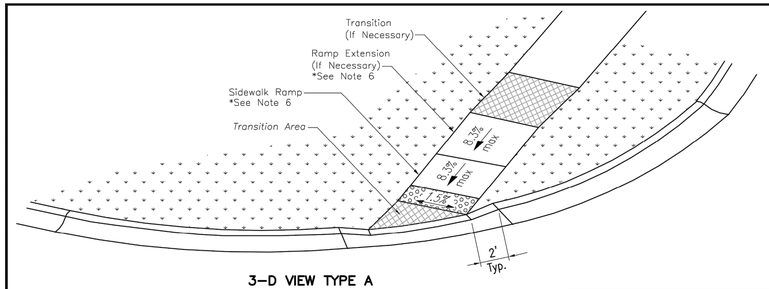
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 06.11.2019

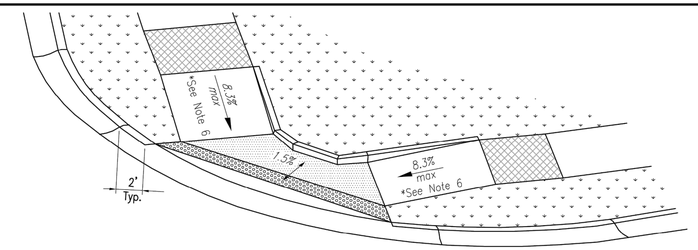
DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DETAILS\STANDARD DETAILS\T_STD1_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:23am XREFS: t_ptblk_81450



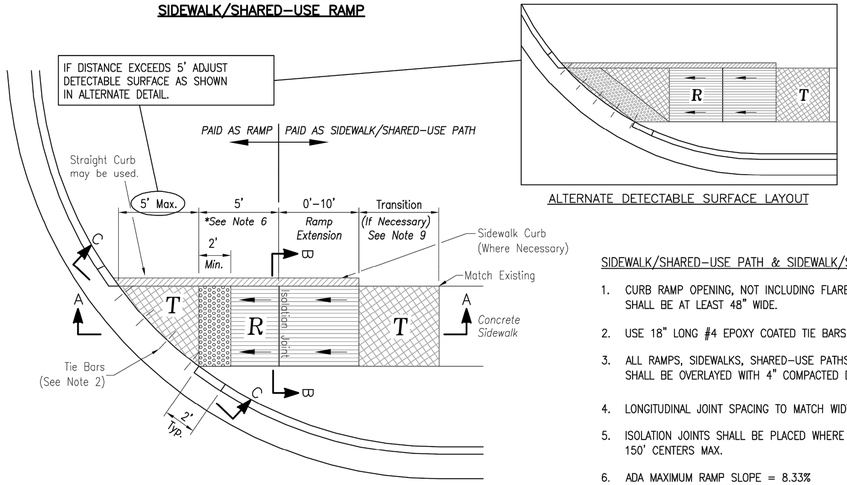
3-D VIEW TYPE A
SIDEWALK/SHARED-USE RAMP

LEGEND

- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION



3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP

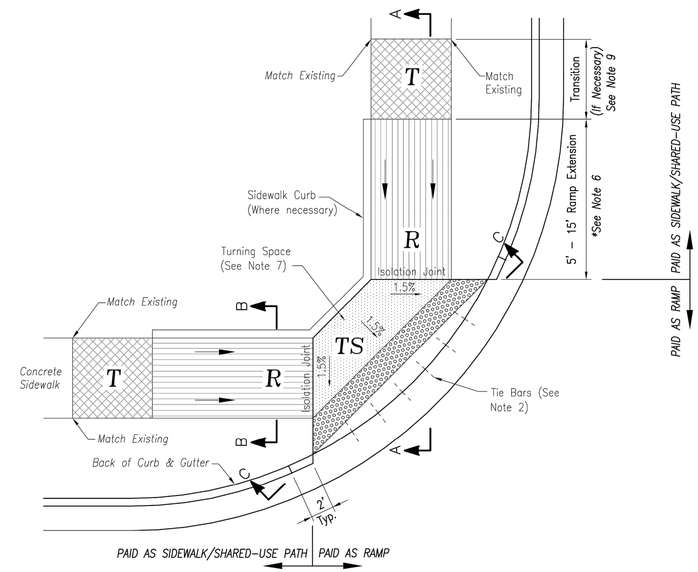


TYPE A SIDEWALK/SHARED-USE RAMP
Not to Scale

ALTERNATE DETECTABLE SURFACE LAYOUT

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   *ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).



TYPE B SIDEWALK/SHARED-USE RAMP
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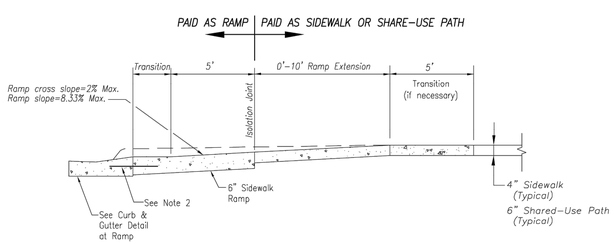
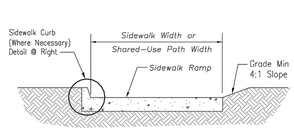


SECTION A–A



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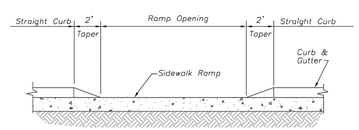

SECTION C–C

TYPE A & B SIDEWALK RAMP
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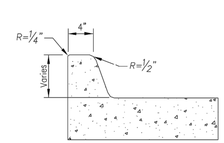
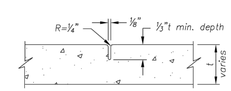
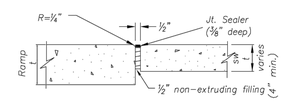


SIDEWALK CURB DETAIL
Not to Scale

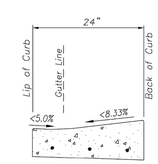


CONTRACTION JOINT



ISOLATION JOINT

JOINT DETAILS
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project:
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name:
ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

GEN-3A

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STANDARD DETAILS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS
LEE'S SUMMIT, MISSOURI
2019

C.O.A. NO.: 001592
DRAWN BY: AS
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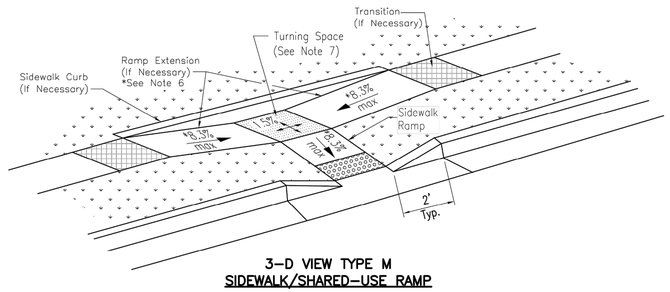
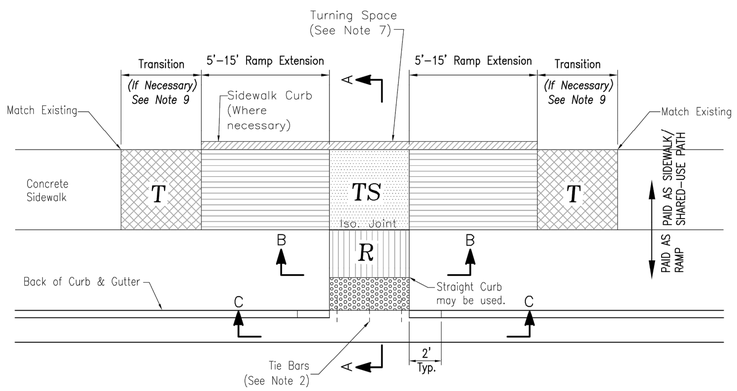
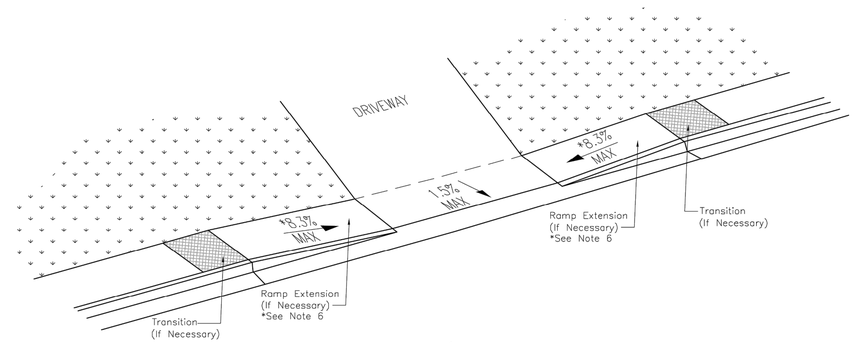
DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DETAILS\STANDARD DETAILS\T_STD1_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:23am XREFS: t_ptblk_81450



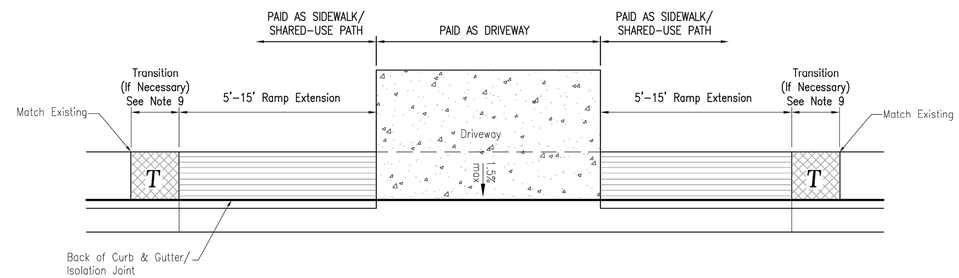
3-D VIEW TYPE M
SIDEWALK/SHARED-USE RAMP



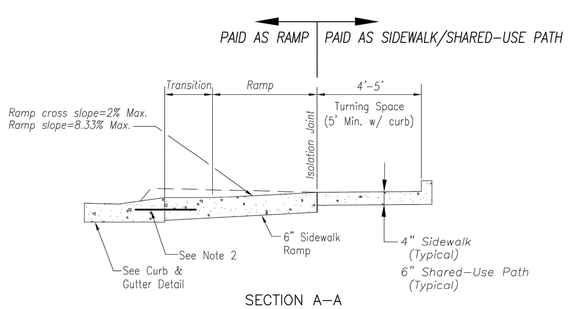
TYPE M SIDEWALK/SHARED-USE RAMP
Not to Scale



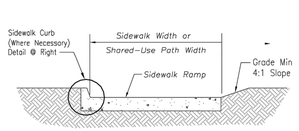
3-D VIEW SIDEWALK/SHARED-USE RAMP
AT DRIVEWAY



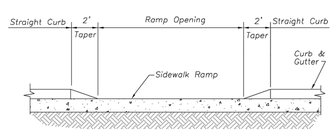
SIDEWALK/SHARED USE RAMP
AT DRIVEWAY WITH ADJOINING CURB



SECTION A-A

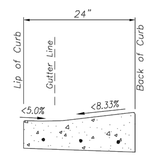


SECTION B-B

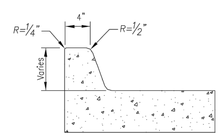


SECTION C-C

TYPE M SIDEWALK RAMP
Not to Scale



CURB & GUTTER DETAIL AT RAMP
Not to Scale



SIDEWALK CURB DETAIL
Not to Scale

LEGEND

- R — SIDEWALK RAMP
- TS — TURNING SPACE
- DETECTABLE WARNING SURFACE
- T — TRANSITION

SIDEWALK/SHARED-USE PATH & SIDEWALK/SHARED-USE RAMP NOTES:

1. CURB RAMP OPENING, NOT INCLUDING FLARES, SHALL MATCH EXISTING SIDEWALK WIDTH AND OPENING SHALL BE AT LEAST 48" WIDE.
2. USE 18" LONG #4 EPOXY COATED TIE BARS @ 24" O.C. EMBED TIE BARS 9" IN EACH DIRECTION.
3. ALL RAMPS, SIDEWALKS, SHARED-USE PATHS SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
4. LONGITUDINAL JOINT SPACING TO MATCH WIDTH OF SIDEWALK.
5. ISOLATION JOINTS SHALL BE PLACED WHERE WALK ABUTS DRIVEWAYS AND SIMILAR STRUCTURES, AND 150' CENTERS MAX.
6. ADA MAXIMUM RAMP SLOPE = 8.33%
   ADA MAXIMUM CROSS SLOPE = 2.0%
   *ROADWAY EXCEPTION: WHERE EXISTING ROAD PROFILE GRADE DOES NOT ALLOW RAMP TO MEET RAMP SLOPE REQUIREMENT OF 8.33% OR LESS, THE RAMP SHALL BE EXTENDED TO A LENGTH OF 15 FEET TO MATCH EXISTING SIDEWALK. CROSS SLOPE OF RAMP SHALL BE 1.5%, ±0.5%.
7. TURNING SPACES SHALL BE 1.5%, ±0.5%, SLOPE IN ANY DIRECTION. TURNING SPACES SHALL HAVE A MINIMUM 4'x4' TURNING AREA. TURNING SPACES, WITH A SIDEWALK CURB, SHALL HAVE A 5' TURNING AREA PERPENDICULAR TO THE SIDEWALK CURB.
8. FOR RETROFIT WORK, SLOPES TO BE DETERMINED IN FIELD BY CONTRACTOR AND APPROVED BY CITY INSPECTOR
9. RAMP EXTENSION AREA SHALL NOT BE USED AS TRANSITION TO EXISTING SIDEWALK. ANY TRANSITIONS REQUIRED TO MATCH RAMPS TO EXISTING SIDEWALK SHALL REQUIRE REMOVAL AND REPLACEMENT OF ADDITIONAL SIDEWALK BEYOND THE RAMP AREA. SIDEWALK TRANSITION LENGTH SHALL BE EQUAL TO OR GREATER THAN THE WIDTH OF THE EXISTING SIDEWALK. RAMP EXTENSIONS SHALL BE A CONTINUOUS SLOPE.
10. ALL SIDEWALK AND RAMP CONSTRUCTION SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: ADA RAMP RETROFIT DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

GEN-3B

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
6-11-19

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

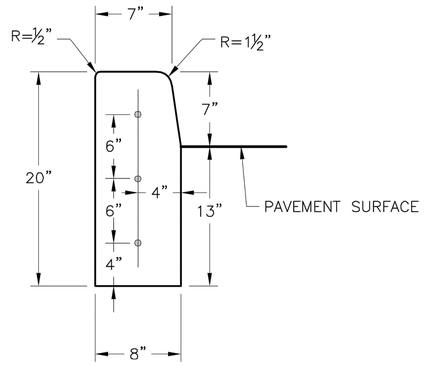
REVISIONS

STANDARD DETAILS

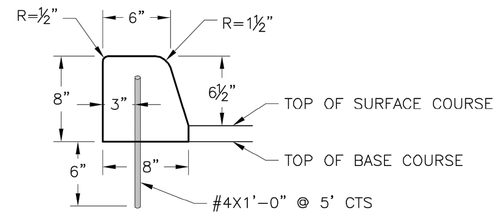
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS
LEE'S SUMMIT, MISSOURI
2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 06.11.2019

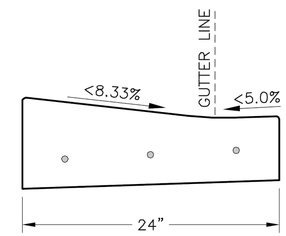
DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DETAILS\STANDARD DETAILS\T_STD1_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:23am XREFS: t_ptblk_81450



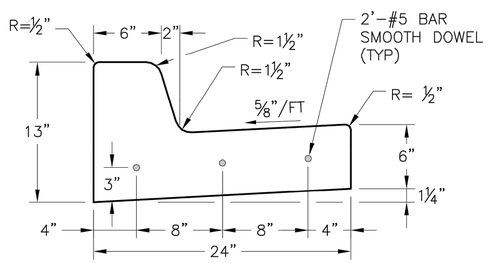
STRAIGHT CURB
(TYPE C–1)



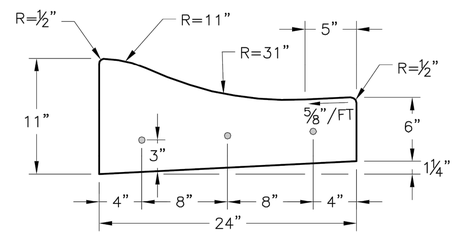
DOWELLED CURB
(TYPE DC)



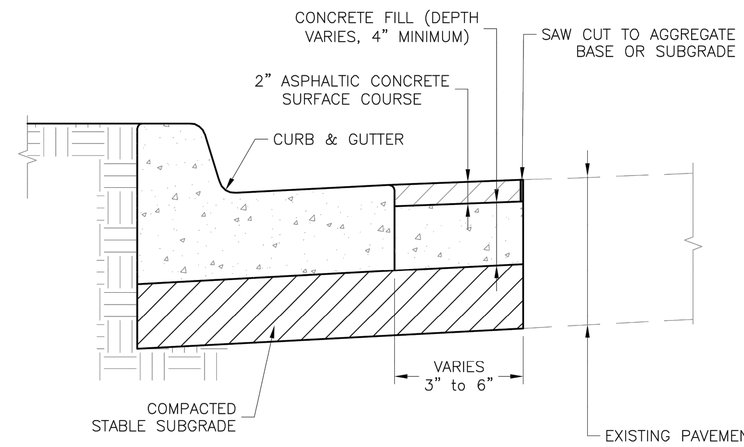
CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



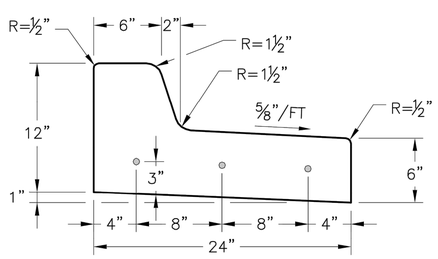
STRAIGHT BACK CURB &
GUTTER
(TYPE CG–1)



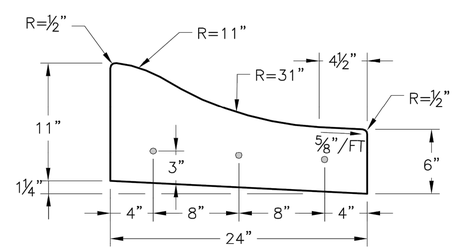
ROLL BACK CURB &
GUTTER
(TYPE CG–2)



CURB REPLACEMENT DETAIL



STRAIGHT BACK DRY CURB &
GUTTER
(TYPE CG–1 DRY)



ROLL BACK DRY CURB &
GUTTER
(TYPE CG–2 DRY)

GENERAL NOTES

1. ¾" ISOLATION JOINTS WITH 3 (2'–#5 BAR) SMOOTH DOWELS SHALL BE PLACED AT RADIUS POINTS AND AT 150' INTERVALS. THESE DOWEL BARS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
2. 3" DEEP CONTRACTION JOINTS SHALL BE INSTALLED AT APROXIMATELY 10' INTERVALS. THESE JOINTS SHALL PASS ACROSS THE ENTIRE CURB SECTION.
3. CONCRETE FILL SHALL HAVE UNIFORM AND SMOOTH FINISH
4. KCMMB 4K CONCRETE SHALL BE USED FOR ALL CURB.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL CONFORM TO STANDARD SPECIFICATIONS SECTION 2205.2.
6. CURBS FOR NEW STREETS SHALL BE BUILT ON ASPHALT OR AGGREGATE BASE AS SHOWN IN TYPICAL SECTION DETAIL.
7. WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: CURB & GUTTER DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

GEN-4

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
6-11-19

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STANDARD DETAILS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 06.11.2019

DWG: F:\2018\1001–1500\018–1450\40–Design\AutoCAD\Final Plans\Sheets\RDBR\DETAILS\STANDARD DETAILS\T_STD1_81450.dwg USER: asaavedra
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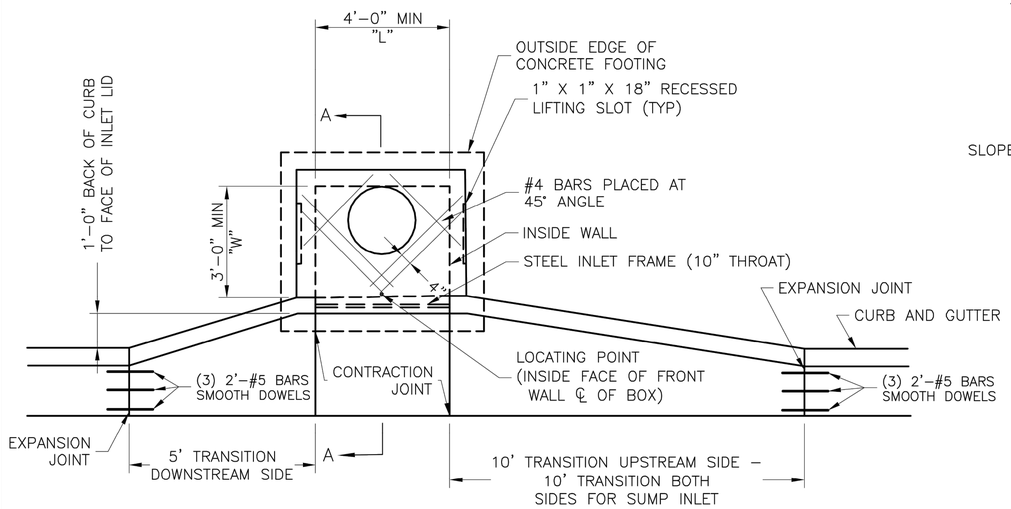
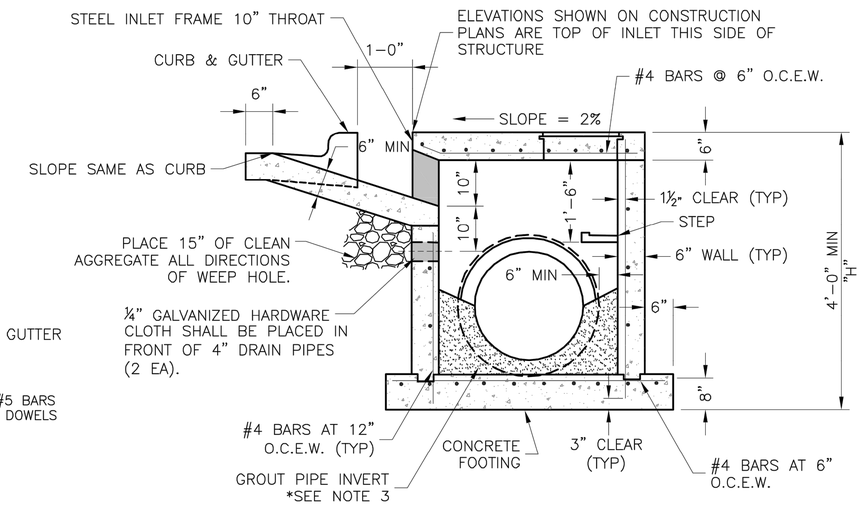
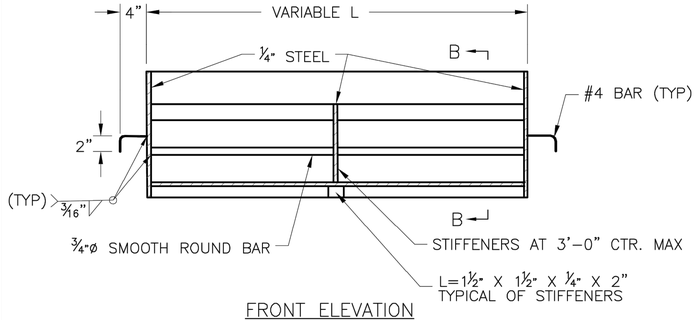


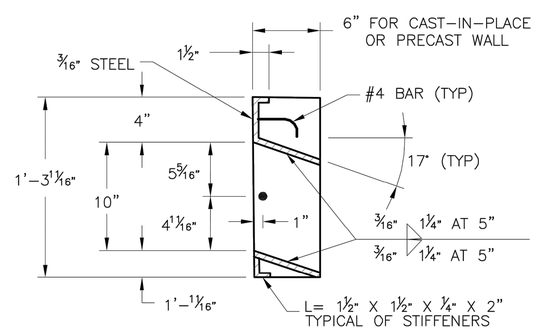
PLAN VIEW



SECTION A–A



FRONT ELEVATION



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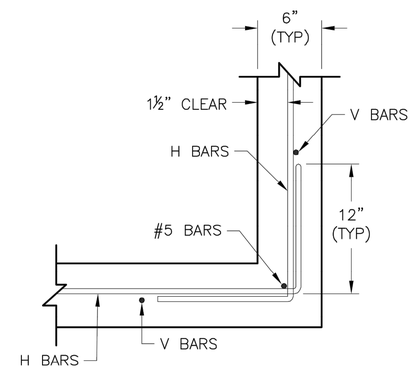
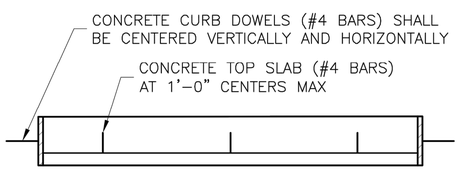


WALL CORNER DETAIL



PLAN VIEW

STEEL FRAME NOTES:

1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:

1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS CITY OF LEE'S SUMMIT, MO LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: CURB INLET DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-1

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STANDARD DETAILS

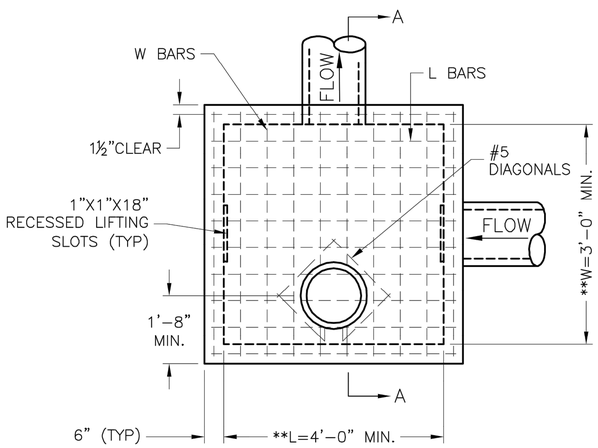
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

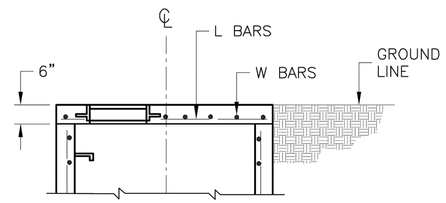
2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 06.11.2019

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\DETAILS\STANDARD DETAILS\T_STD1_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:23am XREFS: t_ptblk_81450



PLAN

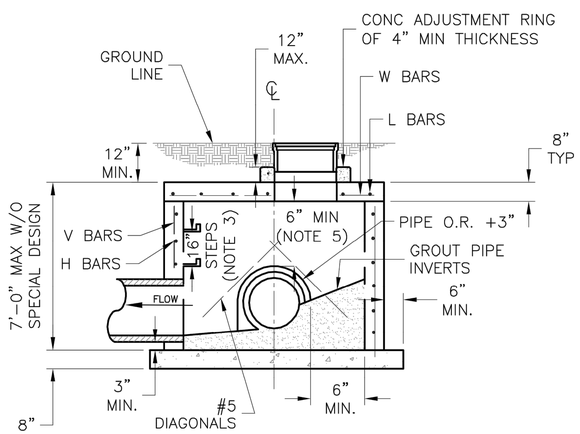


SLAB TOP ALTERNATE FOR
JUNCTION BOX (SHALLOW)

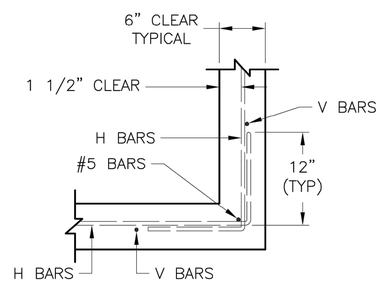
** INCREASE IN MULTIPLES OF 6"
(7'-0") MAX WITHOUT SPECIAL DESIGN.
(SEE PROJECT PLANS FOR DETAILS)

REINFORCING

BARS	BAR SIZE	SPACING (IN.)
H	4	12
V	4	12
L	5	6
W	5	6



SECTION A–A



WALL CORNER DETAIL

GENERAL NOTES:

1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Name: JUNCTION BOX DETAIL

Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #:

STM-3

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
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STANDARD DETAILS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS
LEE'S SUMMIT, MISSOURI
2019

C.O.A. NO.: 001592
DRAWN BY: AS
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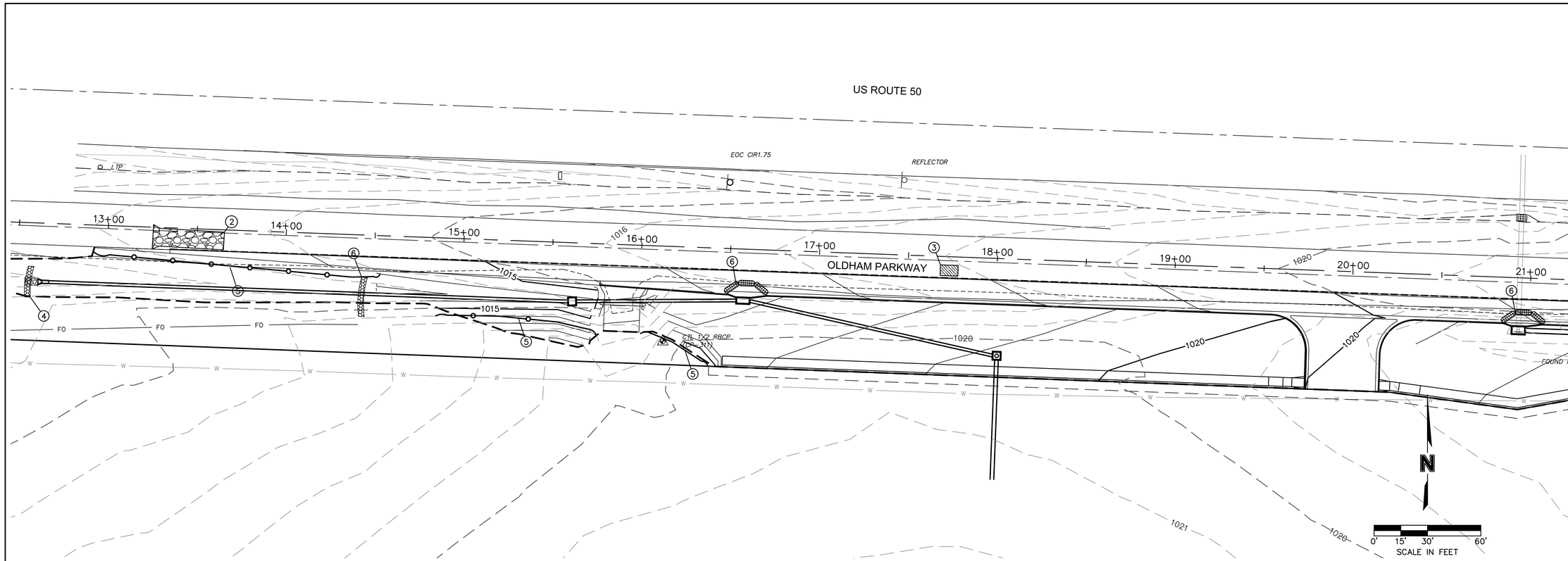
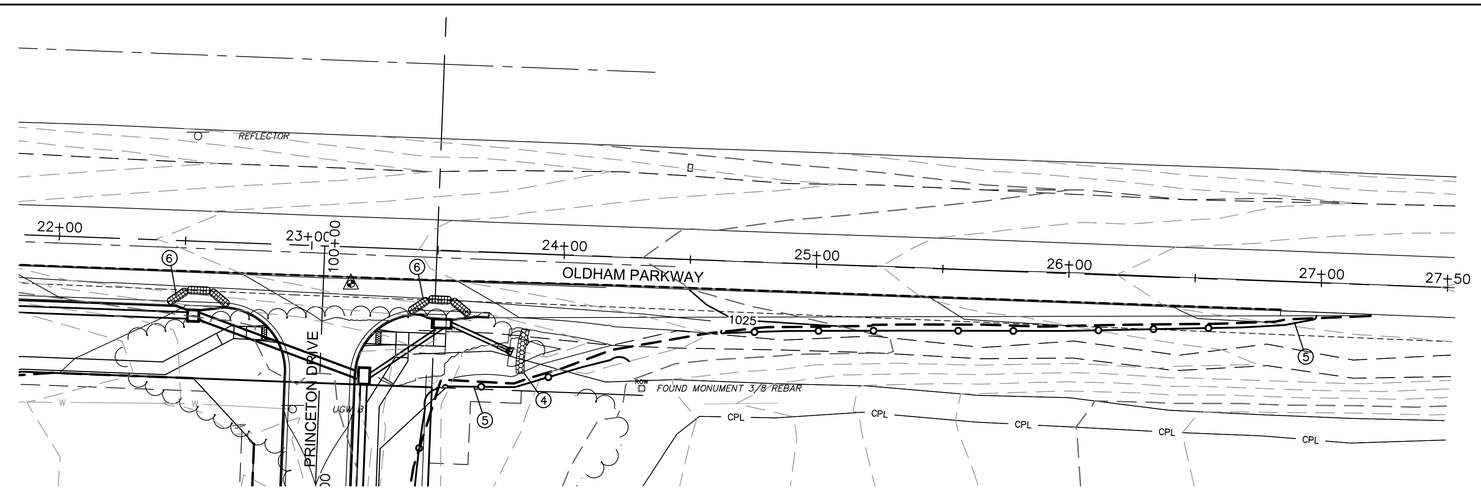


NOTES:

1. CONTRACTOR SHALL ADJUST SWPPP AND EROSION CONTROL PLANS PER PHASING AND FIELD CONDITIONS.
2. CONTRACTOR SHALL PROVIDE A CONCRETE WASHOUT CONFORMING TO THE LATEST EDITION OF THE CITY'S BMP MANUAL FOR LAND DISTURBANCE ACTIVITY. CONCRETE WASHOUT IS SUBSIDIARY TO OTHER EROSION CONTROL BID ITEMS. NO DIRECT PAY.
3. CONTRACTOR SHALL COORDINATE WITH THE CITY'S INSPECTOR TO DETERMINE THE LOCATION OF THE CONCRETE WASHOUT.
4. REFER TO PHASED EROSION CONTROL STAGING CHART.



EROSION AND SEDIMENT CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL PLAN BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRIOR TO LAND DISTURBANCE	1	STAGING AREA	C	
	2	TEMPORARY CONSTRUCTION ENTRANCE	C	
	3	CONCRETE WASHOUT	C	
	4	TYPE II DITCH CHECK		INSTALL BEFORE STORM SEWER INSTALLATION
	5	SILT FENCE AND/OR STRAW WATTLES	D	
B – ROADWAY GRADING & STORM SEWER INSTALLATION	N/A	EROSION AND SEDIMENT CONTROL	N/A	PERFORM MAINTENANCE ON ALL EROSION CONTROL MEASURES FOR ALL PREVIOUS PHASES AS NECESSARY.
	6	CURB INLET/AREA INLET PROTECTION	C	PROTECT ALL OPEN BOXES WITH SILT FENCE
C – PAVING				PER CURB INLET DETAIL
D – STABILIZE SITE	7	SEED & SOD	N/A	

LEGEND

- SILT FENCE
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT
- TURF REINFORCEMENT MAT
- OUTLET STABILIZATION
- INLET PROTECTION
- TYPE II DITCH CHECKS

N

0' 15' 30' 60'
SCALE IN FEET

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RYAN B. FLEMING
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EROSION CONTROL PLANS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
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SHEET
T23 OF 70

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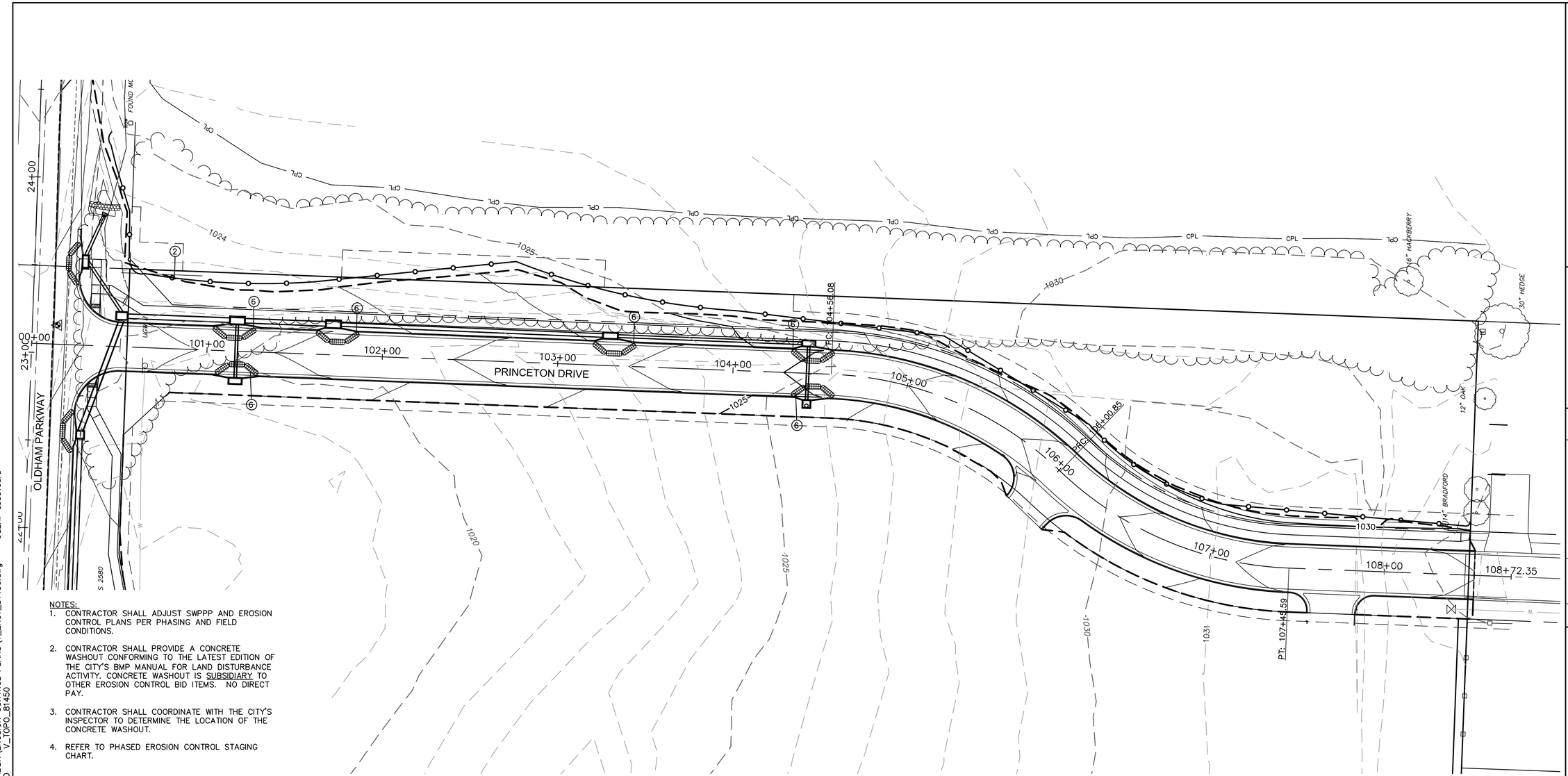
DATE: Jun 12, 2019 9:24am XREFS: t_pbase_81450 T_PTBLK_81450 V_TOPO_81450 USER: asaavedra



NOTES:

1. CONTRACTOR SHALL ADJUST SWPPP AND EROSION CONTROL PLANS PER PHASING AND FIELD CONDITIONS.
2. CONTRACTOR SHALL PROVIDE A CONCRETE WASHOUT CONFORMING TO THE LATEST EDITION OF THE CITY'S BMP MANUAL FOR LAND DISTURBANCE ACTIVITY. CONCRETE WASHOUT IS SUBSIDIARY TO OTHER EROSION CONTROL BID ITEMS. NO DIRECT PAY.
3. CONTRACTOR SHALL COORDINATE WITH THE CITY'S INSPECTOR TO DETERMINE THE LOCATION OF THE CONCRETE WASHOUT.
4. REFER TO PHASED EROSION CONTROL STAGING CHART.

EROSION AND SEDIMENT CONTROL STAGING CHART

PROJECT STAGE	EROSION CONTROL PLAN BMP REFERENCE NO.	BMP DESCRIPTION	REMOVE AFTER STAGE	NOTES:
A – PRIOR TO LAND DISTURBANCE	1	STAGING AREA	C	
	2	TEMPORARY CONSTRUCTION ENTRANCE	C	
	3	CONCRETE WASHOUT	C	
	4	TYPE II DITCH CHECK		INSTALL BEFORE STORM SEWER INSTALLATION
	5	SILT FENCE AND/OR STRAW WATTLES	D	
B – ROADWAY GRADING & STORM SEWER INSTALLATION	N/A	EROSION AND SEDIMENT CONTROL	N/A	PERFORM MAINTENANCE ON ALL EROSION CONTROL MEASURES FOR ALL PREVIOUS PHASES AS NECESSARY.
	6	CURB INLET/AREA INLET PROTECTION	C	PROTECT ALL OPEN BOXES WITH SILT FENCE
C – PAVING				PER CURB INLET DETAIL
D – STABILIZE SITE	7	SEED & SOD	N/A	

LEGEND

- SILT FENCE
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT
- TURF REINFORCEMENT MAT
- OUTLET STABILIZATION
- INLET PROTECTION
- TEMPORARY ROCK DITCH CHECKS

N

0' 15' 30' 60'
SCALE IN FEET

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Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

EROSION CONTROL PLANS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_ERC1_81450
DATE: 06.11.2019

SHEET
T24 OF 70

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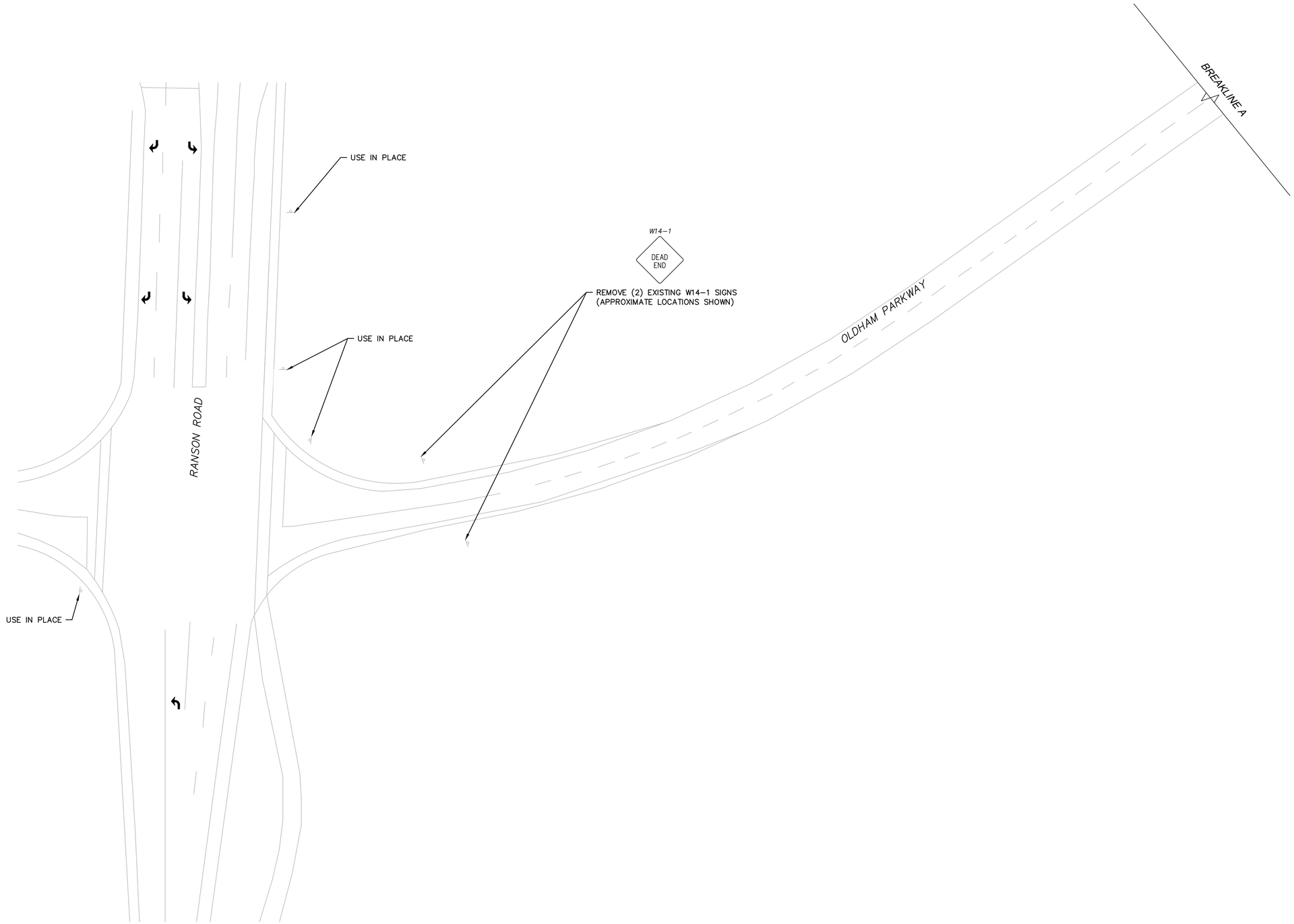

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STATE OF MISSOURI
JEREMY SCOTT STRETZ
NUMBER PE-2017023856
06/15/2019
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

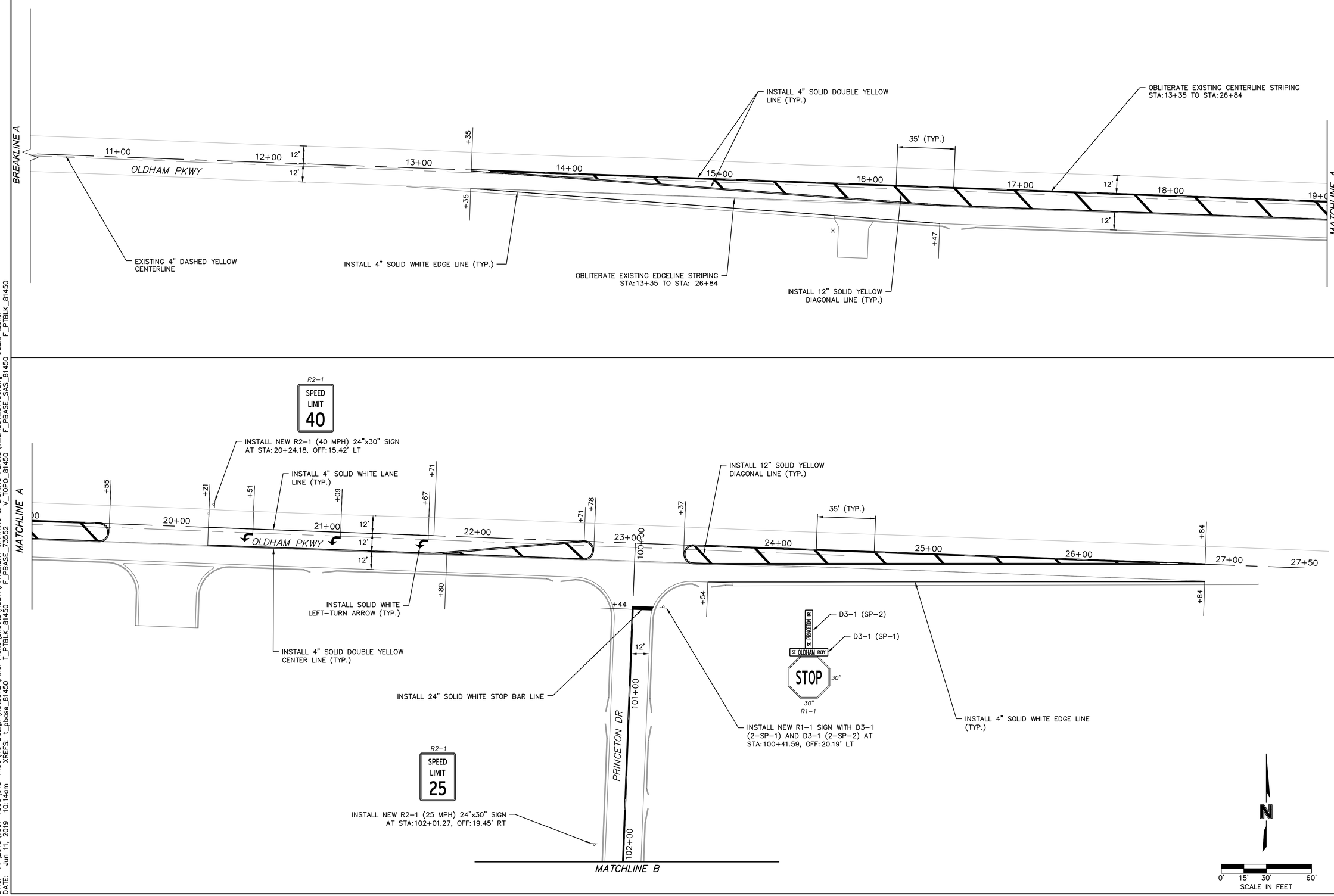
PAVEMENT MARKING AND SIGNING

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: LZ
CHECKED BY: JAC
APPROVED BY: JSS
QA/QC BY: JSS
PROJECT NO.: 018-1450
DWG NO.: T_SAS01_81450
DATE: 06.11.2019



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DATE: Jun 11, 2019 10:14am XREFS: t_pbase_81450 T_PTBLK_81450 F_PBASE_73552 V_TOPO_81450 F_PBASE_SAS_81450 F_PTBLK_81450

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STATE OF MISSOURI
JEREMY SCOTT STRETZ
NUMBER PE-2017023856
06/15/2019
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

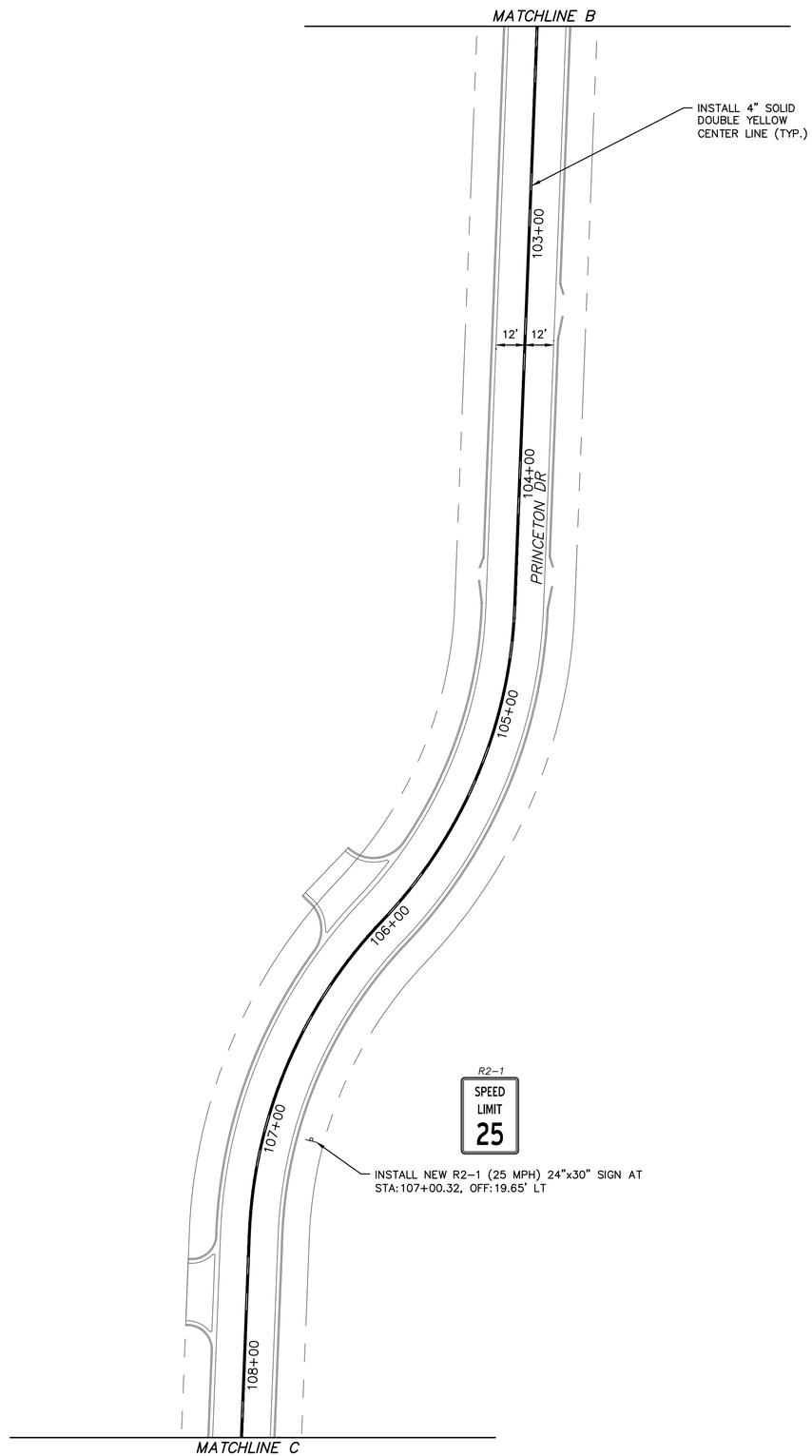
PAVEMENT MARKING AND SIGNING

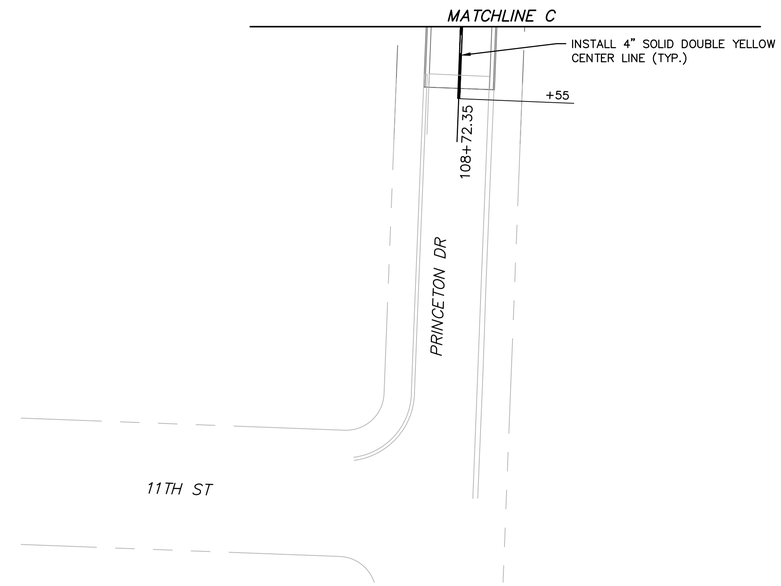
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.:	001592
DRAWN BY:	LZ
CHECKED BY:	JAC
APPROVED BY:	JSS
QA/QC BY:	JSS
PROJECT NO.:	018-1450
DWG NO.:	T_SAS01_81450
DATE:	06.11.2019





PAVEMENT MARKING SUMMARY

STATION TO STATION		LOCATION	4" SOLID WHITE LANE LINES (LF)*	4" SOLID YELLOW LANE LINE (LF)*	12" YELLOW CROSSHATCH LINES (LF)*	24" WHITE STOP LINE (LF)**	WHITE TURN ARROWS (EA)**			
							RT.	THRU RT	THRU LT	LT.
13+35	19+55	OLDHAM		2480						
13+35	19+55	OLDHAM			178					
13+35	16+47	OLDHAM	312							
20+21	21+80	OLDHAM	159							
20+21	22+78	OLDHAM		710						
20+51		OLDHAM								1
21+09		OLDHAM								1
21+67		OLDHAM								1
21+80	22+78	OLDHAM			25					
23+37	26+84	OLDHAM		1388						
23+37	26+84	OLDHAM			65					
23+54	26+84	OLDHAM	330							
100+44		PRINCETON				14				
100+44	108+55	PRINCETON		1818						
TOTALS			801	6396	268	14	0	0	0	3

*ALL PAVEMENT MARKINGS ON ASPHALT SHALL BE THERMOPLASTIC
**PAVEMENT MARKINGS SHALL BE PRE-FORMED THERMOPLASTIC

PERMANENT SIGNING SUMMARY***

STATION	STREET REFERENCE	OFFSET FROM ℄	MUTCD DESIGNATION	SIGN SIZE	AREA (S.F.) MEP SIGNS	POST TYPE
APPROX.	OLDHAM	–	W14-1 (2)	EXISTING	EXISTING	REMOVE (2)
20+24.18	OLDHAM	15.42'L	R2-1	24"x30"	5	SQUARE
100+41.59	PRINCETON	20.19'L	R1-1	30"x30"	5.18	SQUARE
100+41.59	PRINCETON	20.19'L	D3-1 (SP-1) (2)	9"x48"	3 (2)	SHARED
100+41.59	PRINCETON	20.19'L	D3-1 (SP-2) (2)	9"x48"	3 (2)	SHARED
102+1.27	PRINCETON	19.45'R	R2-1	24"x30"	5	SQUARE
107+.0032	PRINCETON	19.65'L	R2-1	24"x30"	5	SQUARE
TOTALS			32.18 SF			4 EA

***ALL SIGNS REMOVED SHALL BE SUBSIDIARY TO NEW SIGNING

N

0' 15' 30' 60'
SCALE IN FEET

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STATE OF MISSOURI
JEREMY SCOTT STRETZ
NUMBER PE-2017023856
06/15/2019
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

PAVEMENT MARKING AND SIGNING

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: LZ
CHECKED BY: JAC
APPROVED BY: JSS
QA/QC BY: JSS
PROJECT NO.: 018-1450
DWG NO.: T_SAS01_81450
DATE: 06.11.2019

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\PAVEMENT MARKING & SIGNING PLANS\T_SAS01_81450.dwg USER: lzoller
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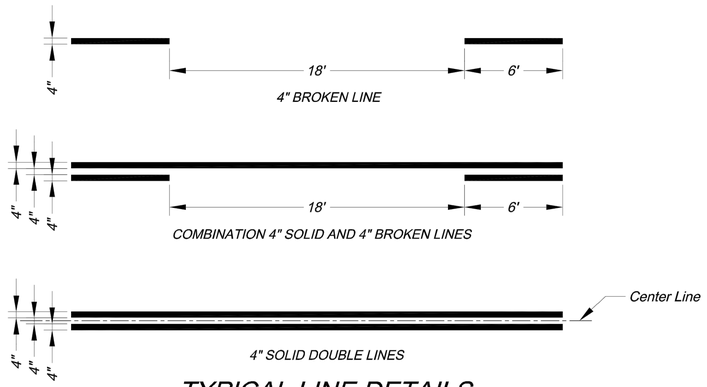
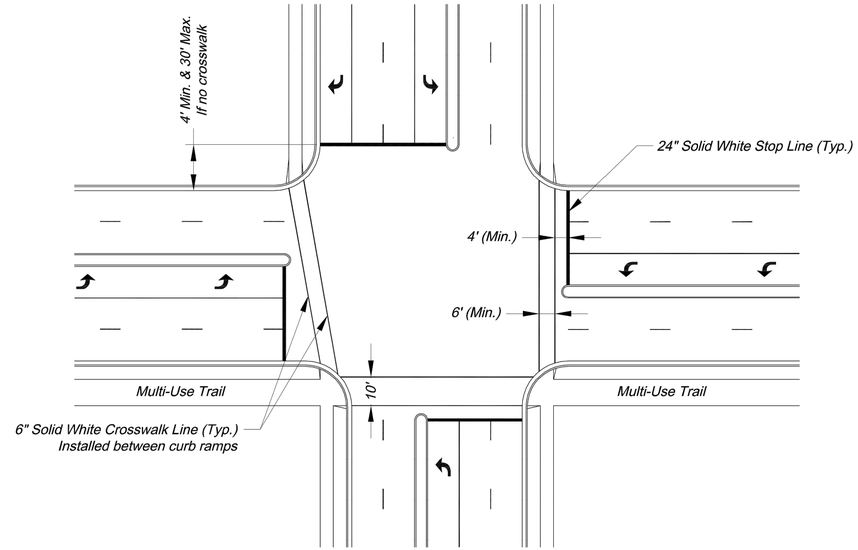


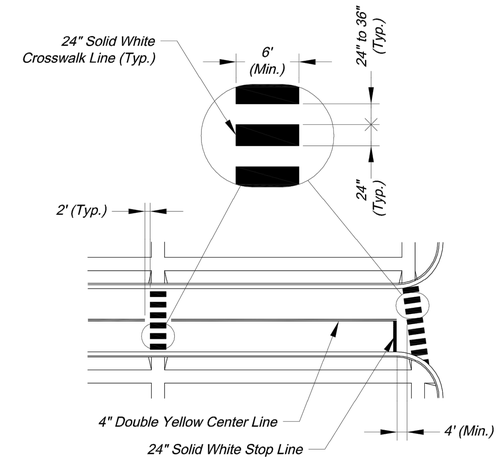
TYPICAL LINE DETAILS

NOTES:
1. All edge line, center line, and lane line pavement markings shall be 4" wide unless otherwise noted.
2. Edge lines shall be continuous solid white or yellow lines. Right side edge lines shall be solid white. Median or left side edge lines on divided roadways are to be solid yellow. Edge lines and center lines shall be continuous across driveways.

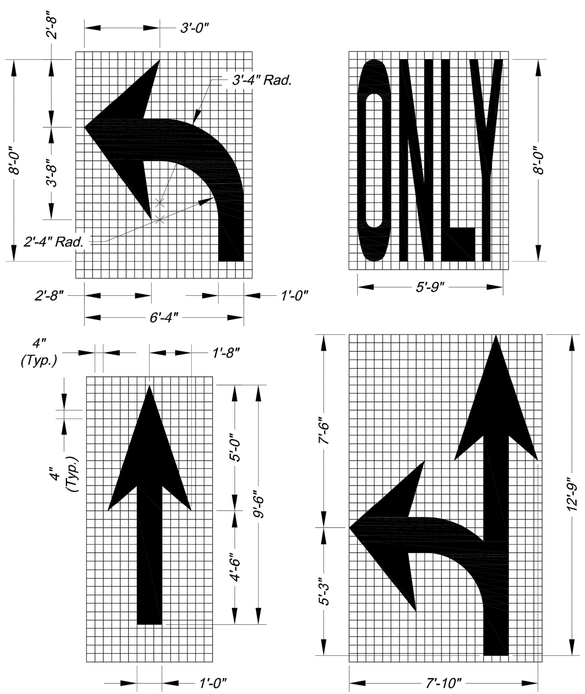


TYPICAL INTERSECTION MARKINGS

NOTES:
1. Transverse crosswalk lines shall be installed such that the distance between lines is at least 6 or 10 feet.
2. Stop lines are required at signalized intersections, on multi-lane stop controlled approaches, or in front of crosswalks at controlled intersections.

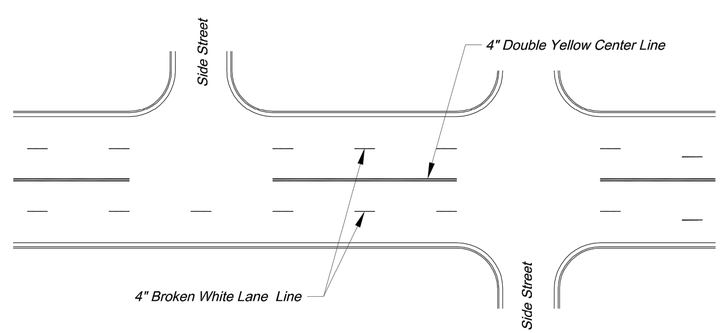


TYPICAL MIDBLOCK OR SCHOOL CROSS WALK

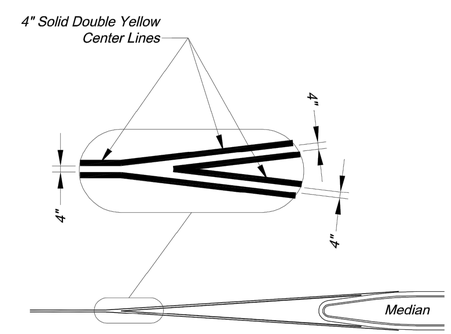


ARROW AND SYMBOL DETAILS

NOTES:
1. All arrow and symbol markings shall be white, and shall be centered in their respective traffic lanes.
2. Right-turn and combination right-turn/straight arrows are reverse of arrows shown.



TYPICAL MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY



TYPICAL MEDIAN NOSE CENTER LINE DETAIL

PAVEMENT MARKING GENERAL NOTES:
1. All pavement markings shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2. All words and symbols shall conform to the latest edition of Standard Alphabets for Highway Signs and Pavement Markings printed by the U.S. Department of Transportation, Federal Highway Administration.
3. Pavement markings, either temporary or permanent are required at all times if the roadway is open to traffic.
4. All pavement markings that conflict with the desired markings shall be completely removed. Removals shall not leave the road surface scarred with an image that misleads traffic. Any excess damage or scarring of pavement shall be repaired at the Contractor's expense.
5. The proposed permanent markings shall be laid out by the Contractor in advance of the marking installation. Markings shall not be applied until the layout has been approved by the City Traffic Engineer.
6. Center lines shall be marked on all undivided arterial streets, and any other undivided street with more than two lanes and/or a speed limit of 30 mph or more.
7. Edge lines shall be marked on all non-curbed streets.

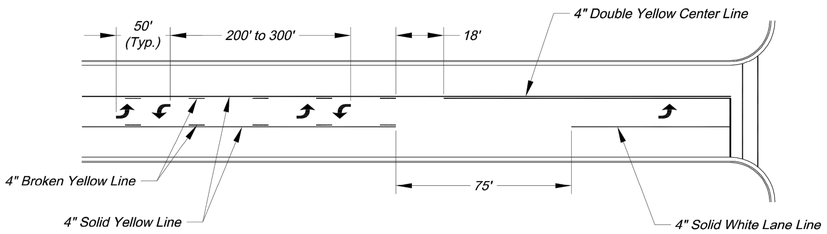
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING

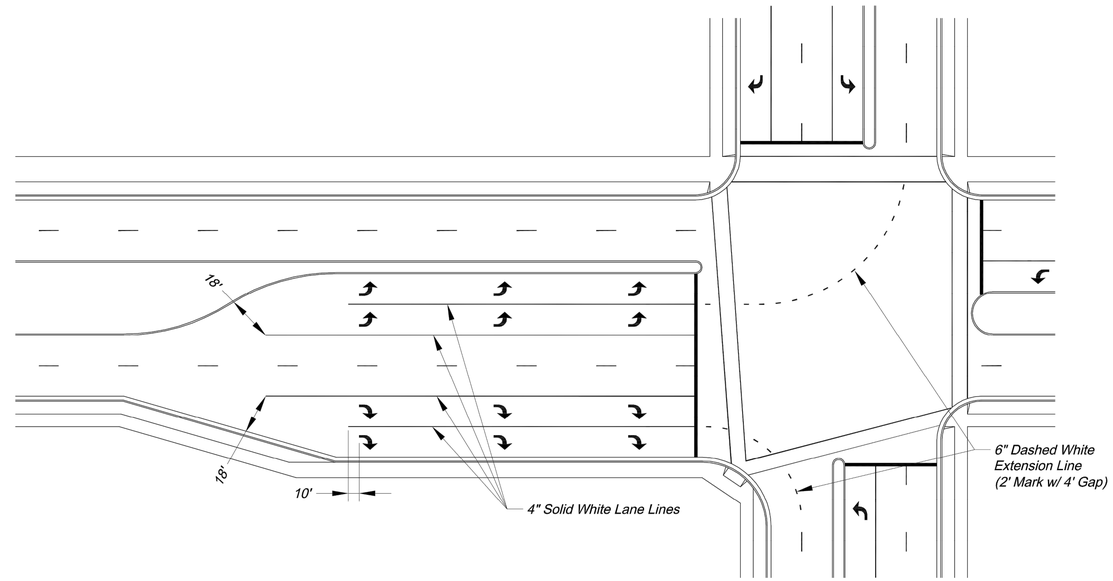
ROADWAY MARKING DETAILS

Sheet Name: STANDARD DRAWING PM-1

Drawn By: AS
Checked By: JW
Date: 09/09/2009
Project#

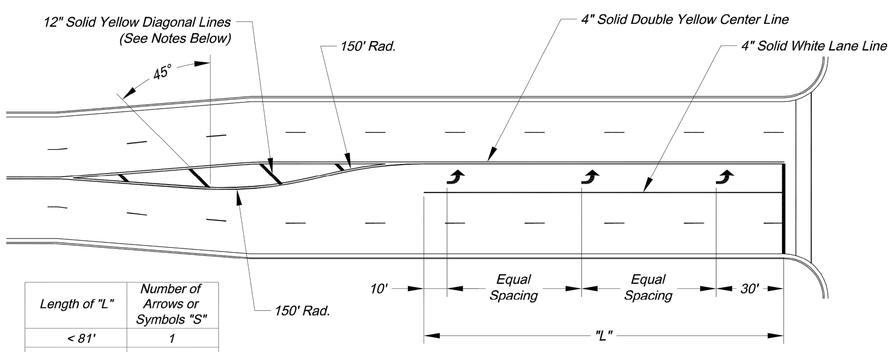


TYPICAL MARKINGS FOR TWO-WAY LEFT-TURN LANE



TYPICAL DUAL TURN LANE MARKINGS

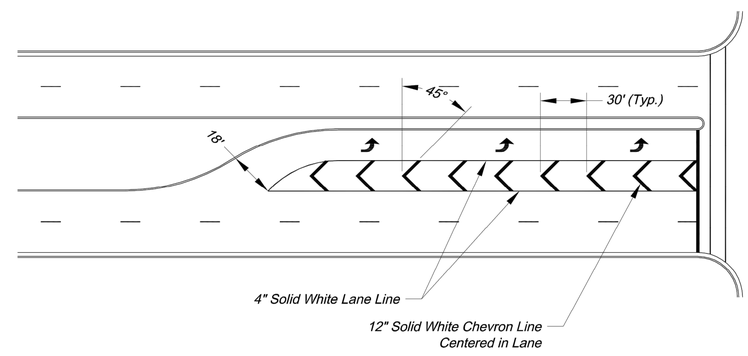
NOTE:
1. Dashed extension lines shall not extend through crosswalks.



Length of "L"	Number of Arrows or Symbols "S"
< 81'	1
81' - 120'	2
121' - 200'	3
201' - 280'	4
281' - 360'	5
361' - 440'	6

TYPICAL TURN LANE MARKINGS

NOTES:
1. Diagonal lines are required between centerlines if the width of the area between the center lines is greater than 12' and/or the length of the area between center lines is greater than 250'.
2. Diagonal lines should be spaced at 5' increments, equal to the posted speed limit.
3. Equal Spacing is calculated as (L - 40) / (S - 1).
4. When a through lane of traffic terminates as a mandatory turn lane, Arrow and "ONLY" symbols should be marked in the turn lane, in alternating order. The first and last symbols should be Arrows.



TYPICAL STRIPED OUT TURN LANE MARKINGS

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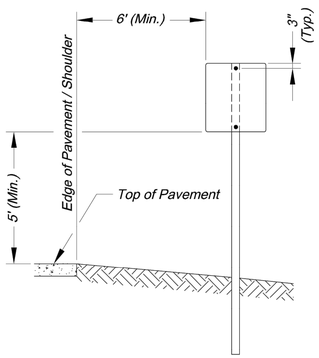
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING

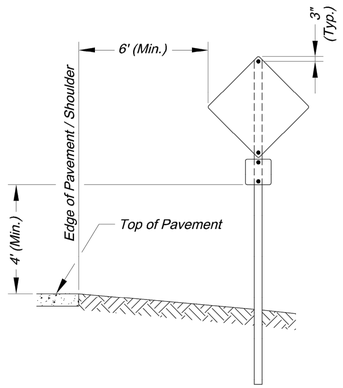
INTERSECTION MARKING DETAILS

Sheet Name: STANDARD DRAWING PM-2

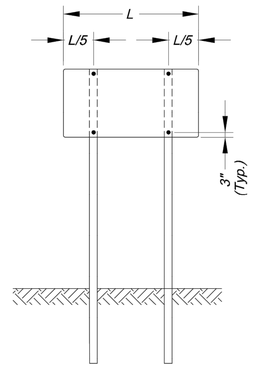
Drawn By: AS
Checked By: JW
Date: 09/09/2009
Project#



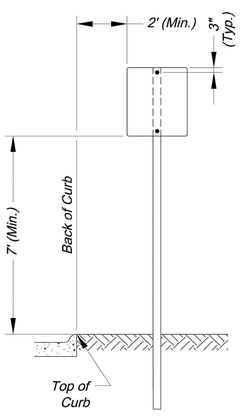
SIGN INSTALLATION FOR NON-CURBED STREET



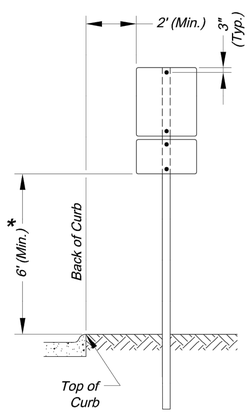
SIGN INSTALLATION WITH AUXILARY SIGN FOR NON-CURBED STREET



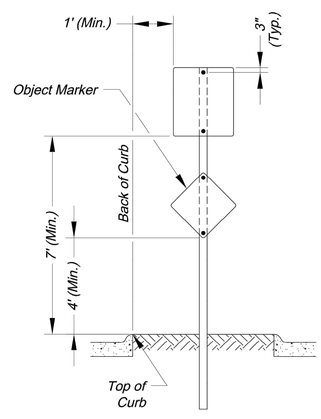
SIGN INSTALLATION WITH TWO SIGN POSTS



SIGN INSTALLATION FOR CURBED STREET



SIGN INSTALLATION WITH AUXILARY SIGN FOR CURBED STREET

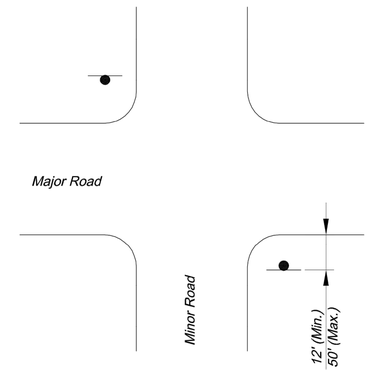


SIGN INSTALLATION FOR RAISED MEDIANS

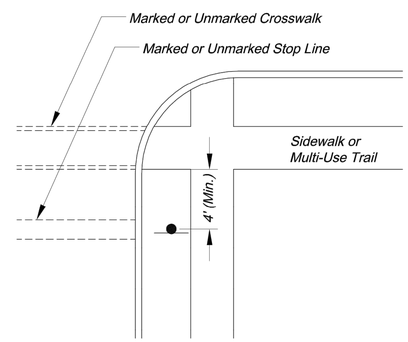
SIGN MOUNTING DETAILS

* The height to the bottom of a sign when it is located in a pedestrian walkway or extends into a walkway shall be a minimum of 80 inches above the walkway.

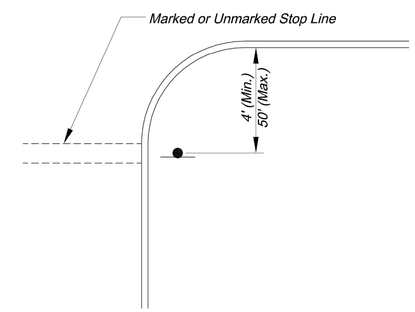
NOTE:
1. Generally, the sign mounting height should not be more than 1' greater than the minimum mounting height.



NON-CURBED INTERSECTION INSTALLATION

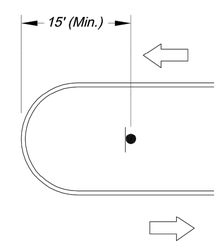


INTERSECTION WITH SIDEWALK / MULTI-USE TRAIL INSTALLATION



CURBED INTERSECTION INSTALLATION

CONTROL SIGN LOCATION



TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

NOTES:
1. A 4" P.V.C. sleeve shall be installed in new concrete medians at each location where a sign is to be installed.
2. For existing concrete medians, a 4" hole shall be cored into the concrete.

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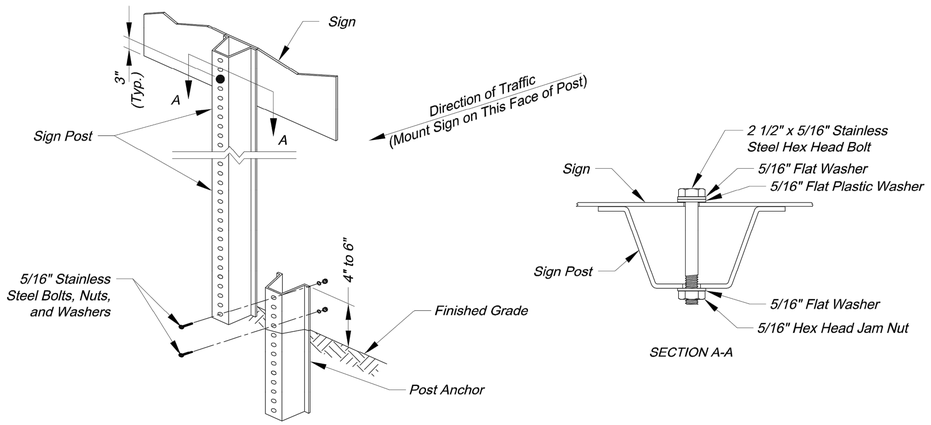
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING

SIGN MOUNTING DETAILS

Sheet Name: STANDARD DRAWING SN-1

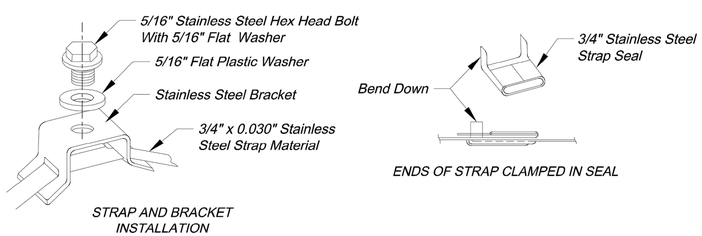
Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#



U-STEEL POST DETAILS

U-STEEL POST NOTES:

1. *Splice shall be positioned entirely between finished grade line and 18" above finished grade line. Only one splice will be allowed per post.*
2. *U-Steel post shall be 3 lb./ft., galvanized according to ASTM A123.*
3. *U-Steel post can be used for installation of signs with an area of less than 2.5 square feet.*
4. *All posts shall be embedded a minimum of 3 feet.*



STRAP TYPE SIGN SUPPORT DETAILS

METAL POLE SIGN MOUNTING NOTES:

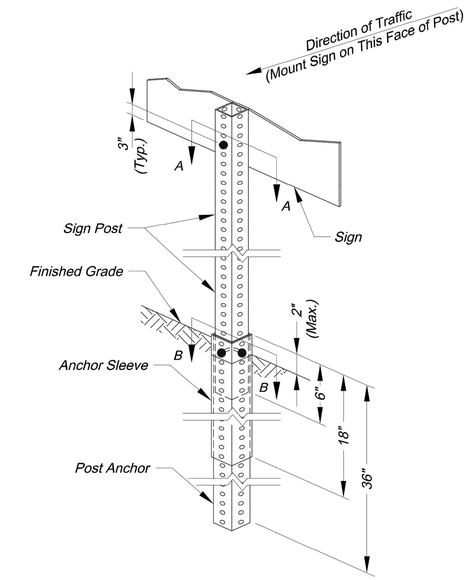
1. *Signs on metal poles shall be attached with two brackets and stainless steel bands.*
2. *Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2 inches from the edge of the sign.*
3. *Holes in sign shall be located such that the sign is level.*
4. *All strap, bracket, and seal materials should be Type 201 stainless steel.*

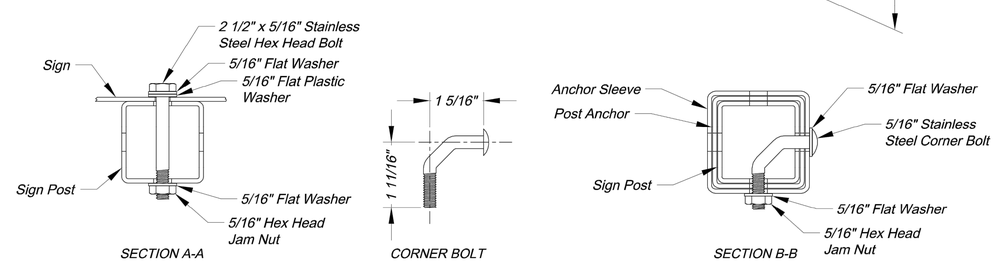
PERMANENT SIGNING GENERAL NOTES:

1. *All signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).*
2. *The Contractor is responsible for avoiding any and all utilities when installing sign posts, whether the utility is indicated on the plans or not.*
3. *All workmanship and materials shall be subject to the inspection and approval of the Public Works Department of the City of Lee's Summit.*
4. *The Contractor shall stake the location of all sign posts to be installed. The City Inspector shall inspect the staking prior to installation. Minor relocation to avoid conflicts may be allowed with the approval of the City Traffic Engineer or designee.*
5. *Signs shown to be installed on the side of metal poles shall be mounted with stainless steel straps or wing brackets as detailed. No signs are to be installed on wood poles. See Traffic Signal Standard Drawings for the installation of signs on mast arms.*
6. *All post mounted signs shall be installed with breakaway anchors according to the Standard Drawings.*
7. *All existing signs will be used in place during construction and protected from damage unless otherwise indicated in the plans. If the Contractor damages any existing sign or posts during construction, the Contractor will be required to replace the damaged materials with new signs or posts of the same type and size at the Contractor's expense. The Contractor shall be responsible for removing and storing any signs that are to be reinstalled on the project. All equipment shall be reinstalled in good condition.*
8. *Existing permanent signs and posts removed by the Contractor for construction purposes which are not to be reinstalled shall be delivered to the City's Public Works Maintenance Facility (1971 SE Hamblen Road). The Contractor shall be responsible for removing and storing equipment in good condition and is fully responsible for the equipment until it is delivered.*
9. *All Stop, Yield, or street name signs shall be maintained in a conspicuous location for the driving public. All Stop and Yield signs removed for construction purposes can be temporarily erected in reflectorized drums (no less than 7 feet above the pavement surface) until they can be reinstalled. Any temporary Stop or Yield sign installation to be left in place overnight will require prior approval from the City Inspector.*

SQUARE STEEL POST INSTALLATION SEQUENCE:

1. *Sign post anchor driven partially into the ground using a drive cap with a sledge or power equipment.*
2. *Anchor sleeve slipped over anchor and drive into the ground together with the sign post anchor.*
3. *Insert sign post into the post anchor and bolt in place.*





SQUARE STEEL POST DETAILS

SQUARE STEEL POST NOTES:

1. *Square steel sign posts and break-away anchor shall consist of the following materials:*
   - *Sign Post - 14 Ga. 2" x 2" Square Steel Post*
   - *Post Anchor - 12 Ga. 2 ¼" x 2 ¼" x 36" Square Steel Post*
   - *Anchor Sleeve - 12 Ga. 2 ½" x 2 ½" x 18" Square Steel Post*
2. *14 Gauge posts must meet a certified minimum yield strength of 60,000 psi.*
3. *In all installations the first hole above the finished grade line on the sign post, anchor, and anchor sleeve must be in line for the insertion of the corner bolt.*
4. *The maximum area for one sign post is 9.0 square feet. A sign or combination of signs with an area greater than 9.0 square feet will require two posts. Also, signs with a width greater than 36" (not including 36" x 36" diamond shaped signs) will require two posts.*

CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING

SIGN POST DETAILS

Sheet Name: STANDARD DRAWING SN-2

Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#

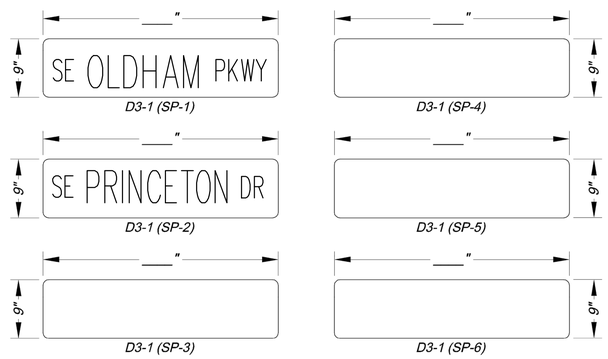
STANDARD ABBREVIATION LISTS

Named Streets	
Avenue	AVE
Boulevard	BLVD
Circle	CIR
Creek	CR
Court	CT
Crossing	XING
Drive	DR
Highway	HWY
Lane	LN
Parkway	PKWY
Place	PL
Road	RD
Street	ST
Terrace	TER
Trail	TRL
Way	WAY

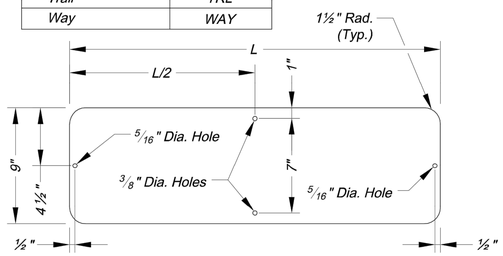
Numbered Streets	
First	ST
Second	ND
Third	RD
Fourth to Tenth	TH

STREET NAME SIGN QUANTITIES

Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1)	9" x 48"	3	2	6
D3-1 (SP-2)	9" x 48"	3	2	6

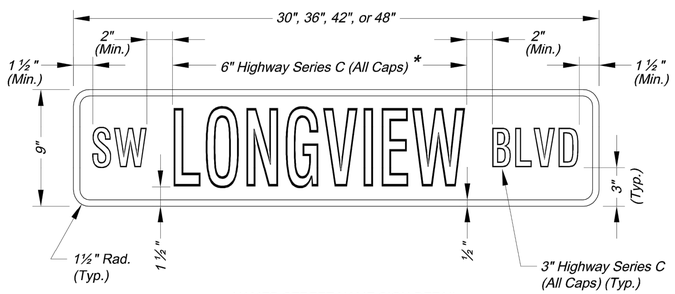


PROJECT SIGN DETAILS



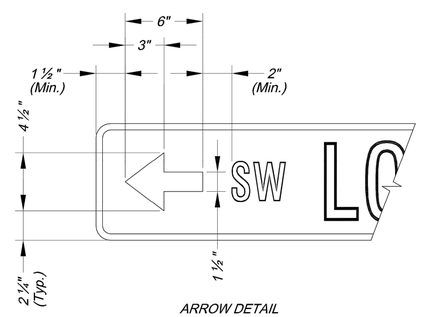
STREET NAME SIGN BLANK DETAILS

For Mounting on Square Steel Posts

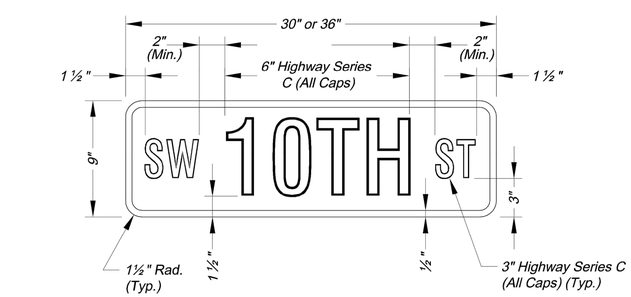


NAMED STREET NAME SIGN DETAIL

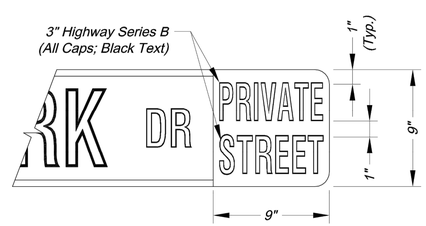
* Use Highway Series B (All Caps) in lieu of series C if necesary to fit text on a 36" sign blank.



ARROW DETAIL



NUMBERED STREET NAME SIGN DETAIL

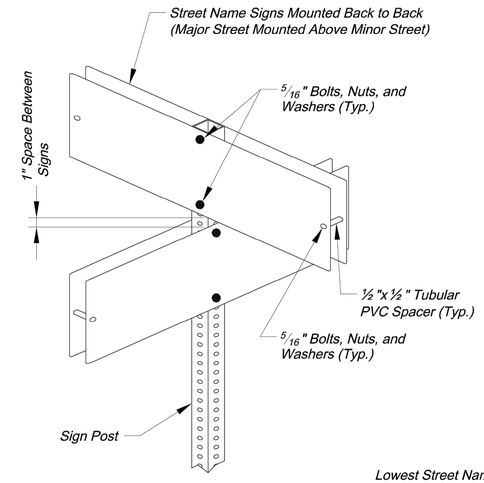


PRIVATE STREET TAG DETAIL

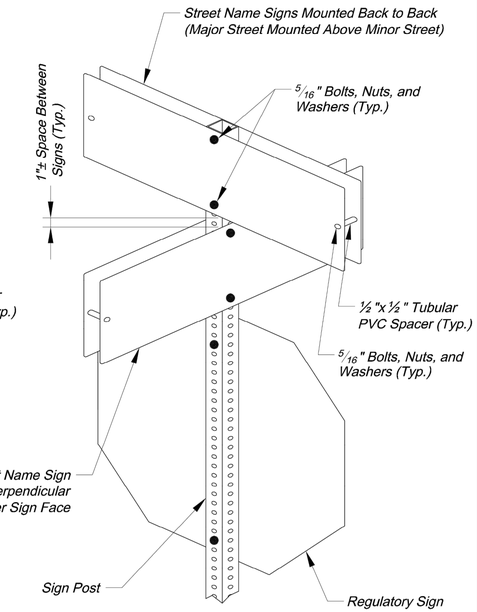
NOTES:

1. For all street name signs, the legend shall be white and the background shall be green.
2. Arrows shall be added to street name signs where the name of a street changes at an intersection. Street name signs with arrows are to be installed on each side of the intersection to indicate the change in names. Arrows shall be white.
3. The "PRIVATE STREET" tag should be added to the end of street name signs to indicate where a street that is outside the right-of-way intersects a public street. The background for the "PRIVATE STREET" tag shall be yellow.

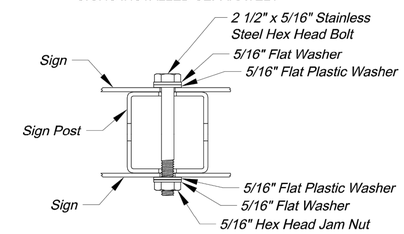
STREET NAME SIGN FACE DETAILS



SIGNS INSTALLED SEPARATELY

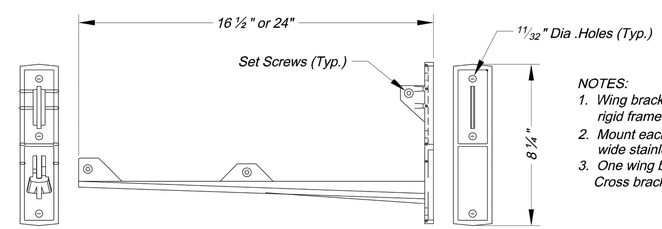


SIGNS INSTALLED WITH OTHER SIGNS



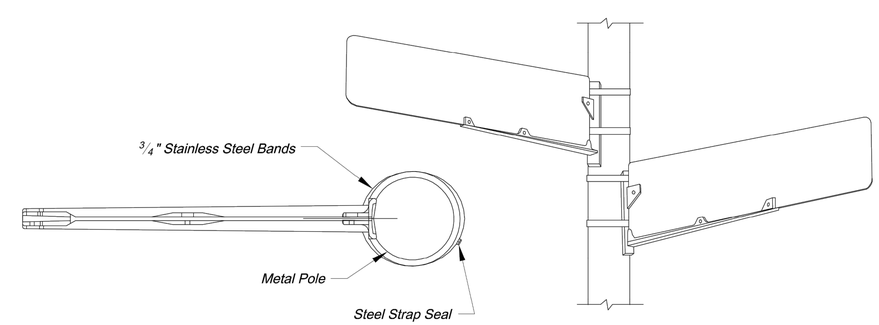
PLAN VIEW

SQUARE STEEL POST MOUNTING DETAILS



NOTES:

1. Wing bracket shall be an L-shaped cantilever of T-beam rigid frame 380-3 aluminum alloy construction.
2. Mount each wing bracket to metal pole using two ¾" wide stainless steel straps.
3. One wing bracket shall be installed per each sign. Cross brackets are not allowed.



WING BRACKET MOUNTING DETAILS

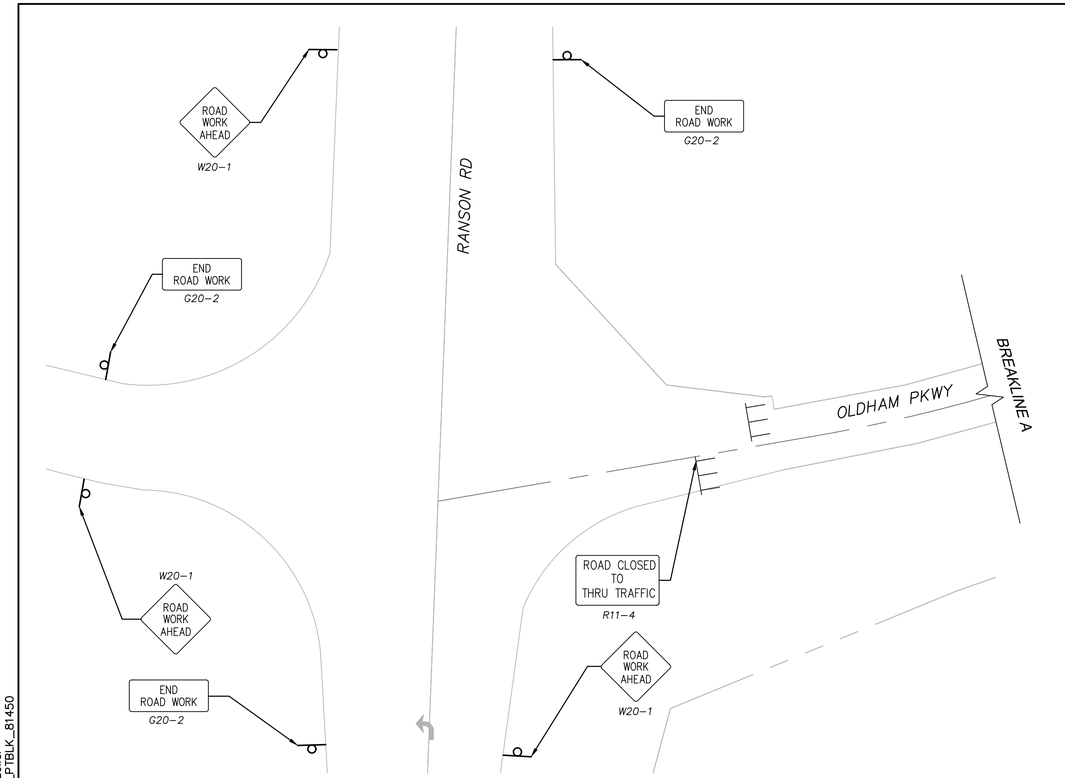
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

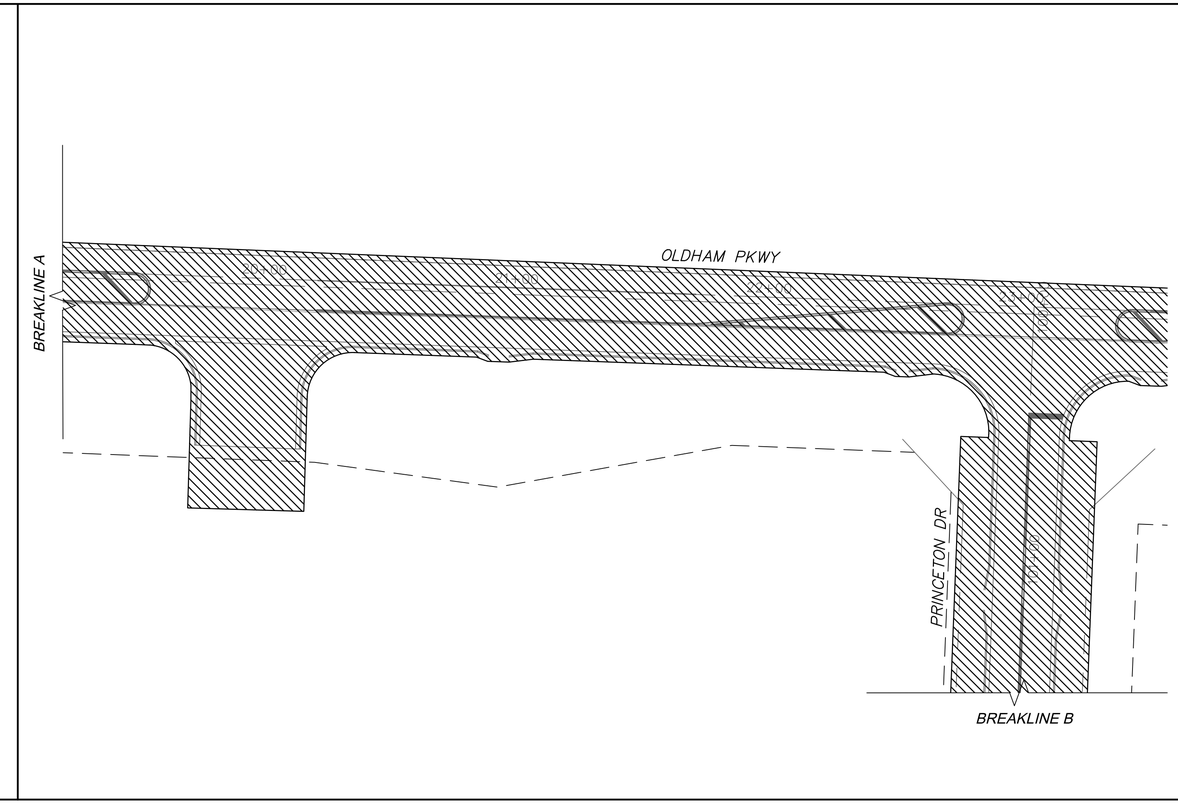
Project: O'REILLY DEVELOPMENT SENIOR LIVING

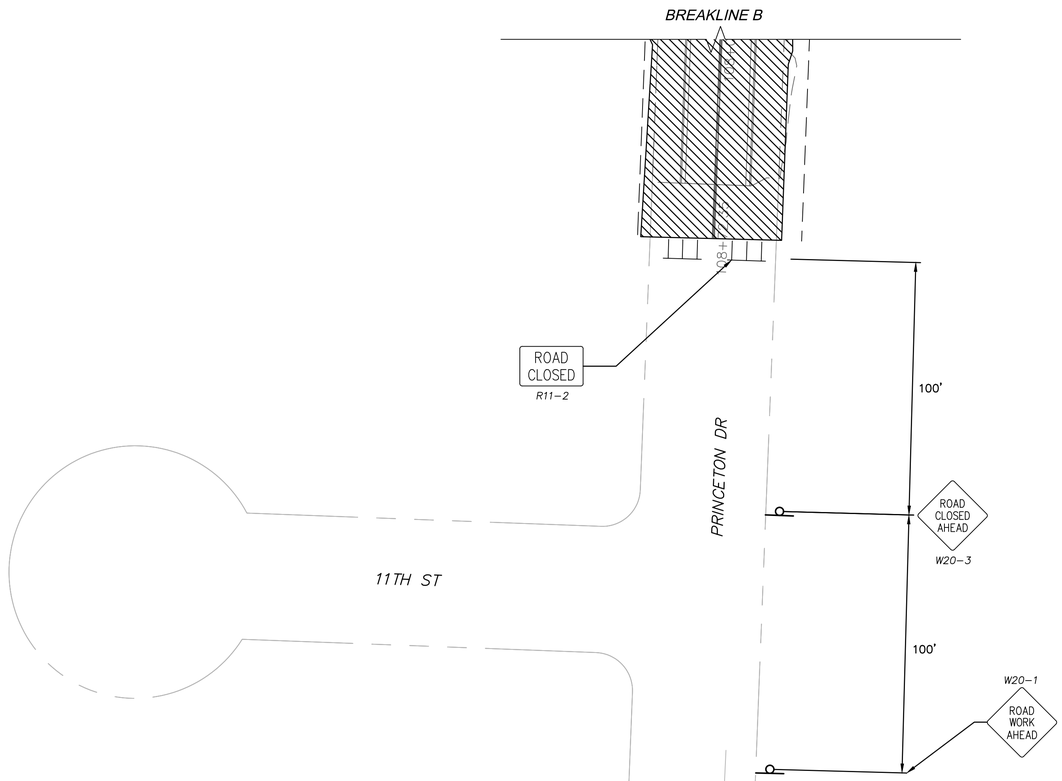
STREET NAME SIGN DETAILS

Sheet Name: STANDARD DRAWING SN-3

Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#







LEGEND

– Type III Barricade

– Sign Symbol

N

0' 15' 30' 60'
SCALE IN FEET

olsson

Olsson Engineering - MO State Certificate of Authority #001592
7301 West 133rd Street, Suite 200 TEL 913.381.1170
Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

STATE OF MISSOURI
JEREMY SCOTT STRETZ
NUMBER PE-2017023856
06/15/2019
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

TRAFFIC CONTROL

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

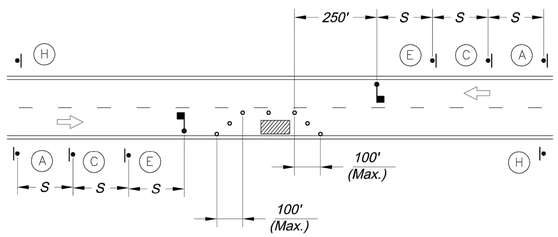
C.O.A. NO.: 001592
DRAWN BY: LZ
CHECKED BY: JAC
APPROVED BY: JSS
QA/QC BY: JSS
PROJECT NO.: 018-1450
DWG NO.: T_TFTC_81450
DATE: 06.11.2019

SHEET
T33 OF 70

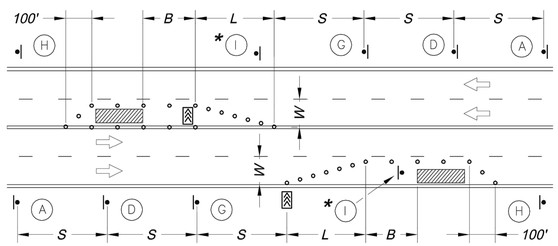
DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\RDBR\TRAFFIC CONTROL\T_TFTC_81450.dwg USER: lzoller
DATE: Jun 11, 2019 10:16am XREFS: t_pbase_81450 F_PTBLK_80743 V_TOPO_81450 F_PBASE_SAS_81450 F_PTBLK_81450

SYMBOL LEGEND

- Work Area
- Sign
- Barricade
- Direction of Travel
- Channelizer
- Arrow Panel
- Flagger

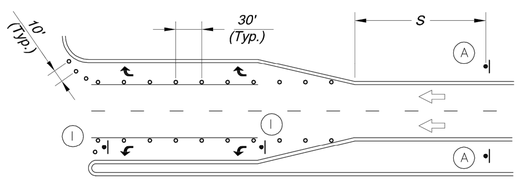


LANE CLOSURE - TWO LANE STREET



LANE CLOSURE - FOUR LANE STREET

* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TURN LANE CLOSURE

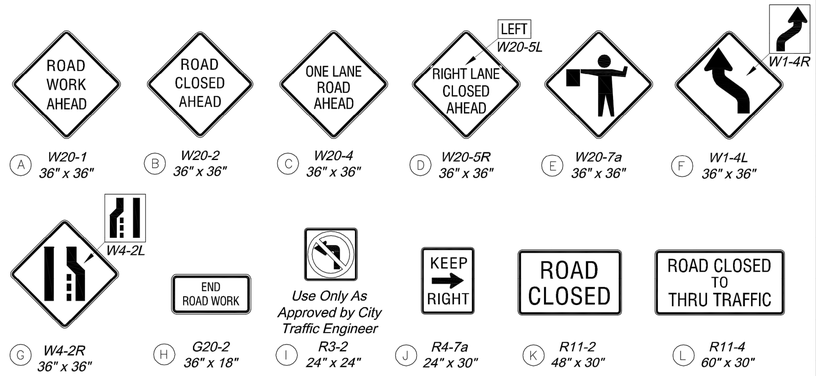
Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
≥ 40	350

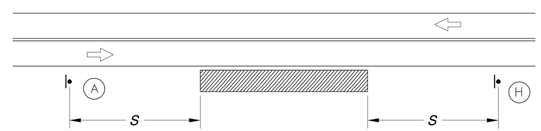
Taper Dimensions (Feet)				
Speed Limit (mph)	Minimum Taper Length "L", per Lane Width "W"			Minimum Number of Channelizers
	10	11	12	
25	105	115	125	6
30	150	165	180	7
35	205	225	245	8
40	270	295	320	9
45	450	495	540	13

Guidelines for Length of Longitudinal Buffer Space "B"	
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

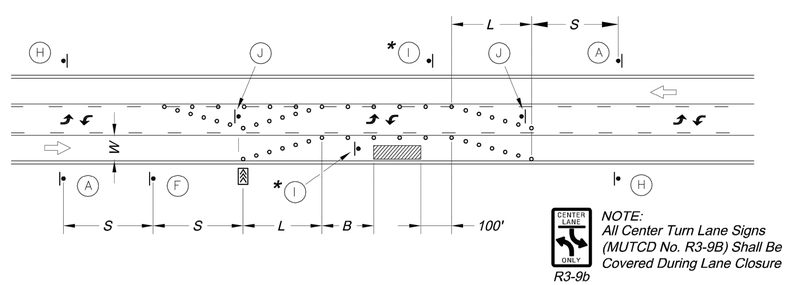
Maximum Channelizer Spacing		
Speed Limit (mph)	Within Taper (Feet)	Outside Taper (Feet)
25	25	50
30	30	60
35	35	70
40	40	80
45	45	90

SIGN LEGEND





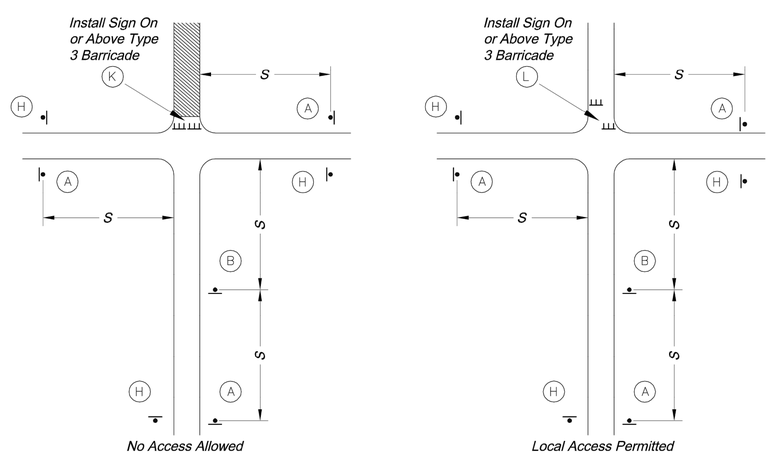
TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET



NOTE:
All Center Turn Lane Signs (MUTCD No. R3-9B) Shall Be Covered During Lane Closure

LANE CLOSURE - THREE LANE STREET

* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



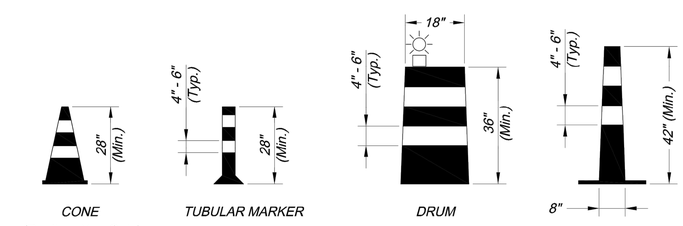
No Access Allowed

Local Access Permitted

TYPICAL STREET CLOSURE

GENERAL NOTES:

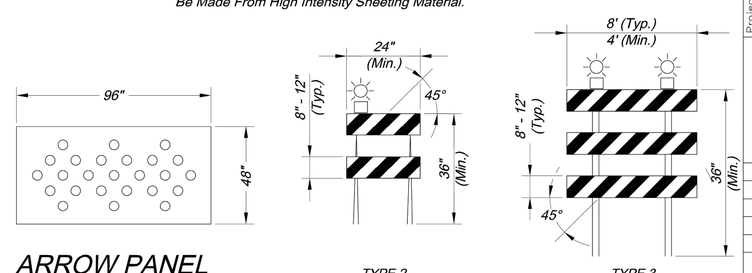
1. All signs, barricades, channelizers, markings and other traffic control devices shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).
2. All traffic control devices shall be standard in size, shape, color, and message, in good condition, and retro-reflectorized. All signs shall be securely mounted with height and lateral location as described in the MUTCD.
3. Warning lights shall be used on barricades in place at night and on warning signs which alert drivers about a change in alignment, traffic control, lane closure, or road closure.
4. Flaggers shall be used where indicated on the plans, where construction vehicles interact with normal traffic, or where construction activities impose a restriction on traffic, as directed by the City Traffic Engineer. Where flaggers are used, advance signing shall be erected as shown in the details or as specified in the MUTCD. Flaggers shall meet the requirements in the MUTCD in regard to character, training, attire, and behavior.
5. Trim-lines are the City's preferred channelizing device. Cones may not be used at nighttime.
6. Traffic control devices not in use or not applicable shall be either covered or removed from the work area.
7. The Contractor shall use barricades, street plates, or fencing as needed to effectively shield pedestrian and vehicular traffic from exposed objects, excavations, and construction activities.
8. Access shall be maintained to all driveways and side streets unless noted otherwise on the plans.
9. No street shall be closed without the approval of the City Traffic Engineer. The Contractor shall notify the City Traffic Engineer at least 7 days in advance of any street closure. If a detour route around the closure is to be provided, all detour signing shall be as shown on a plan approved by the City Traffic Engineer.
10. Construction vehicles parked along streets shall be located within the work area (traffic control) or where otherwise normally permitted. Construction materials, including traffic control and vehicles shall not restrict sight distance for vehicles exiting at streets or drives.
11. Construction materials shall be kept off of sidewalks, consolidated in one location within City right-of-way, and removed daily unless otherwise approved by the Inspector. Dirt, mud, and other construction debris on streets and sidewalks shall be removed immediately.
12. The Contractor shall not perform any work that will restrict vehicular traffic in any way between the hours of 7:00 a.m. and 9:00 a.m. or 4:00 p.m. and 6:00 p.m. Monday through Friday unless otherwise indicated in the specifications.
13. All travel lanes should be at least 11 feet wide unless otherwise authorized by the City Traffic Engineer. A "Narrow Lanes" sign shall be installed in advance of a lane width reduction to less than 11 feet.
14. All edge drop-offs of more than 2 inches and less than 4 inches should be protected by a wedge or barrier and all edge drop-offs greater than 4 inches shall have edge protection (see Traffic Control Specifications for edge treatment requirements).
15. The "Workers" symbolic sign (MUTCD No. W21-1a) may be used instead of the "Road Work Ahead" sign for work with a duration of 12 hours or less. The "End Road Work" sign is not required to be installed after the "Workers" sign.
16. No traffic signal shall be altered or modified in any way without a plan approved by the City Traffic Engineer.
17. The Contractor shall be responsible for maintaining all traffic control devices on an around-the-clock basis, whether or not work is actively being pursued and any deficiencies noted shall be corrected immediately.
18. The traffic control requirements shown on these plans are minimum requirements only and do not attempt to address in depth the variety of situations that may occur once construction has started. In no way do the requirements shown on these plans relieve the Contractor of his responsibility for selecting the proper traffic control devices and implementation procedures that will assure the safety of drivers, pedestrians, and workers at all times.
19. Should the contractor fail to enforce the traffic control plan or fail to clean, replace or otherwise maintain the traffic control devices when directed to do so by the City Traffic Engineer or representative, the City may take one or more of the following actions:
    - A) Employ another agency to correct deficiencies in traffic control devices and deduct the cost from the Contractor's pay estimate,
    - B) Stop the work until deficiencies are corrected,
    - C) Suspend all pay estimates until deficiencies are corrected, or
    - D) Place the Contractor in default.



CONE (Daytime Use Only) | TUBULAR MARKER | DRUM | TRIM-LINE

CHANNELIZERS

NOTE: White Bands On Barricades and Channelizers Shall Be Made From High Intensity Sheeting Material.



ARROW PANEL

TYPE 2 | TYPE 3

BARRICADES

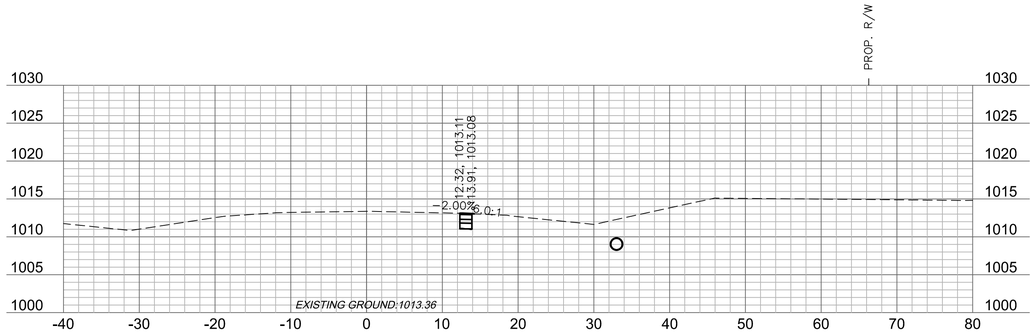
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING

TRAFFIC CONTROL DETAILS

Sheet Name: STANDARD DRAWING TC-1

Drawn By: JJW
Checked By: MP
Date: 12-10-2008
Project No.: X



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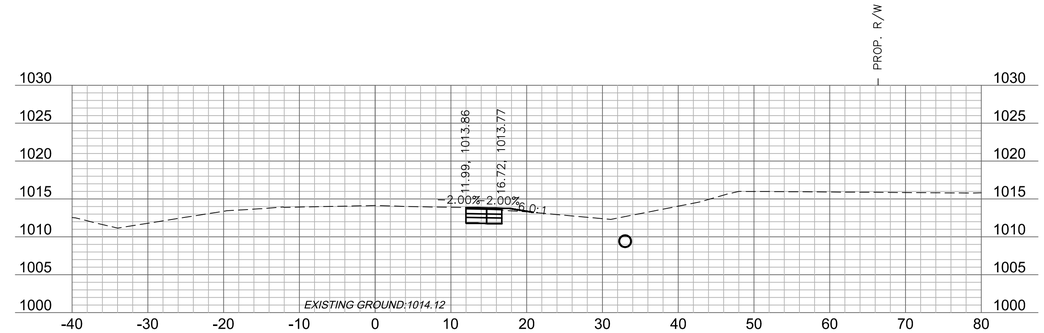
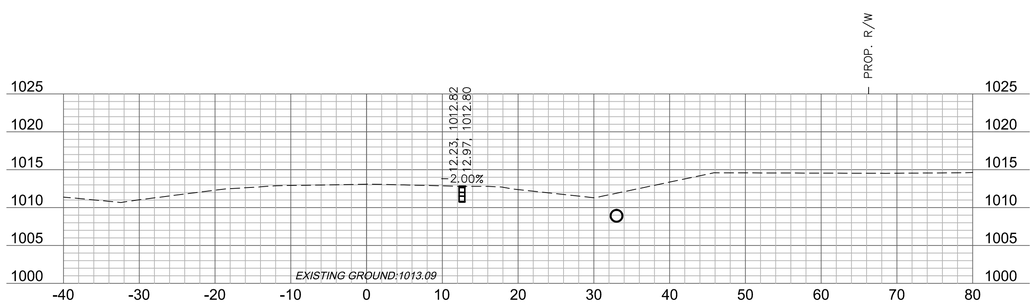
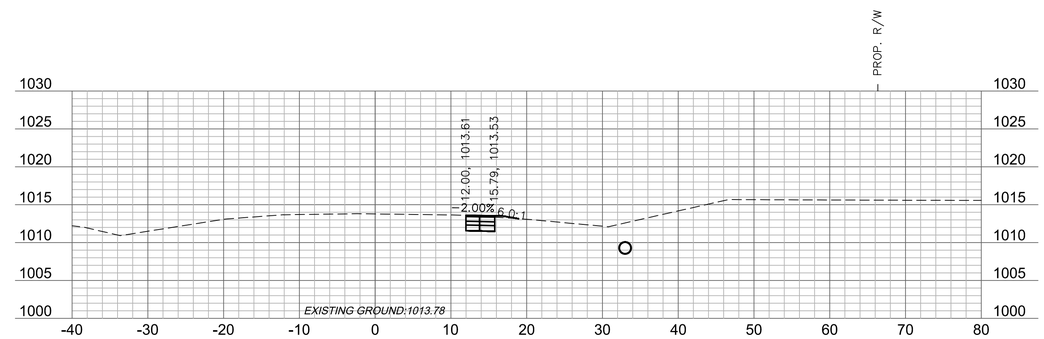


14+00



13+00



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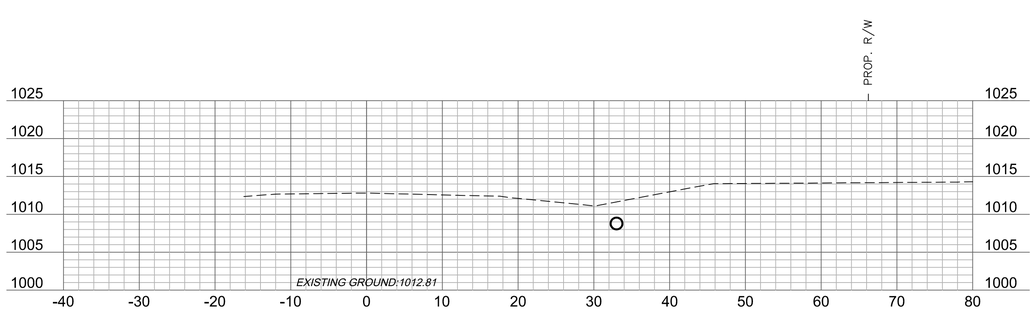

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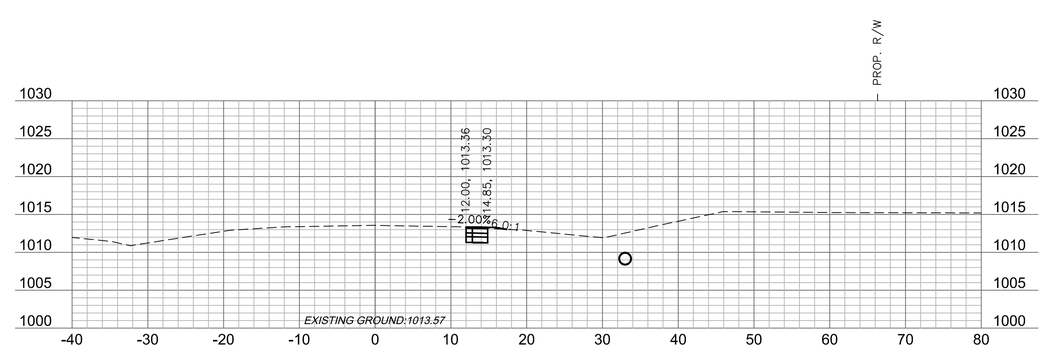

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
6-11-19

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

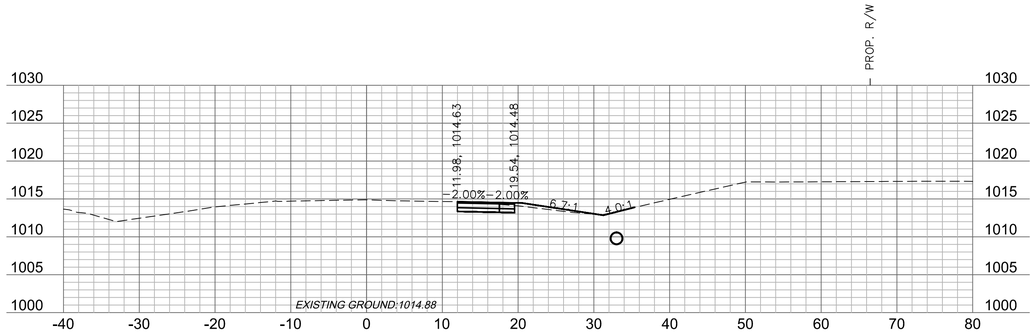
OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.:	001592
DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_PCORR_81450
DATE:	06.11.2019



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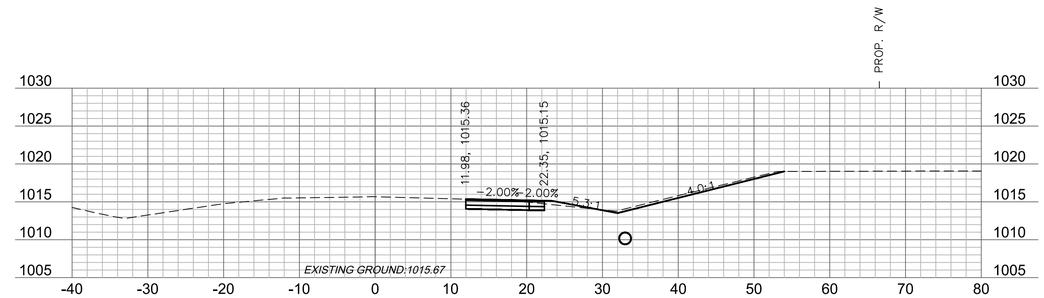

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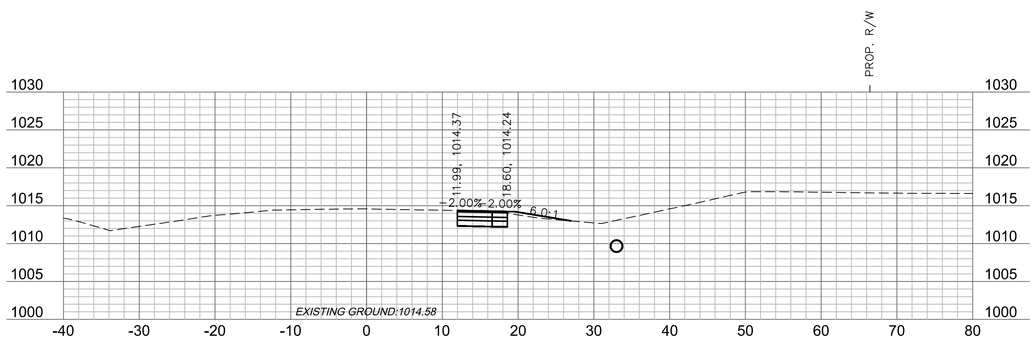

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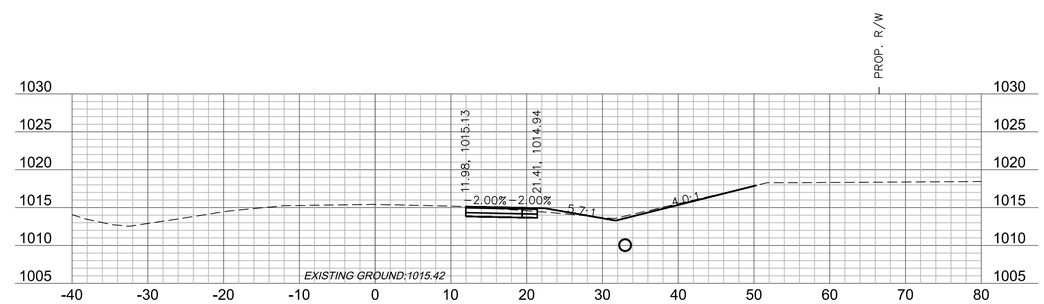

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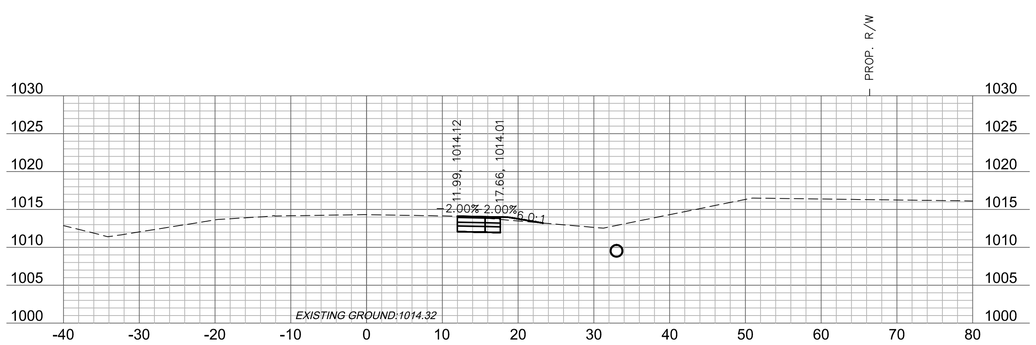

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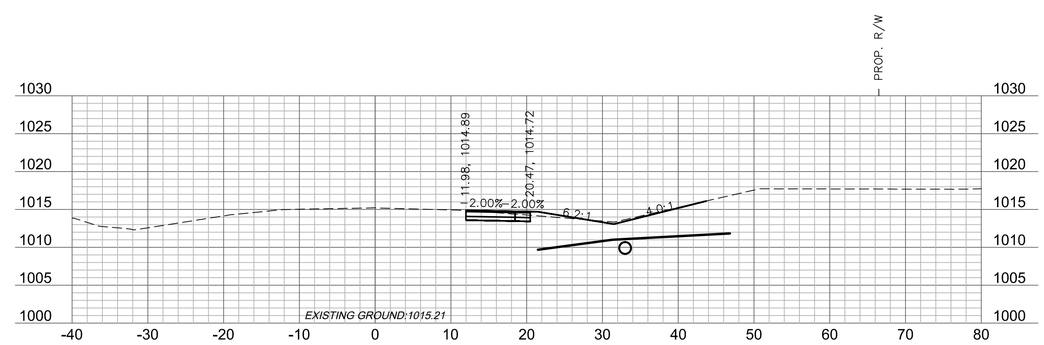

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PROJECT NO.:	018-1450
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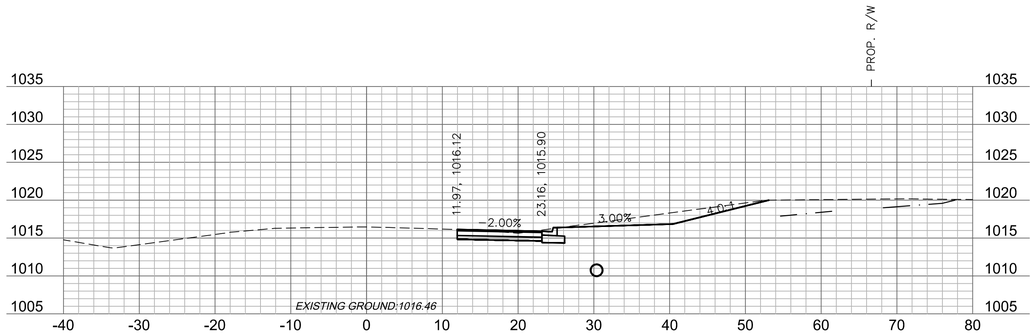

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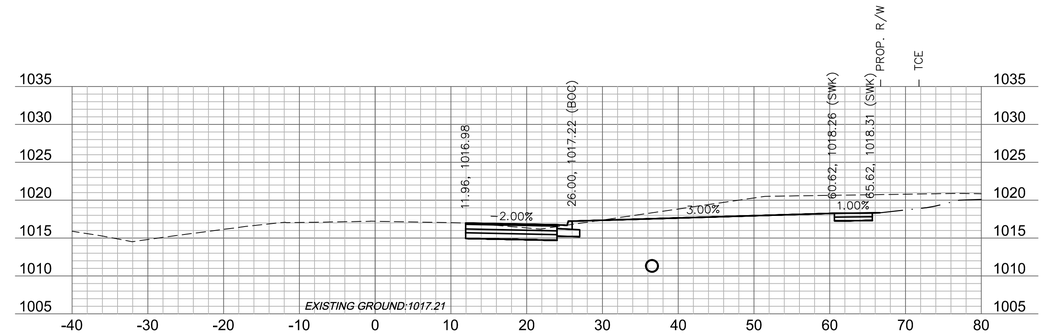

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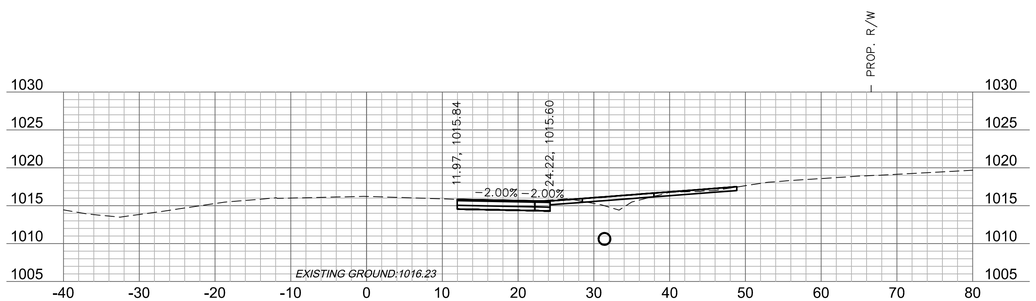

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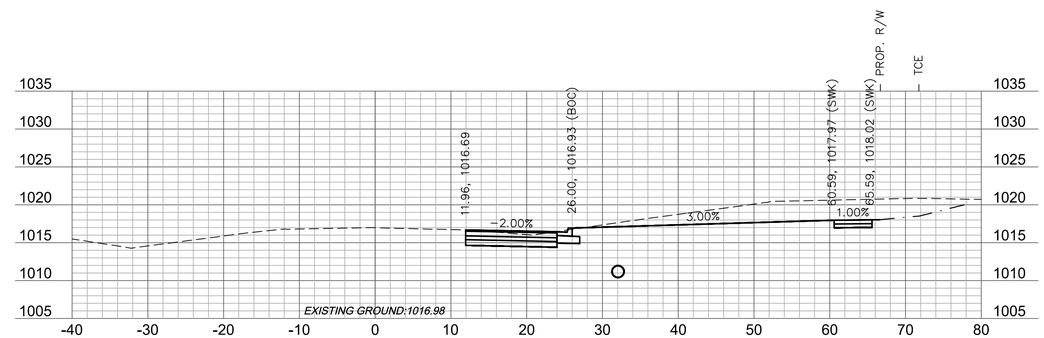

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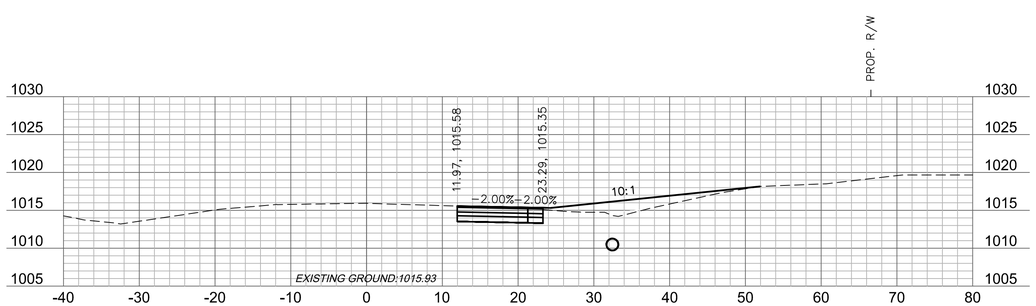

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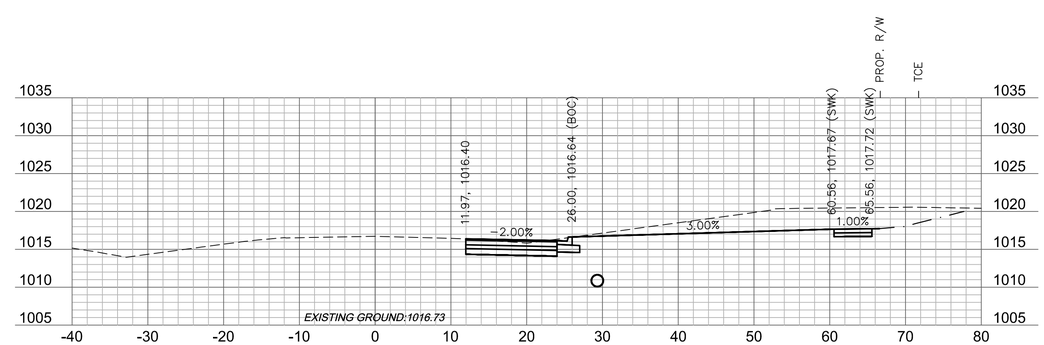

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STATE OF MISSOURI
RYAN B. FLEMING
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6-11-19

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OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_PCORR_81450
DATE: 06.11.2019

SHEET
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DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Xref\T_PCORR_81450.dwg
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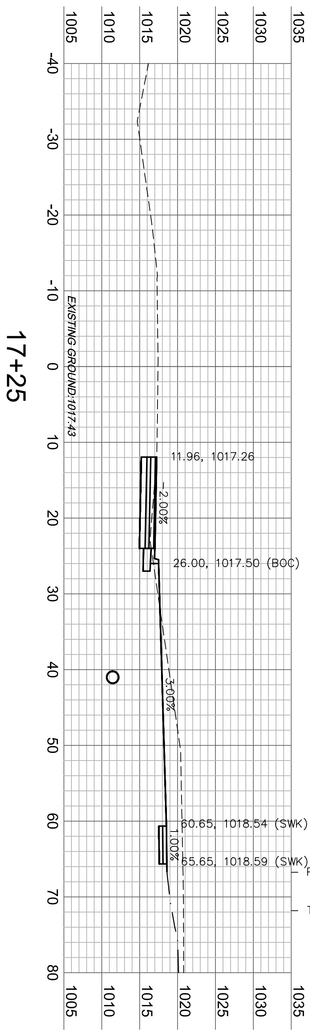

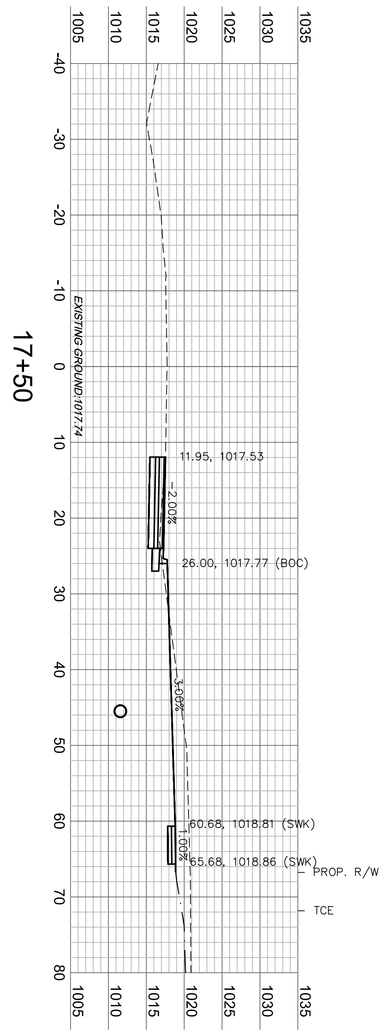

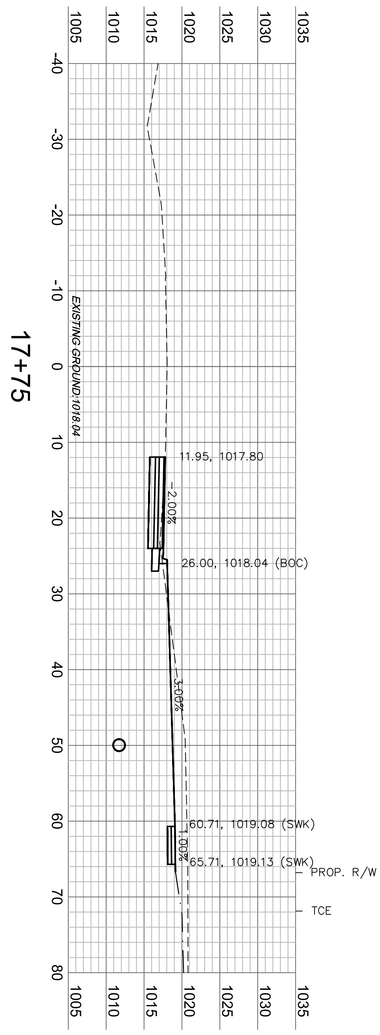

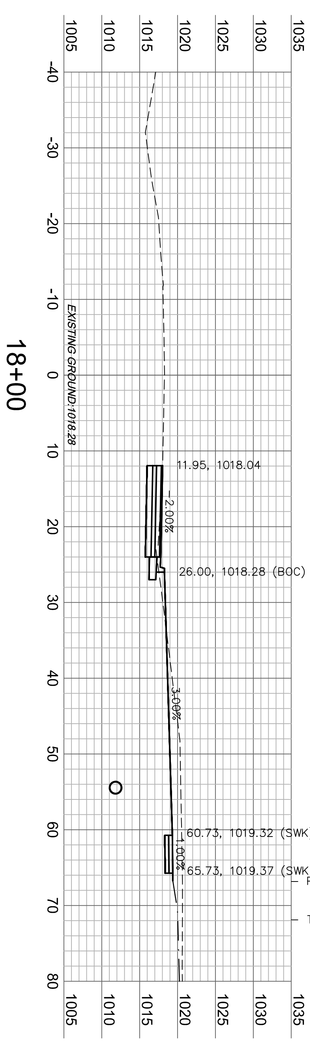

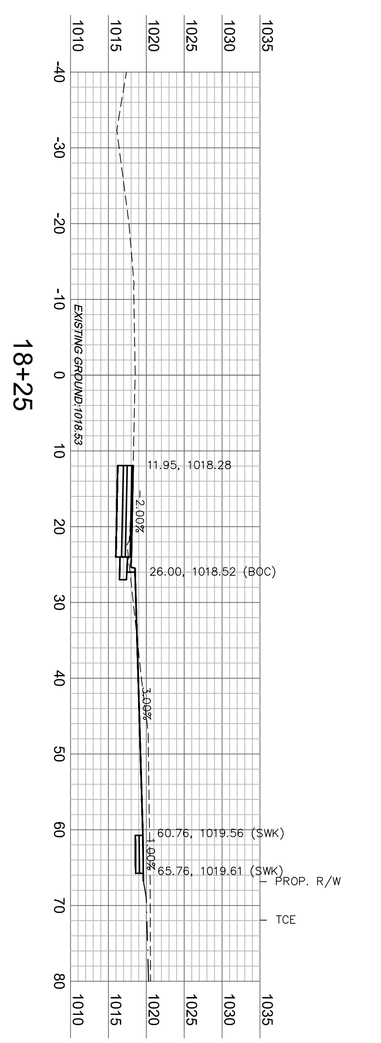

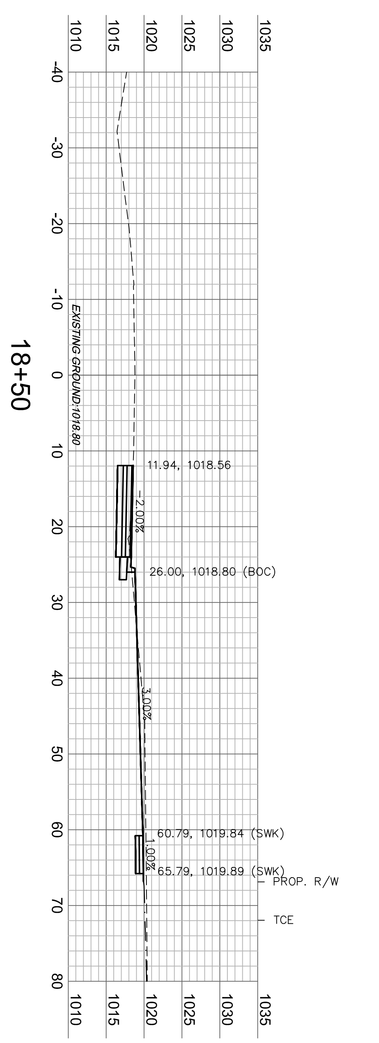

OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI 2019

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STATE OF MISSOURI PROFESSIONAL ENGINEER
PE-2002005161 NUMBER
6-11-19

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
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QA/QC BY: JKL/BBE
PROJECT NO.: 018-1450
DWG NO.: T_PCORR_81450
DATE: 06.11.2019

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T38 OF 70

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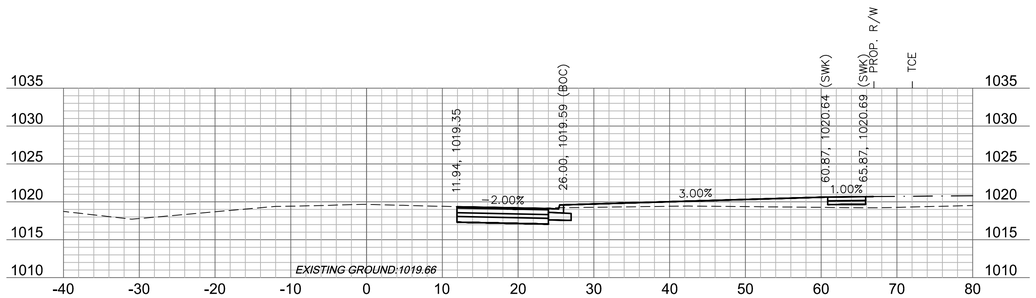

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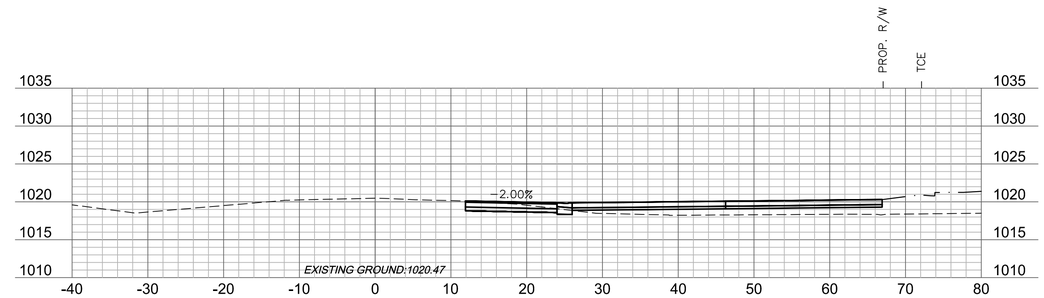

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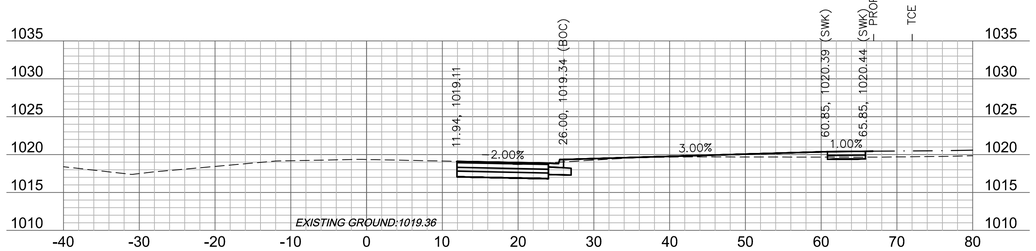

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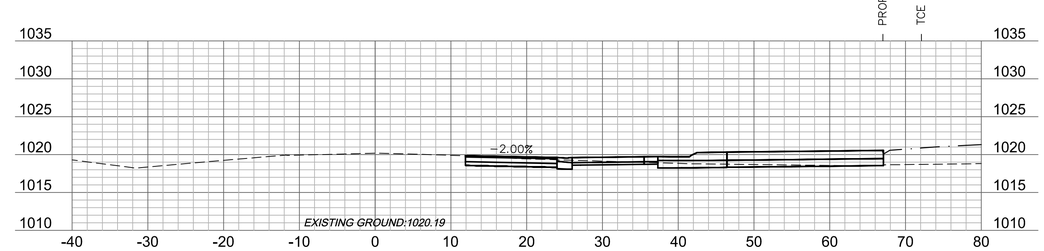

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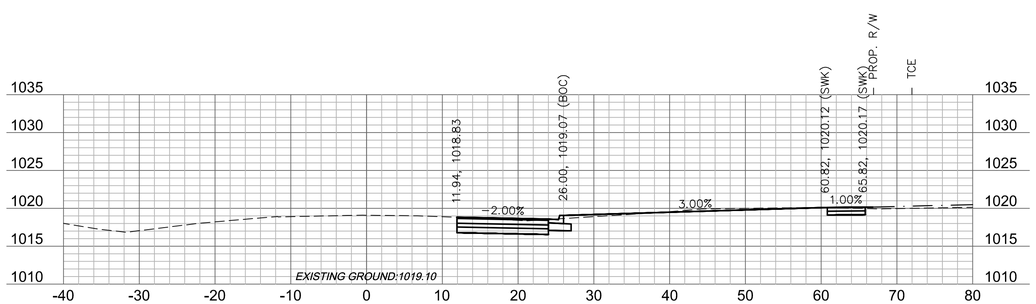

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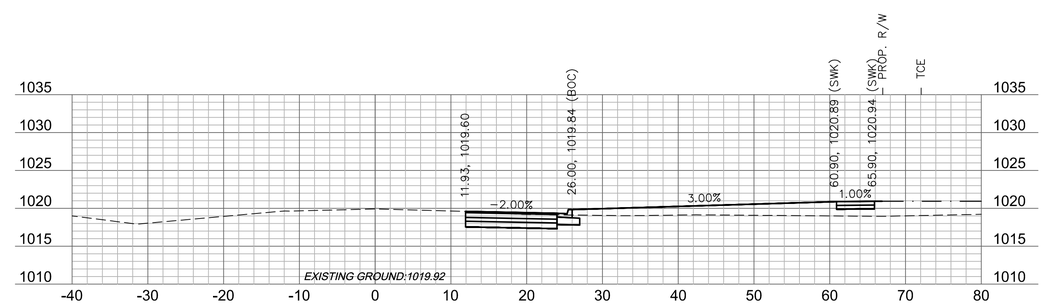

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DATE: Jun 12, 2019 9:19am XREFS: v_xbou_81450 V_TOPO_81450 T_PBASE_81450 USER: asaavedra C_PBASE_81450 T_PTBLK_81450

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
PROFESSIONAL ENGINEER
6-11-19

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OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
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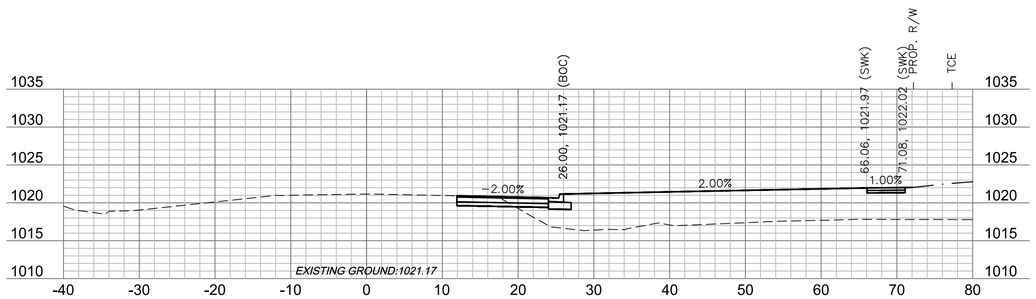
DATE: 06.11.2019



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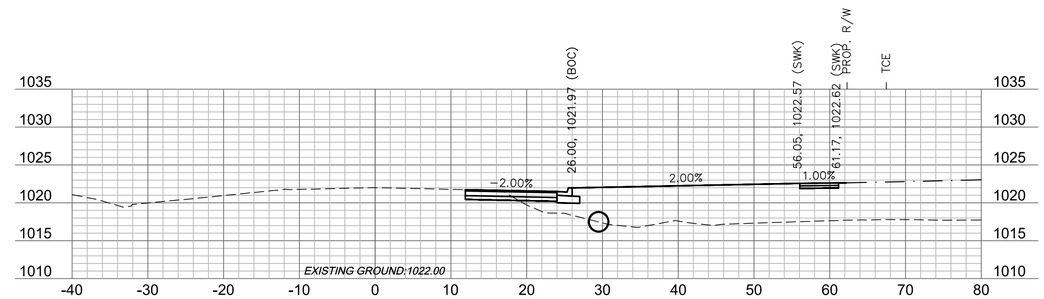

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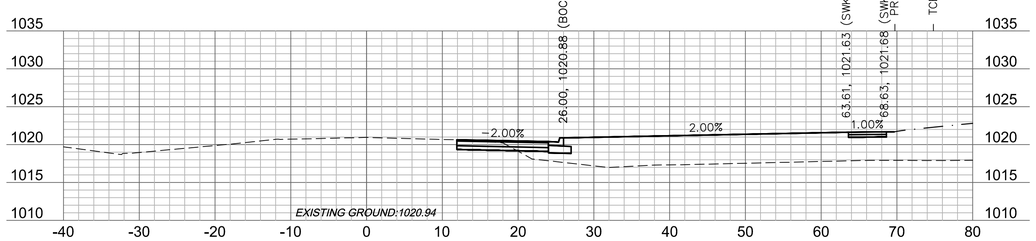

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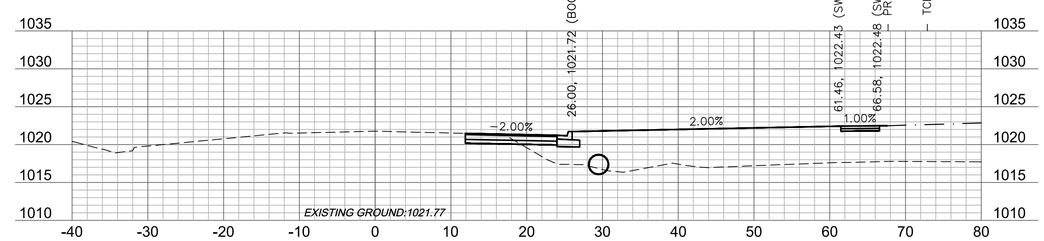

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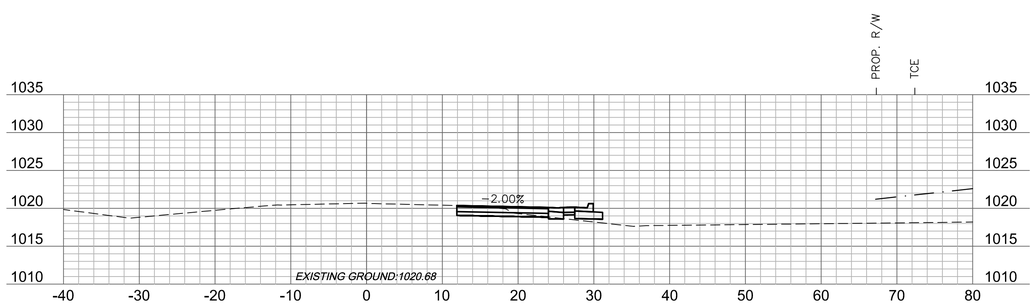

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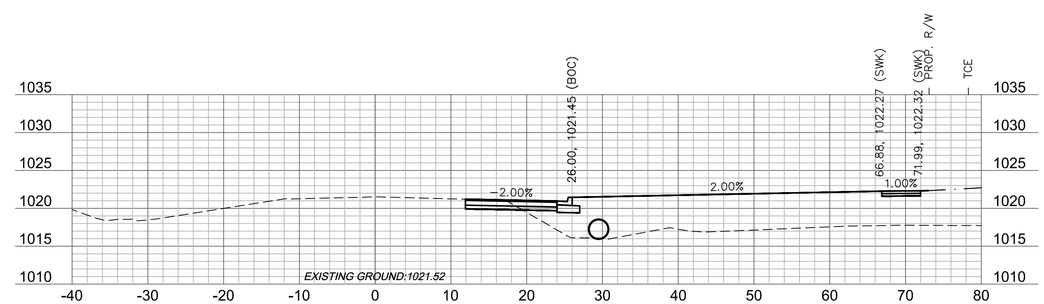

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STATE OF MISSOURI
RYAN B. FLEMING
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REVISIONS

OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.:	001592
DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_PCORR_81450
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T40 OF 70

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Xref\T_PCORR_81450.dwg USER: asaavedra
DATE: Jun 12, 2019 9:19am XREFS: v_xbou_81450 V_TOPO_81450 T_PBASE_81450 C_PBASE_81450 T_PTBLK_81450

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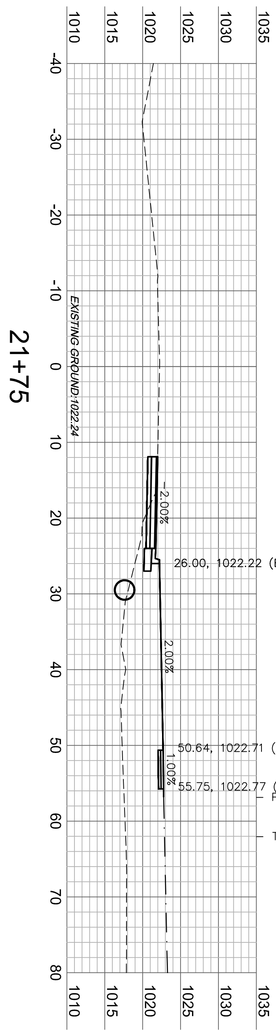

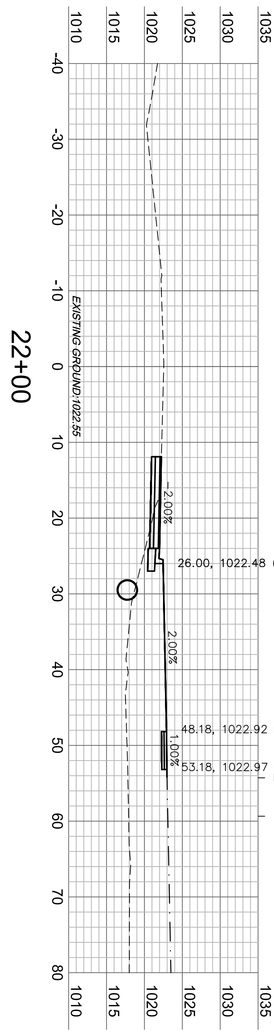

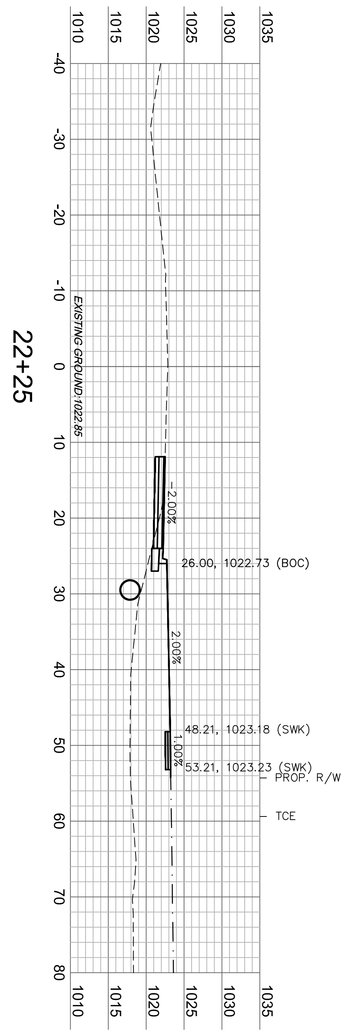

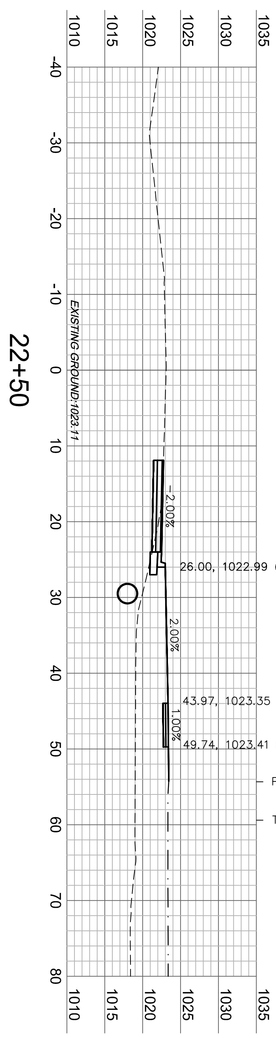

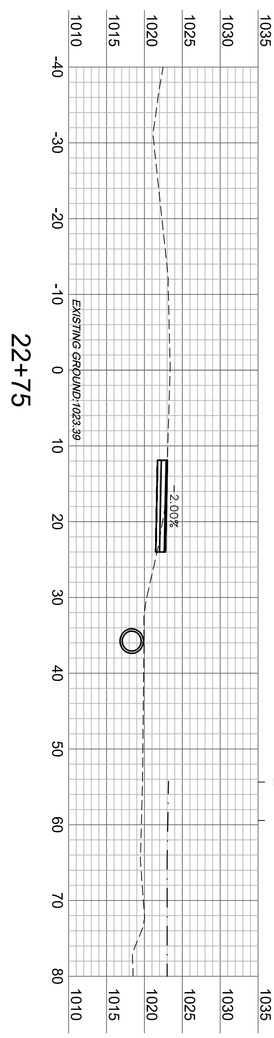

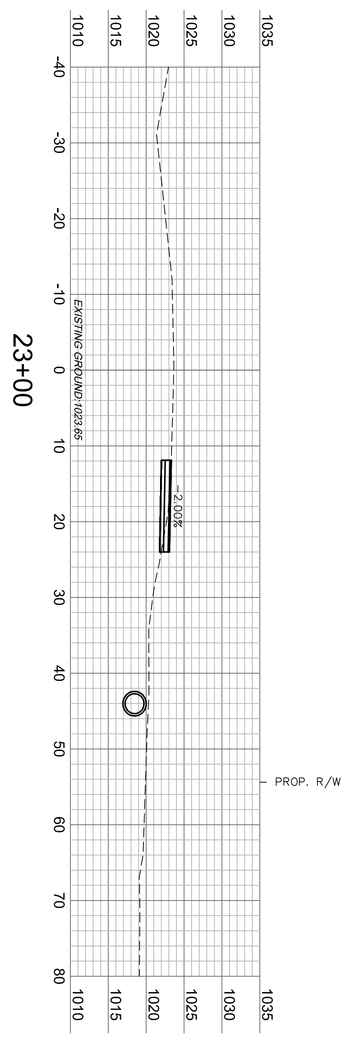

C.O.A. NO: 001592
DRAWN BY: AS
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APPROVED BY: JKL
QA/QC BY: JKL/BBE
PROJECT NO: 018-1450
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DATE: 06.17.2019

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OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI 2019

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

STATE OF MISSOURI
JAMES KEVIN LEMING
NUMBER
PE-2002005161
PROFESSIONAL ENGINEER
6-17-19

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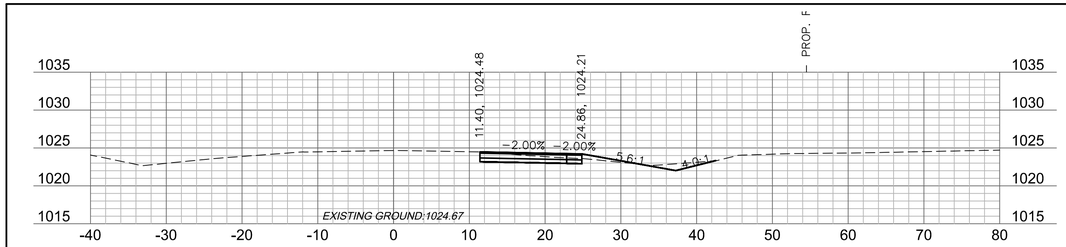

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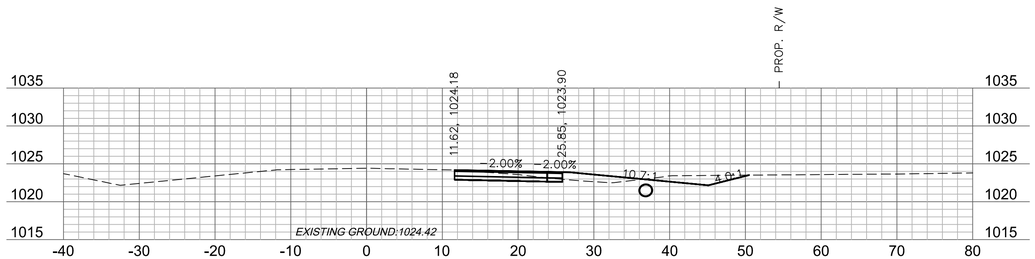

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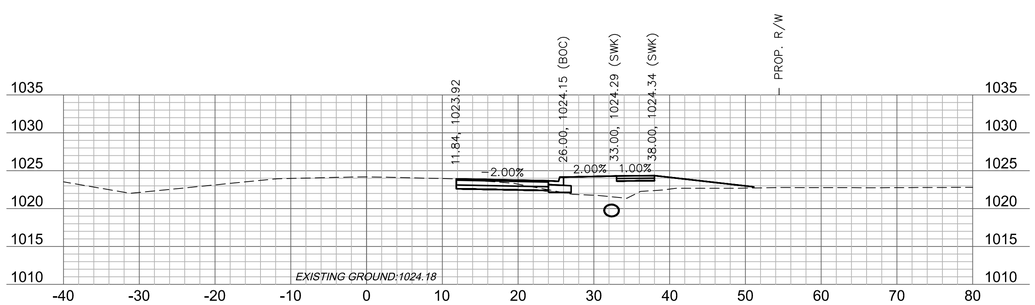

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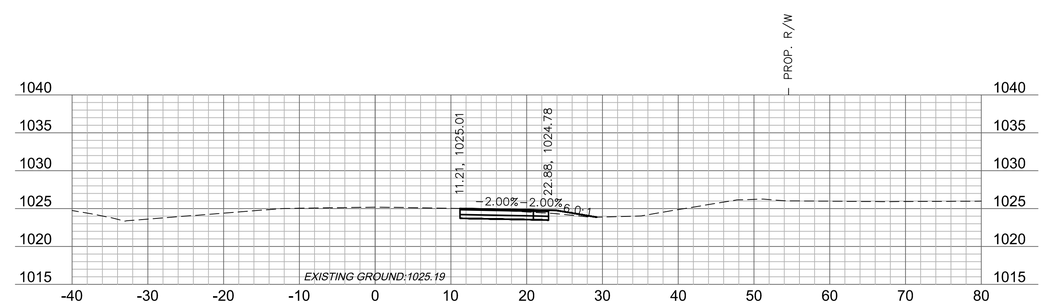

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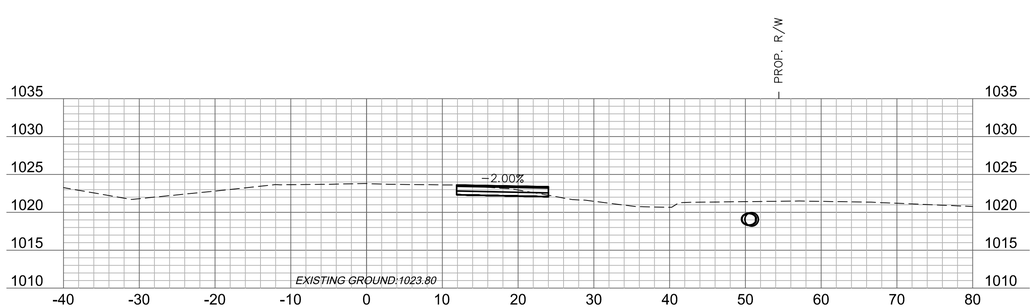

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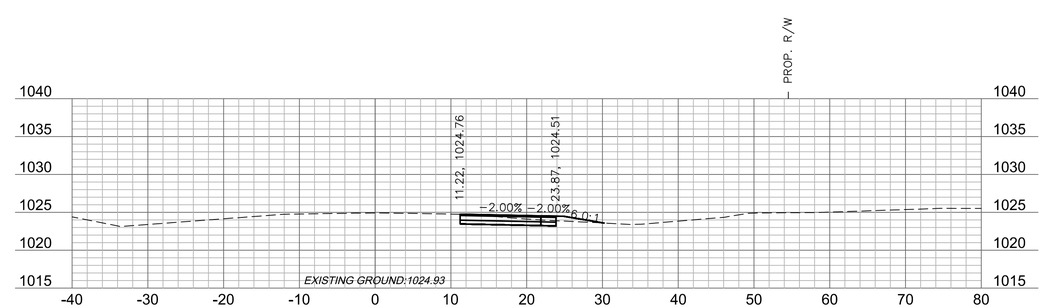

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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER PE-2002003161
6-11-19
PROFESSIONAL ENGINEER

REV. NO.	DATE	REVISIONS DESCRIPTION	BY

REVISIONS

OLDHAM PARKWAY
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_PCORR_81450
DATE: 06.11.2019

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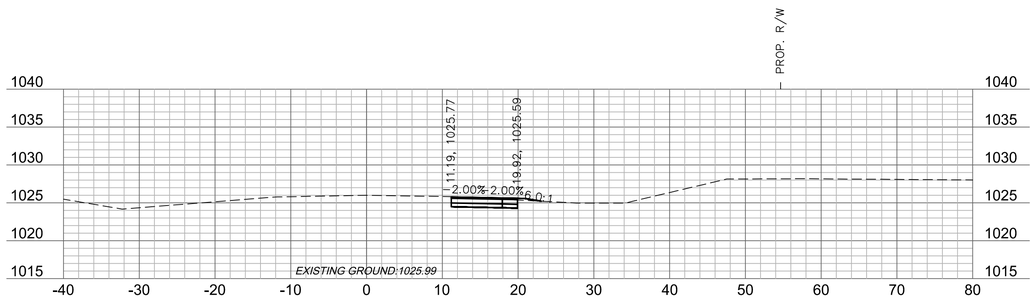

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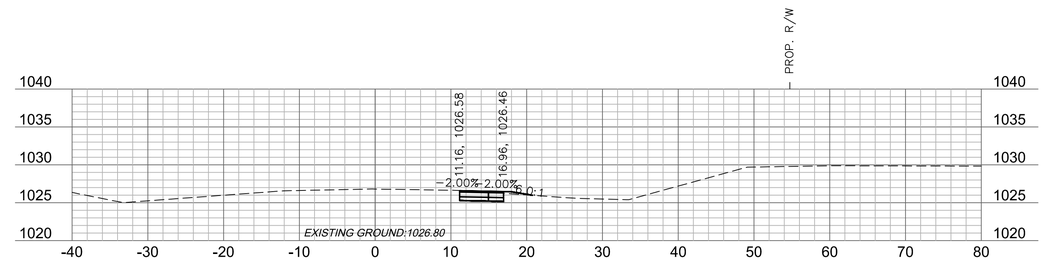

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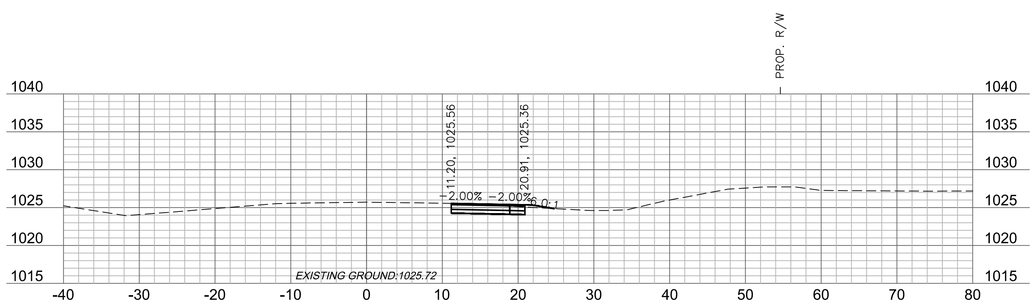

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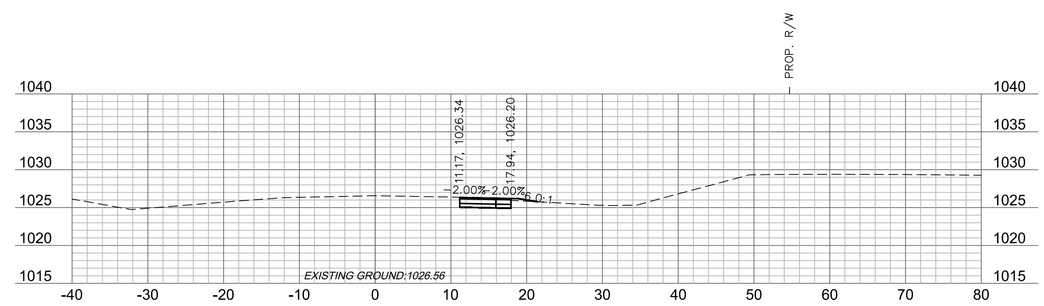

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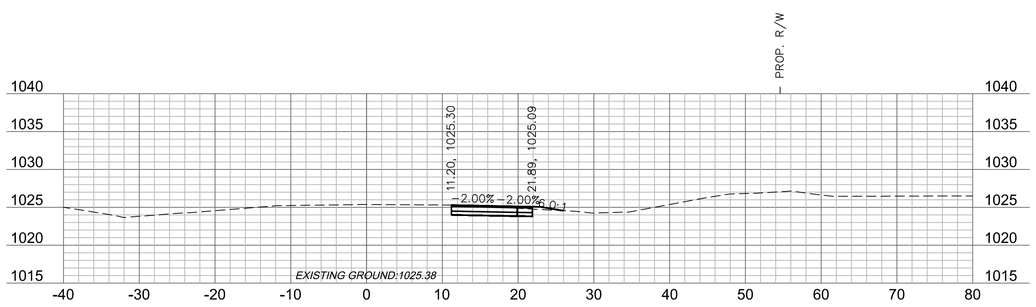

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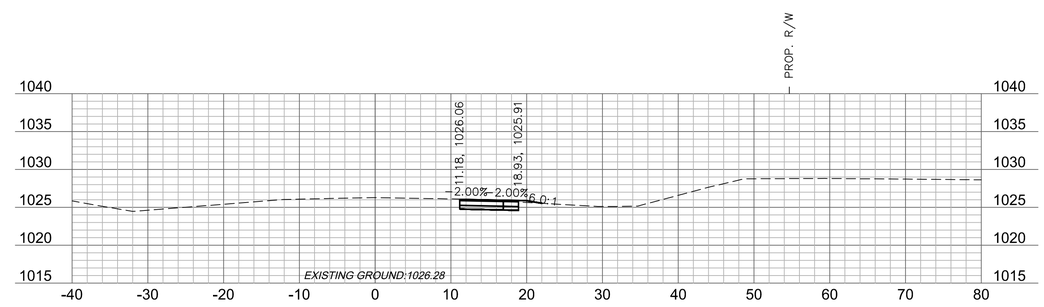

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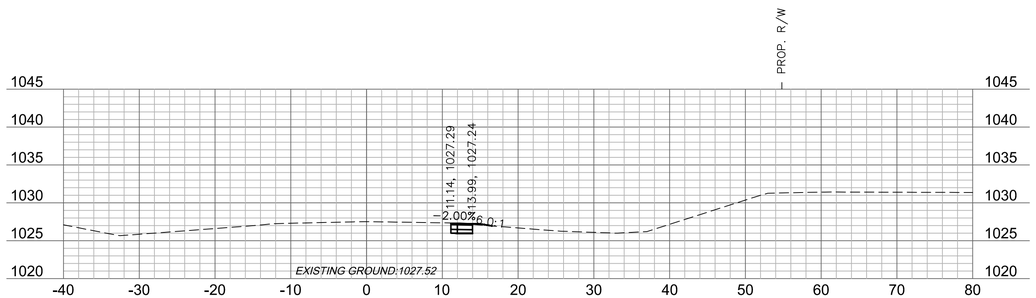

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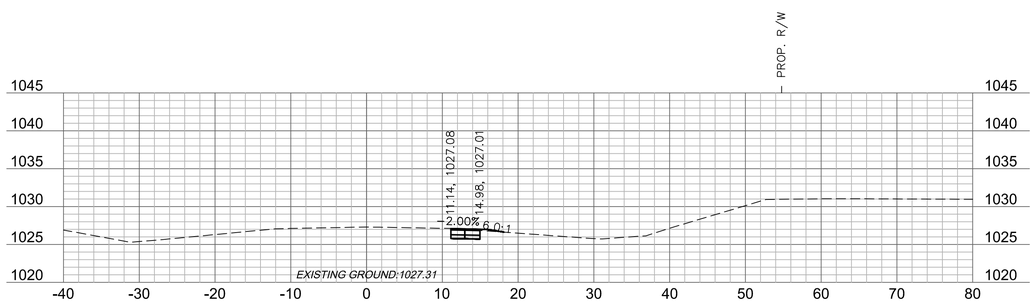

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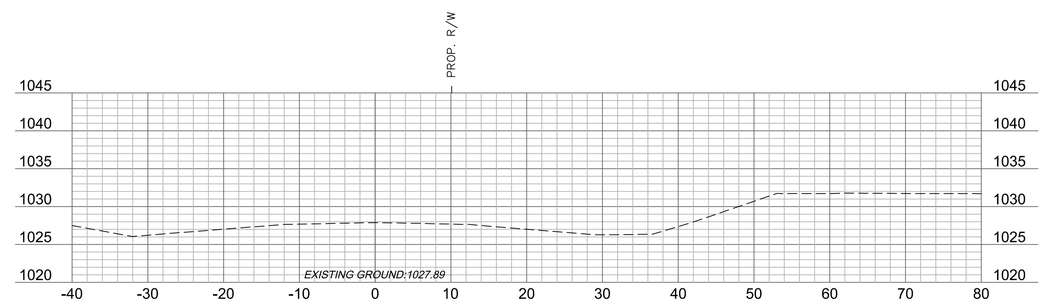

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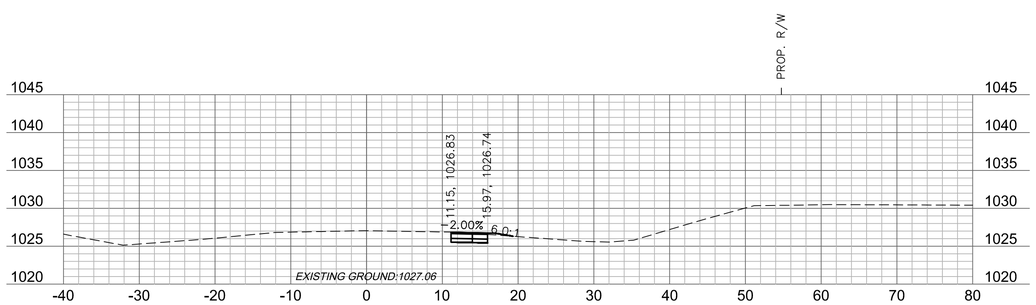

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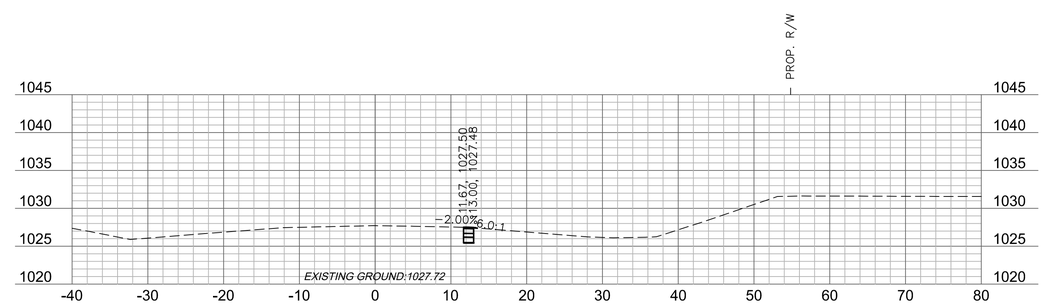

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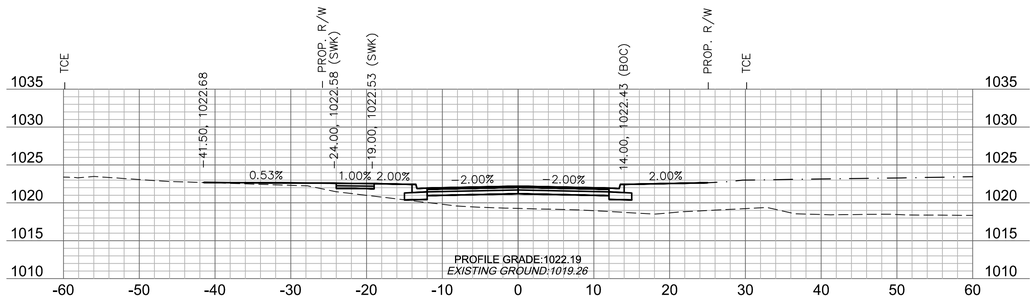

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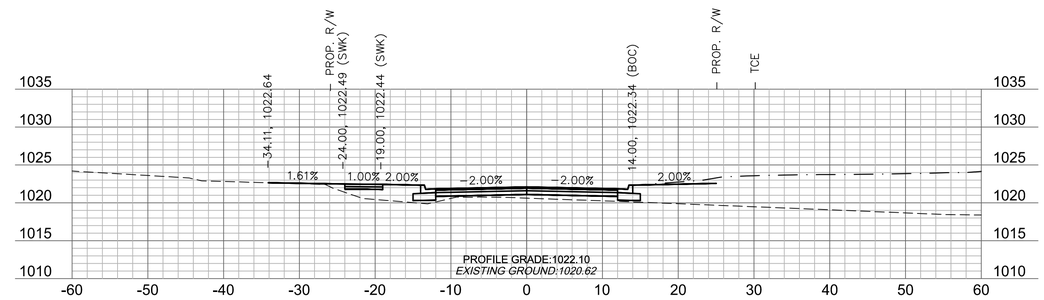

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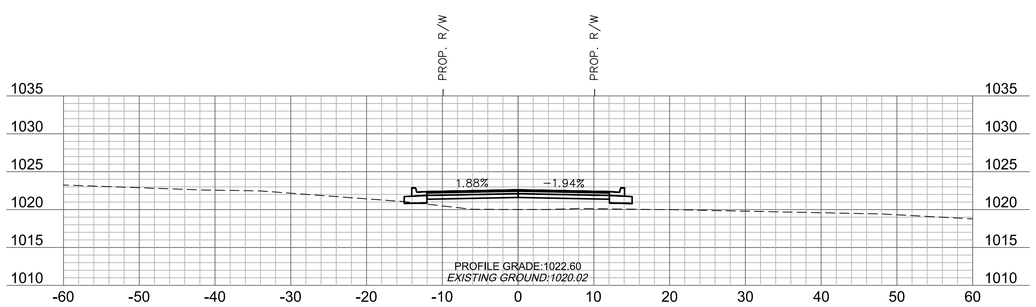

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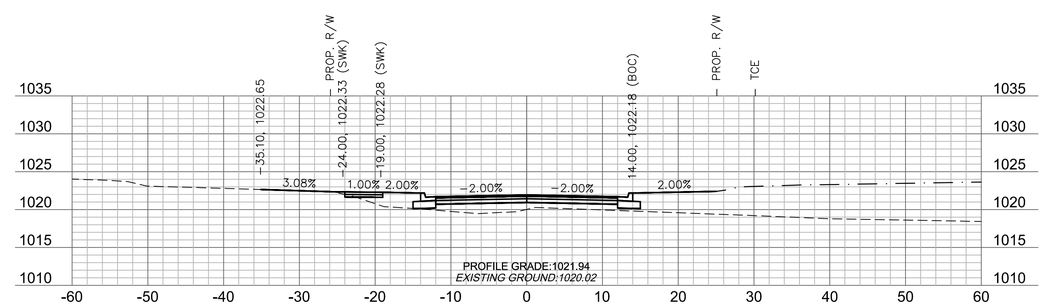

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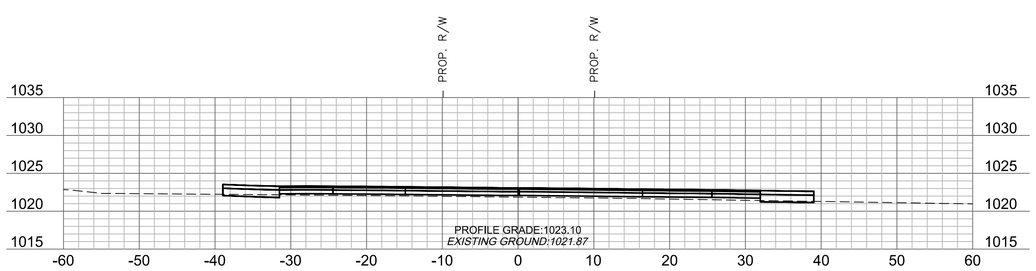

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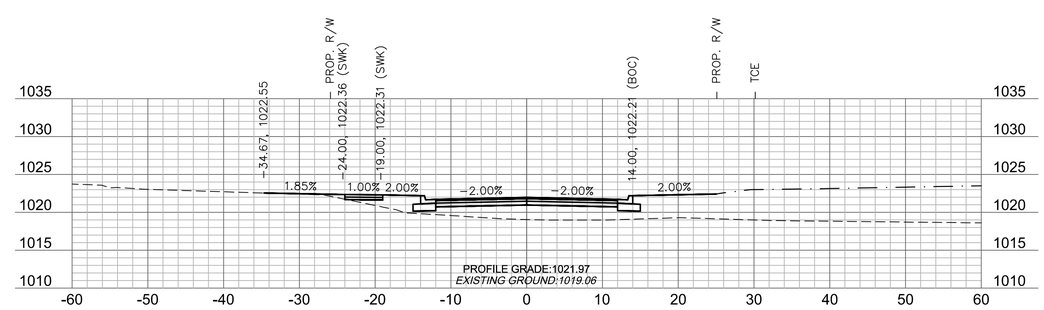

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LEE'S SUMMIT, MISSOURI

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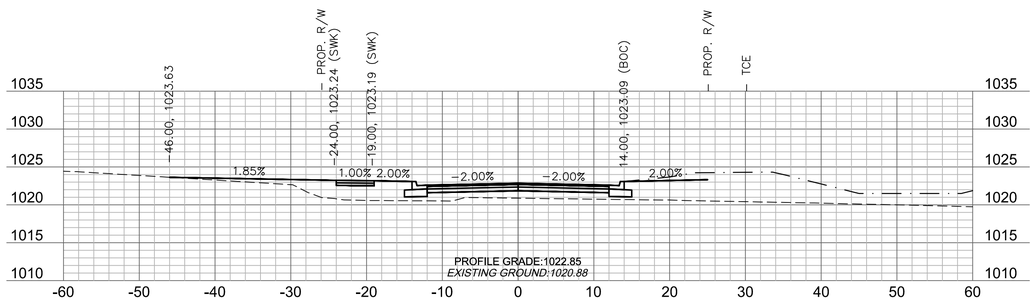

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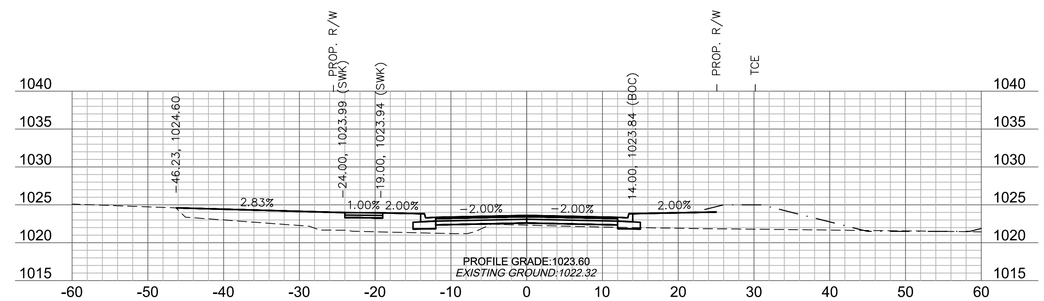

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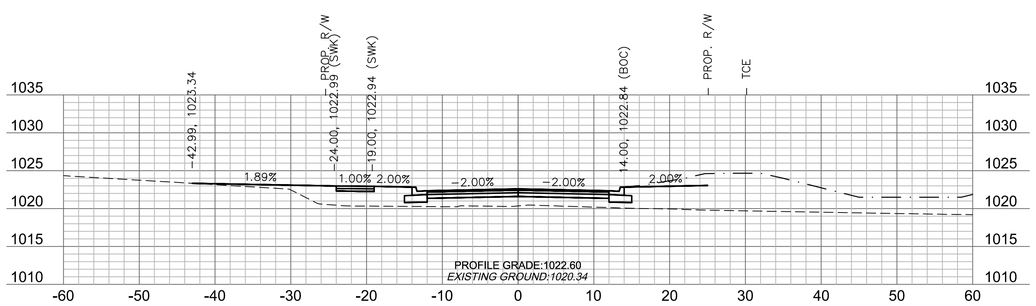

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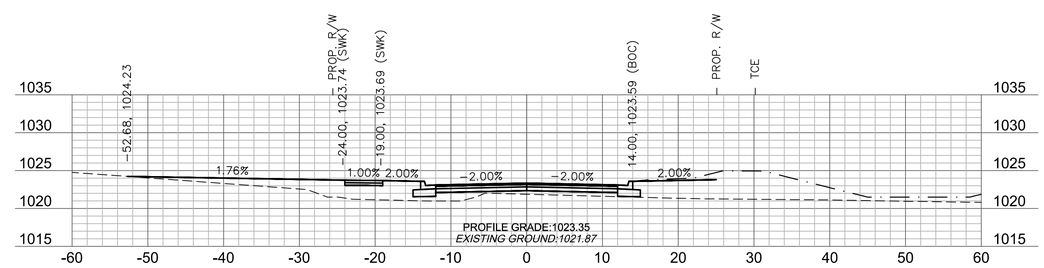

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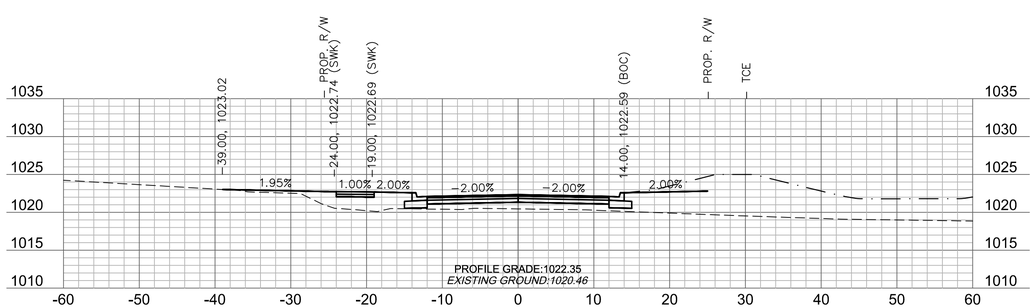

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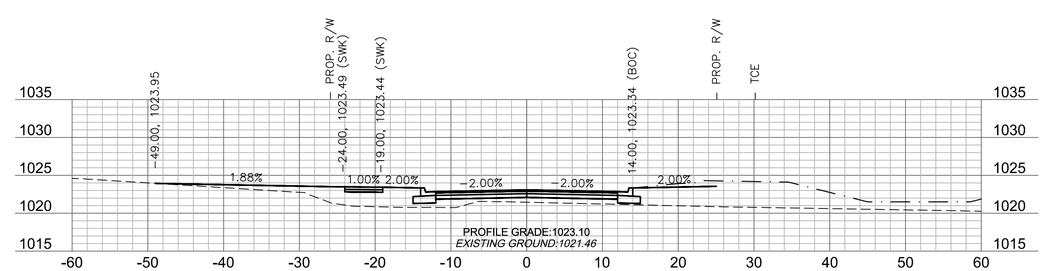

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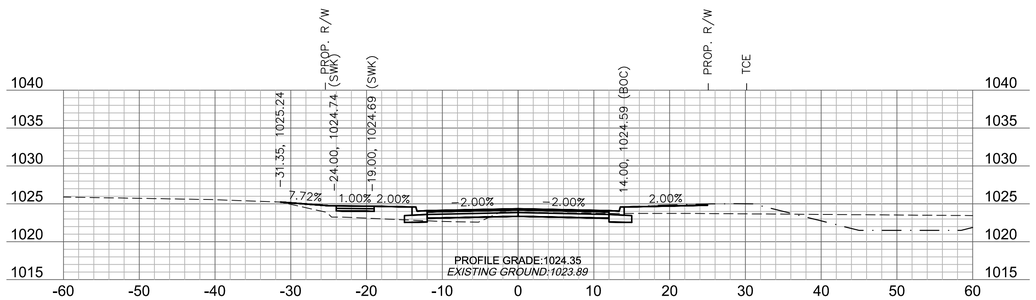

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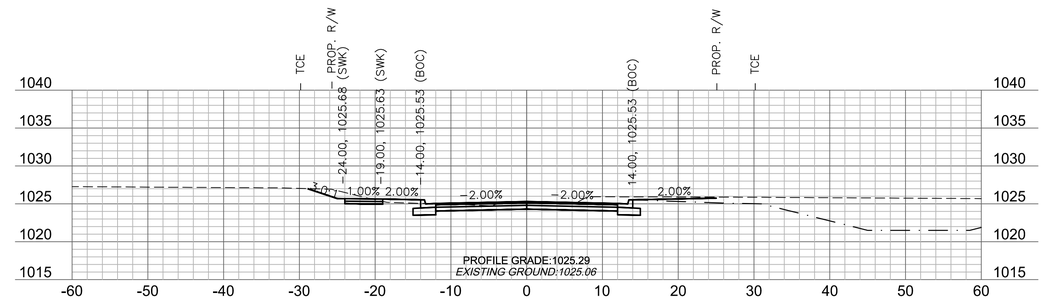

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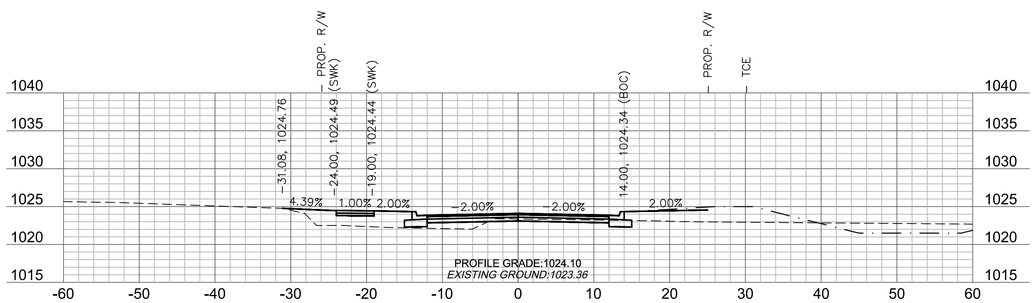

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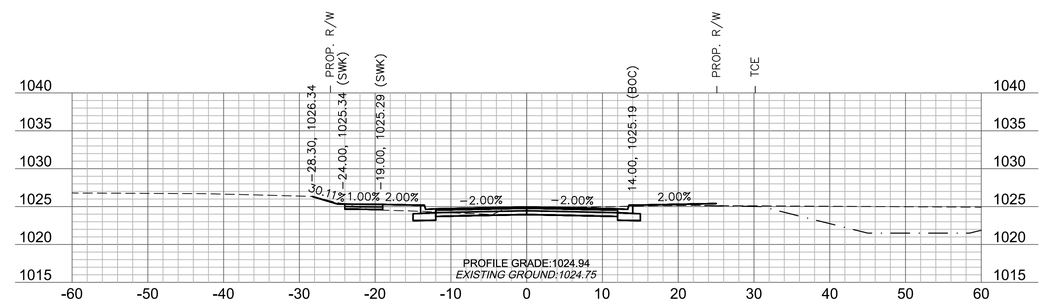

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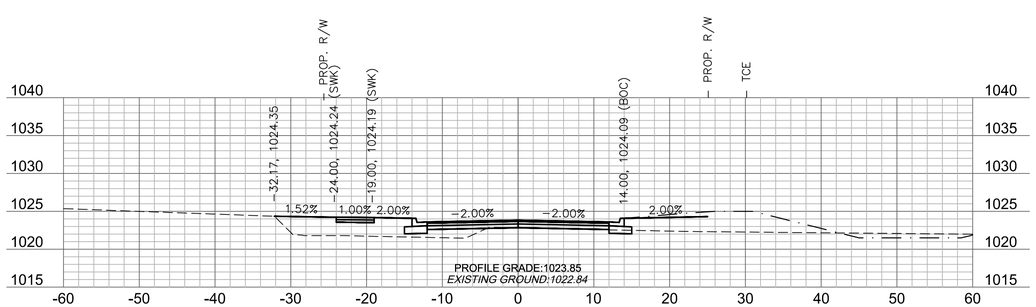

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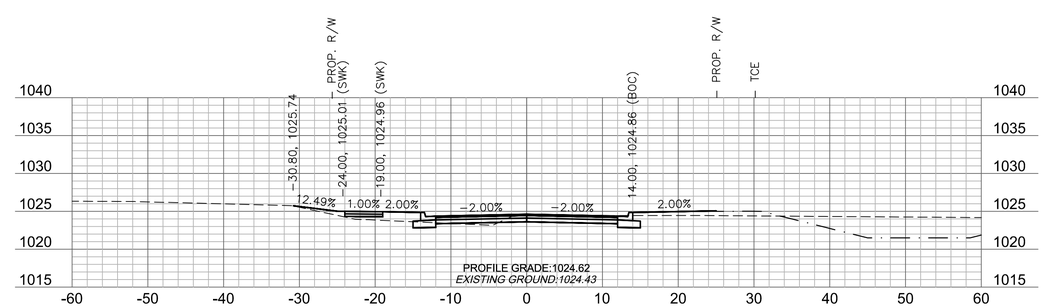

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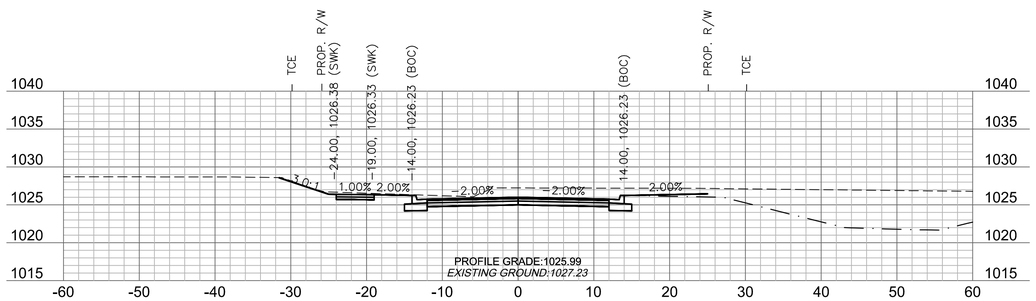

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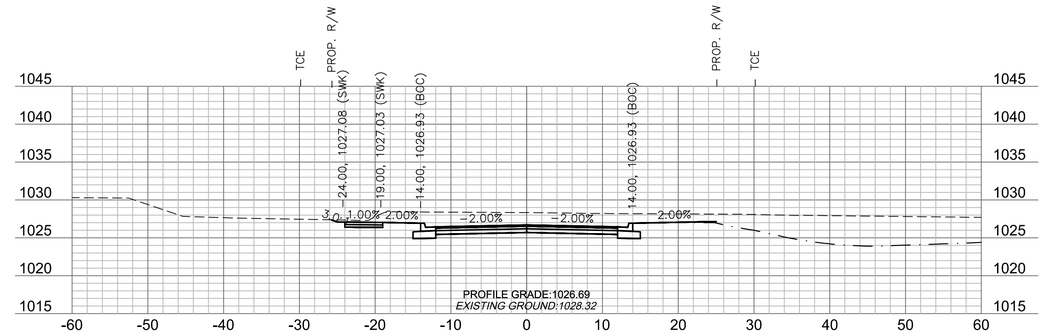

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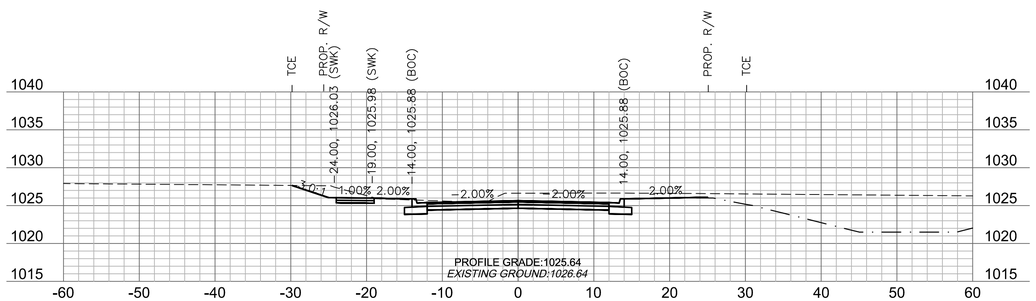

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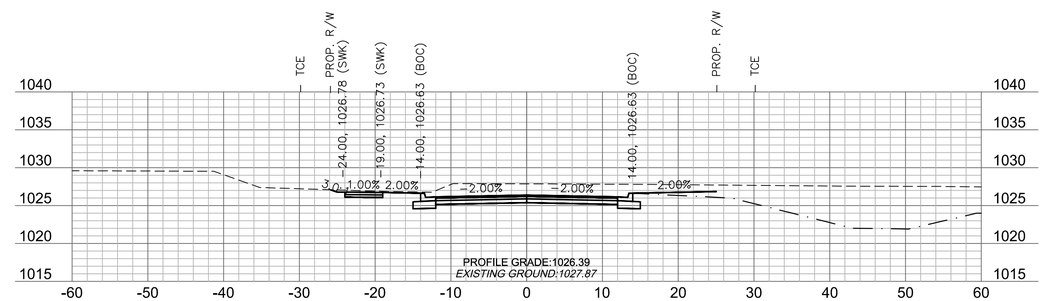

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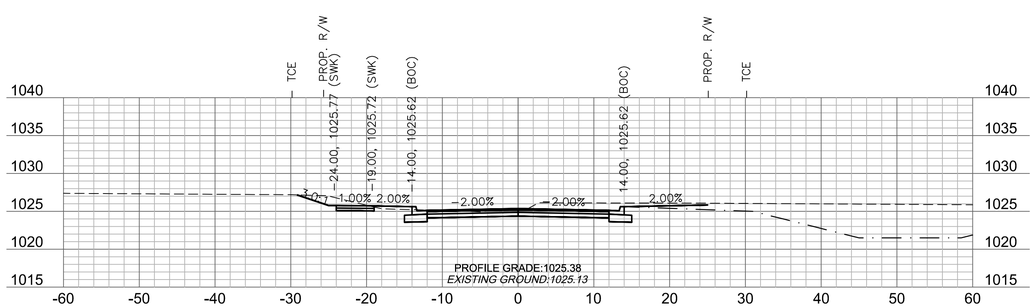

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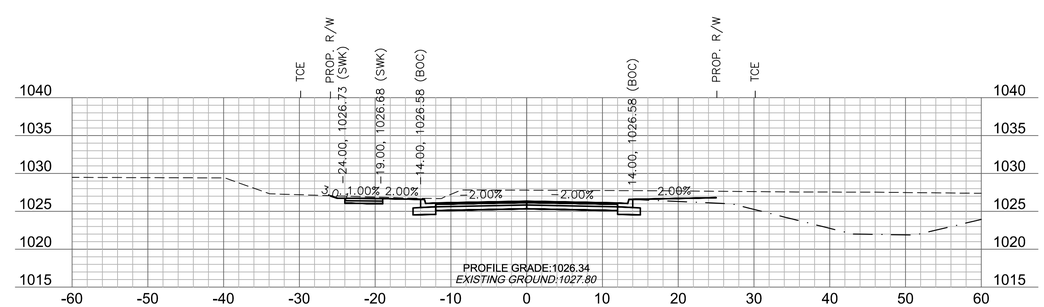

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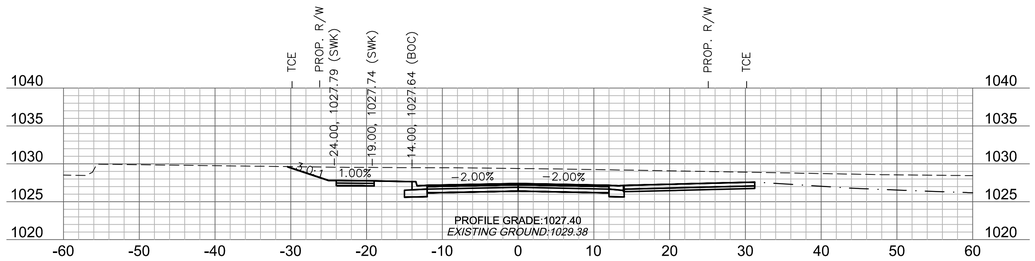

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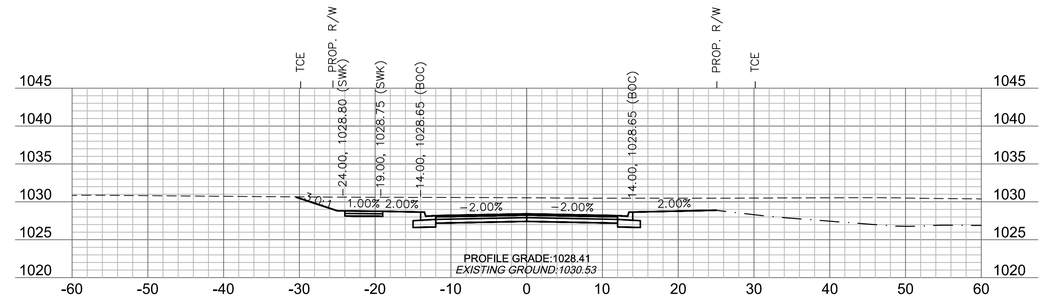

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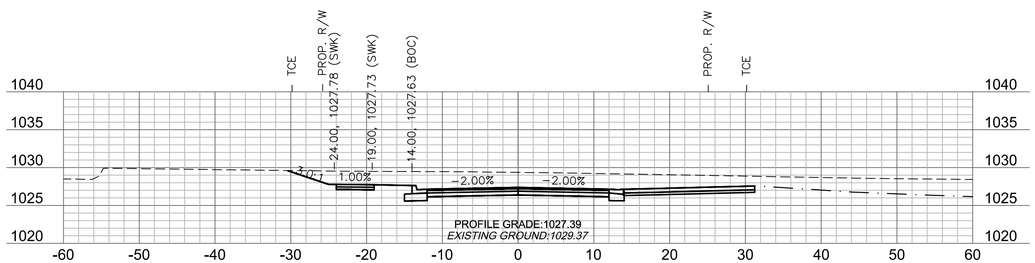

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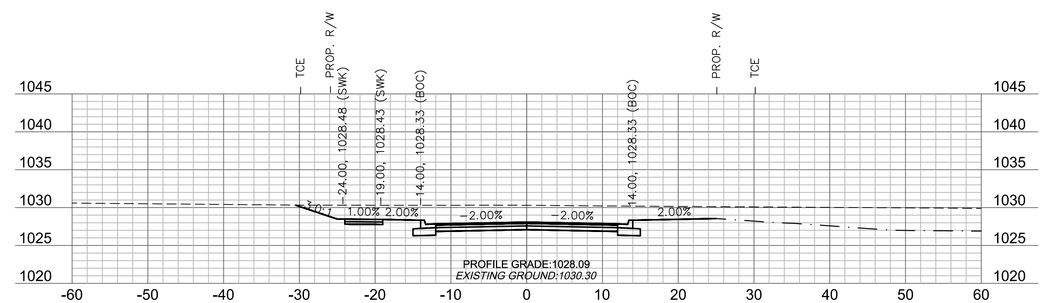

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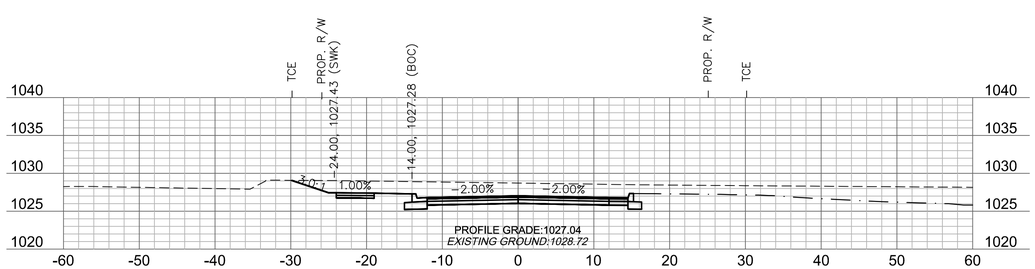

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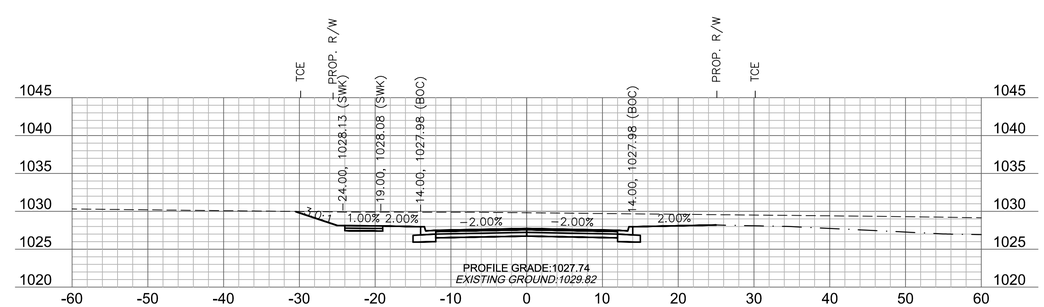

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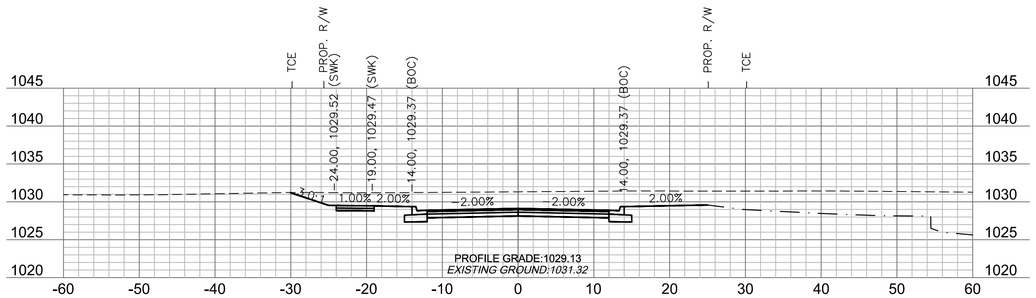
PRINCETON DRIVE
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_PCORR_81450
DATE: 06.11.2019



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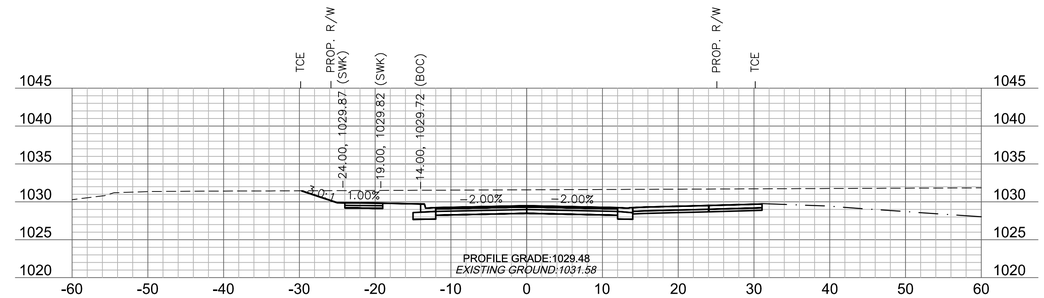

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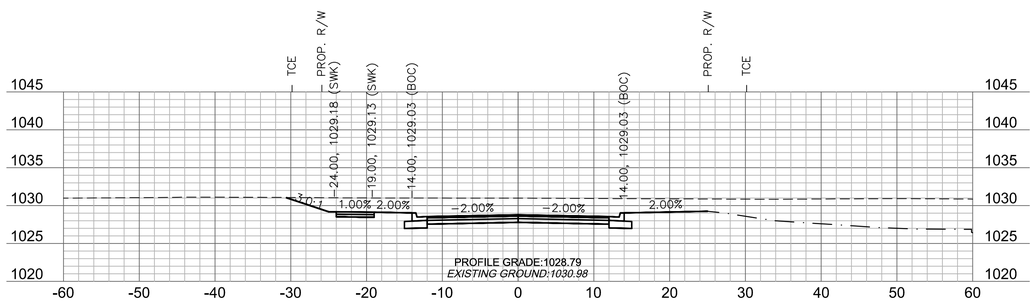

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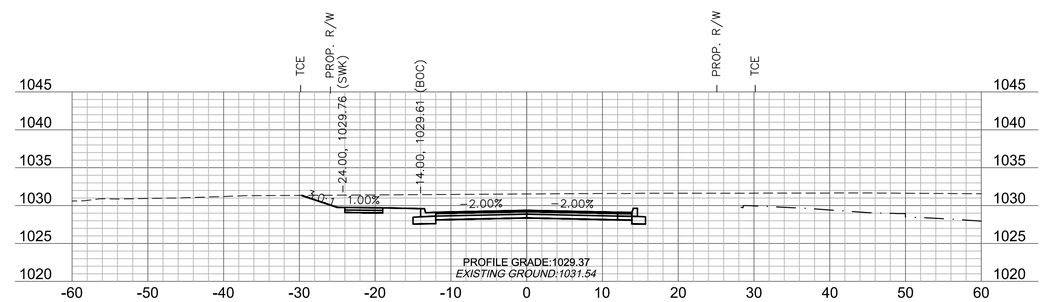

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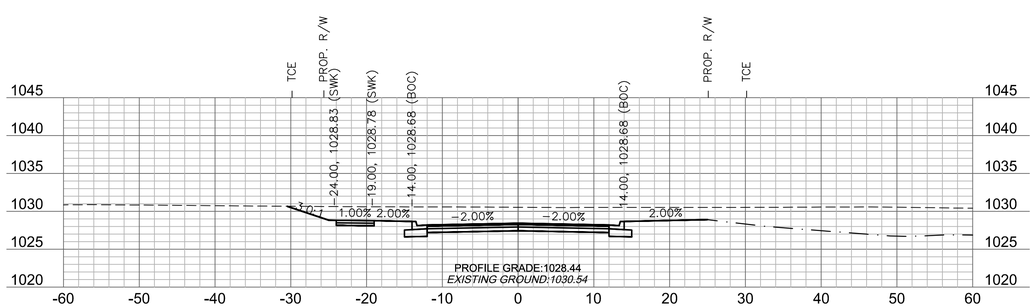

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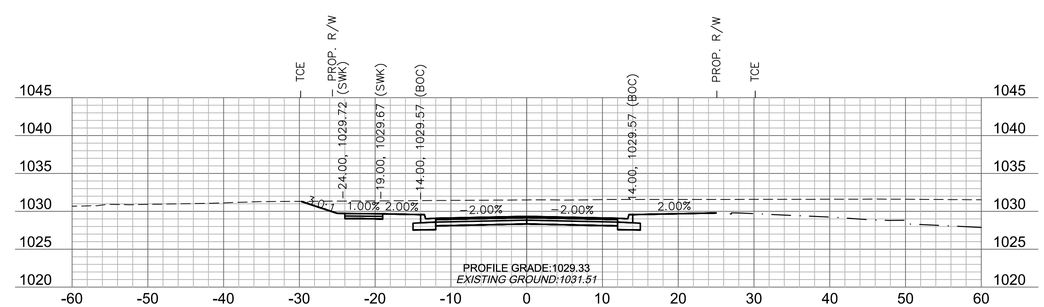

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PRINCETON DRIVE
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2019

C.O.A. NO.:	001592
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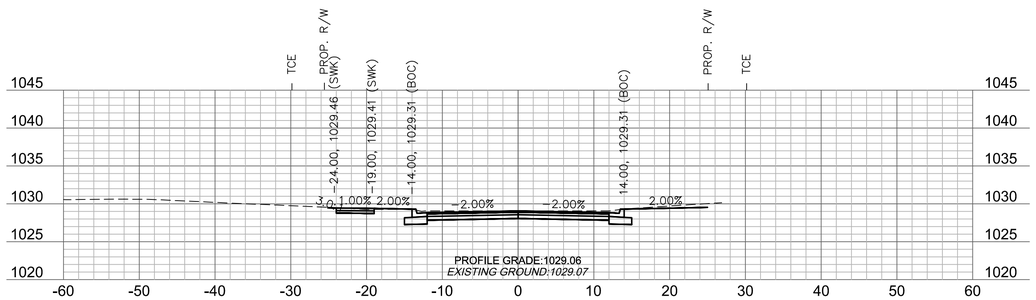
APPROVED BY:	RBF
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_PCORR_81450
DATE:	06.11.2019



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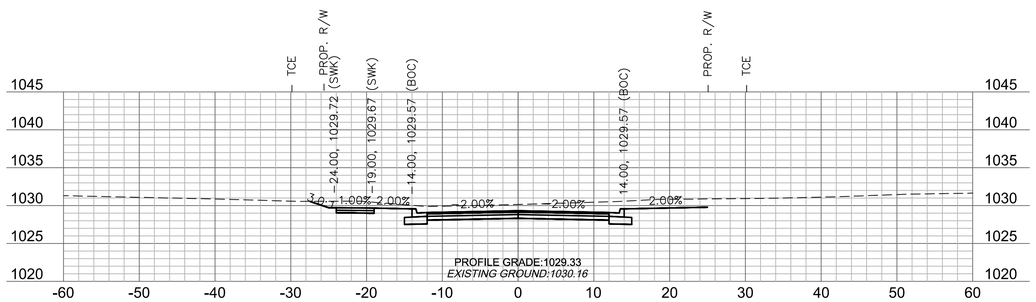

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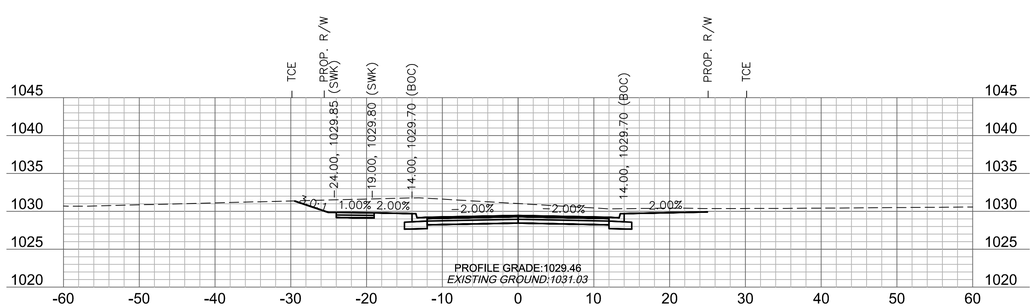

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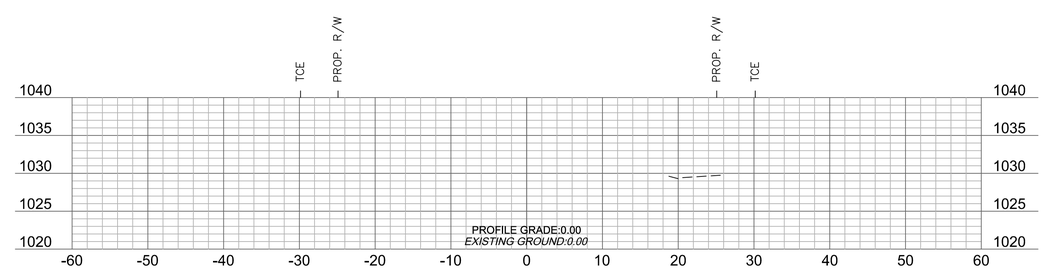

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PRINCETON DRIVE
CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

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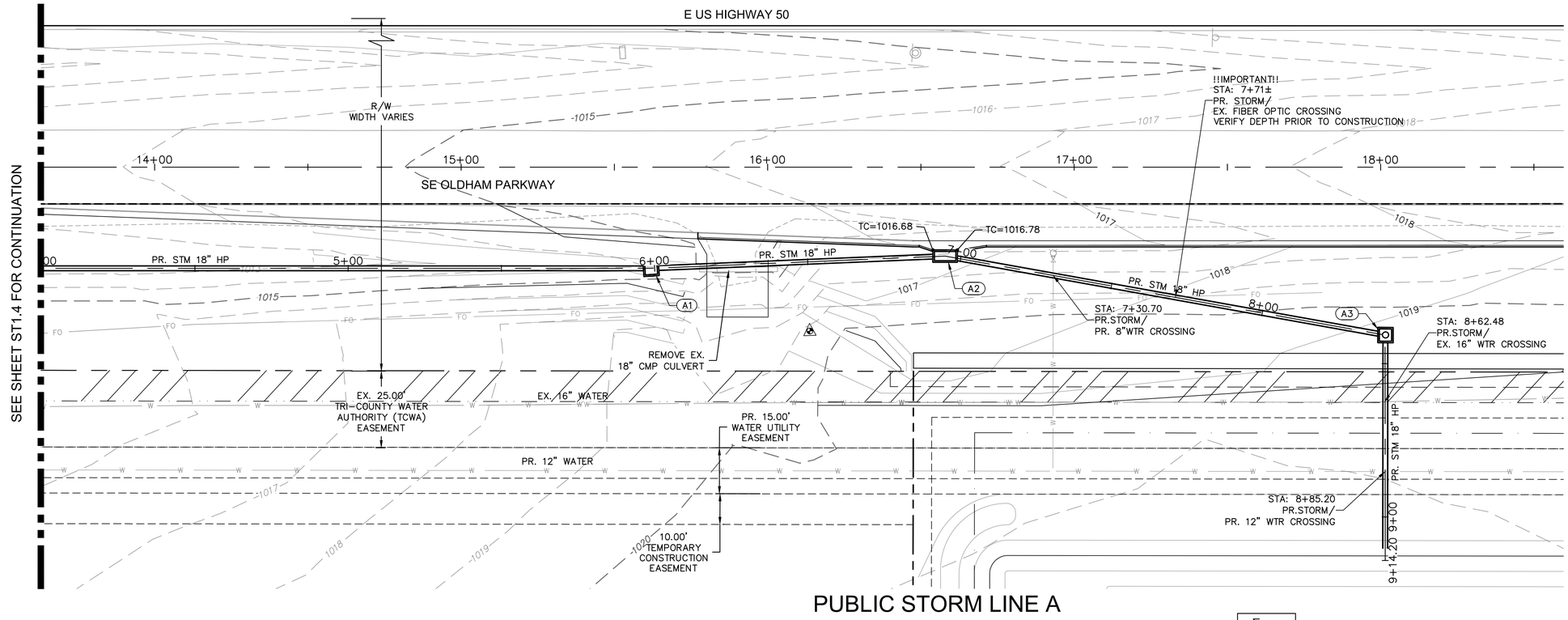
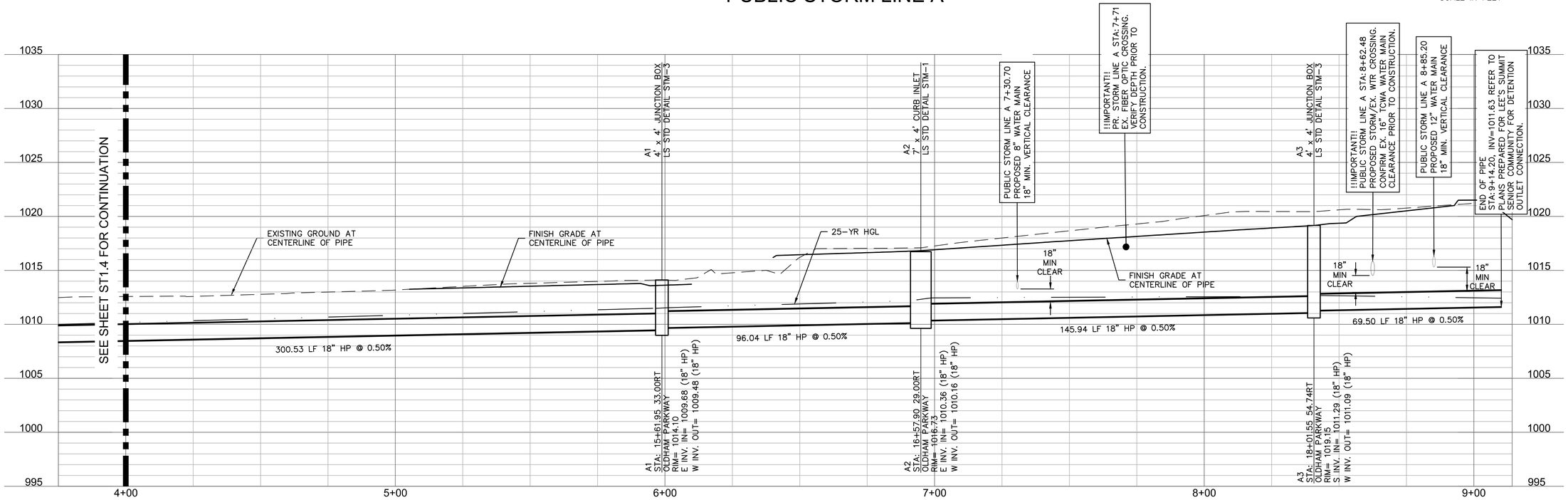
QA/QC BY:	JKL/RBF
PROJECT NO.:	018-1450
DWG NO.:	T_PCORR_81450
DATE:	06.11.2019



PUBLIC STORM LINE A



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MO# PE-2012024241

REV. NO.	DATE	REVISIONS DESCRIPTION

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SE OLDHAM PARKWAY
PUBLIC STORM LINE A PLAN & PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_PROF_81450
date: 06.12.19

SHEET
ST1.0

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC STORM\C-STM_PROF_81450.DWG USER: rjungbauer
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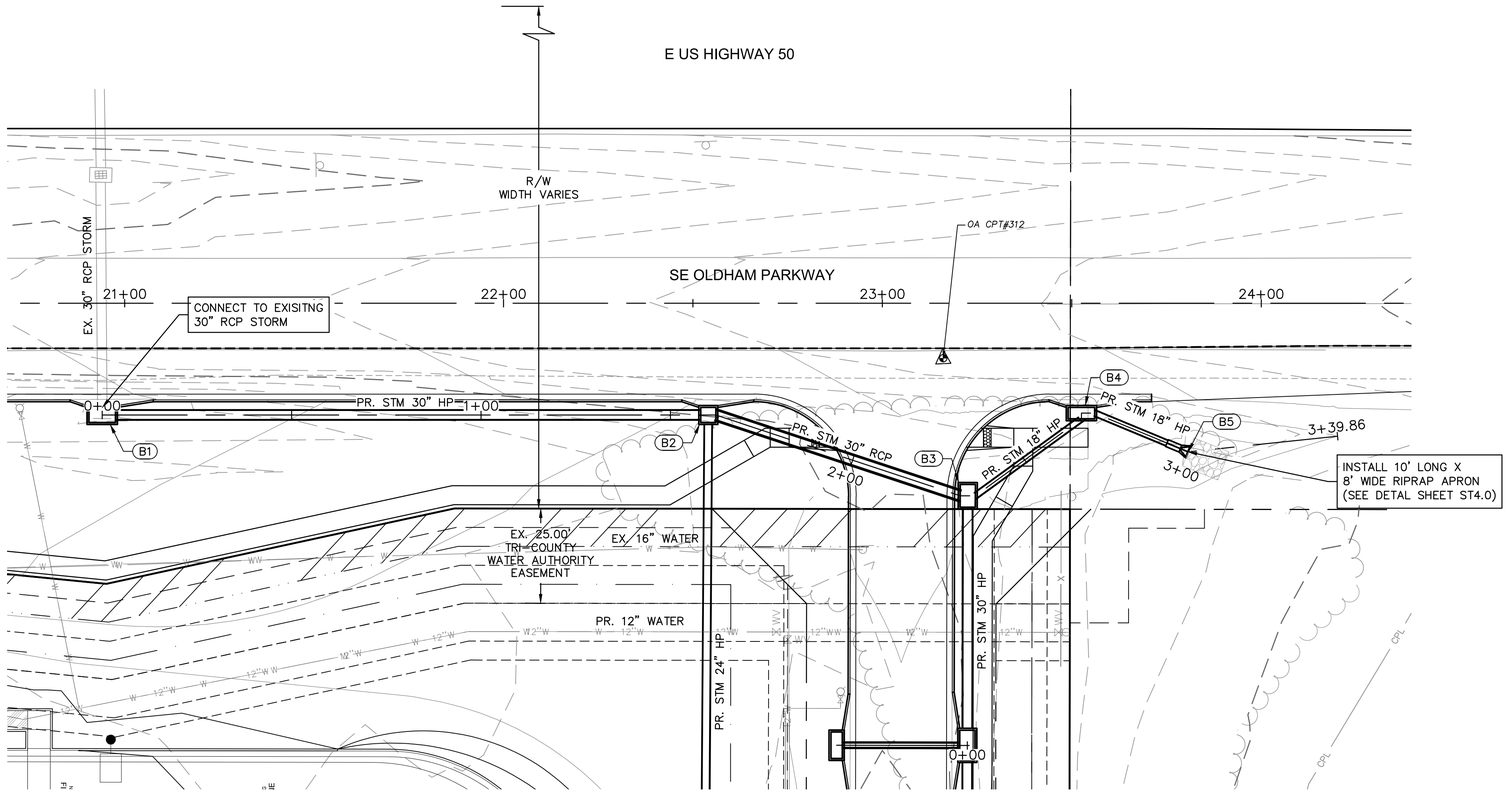

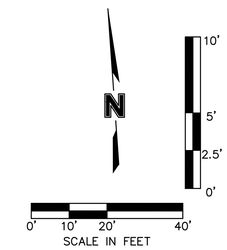

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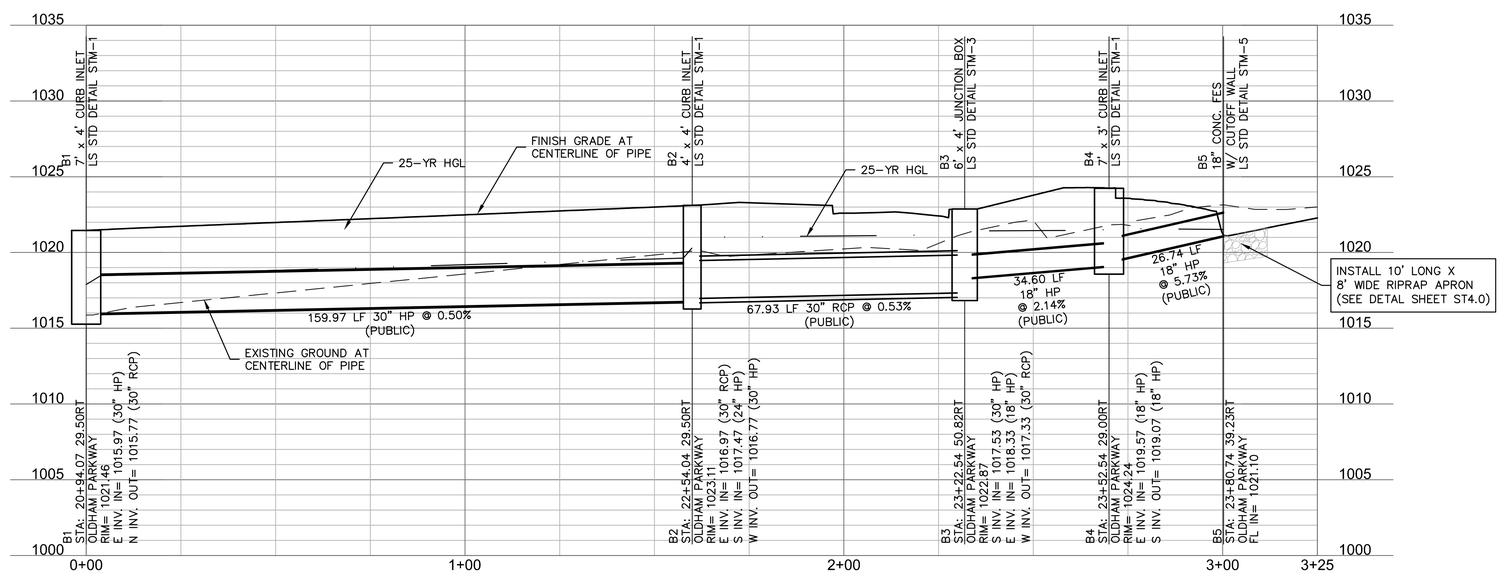

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PUBLIC STORM LINE B PLAN & PROFILE

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SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_PROF_81450
date: 06.12.19

SHEET
ST1.1

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC STORM\C-STM_PROF_81450.DWG USER: rjungbauer
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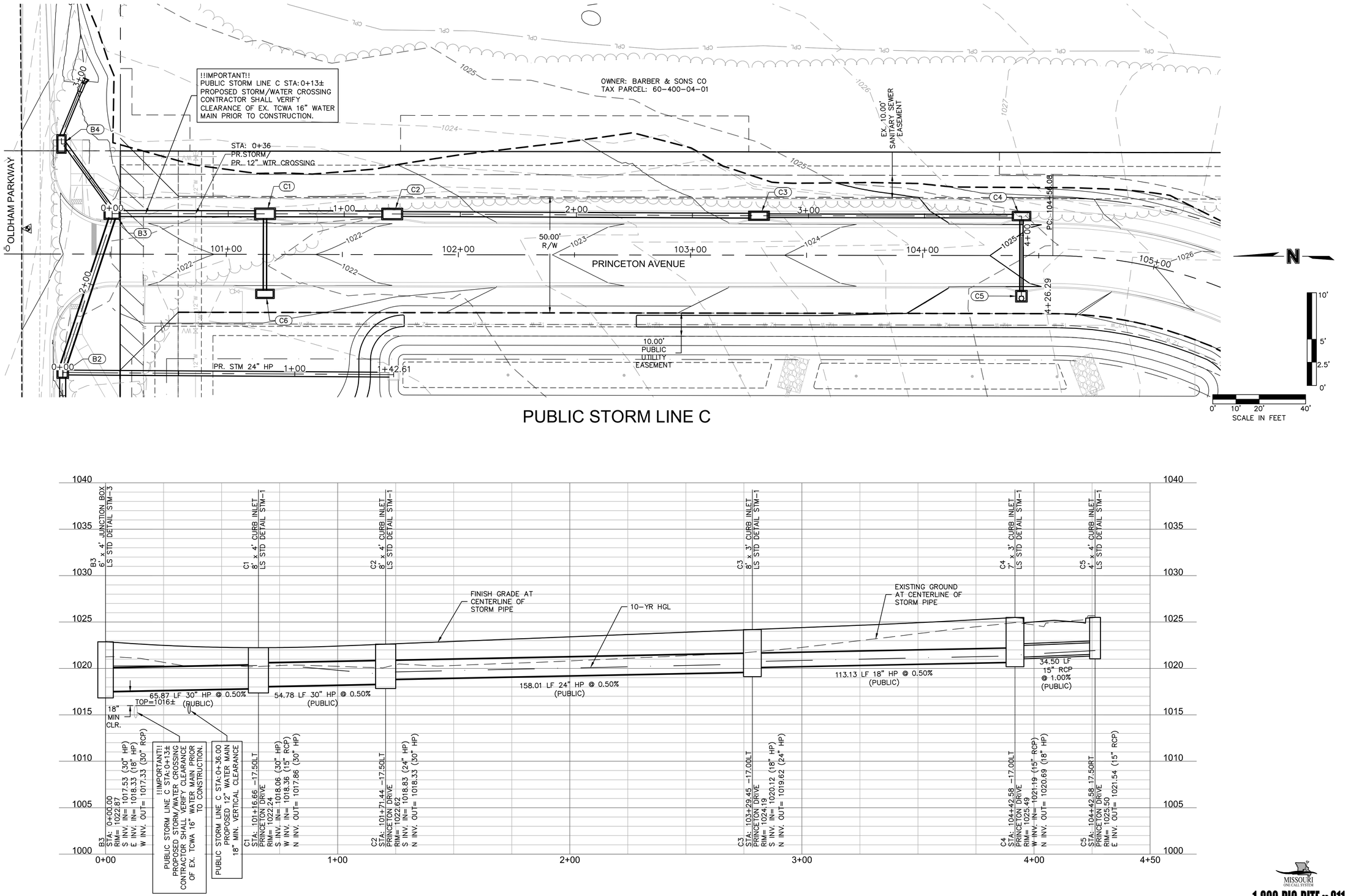

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SE PRINCETON DRIVE
PUBLIC STORM LINE C PLAN & PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_PROF_81450
date: 06.12.19

SHEET
ST1.2

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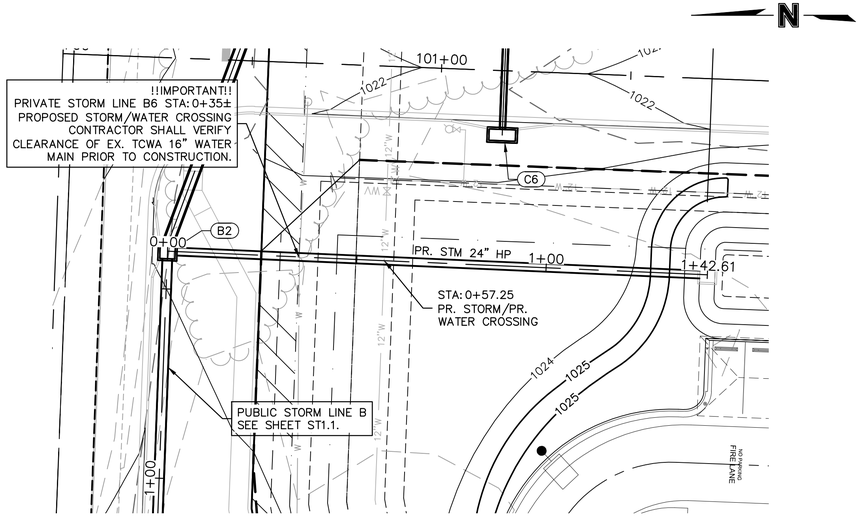
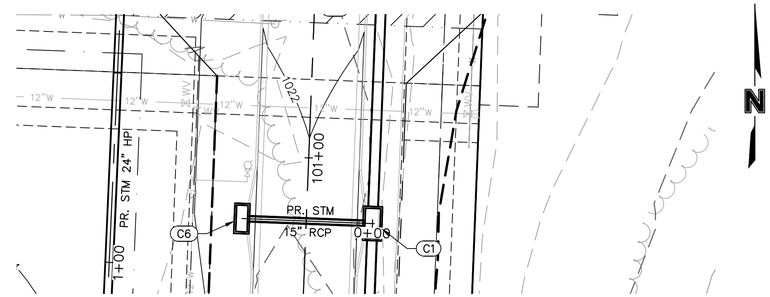
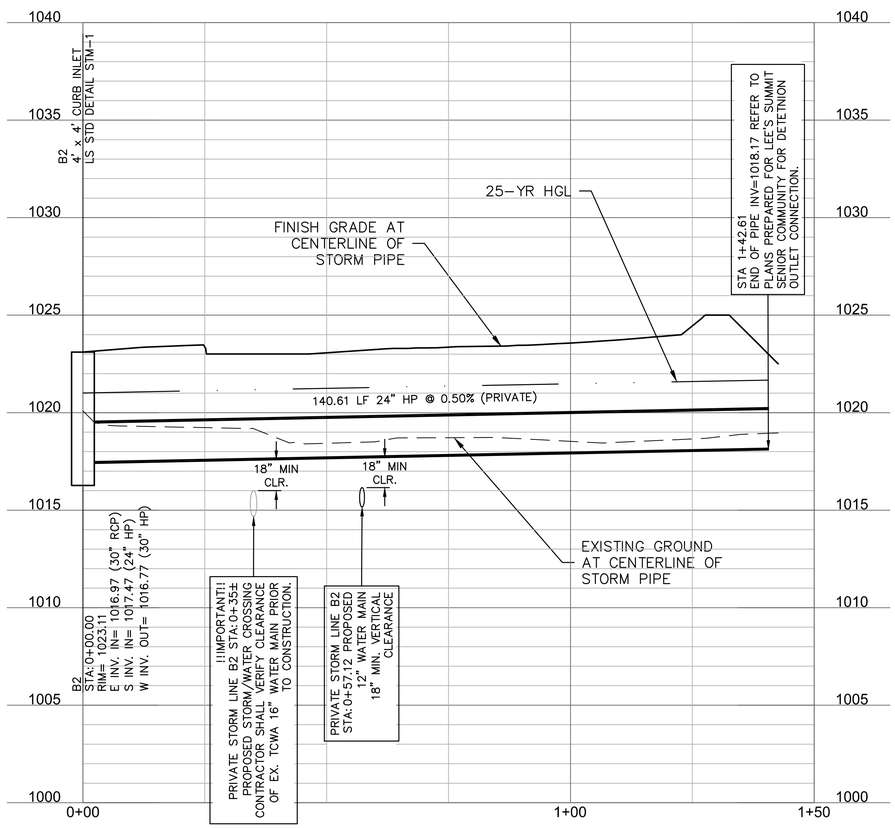
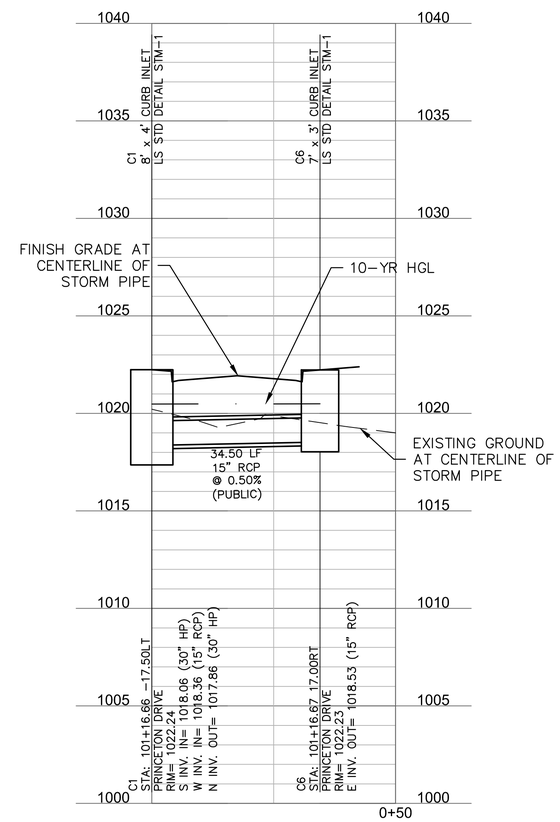


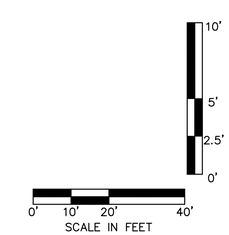
PRIVATE STORM LINE B2



PUBLIC STORM LINE C6







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STORM LINES B2 AND C6

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	RVJ
checked by:	JLR
project no.:	018-1450
drawing no.:	C_STM_PROF_81450
date:	06.12.19

SHEET
ST1.3

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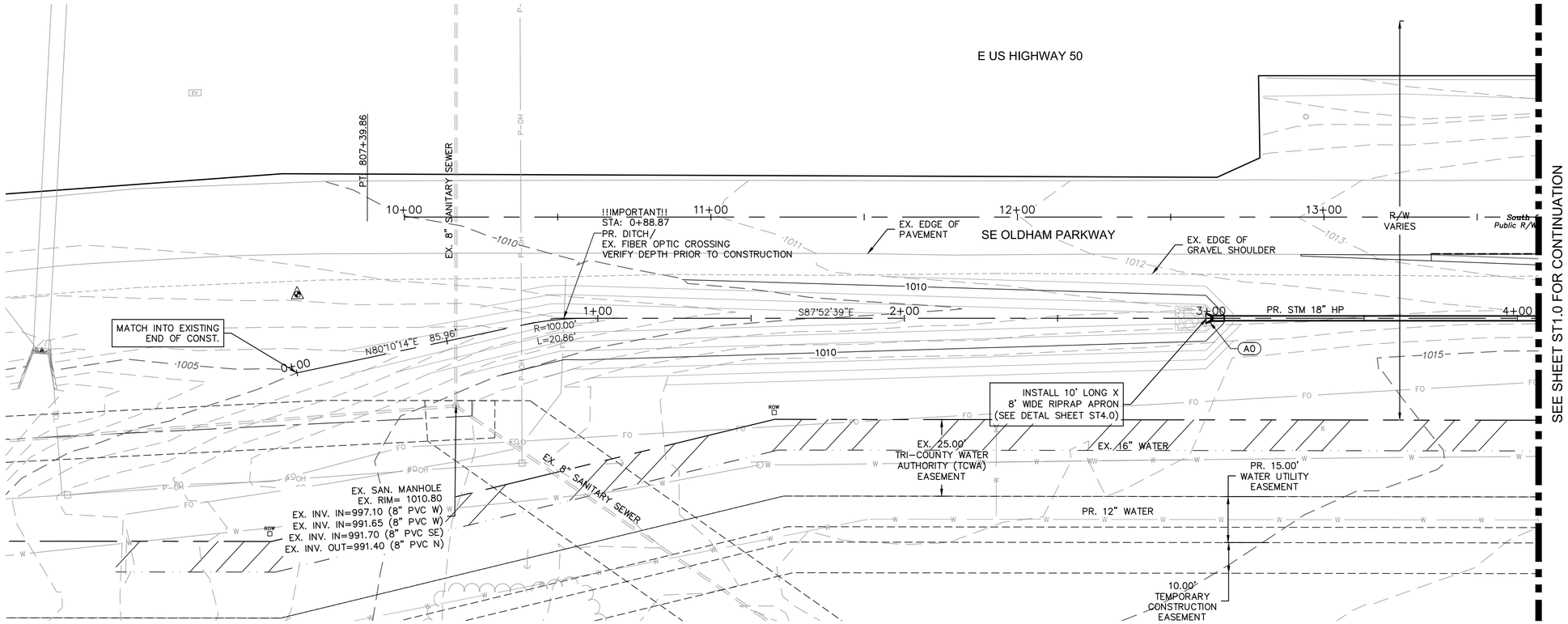
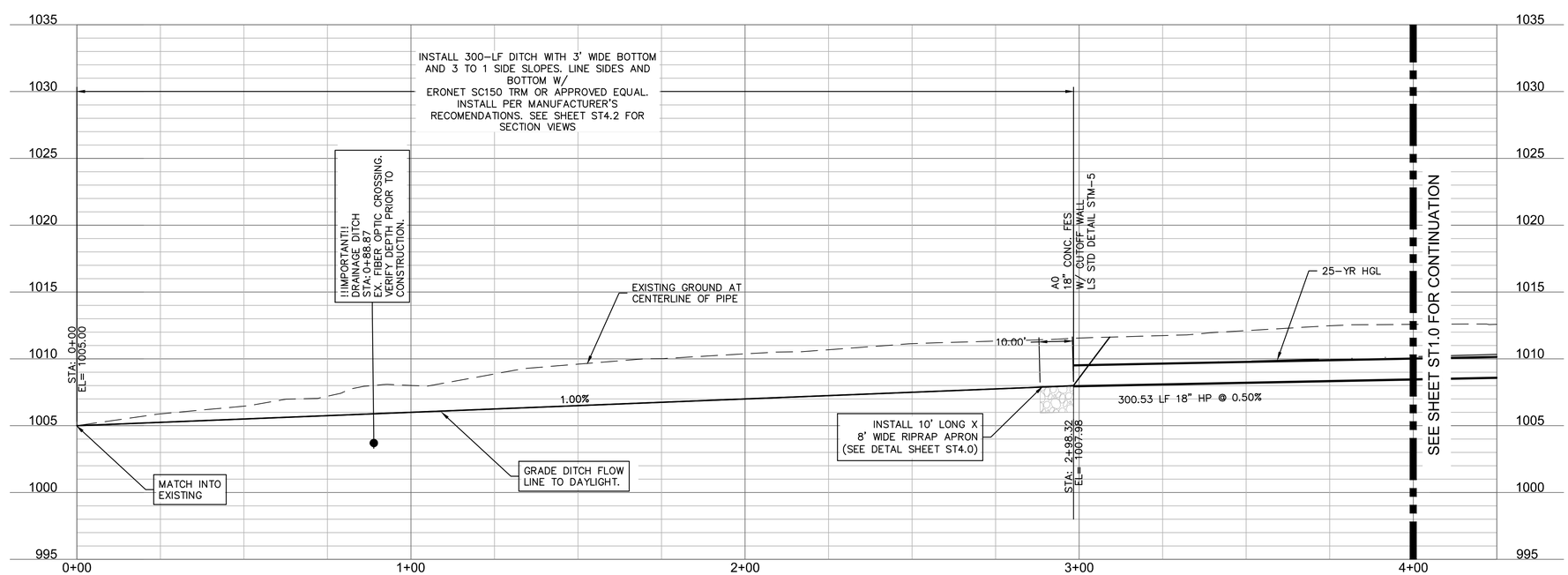
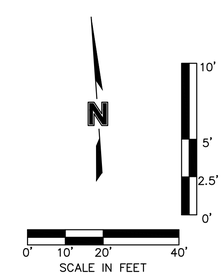


DRIANAGE DITCH AND PUBLIC STORM LINE A





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MO# PE-2012024241

REV. NO.	DATE	REVISIONS DESCRIPTION

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SE OLDHAM PARKWAY
DRAINAGE DITCH PLAN & PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	RVJ
checked by:	JLR
project no.:	018-1450
drawing no.:	C_STM_PROF_81450
date:	06.12.19

SHEET
ST1.4

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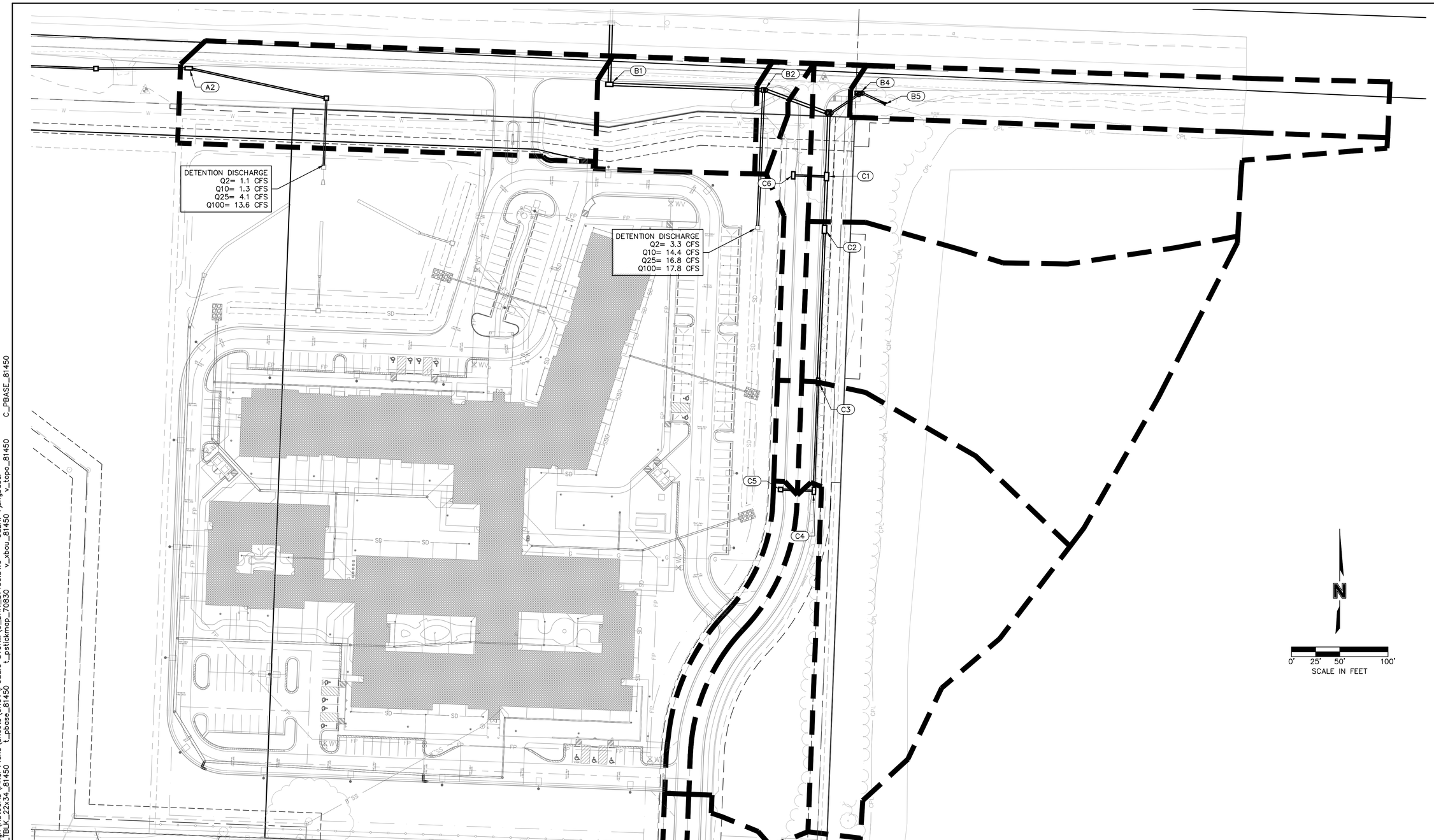

RATIONAL METHOD CALCULATIONS

INLET	DRAINAGE AREA (AC)	Pavement Area (AC) C=0.90	Open Space Area (AC) C=0.30	RUNOFF COEFFICIENT "C2" & "C10"	RUNOFF COEFFICIENT "C25" (1.1)	RUNOFF COEFFICIENT "C50" (1.20)	RUNOFF COEFFICIENT "C100" (1.25)	Time of Concentration "Tc" (min)	2-YEAR INTENSITY	10-YEAR INTENSITY	25-YEAR INTENSITY	50-YEAR INTENSITY	100-YEAR INTENSITY	Q2year (CFS)	Q10year (CFS)	Q25year (CFS)	Q50year (CFS)	Q100year (CFS)
A2 CURB INLET	1.06	0.38	0.68	0.52	0.57	0.62	0.65	5.00	5.41	7.35	8.53	9.40	10.32	2.96	4.03	5.14	6.18	7.07
B1 CURB INLET	0.44	0.12	0.32	0.46	0.50	0.55	0.57	5.00	5.41	7.35	8.53	9.40	10.32	1.09	1.48	1.89	2.27	2.60
B2 CURB INLET	0.08	0.03	0.05	0.54	0.59	0.65	0.68	5.00	5.41	7.35	8.53	9.40	10.32	0.23	0.32	0.41	0.49	0.56
B4 CURB INLET	0.52	0.29	0.23	0.64	0.70	0.77	0.80	5.00	5.41	7.35	8.53	9.40	10.32	1.80	2.44	3.11	3.74	4.28
B5 FES	0.19	0.10	0.09	0.63	0.69	0.75	0.78	5.00	5.41	7.35	8.53	9.40	10.32	0.64	0.87	1.11	1.34	1.53
C1 CURB INLET	1.42	0.09	1.33	0.34	0.37	0.41	0.42	15.00	3.72	5.18	6.01	6.70	7.36	1.79	2.49	3.18	3.87	4.43
C2 CURB INLET	1.93	0.07	1.86	0.32	0.36	0.39	0.40	15.00	3.72	5.18	6.01	6.70	7.36	2.32	3.23	4.12	5.01	5.73
C3 CURB INLET	1.67	0.05	1.62	0.32	0.35	0.38	0.40	15.00	3.72	5.18	6.01	6.70	7.36	1.97	2.74	3.50	4.26	4.87
C4 CURB INLET	0.66	0.15	0.51	0.44	0.48	0.53	0.55	5.00	5.41	7.35	8.53	9.40	10.32	1.57	2.13	2.72	3.27	3.74
C5 CURB INLET	0.20	0.13	0.07	0.68	0.75	0.82	0.85	5.00	5.41	7.35	8.53	9.40	10.32	0.74	1.00	1.28	1.53	1.76
C6 CURB INLET	0.26	0.14	0.12	0.62	0.68	0.75	0.78	5.00	5.41	7.35	8.53	9.40	10.32	0.88	1.19	1.52	1.82	2.09

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MO# PE-2012024241
6-14-19

REV. NO.	DATE	REVISIONS DESCRIPTION

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SE OLDHAM PARKWAY & PRINCETON DRIVE
DRAINAGE AREA MAP

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_DRN_81450
date: 06.14.19

SHEET
ST3.0

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC STORM\C_DRN_81450.DWG USER: rjungbauer
DATE: Jun 12, 2019 4:02pm XREFS: C_TBLK_22x34_81450 t_pbase_81450 t_pstickmap_70830 v_xbou_81450 v_topo_81450 C_PBASE_81450

25-YEAR PUBLIC STORM SEWER HYDRAULIC CALCULATIONS

MyReport

Page 1

Line No.	Line ID	Line Length (ft)	Line Size (in)	n-val Pipe	Invert Dn (ft)	Invert Up (ft)	Line Slope (%)	Gnd/Rim El Dn (ft)	Gnd/Rim El Up (ft)	HGL Dn (ft)	HGL Up (ft)	Vel Ave (ft/s)	Defl Ang (Deg)	J-Loss Coeff	Minor Loss (ft)	Energy Loss (ft)	Known Q (cfs)	Flow Rate (cfs)
1	EX 30-IN. RCP	61.411	30	0.013	1014.45	1015.77	2.15	0.00	1021.46	1015.93	1017.89	11.01	91.614	1.50 z	1.86	0.000	1.89	39.64
2	P-B2	159.969	30	0.012	1015.97	1016.77	0.50	1021.46	1023.10	1018.47	1019.63	7.69	-89.493	1.50	1.38	1.155	0.41	37.75
3	P-B3	71.746	30	0.012	1016.97	1017.33	0.50	1023.10	1022.94	1021.01	1021.16	4.18	17.292	0.96	0.26	0.153	0.00	20.54
4	P-C1	65.881	30	0.012	1017.53	1017.86	0.50	1022.94	1022.24	1021.42	1021.51	3.32	72.806	1.50	0.26	0.089	3.18	16.32
5	P-C2	54.775	30	0.012	1018.06	1018.33	0.49	1022.24	1022.61	1021.77	1021.80	2.37	0.524	0.50	0.04	0.037	4.12	11.62
6	C3	158.006	24	0.012	1018.83	1019.62	0.50	1022.61	1024.19	1021.85	1022.00	2.39	-0.523	0.50	0.04	0.148	3.50	7.50
7	P-C4	113.126	18	0.012	1020.12	1020.69	0.50	1024.19	1025.49	1022.04	1022.17	2.27	0.000	1.50	0.12	0.134	2.72	4.00
8	P-C5	34.500	15	0.013	1021.19	1021.54	1.01	1025.49	1025.50	1022.29	1021.99	2.19	90.000	1.00 z	0.16	0.000	1.28	1.28
9	P-B4	37.097	18	0.012	1018.33	1019.07	1.99	1022.94	1024.22	1021.42	1021.47	2.39	-53.320	1.09	0.10	0.051	3.11	4.22
10	P-B5	28.622	18	0.012	1019.57	1021.05	5.17	1024.22	1022.70	1021.57	1021.52	1.49	43.121	1.00	0.09	0.032	1.11	1.11
11	C6	34.500	15	0.012	1018.36	1018.53	0.49	1022.24	1022.23	1021.77	1021.78	1.24	90.004	1.00	0.02	0.016	1.52	1.52
12	BIORETENTION	140.610	24	0.012	1017.47	1018.17	0.50	1023.10	1022.00	1021.01	1021.67	5.35	90.609	1.00	0.44	0.661	16.80	16.80
13	P-A1	300.530	18	0.012	1007.98	1009.48	0.50	1010.98	1014.10	1009.48	1011.48	5.25	2.122	0.15	0.06	1.996	0.00	9.27
14	P-A2	96.040	18	0.012	1009.68	1010.16	0.50	1014.10	1016.73	1011.54	1012.18	5.25	0.000	0.63	0.27	0.638	5.14	9.27
15	P-A3	145.940	18	0.012	1010.36	1011.09	0.50	1016.73	1016.73	1012.45	1012.59	2.34	21.462	0.94	0.08	0.190	0.00	4.13
16	DRY DETENTION	69.000	18	0.012	1011.29	1011.64	0.51	1016.73	1019.15	1012.67	1012.42	3.45	67.320	1.00 z	0.31	0.000	4.13	4.13

Project File: PUBLIC STORM 25-YR.stm | Number of lines: 16 | Date: 6/12/2019

NOTES: ** Critical depth

Storm Sewers

10-YEAR PUBLIC STORM SEWER HYDRAULIC CALCULATIONS

MyReport

Page 1

Line No.	Line ID	Line Length (ft)	Line Size (in)	n-val Pipe	Invert Dn (ft)	Invert Up (ft)	Line Slope (%)	Gnd/Rim El Dn (ft)	Gnd/Rim El Up (ft)	HGL Dn (ft)	HGL Up (ft)	Vel Ave (ft/s)	Defl Ang (Deg)	J-Loss Coeff	Minor Loss (ft)	Energy Loss (ft)	Known Q (cfs)	Flow Rate (cfs)
1	EX 30-IN. RCP	61.411	30	0.013	1014.45	1015.77	2.15	0.00	1021.46	1015.76	1017.70	10.20	91.614	1.50 z	1.47	0.000	1.48	32.29
2	P-B2	159.969	30	0.012	1015.97	1016.77	0.50	1021.46	1023.10	1017.98	1018.77	7.30	-89.493	1.50	1.24	0.801	0.32	30.81
3	P-B3	71.746	30	0.012	1016.97	1017.33	0.50	1023.10	1022.94	1020.02	1020.11	3.28	17.292	0.96	0.16	0.094	0.00	16.09
4	P-C1	65.881	30	0.012	1017.53	1017.86	0.50	1022.94	1022.24	1020.27	1020.32	2.61	72.806	1.50	0.16	0.052	2.49	12.78
5	P-C2	54.775	30	0.012	1018.06	1018.33	0.49	1022.24	1022.61	1020.48	1019.34	3.40	0.524	0.50 z	n/a	0.000	3.23	9.10
6	C3	158.006	24	0.012	1018.83	1019.62	0.50	1022.61	1024.19	1019.63	1020.48	4.78	-0.523	0.50 z	0.16	0.000	2.74	5.87
7	P-C4	113.126	18	0.012	1020.12	1020.69	0.50	1024.19	1025.49	1020.77	1021.36	4.18	0.000	1.50 z	0.39	0.000	2.13	3.13
8	P-C5	34.500	15	0.013	1021.19	1021.54	1.01	1025.49	1025.50	1021.52	1021.93	3.43	90.000	1.00 z	n/a	0.000	1.00	1.00
9	P-B4	37.097	18	0.012	1018.33	1019.07	1.99	1022.94	1024.22	1020.27	1020.29	2.01	-53.320	1.09	0.08	0.032	2.44	3.31
10	P-B5	28.622	18	0.012	1019.57	1021.05	5.17	1024.22	1022.70	1020.37	1021.40 j	1.86	43.121	1.00 z	n/a	0.000	0.87	0.87
11	C6	34.500	15	0.012	1018.36	1018.53	0.49	1022.24	1022.23	1020.48	1020.49	0.97	90.004	1.00	0.01	0.010	1.19	1.19
12	BIORETENTION	140.610	24	0.012	1017.47	1018.17	0.50	1023.10	1022.00	1020.02	1020.50	4.58	90.609	1.00	0.33	0.486	14.40	14.40
13	P-A1	300.530	18	0.012	1007.98	1009.48	0.50	1010.98	1014.10	1008.87	1010.37	4.86	2.122	0.15	0.06	1.500	0.00	5.33
14	P-A2	96.040	18	0.012	1009.68	1010.16	0.50	1014.10	1016.73	1010.57	1011.05	4.86	0.000	0.63	0.23	0.479	4.03	5.33
15	P-A3	145.940	18	0.012	1010.36	1011.09	0.50	1016.73	1016.73	1011.28	1011.52 j	2.14	21.462	0.94 z	n/a	0.000	0.00	1.30
16	DRY DETENTION	69.000	18	0.012	1011.29	1011.64	0.51	1016.73	1019.15	1011.70	1012.07	3.25	67.320	1.00 z	0.15	0.000	1.30	1.30

Project File: PUBLIC STORM 10-YR.stm | Number of lines: 16 | Date: 6/12/2019

NOTES: ** Critical depth

Storm Sewers

25-YEAR PUBLIC STORM SEWER INLET CALCULATIONS

Inlet Report

Page 1

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet Ht (in)	Curb Inlet L (ft)	Grate Inlet Area (sqft)	Grate Inlet L (ft)	Grate Inlet W (ft)	Gutter So (ft/ft)	Gutter W (ft)	Gutter Sw (ft/ft)	Gutter Sx (ft/ft)	Gutter n	Gutter Depth (ft)	Gutter Spread (ft)	Inlet Depth (ft)	Inlet Spread (ft)	Inlet Depr (in)	Byp Line No
1	B1	1.89*	0.00	1.89	0.00	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.19	8.30	0.79	0.00	9.5	14
2	B2	0.41*	0.00	0.41	0.00	Curb	0.5	4.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.11	4.48	0.79	0.00	9.5	1
3	B3	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	C1	3.18*	0.22	3.40	0.00	Curb	0.5	6.40	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.000	0.33	15.23	1.12	15.23	9.5	Off
5	C2	4.12*	0.03	4.00	0.15	Curb	0.5	8.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.25	11.25	0.87	2.88	9.5	4
6	C3	3.50*	0.04	3.51	0.03	Curb	0.5	8.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.24	10.58	0.84	1.22	9.5	5
7	C4	2.72*	0.00	2.68	0.04	Curb	0.5	7.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.21	9.09	0.84	1.25	9.5	6
8	C5	1.28*	0.00	1.22	0.06	Curb	0.5	4.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.16	6.77	0.85	1.54	9.5	11
9	B4	3.11*	0.00	3.04	0.07	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.23	10.07	0.85	1.90	9.5	4
10	B5	1.11*	0.00	1.11	0.00	Hdwl	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
11	C6	1.52*	0.06	1.58	0.00	Curb	0.5	5.60	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.000	0.22	9.72	1.01	9.72	9.5	Off
12	BIORETENTION	16.80*	0.00	0.00	16.80	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
13	A1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
14	A2	5.14*	0.00	4.34	0.80	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.27	12.21	0.94	5.91	9.5	Off
15	A3	0.00	4.13	0.00	4.13	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
16	DRY DETENTION	4.13*	0.00	0.00	4.13	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	15

Project File: PUBLIC STORM 25-YR.stm | Number of lines: 16 | Run Date: 6/12/2019

NOTES: Inlet N-Values = 0.016; Known Qs only; * Indicates Known Q added. All curb inlets are throat.

Storm Sewers v12.00

10-YEAR PUBLIC STORM SEWER INLET CALCULATIONS

Inlet Report

Page 1

Line No	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet Ht (in)	Curb Inlet L (ft)	Grate Inlet Area (sqft)	Grate Inlet L (ft)	Grate Inlet W (ft)	Gutter So (ft/ft)	Gutter W (ft)	Gutter Sw (ft/ft)	Gutter Sx (ft/ft)	Gutter n	Gutter Depth (ft)	Gutter Spread (ft)	Inlet Depth (ft)	Inlet Spread (ft)	Inlet Depr (in)	Byp Line No
1	B1	1.46*	0.00	1.48	0.00	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.18	7.55	0.79	0.00	9.5	14
2	B2	0.32*	0.00	0.32	0.00	Curb	0.5	4.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.11	4.03	0.79	0.00	9.5	1
3	B3	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
4	C1	2.49*	0.00	2.49	0.00	Curb	0.5	6.40	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.000	0.27	12.37	1.06	12.37	9.5	Off
5	C2	3.23*	0.00	3.23	0.00	Curb	0.5	8.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.23	10.22	0.81	0.49	9.5	4
6	C3	2.74*	0.00	2.74	0.00	Curb	0.5	8.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.22	9.59	0.79	0.00	9.5	5
7	C4	2.13*	0.00	2.13	0.00	Curb	0.5	7.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.19	8.27	0.79	0.00	9.5	6
8	C5	1.00*	0.00	1.00	0.00	Curb	0.5	4.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.15	6.13	0.81	0.52	9.5	11
9	B4	2.44*	0.00	2.44	0.00	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.21	9.17	0.79	0.00	9.5	4
10	B5	0.87*	0.00	0.87	0.00	Hdwl	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
11	C6	1.19*	0.00	1.19	0.00	Curb	0.5	5.60	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.000	0.19	8.07	0.98	8.07	9.5	Off
12	BIORETENTION	14.40*	0.00	0.00	14.40	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
13	A1	0.00	0.00	0.00	0.00	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.000	0.00	0.00	0.00	0.00	0.0	Off
14	A2	4.03*	0.00	3.69	0.34	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.25	11.12	0.90	4.12	9.5	Off
15	A3	0.00	1.30	0.00	1.30	MH	0.0	0.00	0.00	0.00	0.00	Sag	0.00	0.000	0.000	0.013	0.00	0.00	0.00	0.00	0.0	Off
16	DRY DETENTION	1.30*	0.00	0.00	1.30	MH	0.0	0.00	0.00	0.00	0.00	Sag	2.00	0.050	0.020	0.013	0.00	0.00	0.00	0.00	0.0	15

Project File: PUBLIC STORM 10-YR.stm | Number of lines: 16 | Run Date: 6/12/2019

NOTES: Inlet N-Values = 0.016; Known Qs only; * Indicates Known Q added. All curb inlets are throat.

Storm Sewers v12.00

olsson

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Olsson Landscape Architecture MO State Cert. of Authority #2005000285
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STATE OF MISSOURI
RYAN V. JEPPSON
NUMBER
PE-2012024241
PROFESSIONAL ENGINEER
6-14-19
RYAN V. JEPPSON
PROFESSIONAL ENGINEER
MO# PE-2012024241

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SE PRINCETON DRIVE & PRINCETON DRIVE
STORM DRAINAGE CALCULATIONS

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

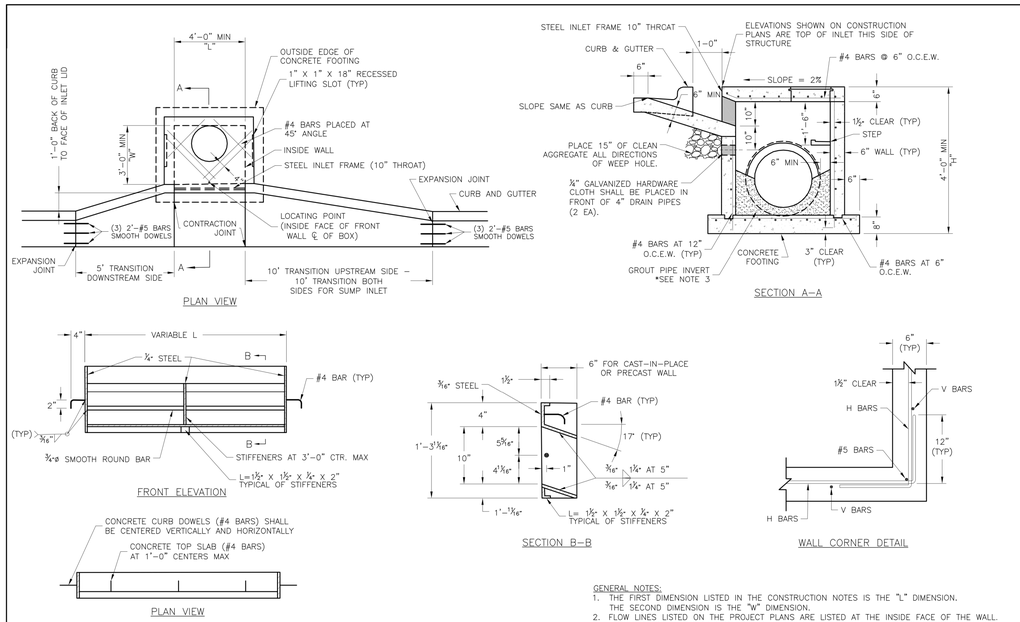
LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_CALCS_81450
date: 06.14.19

SHEET
ST3.0

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC STORM\C-CALCS_81450.DWG USER: rjungbauer
DATE: Jun 12, 2019 4:04pm XREFS: C_TBLK_22x34_81450

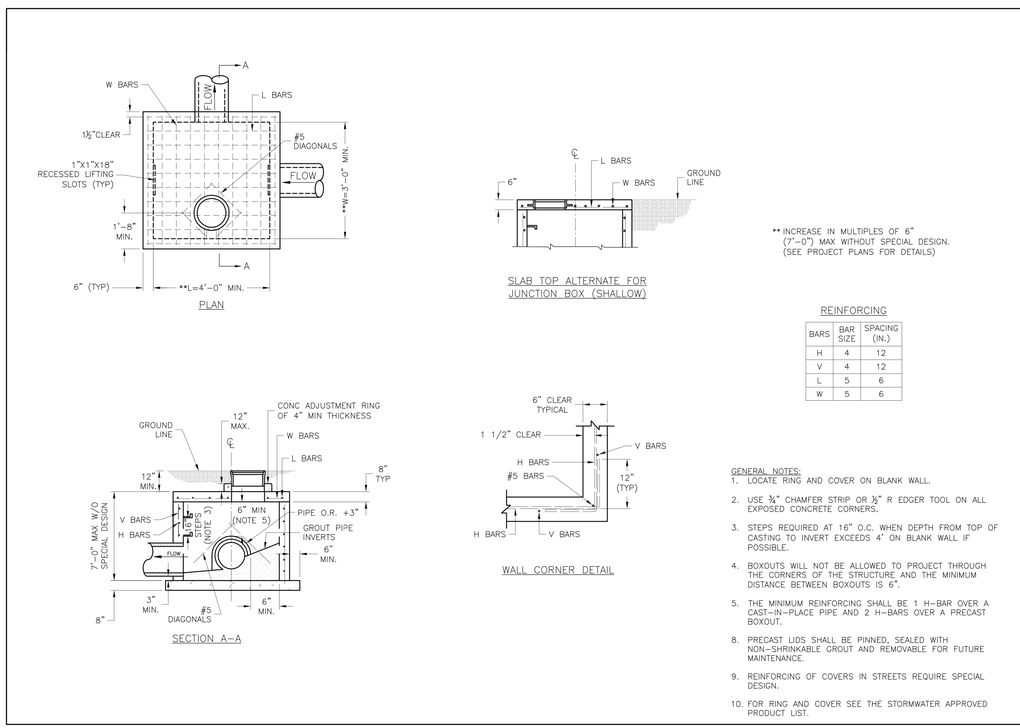


STEEL FRAME NOTES:
1. ALL WELDS SHALL BE PERFORMED IN ACCORDANCE WITH APPROPRIATE AWS SPECIFICATIONS AND PROCEDURES.
2. ALL WELDS ON EXPOSED SURFACES SHALL BE DRESSED SO AS TO PROVIDE A PLEASING FINISHED APPEARANCE.
3. THE ENTIRE FRAME SHALL BE PAINTED A SINGLE COAT OF CHEM–PRIME #37H–78 PRIMER (GRAY) OR EQUAL.

GENERAL NOTES:
1. THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
2. FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
3. FLOOR OF INLET GROUTED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
4. LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
5. STEPS SHALL BE SPACED AT 1'–4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
6. BEVEL ALL EXPOSED EDGES WITH ¾"CHAMFER OR ½" TOOLED EDGE.
7. ON–GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON–SHRINKABLE GROUT
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

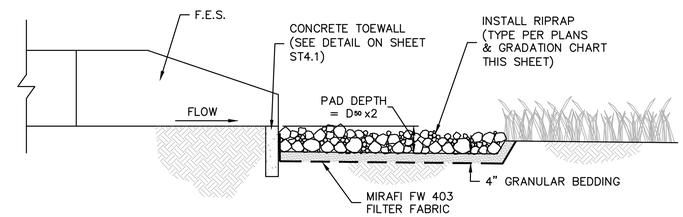
Project: STANDARD DETAILS, CITY OF LEE'S SUMMIT, MO; LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: CURB INLET DETAIL
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #
STM-1



GENERAL NOTES:
1. LOCATE RING AND COVER ON BLANK WALL.
2. USE ¾" CHAMFER STRIP OR ½" R EDGER TOOL ON ALL EXPOSED CONCRETE CORNERS.
3. STEPS REQUIRED AT 16" O.C. WHEN DEPTH FROM TOP OF CASTING TO INVERT EXCEEDS 4' ON BLANK WALL IF POSSIBLE.
4. BOXOUTS WILL NOT BE ALLOWED TO PROJECT THROUGH THE CORNERS OF THE STRUCTURE AND THE MINIMUM DISTANCE BETWEEN BOXOUTS IS 6".
5. THE MINIMUM REINFORCING SHALL BE 1 H–BAR OVER A CAST–IN–PLACE PIPE AND 2 H–BARS OVER A PRECAST BOXOUT.
8. PRECAST LIDS SHALL BE PINNED, SEALED WITH NON–SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
9. REINFORCING OF COVERS IN STREETS REQUIRE SPECIAL DESIGN.
10. FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

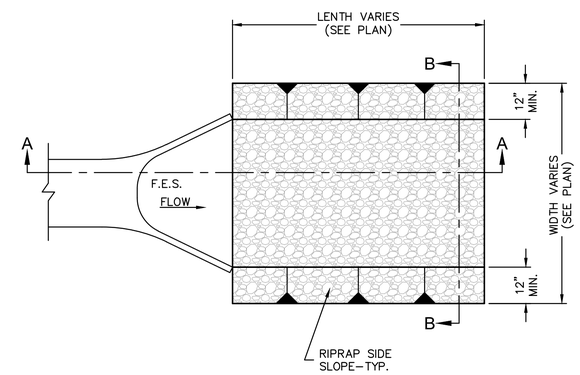
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

Project: STANDARD DETAILS, CITY OF LEE'S SUMMIT, MO; LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: JUNCTION BOX DETAIL
Drawn By: MJF
Checked By: DL
Date: 04/17
Proj. #
STM-3

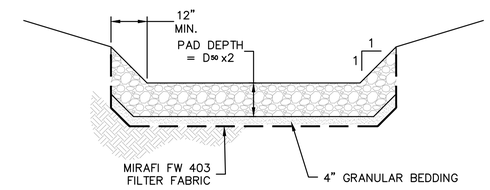


SECTION A - A

SECTION B-B



PLAN VIEW



RIPRAP APRON DETAILS

NOT TO SCALE

NOTES:
1. RIPRAP SHALL BE PLACED IN SUCH A MANNER AS TO AVOID SEGREGATION OF VARIOUS SIZES OF ROCK, AND DISTRIBUTED SO THAT THERE WILL BE NO LARGE ACCUMULATION OF EITHER THE LARGER OR SMALLER SIZES OF STONE.
2. INDIVIDUAL ROCKS SHALL BE PLACED IN TIGHT CONTACT WITH ONE ANOTHER IN SUCH A WAY TO PRODUCE THE LEAST AMOUNT OF VOID SPACES.
3. RIPRAP SHALL BE SOLID, UNFRACTURED ROCK OR CONCRETE, BULKY IN SHAPE WITH SHARP, ANGULAR EDGES.
4. GRANULAR BEDDING SHALL CONSIST OF 1" CLEAN, FRACTURED LIMESTONE.
5. INSTALL FILTER FABRIC ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

CLASSIFICATION & GRADATION OF RIPRAP & RIVER GRAVEL

RIP-RAP DESIGNATION	PERCENT (%) SMALLER THAN GIVEN BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	*D_{50} (INCHES)
TYPE M	70–100	21	12
	50–70	18	
	35–50	12	
	2–10	4	

*D_{50} = MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION).

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STATE OF MISSOURI
RYAN V. JEPPSON
NUMBER PE-2012024241
PROFESSIONAL ENGINEER
6-14-19
RYAN V. JEPPSON
PROFESSIONAL ENGINEER
MO# PE-2012024241

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SE OLDHAM PARKWAY & SE PRINCETON DRIVE
STORM WATER DETAILS

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_DTLS_81450
date: 06.12.19

SHEET
ST4.0

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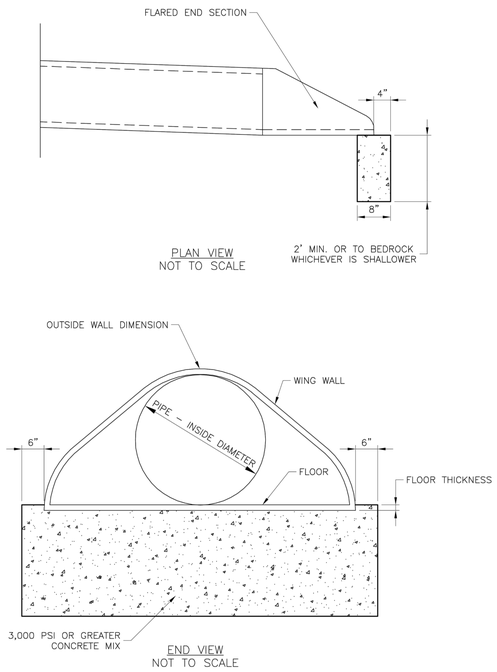
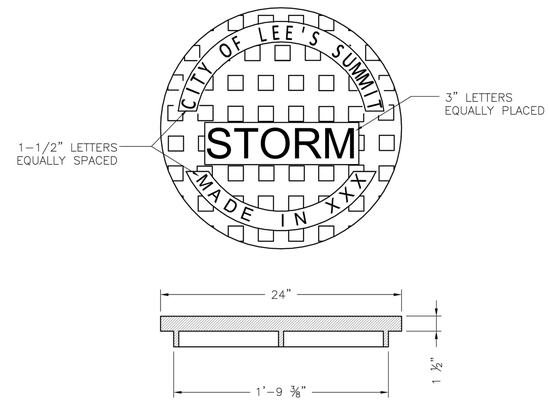


LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

FLARED END SECTION SUPPORT DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-5



STANDARD 24" MANHOLE COVER
MINIMUM WEIGHT = 160 LB
NOTE: PICK HOLES NOT SHOWN

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCT LIST.

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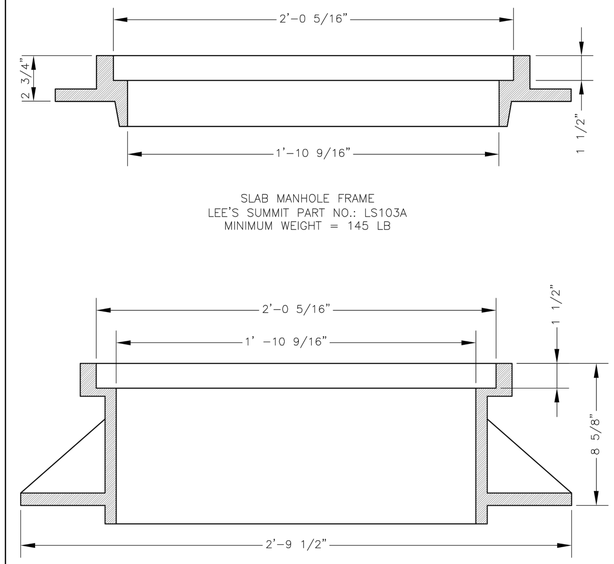
STORM MANHOLE COVER DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-6



SLAB MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS103A
MINIMUM WEIGHT = 145 LB

STANDARD 24" MANHOLE FRAME
LEE'S SUMMIT PART NO.: LS101A
MINIMUM WEIGHT = 250 LB

*COVER AND FRAME MODEL INFORMATION REFER TO THE STORMWATER APPROVED PRODUCTS LIST.

LEE'S SUMMIT
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STORM MANHOLE FRAME DETAIL

Date: 04/17
Drawn By: MJF
Checked By: DL

STM-7

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REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SE OLDHAM PARKWAY & SE PRINCETON DRIVE
STORM WATER DETAILS

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_DTLS_81450
date: 06.12.19

SHEET
ST4.1

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCY\PUBLIC STORM\C_STM_DTLS_81450.DWG USER: rjungbauer
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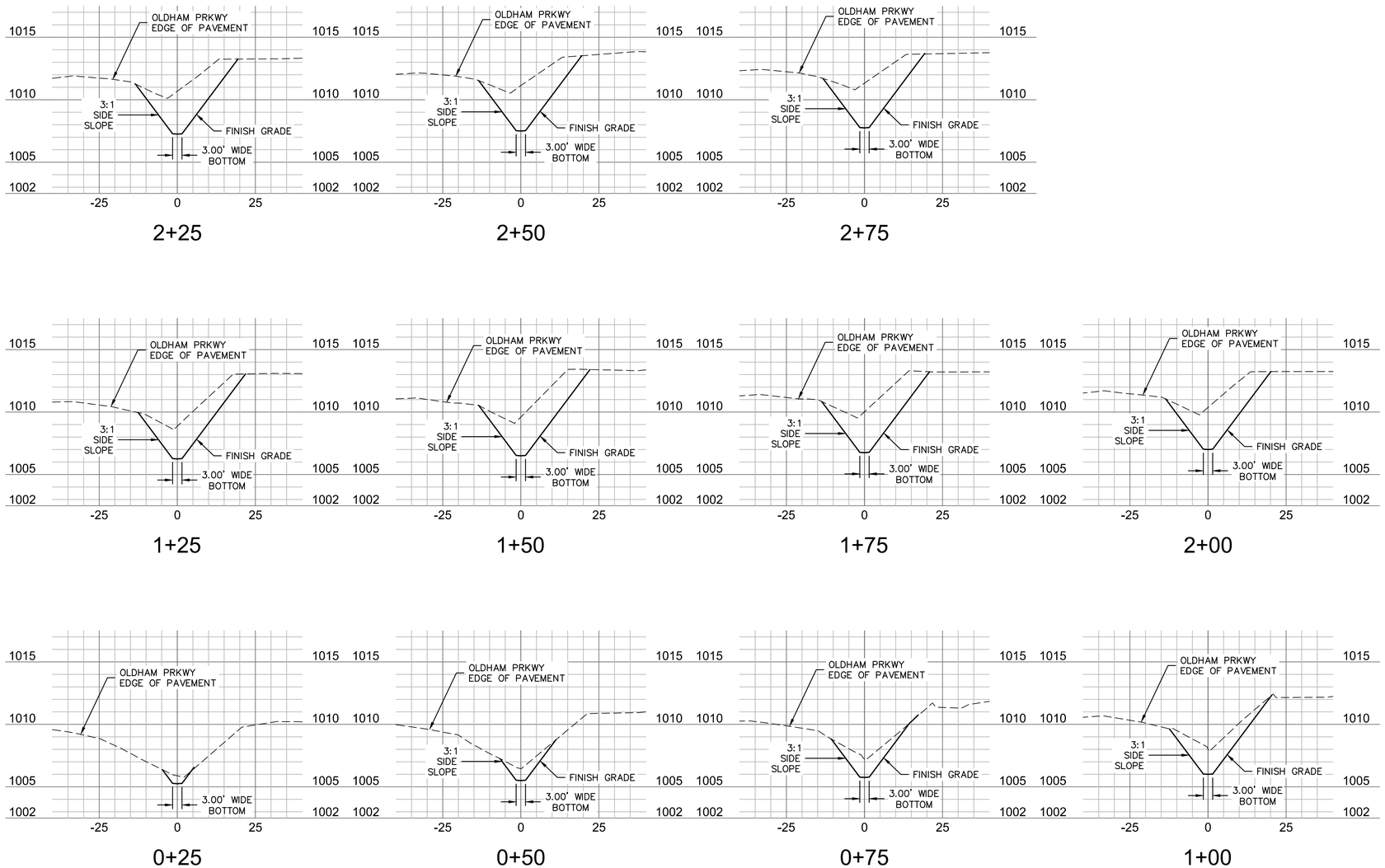
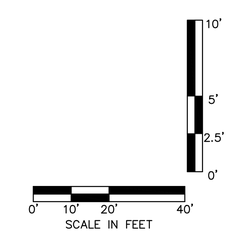


OLDHAM PARKWAY DRAINAGE DITCH SECTION VIEWS

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 5'



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REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

SE OLDHAM PARKWAY & SE PRINCETON DRIVE
DRAINAGE DITCH CROSS SECTIONS

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: RVJ
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_DTLS_81450
date: 06.12.19

SHEET
ST4.2

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC STORM\C-STM_DTLS_81450.DWG USER: rjeppson
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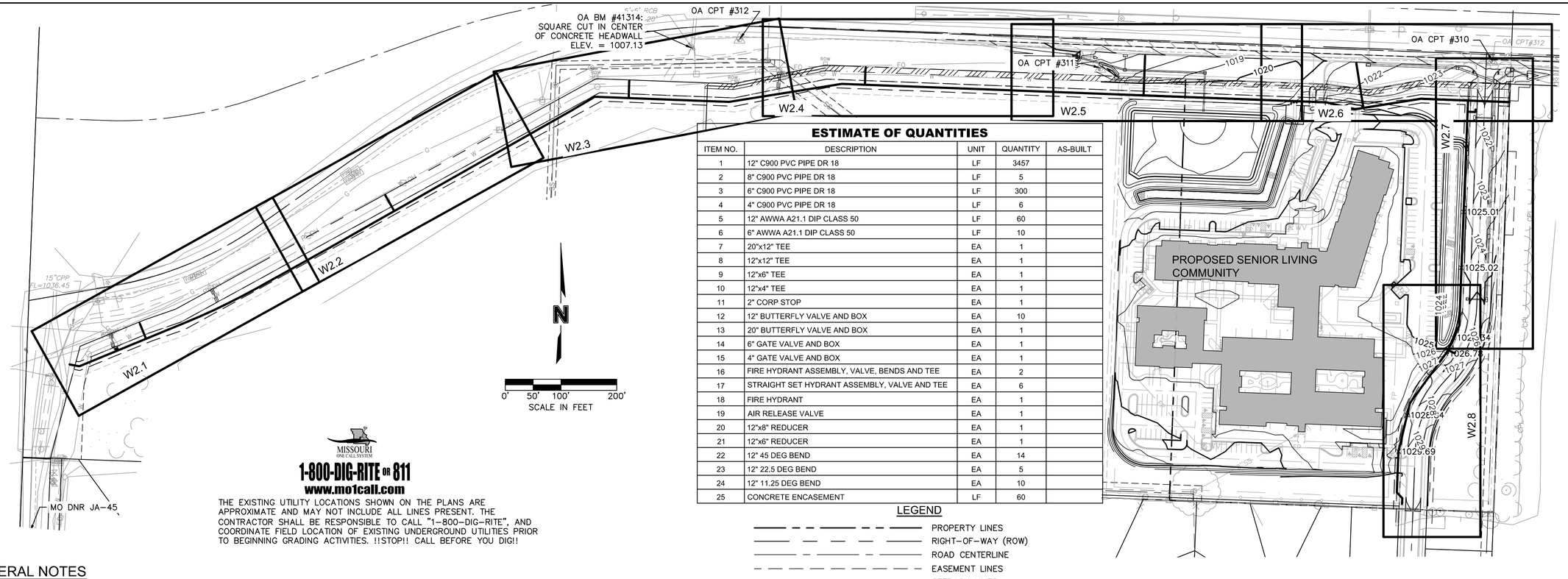

MISSOURI ONE CALL SYSTEM
1-800-DIG-RITE OR 811
www.mo1call.com

THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL "1-800-DIG-RITE", AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING ACTIVITIES. !!STOP!! CALL BEFORE YOU DIG!!

ESTIMATE OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	AS-BUILT
1	12" C900 PVC PIPE DR 18	LF	3457	
2	8" C900 PVC PIPE DR 18	LF	5	
3	6" C900 PVC PIPE DR 18	LF	300	
4	4" C900 PVC PIPE DR 18	LF	6	
5	12" AWWA A21.1 DIP CLASS 50	LF	60	
6	6" AWWA A21.1 DIP CLASS 50	LF	10	
7	20"x12" TEE	EA	1	
8	12"x12" TEE	EA	1	
9	12"x6" TEE	EA	1	
10	12"x4" TEE	EA	1	
11	2" CORP STOP	EA	1	
12	12" BUTTERFLY VALVE AND BOX	EA	10	
13	20" BUTTERFLY VALVE AND BOX	EA	1	
14	6" GATE VALVE AND BOX	EA	1	
15	4" GATE VALVE AND BOX	EA	1	
16	FIRE HYDRANT ASSEMBLY, VALVE, BENDS AND TEE	EA	2	
17	STRAIGHT SET HYDRANT ASSEMBLY, VALVE AND TEE	EA	6	
18	FIRE HYDRANT	EA	1	
19	AIR RELEASE VALVE	EA	1	
20	12"x8" REDUCER	EA	1	
21	12"x6" REDUCER	EA	1	
22	12" 45 DEG BEND	EA	14	
23	12" 22.5 DEG BEND	EA	5	
24	12" 11.25 DEG BEND	EA	10	
25	CONCRETE ENCASEMENT	LF	60	

LEGEND

PROPERTY LINES
RIGHT-OF-WAY (ROW)
ROAD CENTERLINE
EASEMENT LINES
SETBACK LINES
FOUND MONUMENT
TEMPORARY BENCHMARK
EXIST. POWER POLE
EXIST. ELECTRIC BOX
EXIST. ELECTRIC VAULT
EXIST. ELECTRIC METER
EXIST. GUY WIRE
EXIST. TELEPHONE PEDESTAL
EXIST. FIRE HYDRANT
EXIST. WATER METER
EXIST. WATER VALVE
EXIST. GAS MARKER
EXIST. CABLE VAULT
EXIST. SANITARY MANHOLE
EXIST. FLARED END SECTION
EXIST. DECIDIOUS TREE
EXIST. SIGN
PROP. SANITARY SEWER CLEANOUT
PROP. FIRE HYDRANT
PROP. GATE VALVE
PROP. SIGN
P-OH EXIST. OVERHEAD ELECTRIC
TEL EXIST. UNDERGROUND TELEPHONE
G EXIST. GAS LINE
SD EXIST. STORM SEWER LINE
EX. WOOD FENCE
8"SS PROP. SANITARY SEWER SERVICE
PROP. STORM SEWER 12" OR LARGER
SD PROP. STORM SEWER 10" OR SMALLER
E PROP. UNDERGROUND ELECTRIC
12"W PROP. PUBLIC WATER MAIN
IRR PROP. IRRIGATION LINE
6"W PROP. WATER SERVICE
FP PROP. FIRE PROTECTION LINE
PROP. FENCE
910 EXISTING CONTOUR
910 PROPOSED CONTOUR
STRAIGHT BACK DRY CURB & GUTTER (TYPE CG-1 DRY)
STRAIGHT BACK CURB & GUTTER (TYPE CG-1)
STRAIGHT CURB (TYPE C-1)
"FLUSH" CURB
B-B BACK OF CURB TO BACK OF CURB

GENERAL NOTES

1. CONTRACTOR SHALL "POTHOLE" AND EXPOSE ALL TIE-IN AND CROSSING LOCATIONS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL FITTINGS REQUIRED TO PROVIDE PROPER HORIZONTAL AND VERTICAL ALIGNMENT FOR NEW WATER MAINS, CONNECTIONS TO EXISTING WATER MAINS AT THE PROPER LOCATION AND ELEVATION, WHETHER OR NOT THE PROPER FITTINGS, LOCATION OR ELEVATIONS ARE CALLED OUT ON THESE DRAWINGS, INCLUDING MODIFICATIONS OF EXISTING INFRASTRUCTURE REQUIRED TO MAKE ALL OF THE WORK CONFORM TO THE CURRENT LEE'S SUMMIT PUBLIC WORKS STANDARDS AND MISSOURI DEPARTMENT OF NATURAL RESOURCES, MINIMUM DESIGN STANDARDS FOR COMMUNITY WATER SYSTEMS 2013.

2. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY BLOW-OFF ASSEMBLIES, FITTINGS, THRUST BLOCKING, AND RESTRAINING DEVICES REQUIRED FOR TEMPORARY CONNECTIONS FOR FLUSHING, PRESSURE TESTING, CHLORINATION, AND DE-CHLORINATION OF THE NEW WATER MAINS PRIOR TO PLACING NEW MAINS IN SERVICE. THE CONTRACTOR SHALL REMOVE ANY CORPORATION COCKS USED FOR TESTING OR CHLORINATION AND REPLACE THEM WITH TAPERED BRASS PLUGS.

3. SCHEDULING OF WATER MAIN SHUTDOWNS AND CONNECTION TO EXISTING MAINS SHALL BE AT THE DISCRETION OF LEE'S SUMMIT PUBLIC WORKS. ALL WATER LINE SHUTDOWNS MUST BE COORDINATED THROUGH LEE'S SUMMIT PUBLIC WORKS. THE CONTRACTOR SHALL PLAN ON THIS WORK BEING SCHEDULED DURING THE NIGHT AT OFF PEAK HOURS.

4. THE LOCATIONS OF EXISTING UTILITIES, AS SHOWN, ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES. CONTRACTOR SHALL "POTHOLE" AND EXPOSE ALL UTILITIES (INDICATED ON THE DRAWINGS, LOCATED AT GRADE BY A UTILITY LOCATING SERVICE, OR EVIDENT FROM UTILITY COMPANY INFORMATION) AT LEAST 500 FEET IN ADVANCE OF WATER MAIN CONSTRUCTION, DETERMINING THE DEPTH, SIZE, AND MATERIAL OF THE UTILITIES IN PROXIMITY TO THE PROPOSED WATER MAIN ALIGNMENT.

5. THE CONTRACTOR SHALL COMPLY WITH STATE LAW REQUIRING ANY PERSON OR FIRM DOING EXCAVATION ON THE PUBLIC RIGHT-OF-WAY. PROCEED ONLY AFTER GIVING NOTICE TO AND OBTAINING INFORMATION FROM UTILITY COMPANIES.

6. WATER MAINS SHALL BE INSTALLED WITH A MINIMUM GROUND COVER OF 42 INCHES BELOW FINISHED GRADE AND A MAXIMUM OF 7' IN DEPTH.

7. WATER MAINS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY SEWER. WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A WATER MAIN MAY BE LAID CLOSER THAN 10 FEET TO A SEWER, PROVIDED THAT THE WATER MAIN IS LAID IN A SEPARATE TRENCH, OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER, AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WATER MAINS SHALL BE LAID SUCH THAT THERE IS A MINIMUM OF 18 INCHES CLEARANCE BETWEEN THE PIPE WALL AND THE EXTERIOR OF ANY MANHOLE AND/OR INLET ON THE SEWER LINE.

   WHENEVER A WATER MAIN MUST CROSS ABOVE A SEWER, A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER SHALL BE MAINTAINED. WHENEVER A WATER MAIN MUST CROSS UNDER A SEWER, A VERTICAL SEPARATION OF 18 INCHES BETWEEN THE BOTTOM OF THE SEWER AND THE TOP OF THE WATER MAIN SHALL BE MAINTAINED. A FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ON THE SEWER TO BE CROSSED SO THAT THE JOINTS WILL BE EQUALLY DISTANT FROM THE SEWER AND AS FAR AWAY AS POSSIBLE. THE 18-INCH VERTICAL SEPARATION SHALL BE MAINTAINED FOR THAT PORTION OF THE WATER MAIN LOCATED WITHIN 10 FEET, HORIZONTALLY, OF ANY SEWER IT CROSSES.

   WHERE THESE CONDITIONS CANNOT BE MET, LEE'S SUMMIT PUBLIC WORKS SHALL BE CONSULTED AS TO THE PRECAUTIONS TO BE TAKEN TO PROTECT THE PUBLIC WATER SUPPLY.

8. THE CONTRACTOR SHALL VERIFY THE OUTSIDE DIAMETER (O.D.) OF THE EXISTING WATER MAIN PRIOR TO SCHEDULING CONNECTION.

9. CONTRACTORS SHALL PROTECT EXISTING POWER POLES AND LIGHT POLES FROM DAMAGE AND SHALL PROVIDE BRACING, SHORING, OR OTHER WORK NECESSARY FOR SUCH PROTECTION. ANY STRUCTURES REMOVED DURING CONSTRUCTION OPERATIONS SHALL BE REPLACED.

10. THE PROPOSED WATER LINE IMPROVEMENTS SHALL BE COMPLETED IS SUCH A MANNER TO PROVIDE THE LEAST AMOUNT OF INTERRUPTION TO WATER SERVICE.

Control: Horizontal & Vertical Control is based on the MoDOT Continuously Operating GNSS Network, Missouri Coordinate System 1983, West Zone, MO DNR Control Point JA-45.

Coordinate Datum: State Plane Bearings, Local Ground Coordinates, Ground Distances, US Survey Feet

MO DNR JA-45: KC Metro Aluminum GRS Disk Set in Concrete 3"± below Pavement on the Shoulder of SE Ranson Road Stamped "JA-45"
Elev.=1046.26'
Published Coordinates (1988 Adjustment):
N: 303273.664m
E: 863885.886m
Grid=Ground
N: 994990.3460
E: 2834265.6110
CAF: 0.9998986

OA CPT #310: Found 1/2" Rebar w/Cap 8' South of Pavement East of RCB
N: 995873.44
E: 2835537.73

OA CPT #311: fOUND 1/2" Rebar w/Cap 30' South of Pavement Southeast of Gravel Field Entrance
N: 995821.94
E: 2836184.94

OA CPT #312: Set 1/2" Rebar w/Cap "Olsson Associates Survey Control Point" 1' South of Pavement
N: 995834.09
E: 2836888.17

Elevations Datum: NAVD 1988

OA Bench Mark #41314: Set Square Cut in Center of Concrete Headwall for RCB
Elevation=1007.13'

Utilities:
Utilities shown have been located from field survey information, together with obtained records. The Surveyor makes no guarantee that the utilities shown comprise all such utilities in the area, either in-service or abandoned. The Surveyor further does not warrant that the utilities shown are in the exact location indicated. Locates are in compliance with Subsurface Utility Engineering Quality Level "B", and were through the Missouri One-Call System, Ticket Number 181362453. Companies listed on said Ticket are: ATT Distribution, Google Fiber, Spire MO Midwest, City of Lee's Summit, City of Lee's Summit Sewer, City of Lee's Summit Stormwater, Tri-County Water Authority, Time Warner Cable and Kansas City Power & Light.

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STATE OF MISSOURI
FRED J. SCHLEGEL
NUMBER
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06/15/19

REVISIONS

REV. NO.	DATE	REVISIONS DESCRIPTION

WATER MAIN EXTENSION
WATERLINE INDEX SHEET

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W1.0

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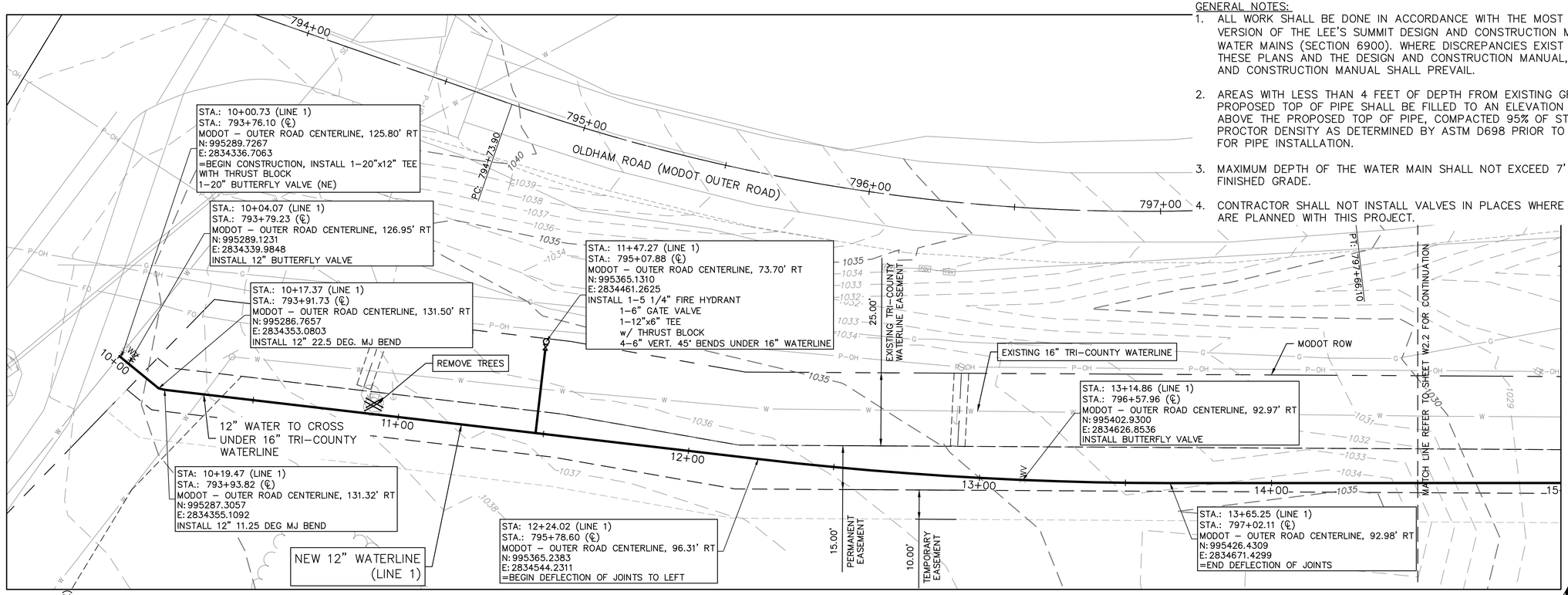
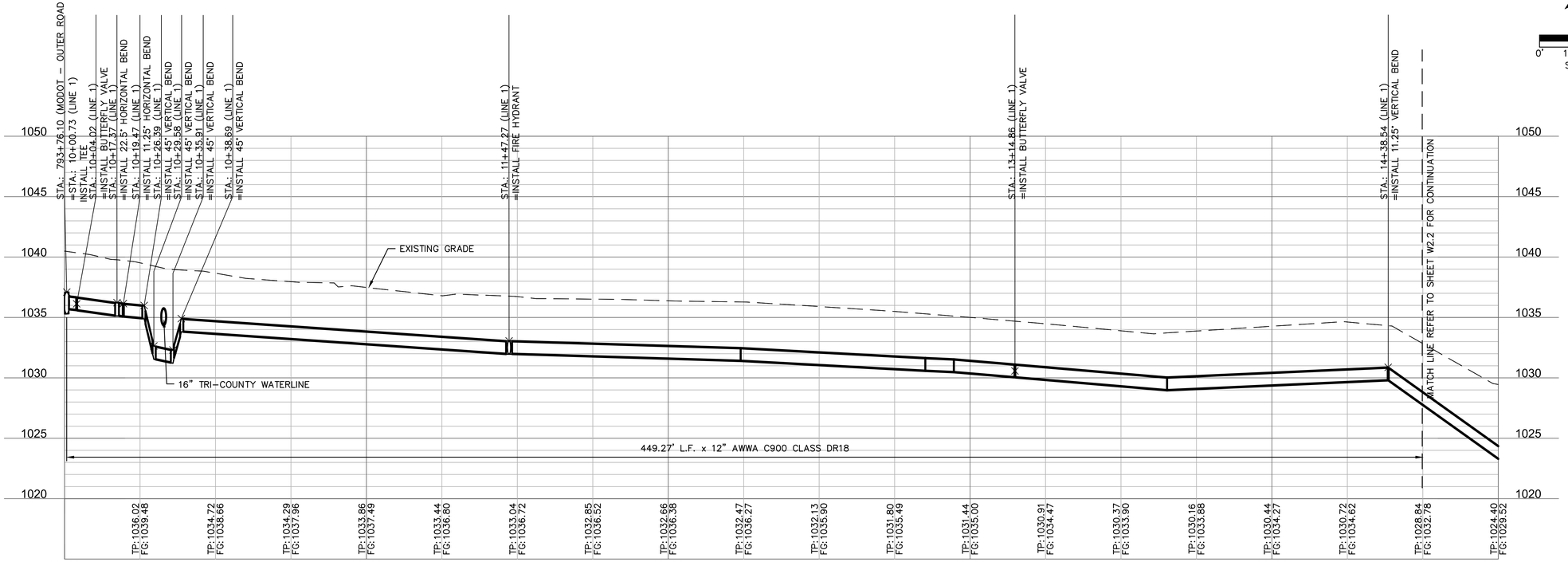
GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT VERSION OF THE LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL FOR WATER MAINS (SECTION 6900). WHERE DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE DESIGN AND CONSTRUCTION MANUAL, THE DESIGN AND CONSTRUCTION MANUAL SHALL PREVAIL.
2. AREAS WITH LESS THAN 4 FEET OF DEPTH FROM EXISTING GRADE TO THE PROPOSED TOP OF PIPE SHALL BE FILLED TO AN ELEVATION OF 4 FEET ABOVE THE PROPOSED TOP OF PIPE, COMPACTED 95% OF STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D698 PRIOR TO TRENCHING FOR PIPE INSTALLATION.
3. MAXIMUM DEPTH OF THE WATER MAIN SHALL NOT EXCEED 7' FROM FINISHED GRADE.
4. CONTRACTOR SHALL NOT INSTALL VALVES IN PLACES WHERE ADA RAMPS ARE PLANNED WITH THIS PROJECT.



LINE 1 (10+00 - 14+75)



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FRED J. SCHLEGEL
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06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

WATER MAIN EXTENSION
LINE 1 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.1

DWG: F:\2018\1001–1500\018–1450\40–Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C_WPP_81450.dwg USER: thill
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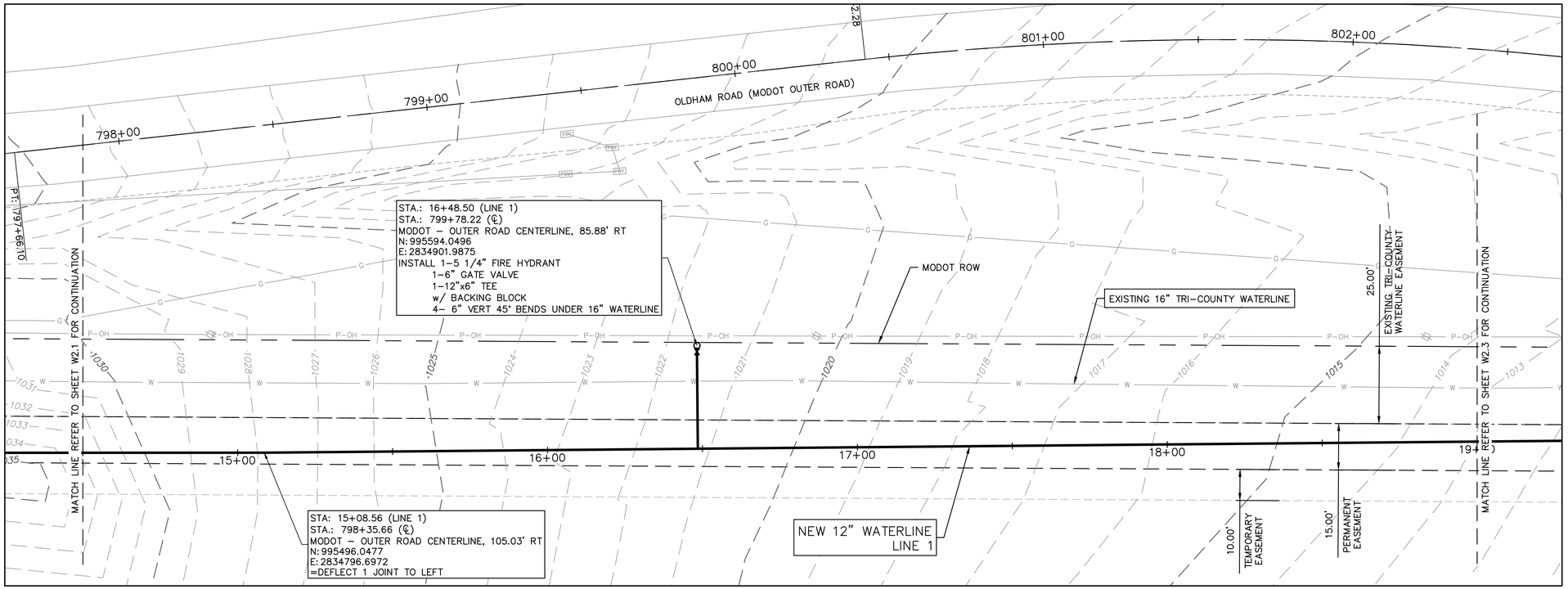

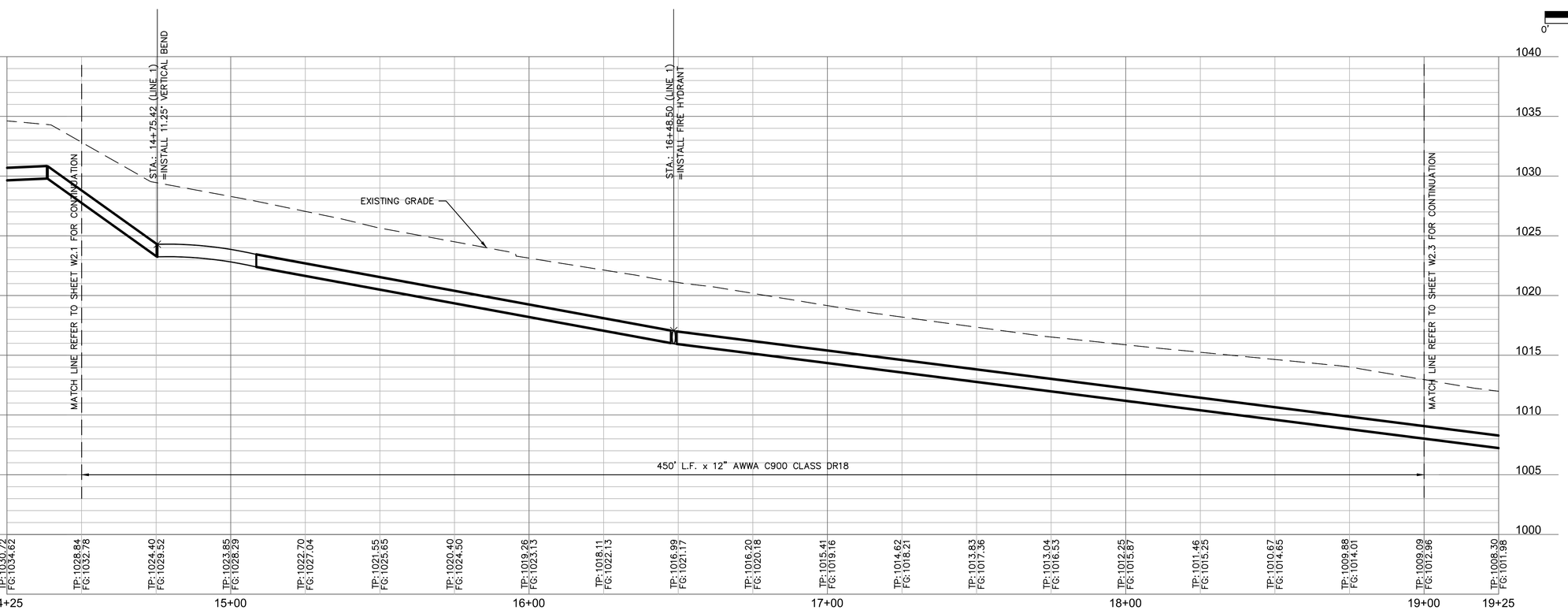

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06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

WATER MAIN EXTENSION
LINE 1 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.2

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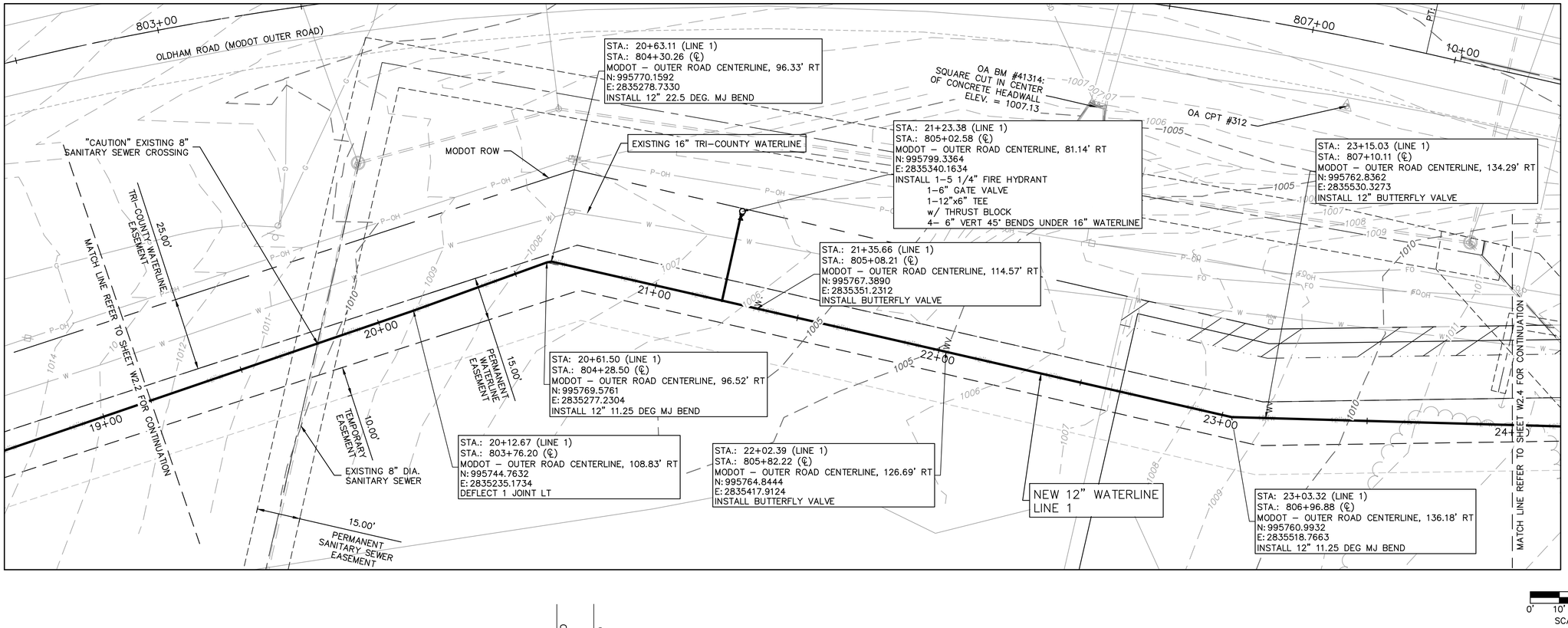

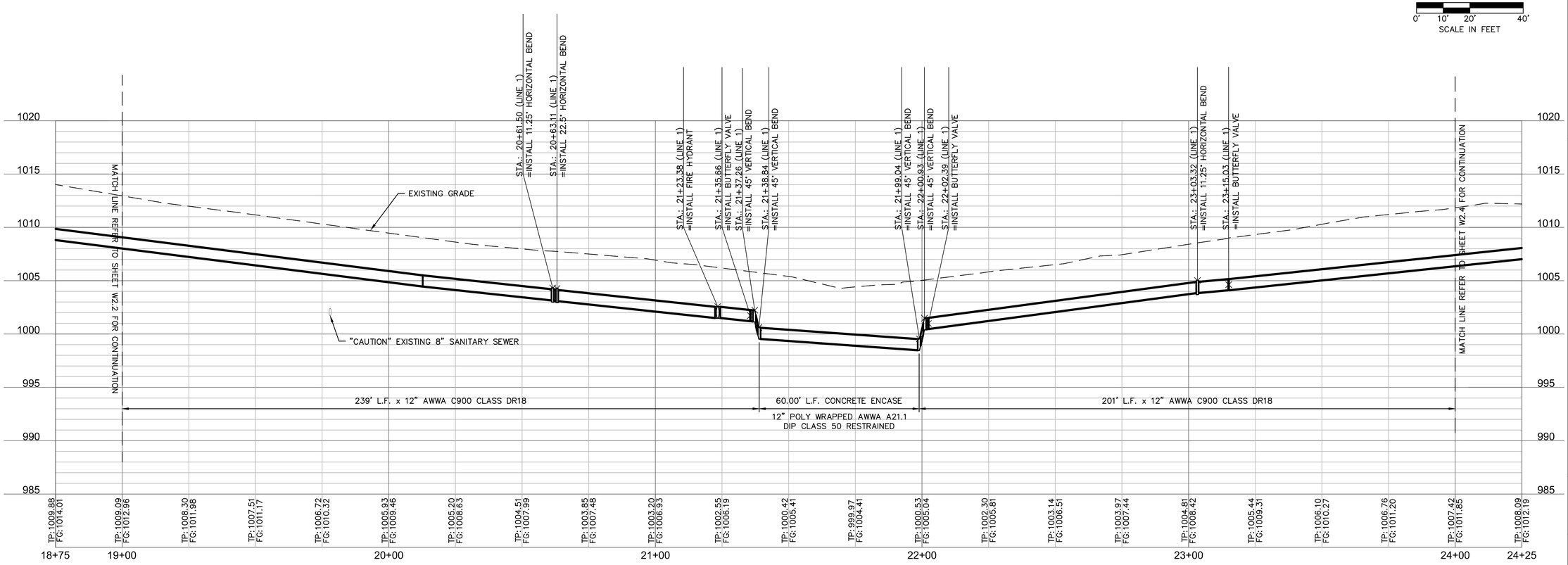

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FRED J. SCHLEGEL
NUMBER
PE-2006023332
PROFESSIONAL ENGINEER
06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

WATER MAIN EXTENSION
LINE 1 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

2019

LEE'S SUMMIT, MISSOURI

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.3

DWG: F:\2018\1001–1500\018–1450\40–Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C_WPP_81450.dwg USER: thill
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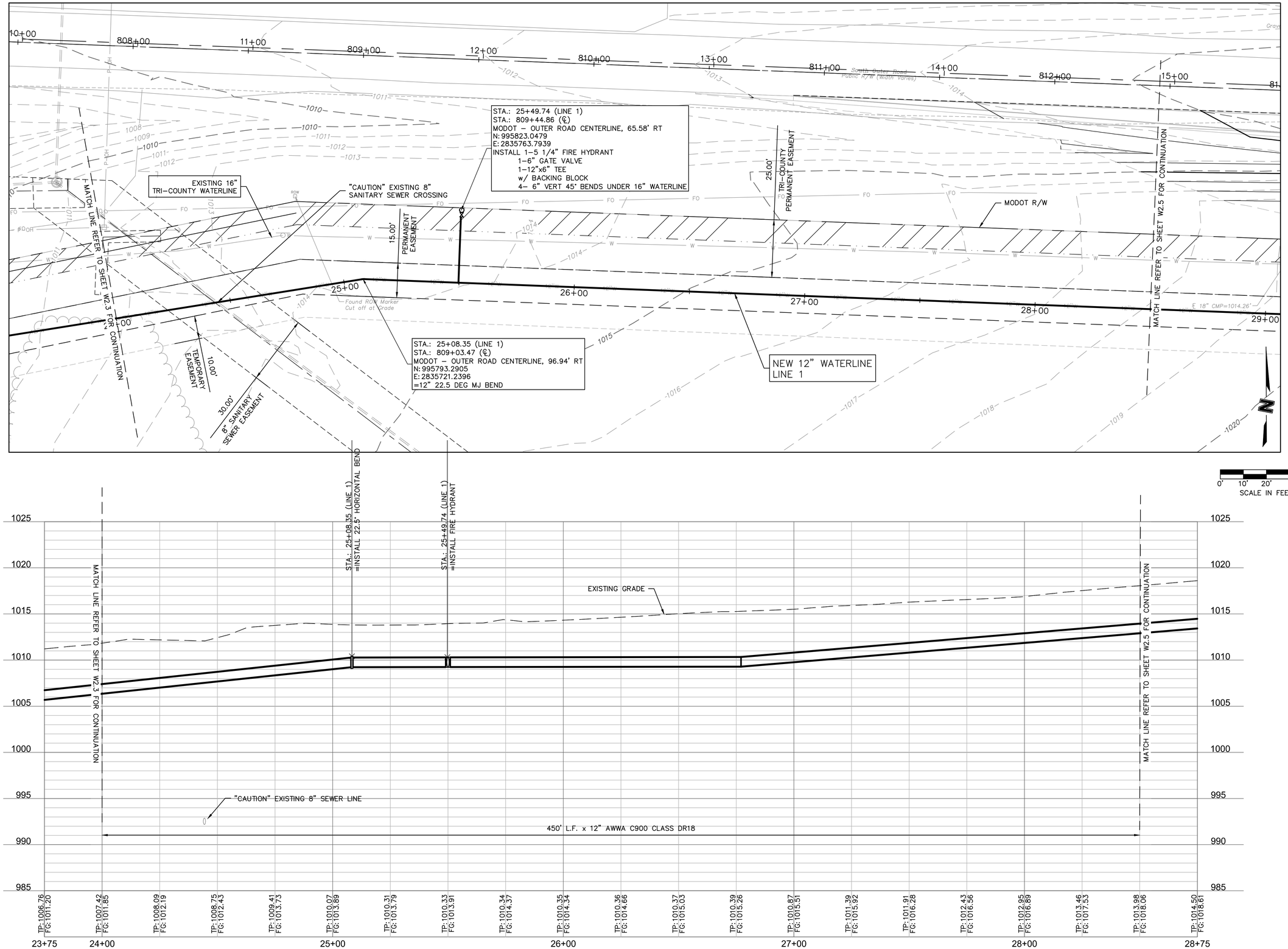

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06/15/19

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WATER MAIN EXTENSION
LINE 1 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.4

DWG: F:\2018\1001–1500\018–1450\40–Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C_WPP_81450.dwg USER: thill
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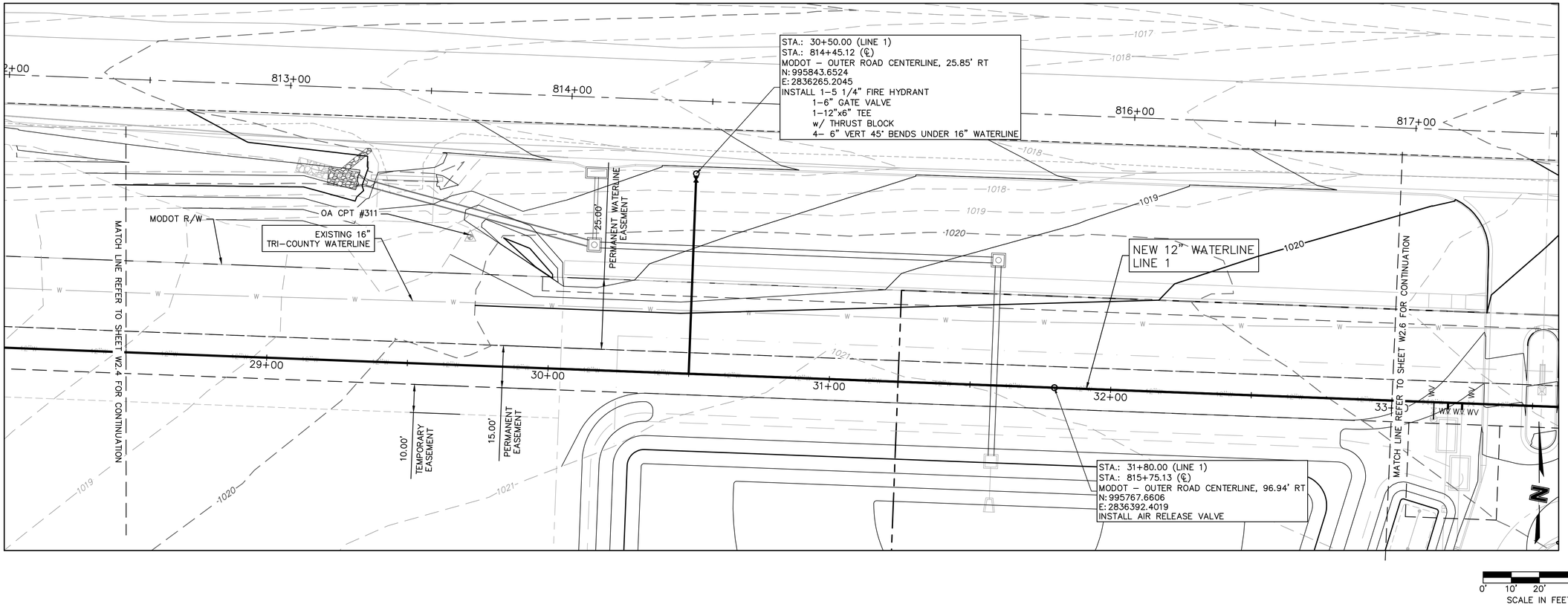

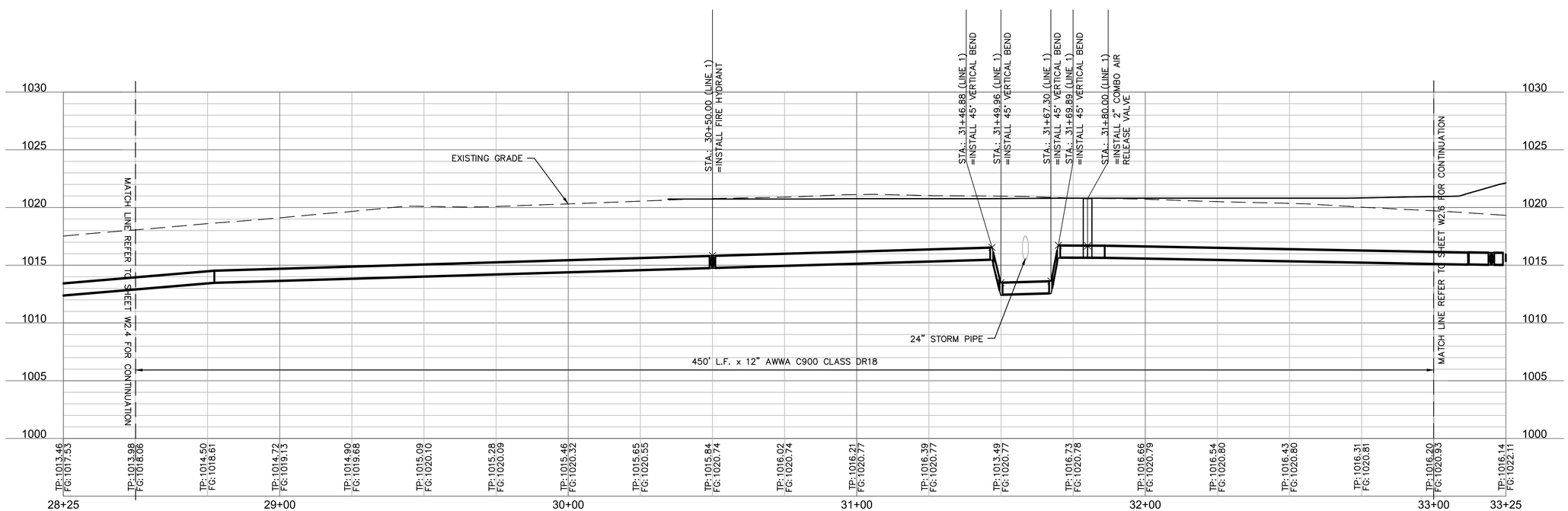

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06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

WATER MAIN EXTENSION
LINE 1 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.5

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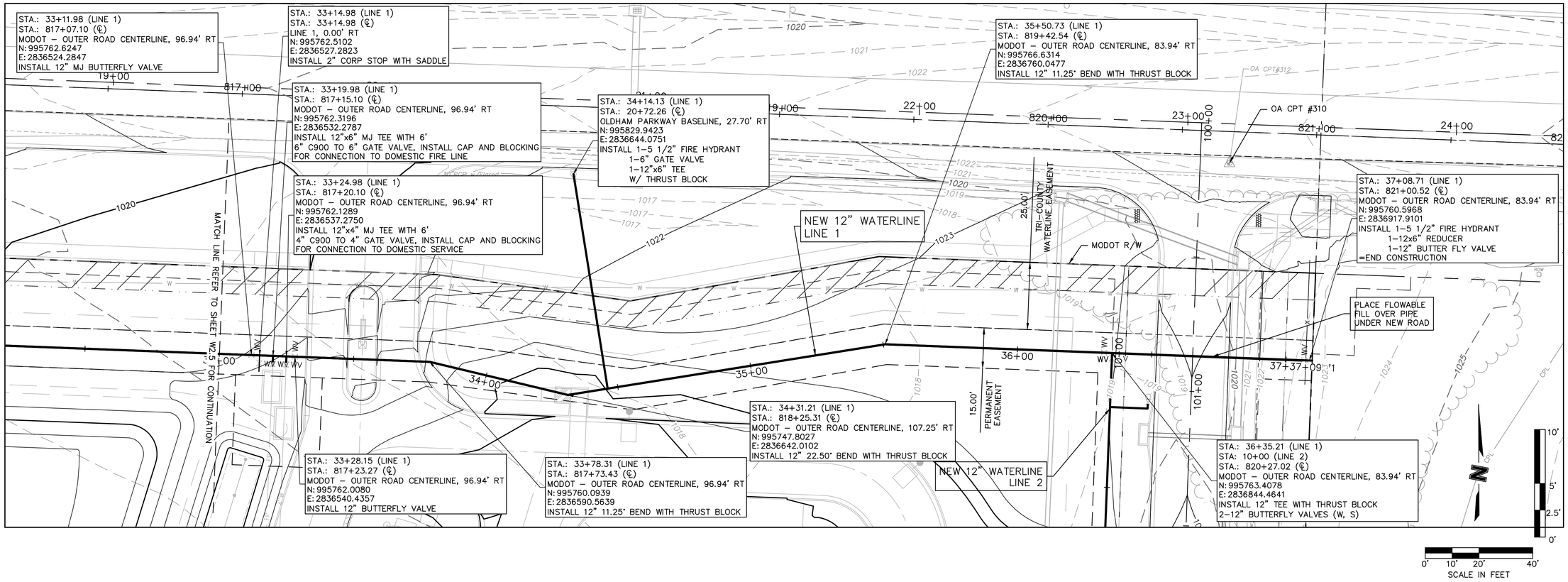

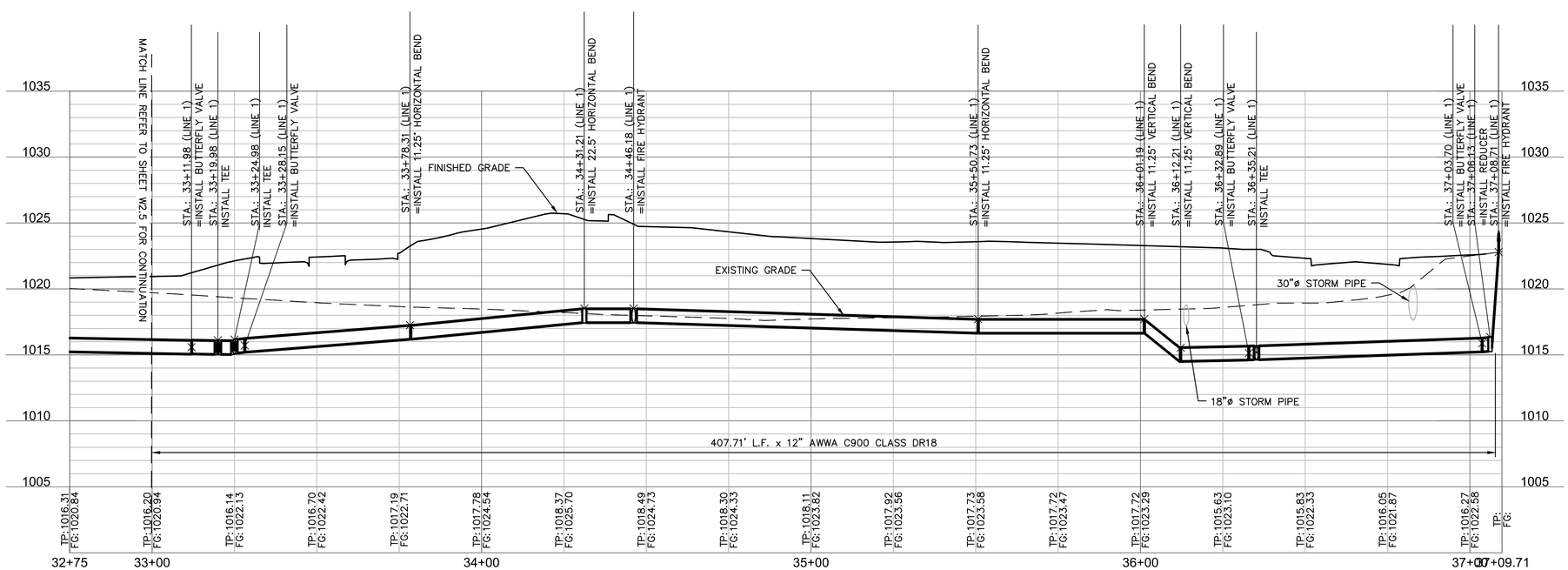

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REVISIONS

WATER MAIN EXTENSION
LINE 1 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.6

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C_WPP_81450.dwg USER: thill
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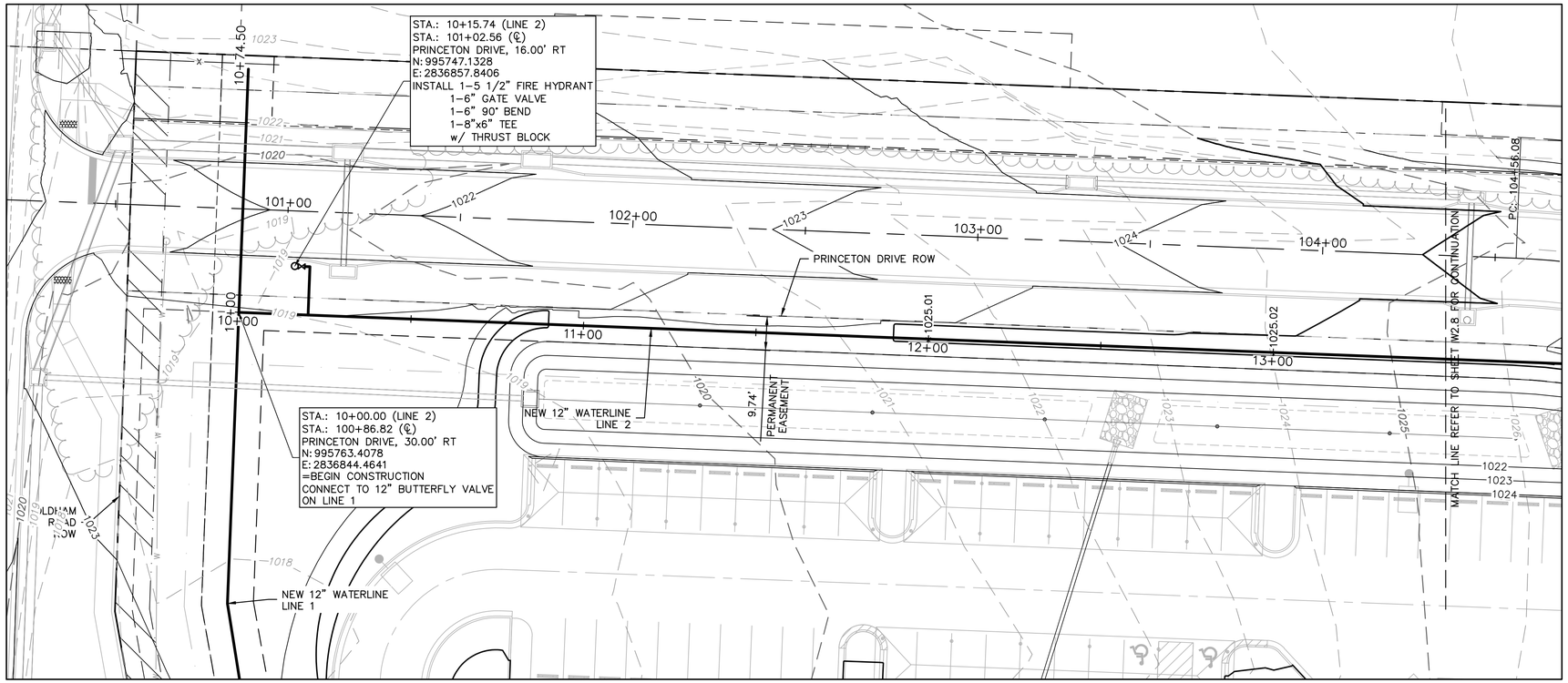

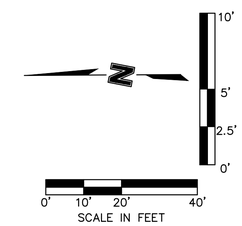

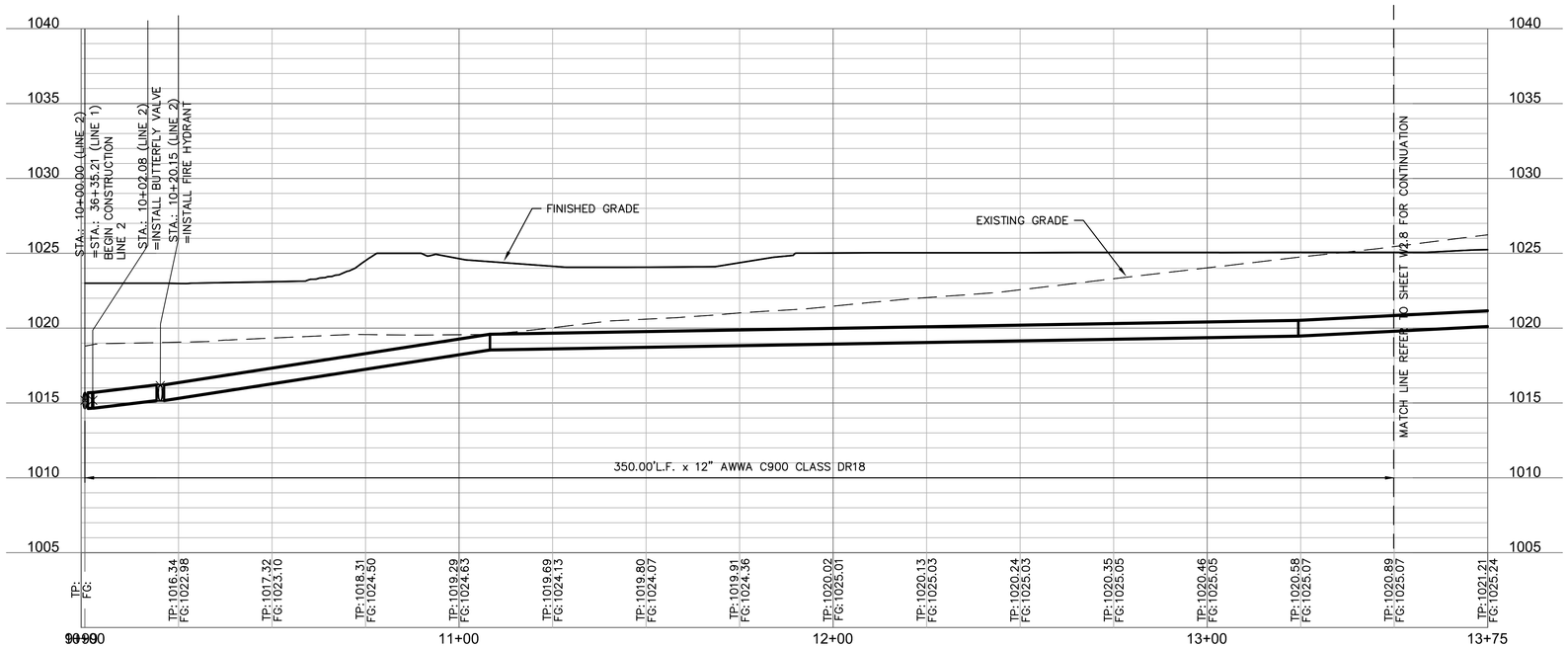

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06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

WATER MAIN EXTENSION
LINE 2 PLAN AND PROFILE

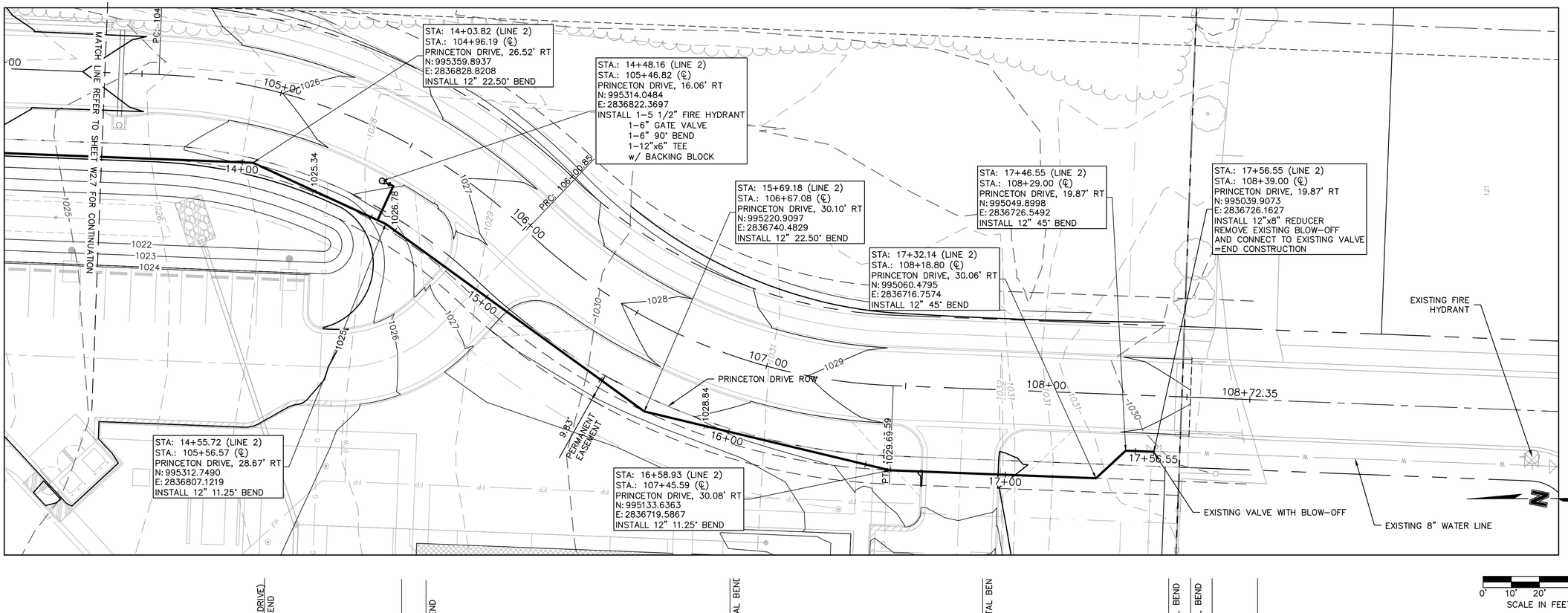
LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

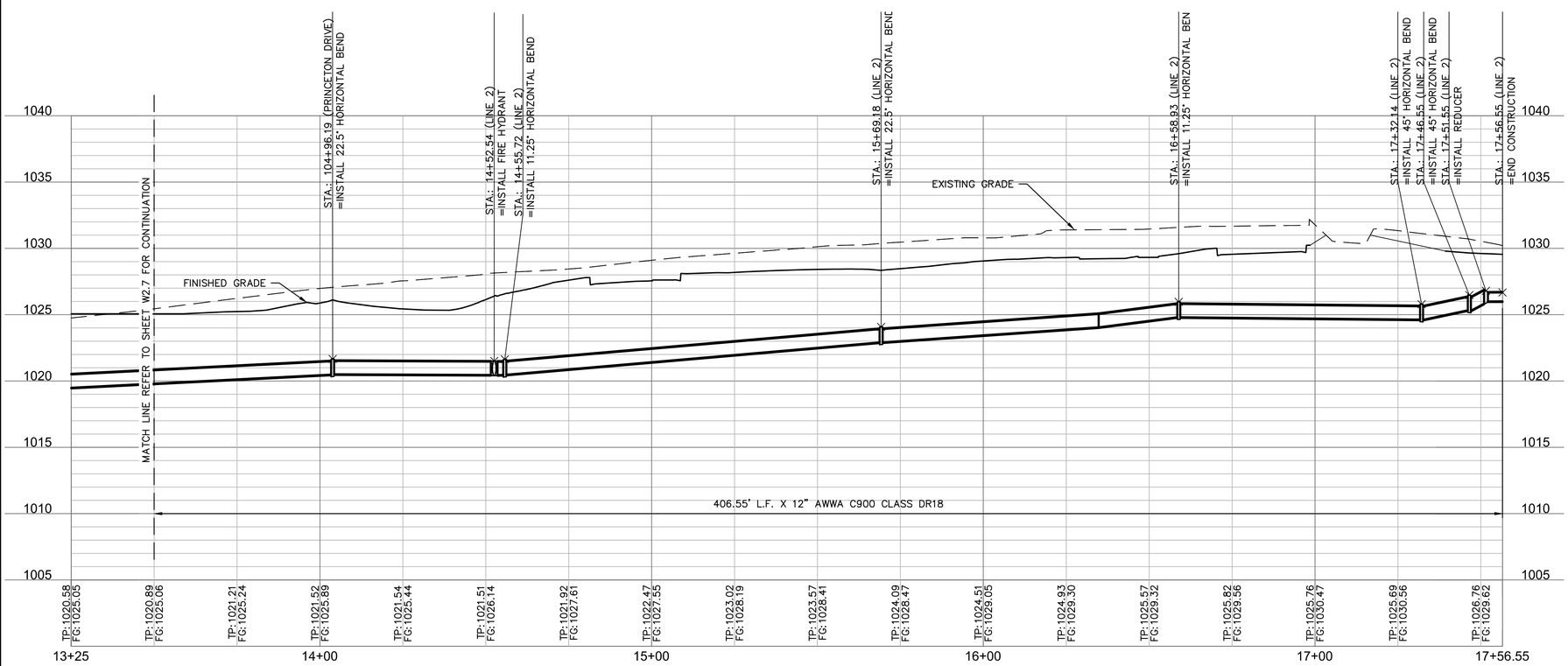
LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.7





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06/15/19

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REVISIONS

WATER MAIN EXTENSION
LINE 2 PLAN AND PROFILE

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

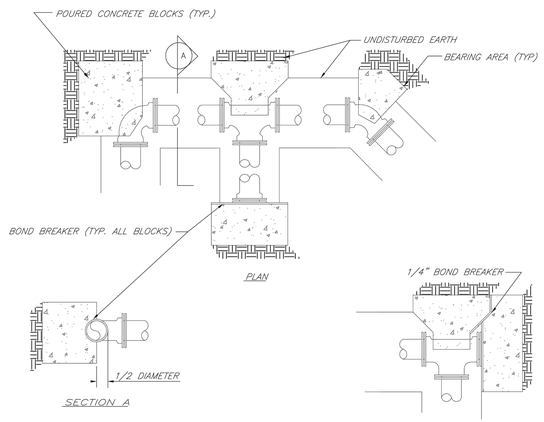
drawn by:	RPJ
designed by:	JKE
checked by:	JL
project no.:	018-1450
drawing no.:	C_WPP_81450
date:	00.00.00

SHEET
W2.8

REQUIRED CONCRETE BEARING AREA (SQUARE FEET – SF)

NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	4.7	6.7	4.0	4.0	4.0
8	8.4	11.8	6.4	4.0	4.0
10	13.1	18.5	10.0	5.1	4.0
12	18.8	26.7	14.4	7.4	4.0
14	25.7	36.3	19.6	10.0	5.0
16	33.5	47.4	25.6	13.1	6.6
18	42.4	REST. JT.	32.5	16.5	8.3
20	REST. JT.	REST. JT.	40.1	20.4	10.3
24	REST. JT.	REST. JT.	REST. JT.	29.4	14.8

NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.
5. ALL DUCTILE IRON FITTINGS SHALL BE POLYETHYLENE WRAPPED.



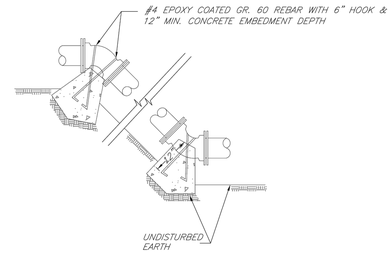
LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HORIZONTAL THRUST BLOCKS

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-1
Rev: 1/14
Rev:

REQUIRED CONCRETE VOLUME (CUBIC FEET – CF)

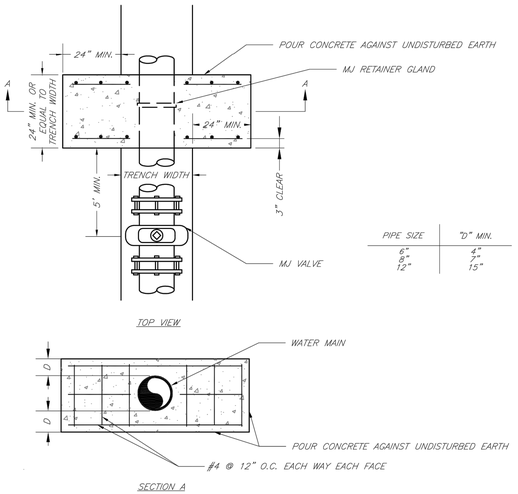
NOM. DIA. (INCHES)	180 TEE, PLUG	90 BEND	45 BEND	22.5 BEND	11.25 BEND
6	50.5	71.4	38.6	19.7	9.9
8	89.8	126.9	68.7	35.0	17.6
10	140.2	198.3	107.3	54.7	27.5
12	202.0	REST. JT.	154.6	78.8	39.6
14	REST. JT.	REST. JT.	210.4	107.3	53.9
16	REST. JT.	REST. JT.	REST. JT.	140.1	70.4
18	REST. JT.	REST. JT.	REST. JT.	177.3	89.1
20	REST. JT.	REST. JT.	REST. JT.	REST. JT.	110.0
24	REST. JT.	REST. JT.	REST. JT.	REST. JT.	158.4

NOTES:
1. ALL BENDS WITHOUT RESTRAINED JOINTS SHALL HAVE CONCRETE THRUST BLOCKS INSTALLED FOR RESTRAINT.
2. MEGA LUGS MAY BE USED ONLY IN CONJUNCTION WITH CONCRETE THRUST BLOCKING.
3. BEARING MUST BE AGAINST UNDISTURBED SOIL.
4. DO NOT COVER JOINTS OR BOLTS (WHERE APPLICABLE) WITH CONCRETE.
5. USE POLYETHYLENE AROUND ALL FITTINGS AND COAT BOLTS PER SPECS.



LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
VERTICAL THRUST BLOCKS

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-2
Rev: 1/14
Rev:

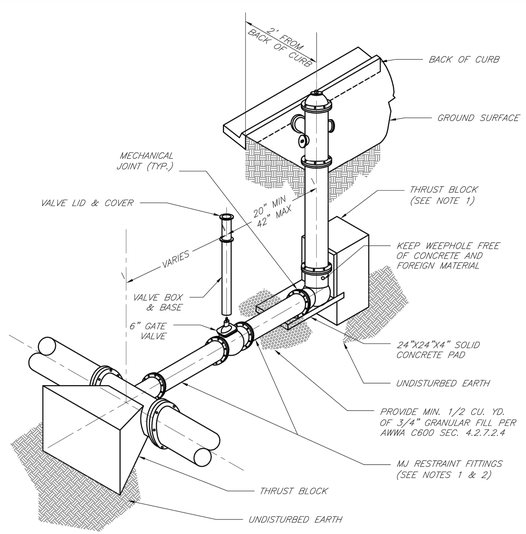


PIPE SIZE	"D" MIN.
6"	4"
9"	7"
12"	15"

NOTE:
THIS DETAIL NOT TO BE USED FOR PIPE GREATER THAN 12"

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
STRADDLE BLOCK

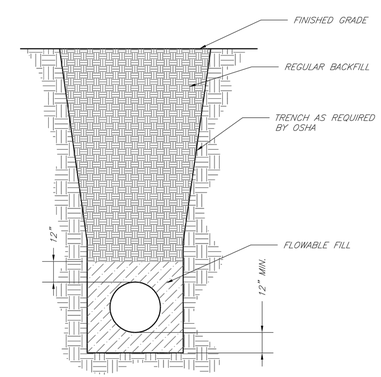
Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-3
Rev: 1/14
Rev:



NOTES:
1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
HYDRANT INSTALLATION – STRAIGHT SET

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-7
Rev: 1/14
Rev:



NOTES:
1. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.
2. REGULAR BACKFILL ABOVE THE TRENCH CHECK SHALL BE FREE OF DEBRIS, ORGANIC MATTER, AND STONES > 6" IN ANY DIMENSION.
3. TOP OF FLOWABLE BACKFILL SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE.
4. LENGTH OF TRENCH CHECK SHALL BE A MINIMUM OF 12".

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063
TRENCH CHECK

Date: 02/13
Drawn By: JN
Checked By: DL
FILE: WAT-6
Rev: 1/14
Rev:

NOTE:
1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE MOST CURRENT VERSION OF LEE'S SUMMIT'S "DESIGN AND CONSTRUCTION MANUAL".
2. SEE LEE'S SUMMIT'S "DESIGN AND CONSTRUCTION MANUAL" FOR LIST OF APPROVED VENDORS

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FRED J. SCHLEGEL
NUMBER
PE-2006023332
PROFESSIONAL ENGINEER
06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

PUBLIC WATER MAIN EXTENSION
WATER SYSTEM DETAILS

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by: RPJ
designed by: JKE
checked by: JLR
project no.: 018-1450
drawing no.: C_DTLS_81450
date: 00.00.00

SHEET
W3.0

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final Plans\Sheets\GNCV\PUBLIC WATER\C_DTLS_81450.dwg USER: thill
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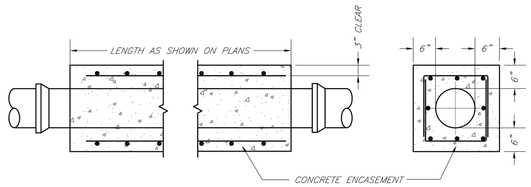


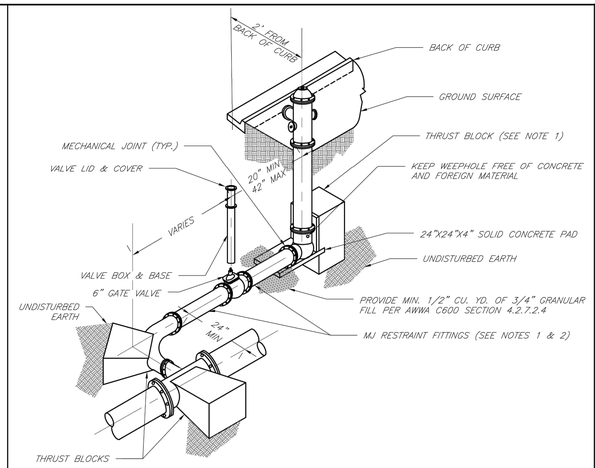
NOTES:

1. INTERMEDIATE BELLS SHALL BE ENCASED.
2. REINFORCING STEEL SHALL BE #4 @ 12" O.C. EACH WAY WITH A MINIMUM REBAR LAP OF 12".
3. THIS DETAIL IS FOR PIPES 12" AND SMALLER.
4. FOR CONTINUITY CONTINUE TAPPING TRACE WIRE TO DUCTILE IRON PIPE THROUGH CONCRETE ENCASEMENT ZONE.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

WATER PIPE ENCASEMENT

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-4
Rev:	1/14
Rev:	



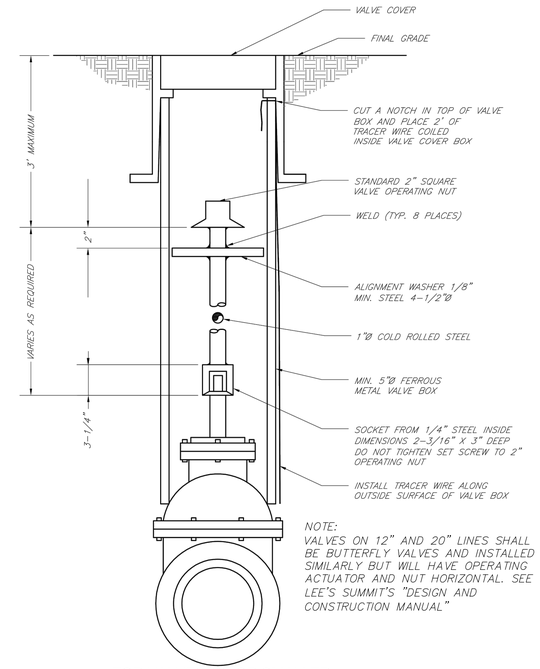
NOTES:

1. WHEN RETAINER GLANDS ARE USED IN LIEU OF MECHANICAL JOINT (MJ) RESTRAINT FITTINGS, HORIZONTAL THRUST BLOCKS ARE REQUIRED.
2. GATE VALVE MAY BE BOLTED DIRECTLY TO MJ RESTRAINT TEE.
3. SEE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR FIRE HYDRANT, VALVES, VALVE BOX LID, AND COVER.
4. BOTTOM HYDRANT FLANGE SHALL BE 2" TO 6" ABOVE FINISHED GRADE.
5. FOR STREETS WITHOUT CURBS FIRE HYDRANTS SHALL BE PLACED WITHIN 1 FOOT OF THE R/W LINE, BUT NOT MORE THAN 10' FROM EDGE OF PAVEMENT. FIRE HYDRANT SHALL NOT BE PLACED IN BOTTOM OF DITCH.
6. HYDRANT SHALL BE ROTATED AS DIRECTED BY INSPECTOR.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

HYDRANT WITH 90 DEGREE BEND

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-8
Rev:	1/14
Rev:	



NOTE:
VALVES ON 12" AND 20" LINES SHALL BE BUTTERFLY VALVES AND INSTALLED SIMILARLY BUT WILL HAVE OPERATING ACTUATOR AND NUT HORIZONTAL. SEE LEE'S SUMMIT'S "DESIGN AND CONSTRUCTION MANUAL"

FOR VALVES 10" OR SMALLER

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

VALVE STEM EXTENSION AND VALVE BOX

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-9
Rev:	1/14
Rev:	

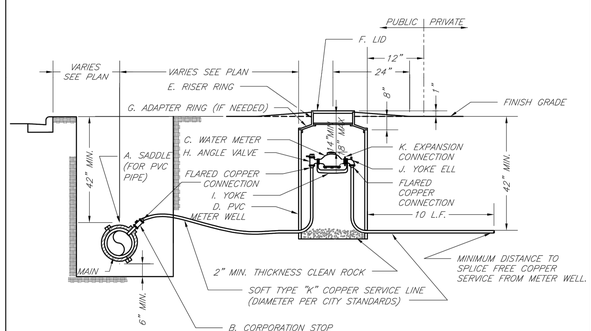
AIR RELEASE ASSEMBLY
NOT TO SCALE

NOTE: A COMBINATION AIR VACUUM/AIR RELEASE VALVE (CAV-ARV) IS REQUIRED. SIZE OF FITTINGS TO BE 2" AS PER LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL.

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

AIR RELEASE ASSEMBLY

Date:	04/17
Drawn By:	MJF
Checked By:	DL
	WAT-10



TYPICAL METER INSTALLATION – 2" AND SMALLER
NOT TO SCALE

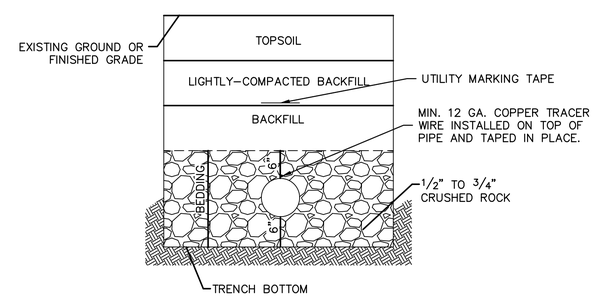
NOTES:

1. METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
2. IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
3. CITY TO FURNISH ITEMS A–K.
4. NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
5. 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
6. EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
7. NO SPLICES ALLOWED BETWEEN METER AND MAIN.
8. SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
9 LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
10. CONTACT WATER UTILITIES, 816-969-1900, FOR REQUIREMENTS OF A METER LARGER THAN 2"

LEE'S SUMMIT
MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SERVICE CONNECTION/METER WELL

Date:	02/13
Drawn By:	JN
Checked By:	DL
FILE:	WAT-11
Rev:	1/14
Rev:	



UNDERGROUND PIPE INSTALLATION FOR WATER LINES
N.T.S.

NOTES:

1. A MINIMUM OF 42 INCHES OF COVER SHALL BE OVER THE TOP OF THE PIPE. THIS MINIMUM OF COVER SHALL BE FROM THE TOP OF PIPE TO THE FINISHED GRADE. A MAXIMUM ALLOWED COVER SHALL BE 7'.
2. BEDDING AGGREGATE SHALL BE PLACES FROM A LEVEL 6 INCHES BELOW THE BOTTOM OF THE PIPE TO A LEVEL 6 INCHES ABOVE THE TOP OF THE PIPE.
3. TRENCH BACKFILL IN PAVED AREAS WITHIN STREET OR ALLEY RIGHT OF WAYS
   a. NARROW TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES 24 INCHES OR LESS IN WIDTH AND SHALL BE TYPE A FLOWABLE FILL.
   b. STANDARD TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES BETWEEN 24 TO 48 INCHES WIDE SHALL BE EITHER TYPE A FLOWABLE FILL OR DENSE, WELL GRADED AGGREGATE BASE MATERIAL. AGGREGATE BASE MATERIAL SHALL MEET THE REQUIREMENTS FOR KDOT AB-3; MODOT TYPES 1 OR 5; OR APWA 2202.2.
   c. WIDE TRENCH: SUITABLE BACKFILL MATERIAL FOR TRENCHES BETWEEN GREATER THAN 48 INCHES WIDE SHALL BE SUITABLE MATERIAL AS SPECIFIED FOR EARTH EMBANKMENT IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.C.
4. SUITABLE BACKFILL MATERIAL OUTSIDE OF PAVED AREAS WITHIN RIGHT OF WAY, AND ALL AREAS OUTSIDE RIGHT OF WAY, MAY BE SUITABLE MATERIAL AS SPECIFIED FOR EARTH EMBANKMENT IN APWA STANDARD SPECIFICATIONS, SECTION 2102.2.C. SUITABLE BACKFILL MATERIAL MAY ALSO BE OTHER TRENCH BACKFILL MATERIAL (FLOWABLE FILL OR AGGREGATE BASE) DEPENDING ON SITE CONDITIONS, TRENCH WIDTHS OR AT THE DIRECTION OF THE CITY'S ON SITE INSPECTOR.

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06/15/19

REV. NO.	DATE	REVISIONS DESCRIPTION

REVISIONS

PUBLIC WATER MAIN EXTENSION
WATER SYSTEM DETAILS

LEE'S SUMMIT SENIOR LIVING COMMUNITY
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

2019

drawn by:	RPJ
designed by:	JKE
checked by:	JLR
project no.:	018-1450
drawing no.:	C_DTLS_81450
date:	00.00.00

SHEET
W3.1