

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

LEGEND

▲CTL	SURVEY CONTROL POINT	☒	TRAFFIC SIGNAL BOX
▲	SURVEY BENCHMARK	⊙	TRAFFIC SIGNAL MANHOLE
▲TBM	SURVEY TEMPORARY BENCHMARK	⊙—⊙	TRAFFIC SIGNAL POLE W/ ARM
⊠	GAS METER	☒	TRAFFIC SIGNAL POLE
⊠GAR	GAS RISER	☒	TRAFFIC SIGNAL CONTROL BOX
⊙	GAS MANHOLE	☒	TRAFFIC SIGNAL PEDESTAL
⊠GR	GAS REGULATOR	⊙	ELECTRIC MANHOLE
⊠TP	TELEVISION PEDESTAL	⊠	ELECTRIC METER
⊠	FIBER BOX	⊠	ELECTRIC RISER
⊙	FIBER PEDESTAL	⊠	ELECTRIC BOX
⊠	CABLE BOX	⊠	ELECTRIC CABINET
⊠V	CABLE VAULT	⊠	ELECTRIC JUNCTION BOX
⊠P	TELEPHONE PEDESTAL	⊙SPH	SPRINKLER HEAD
⊙	STORM MANHOLE	⊠SCV	SPRINKLER CONTROL VALVE
⊠	STORM GRATE	⊙	WATER METER PIT
⊙	SANITARY MANHOLE	⊙	FIRE HYDRANT
⊙YL	YARD LIGHT	⊠WV	WATER METER
⊙LTP	LIGHT POLE	⊠WV	WATER VALVE
⊠	POWER POLE	⊠FP	FLAG POLE
⊠LPPP	POWER POLE W/ LIGHT	⊠	SIGN
⊠	GUY WIRE	⊠	BOLLARD
⊠	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
---	EXISTING CONTOUR
---	EXISTING CONTOUR
---	PROPOSED MINOR CONTOUR
---	PROPOSED MAJOR CONTOUR
---	EXISTING TELEPHONE LINE
---	EXISTING SANITARY LINE
---	EXISTING STORM LINE
---	EXISTING GAS LINE
---	EXISTING WATER LINE
---	EXISTING CHAIN LINK FENCE
---	EXISTING OVERHEAD ELECTRIC
---	EXISTING PIPE LINE
---	GRADING LIMITS
---	TEMPORARY CONSTRUCTION EASEMENT
---	PROPOSED UTILITY OVERHEAD EASEMENT
---	PROPOSED PERMANENT DRAINAGE EASEMENT
---	PROPOSED CHAIN LINK FENCE
---	PROPOSED WOOD PRIVACY FENCE
---	EXISTING TREELINE

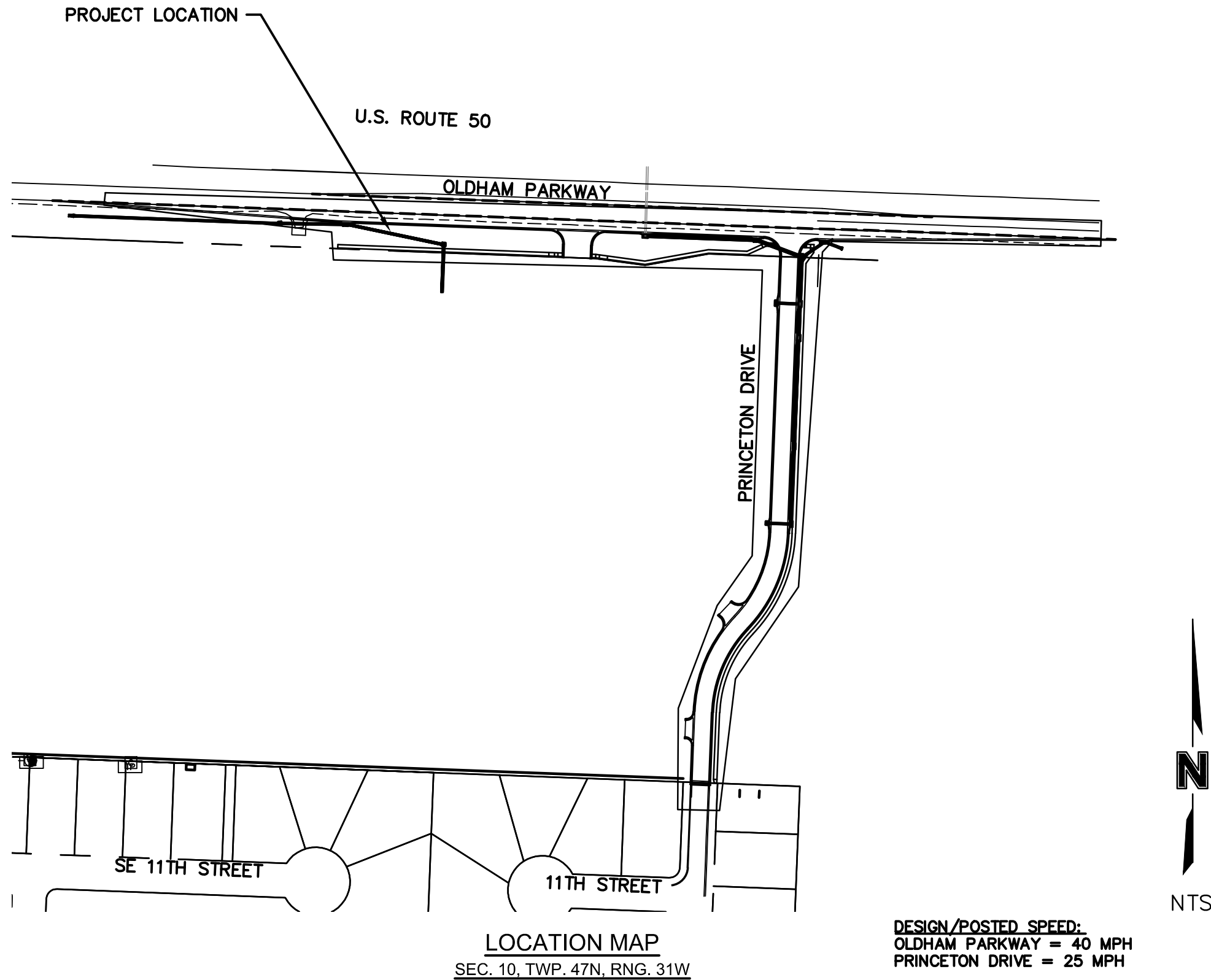
ABBREVIATION TABLE

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 BENCHMARK
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

*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
---	[CC]	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.



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

INDEX OF SHEETS

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T2	GENERAL LAYOUT
T3	ALIGNMENT DATA & SURVEY CONTROL
T4	GENERAL NOTES
T5	DEMOLITION AND REMOVALS
T6	TYPICAL SECTIONS
T7-T11	PLAN AND PROFILES
T12	INTERSECTION LAYOUTS
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T15	SIDEWALK RAMP LAYOUTS
T16-T22	STANDARD DETAILS
T23-T24	EROSION CONTROL PLANS
T25-T29	PAVEMENT MARKING & SIGNING PLANS & DETAILS
T33-T34	TRAFFIC CONTROL PLANS & DETAILS
T35-T51	CROSS SECTIONS

PUBLIC STORM WATER

SHEET NO.	TITLE
ST1.0-ST1.3	STORM PROFILES
ST2.0-ST3.0	DRAINAGE MAP & STORM SEWER CALCULATIONS
ST4.0-ST4.1	STORM WATER DETAILS

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.

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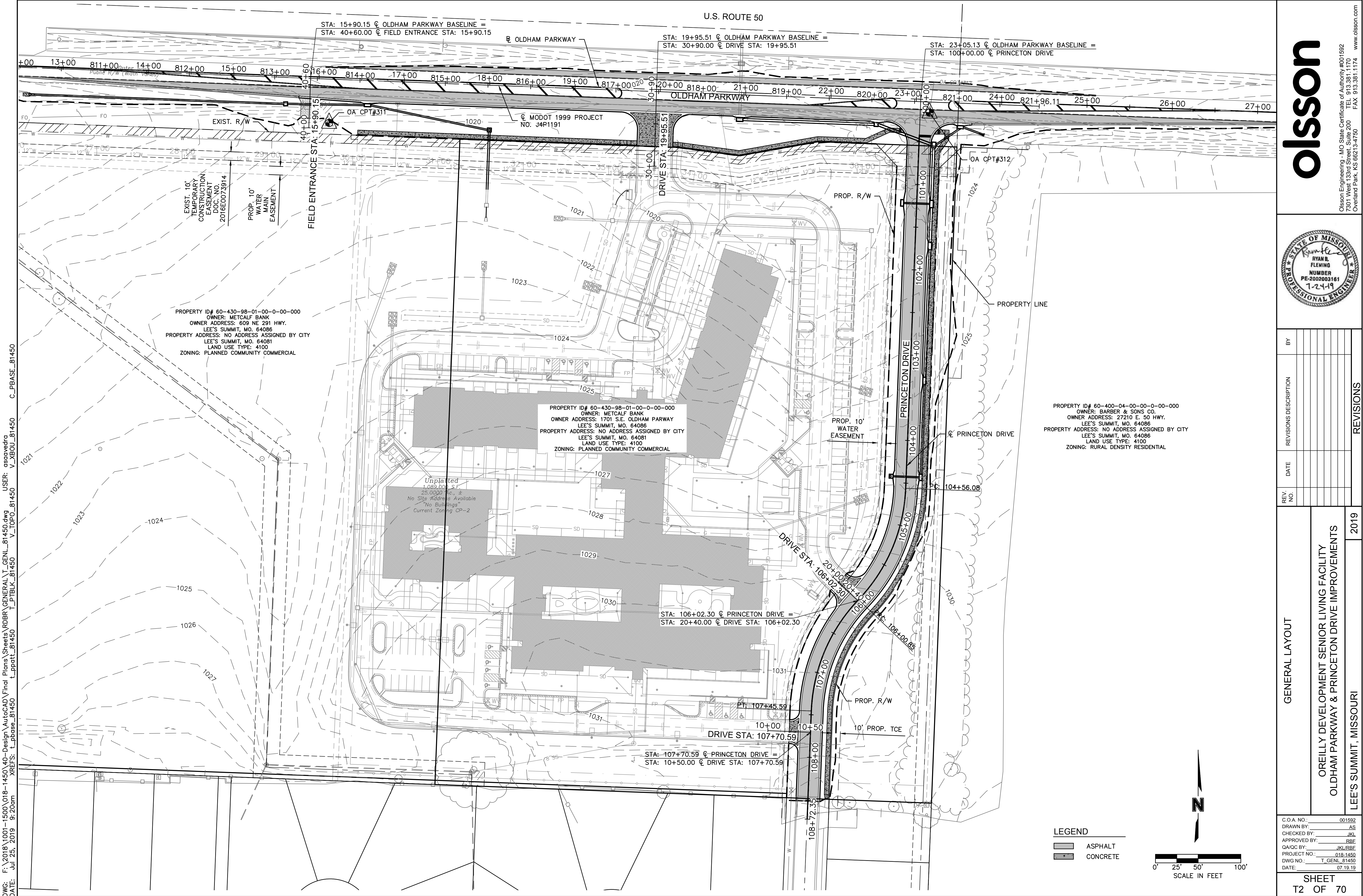


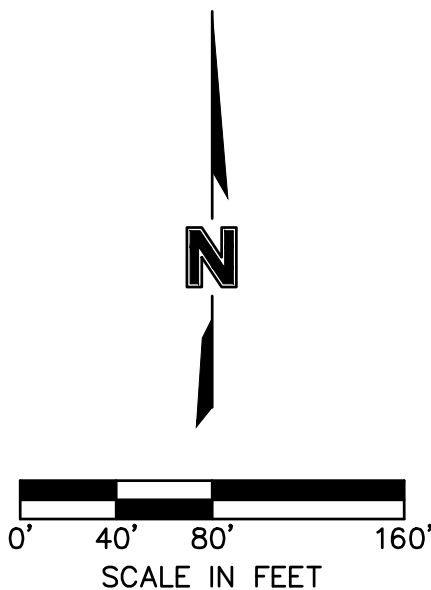
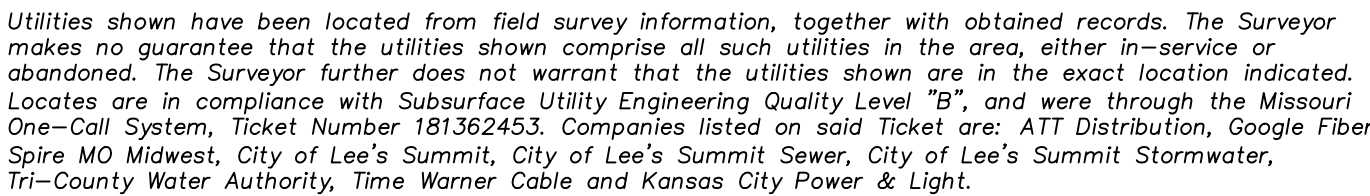
REV. NO.	DATE	REVISIONS DESCRIPTION	BY
1	07/19/2019	ENGR. REVIEW COMMENTS	

TITLE SHEET	OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	2019
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C.O.A. NO.:	001592
DRAWN BY:	AS
CHECKED BY:	JKL
APPROVED BY:	RBE
QA/QC BY:	JKL/RBE
PROJECT NO.:	018-1450
DWG NO.:	T_TTL_81450
DATE:	07.19.19

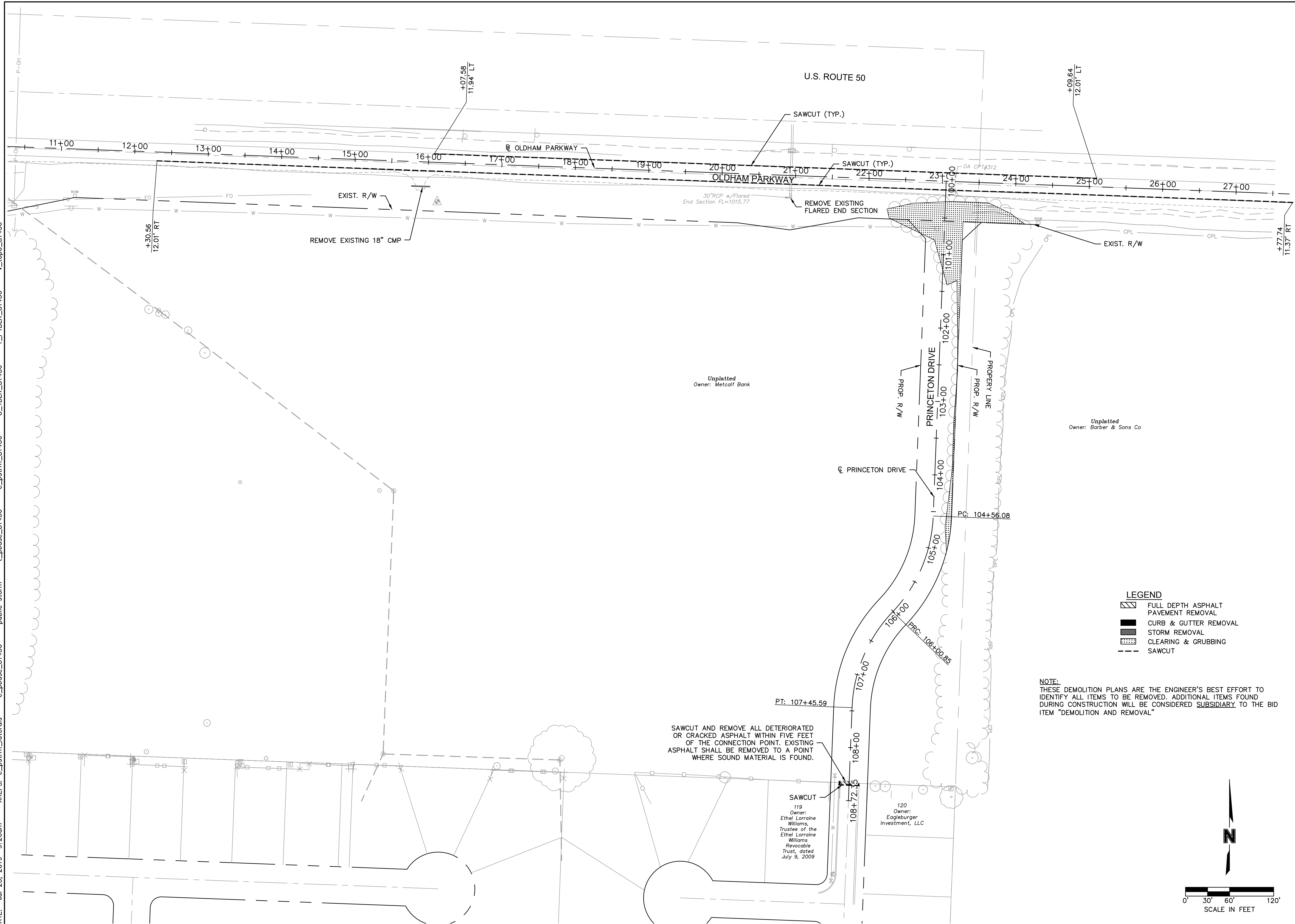
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T1 OF 70





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)
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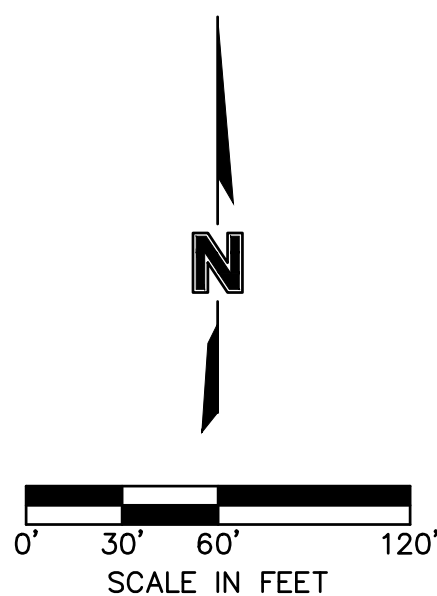
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DATE:	Jul 25, 2019 9:20am	XREFs:	c_phase_81450 public storm c_pstrm_81450 c_pstrm_81450
			T_PTBK_81450 v_topo_81450



NOTE:
THESE DEMOLITION PLANS ARE THE ENGINEER'S BEST EFFORT TO IDENTIFY ALL ITEMS TO BE REMOVED. ADDITIONAL ITEMS FOUND DURING CONSTRUCTION WILL BE CONSIDERED SUBSIDIARY TO THE BID ITEM "DEMOLITION AND REMOVAL"

LEGEND

	FULL DEPTH ASPHALT PAVEMENT REMOVAL
	CURB & GUTTER REMOVAL
	STORM REMOVAL
	CLEARING & GRUBBING
	SAWCUT



DEMOLITION & REMOVALS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

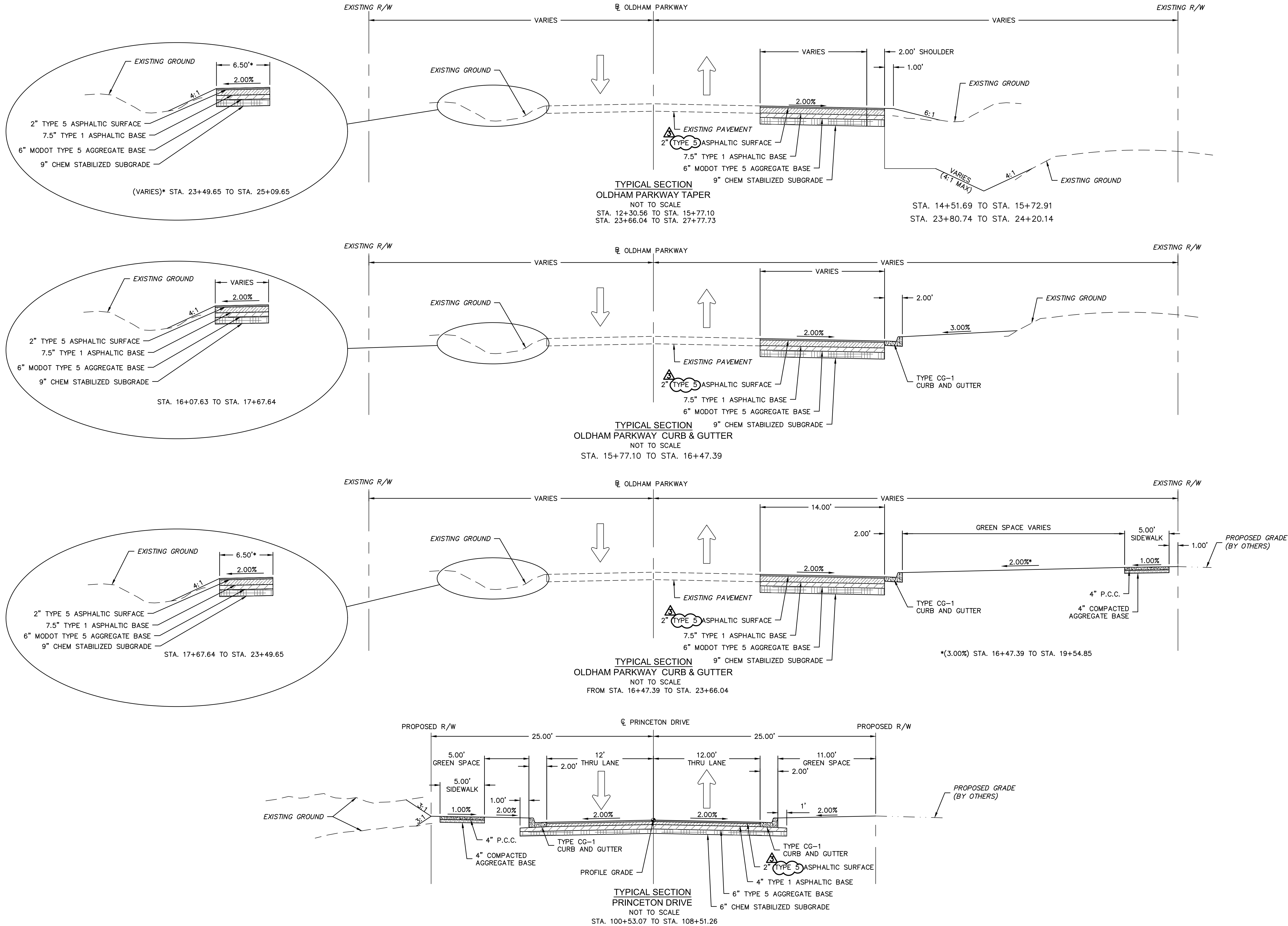
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2019

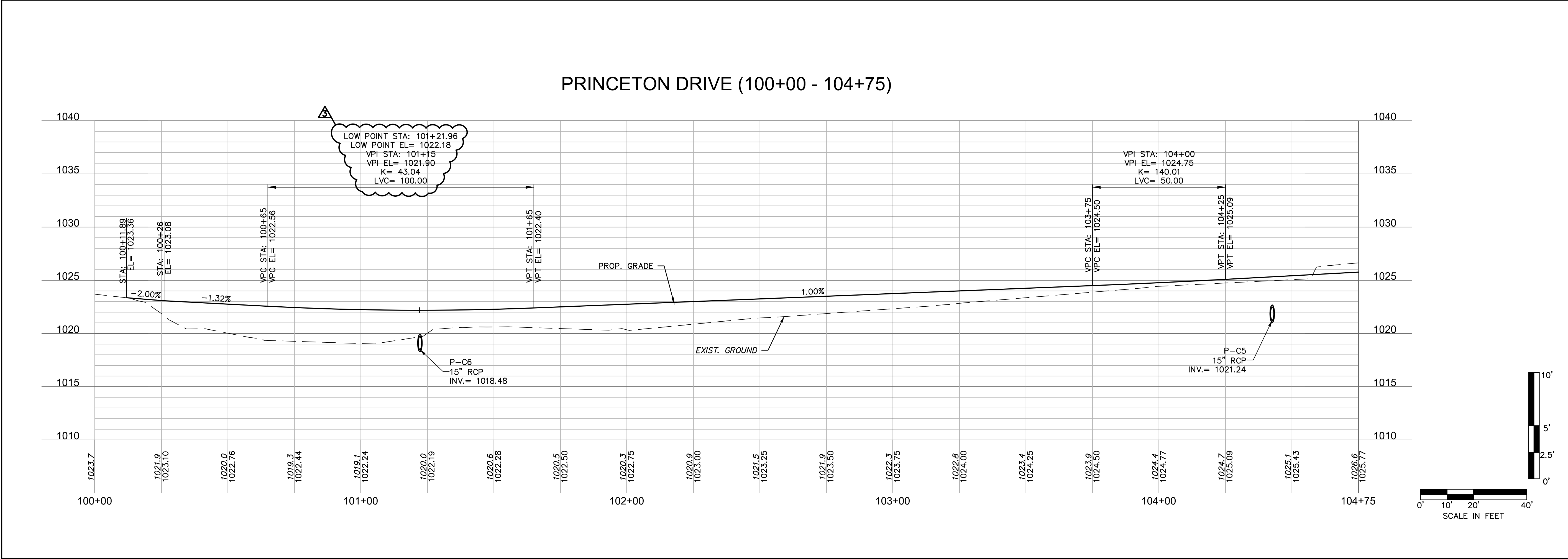
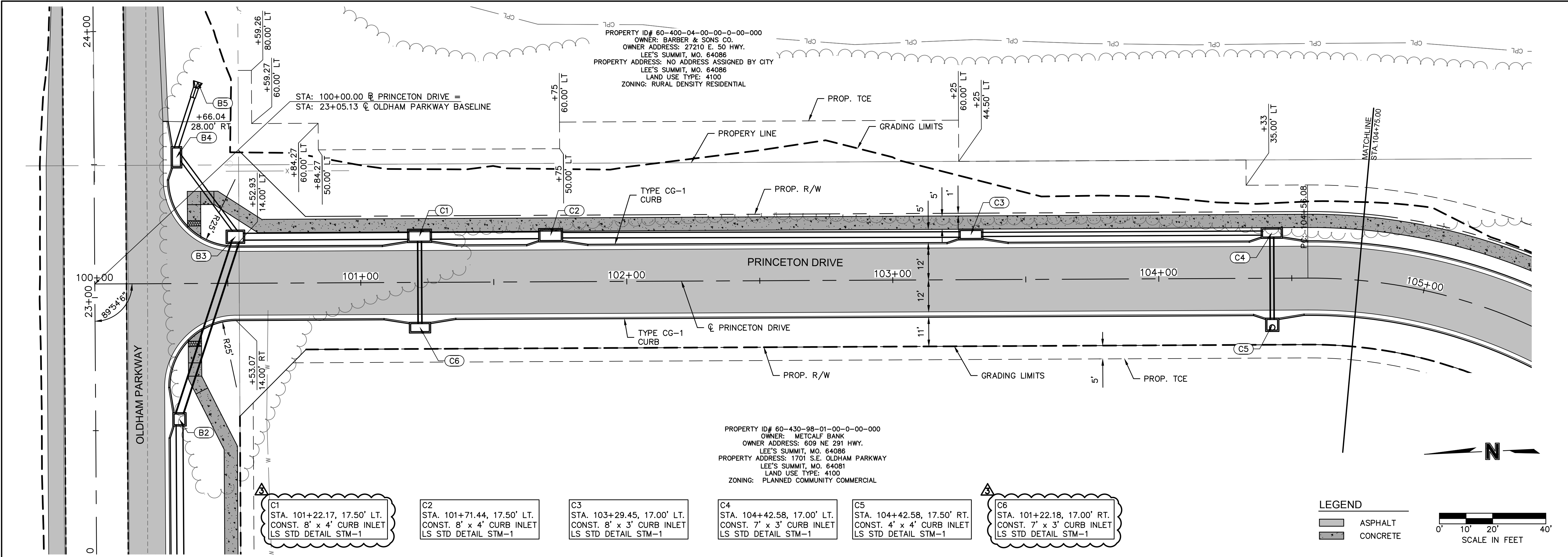
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PRINCETON DRIVE
PLAN & PROFILE

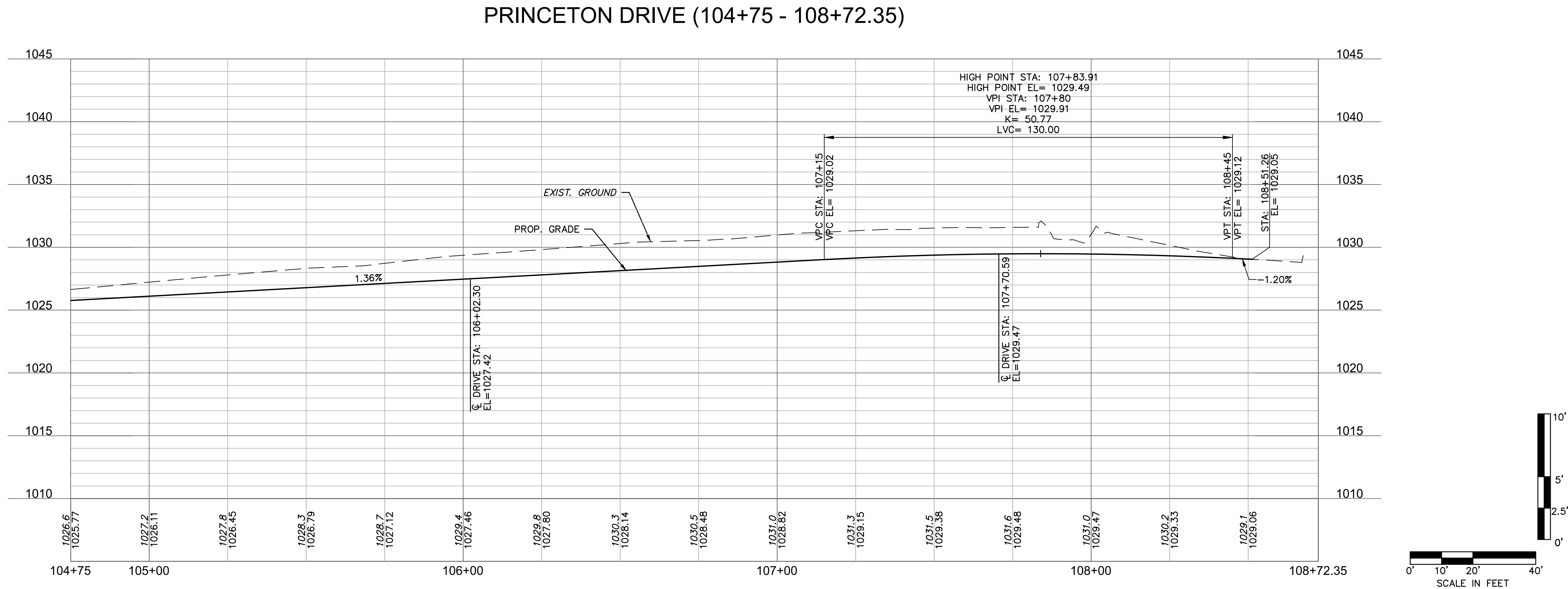
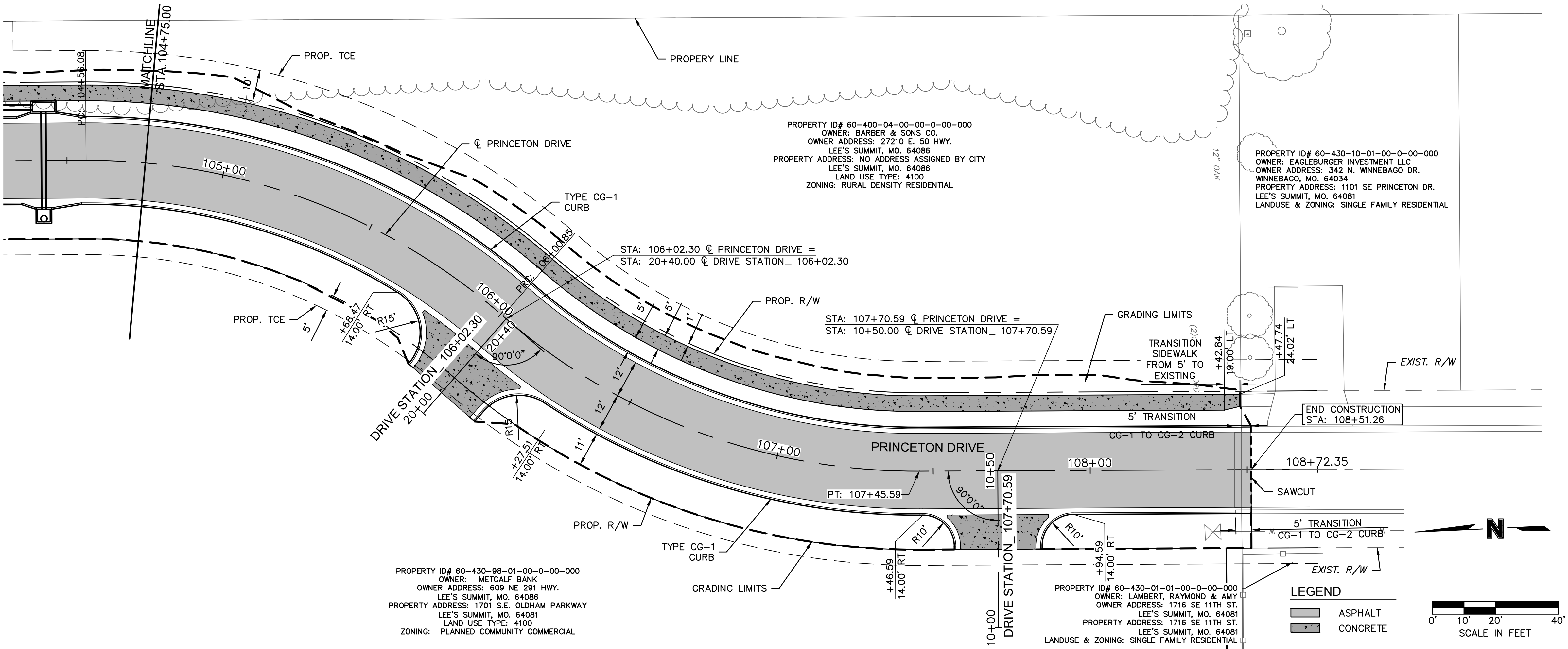
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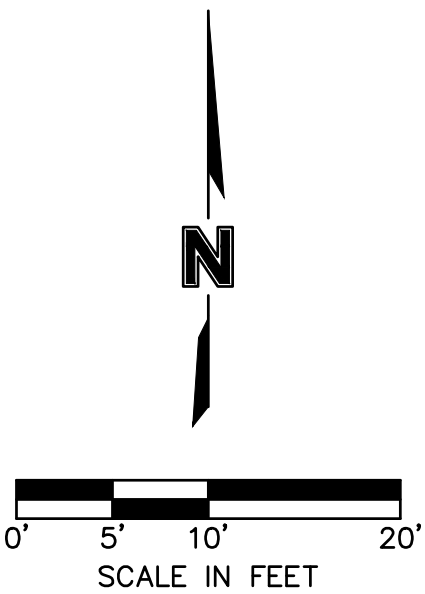
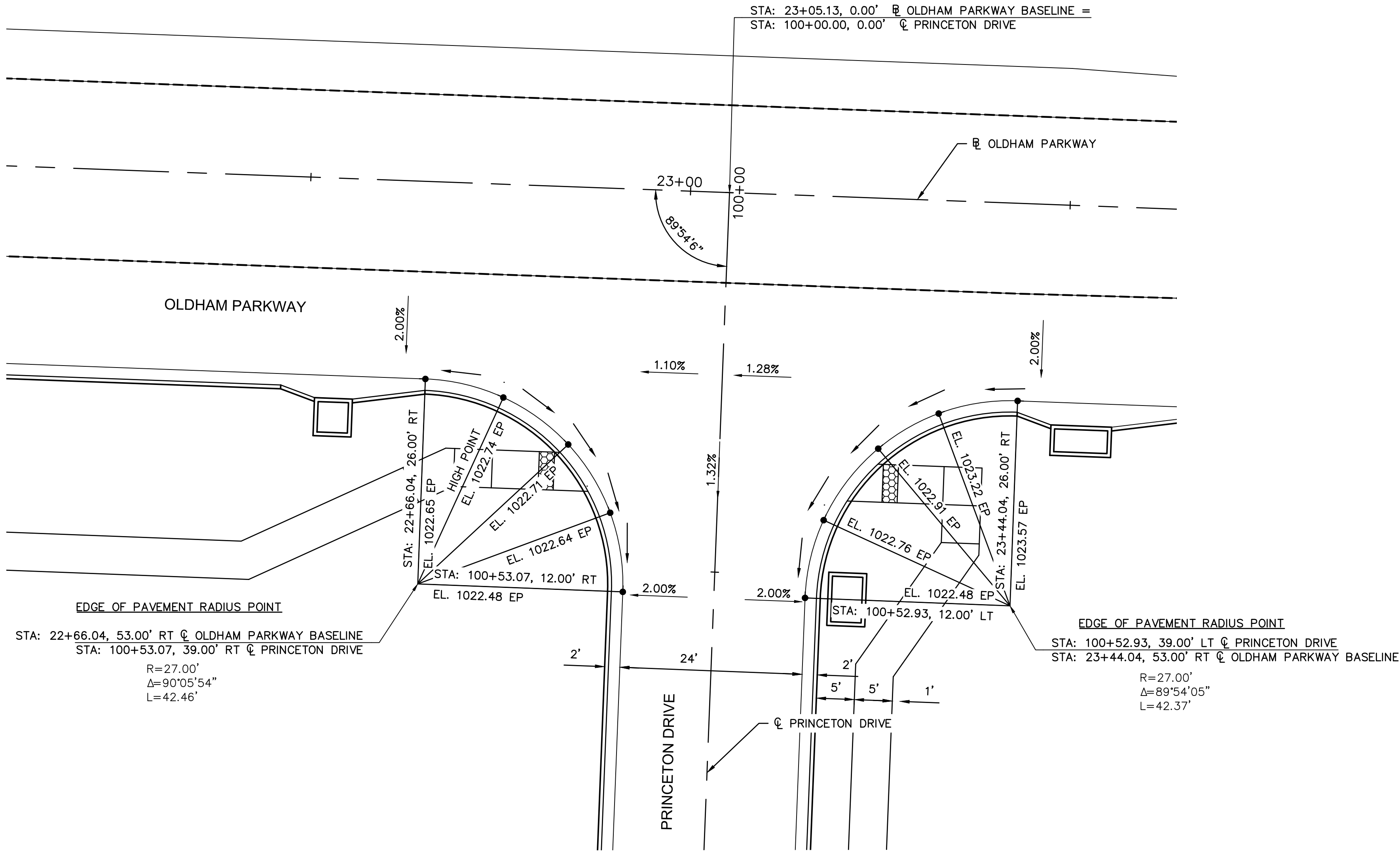
PRINCETON DRIVE
PLAN & PROFILE
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INTERSECTION LAYOUT

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

2019

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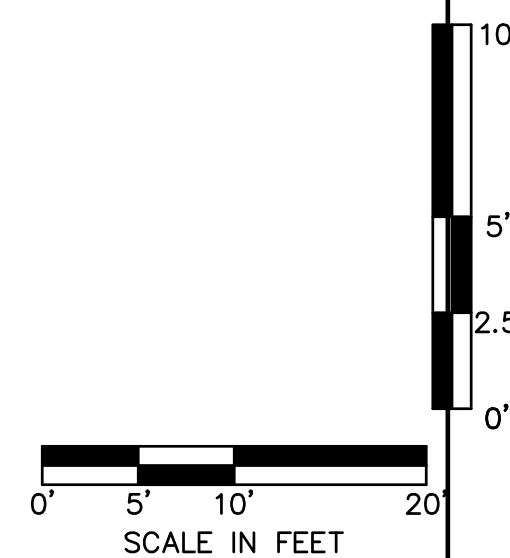
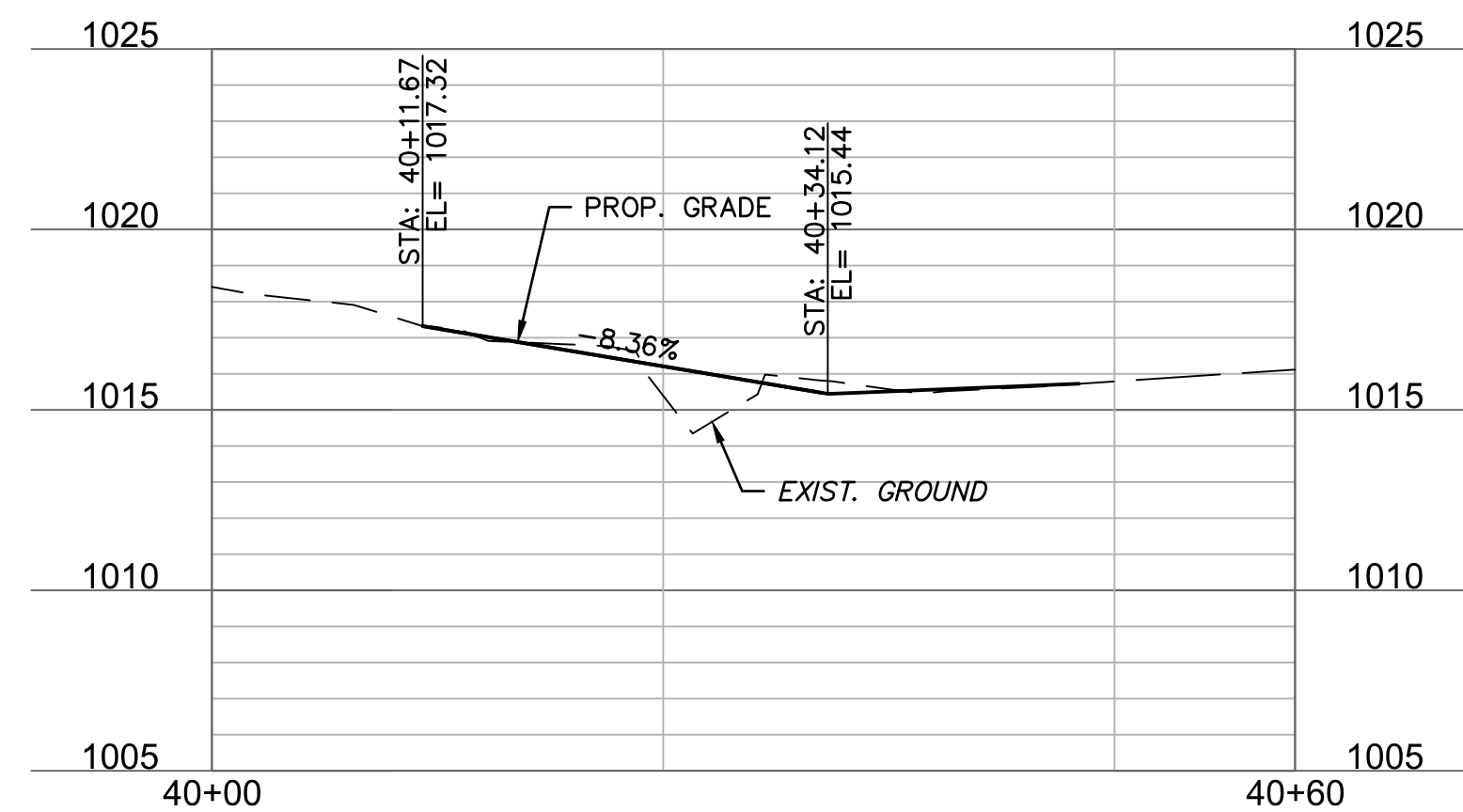


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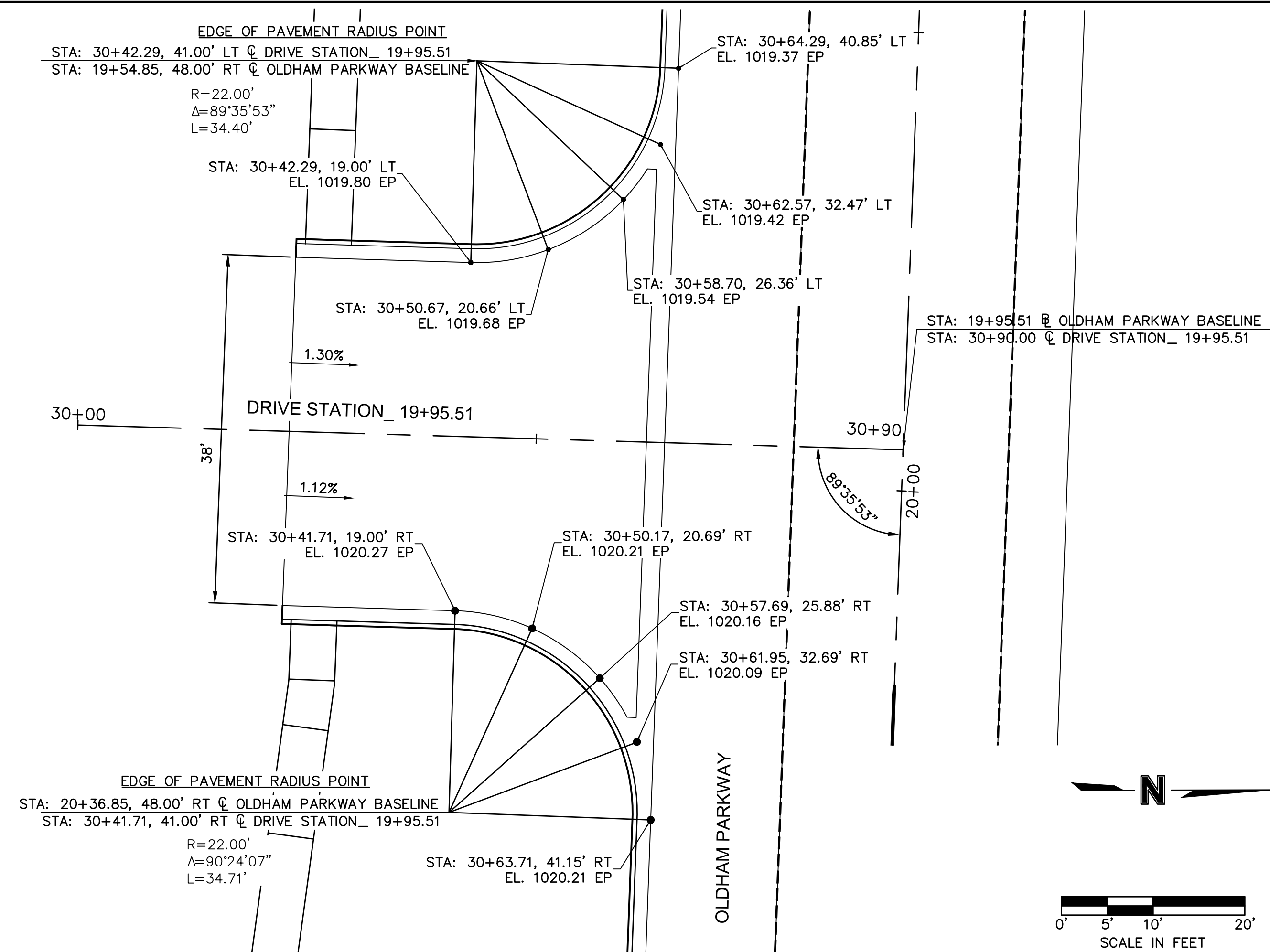
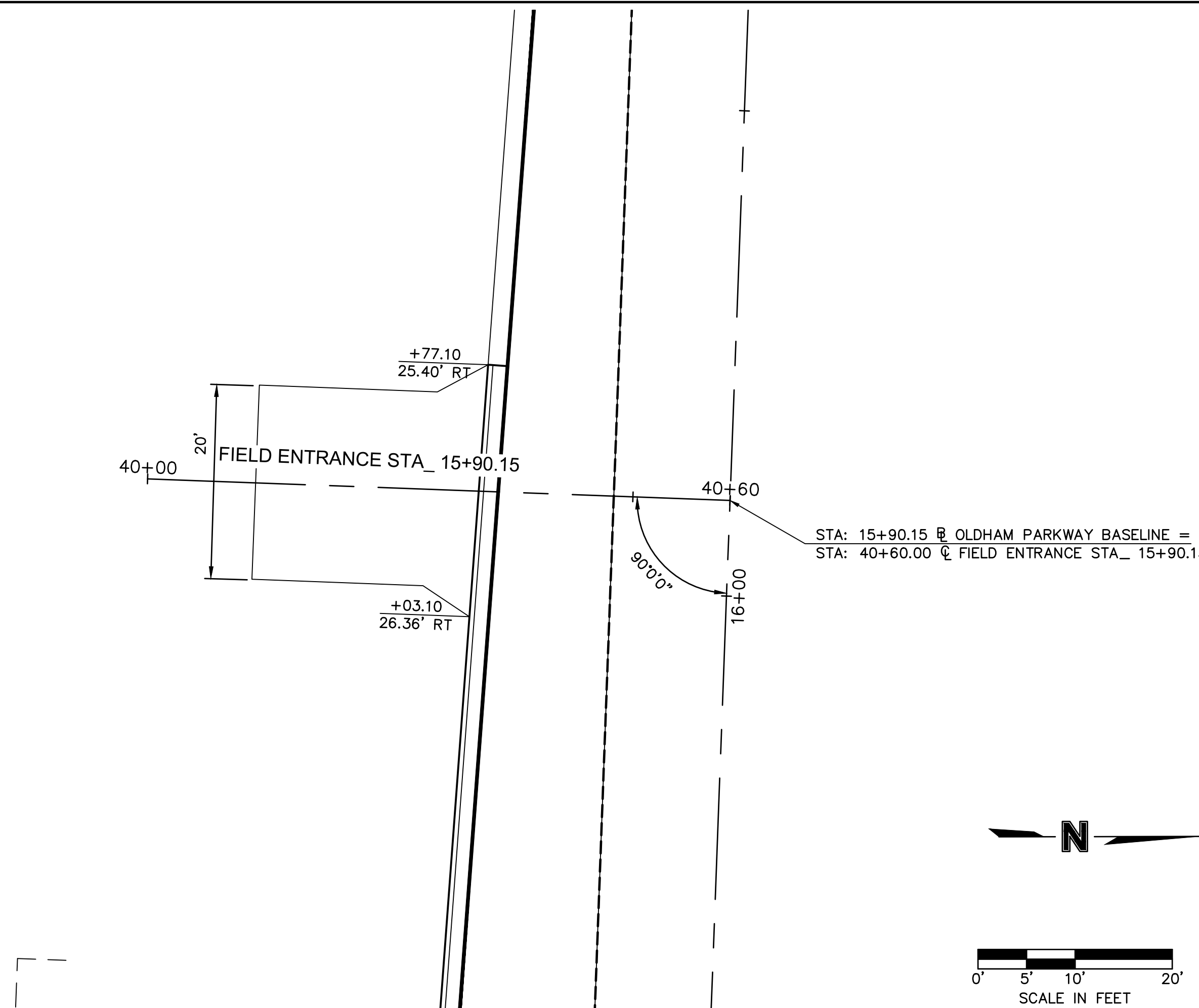
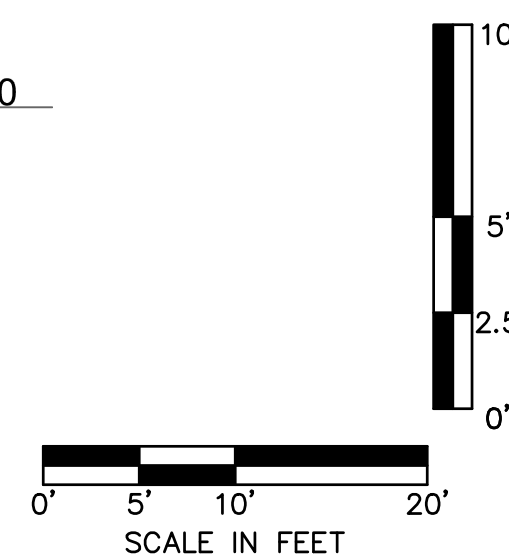
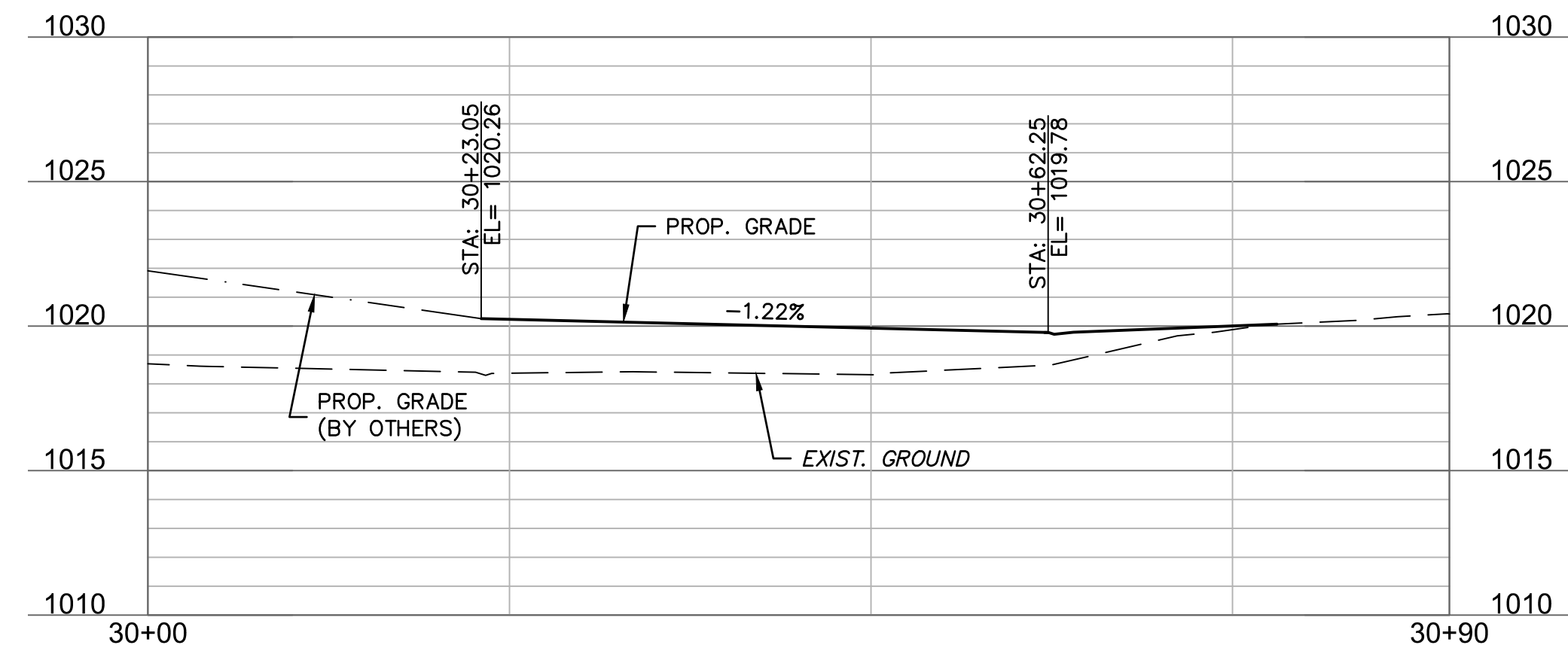
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FIELD ENTRANCE STA_ 15+90.15 (40+00 - 40+60)



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

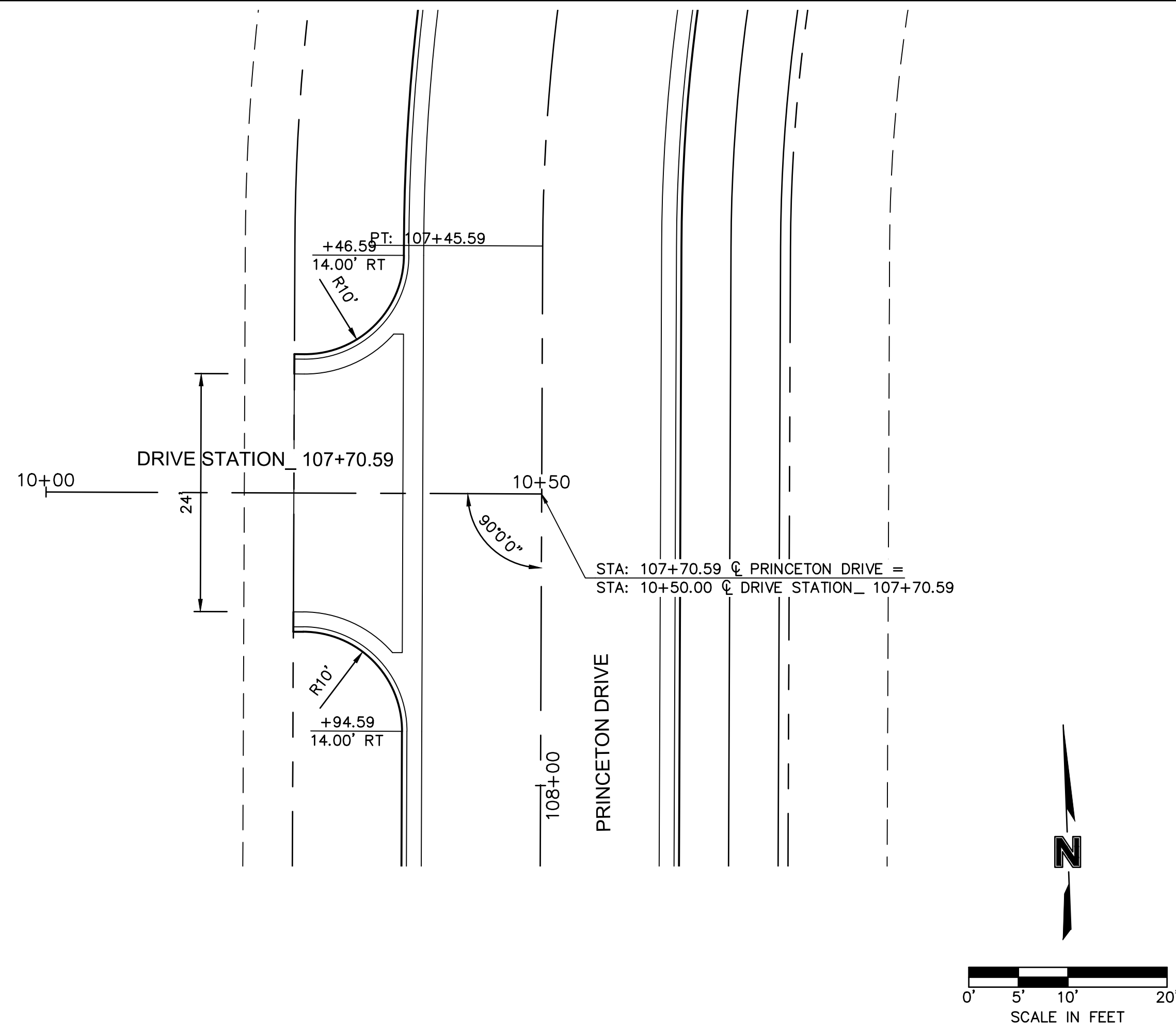
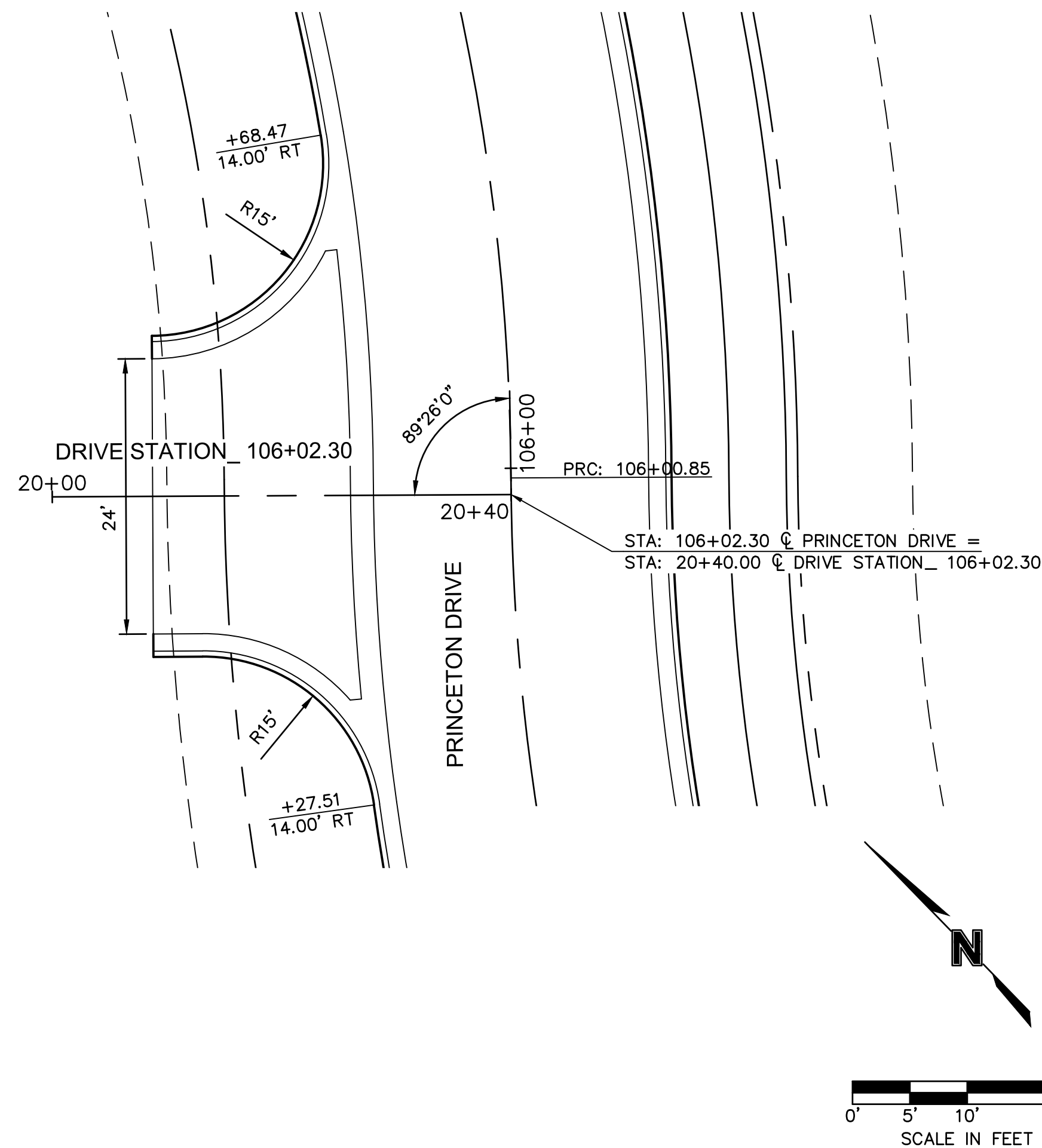
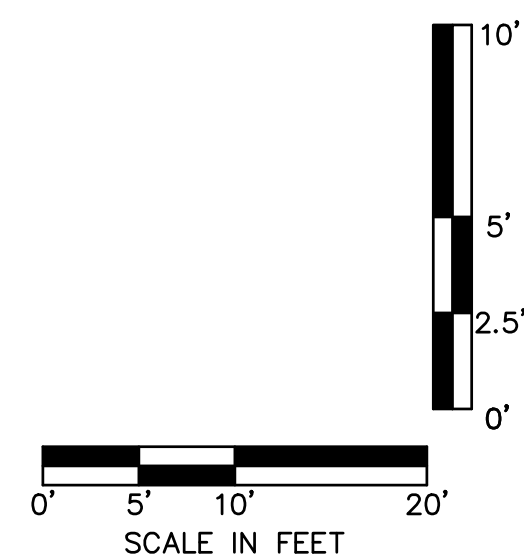
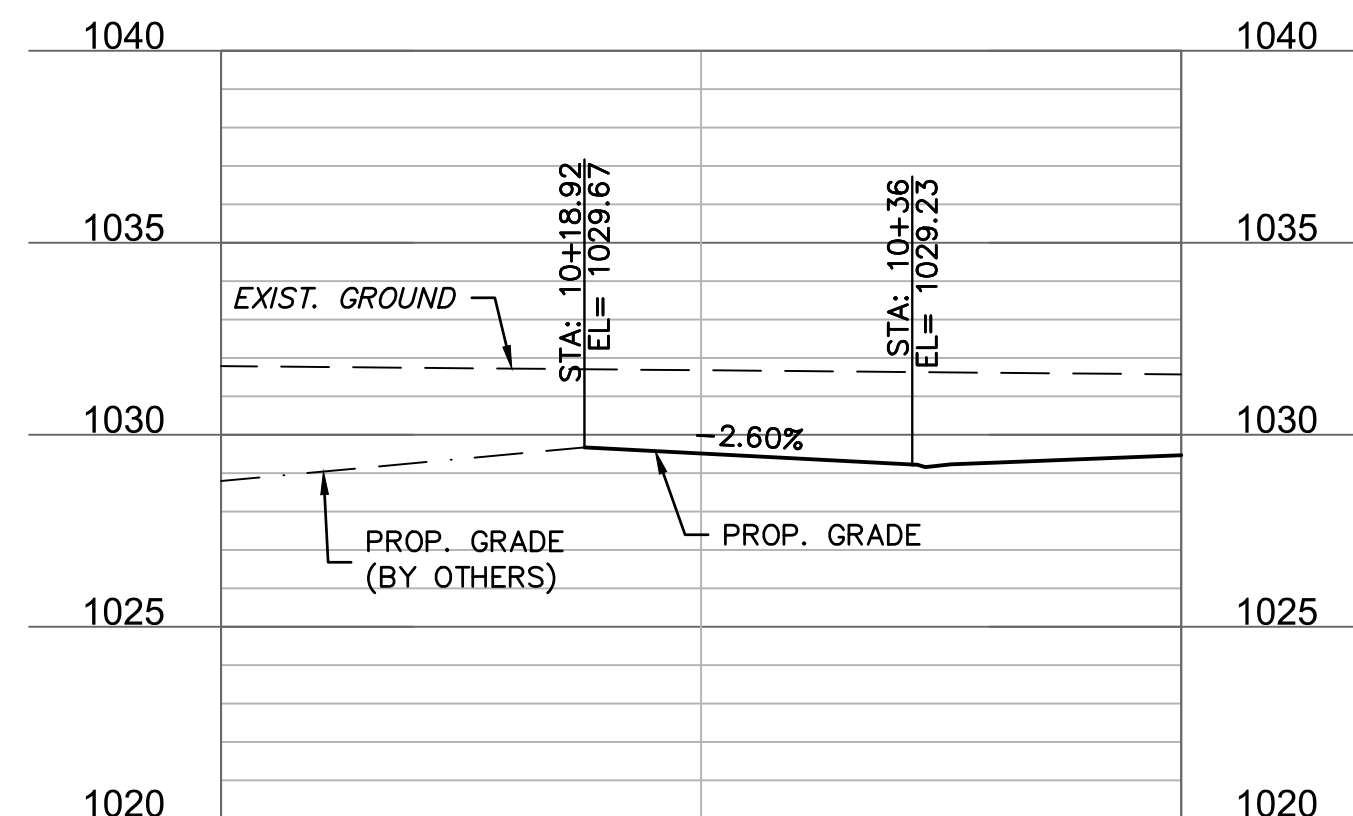
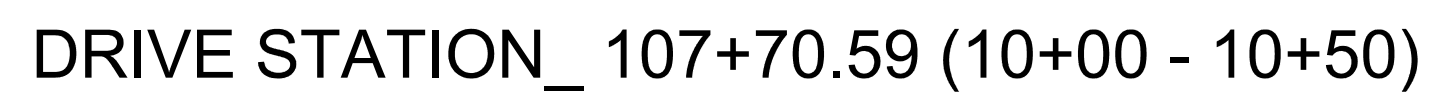
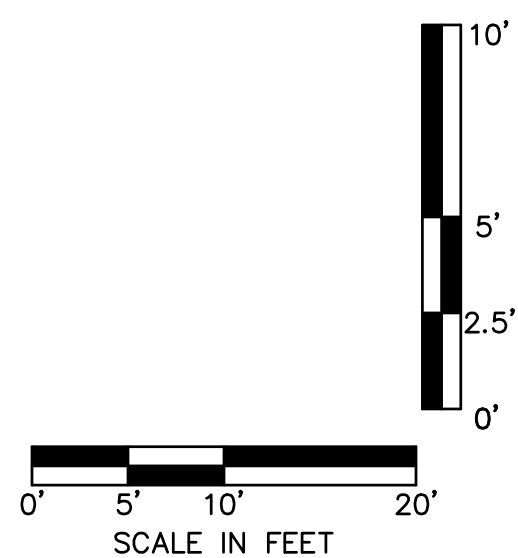
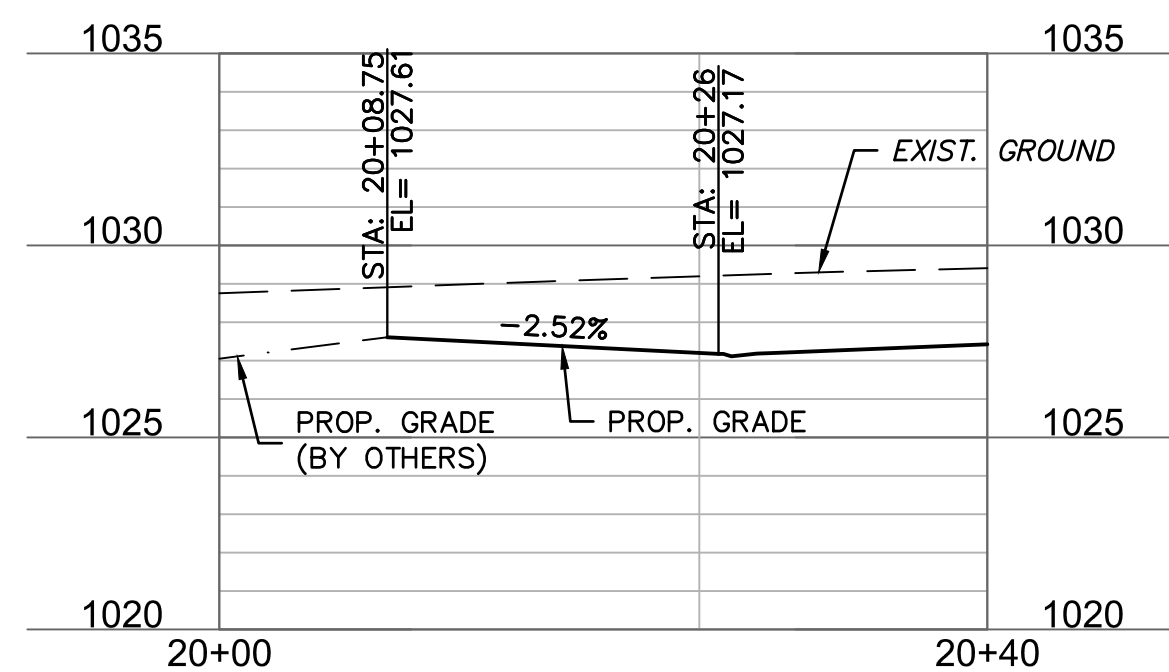
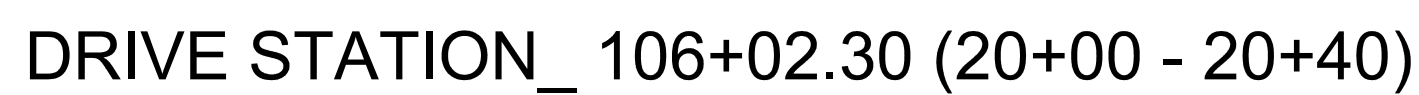


DRIVE LAYOUTS OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS LEE'S SUMMIT, MISSOURI 2019	REV. NO.	DATE	REVISIONS DESCRIPTION	BY
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DRIVE LAYOUTS	OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	20
LEE'S SUMMIT, MISSOURI		

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PROJECT NO.: 018-1450
DWG NO.: T_DRV01_81450
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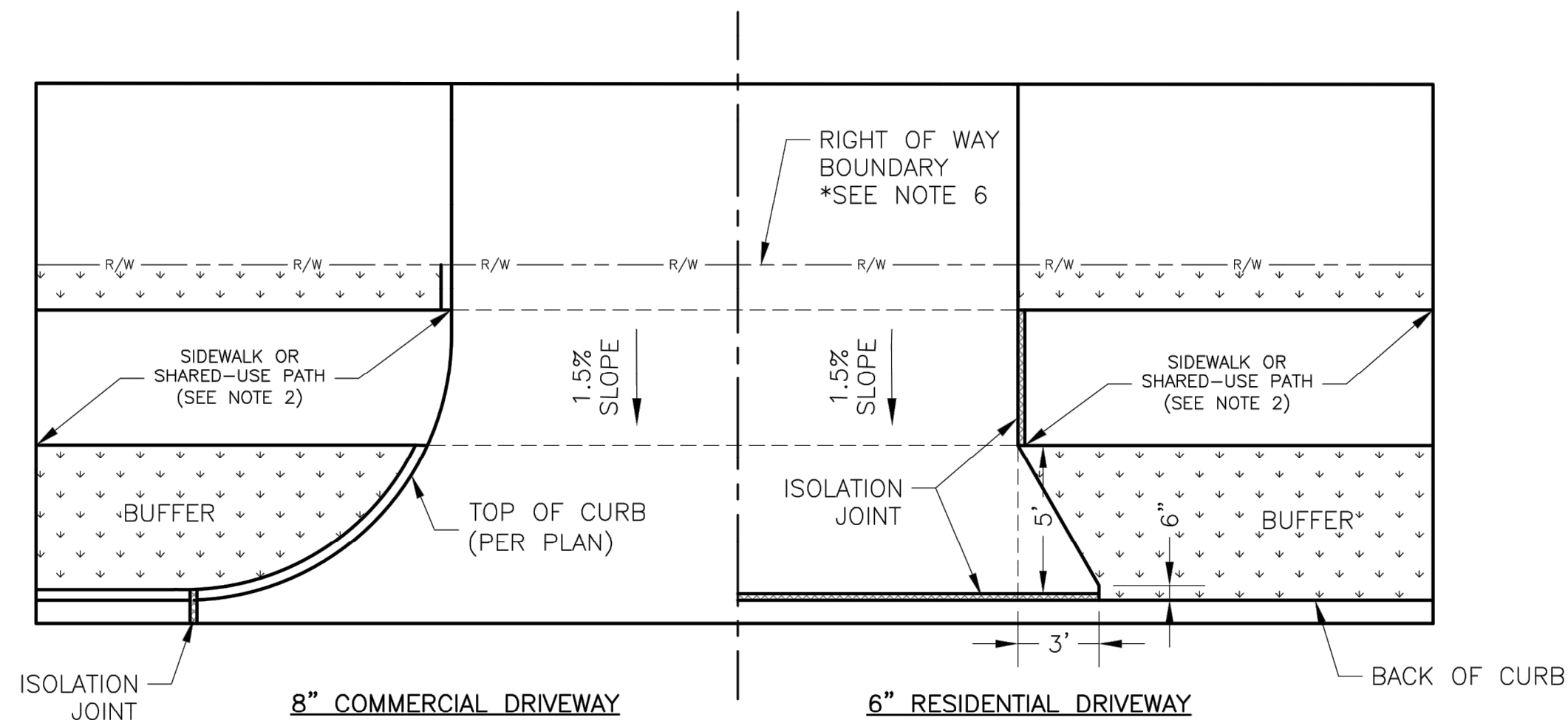
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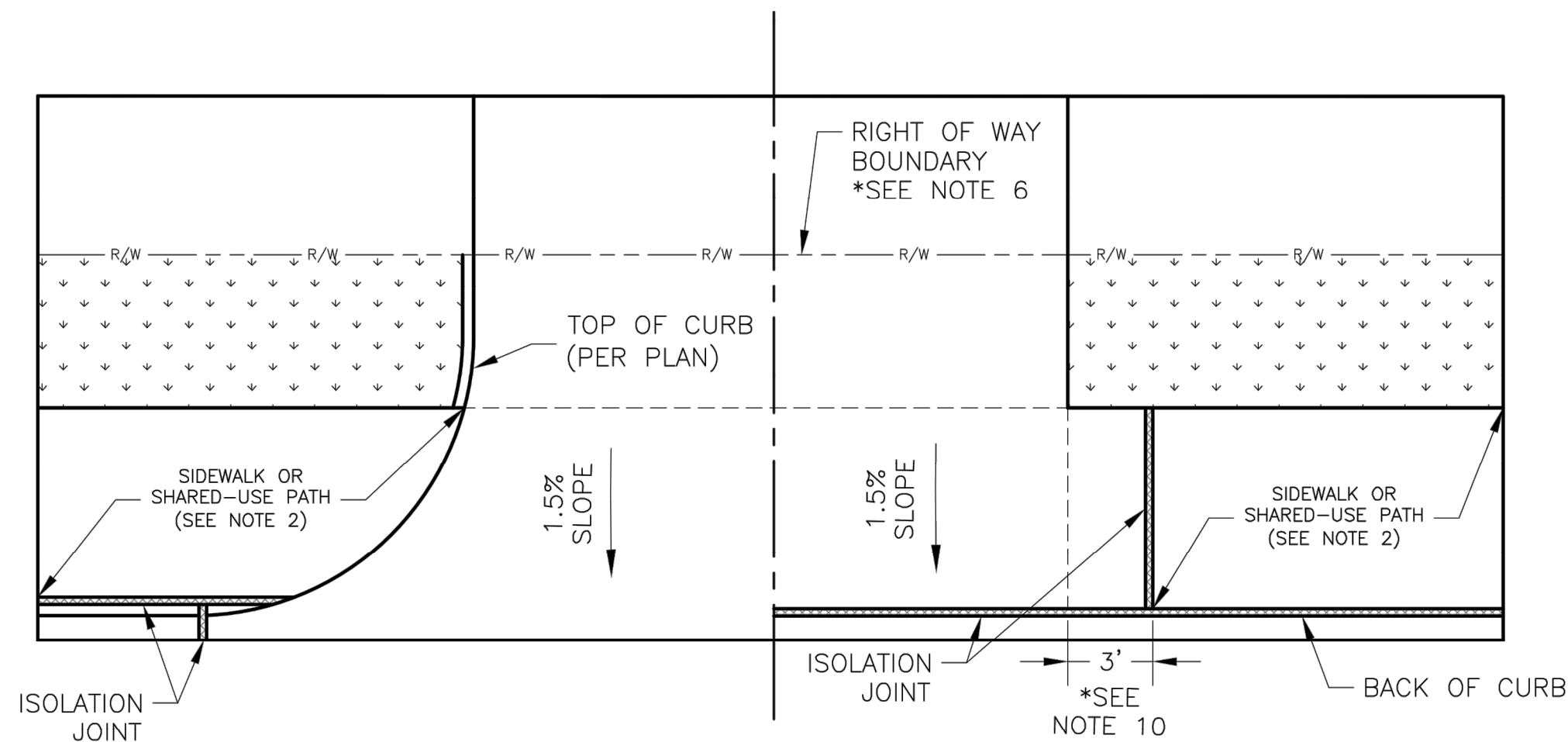
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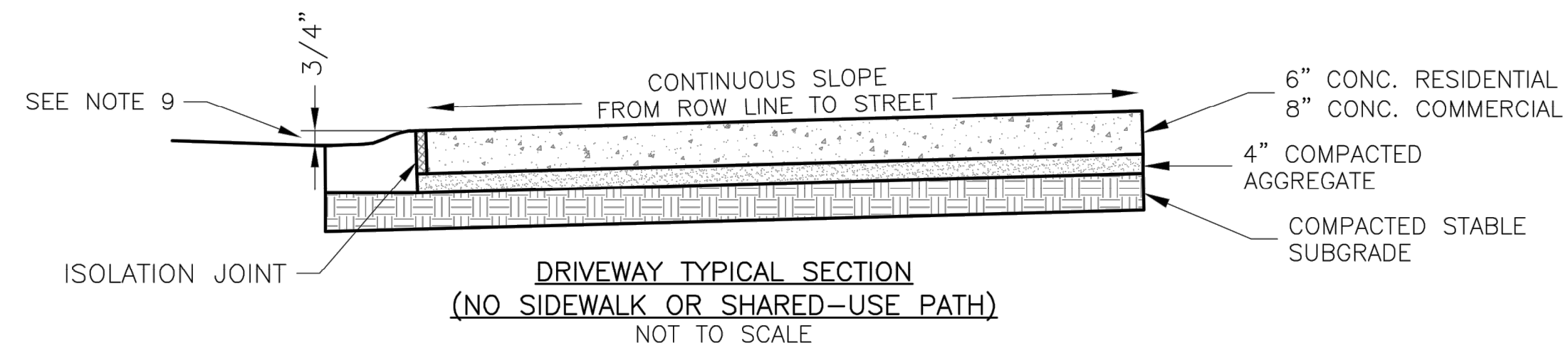
DRIVEWAY WITH BUFFER
NOT TO SCALE



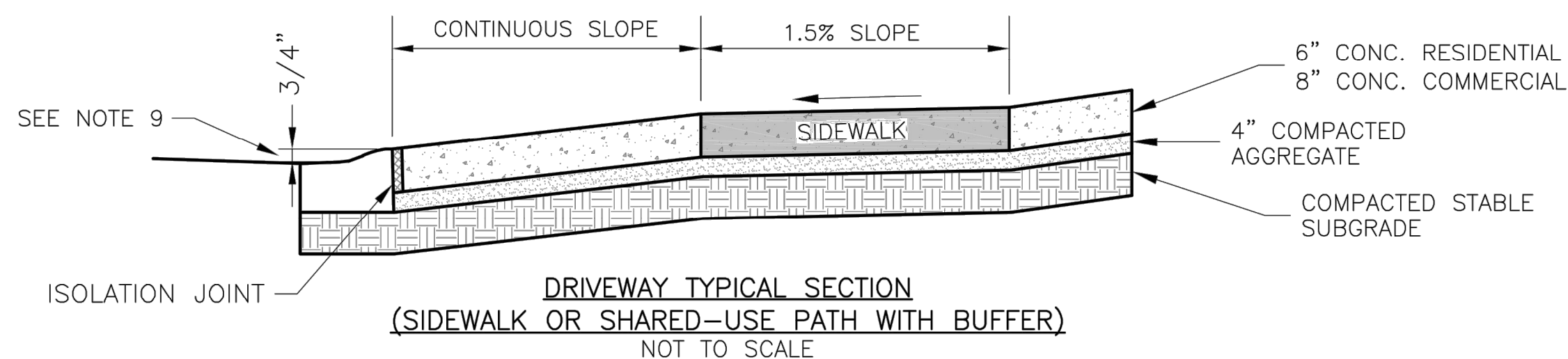
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GENERAL NOTES

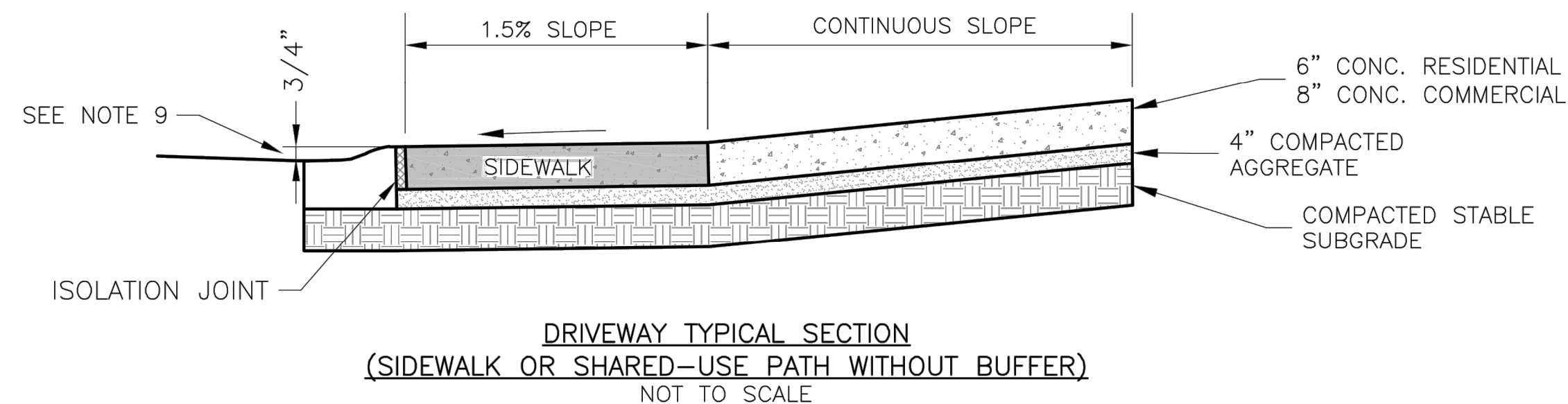
1. SUBGRADE SHALL BE STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
2. ALL DRIVE APPROACHES SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG) FOR SLOPE REQUIREMENTS WHEN SIDEWALK IS REQUIRED (SEE ADA RAMP RETROFIT DETAIL GEN-3B, SIDEWALK/SHARED 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.



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



DRIVEWAY TYPICAL SECTION
(SIDEWALK OR SHARED-USE PATH WITH BUFFER)
NOT TO SCALE



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

LS **LEE'S SUMMIT**
MISSOURI

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

STANDARD DETAILS

CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

Sheet Na₂e:

Sheet Na₂e:

DRIVEWAY DETAIL

GEN-1

Drawn By: MJF

Checked By: DL

Date: 04/17

Pr[?] [?] [?]

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REVISIONS

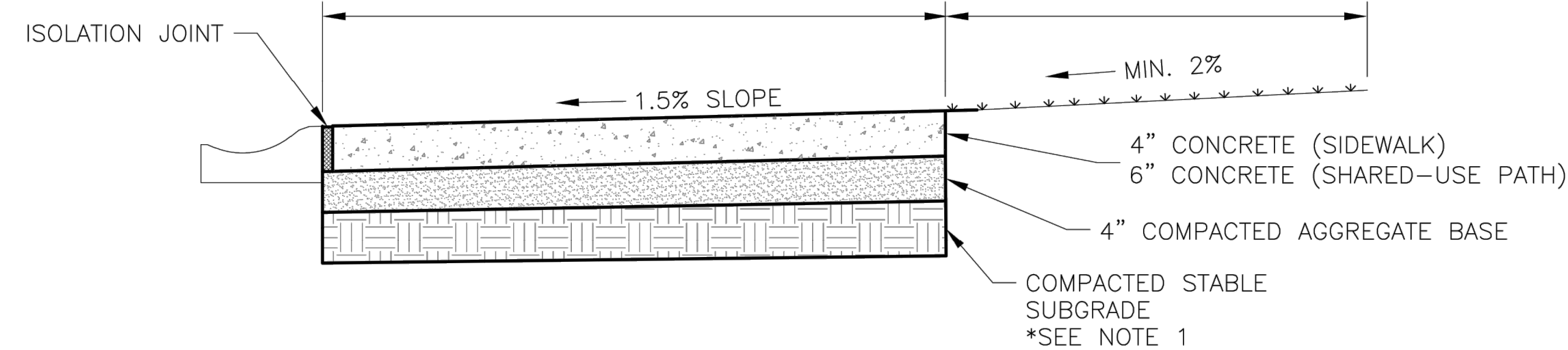
STANDARD DETAILS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

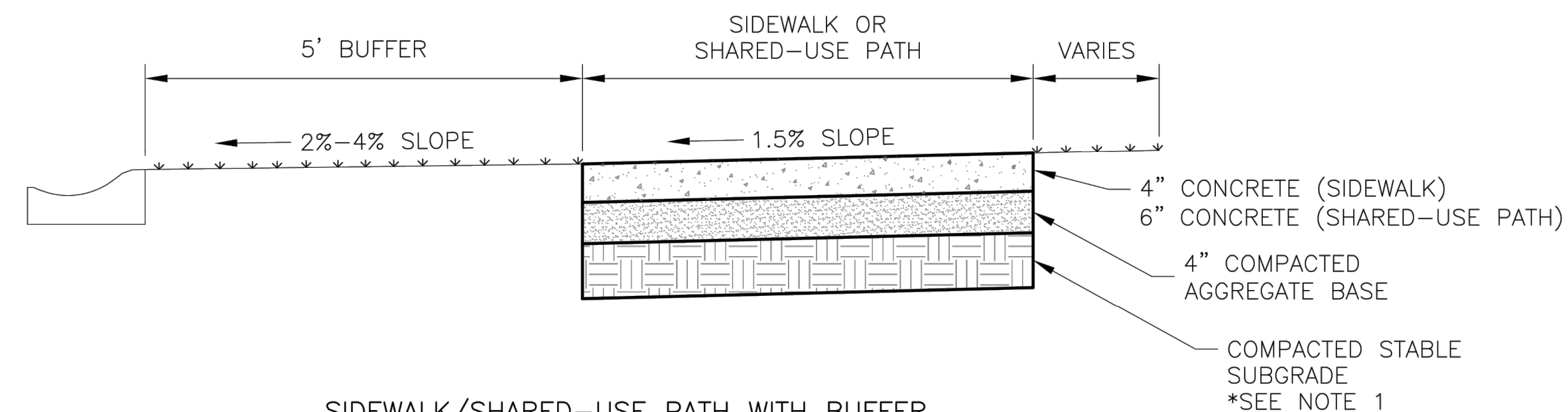
LEE'S SUMMIT, MISSOURI

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: 07.19.19



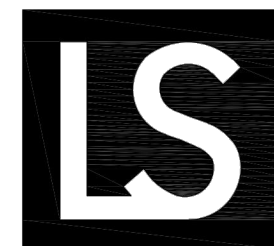
SIDEWALK/SHARED-USE PATH WITHOUT BUFFER
NOT TO SCALE



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

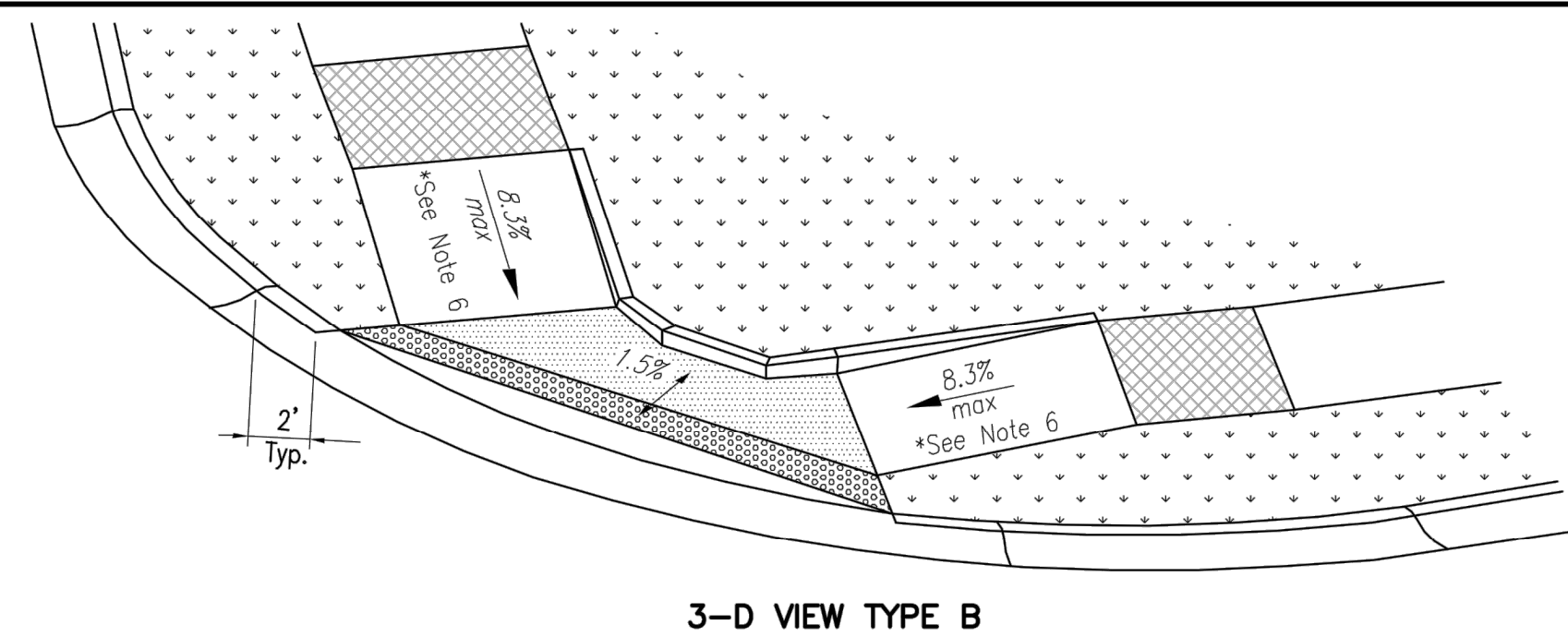
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STANDARD DETAILS

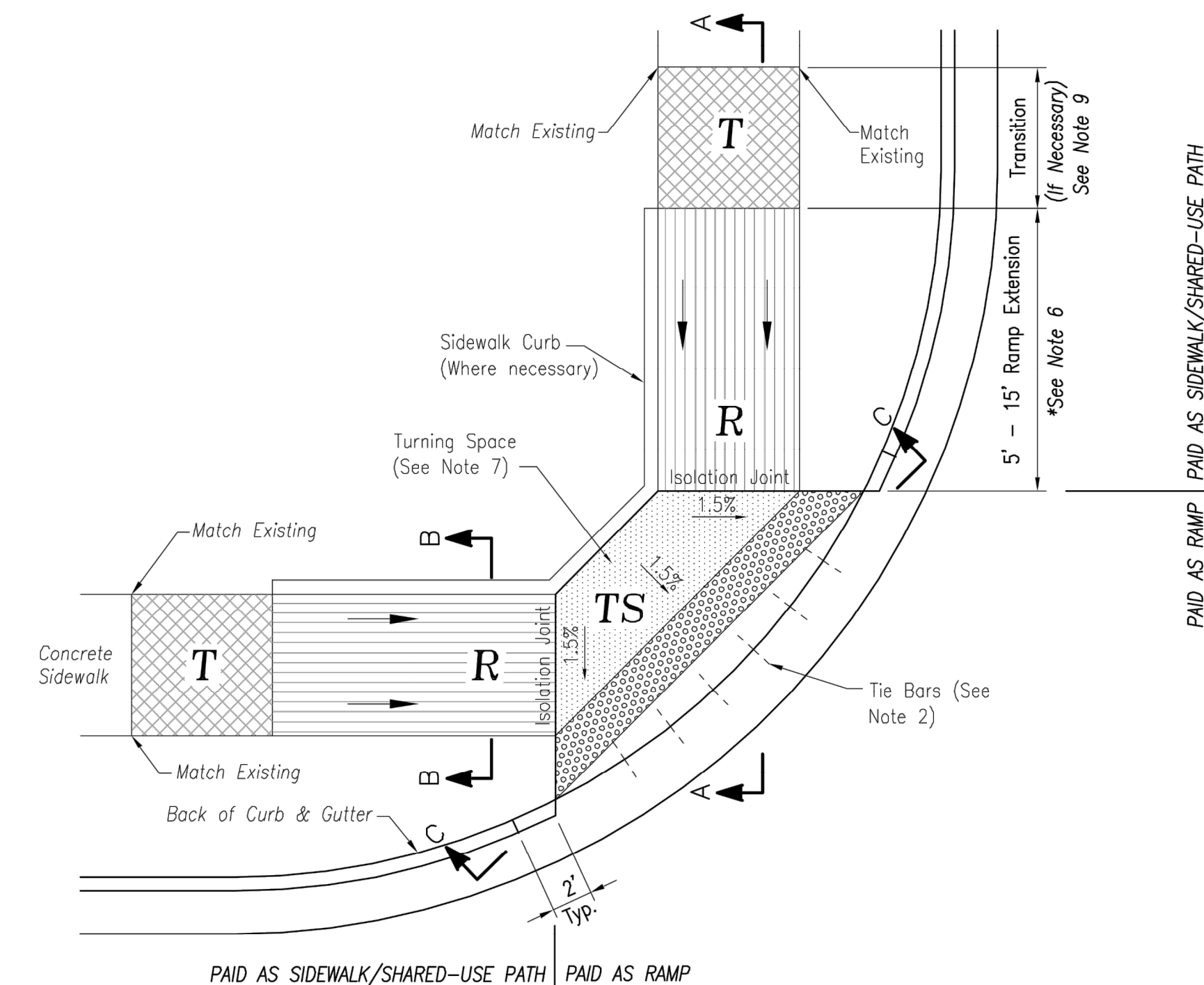
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

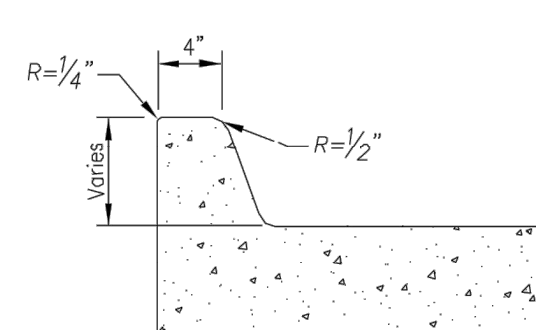
C.O.A. NO.: 001592
DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 07.19.19



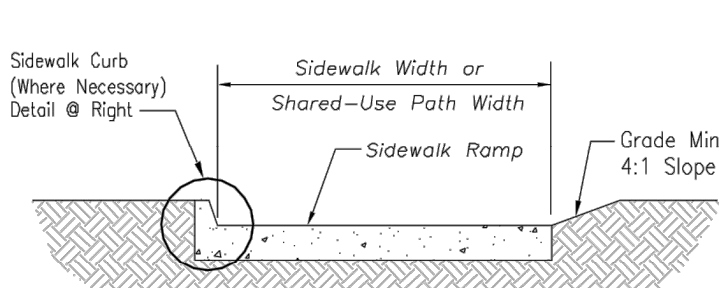
3-D VIEW TYPE B
SIDEWALK/SHARED-USE RAMP



TYPE B SIDEWALK/SHARED-USE RAMP
Not to Scale



SIDEWALK CURB DETAIL

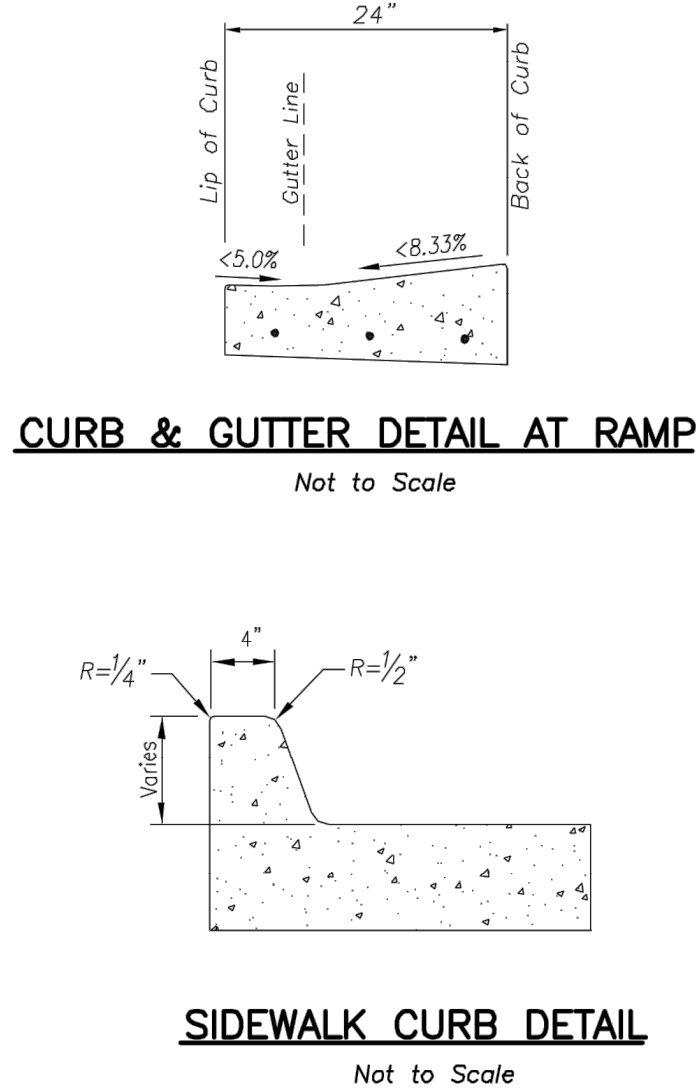
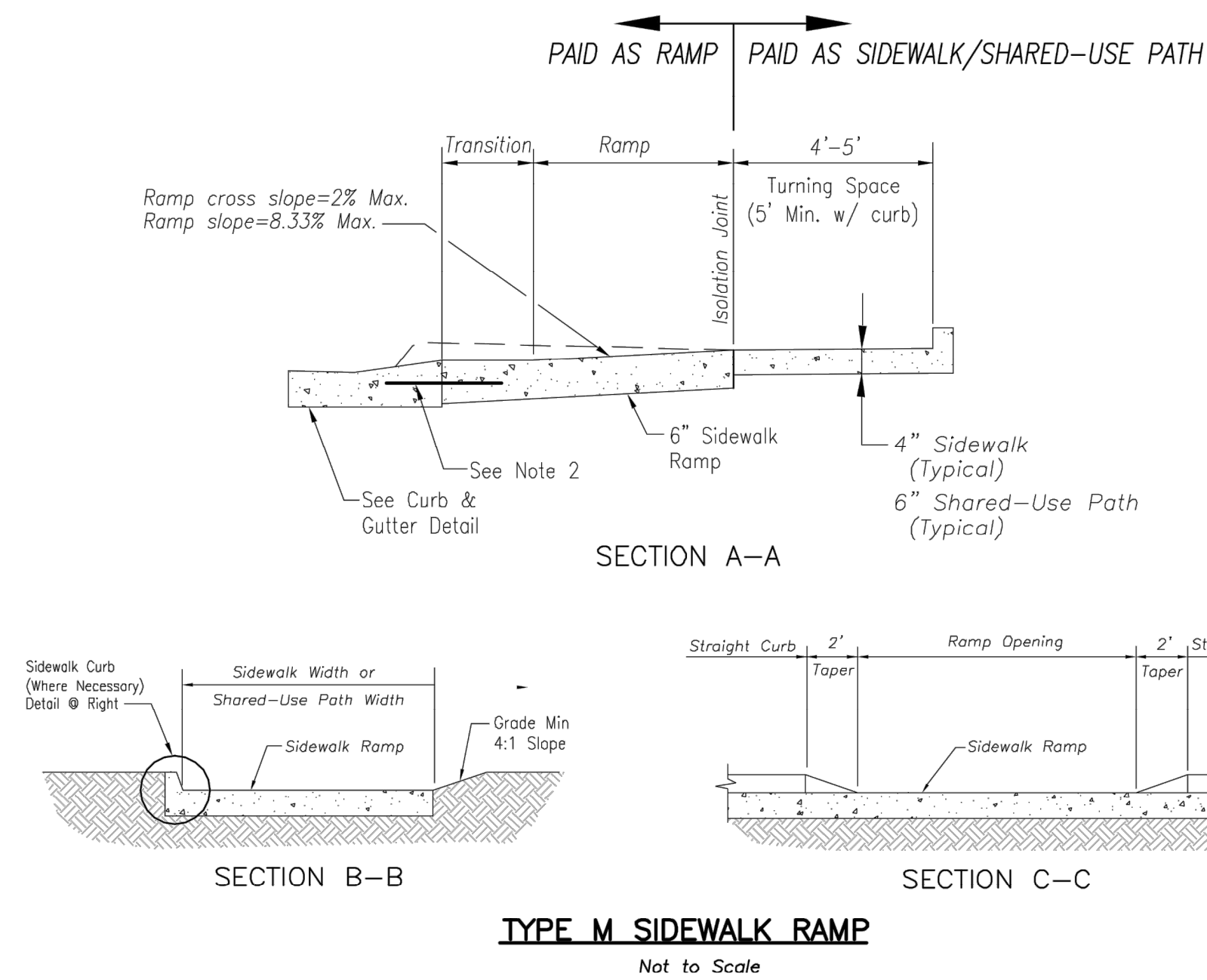


A cross-sectional diagram of a sidewalk ramp opening. The diagram shows a horizontal sidewalk surface with a central ramp opening. The ramp opening is flanked by two vertical sections labeled "Taper". The width of the ramp opening is indicated as 2' on each side. The total width of the sidewalk section shown is 2' + 2' = 4'. The ramp opening is labeled "Ramp Opening". The sidewalk surface is labeled "Sidewalk Ramp". The curb and gutter are labeled "Curb & Gutter". The diagram shows the ramp opening is 2' wide on each side of the taper. The sidewalk is 2' wide on each side of the taper. The curb and gutter are shown on the outer edges of the sidewalk.

Diagram illustrating a gutter section with a width of 24". The gutter line is shown, and the slopes are indicated as $<5.0\%$ and $<8.33\%$. The diagram also labels the "Lip of Curb" and "Back of Curb".

CURB & GUTTER DETAIL AT RAMP

NOTE: THESE DETAILS ARE MEANT TO DESCRIBE TIE BAR LOCATIONS. AND ISOLATION JOINTS. IT IS NOT MEANT TO SUPERCEDE THE SITE-SPECIFIC DESIGN DETAILS FOR THE ADA-ACCESSIBLE RAMPS.



- ST** **LEE'S SUMMIT**
MISSOURI

Project: STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
Sheet Name: ADA RAMP RETROFIT DETAIL

ADA RAMP RETROFIT DETAIL

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

GEN-3B

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



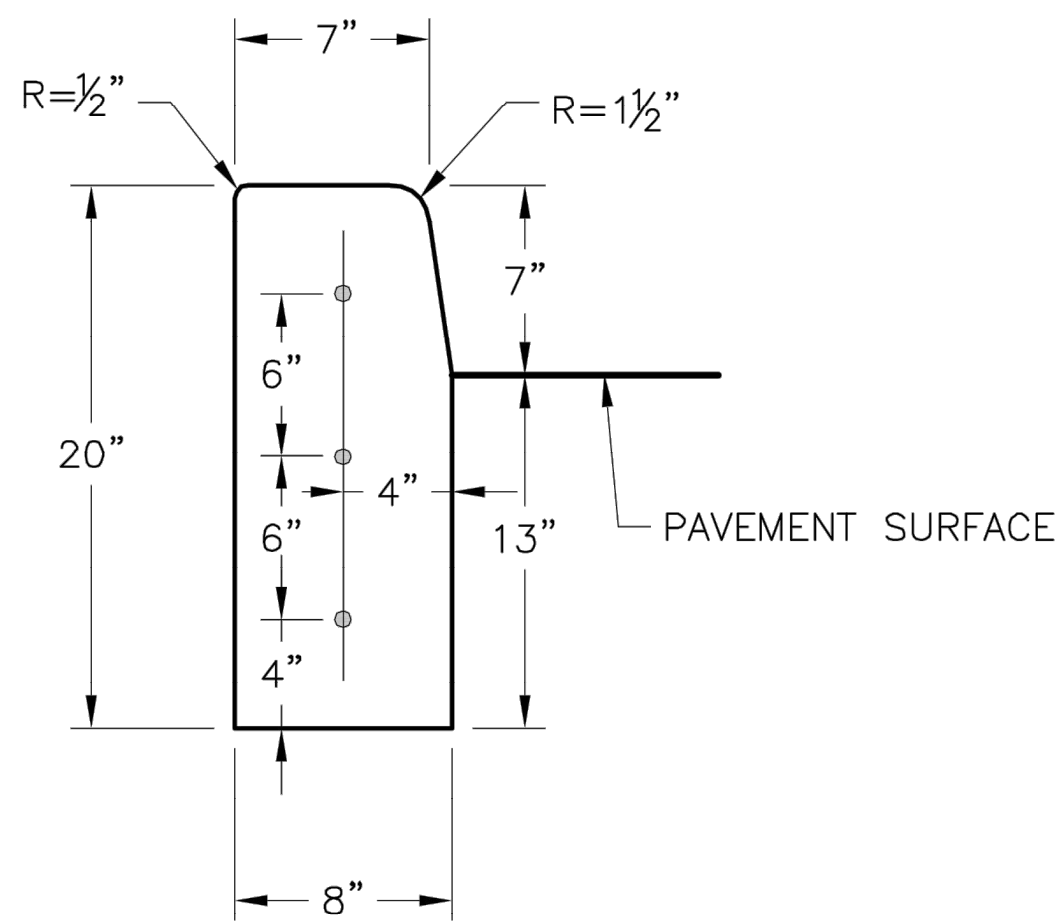
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73301 West 133rd Street, Suite 200 TEL 913.381.1170
Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

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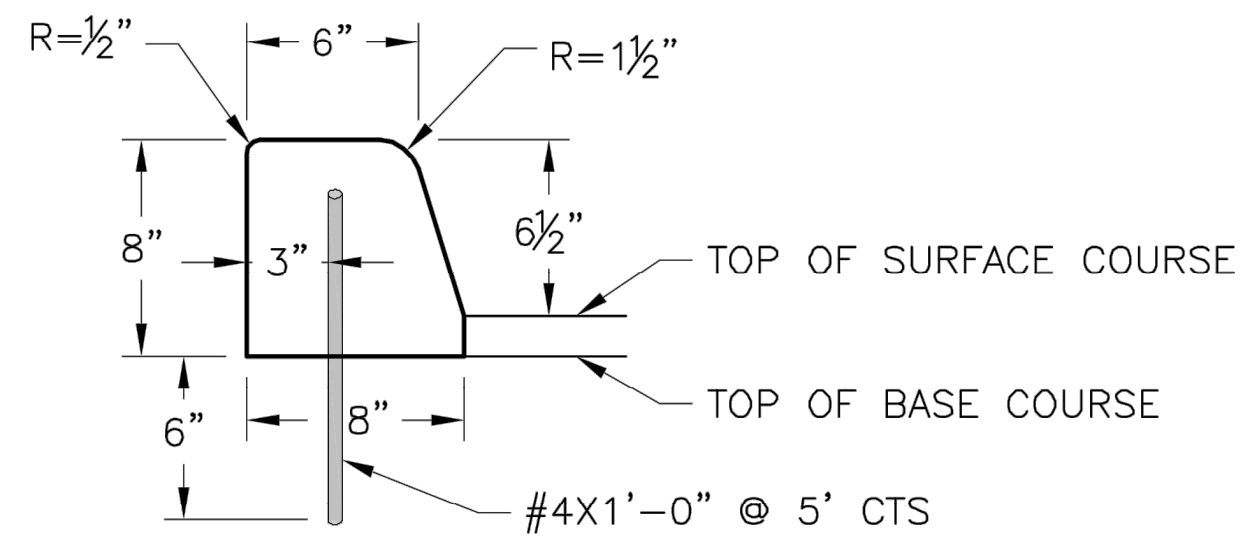
STANDARD DETAILS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

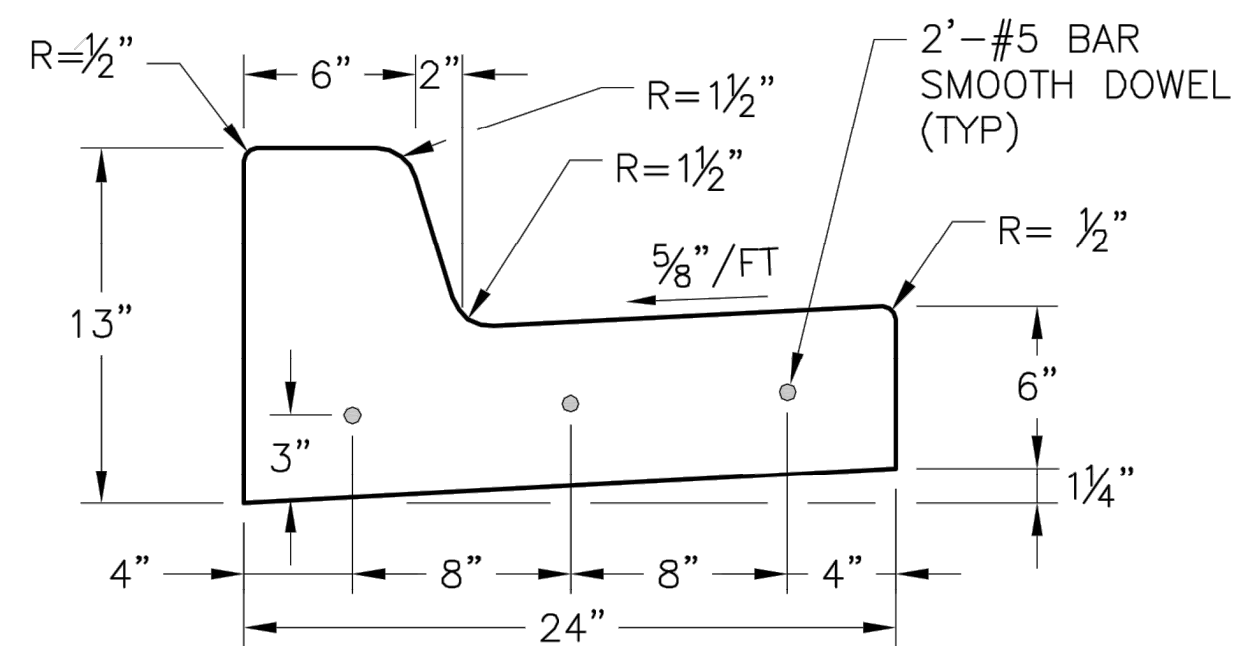
LEE'S SUMMIT, MISSOURI	2019
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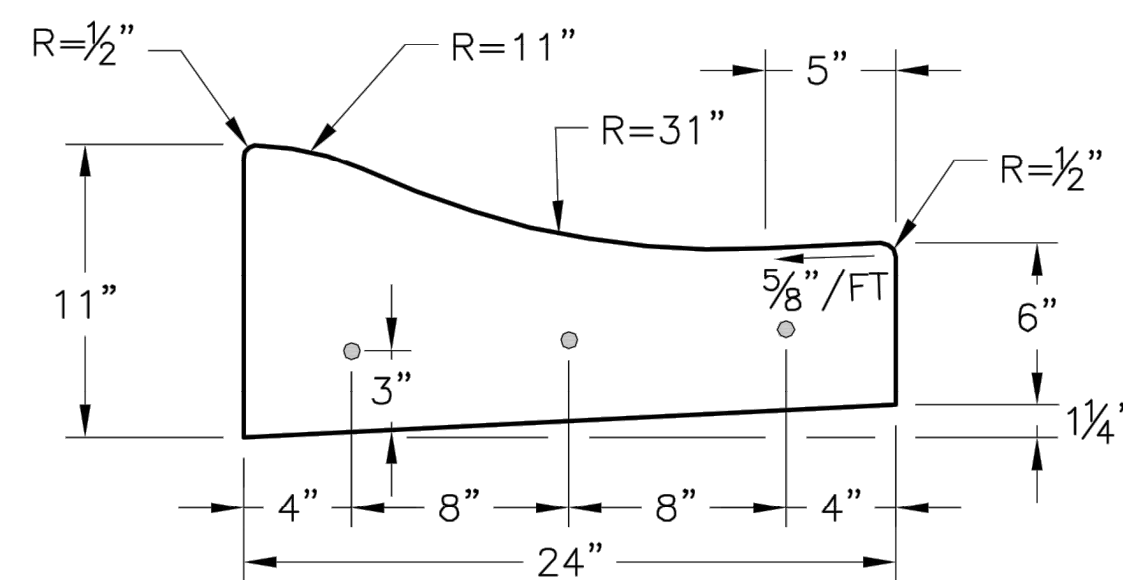
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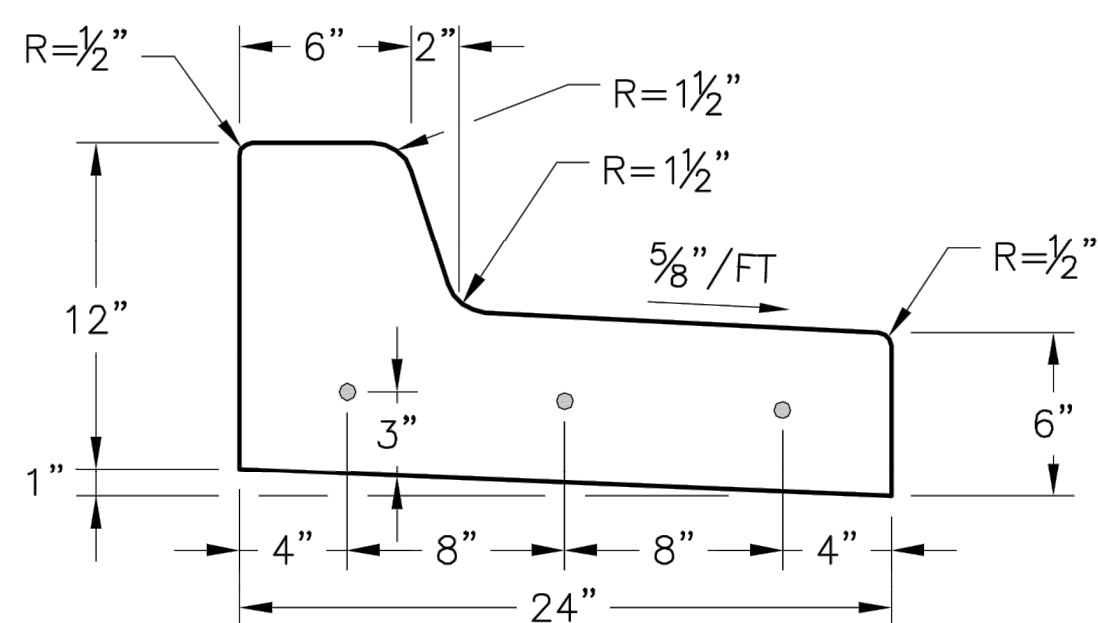
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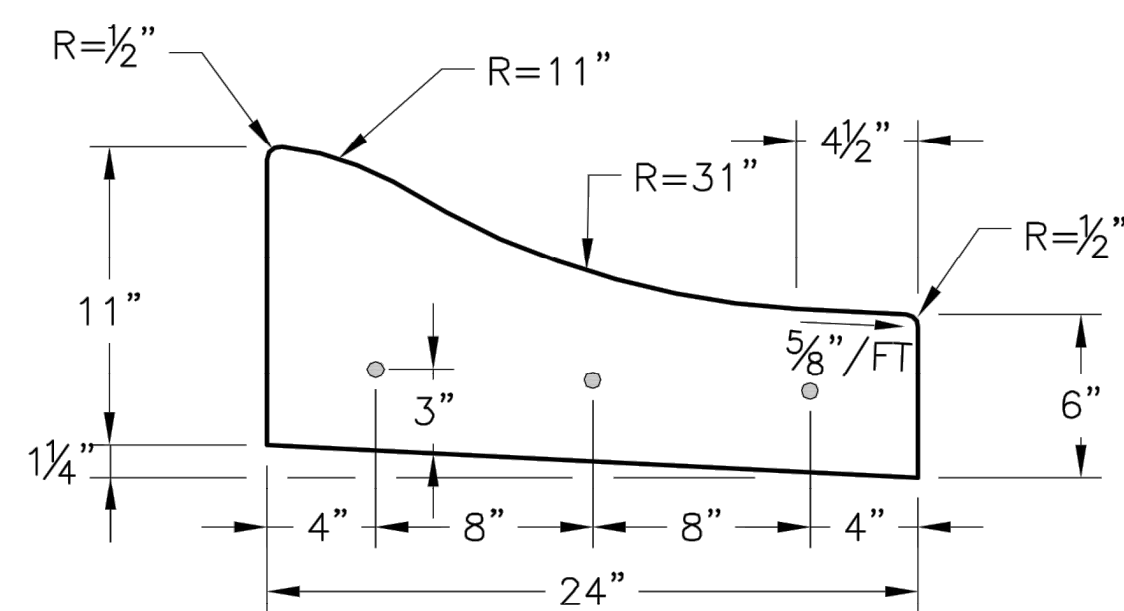
STRAIGHT BACK CURB &
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(TYPE CG-1)



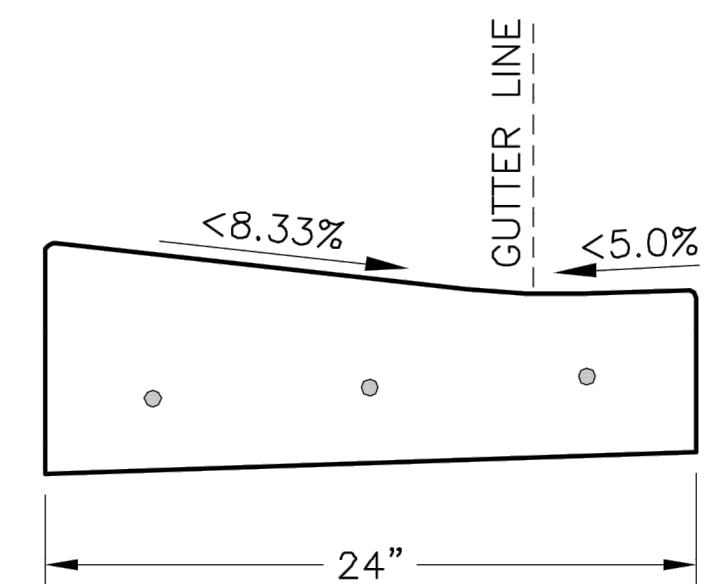
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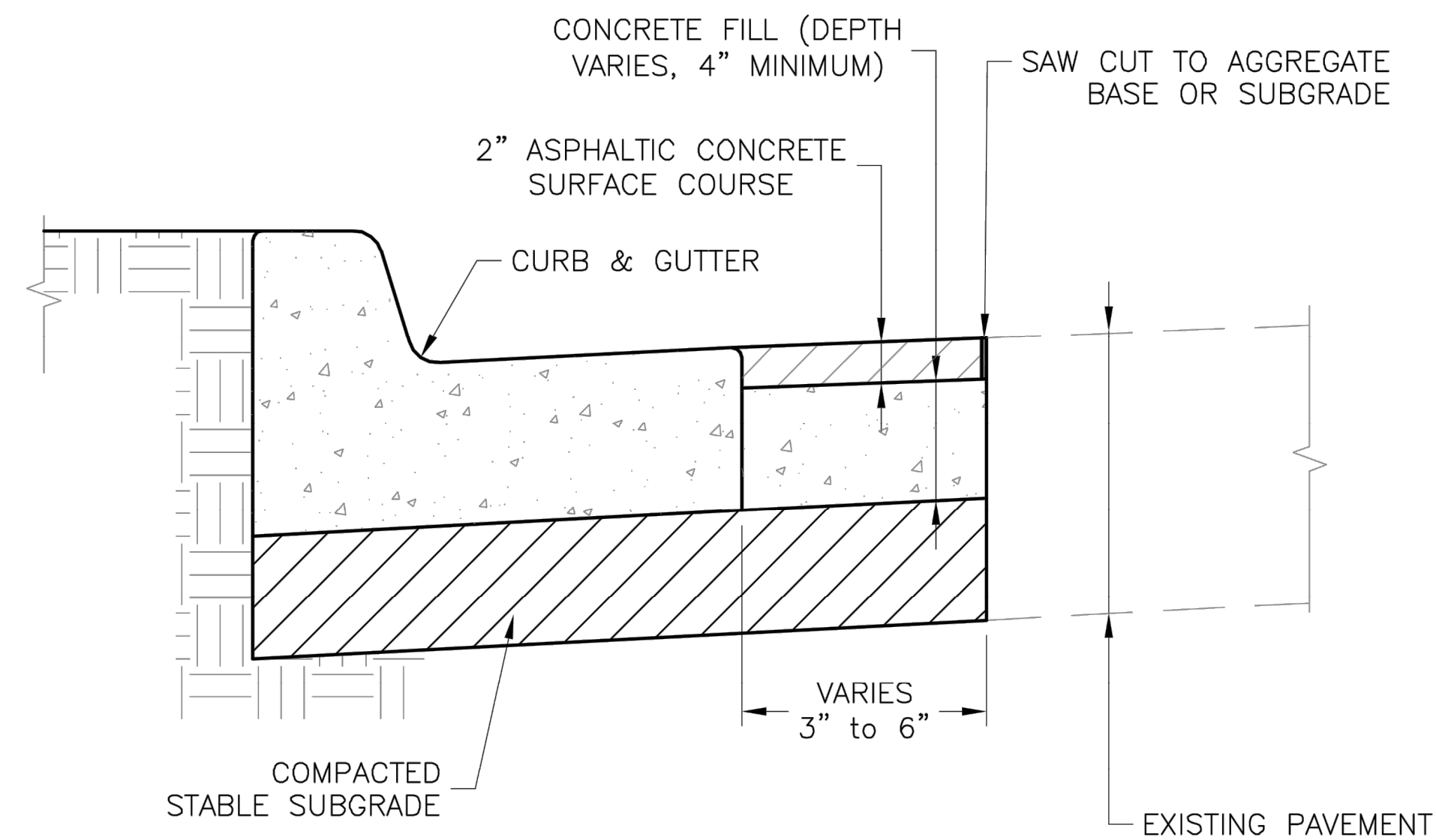
STRAIGHT BACK DRY CURB &
GUTTER
(TYPE CG-1 DRY)



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



CURB & GUTTER DETAIL AT RAMP
(ADA SLOPE REQUIREMENTS)



CURB REPLACEMENT DETAIL

GENERAL NOTES

1. 3/4" 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 APPROXIMATELY 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.

LS **LEE'S SUMMIT**
MISSOURI

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

GEN-4

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

STANDARD DETAILS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	20
LEE'S SUMMIT, MISSOURI	

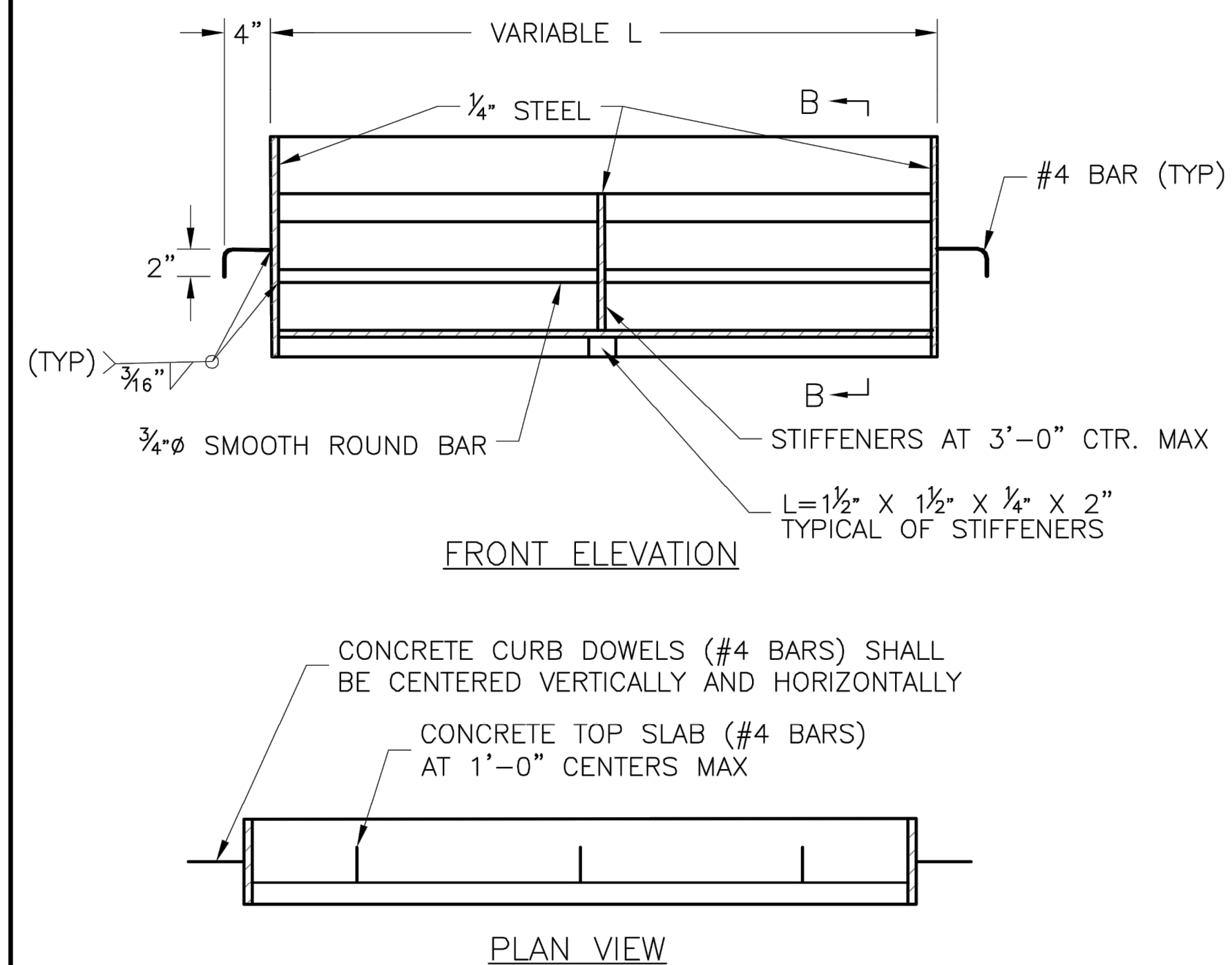
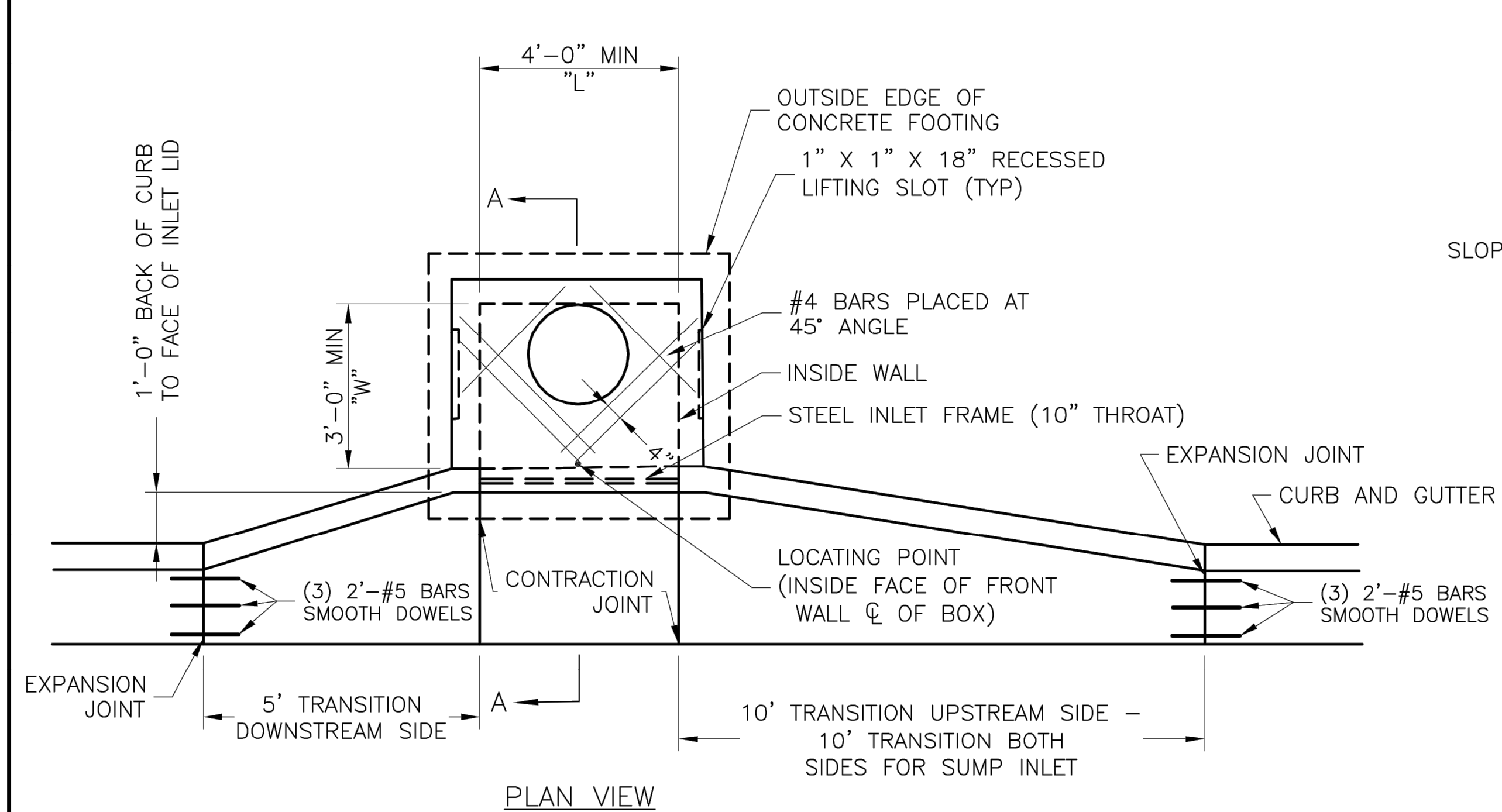
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STATE OF MISSOURI
 RYAN B. FLEWING
 NUMBER
 PE-2002003161
 7-24-19
 PROFESSIONAL ENGINEER

Olsson

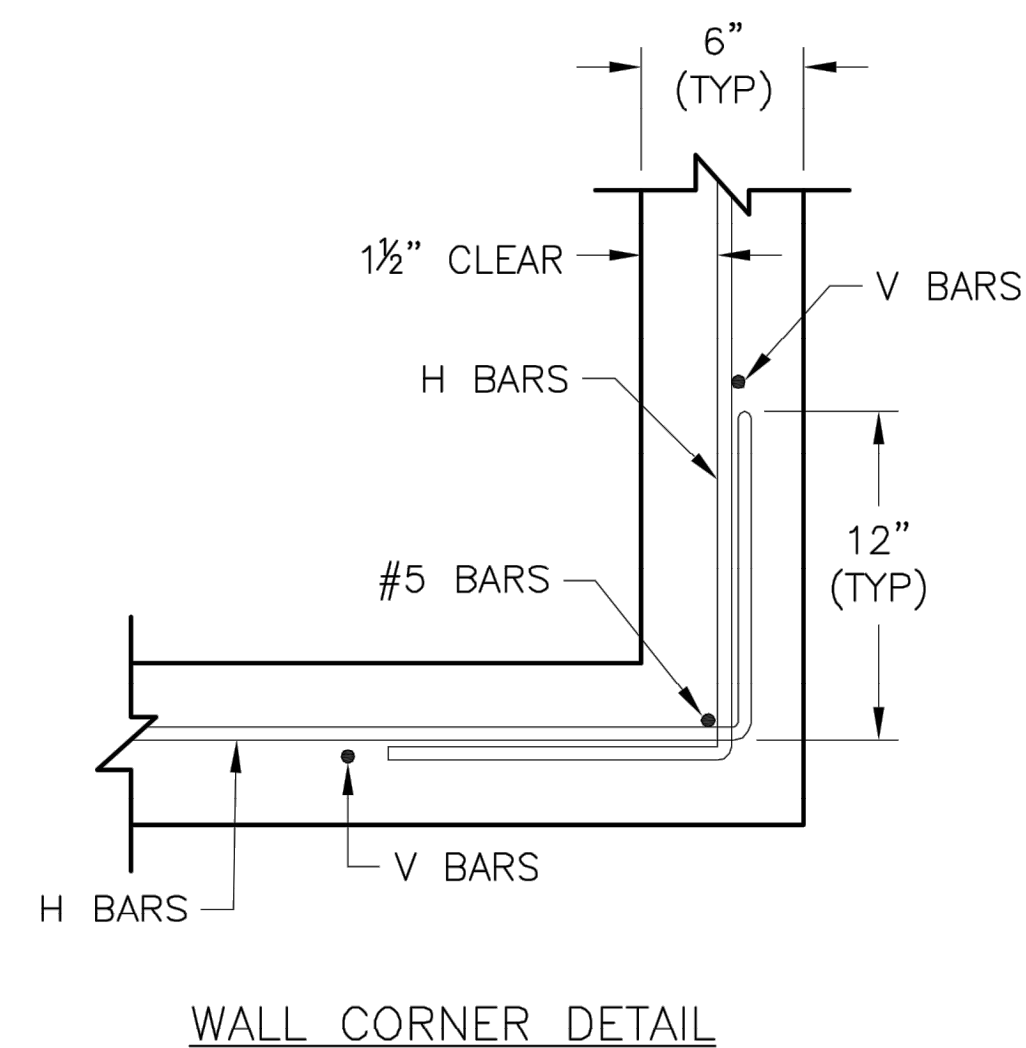
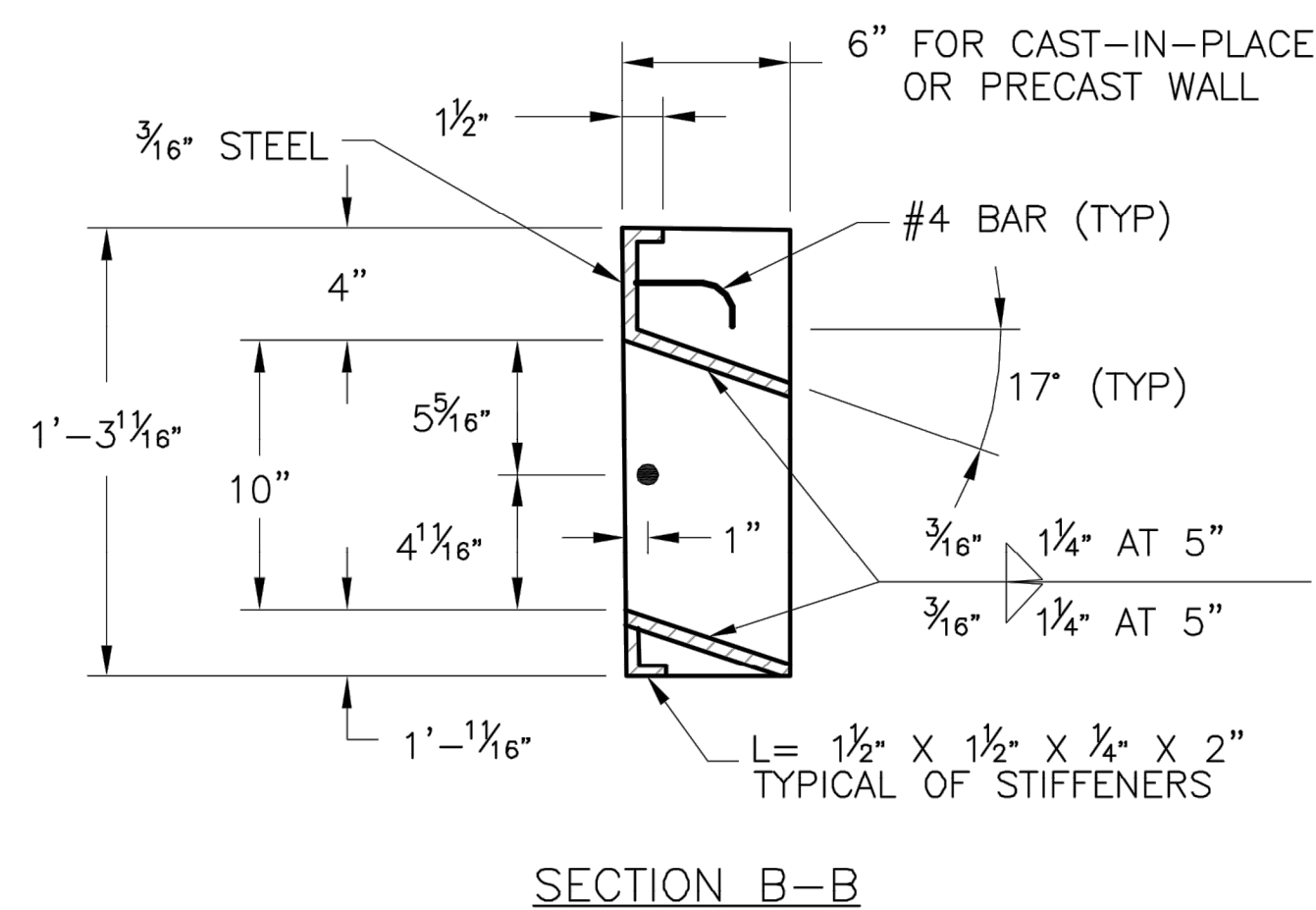
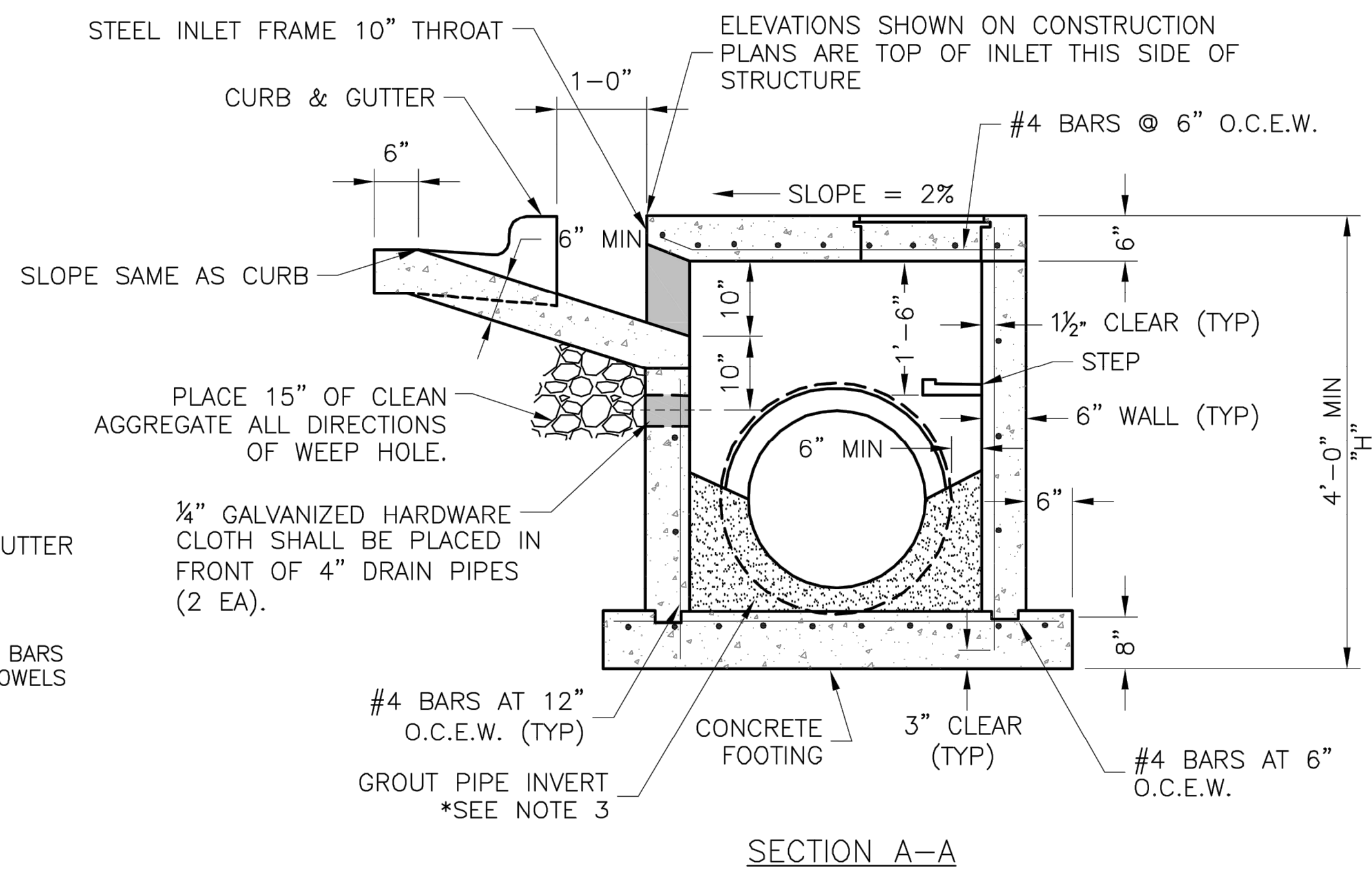
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SHEET
T20 OF 70



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 $\frac{3}{4}$ " CHAMFER OR $\frac{1}{2}$ " 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.

STM-1

LS **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

CURB INLET DETAIL

Project:

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

STANDARD DETAILS

STANDARD DETAILS

LEE'S SUMMIT, MISSOURI

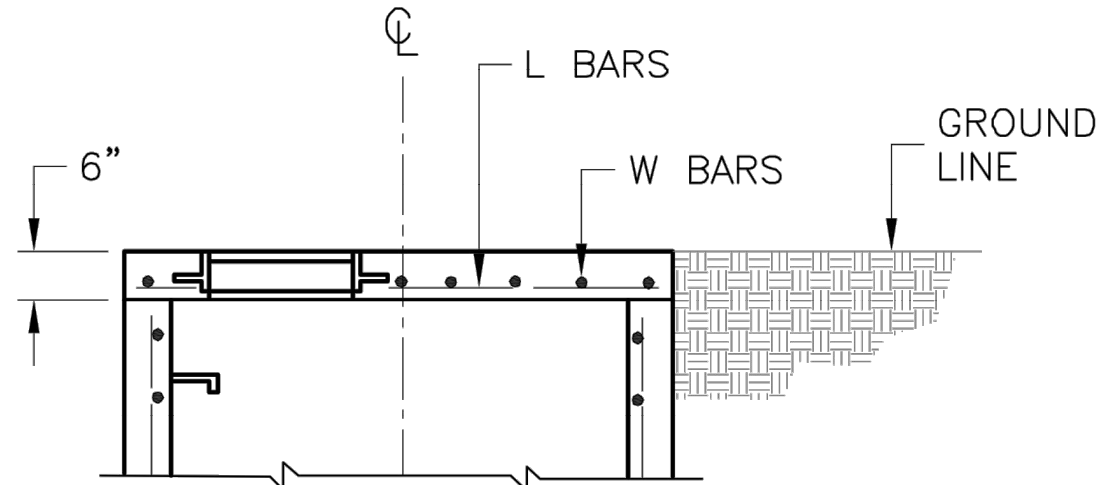
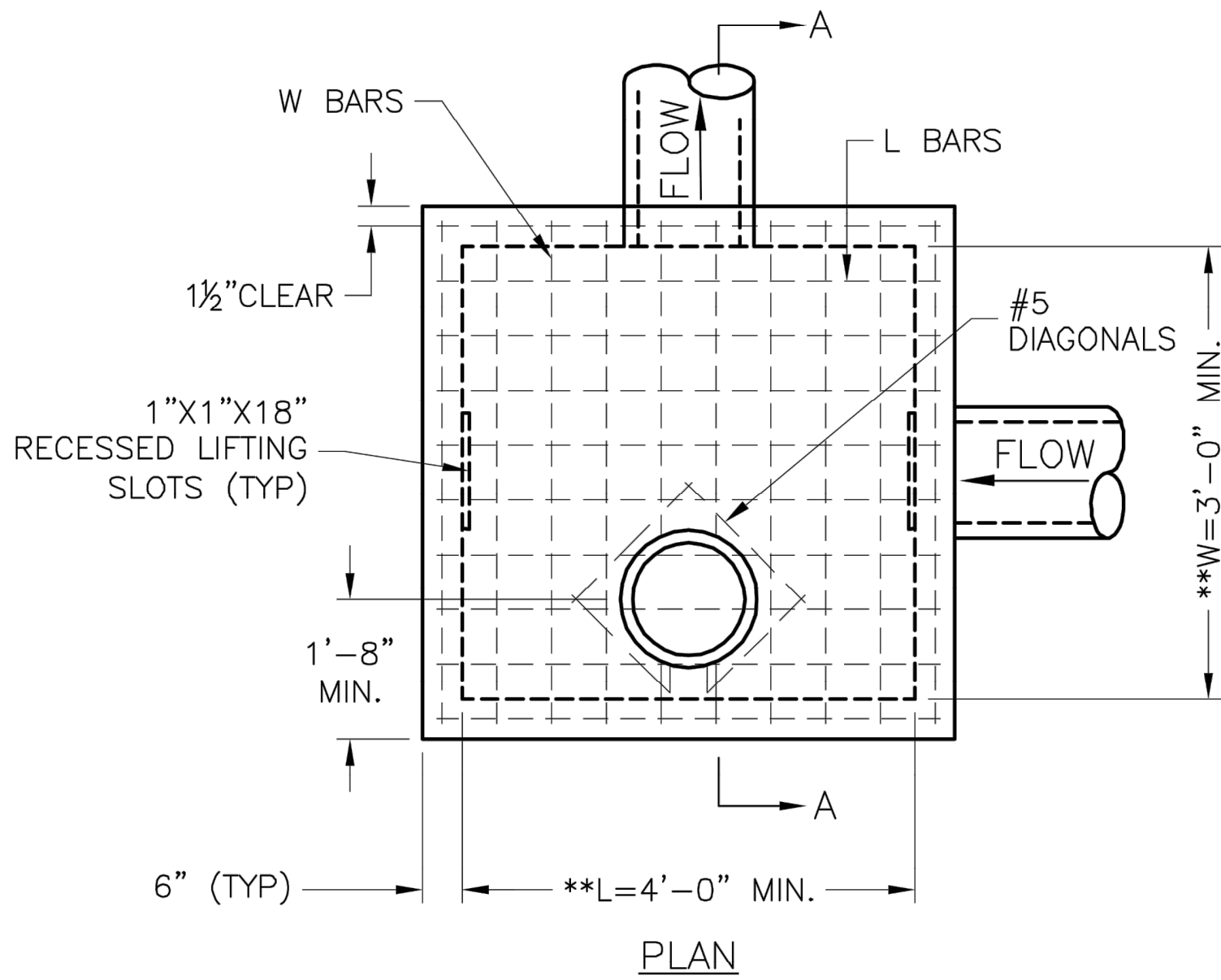
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DRAWN BY: AS
CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_STD1_81450
DATE: 07.19.19

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T21 OF 70



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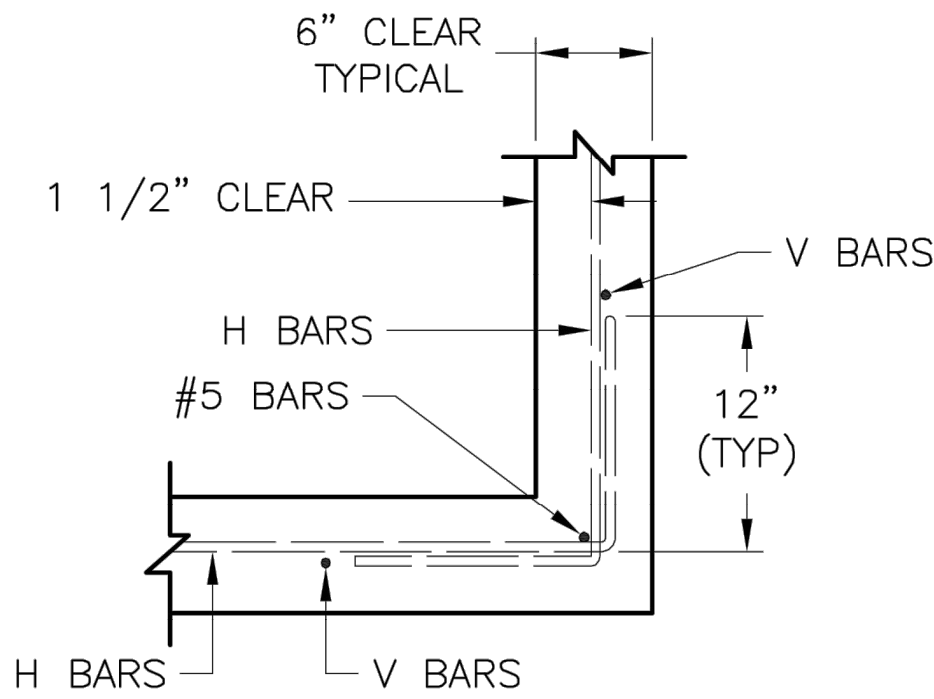
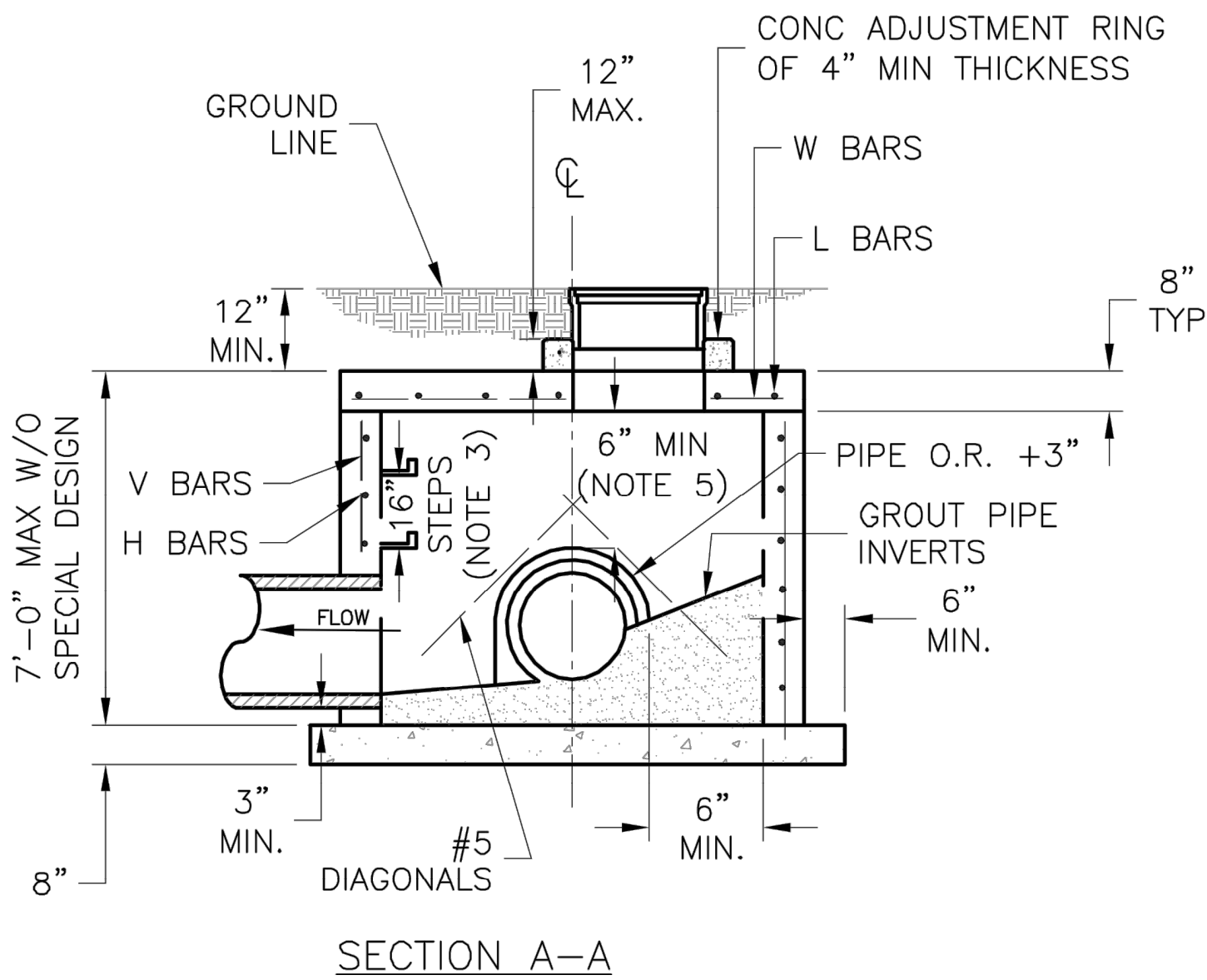
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** INCREASE IN MULTIPLES OF 6"
(7'-0") MAX WITHOUT SPECIAL DESIGN.
(SEE PROJECT PLANS FOR DETAILS)

REINFORCING

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



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

STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
JUNCTION BOX DETAIL

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

STM-3



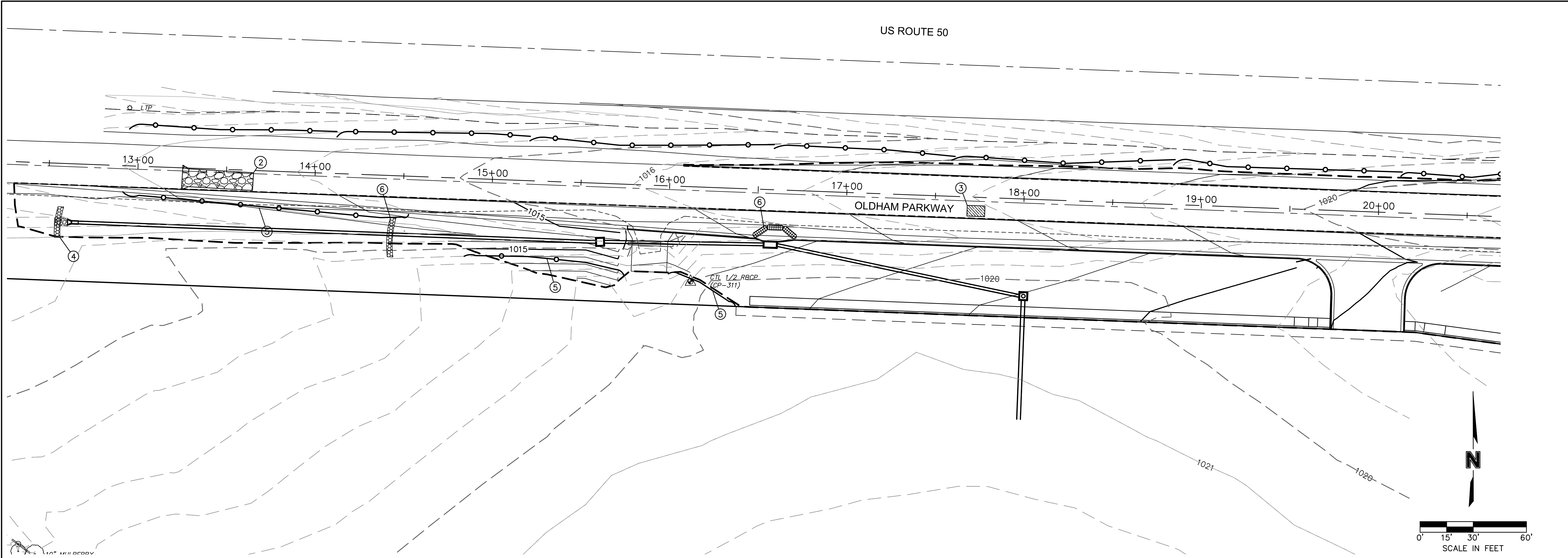
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STANDARD DETAILS	OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	LEE'S SUMMIT, MISSOURI	2019

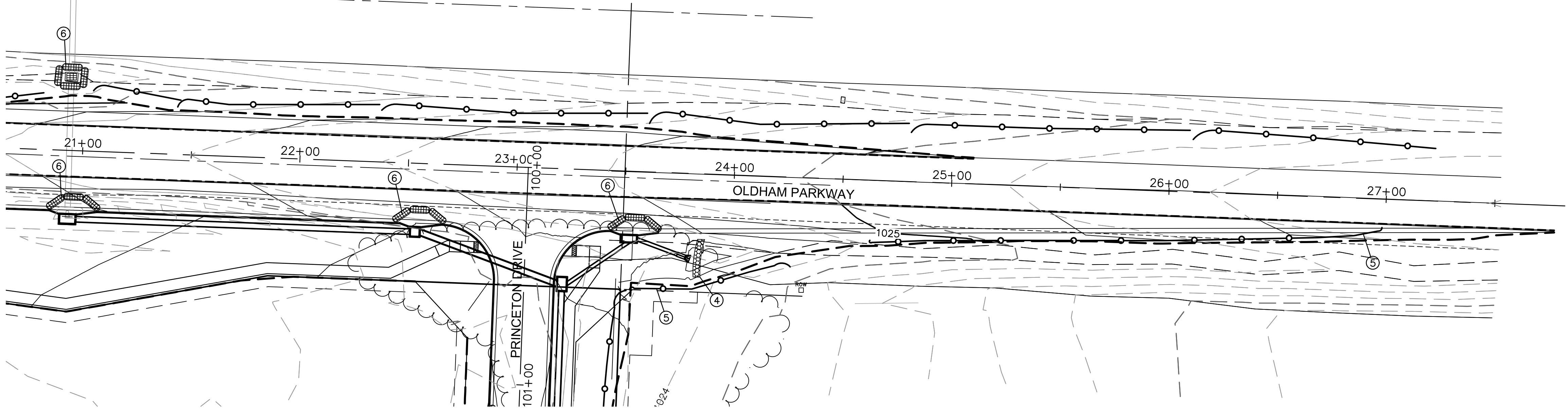
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APPROVED BY:	RBE
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PROJECT NO.:	018-1450
DWG NO.:	T_STDI_81450
DATE:	07.19.19

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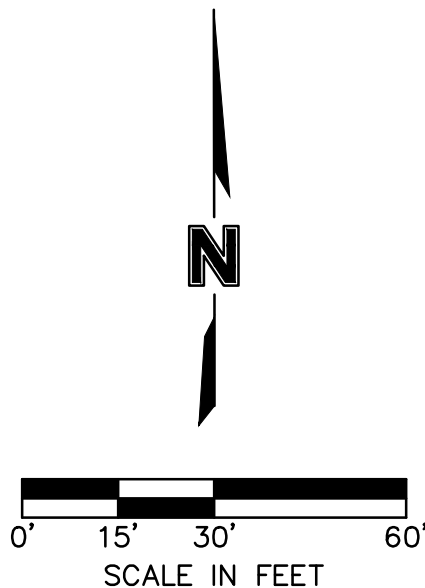


- NOTES:
- CONTRACTOR SHALL ADJUST SWPPP AND EROSION CONTROL PLANS PER PHASING AND FIELD CONDITIONS.
 - CONTRACTOR SHALL PROVIDE A CONCRETE WASHOUT CONFORMING TO THE LATEST EDITION OF THE CITY'S BMP MANUAL FOR LAND DISTURBANCE ACTIVITY. CONCRETE WASHOUT IS SUBSIDIARY TO OTHER EROSION CONTROL BID ITEMS. NO DIRECT PAY.
 - CONTRACTOR SHALL COORDINATE WITH THE CITY'S INSPECTOR TO DETERMINE THE LOCATION OF THE CONCRETE WASHOUT.
 - 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		
	5	SILT FENCE AND/OR STRAW WATTLES	D	INSTALL BEFORE STORM SEWER INSTALLATION
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.
C - PAVING	6	CURB INLET/AREA INLET PROTECTION	C	PROTECT ALL OPEN BOXES WITH SILT FENCE 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



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STATE OF MISSOURI
RYAN B. FLEMING
NUMBER
PE-2002003161
1-24-19
PROFESSIONAL ENGINEER

BY
REVISIONS DESCRIPTION
DATE
REV. NO.

REVISIONS

EROSION CONTROL PLANS

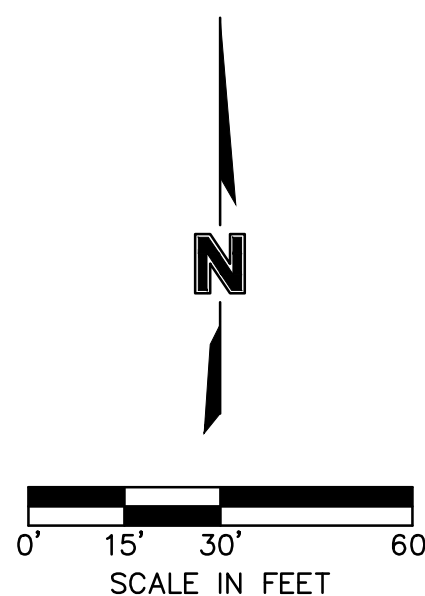
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

C.O.A. NO.: 001592
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QA/QC BY: JKL/RBE
PROJECT NO.: 018-1450
DWG NO.: T_ERC1_81450
DATE: 07.19.19

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T23 OF 70

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PAVEMENT MARKING AND SIGNING

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
WOLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI	2019
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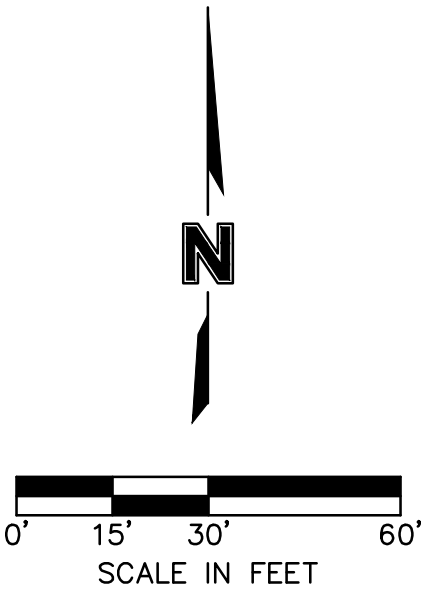
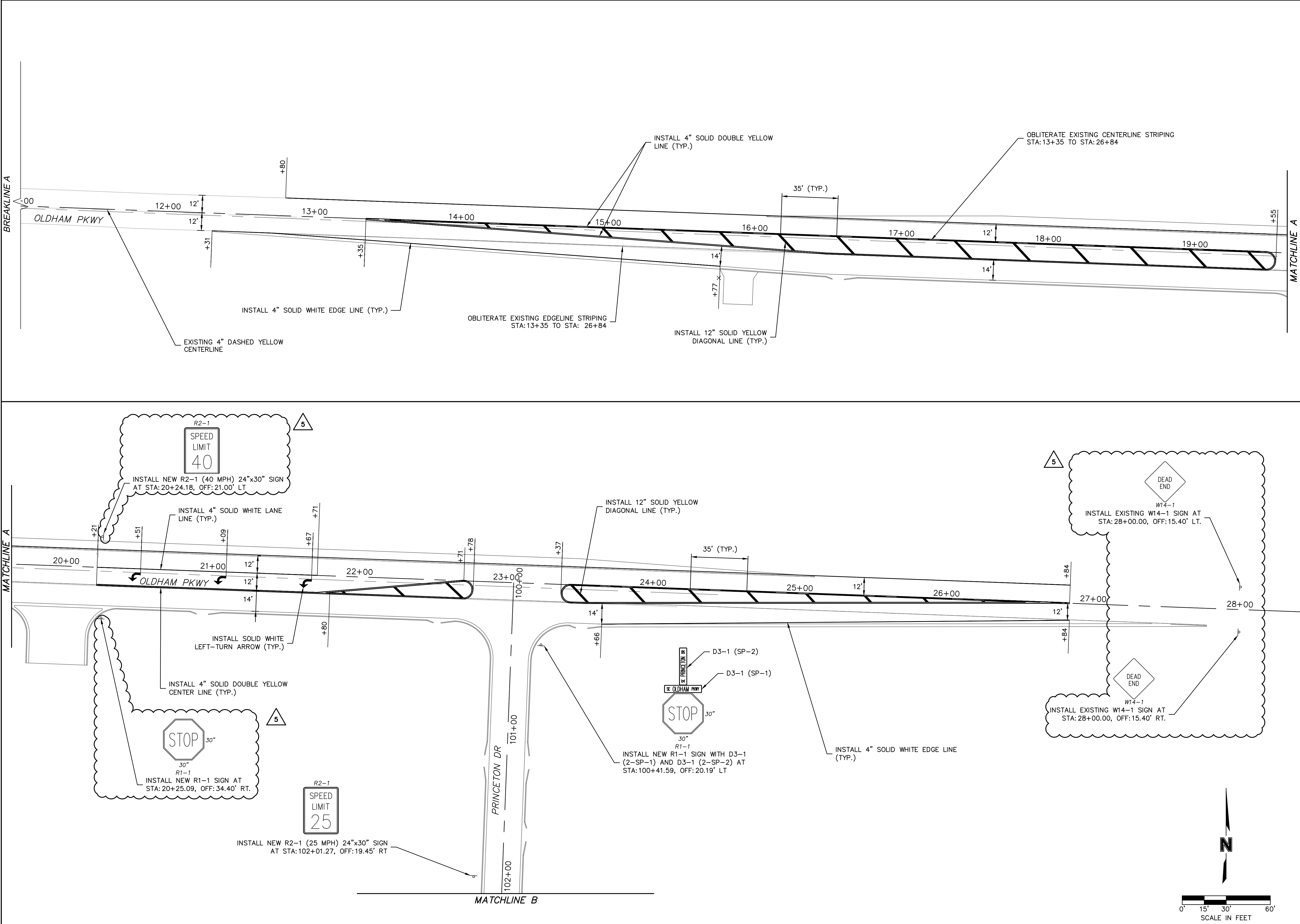
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MATCHLINE A
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STATE OF MISSOURI
JEREMY BOOT
STREET
NUMBER
FE-2017023856
8.14.19
PROFESSIONAL ENGINEER

PAVEMENT MARKING AND SIGNING

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

REV. NO.

DATE

REVISIONS DESCRIPTION

BY

REV. NO.

DATE

REVISIONS DESCRIPTION

BY

5

08/14/2019

ModDOT Review Comments

JRC

2019

REVISIONS

C.O.A. NO.: 001592

DRAWN BY: L

CHECKED BY: JAC

APPROVED BY: JSS

QA/QC BY: JSS

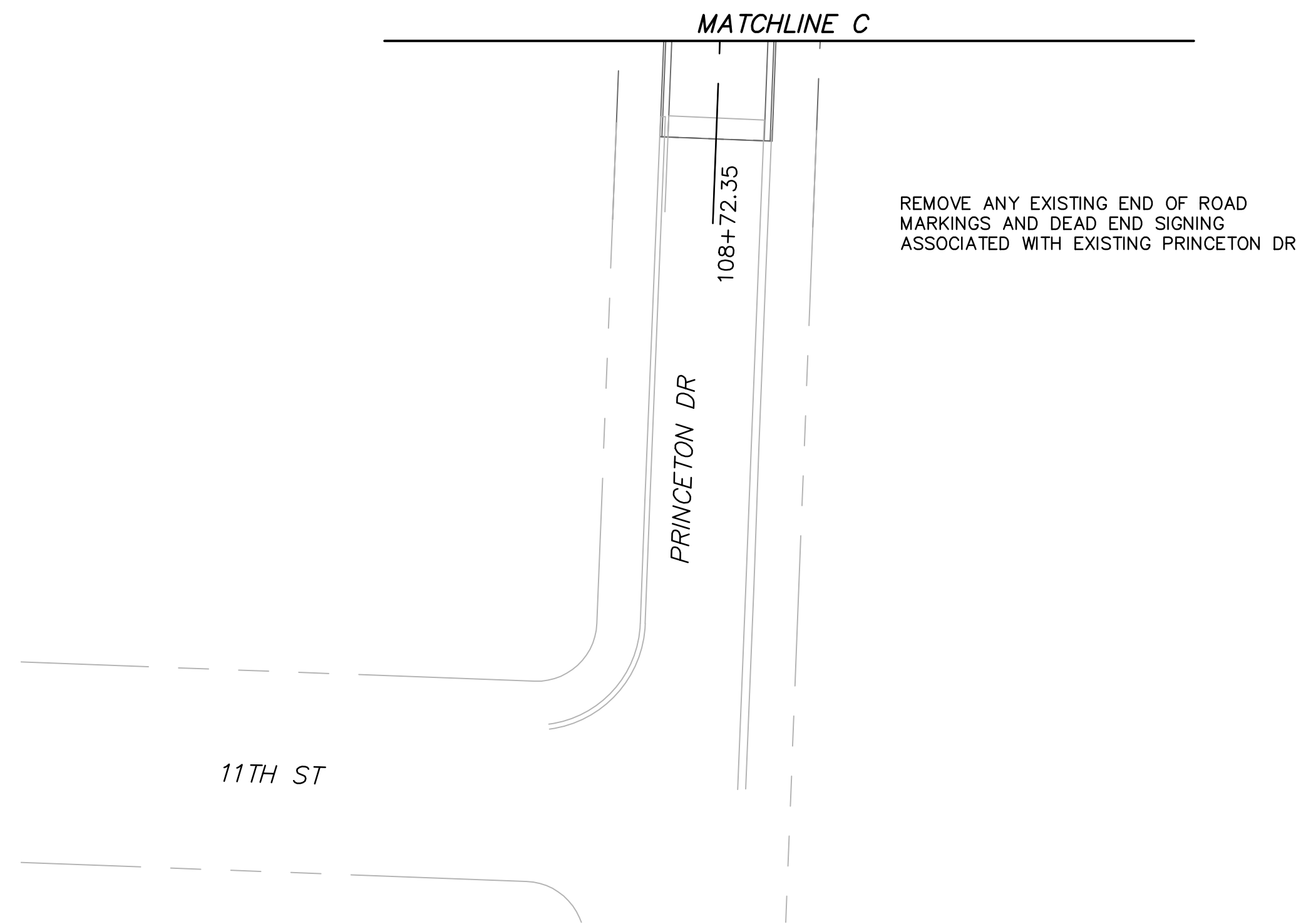
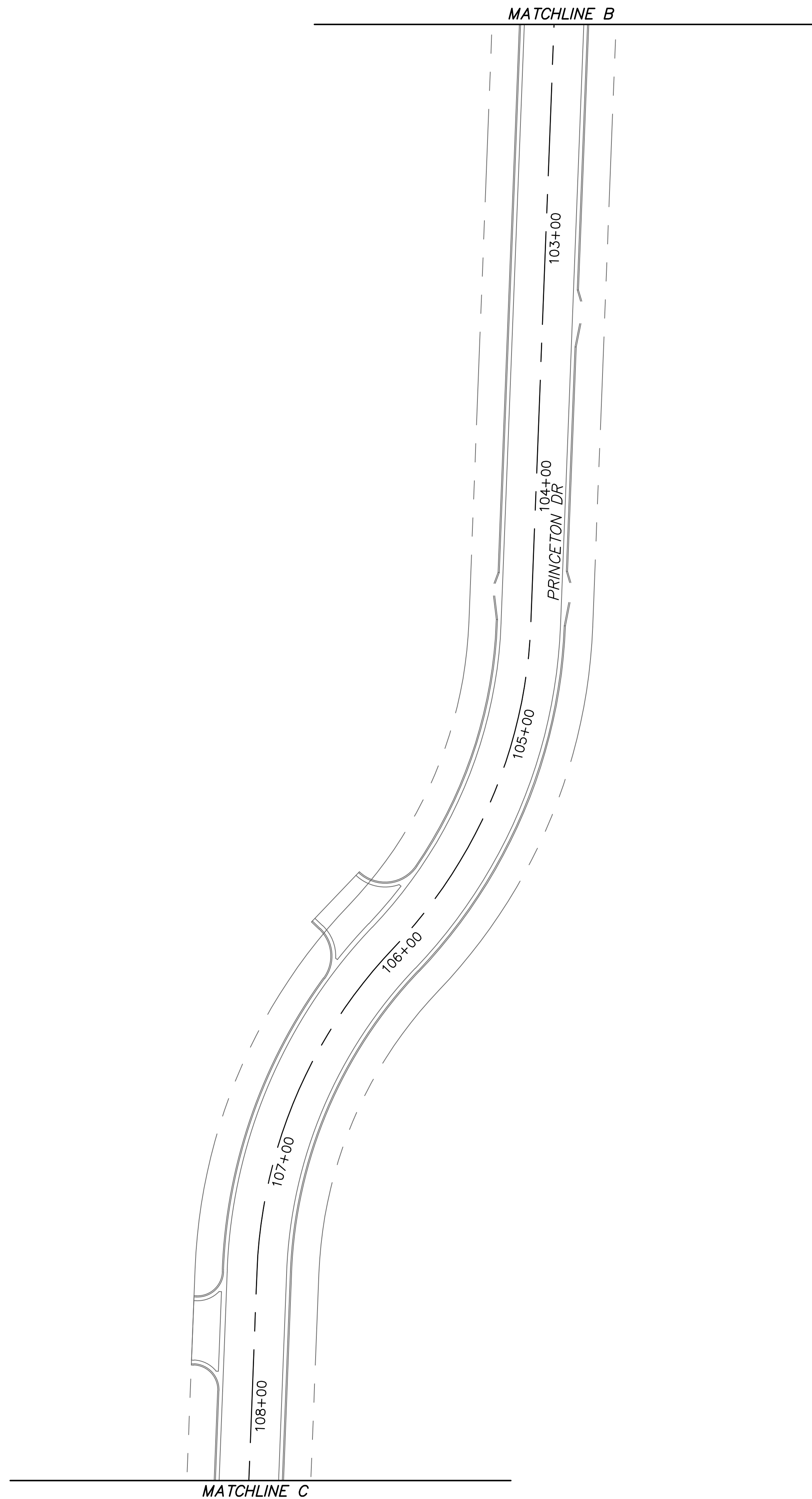
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DATE: 07.19.19

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T26 OF 70

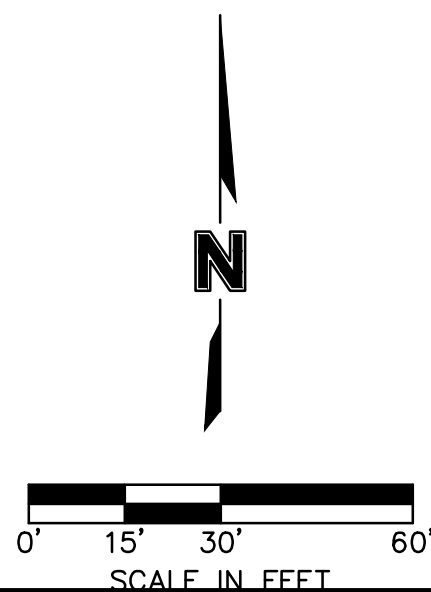


PAVEMENT MARKING SUMMARY						
STATION TO STATION		LOCATION	4" SOLID WHITE LANE LINES (LF) *	4" SOLID YELLOW LANE LINE (LF) *	12" YELLOW CROSSHATCH LINES (LF) *	WHITE TURN ARROWS (EA) **
						LT.
13+35	19+55	OLDHAM		2480		
13+35	19+55	OLDHAM			178	
12+31	15+77	OLDHAM	346			
20+21	21+71	OLDHAM	150			
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+66	26+84	OLDHAM	318			
12+80	26+84	OLDHAM	1404			
TOTALS			2218	4578	268	3

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

PERMANENT SIGNING SUMMARY ***						
STATION	STREET REFERENCE	OFFSET FROM C	MUTCD DESIGNATION	SIGN SIZE	AREA (S.F.) MEP SIGNS	POST TYPE
APPROX.	OLDHAM	-	W14-1 (2)	EXISTING	EXISTING	REMOVE (2)
20+24.18	OLDHAM	21.00'L	R2-1	24"x30"	5	SQUARE
20+25.09	OLDHAM	34.40'R	R1-1	30"x30"	5.18	SQUARE
28+00.00	OLDHAM	15.40'R	W14-1	EXISTING	EXISTING	SQUARE
28+00.00	OLDHAM	15.40'L	W14-1	EXISTING	EXISTING	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
TOTALS			32.36 SF		6 EA	

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

[illegible]

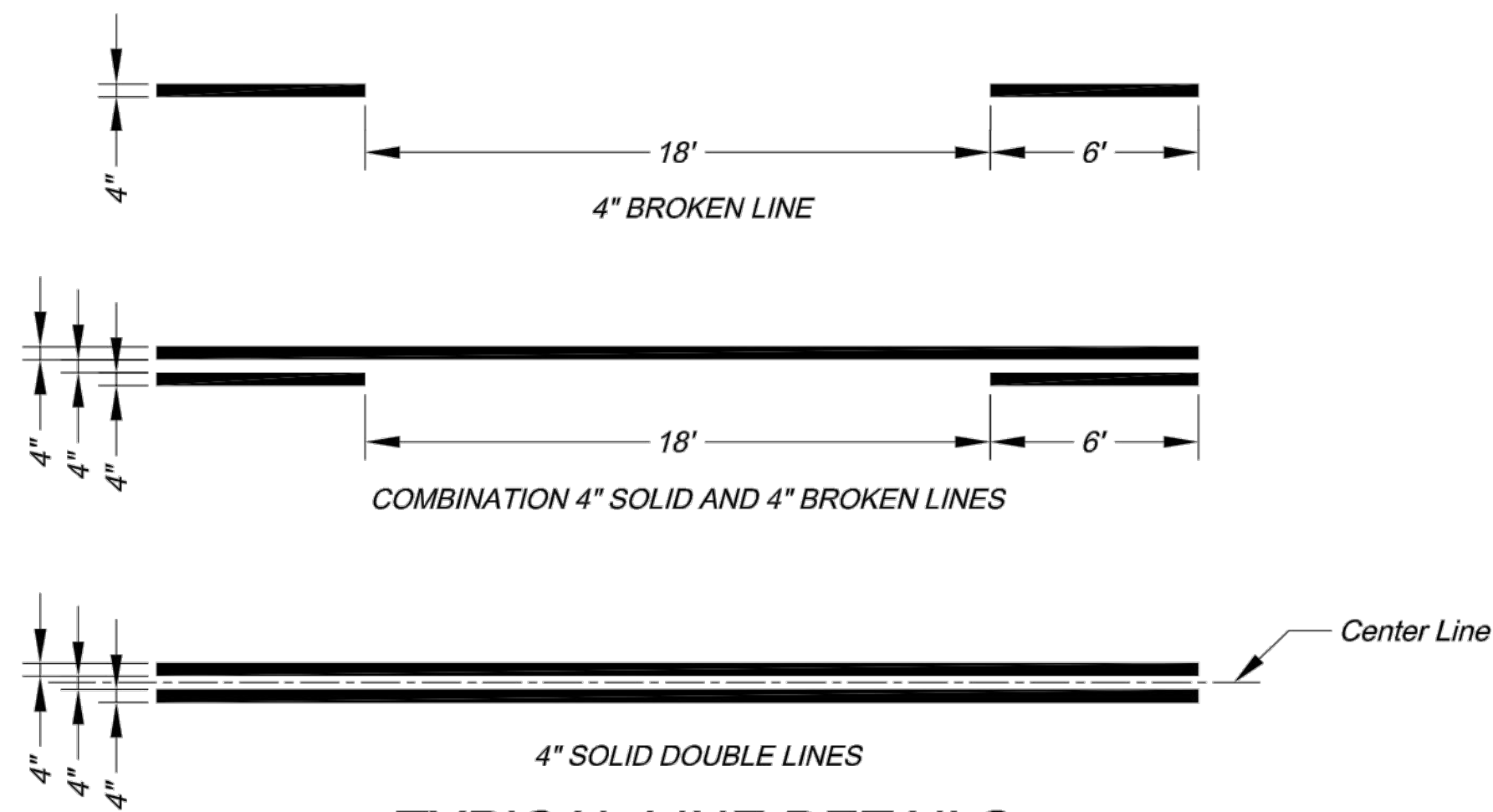
PAVEMENT MARKING AND SIGNING	
OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	
LEE'S SUMMIT, MISSOURI	2019

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 S&S/ 81450
DATE: 07.19.19

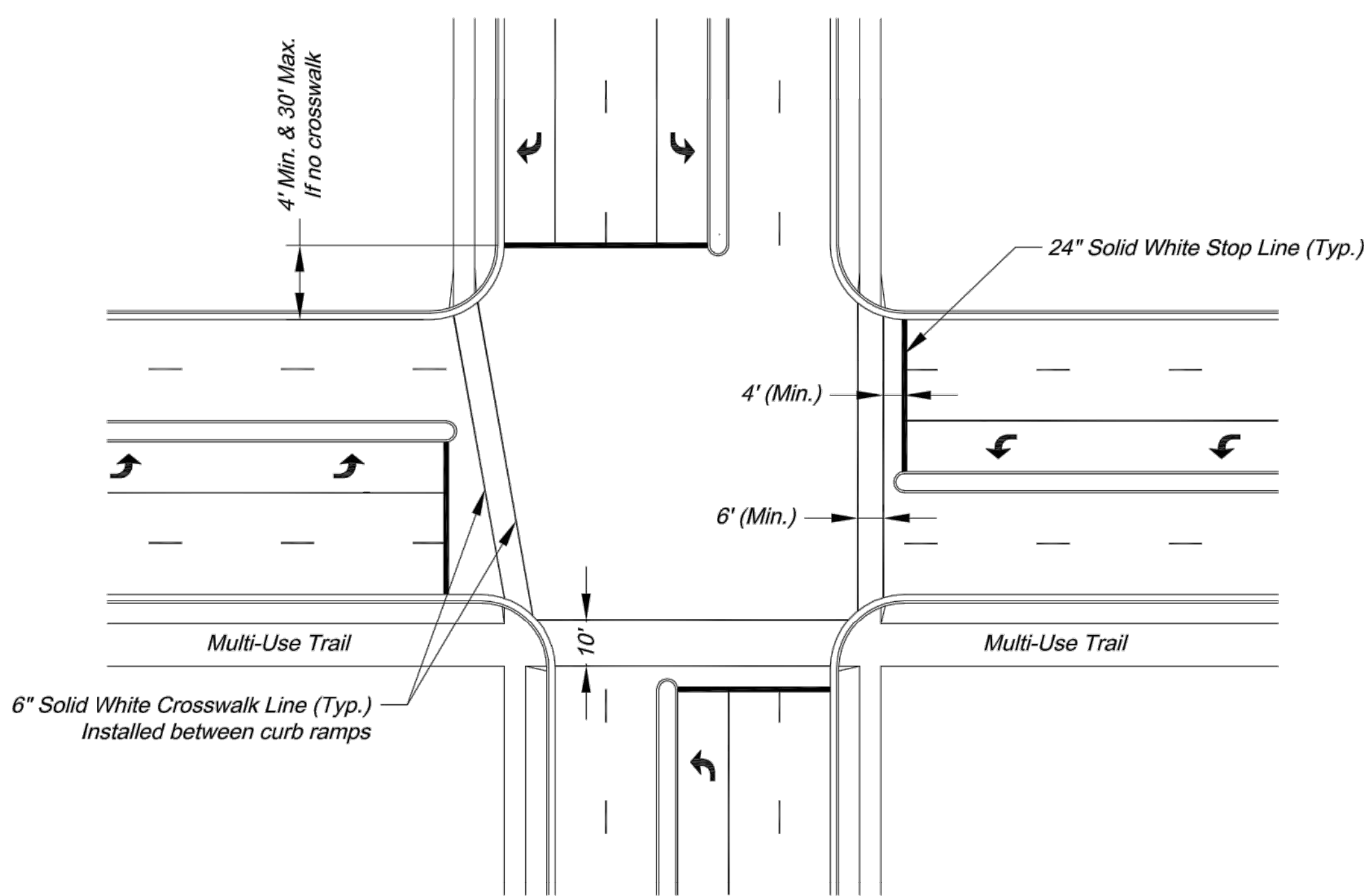
SHEET
T27 OF 70

olson

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

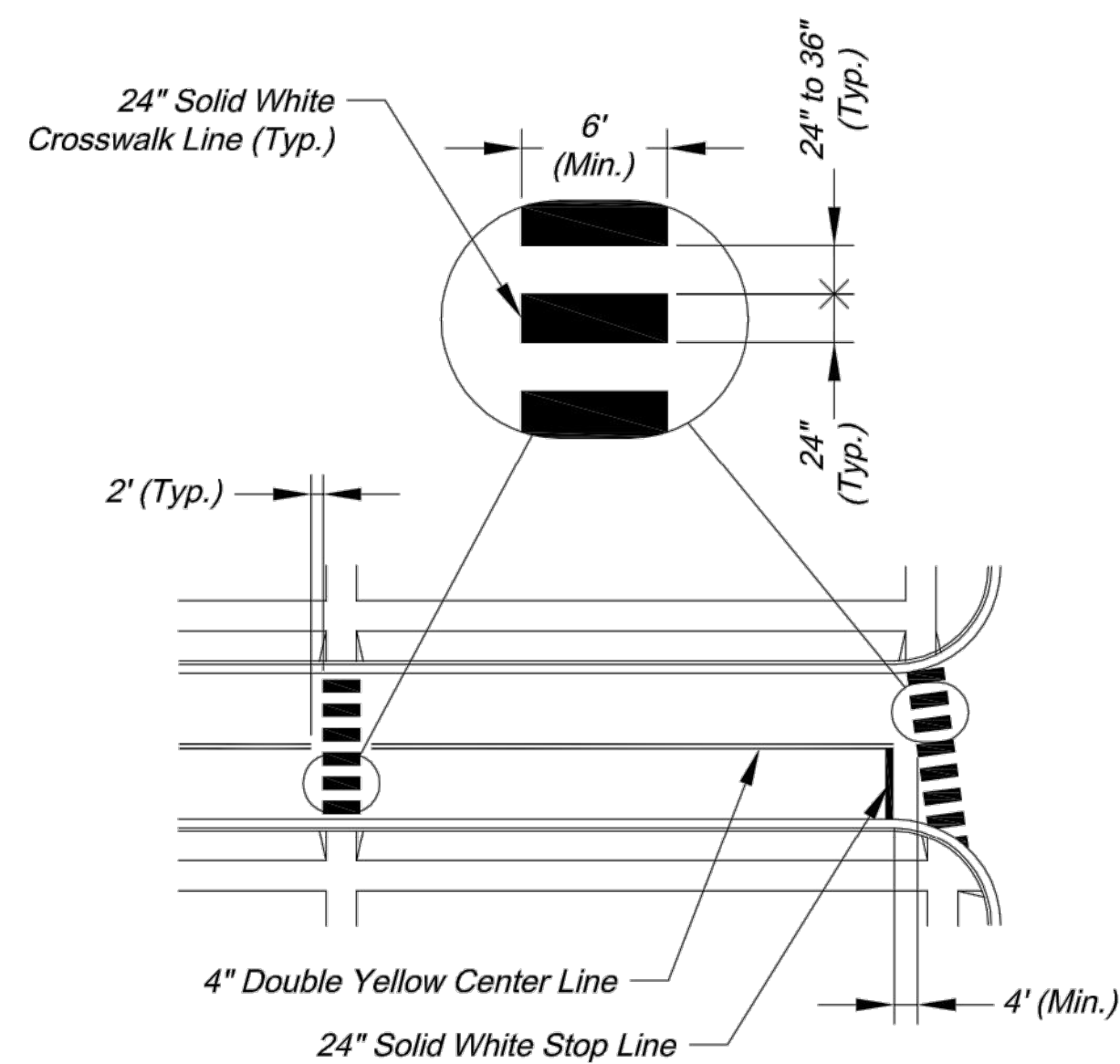


NOTES:
1. All edge line, center line, and lane line pavement markings shall be 4" wide unless otherwise noted.
2. Edge lines shall be continuous solid white or yellow lines. Right side edge lines shall be solid white. Median or left side edge lines on divided roadways are to be solid yellow. Edge lines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

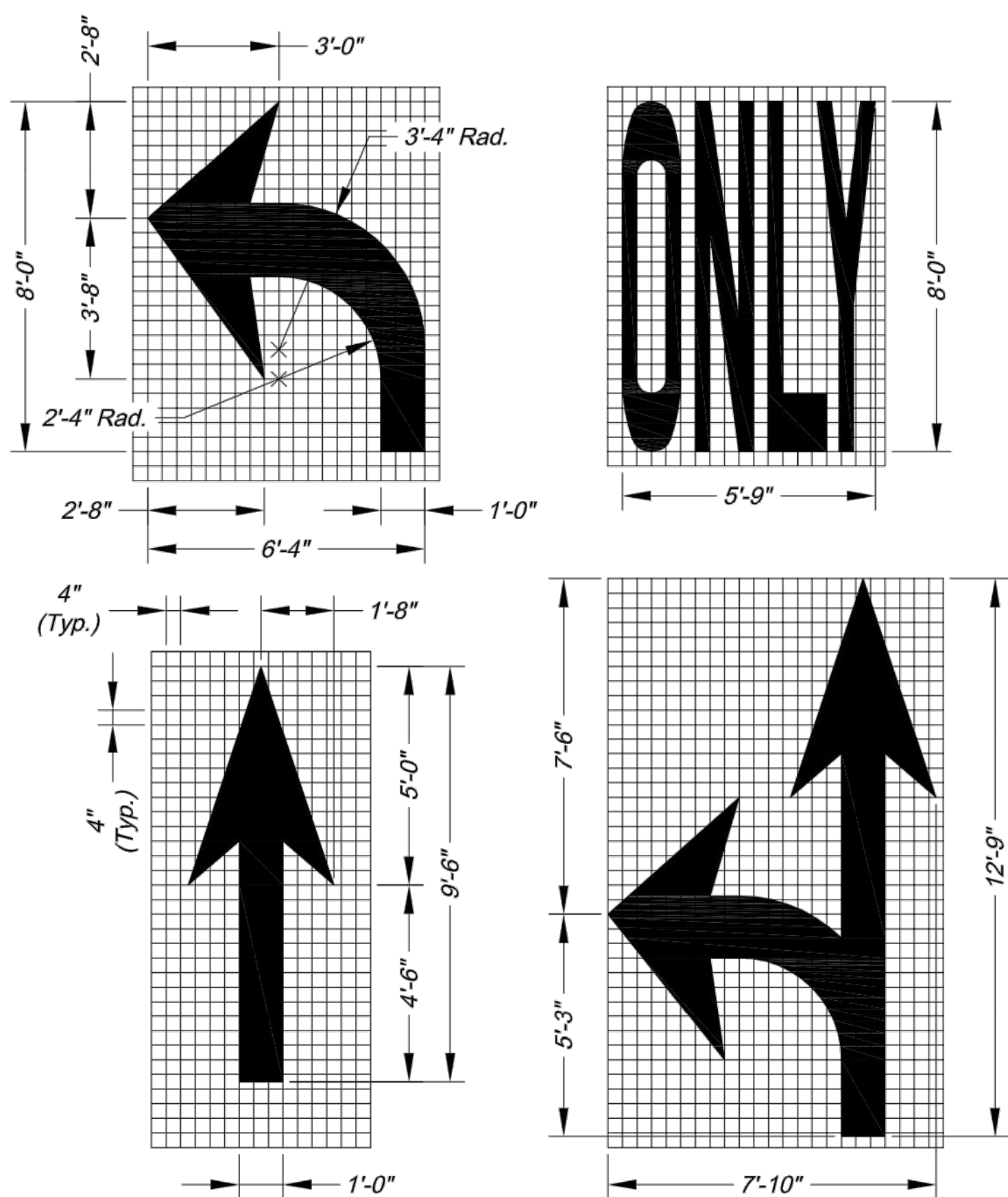


TYPICAL INTERSECTION MARKINGS

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.

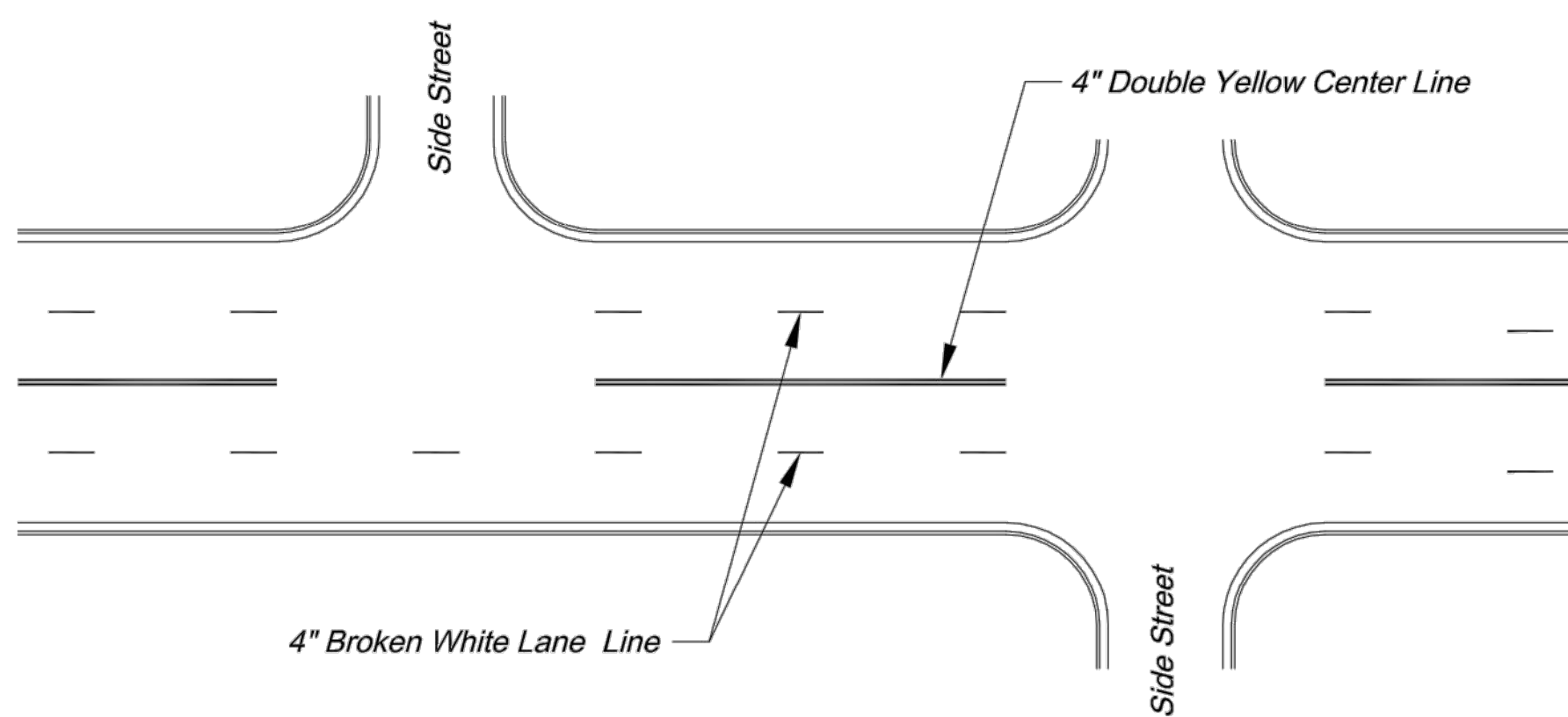


TYPICAL MIDBLOCK OR SCHOOL CROSS WALK

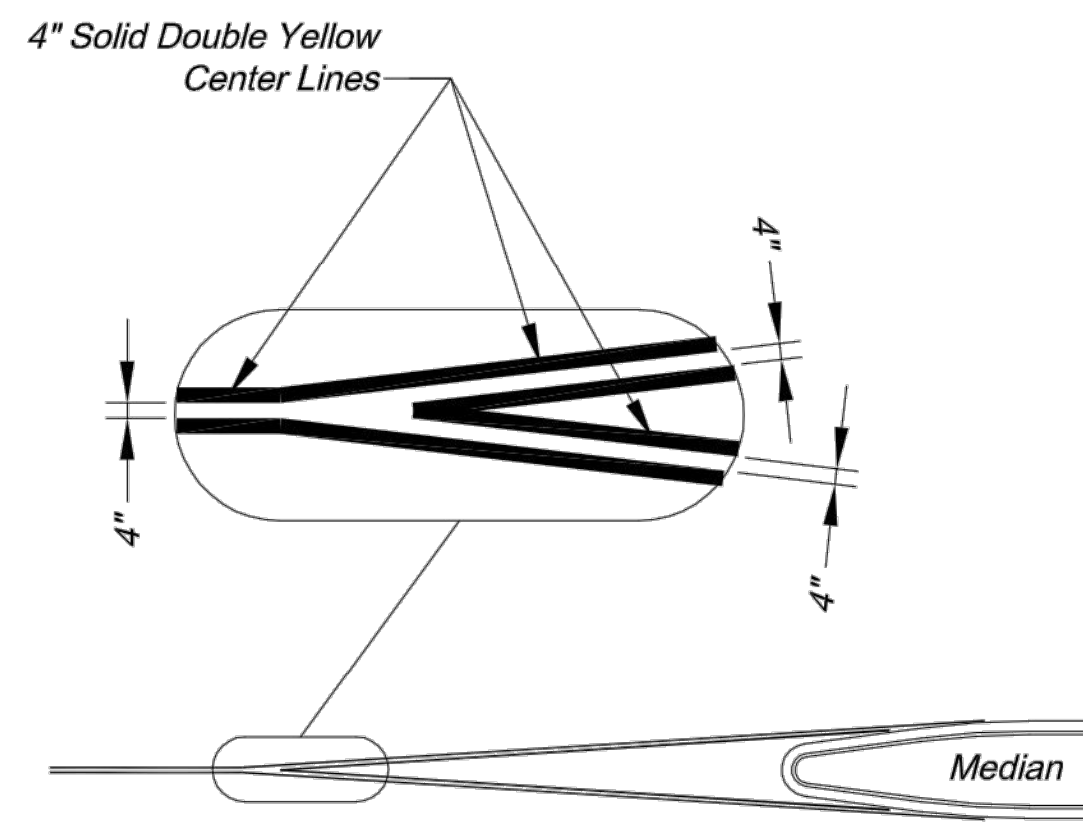


ARROW AND SYMBOL DETAILS

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.

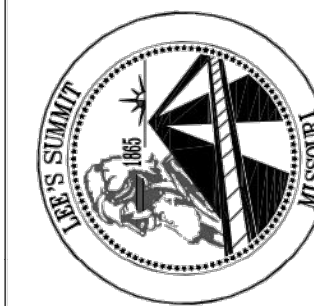


TYPICAL MARKINGS FOR FOUR-LANE UNDIVIDED ROADWAY



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.



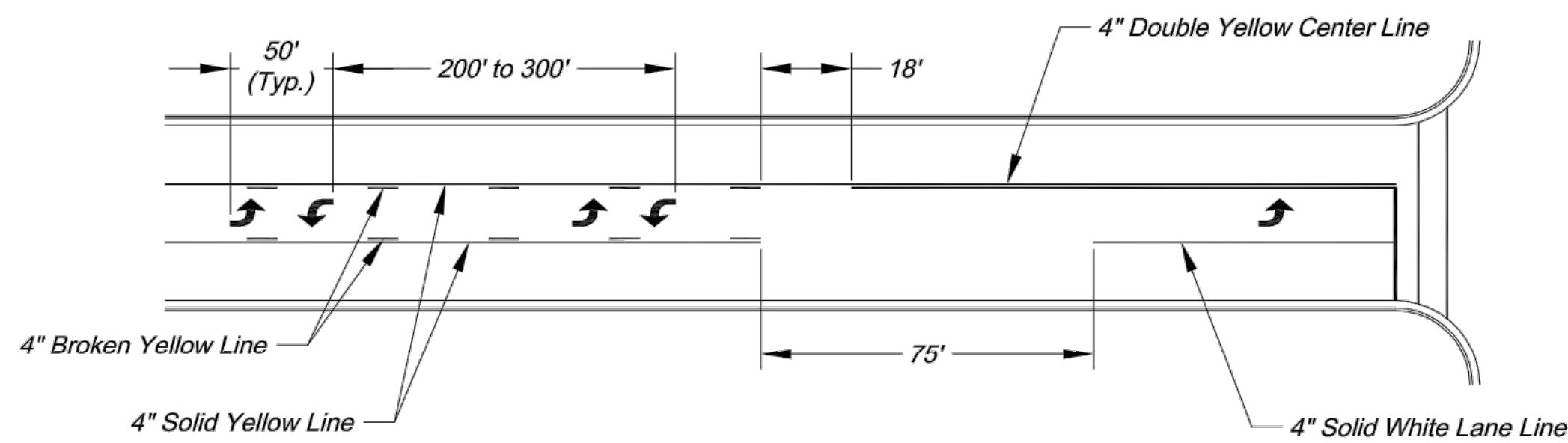
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING

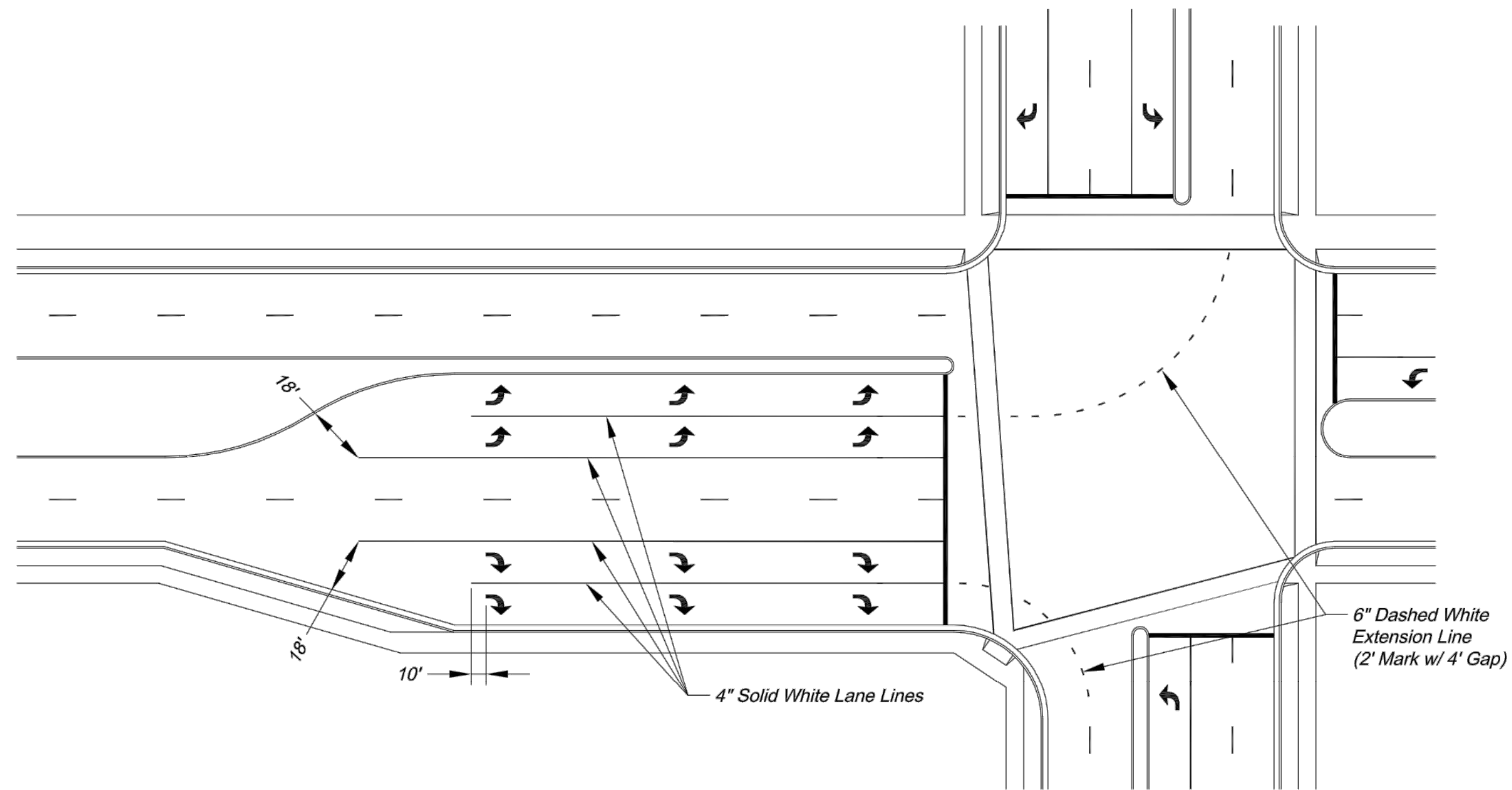
ROADWAY MARKING DETAILS

Sheet Name: STANDARD DRAWING PM-1

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

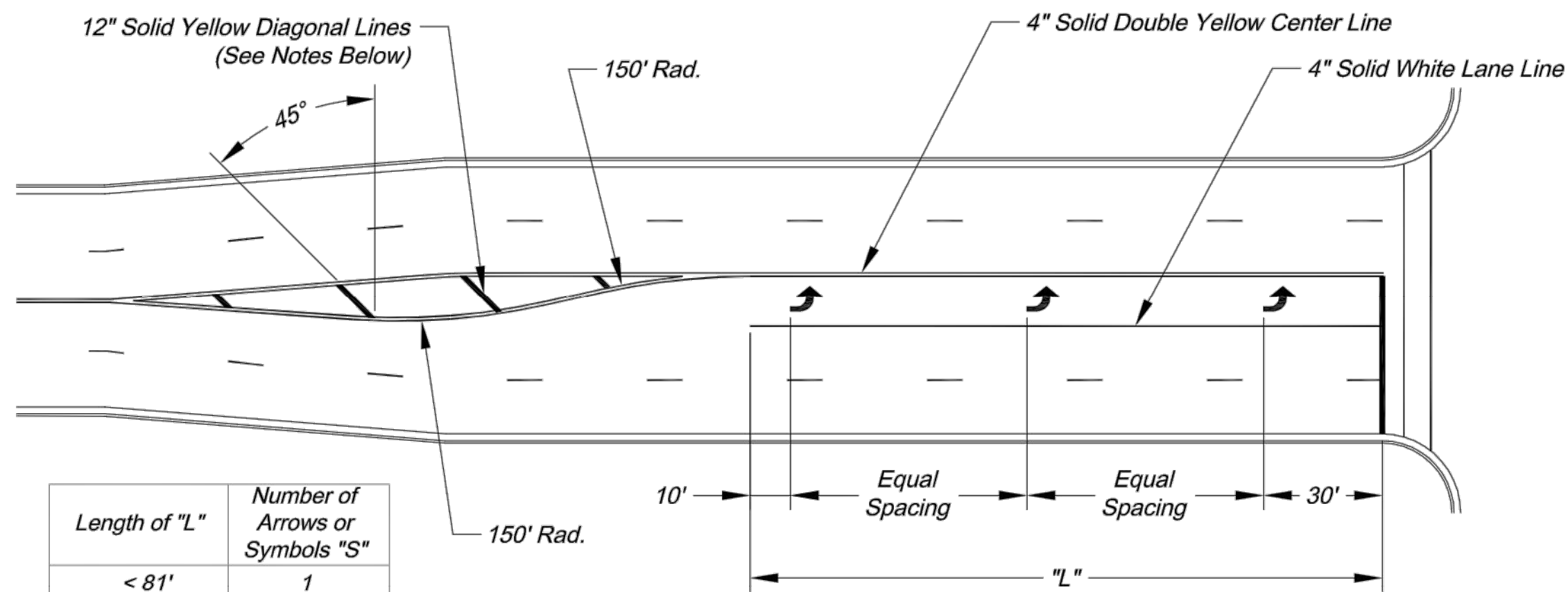


TYPICAL MARKINGS FOR TWO-WAY LEFT-TURN LANE



TYPICAL DUAL TURN LANE MARKINGS

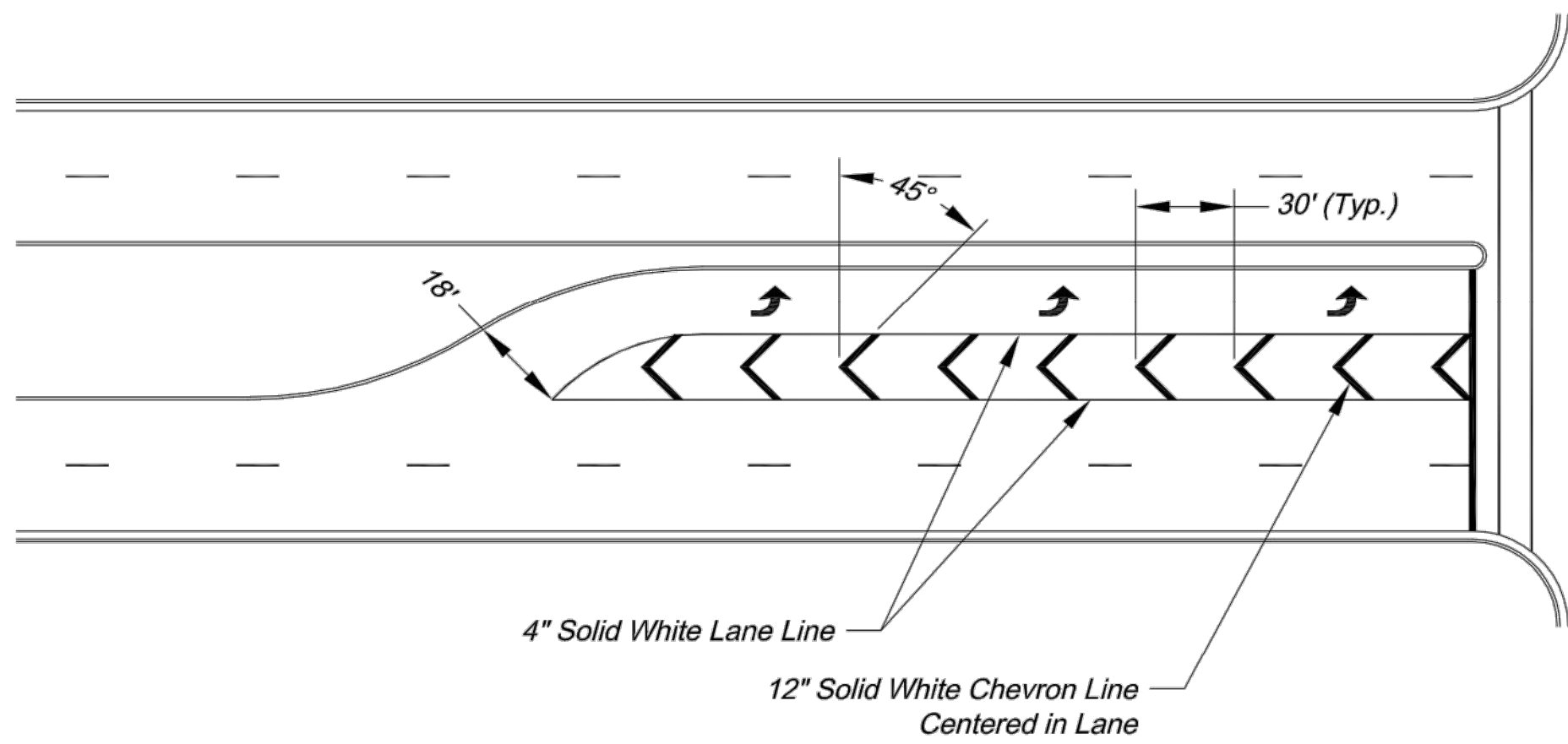
NOTE:
1. Dashed extension lines shall not extend through crosswalks.



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.



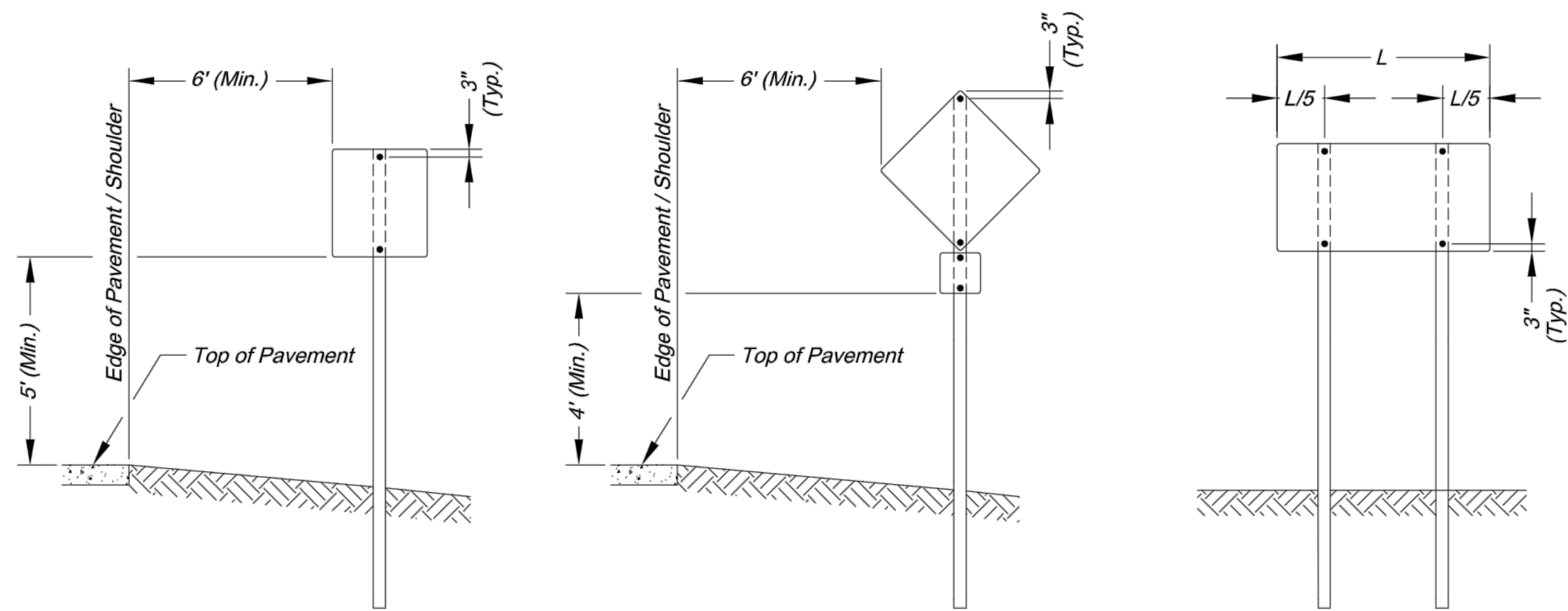
TYPICAL STRIPED OUT TURN LANE MARKINGS



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Project: O'REILLY DEVELOPMENT SENIOR LIVING
INTERSECTION MARKING DETAILS
Sheet Name: STANDARD DRAWING PM-2

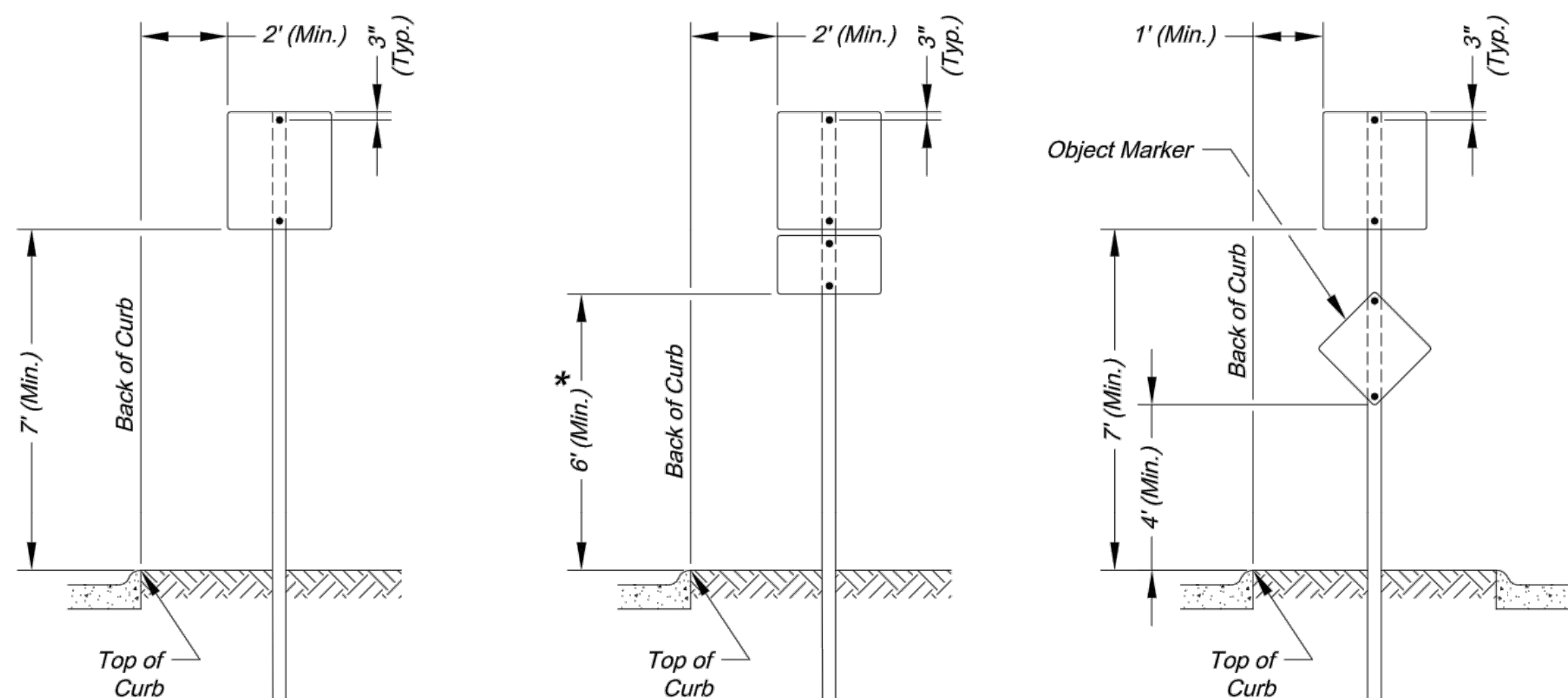
Drawn By: AS
Checked By: JW
Date: 09/09/2009
Project#



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

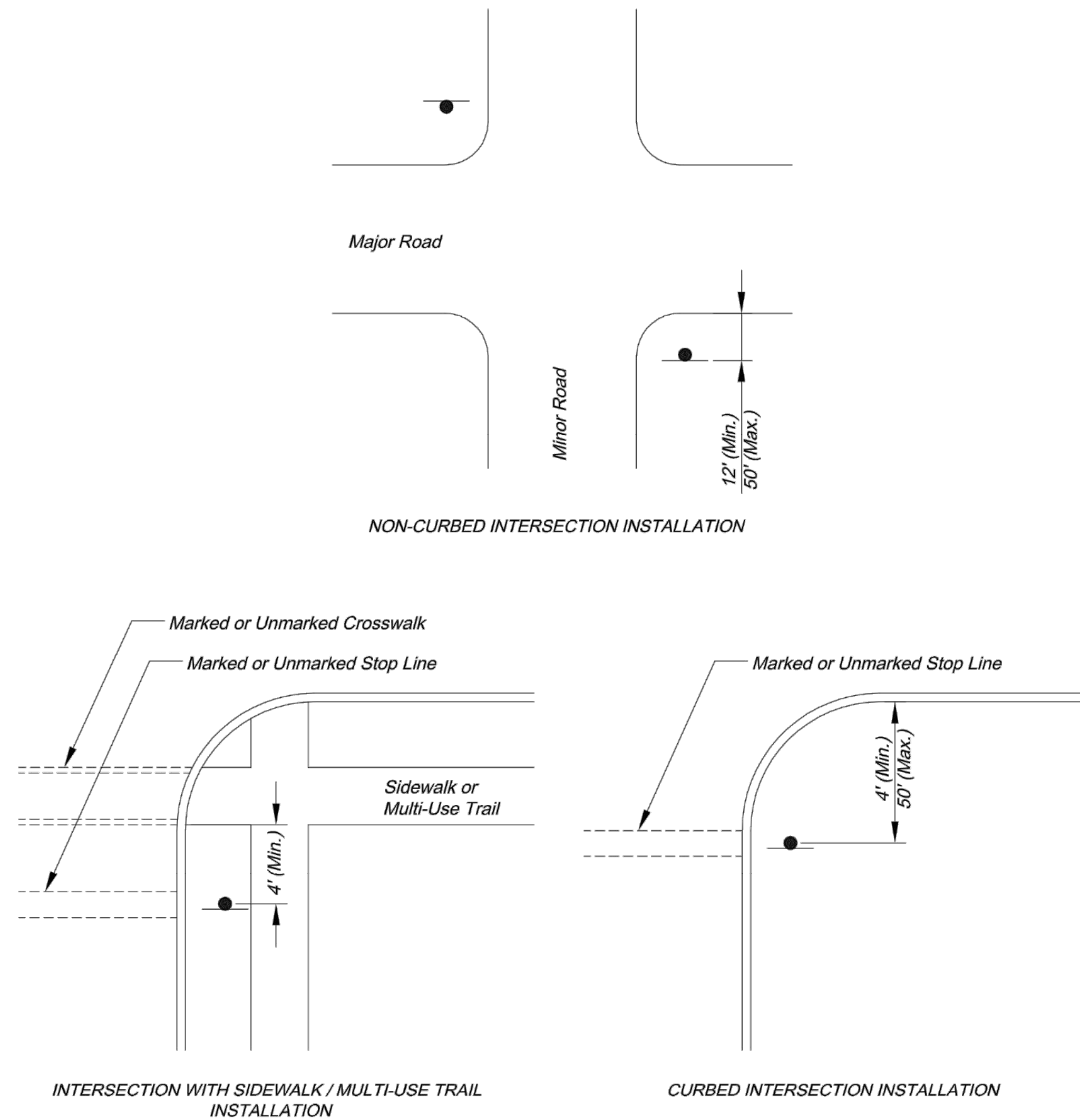
SIGN INSTALLATION FOR
RAISED MEDIANS

SIGN MOUNTING DETAILS

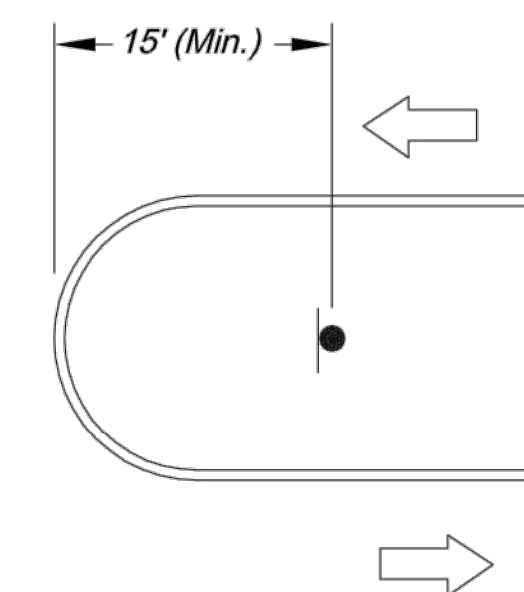
* The height to the bottom of a sign when it is located in a pedestrian walkway or extends into a walkway shall be a minimum of 80 inches above the walkway.

NOTE:

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



CONTROL SIGN LOCATION



TYPICAL MEDIAN SIGN LOCATION

MEDIAN SIGN LOCATION

NOTES:

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



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Project: O'REILLY DEVELOPMENT SENIOR LIVING

SIGN MOUNTING DETAILS

Sheet Name: STANDARD DRAWING SN-1

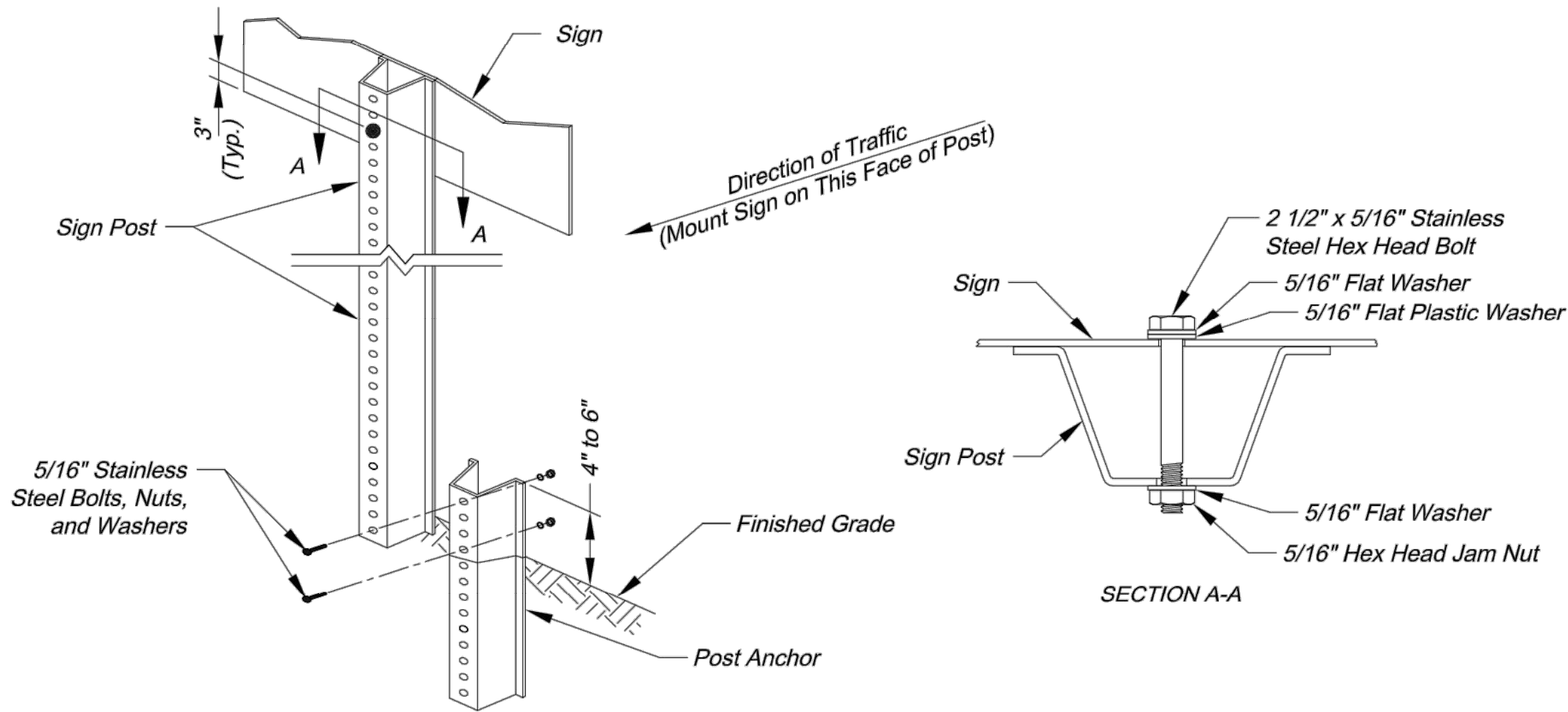
Drawn By: AS

Checked By: JW

Date: 08/26/2009

Project#

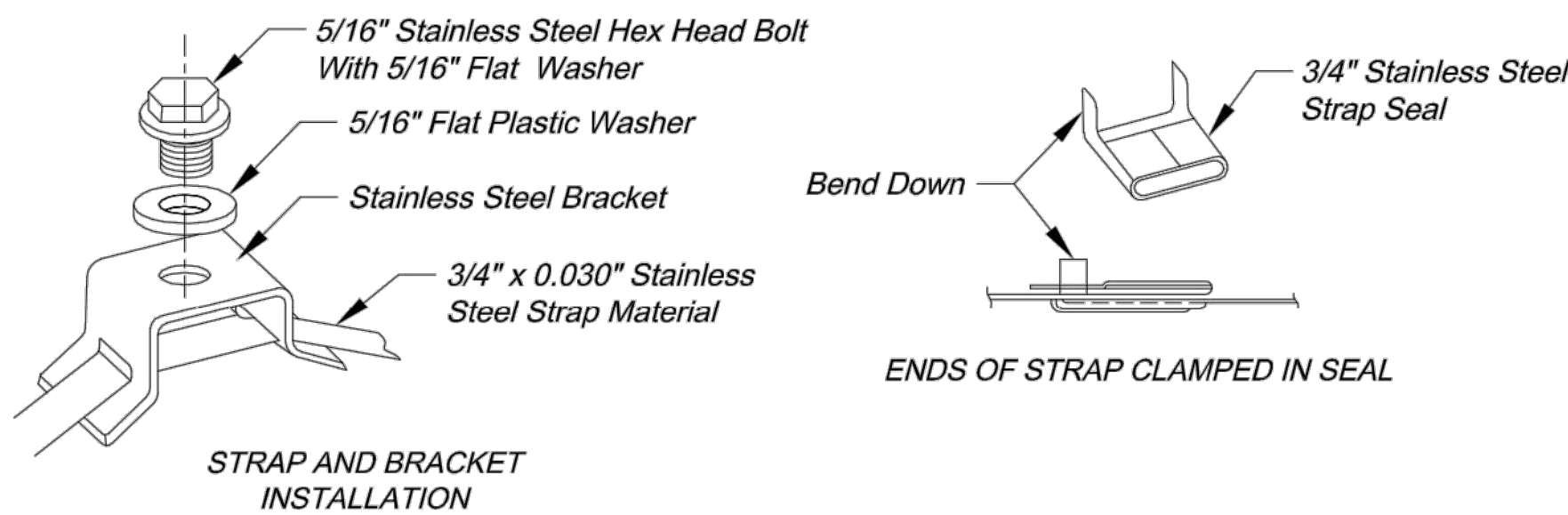
T30



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:

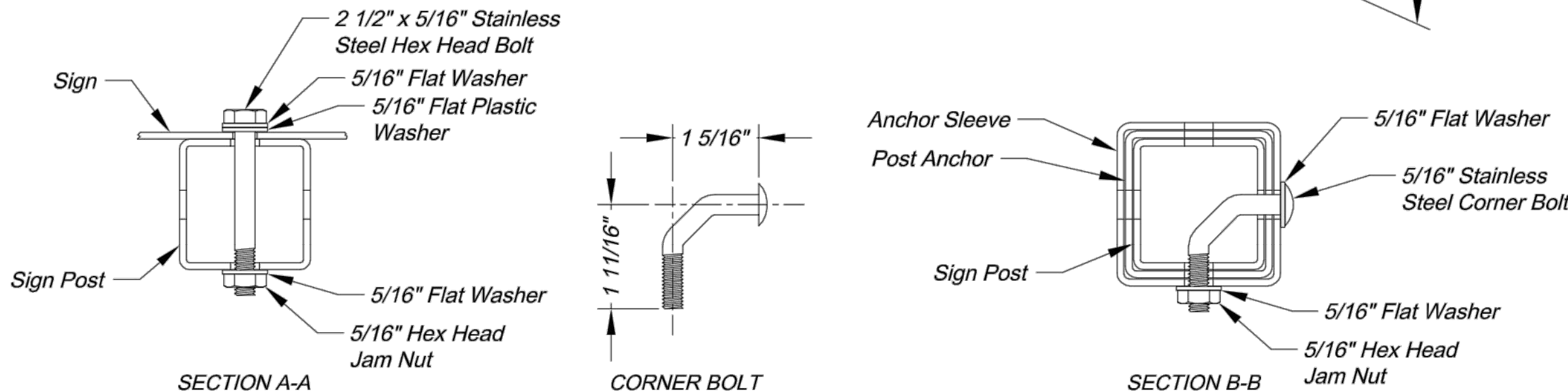
1. Signs on metal poles shall be attached with two brackets and stainless steel bands.
2. Holes in sign for attachment to the mounting brackets shall be offset a minimum of 2 inches from the edge of the sign.
3. Holes in sign shall be located such that the sign is level.
4. All strap, bracket, and seal 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 1/4" x 2 1/4" x 36" Square Steel Post
 - Anchor Sleeve - 12 Ga. 2 1/2" x 2 1/2" 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.



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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#

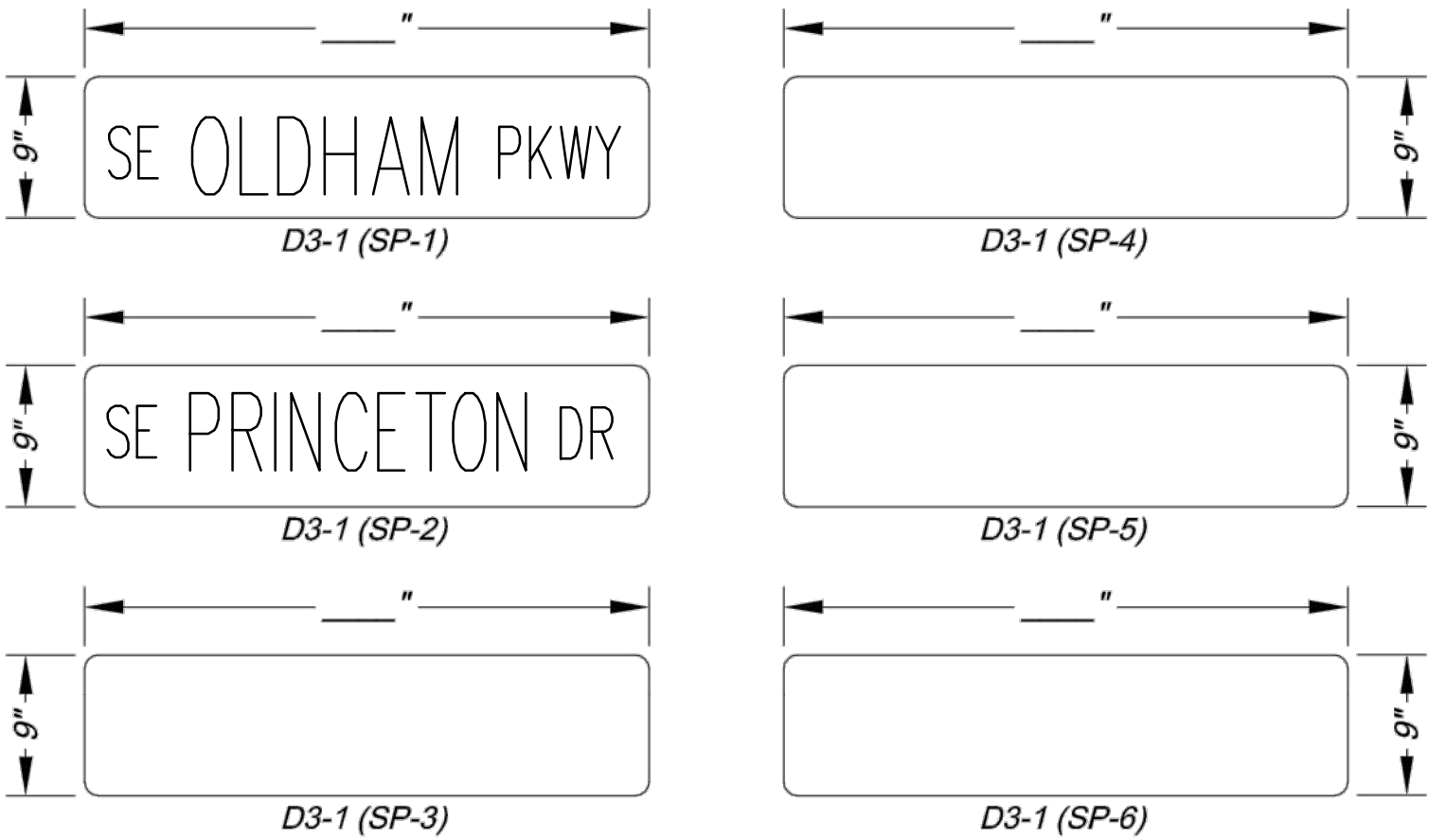
STANDARD ABBREVIATION LISTS

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

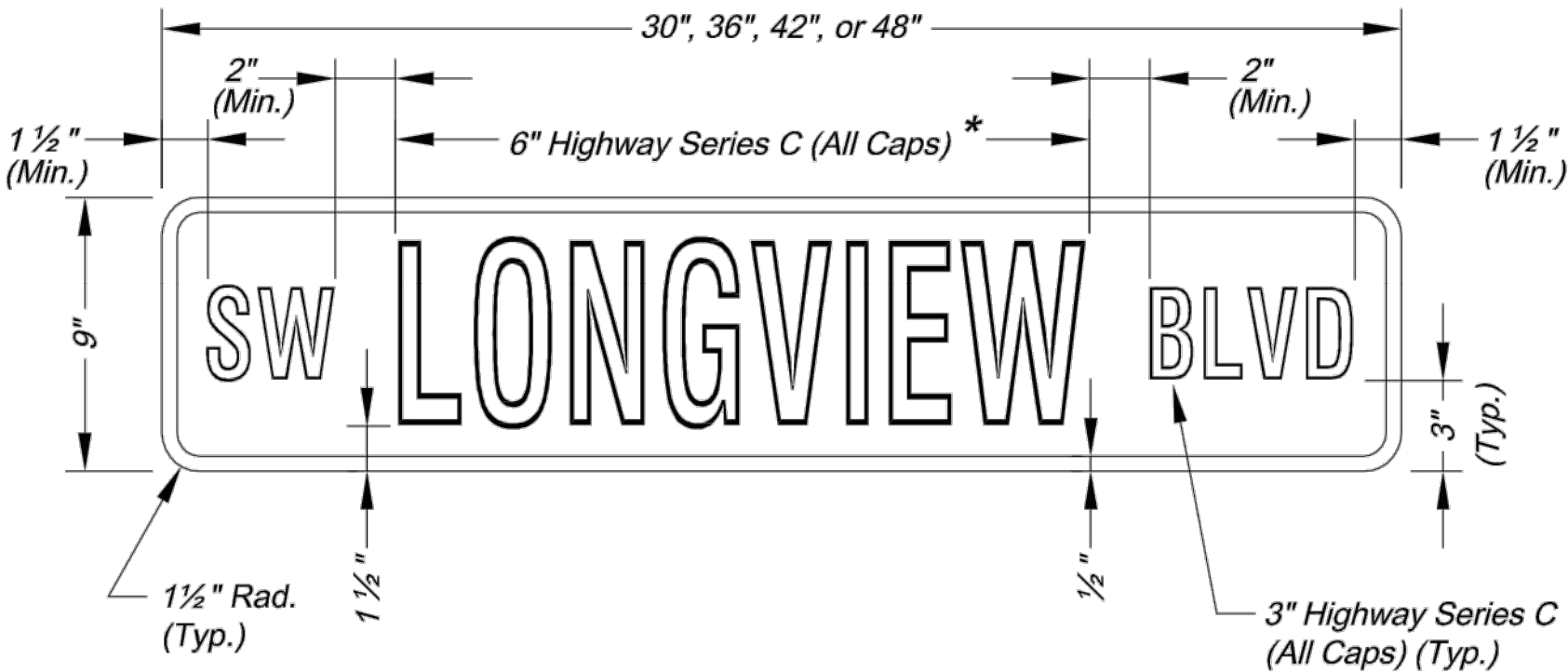
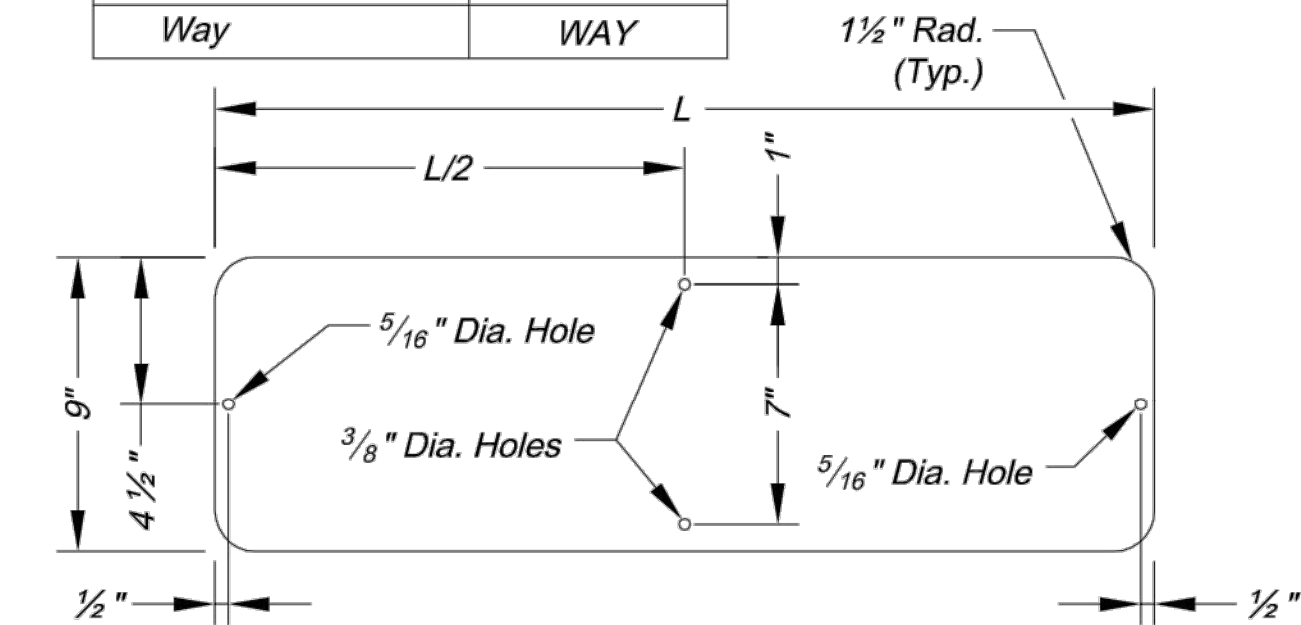
Sign Designation	Sign Size	Sign Area (Sq. Ft.)	Number	Quantity (Sq. Ft.)
D3-1 (SP-1)	9" x 48"	3	2	6
D3-1 (SP-2)	9" x 48"	3	2	6



PROJECT SIGN DETAILS

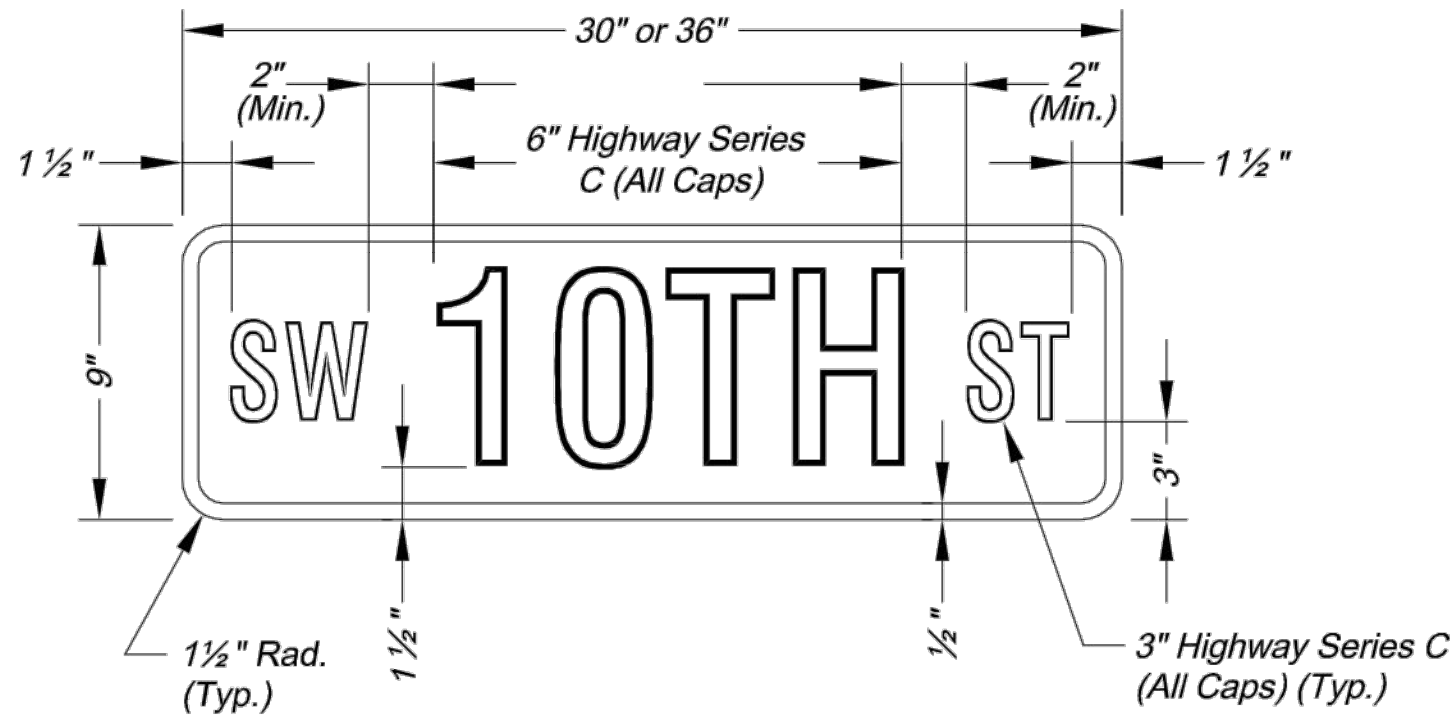
STREET NAME SIGN BLANK DETAILS

For Mounting on Square Steel Posts

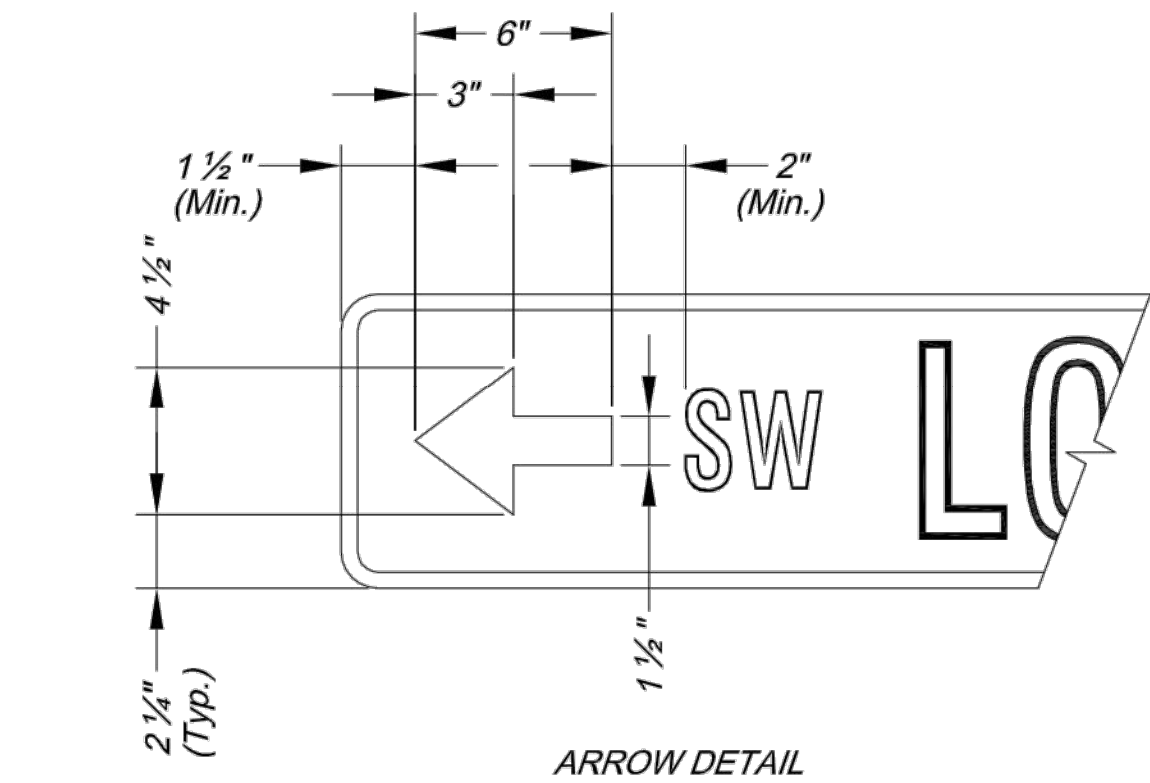


NAMED STREET NAME SIGN DETAIL

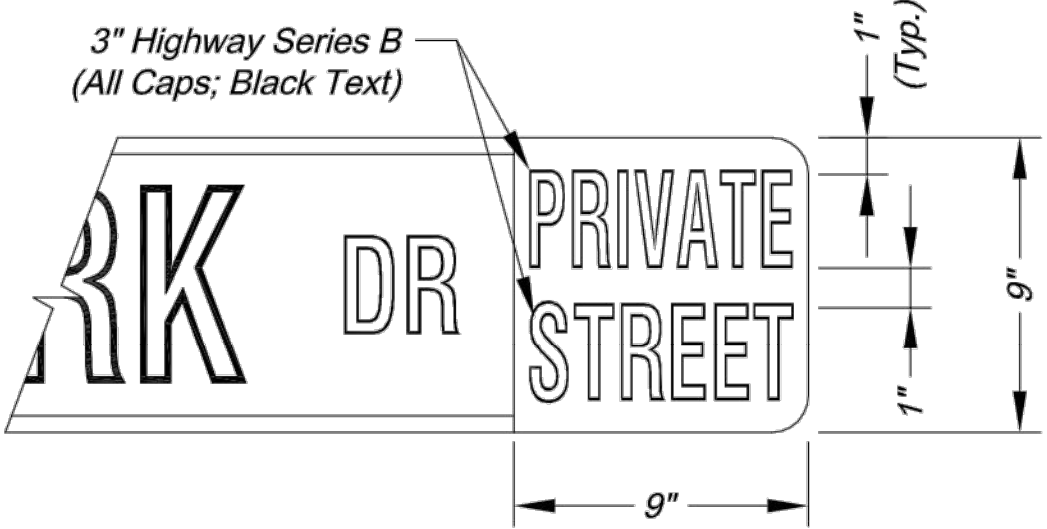
* Use Highway Series B (All Caps) in lieu of series C if necessary to fit text on a 36" sign blank.



NUMBERED STREET NAME SIGN DETAIL



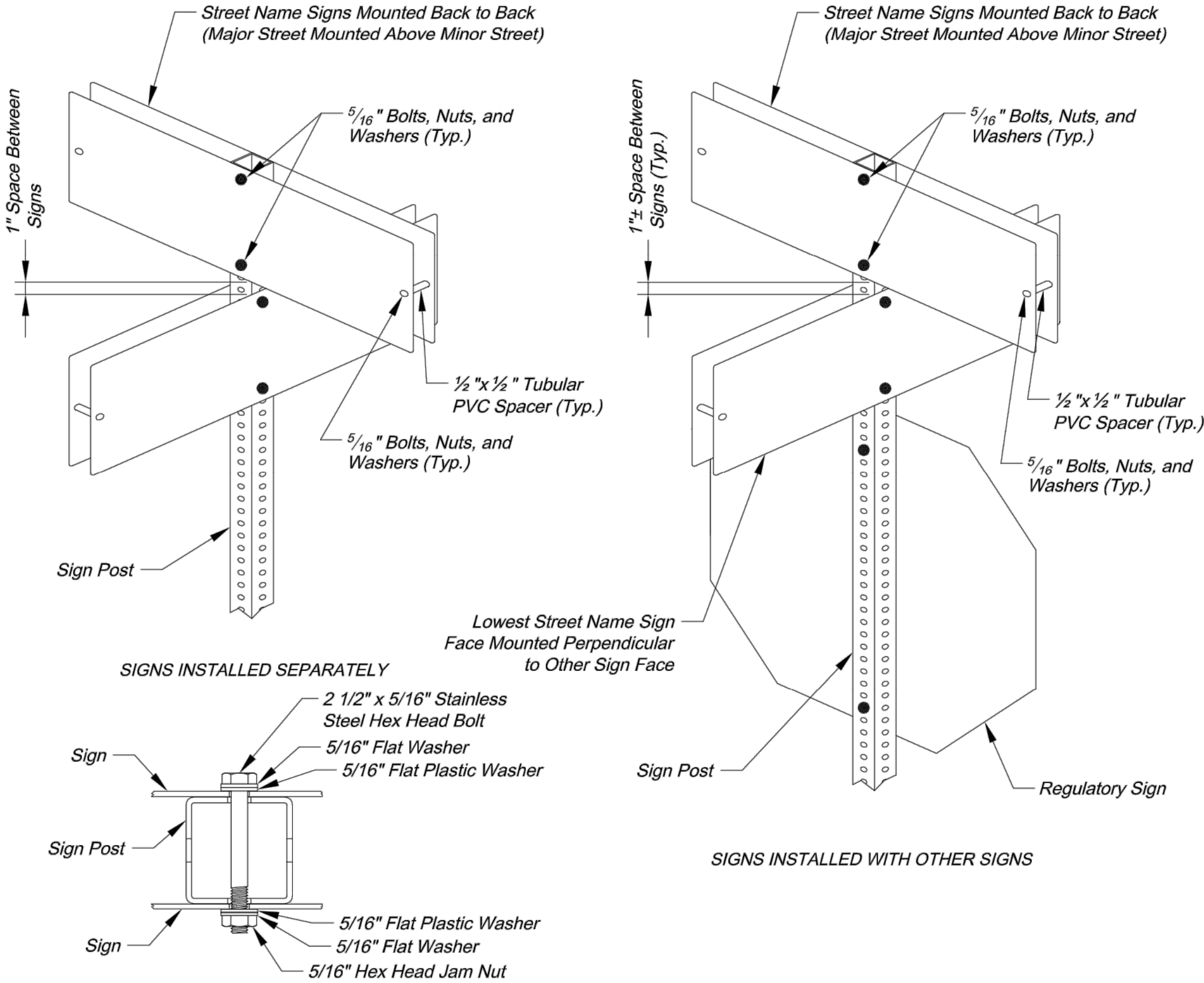
ARROW DETAIL



PRIVATE STREET TAG DETAIL

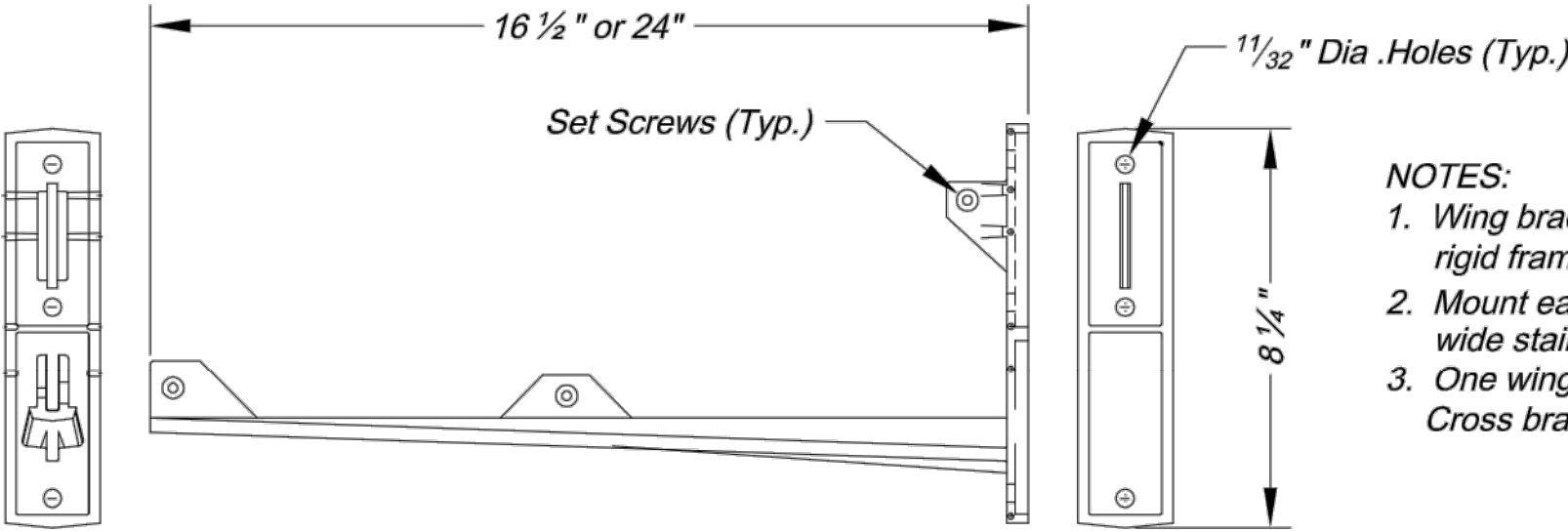
- NOTES:
- For all street name signs, the legend shall be white and the background shall be green.
 - Arrows shall be added to street name signs where the name of a street changes at an intersection. Street name signs with arrows are to be installed on each side of the intersection to indicate the change in names. Arrows shall be white.
 - 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

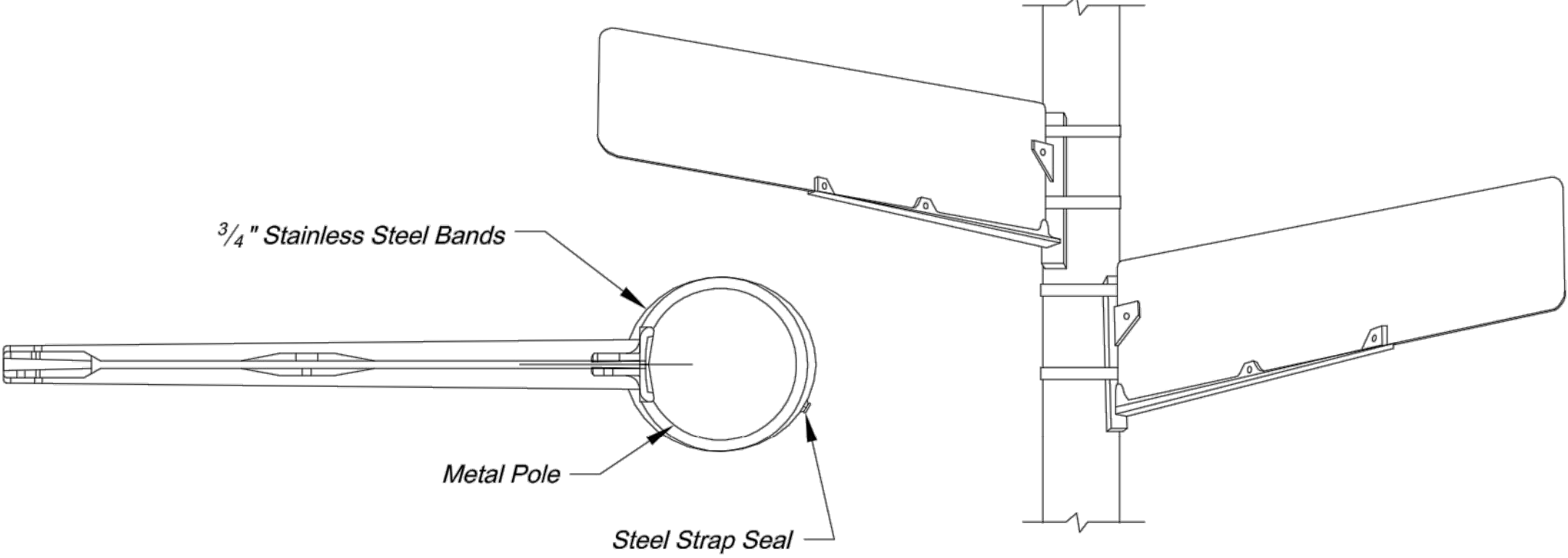


PLAN VIEW

SQUARE STEEL POST MOUNTING DETAILS



- NOTES:
- Wing bracket shall be an L-shaped cantilever of T-beam rigid frame 380-3 aluminum alloy construction.
 - Mount each wing bracket to metal pole using two 3/4" wide stainless steel straps.
 - One wing bracket shall be installed per each sign. Cross brackets are not allowed.



WING BRACKET MOUNTING DETAILS



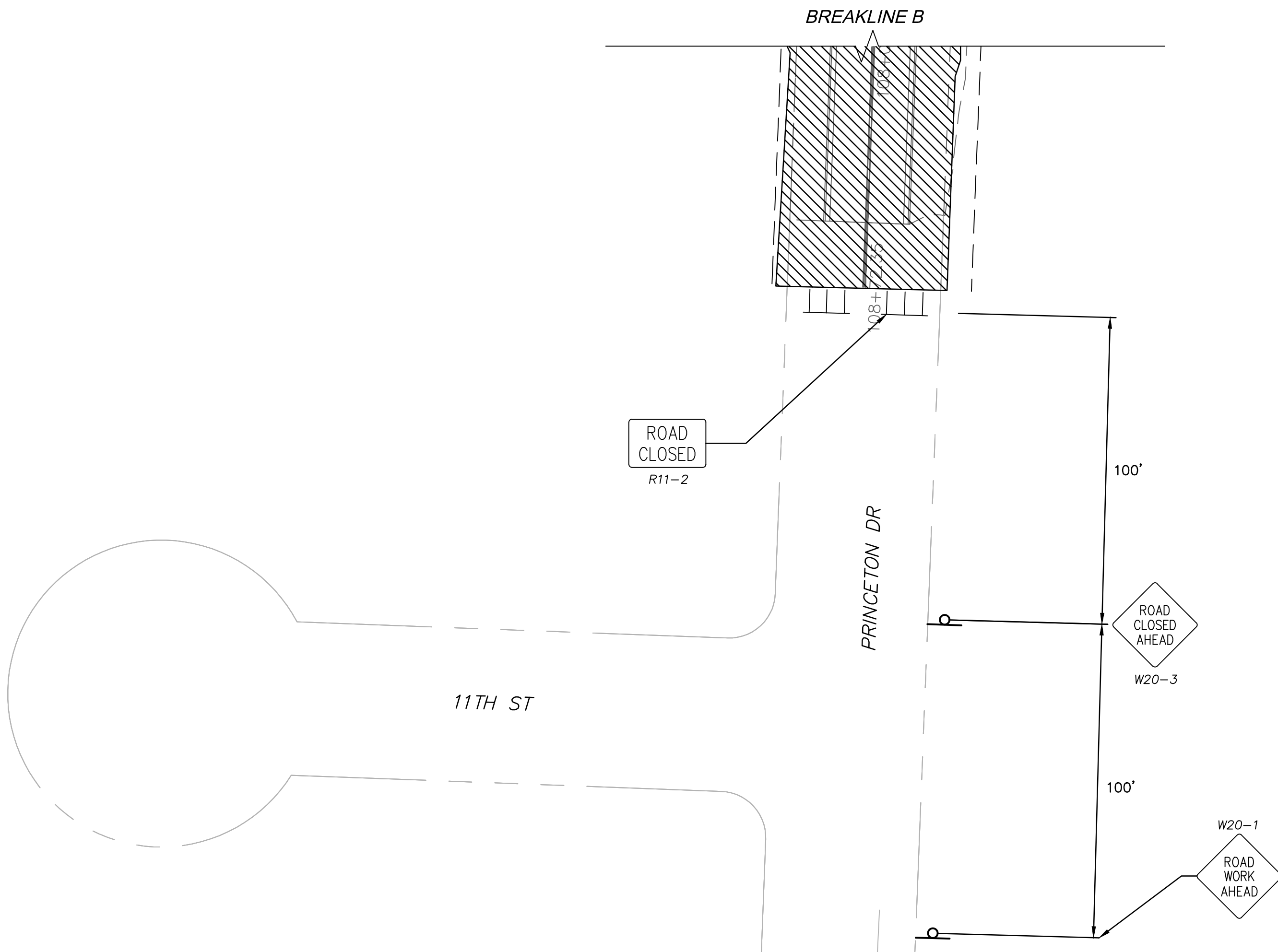
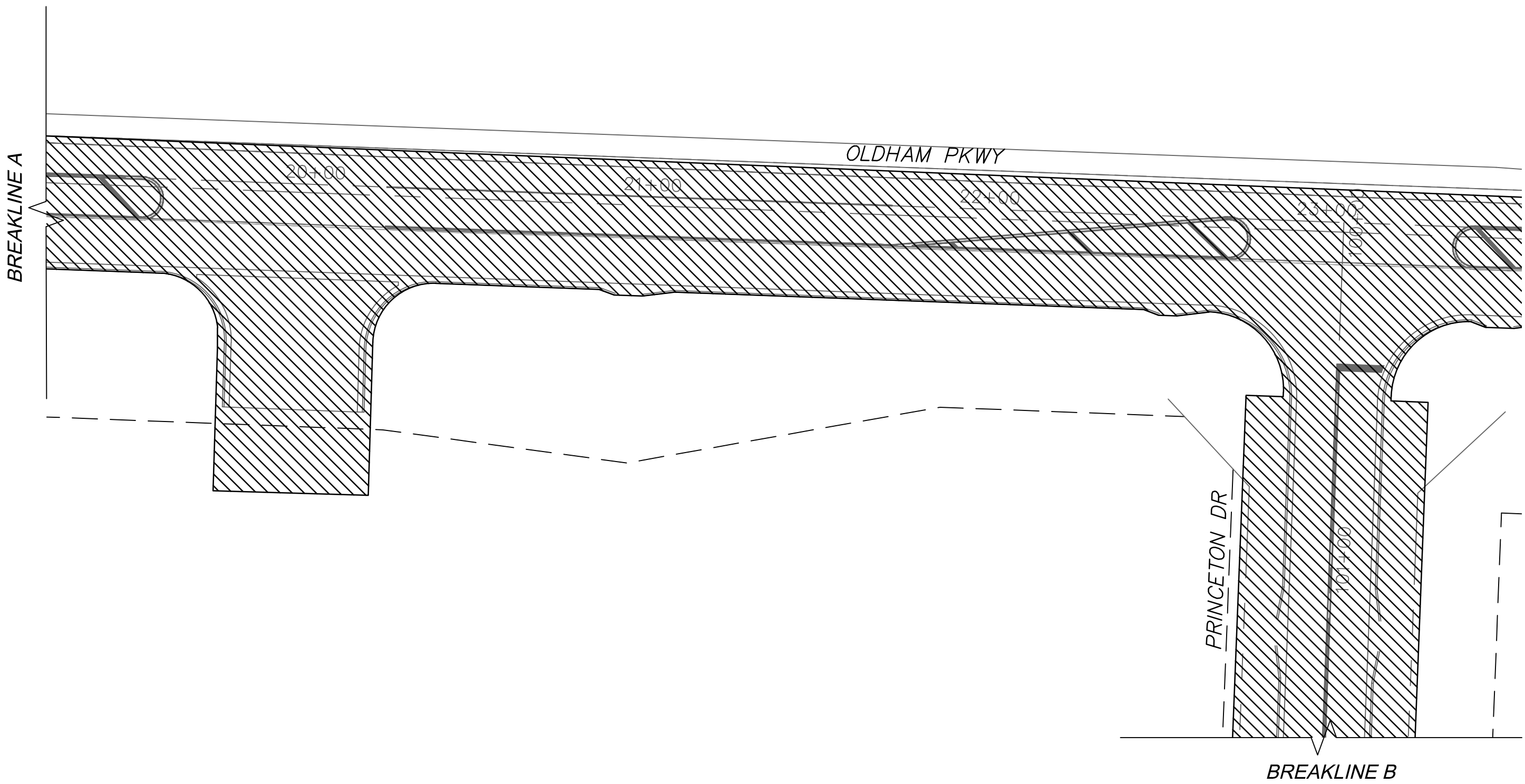
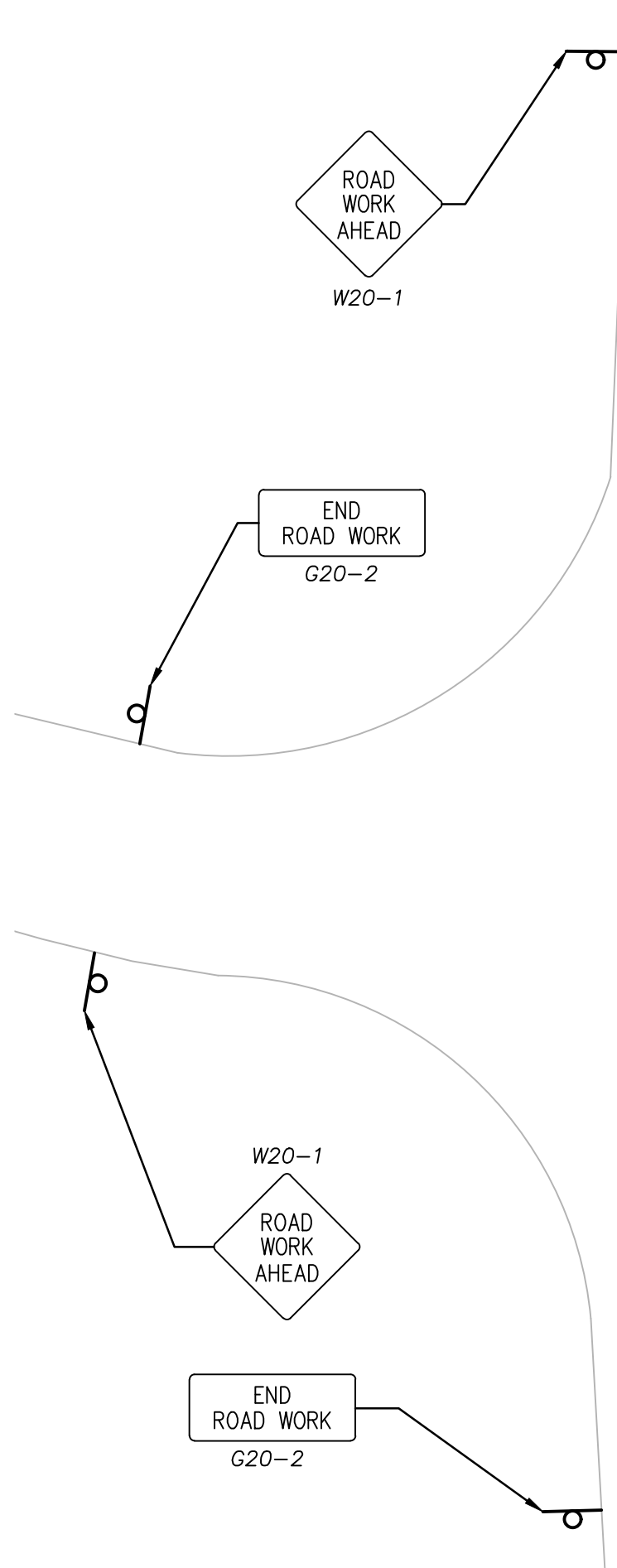
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809

Project: O'REILLY DEVELOPMENT SENIOR LIVING
STREET NAME SIGN DETAILS
Sheet Name: STANDARD DRAWING SN-3



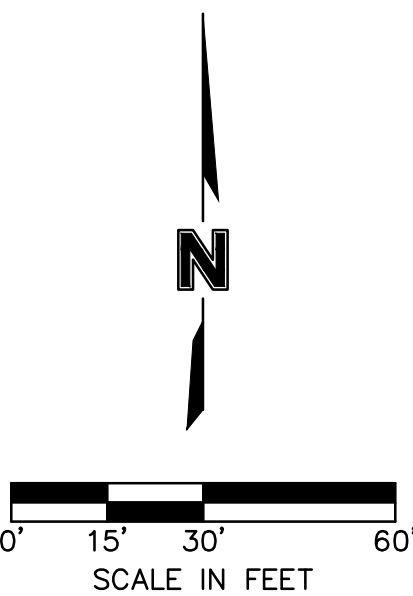
Drawn By: AS
Checked By: JW
Date: 08/26/2009
Project#

DWG: F:\2018\1
DATE: Jul 25, 2018



LEGEND

 - Type III Barricade
 - Sign Symbol



TRAFFIC CONTROL		REV. NO.	DATE	REVISIONS DESCRIPTION	BY
OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS					
LEE'S SUMMIT, MISSOURI		2019	REVISIONS		
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_TFC-24450 DATE: 07-19-19					

SHEET

T33 OF 70

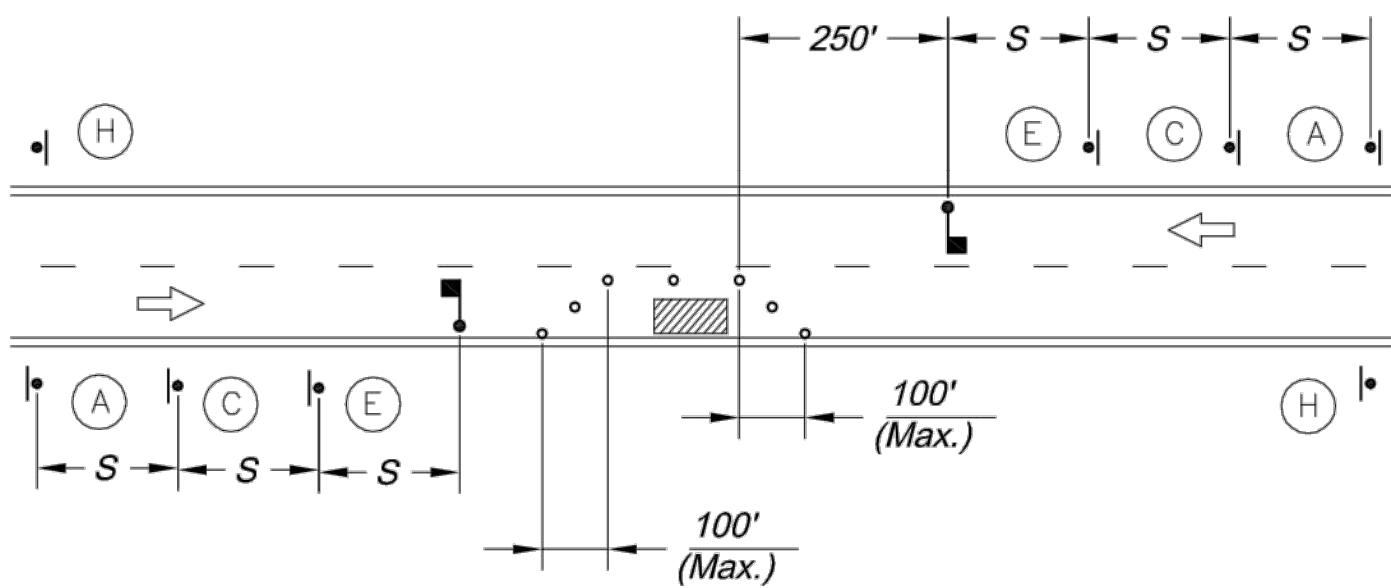


olson

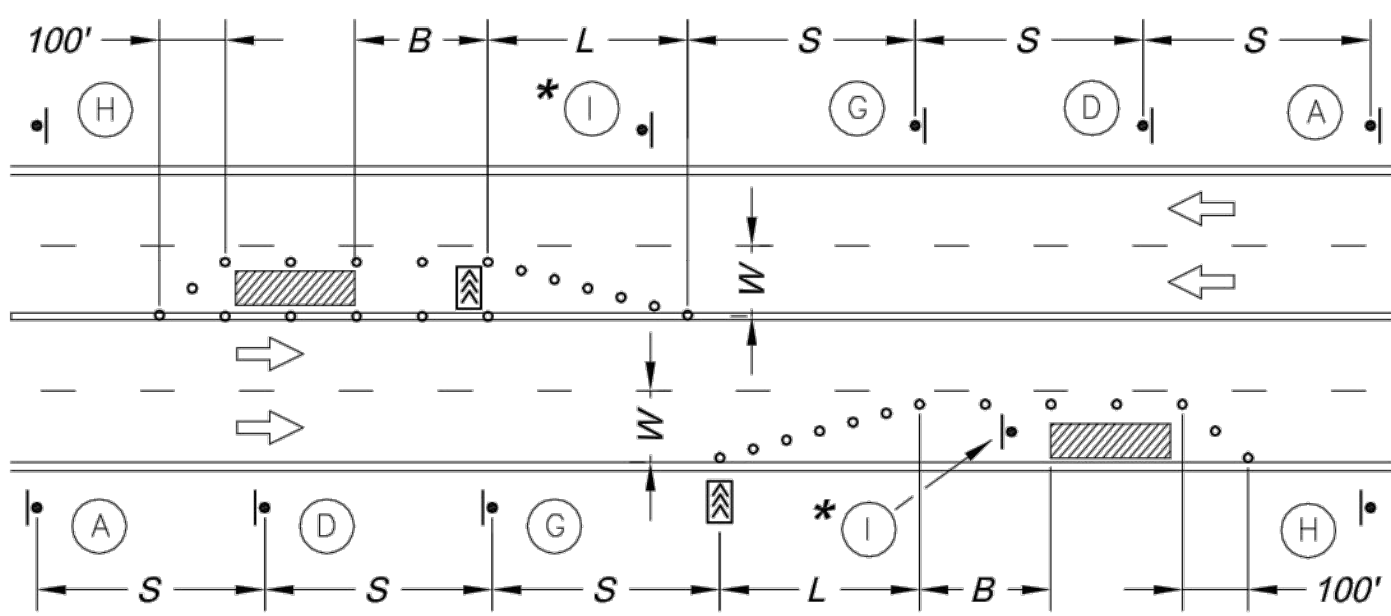
Olsson Engineering - MO State Certificate of Authority #001592
7301 West 133rd Street, Suite 200 TEL 913.381.1170
Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

SYMBOL LEGEND

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

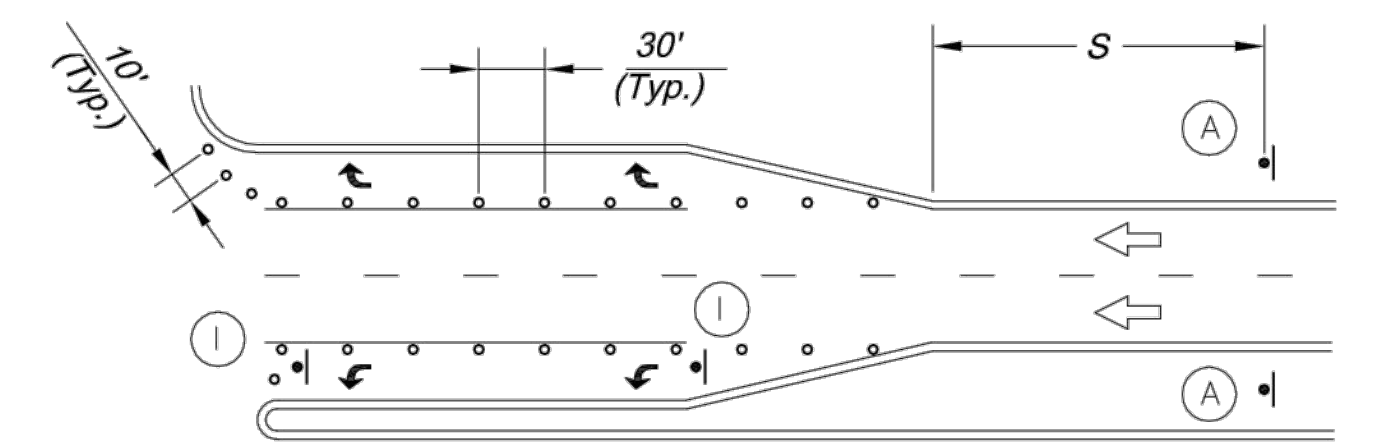


LANE CLOSURE - TWO LANE STREET



LANE CLOSURE - FOUR LANE STREET

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



TURN LANE CLOSURE

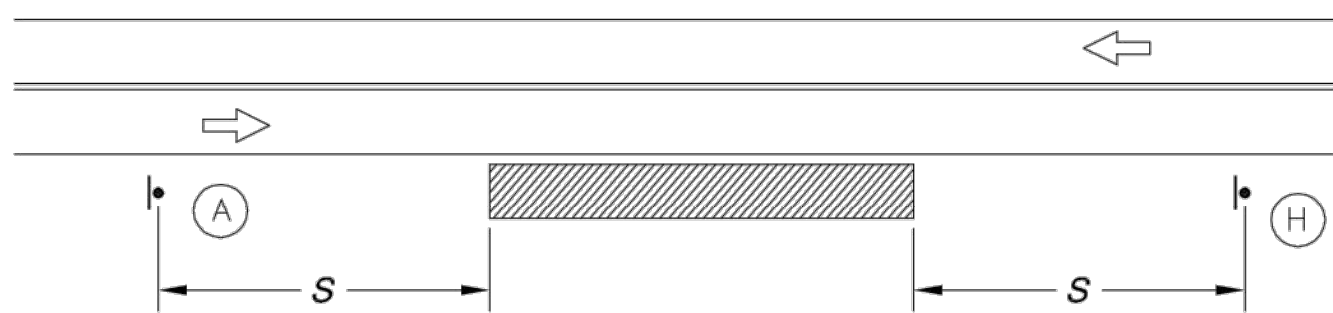
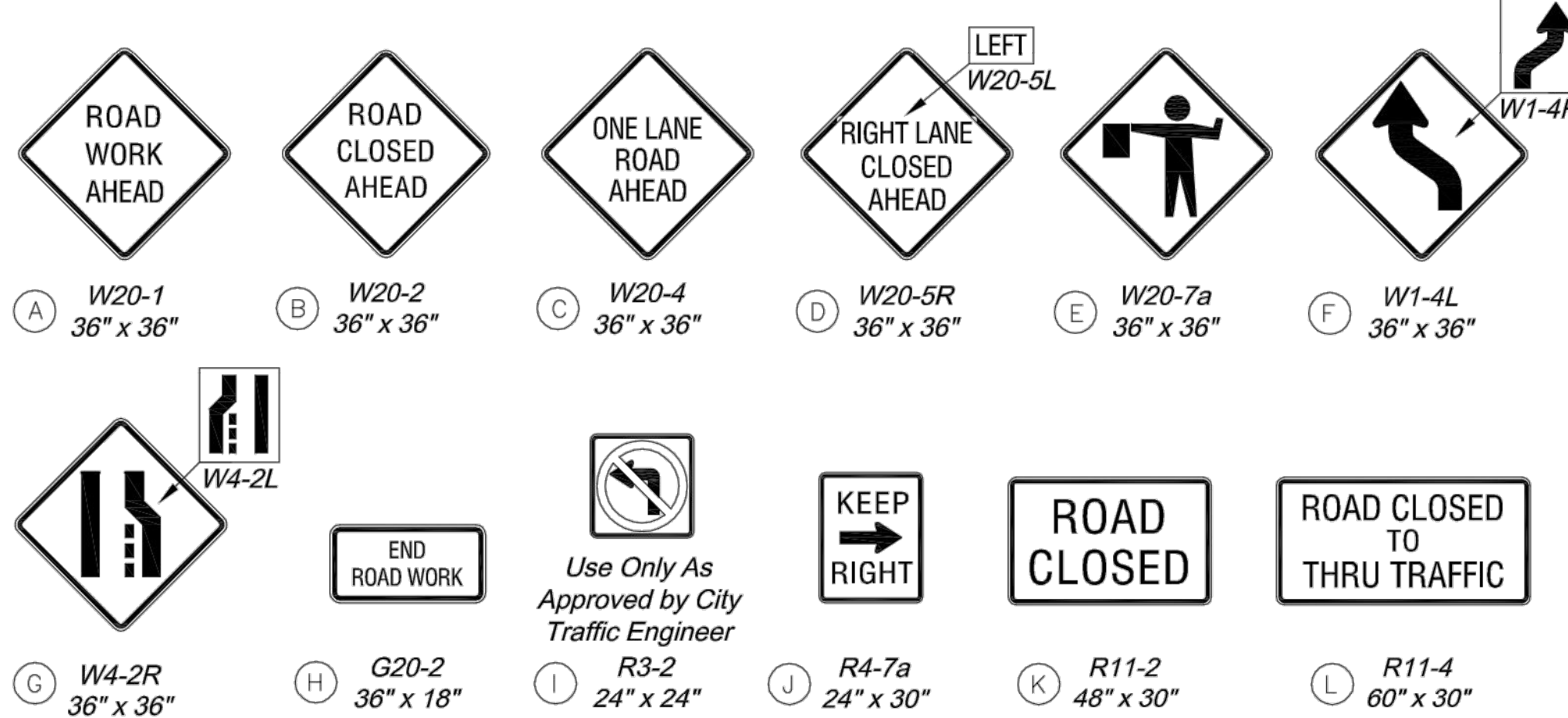
Sign Spacing "S"	
Speed Limit (mph)	Spacing (Feet)
25	100
30 - 35	250
≥ 40	350

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

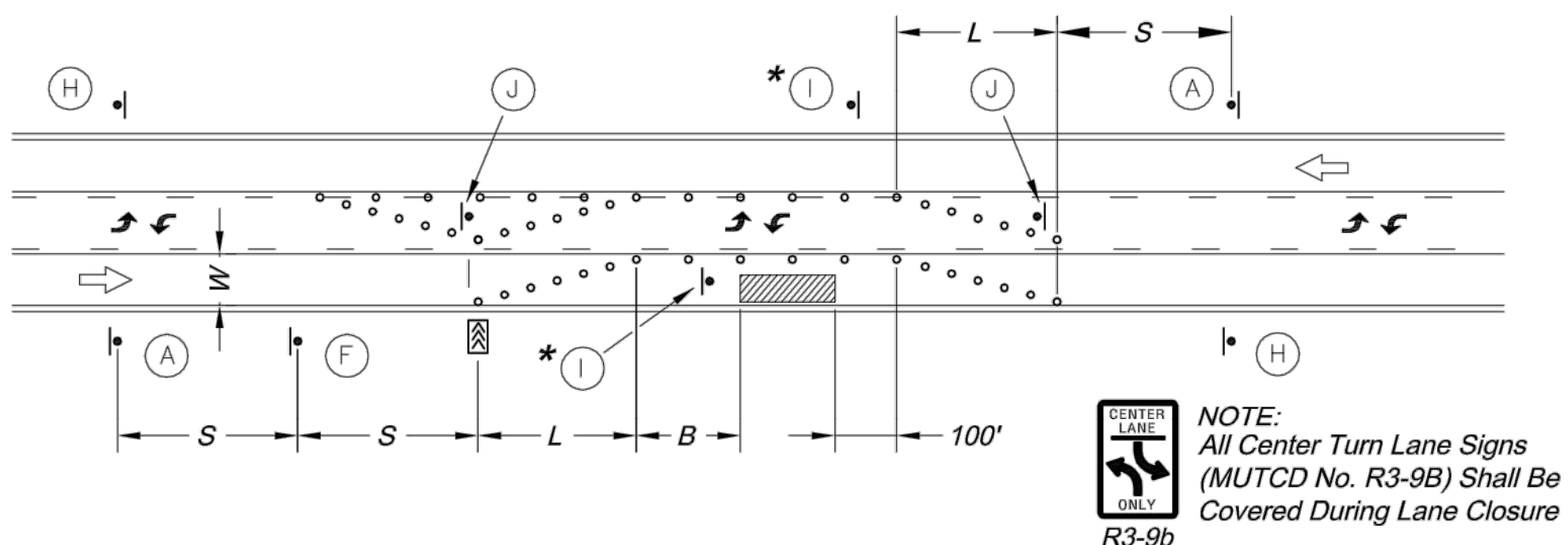
Guidelines for Length of Longitudinal Buffer Space "B"	
Speed Limit (mph)	Length (Feet)
25	35
30	55
35	85
40	120
45	170

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

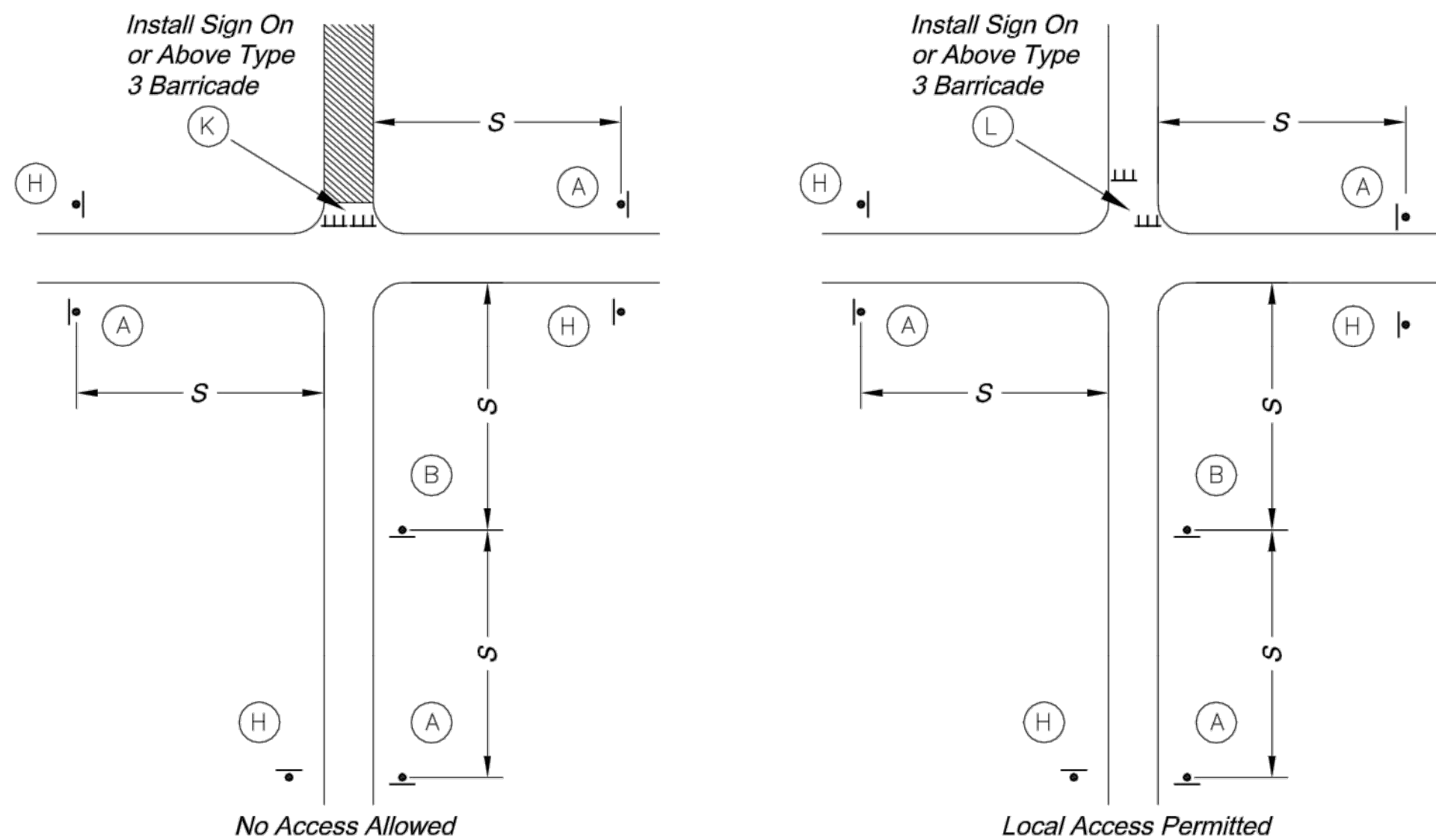


TYPICAL SIGNING FOR WORK ADJACENT TO THE STREET



LANE CLOSURE - THREE LANE STREET

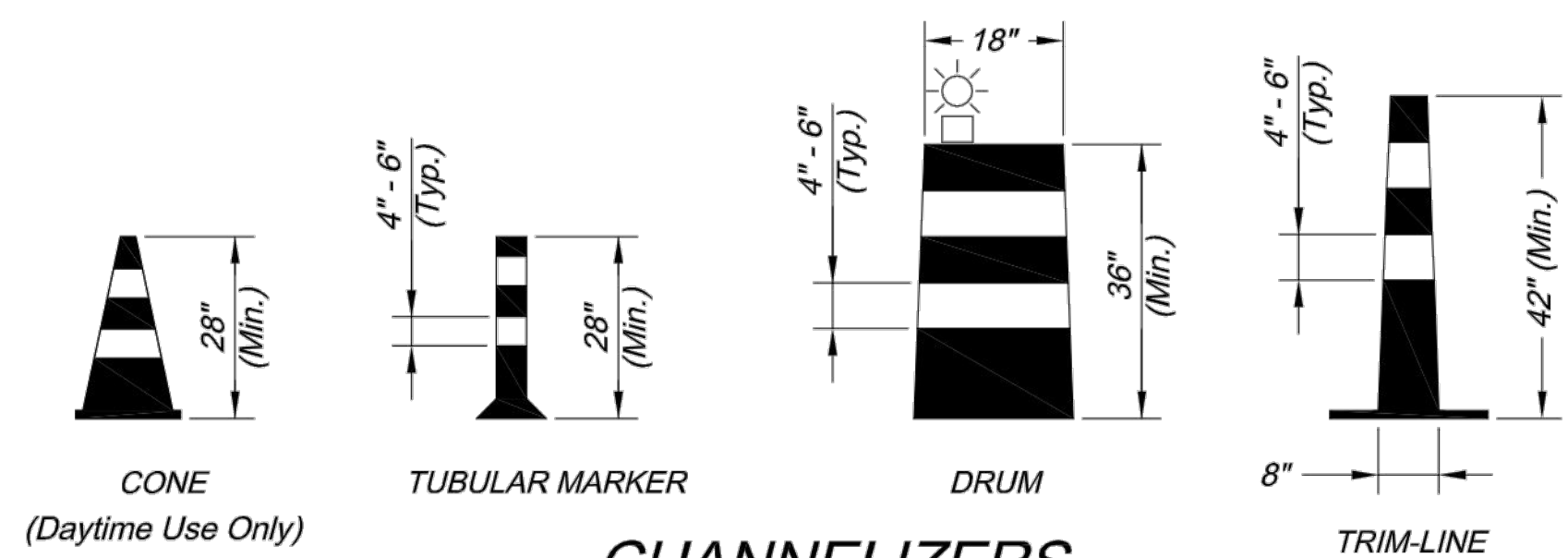
* Install Signs Every 200 Feet Throughout the Closed Lane or As Needed



TYPICAL STREET CLOSURE

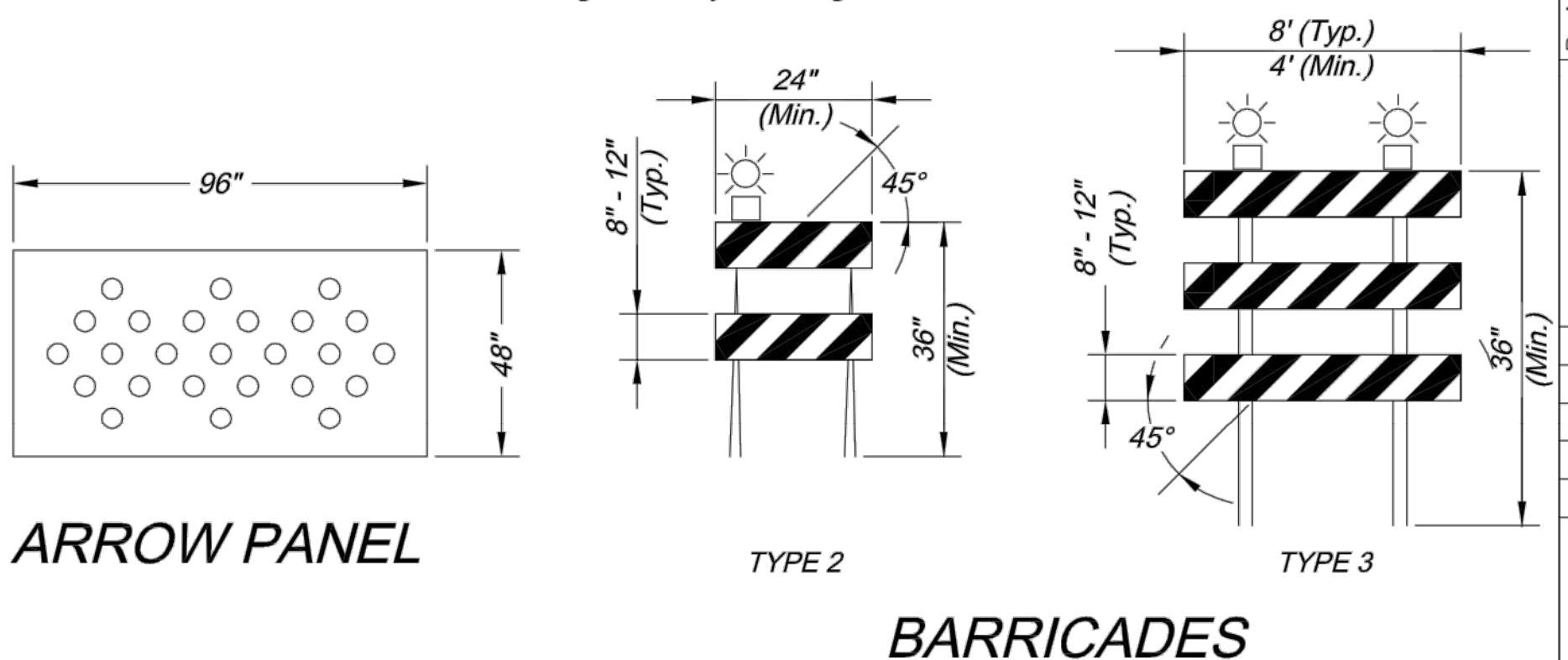
GENERAL NOTES:

- 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)*.
- 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*.
- 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.
- 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.
- Trim-lines are the City's preferred channelizing device. Cones may not be used at nighttime.
- Traffic control devices not in use or not applicable shall be either covered or removed from the work area.
- 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.
- Access shall be maintained to all driveways and side streets unless noted otherwise on the plans.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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).
- 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.
- No traffic signal shall be altered or modified in any way without a plan approved by the City Traffic Engineer.
- 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.
- 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.
- 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:
 - Employ another agency to correct deficiencies in traffic control devices and deduct the cost from the Contractor's pay estimate.
 - Stop the work until deficiencies are corrected.
 - Suspend all pay estimates until deficiencies are corrected, or
 - Place the Contractor in default.



CHANNELIZERS

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



BARRICADES

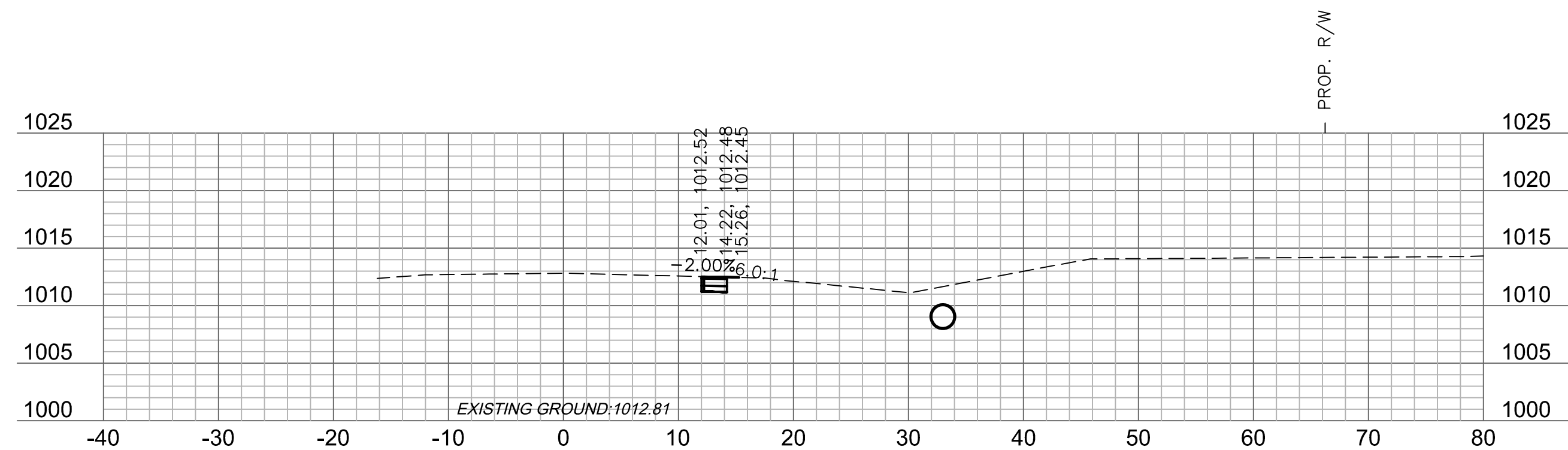
CITY OF LEE'S SUMMIT
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
220 SE GREEN STREET
LEE'S SUMMIT, MISSOURI 64063
PHONE: (816) 969-1800 FAX: (816) 969-1809



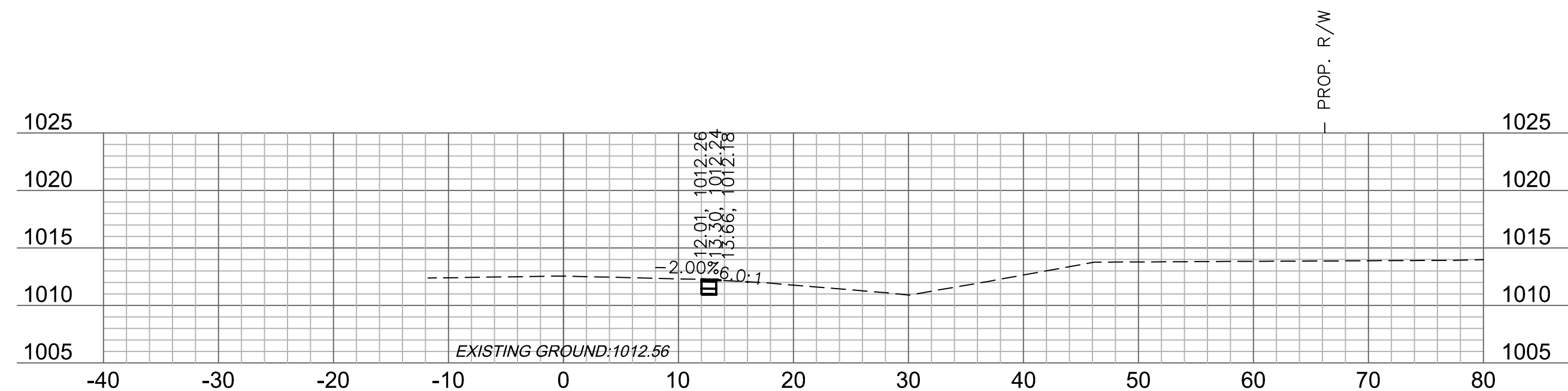
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Drawn By: JJW
Checked By: MP
Date: 12-10-2008
Project No.: X

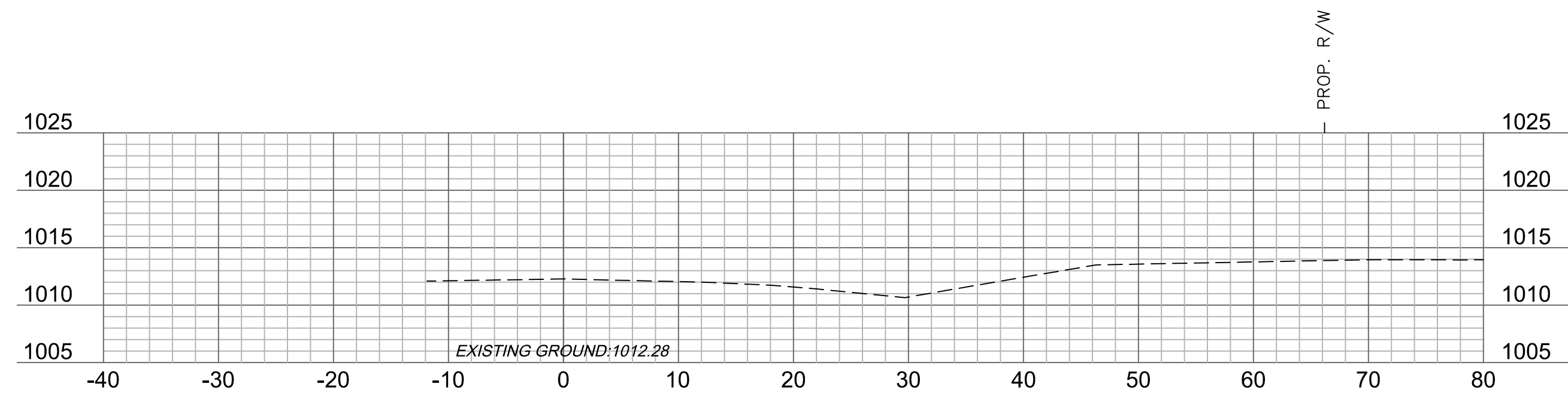
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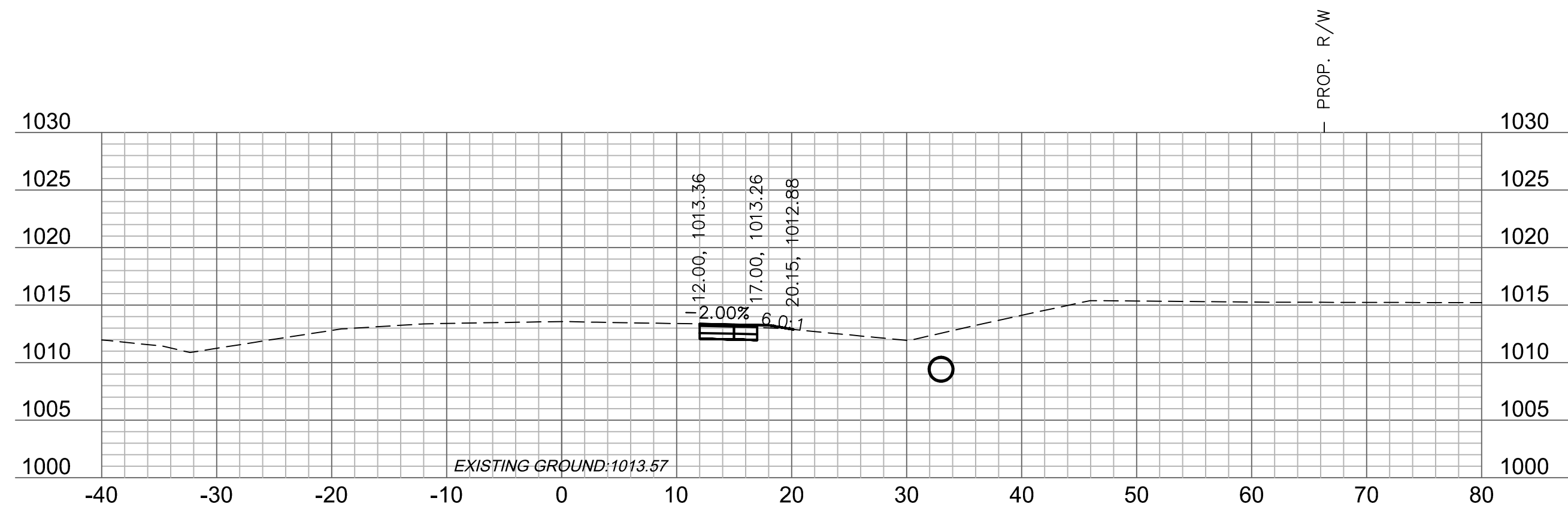
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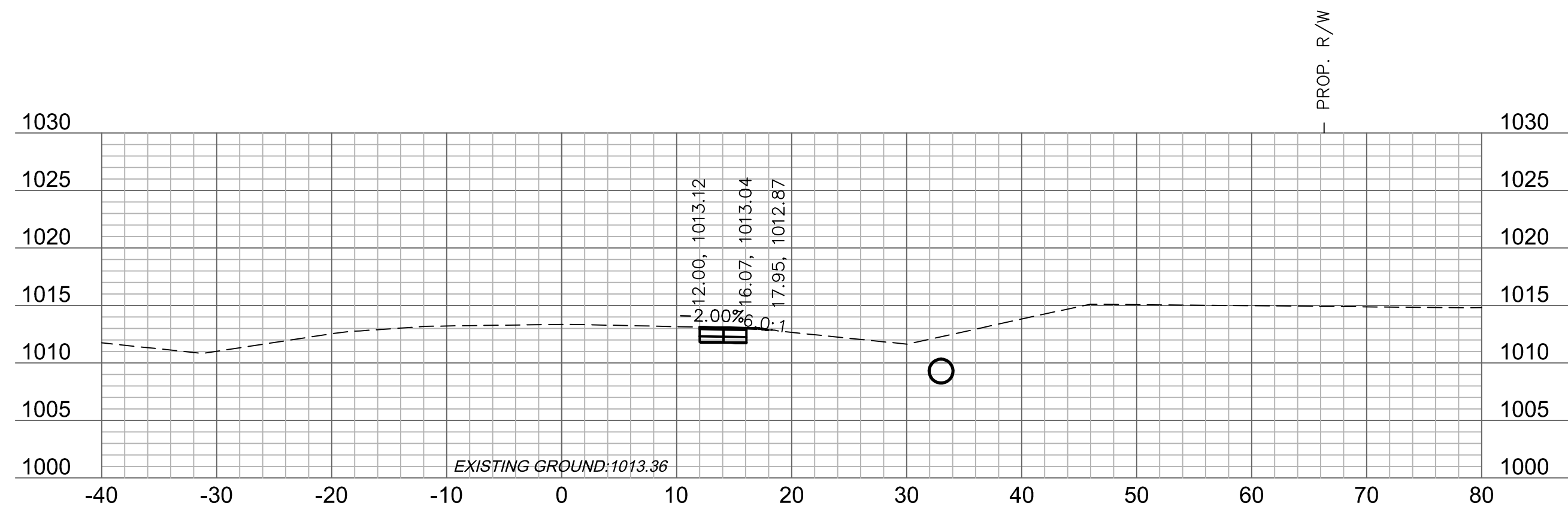
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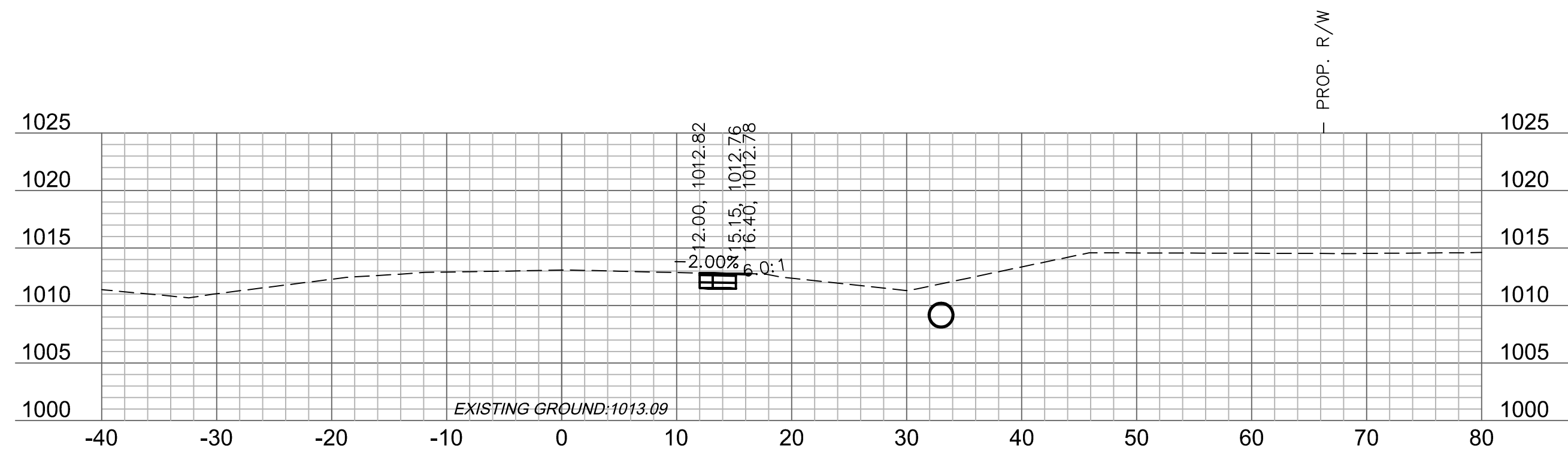
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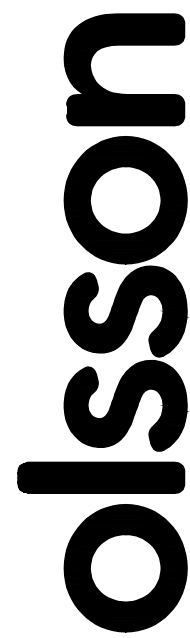


13+25



13+00

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

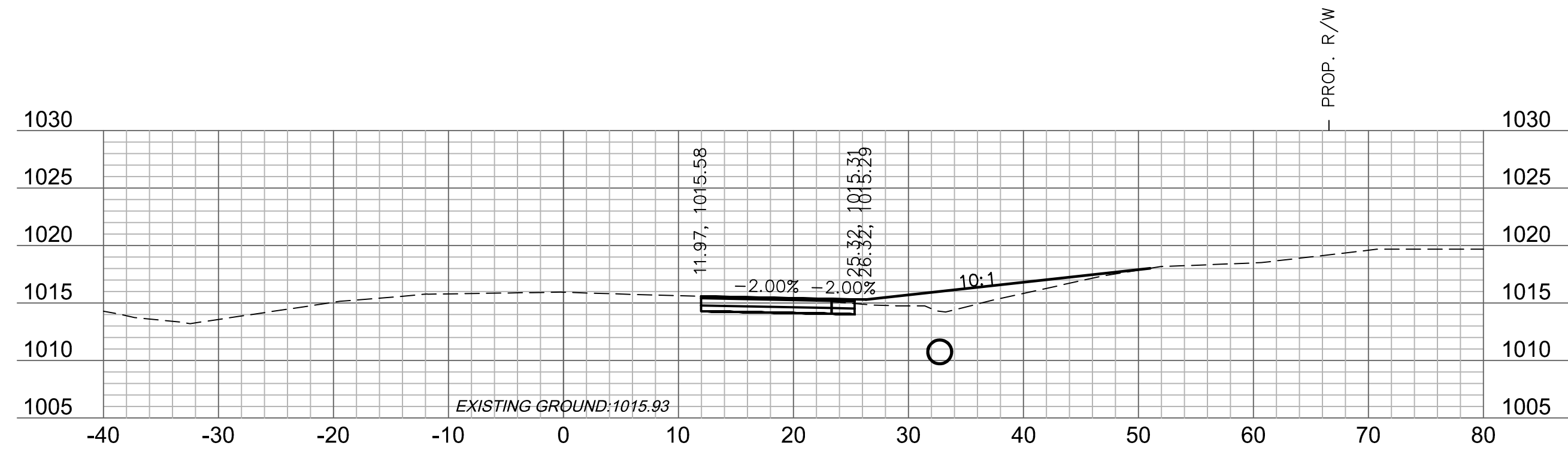
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OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	2018
LEE'S SUMMIT, MISSOURI	2019

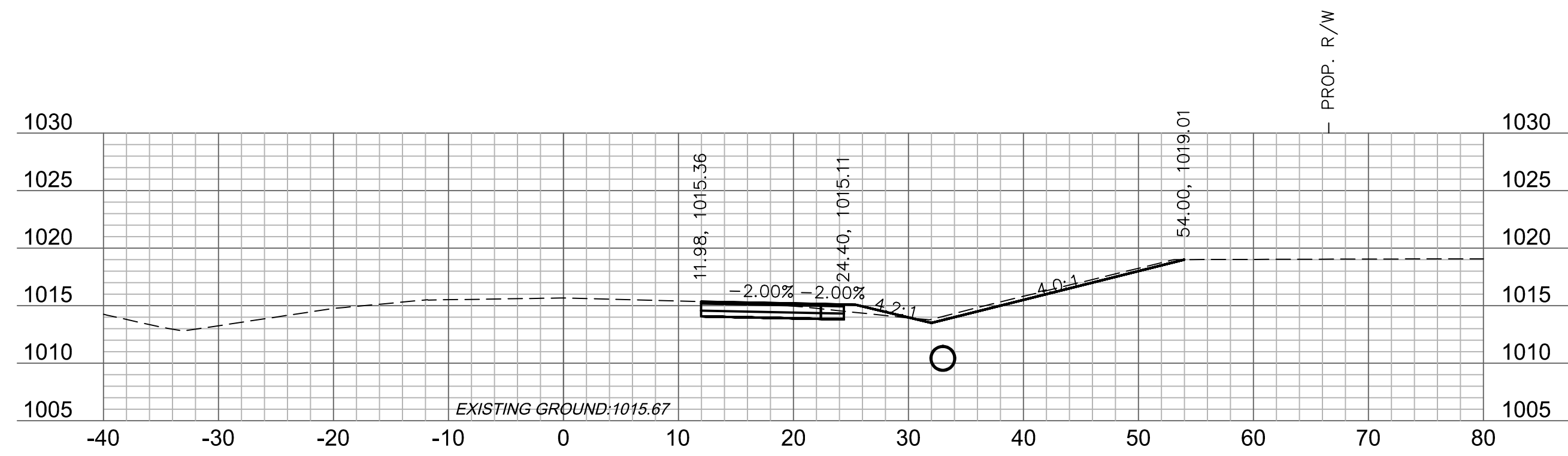
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DWG NO.: T_PCORR_81450
DATE: 07.19.19

SHEET
T35 OF 70

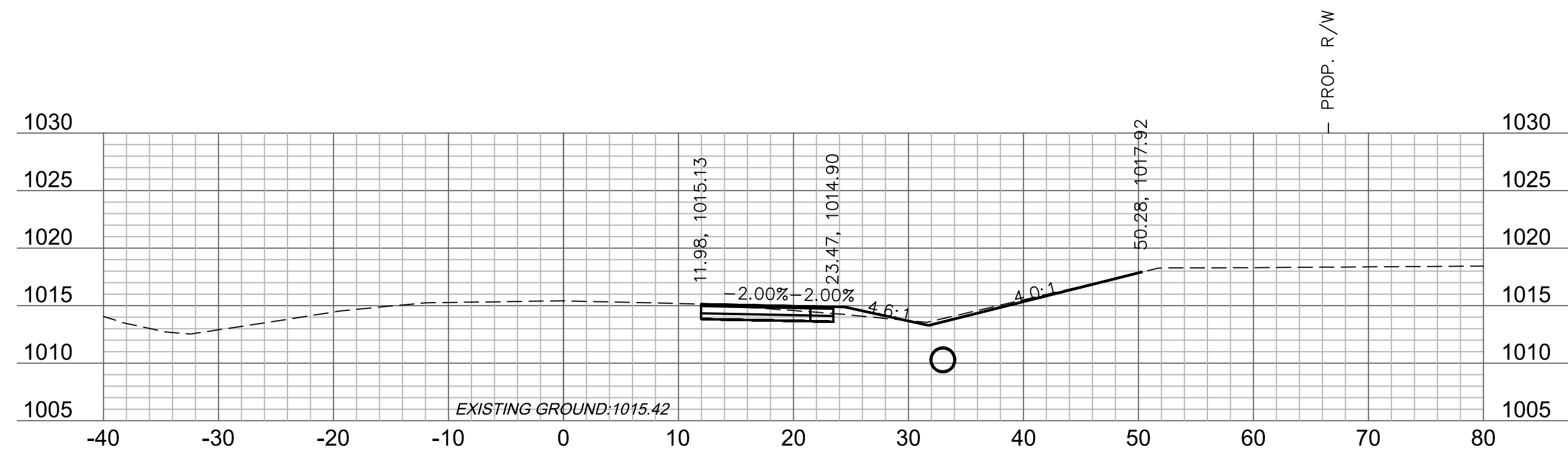
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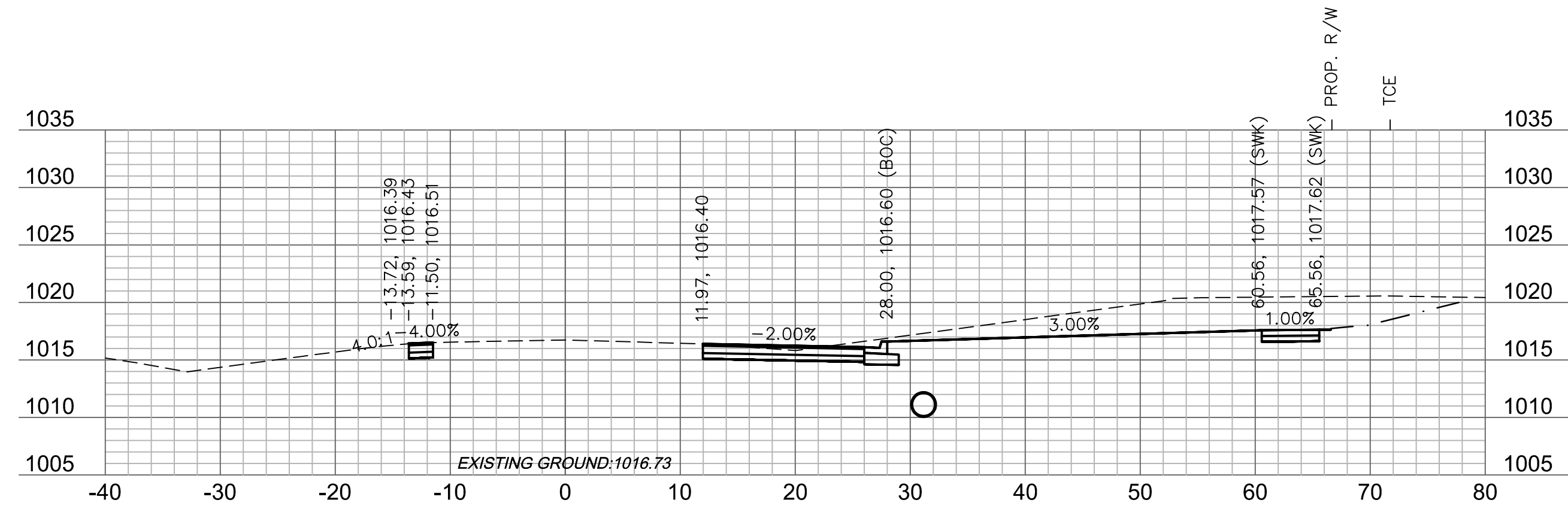
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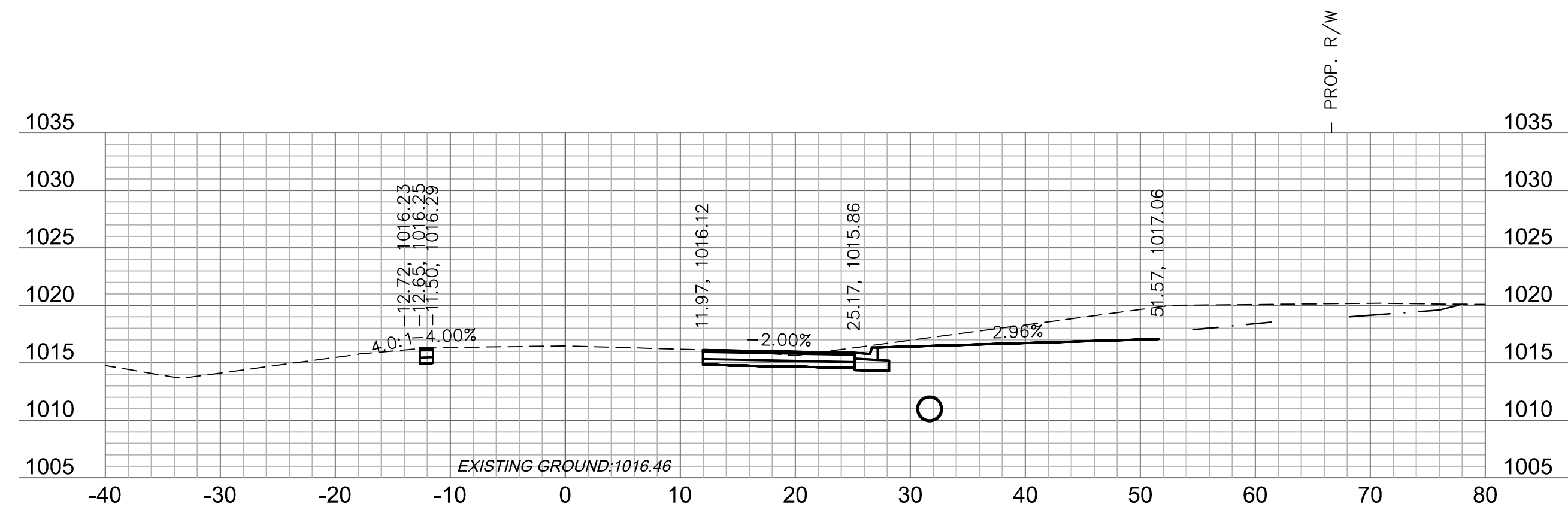
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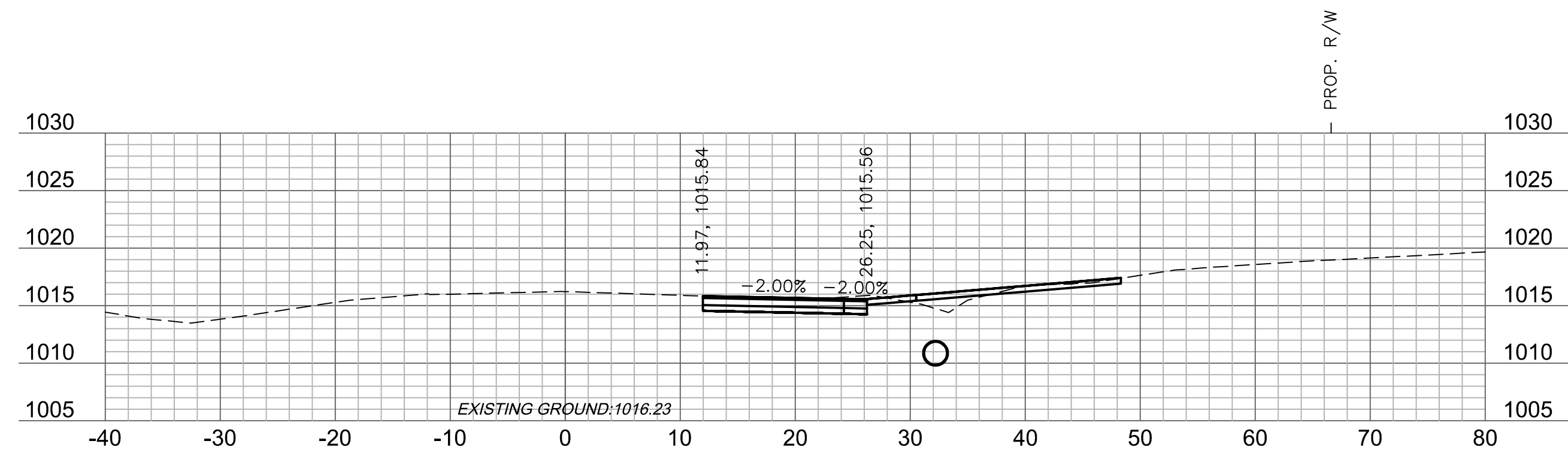
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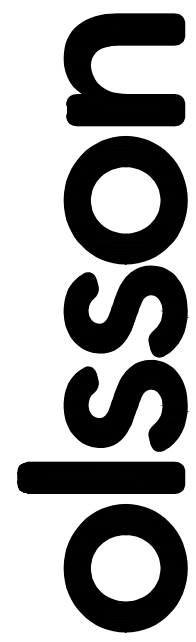


16+25



16+00

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H	30-39
I	20-29
J	10-19
K	0-9



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OLDHAM PARKWAY CROSS SECTIONS

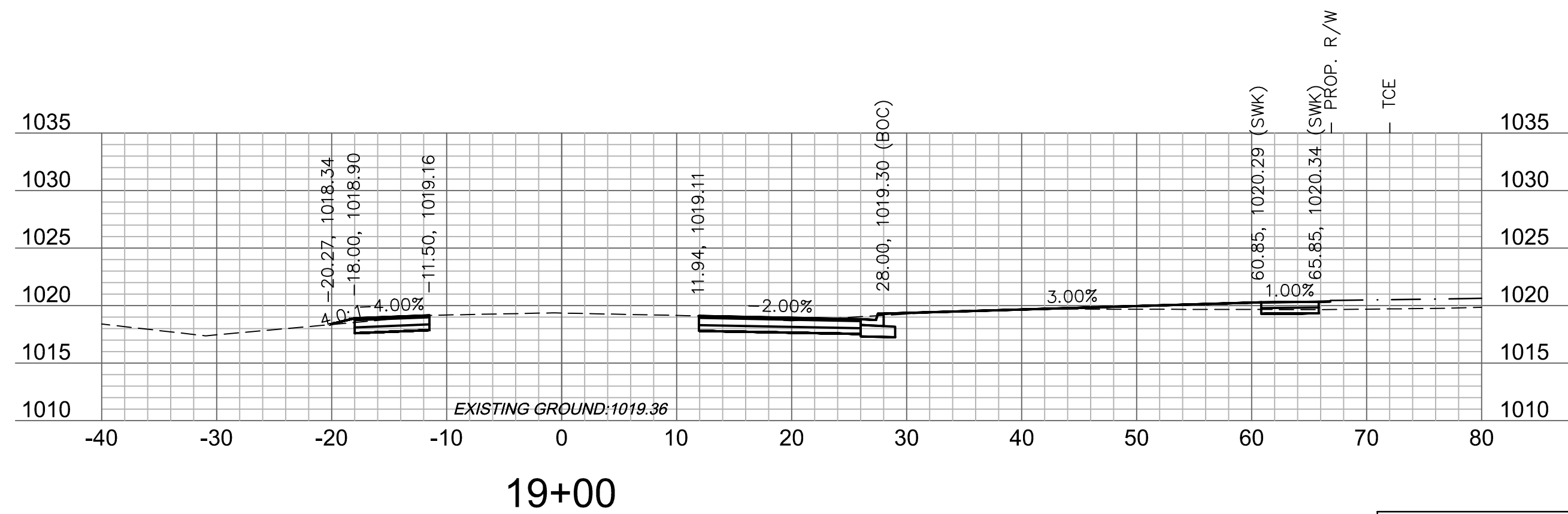
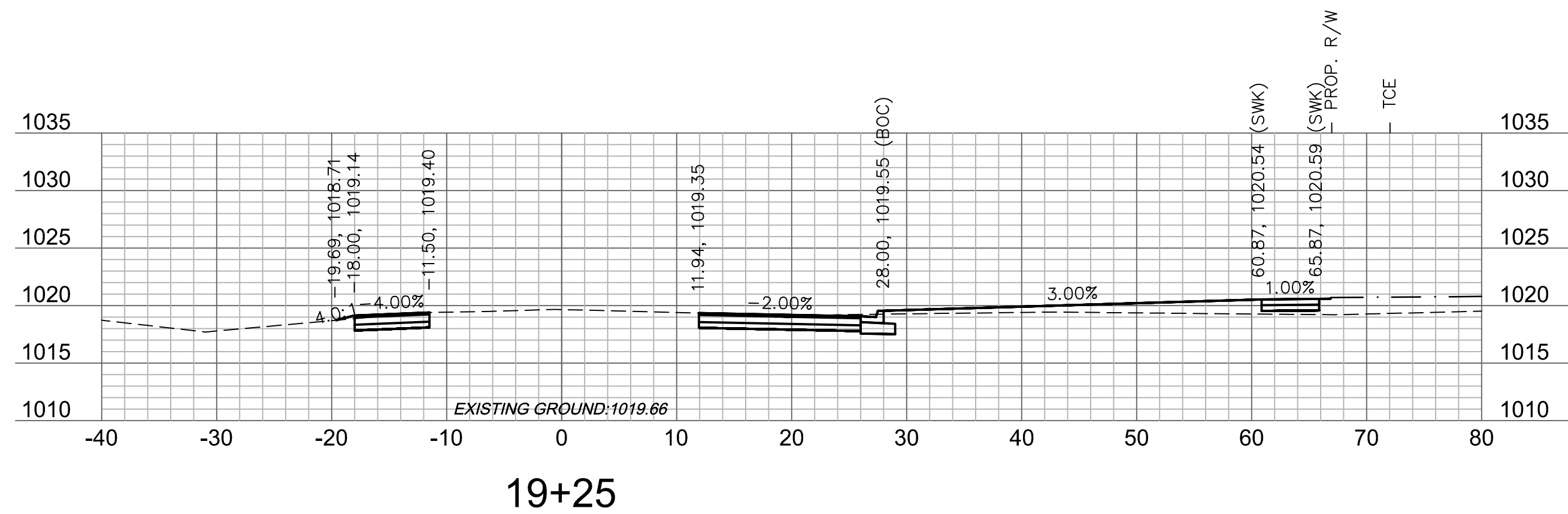
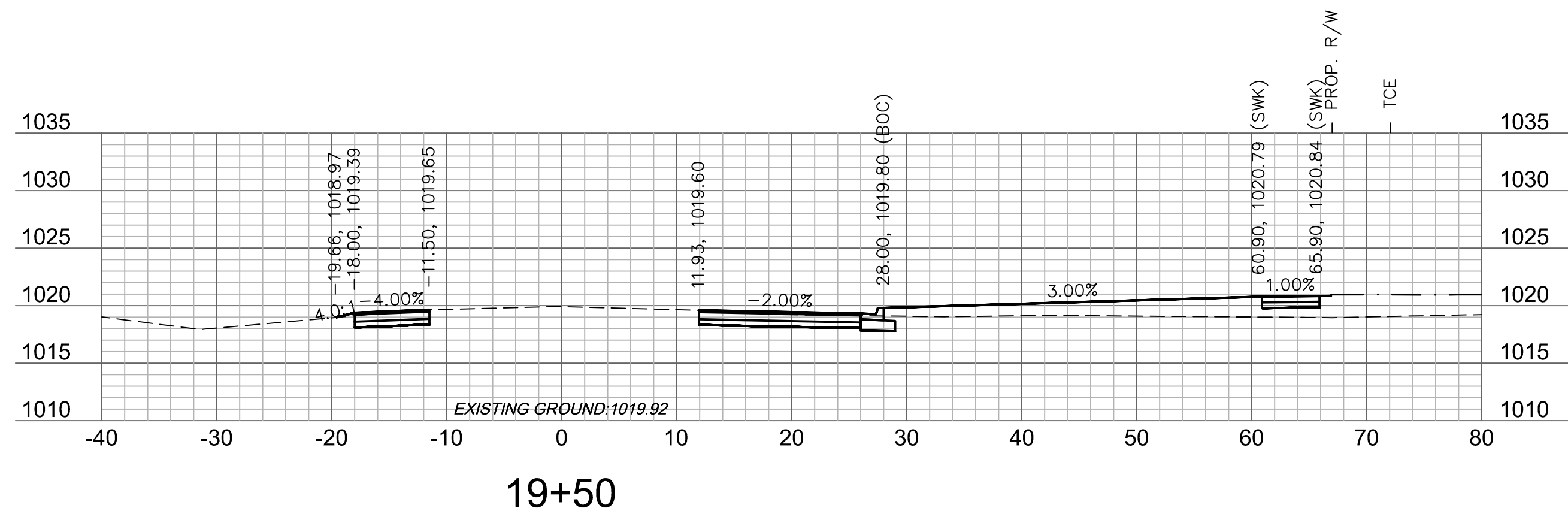
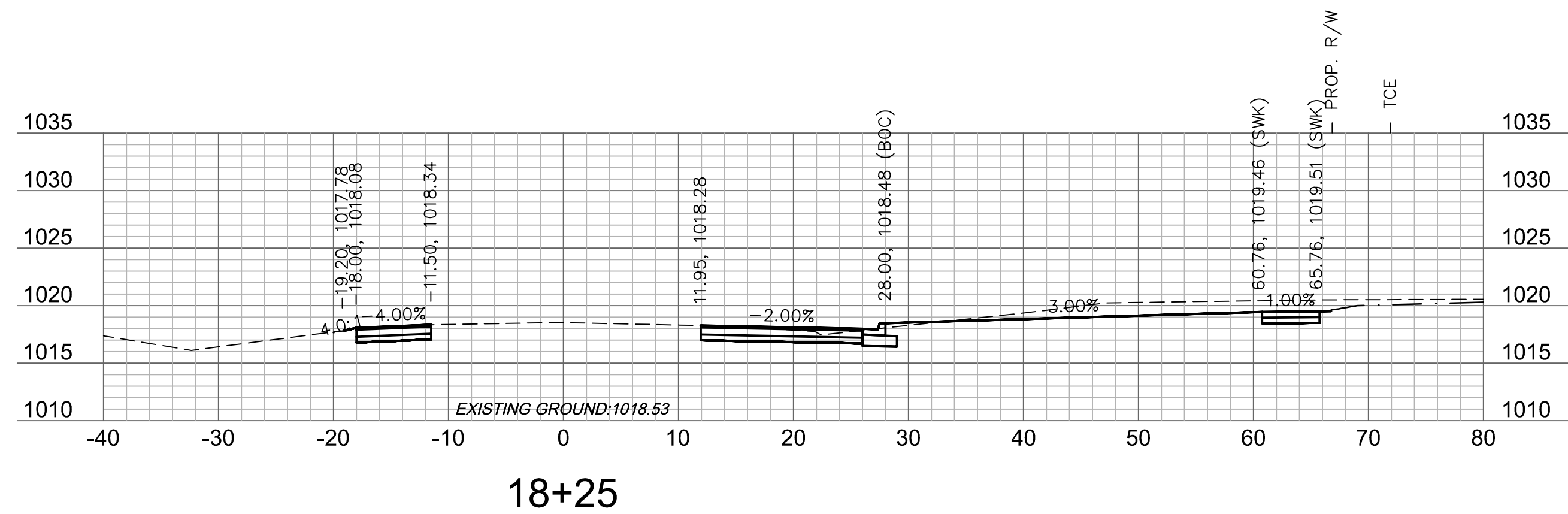
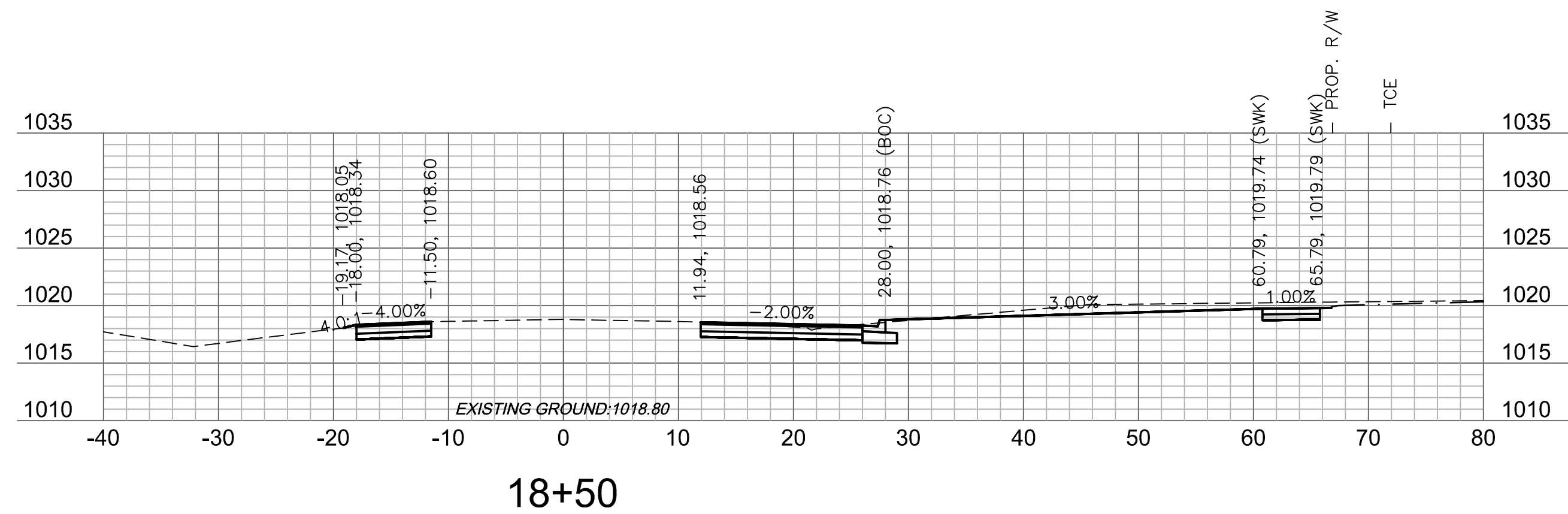
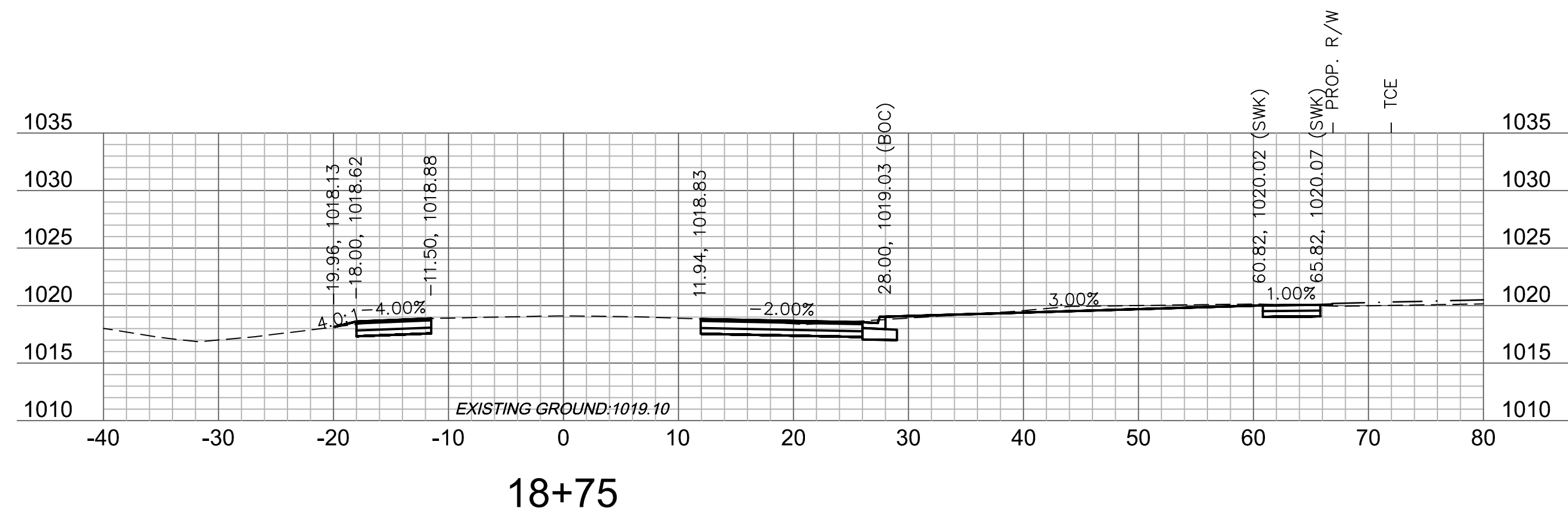
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OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

2019

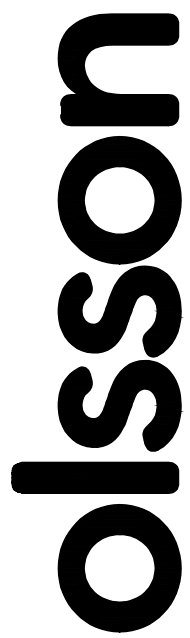
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T37 OF 70

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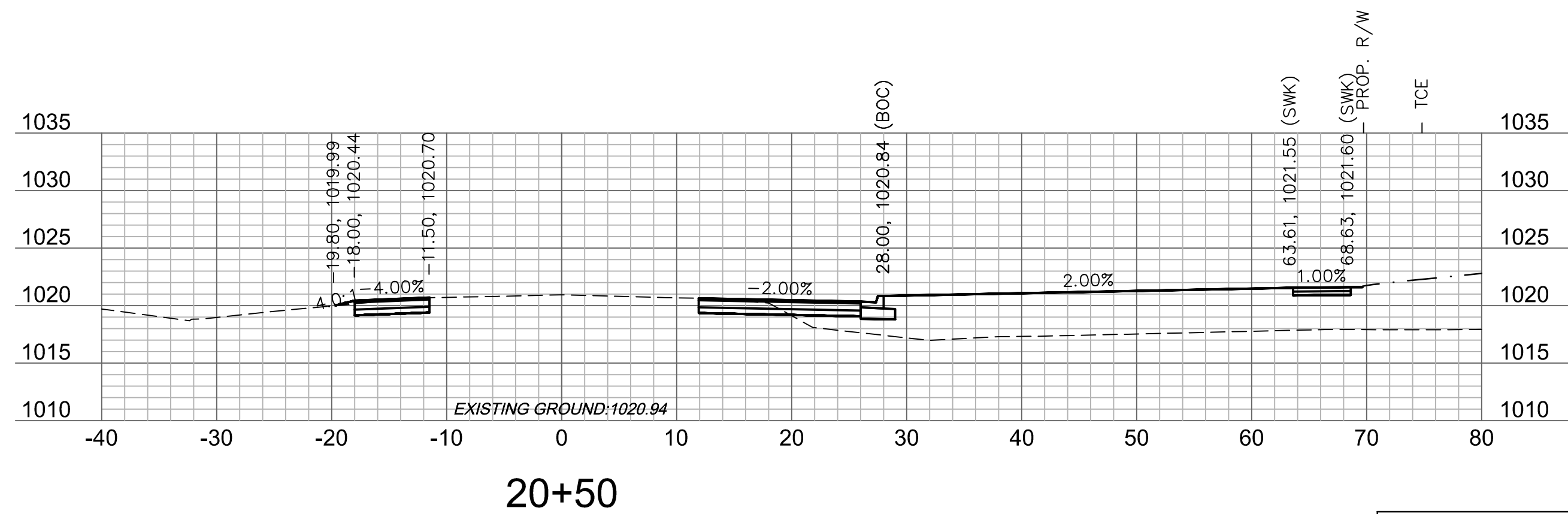
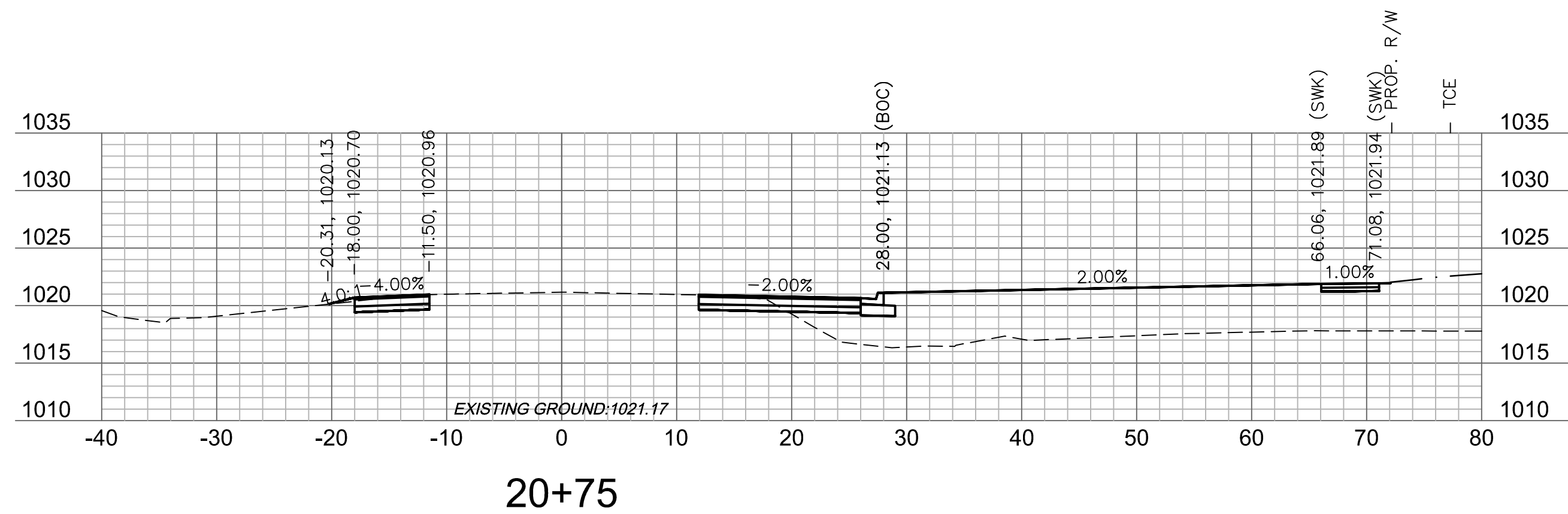
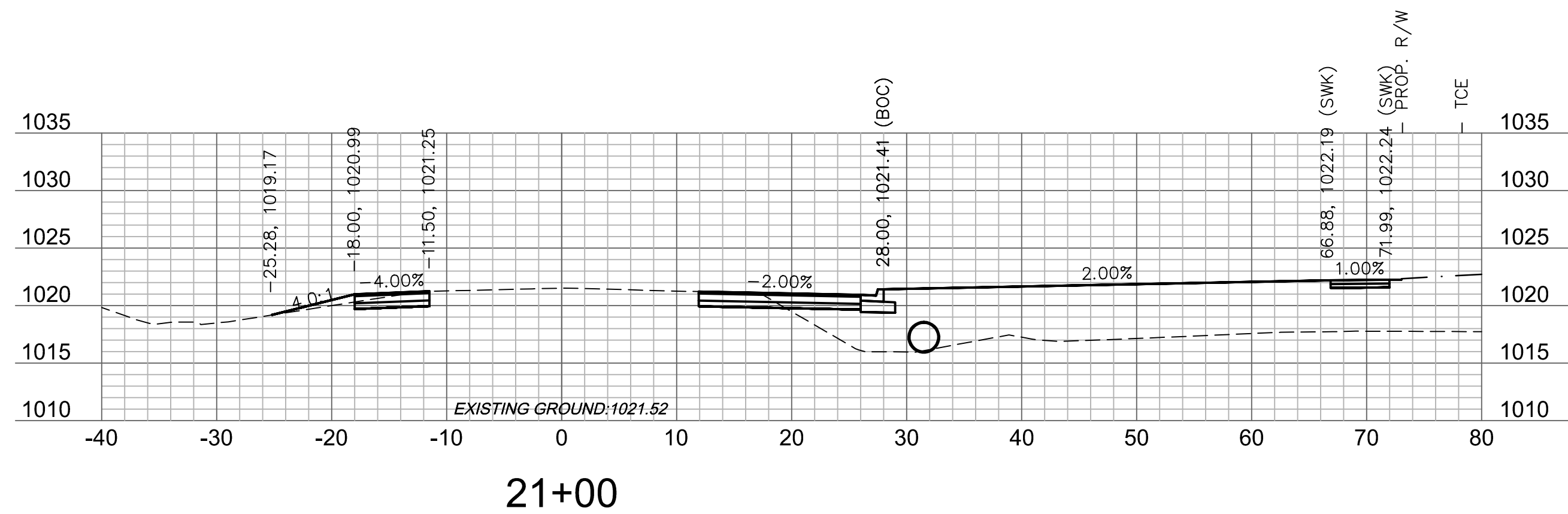
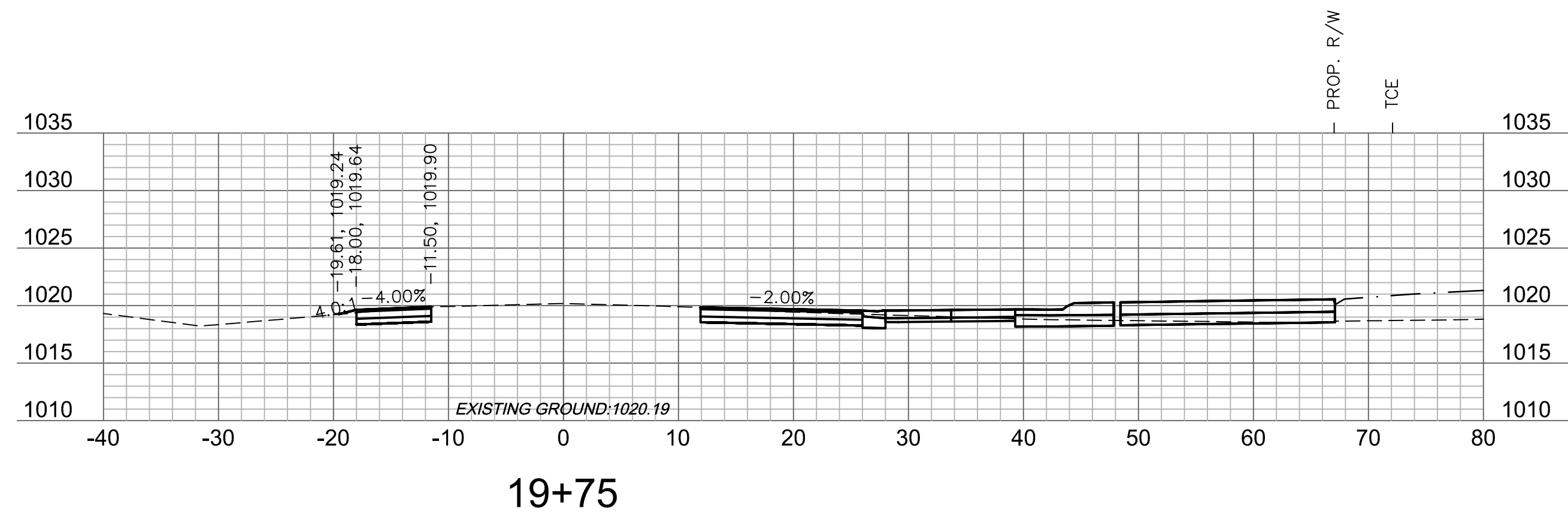
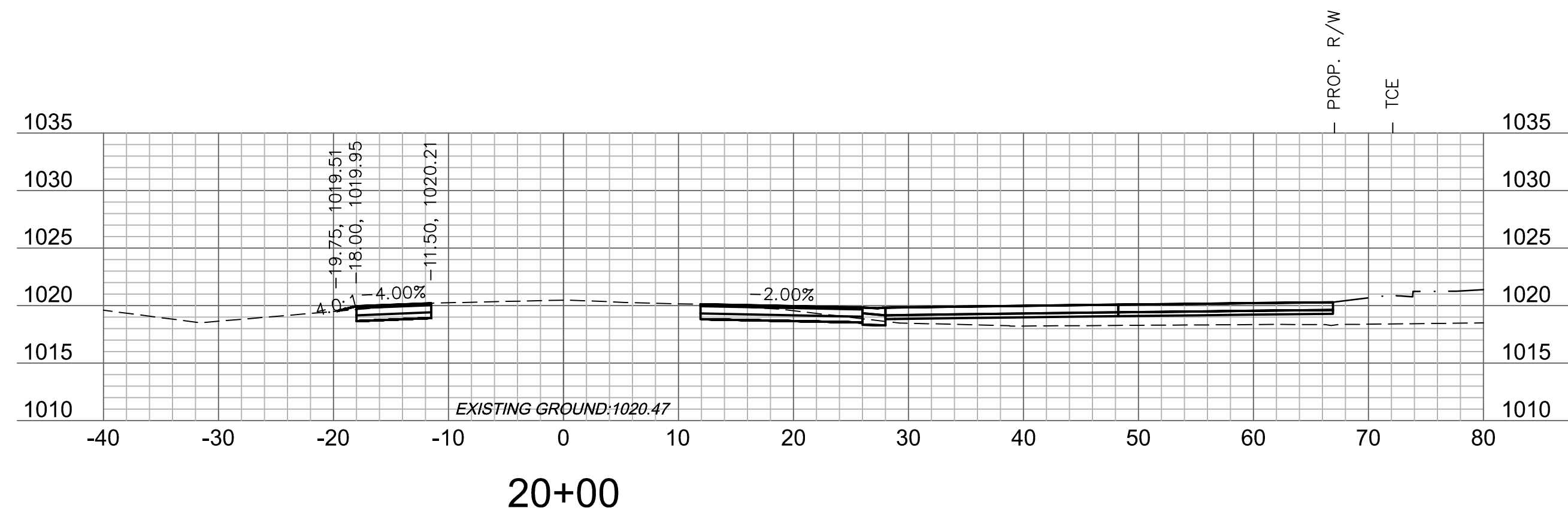
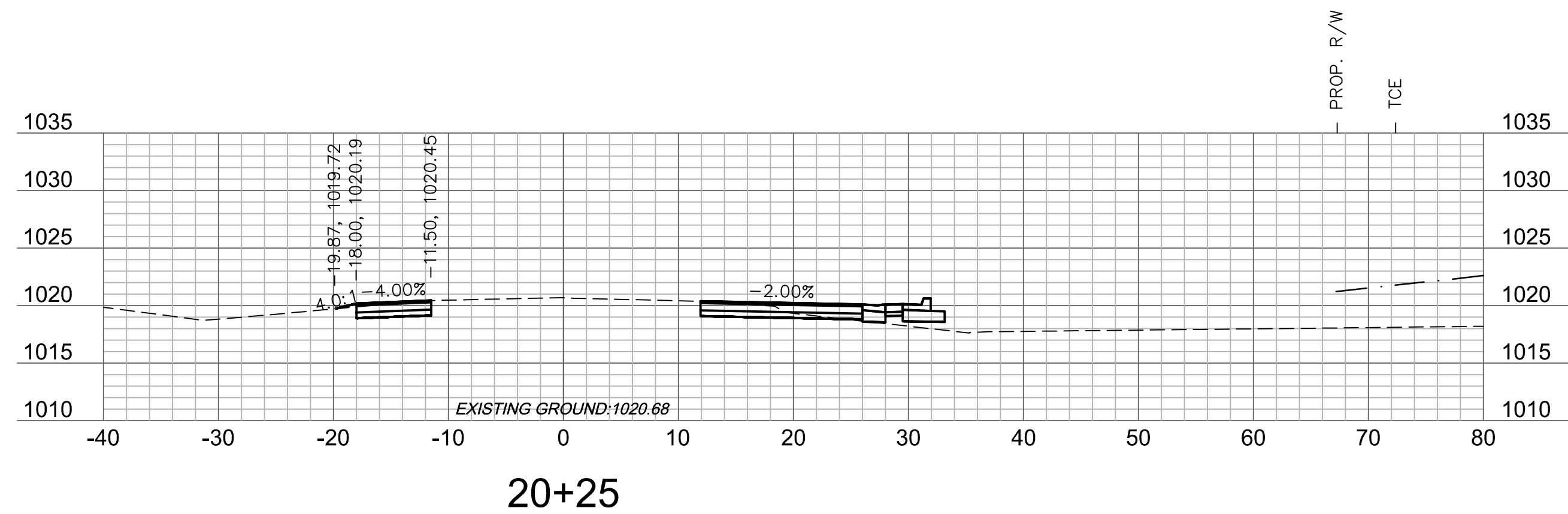
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LEE'S SUMMIT, MISSOURI		

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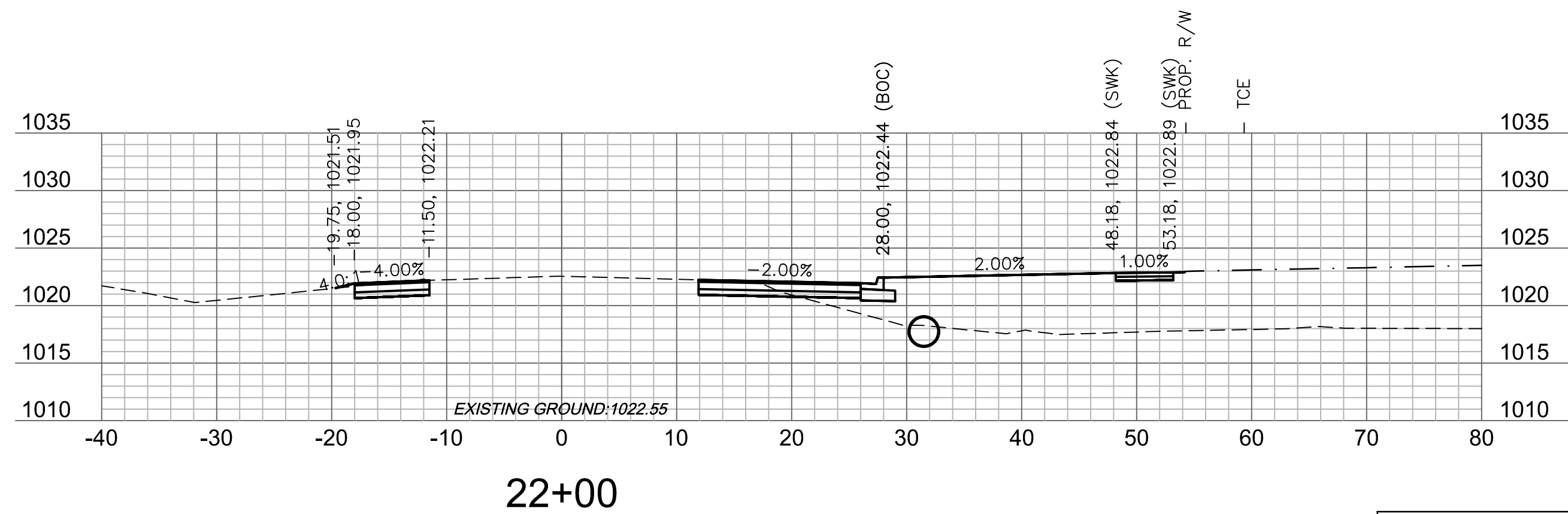
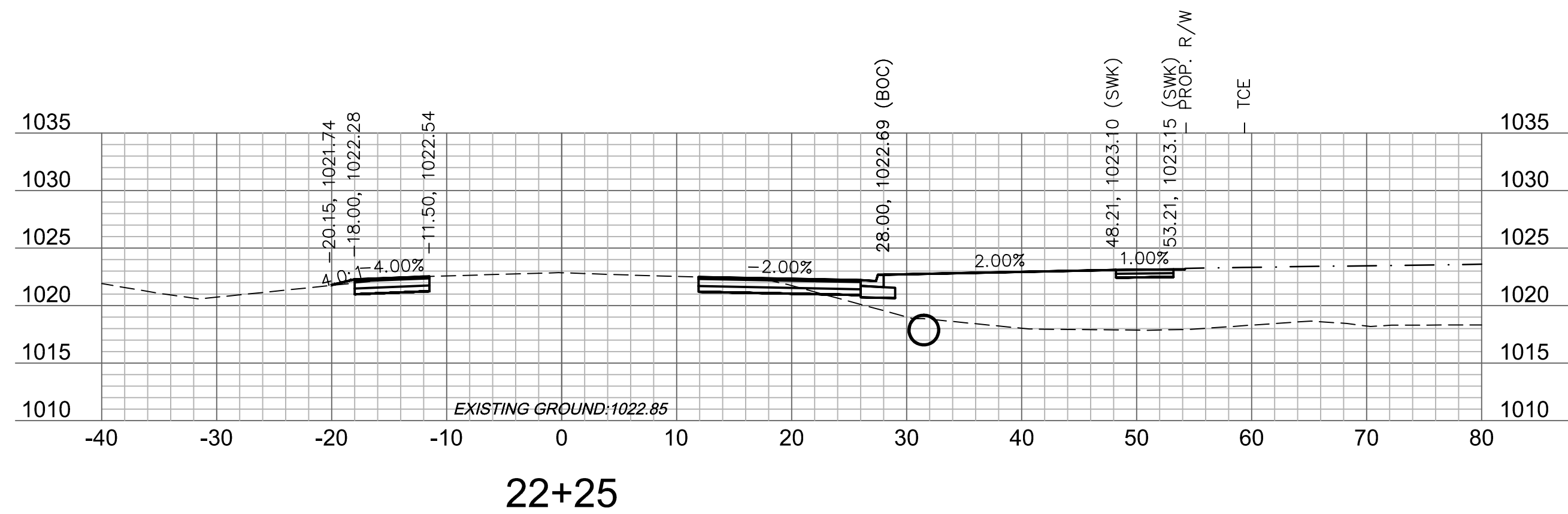
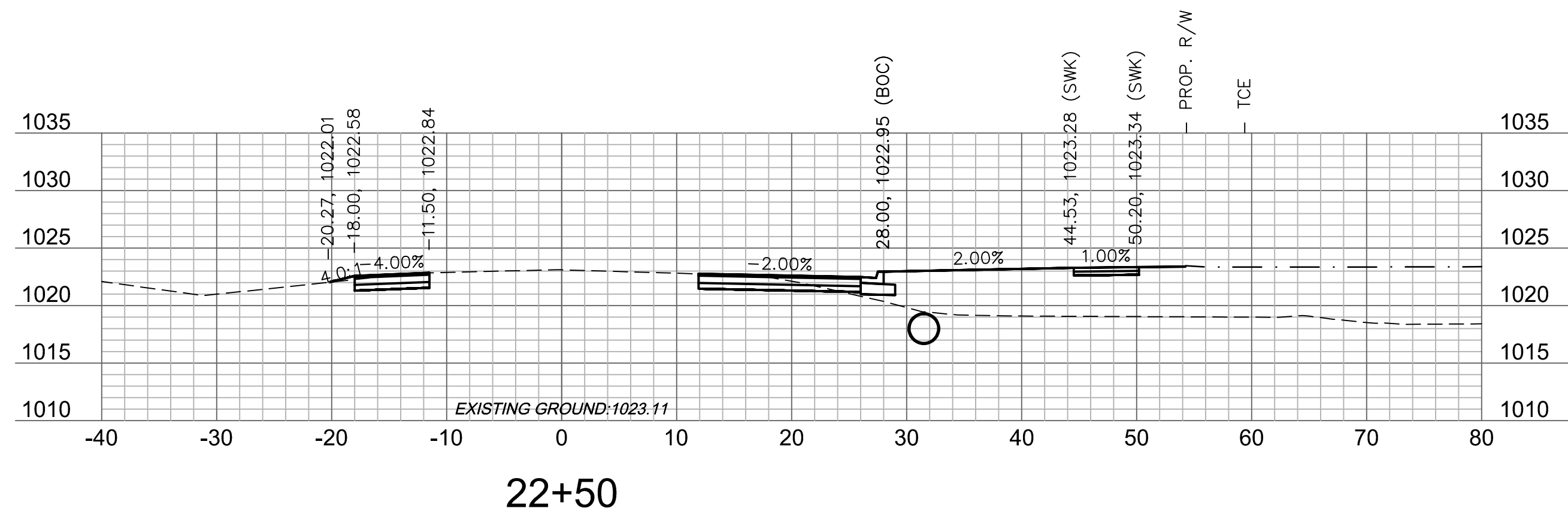
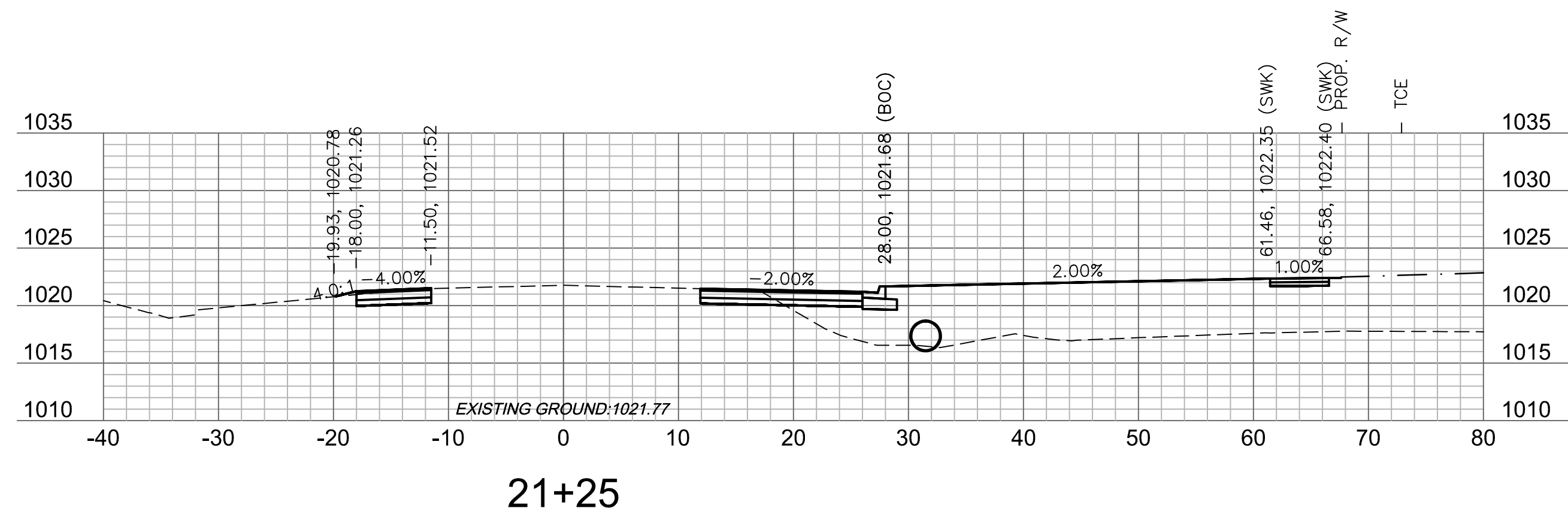
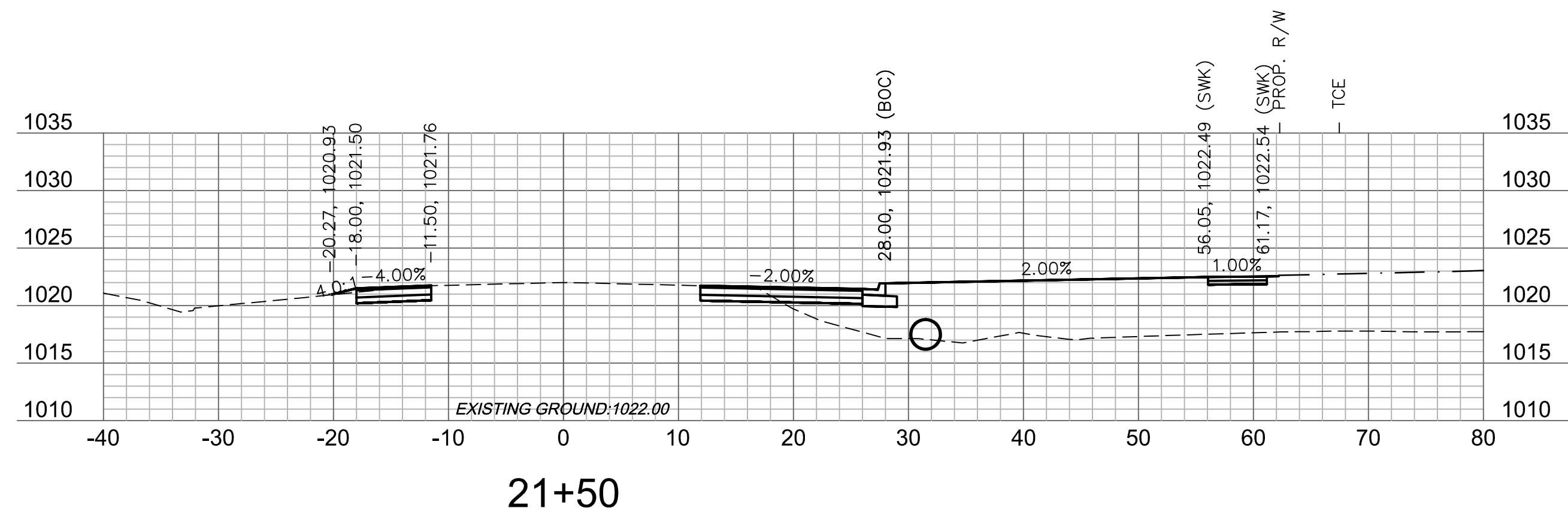
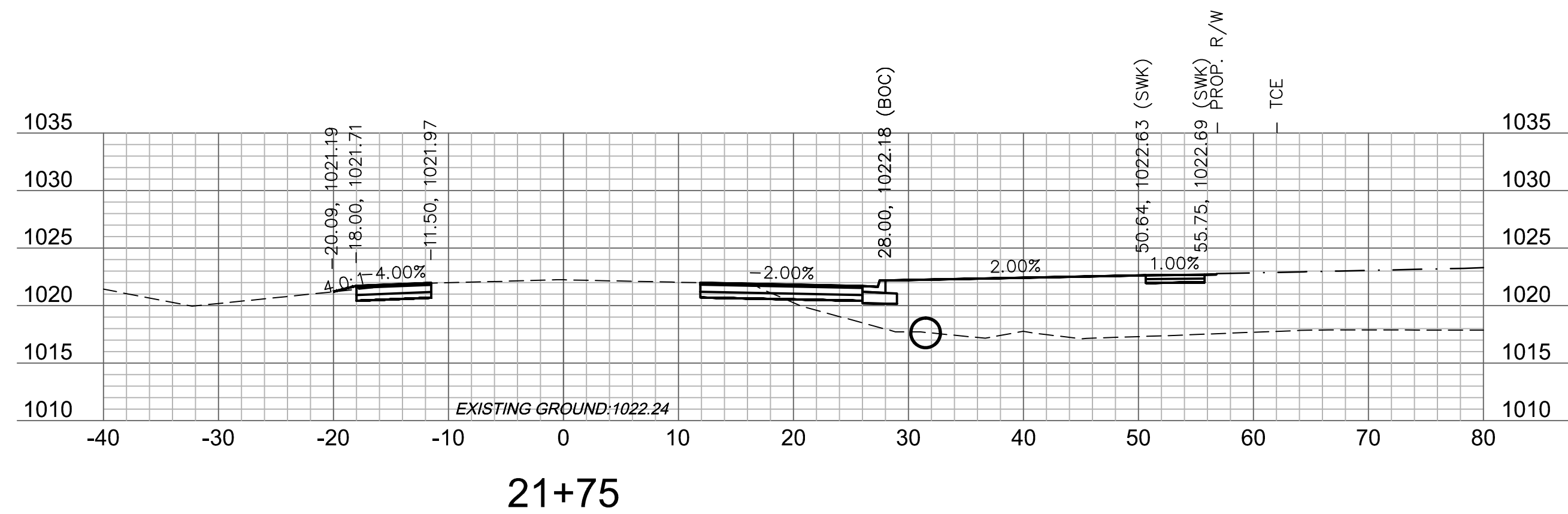
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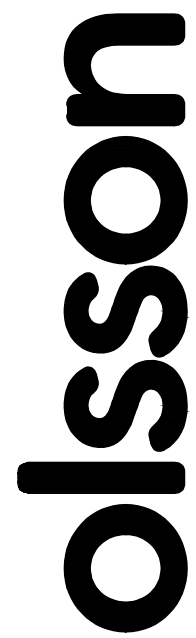
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OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	
LEE'S SUMMIT, MISSOURI	2019

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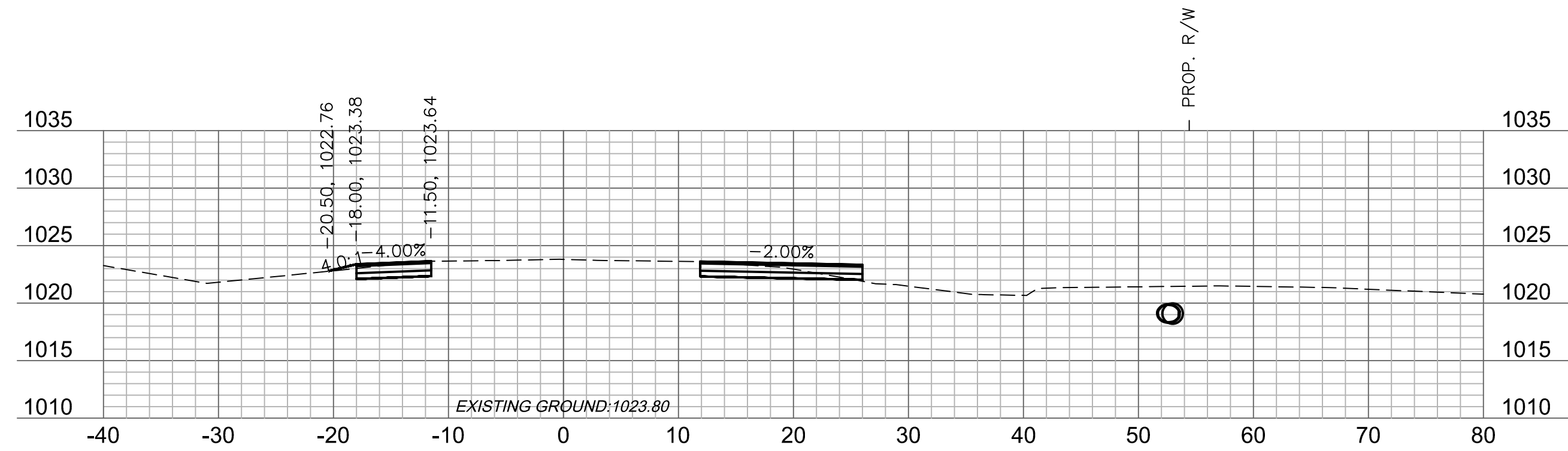
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OLDHAM PARKWAY CROSS SECTIONS	20
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LEE'S SUMMIT, MISSOURI	

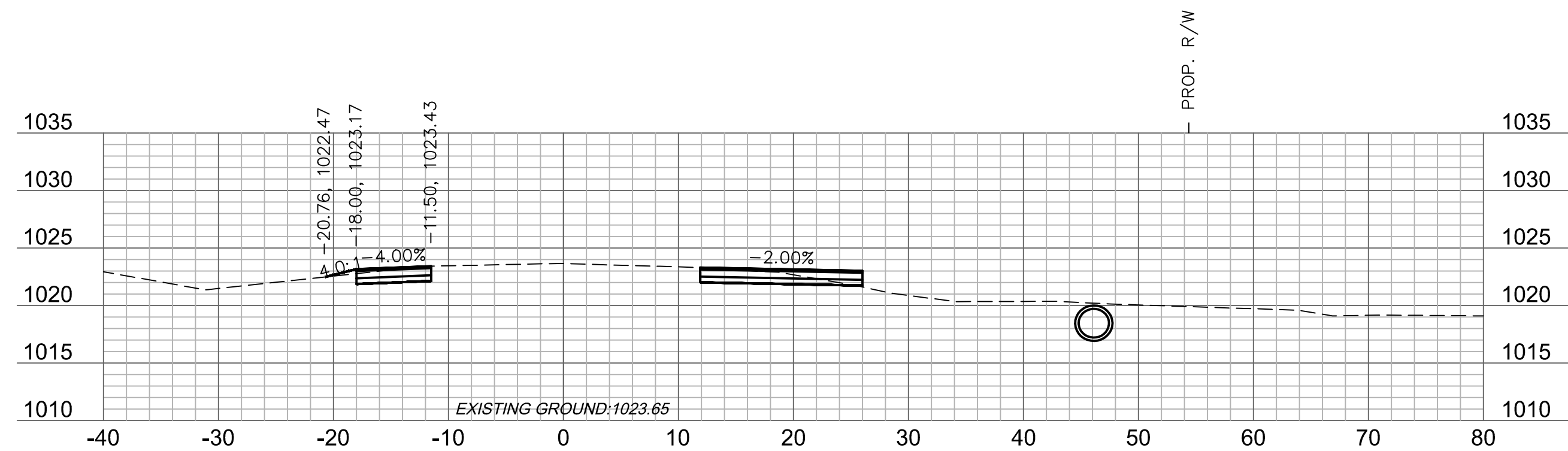
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T41 OF 70

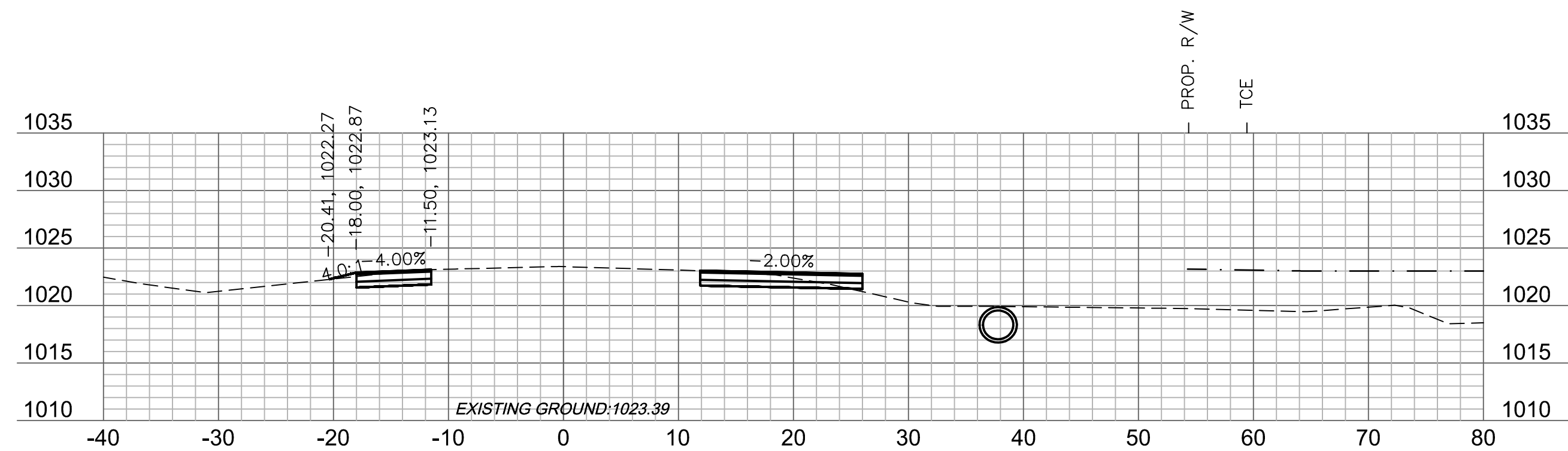
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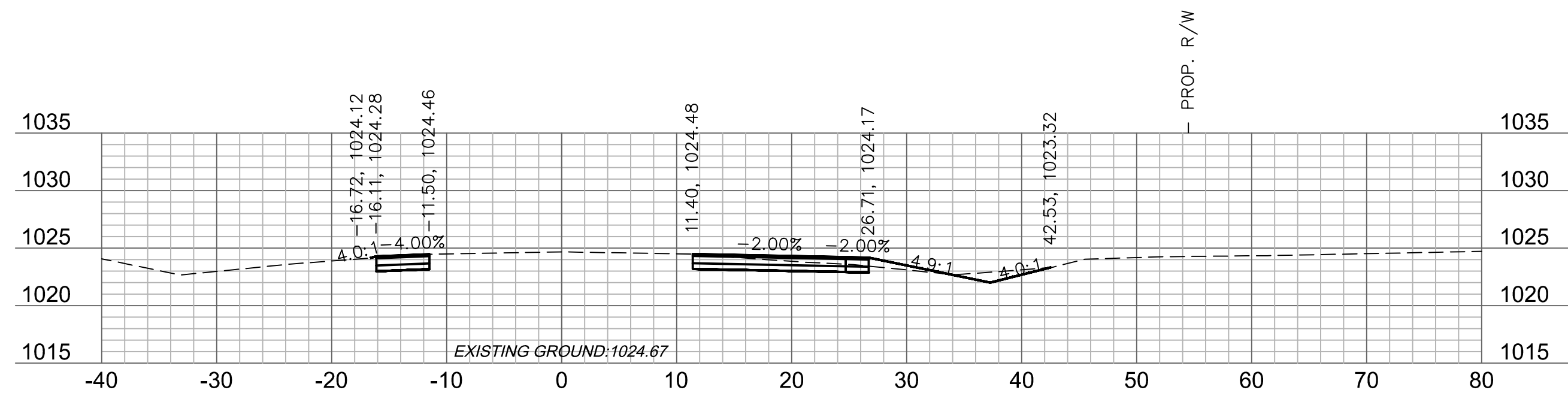
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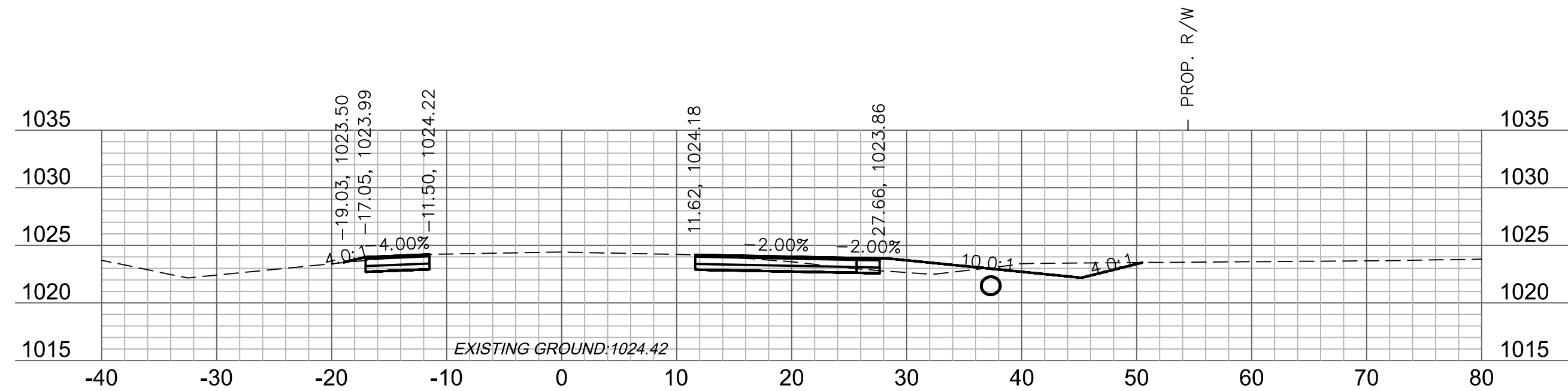
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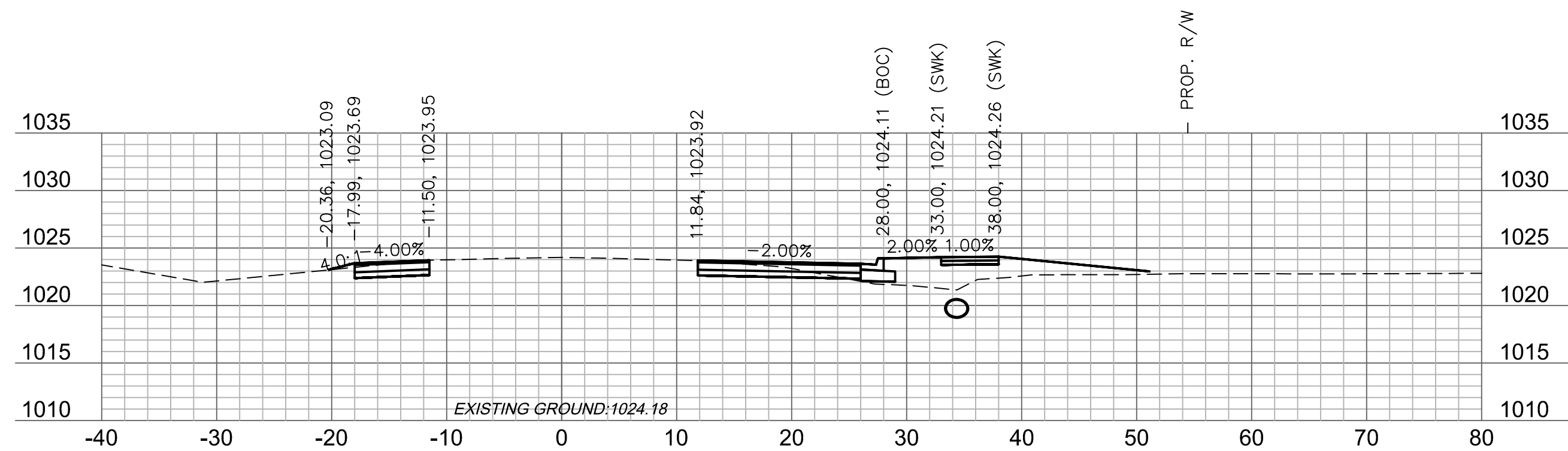
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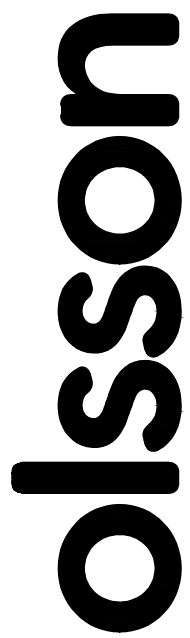


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23+50

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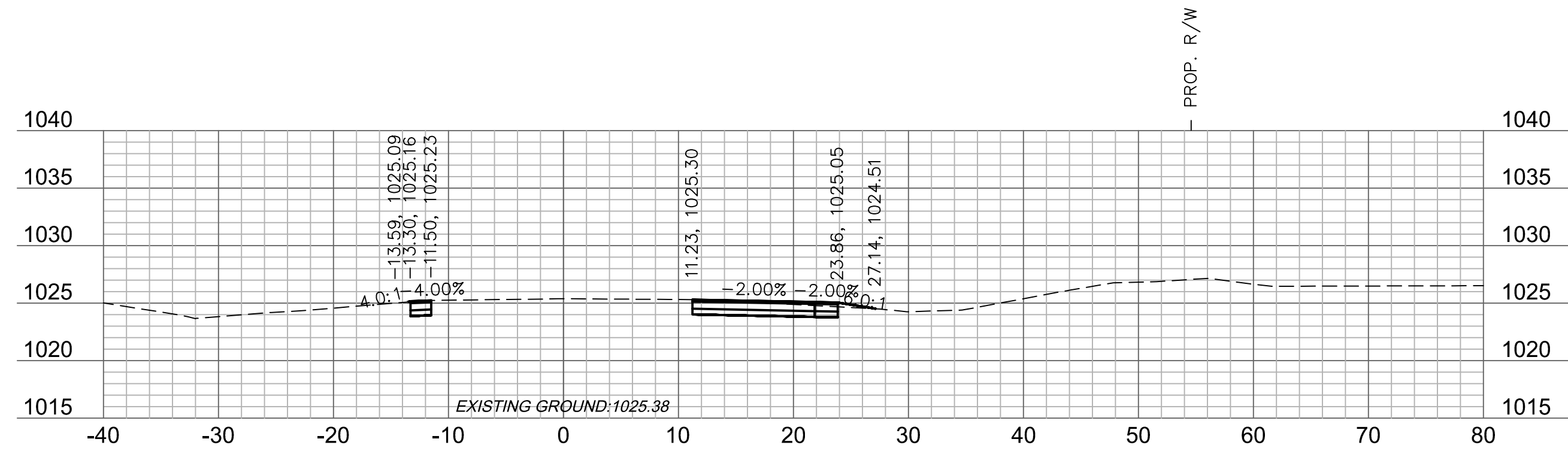
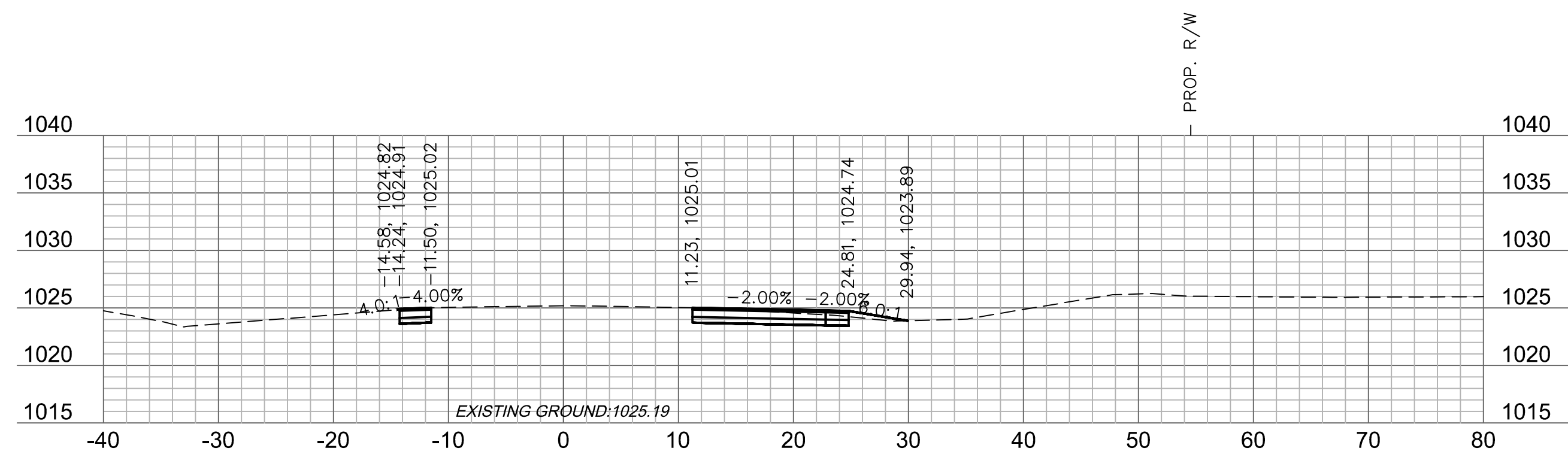
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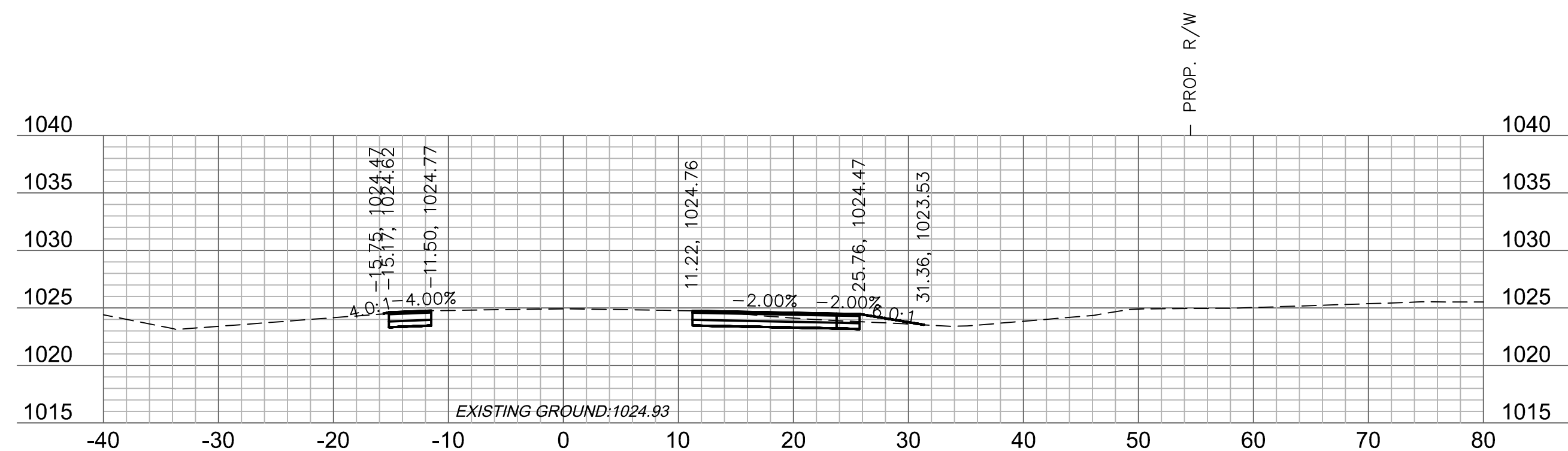
OLDHAM PARKWAY CROSS SECTIONS	2017
OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	2018
LEE'S SUMMIT, MISSOURI	2019

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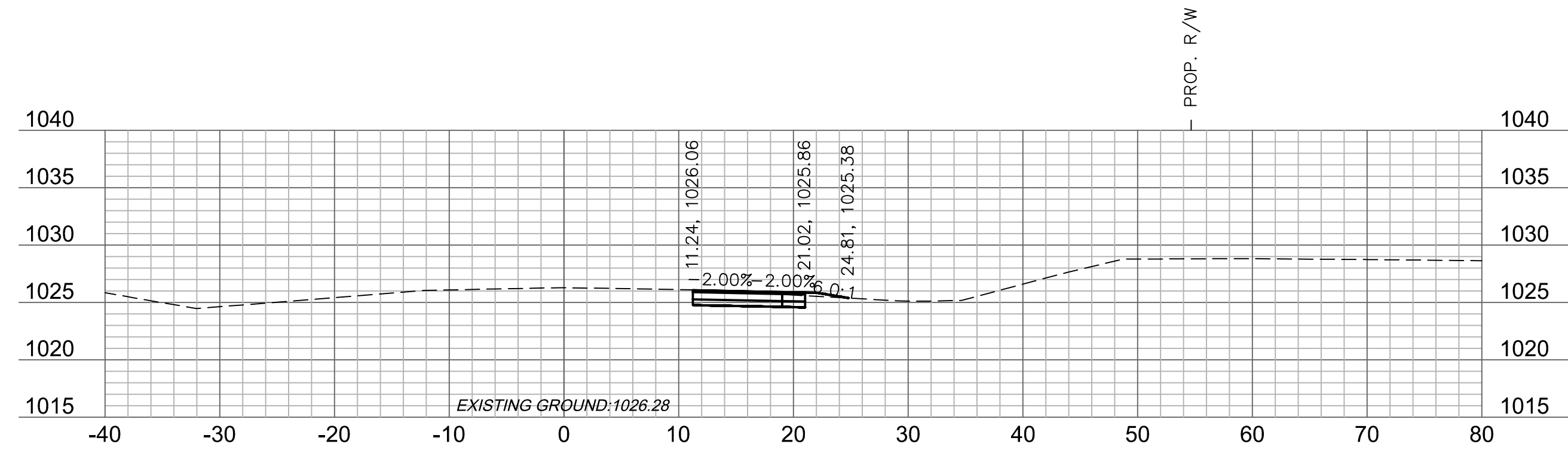
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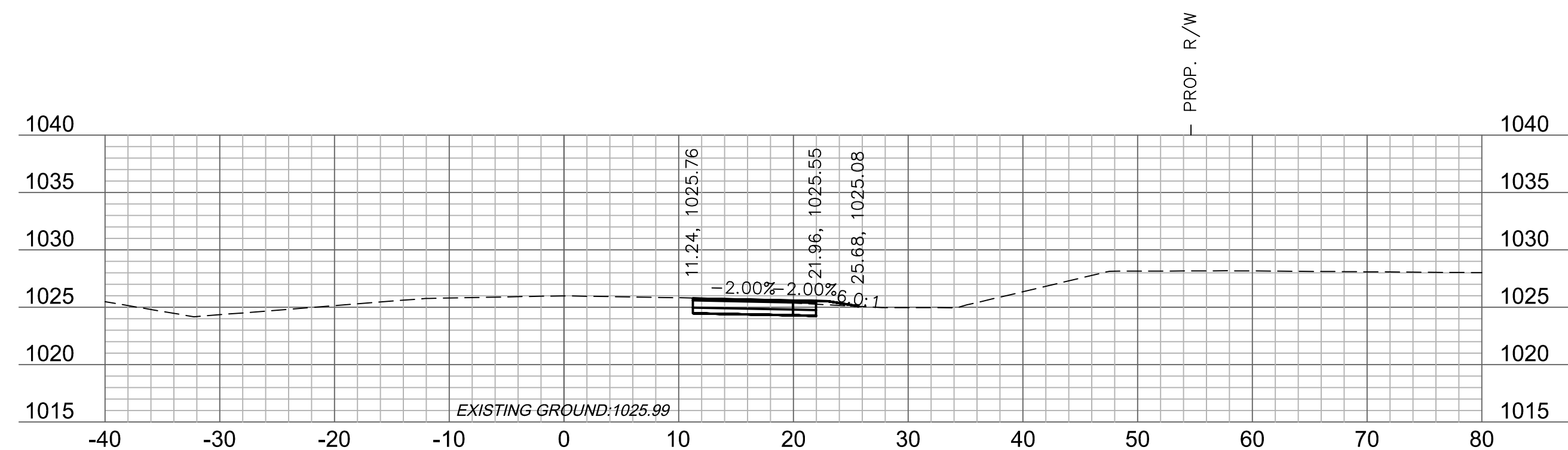
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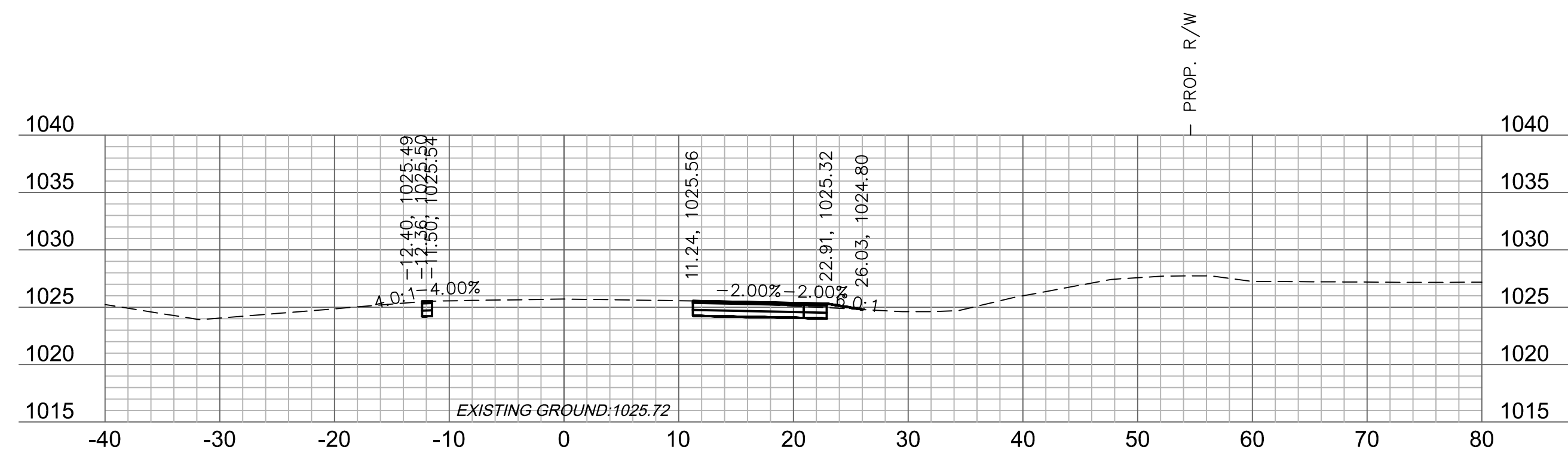
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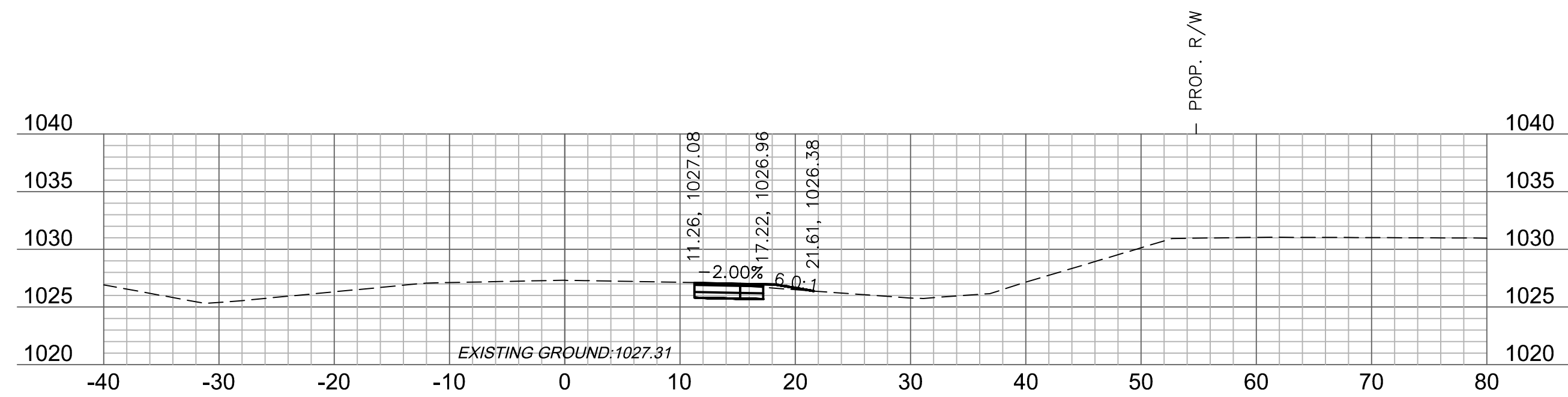


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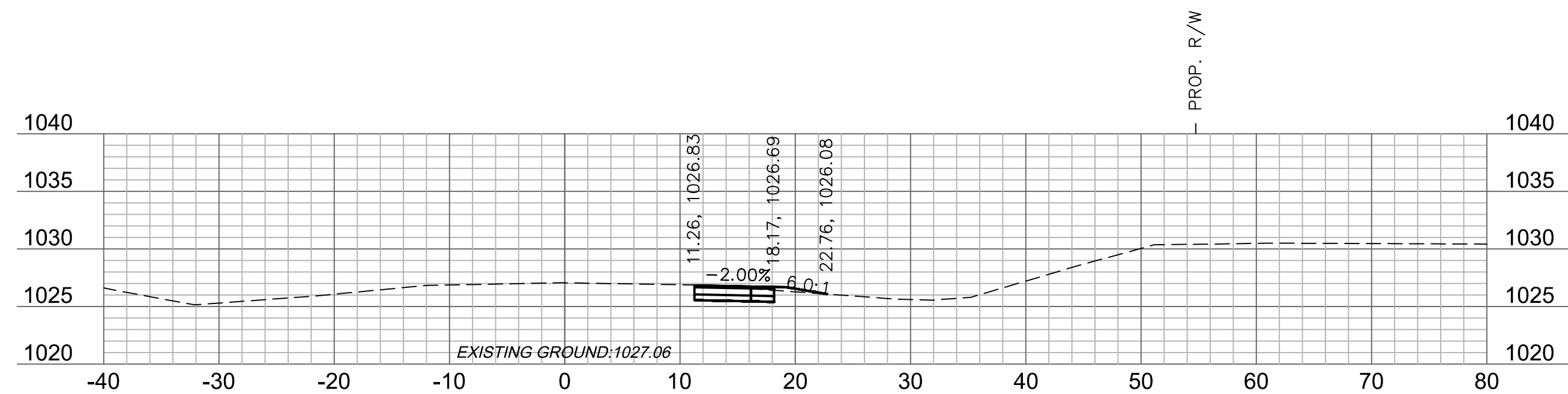


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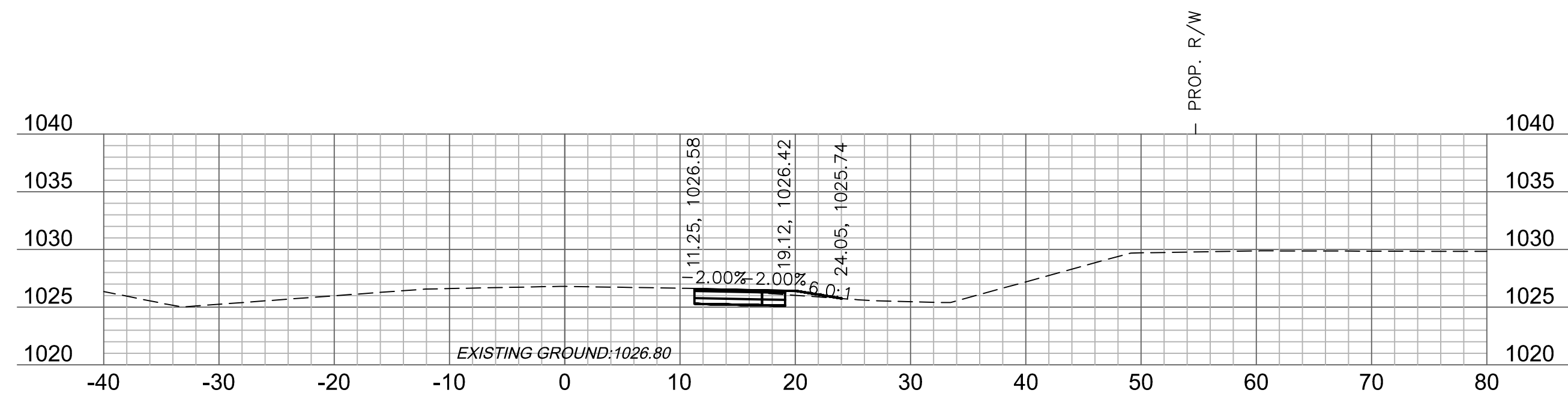
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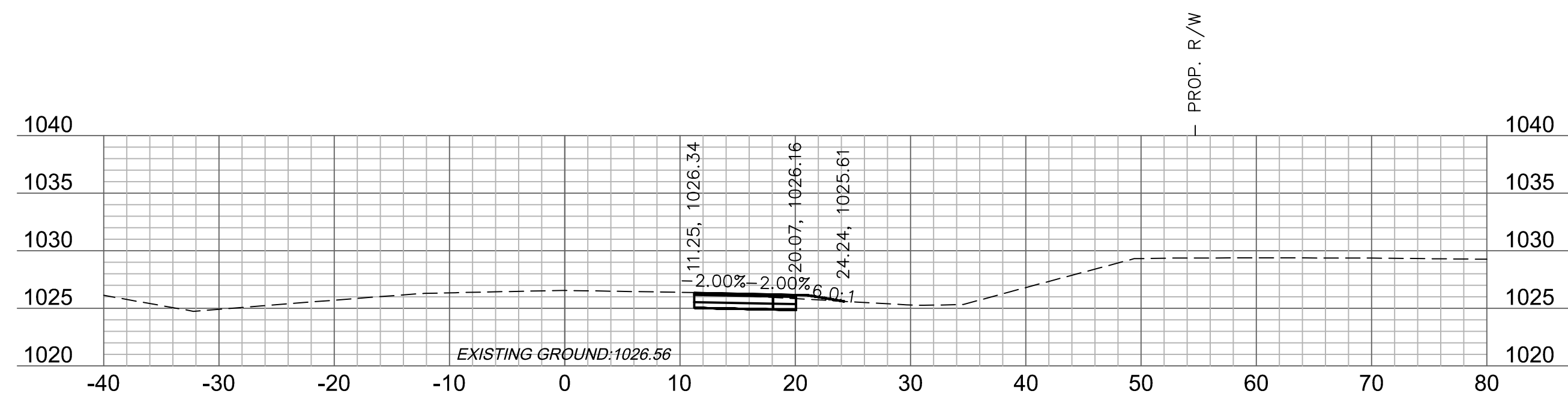
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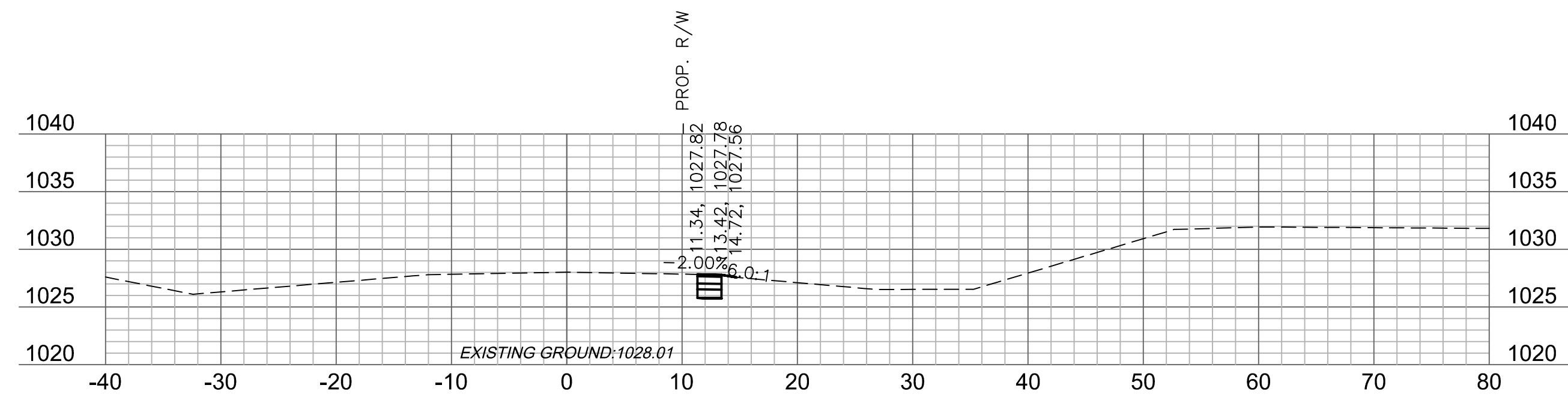
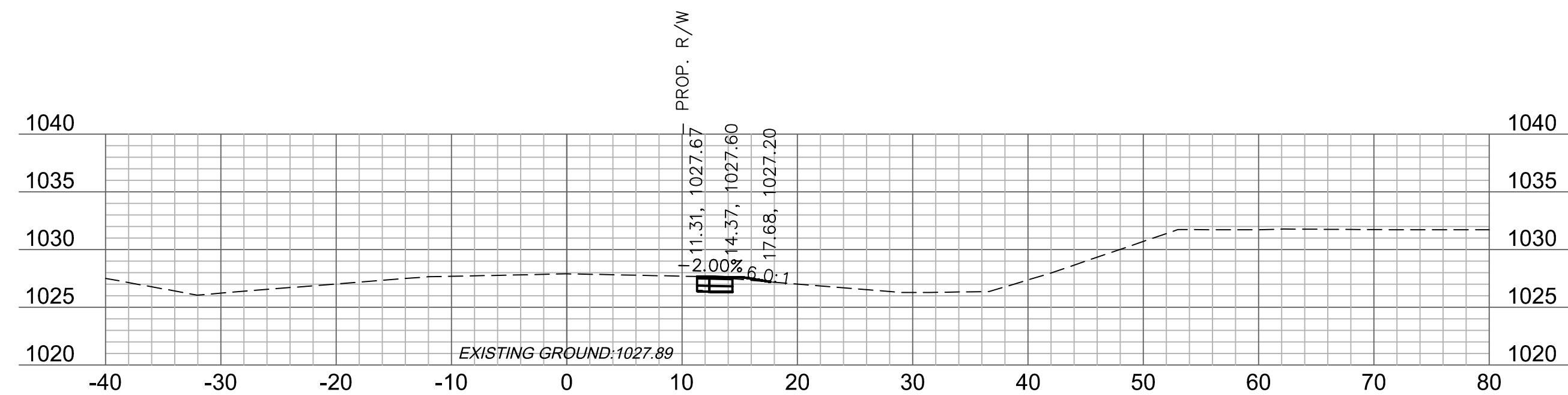
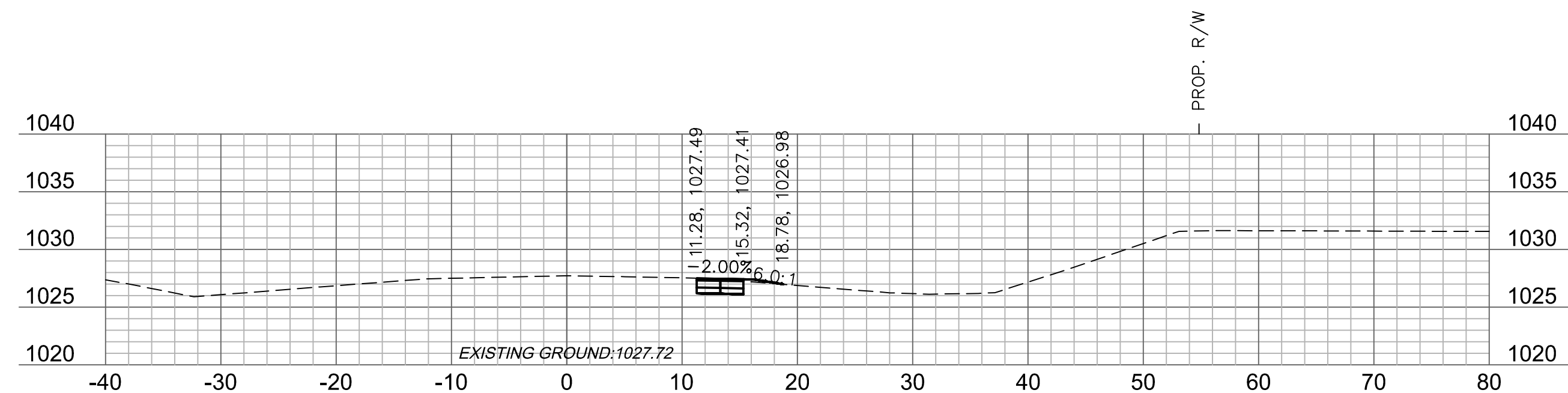
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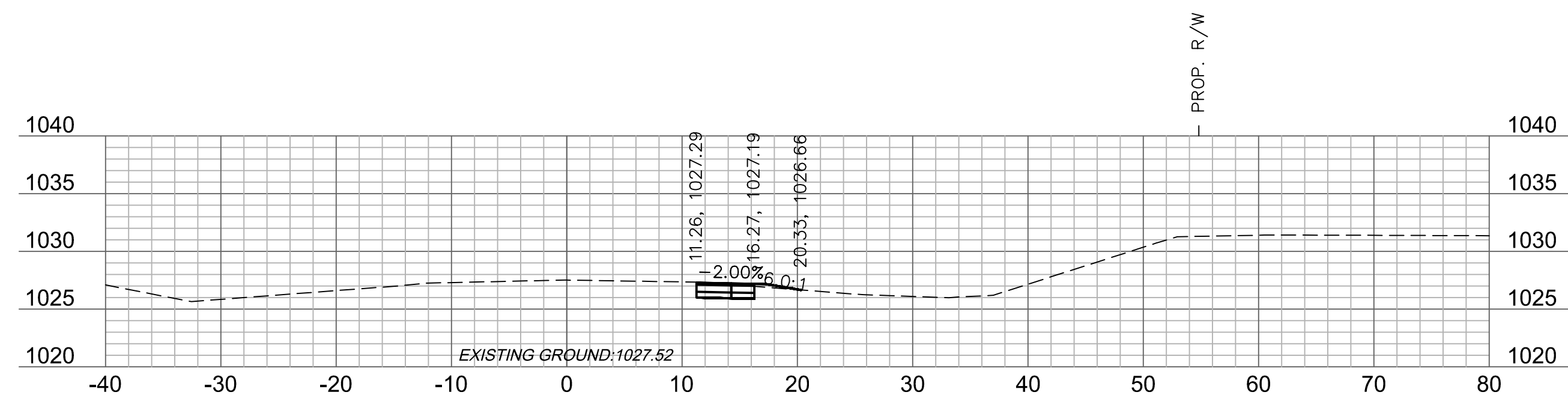
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25+75

 $27+50$  $27+25$ 

27+00



26+75

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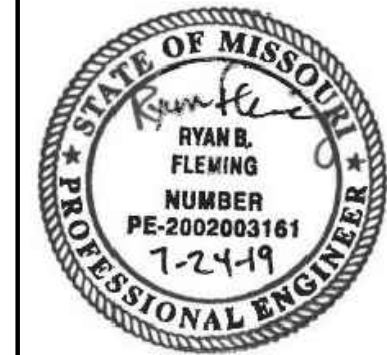
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DWG:
DATE:

olson

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

[illegible]

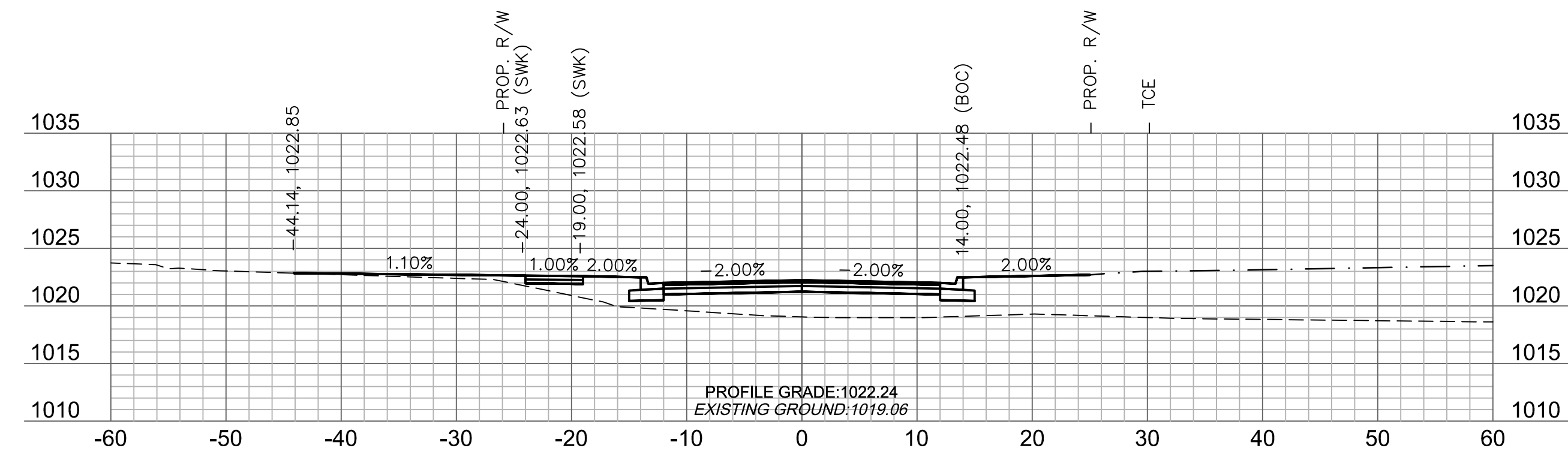
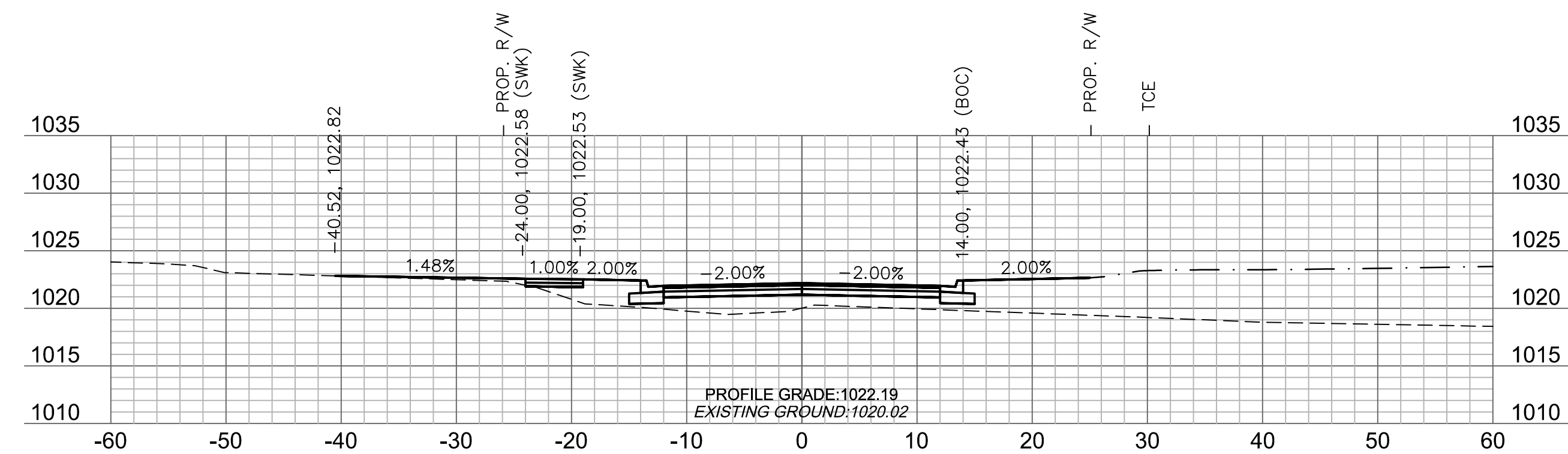
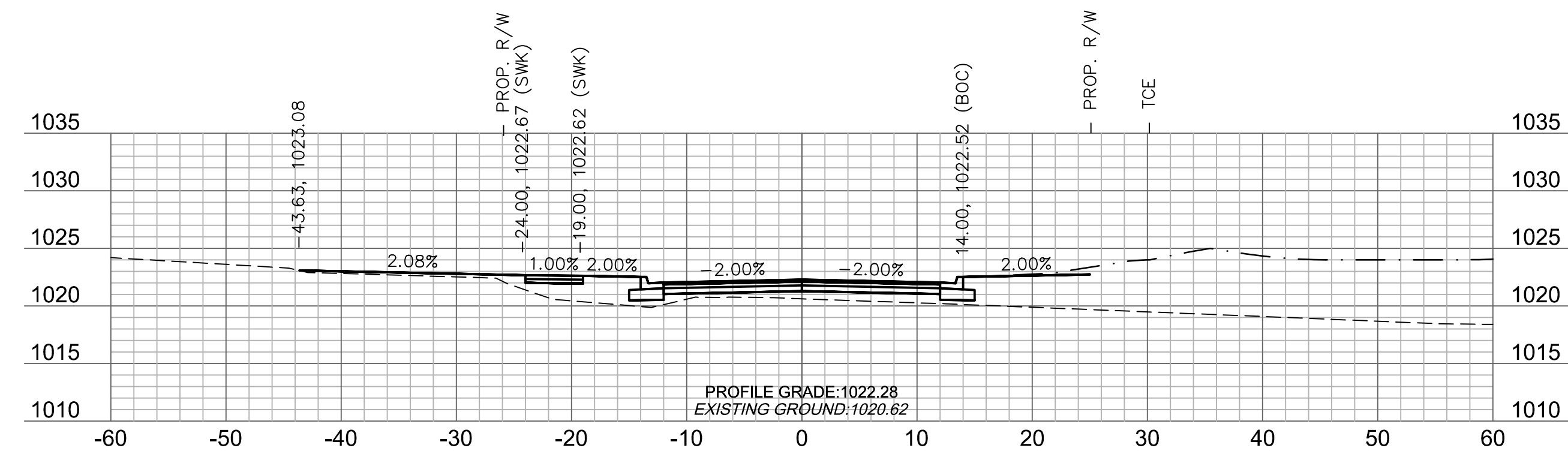
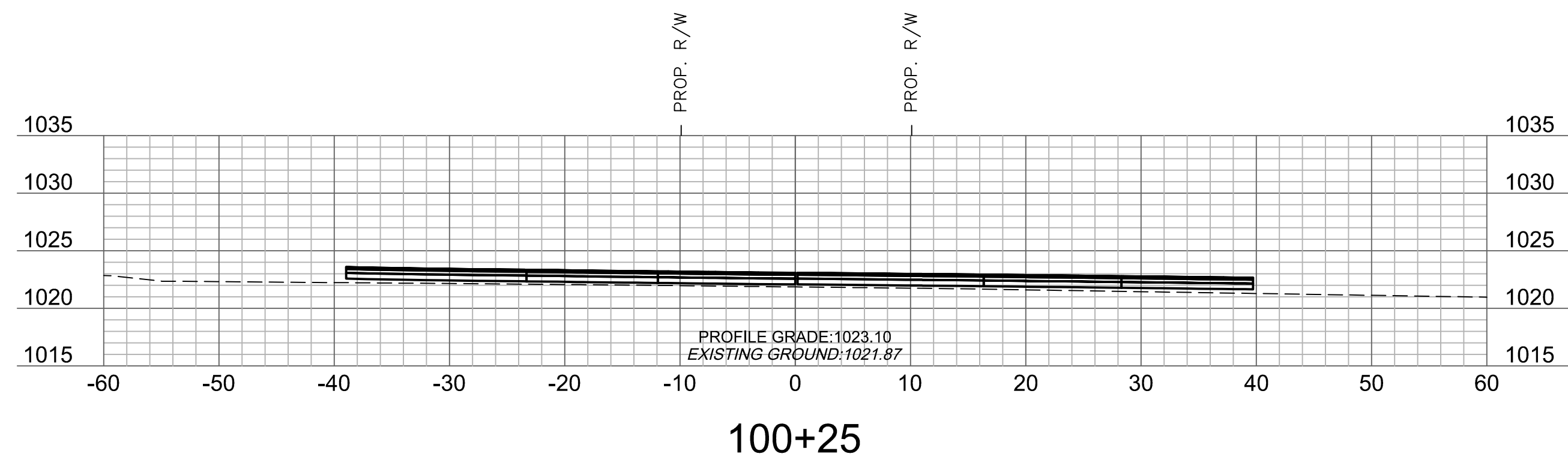
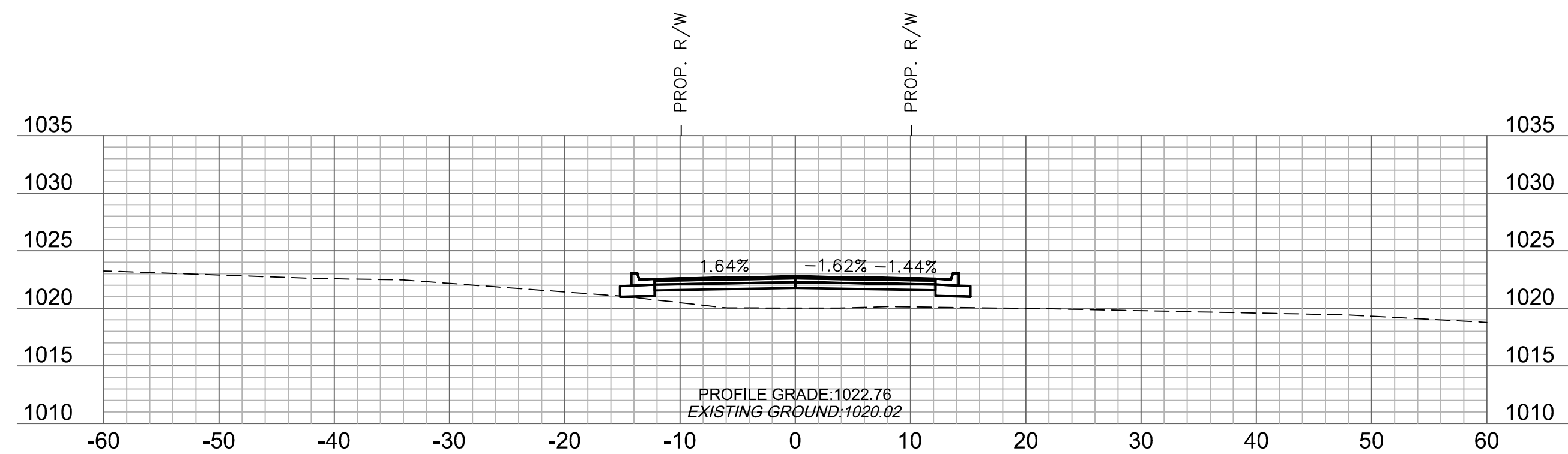
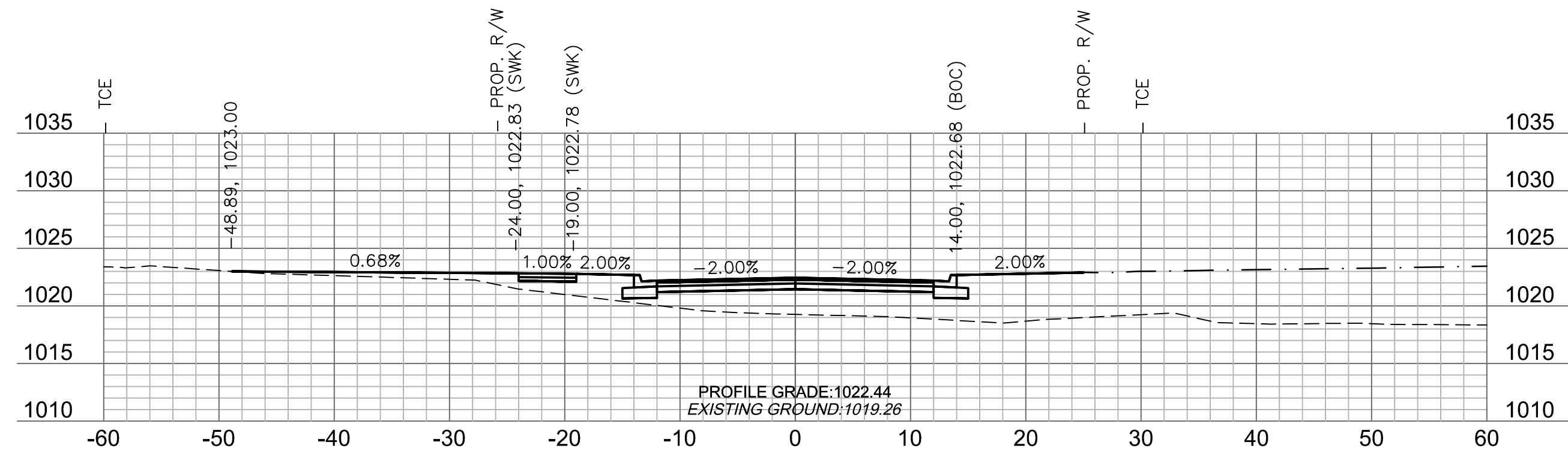
OLDHAM PARKWAY CROSS SECTIONS

OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

2019

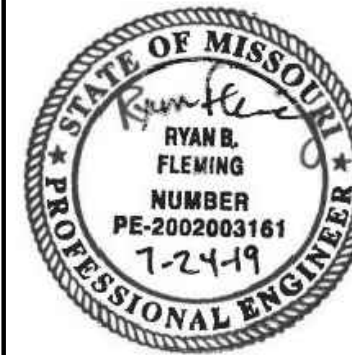
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APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_PCORR 81450
DATE: 07.19.19

SHEET
T44 OF 70



	GRADING (BY OTHERS)
A	90-100
B	80-89
C	70-79
D	60-69
F	50-59
G	40-49
H	30-39
I	20-29
J	10-19
K	0-9

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 DATE: Jul 25, 2019 9:33am USER: ascavedra



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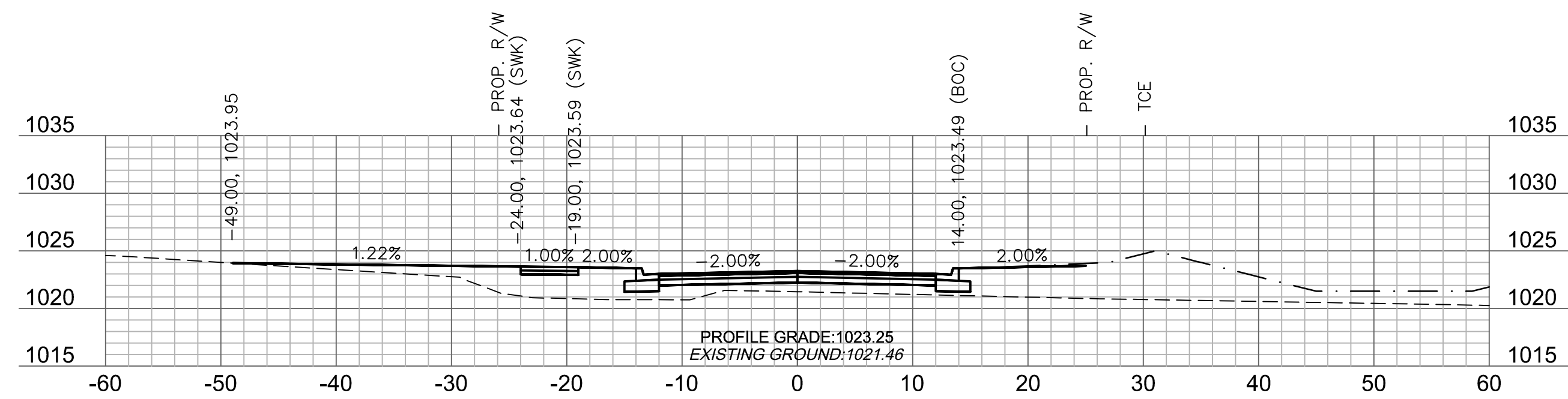
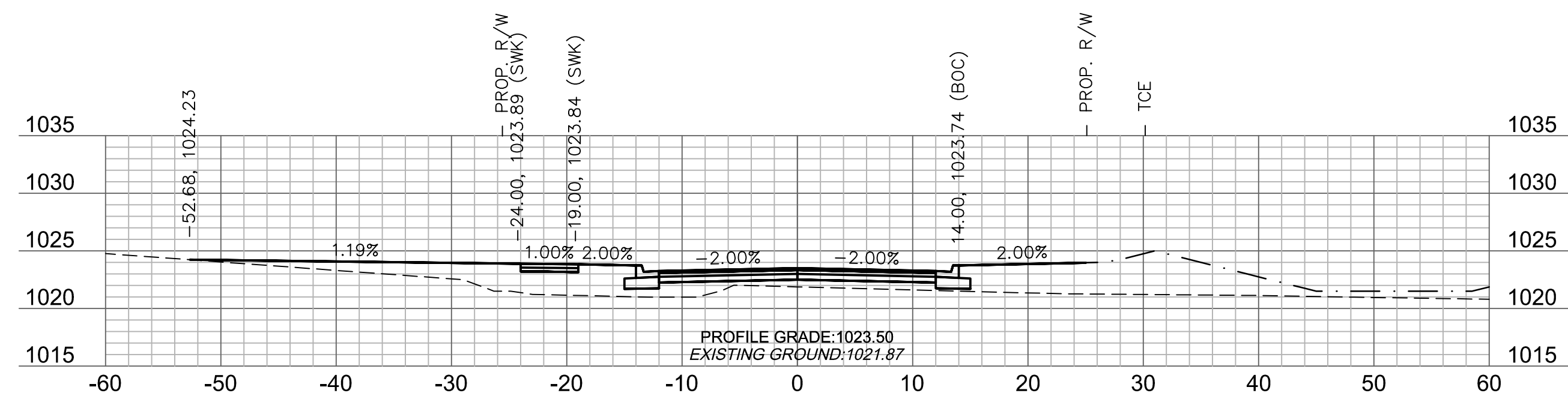
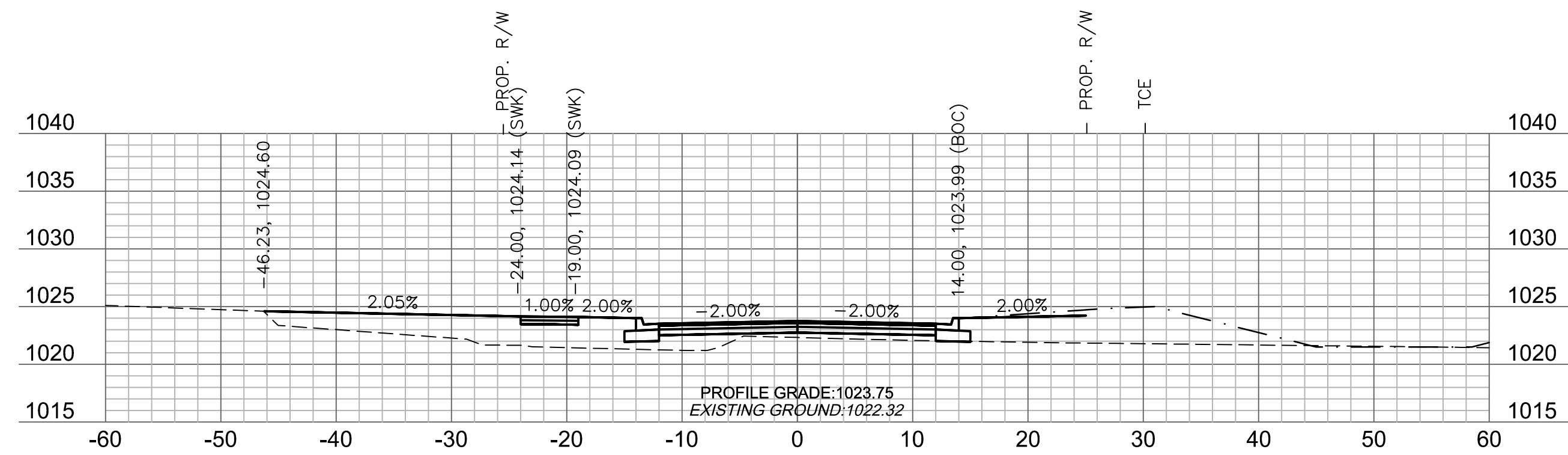
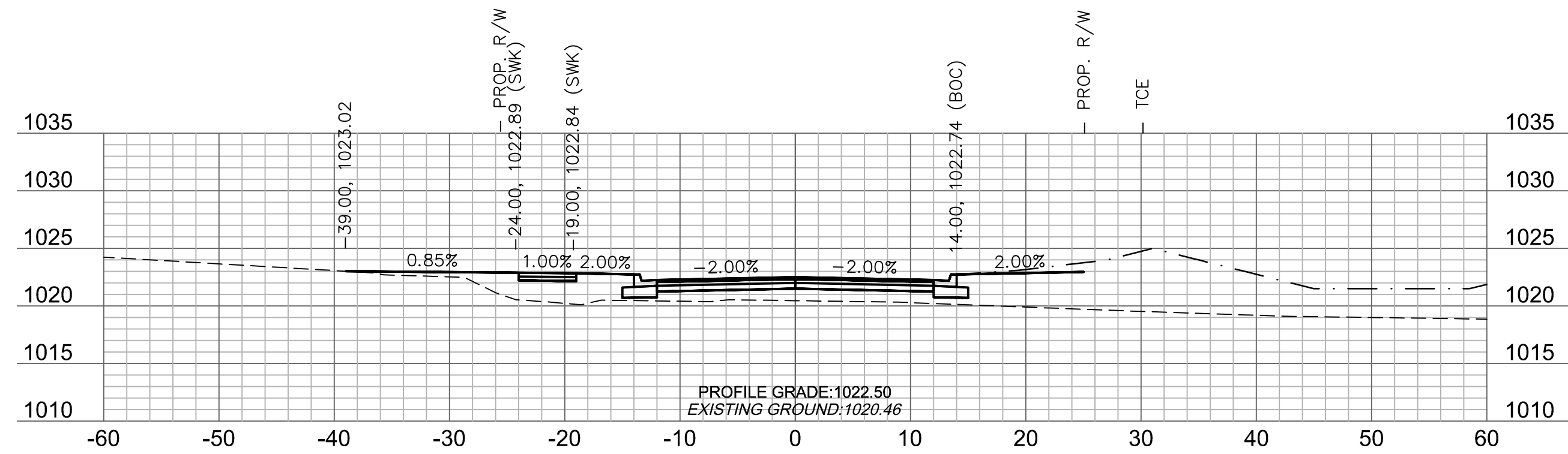
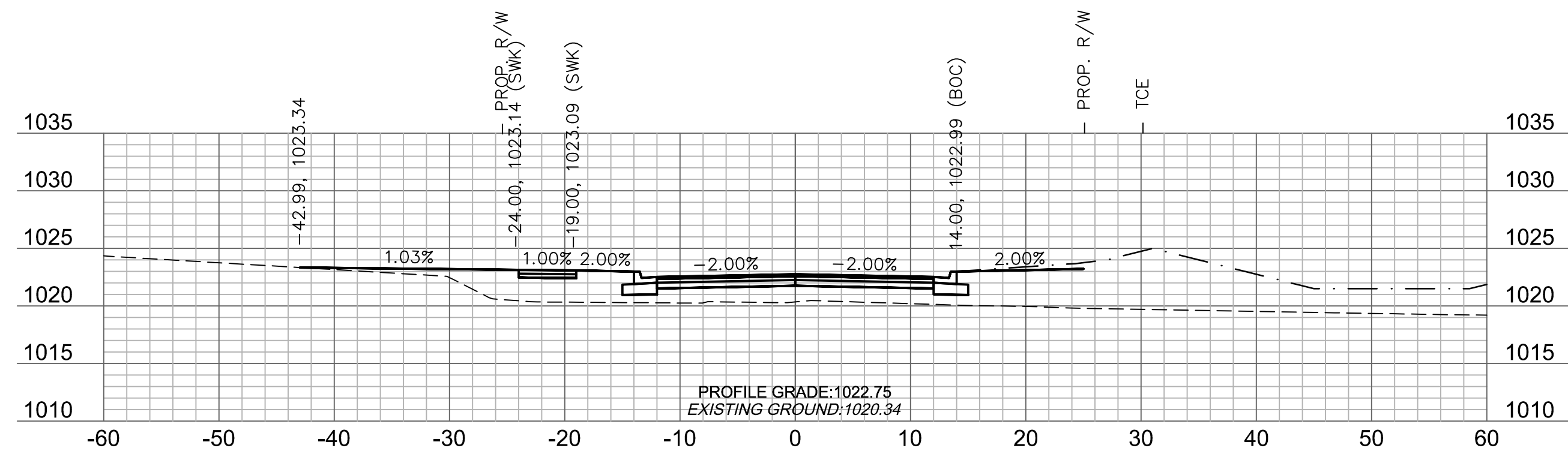
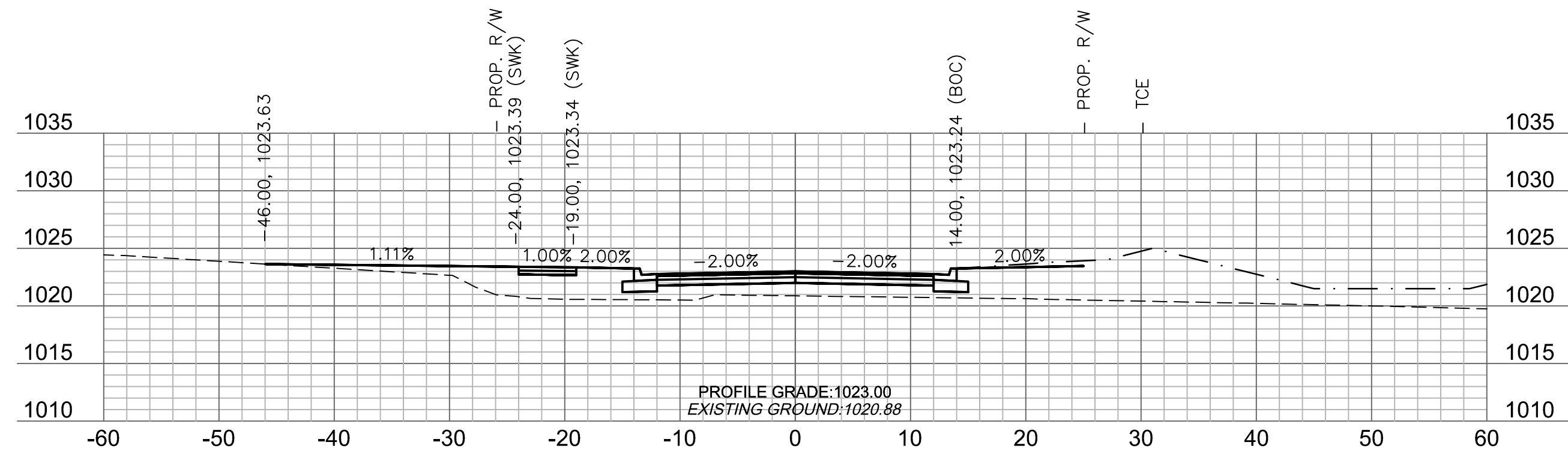
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Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

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PRINCETON DRIVE CROSS SECTIONS	
O'REILLY 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: 07.19.19

SHEET
T45 OF 70



	GRADING (BY OTHERS)
A	90-100
B	80-89
C	70-79
D	60-69
F	50-59
G	40-49
H	30-39
I	20-29
J	10-19
K	0-9

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 DATE: Jul 25, 2019 9:33am USER: ascavedra

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USER: asaavedra
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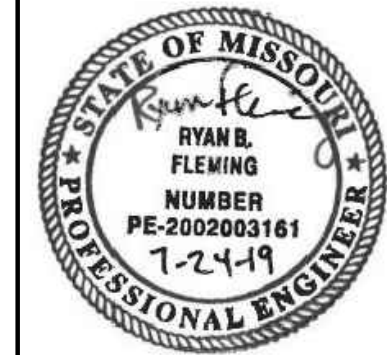
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7201 West 122nd Street, Suite 200Certificate of Authorship
TEL 012 345 6789

minority #00
281 1170

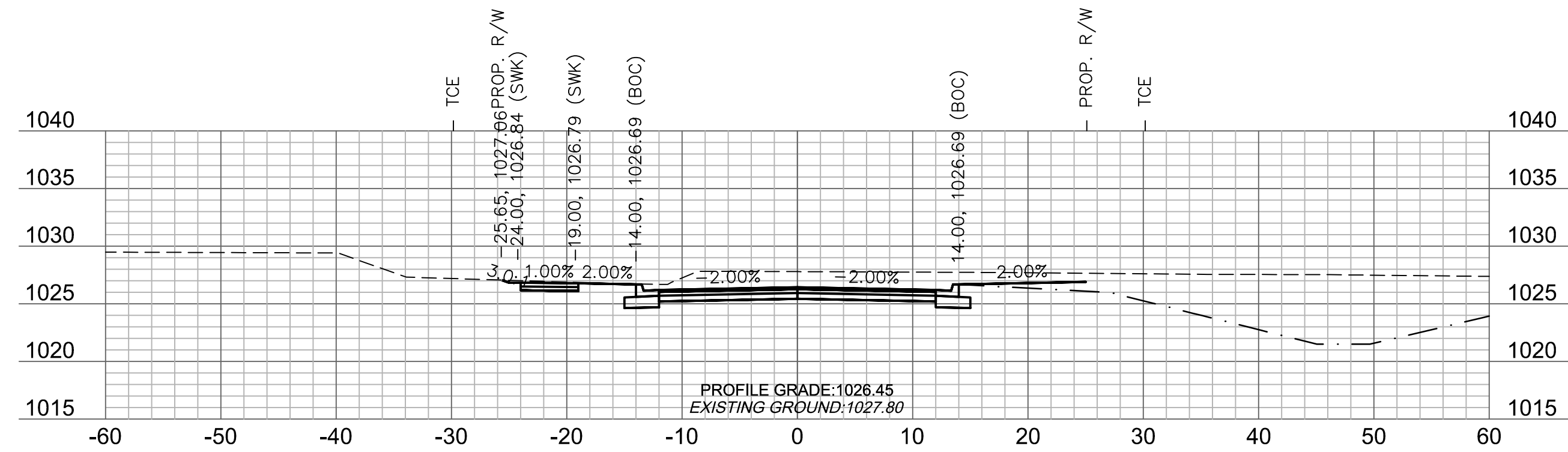
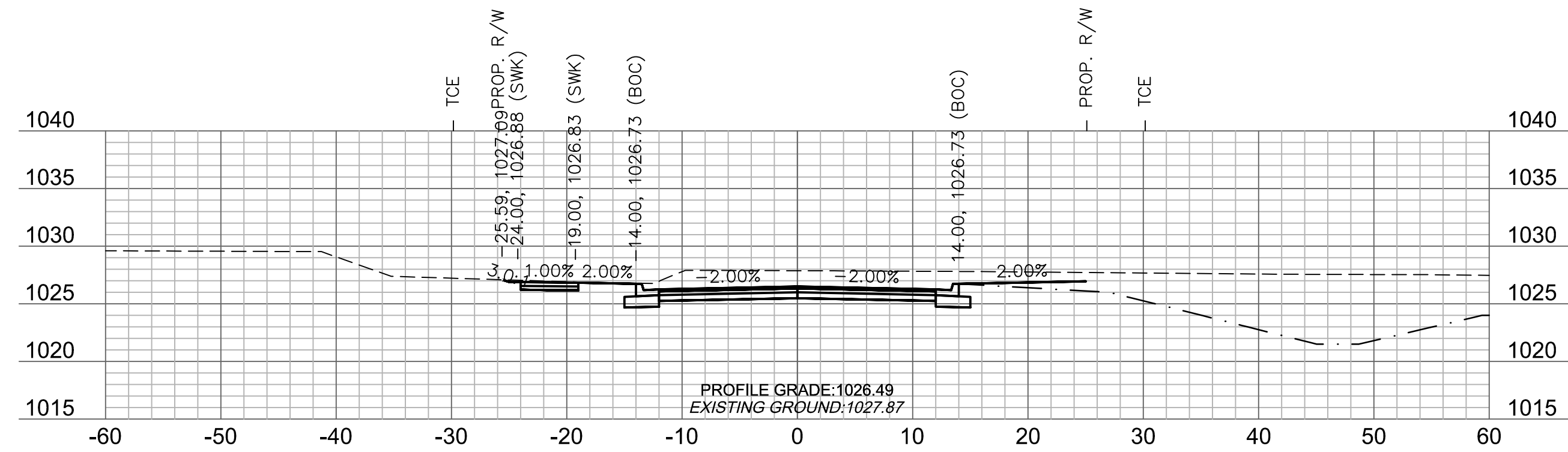
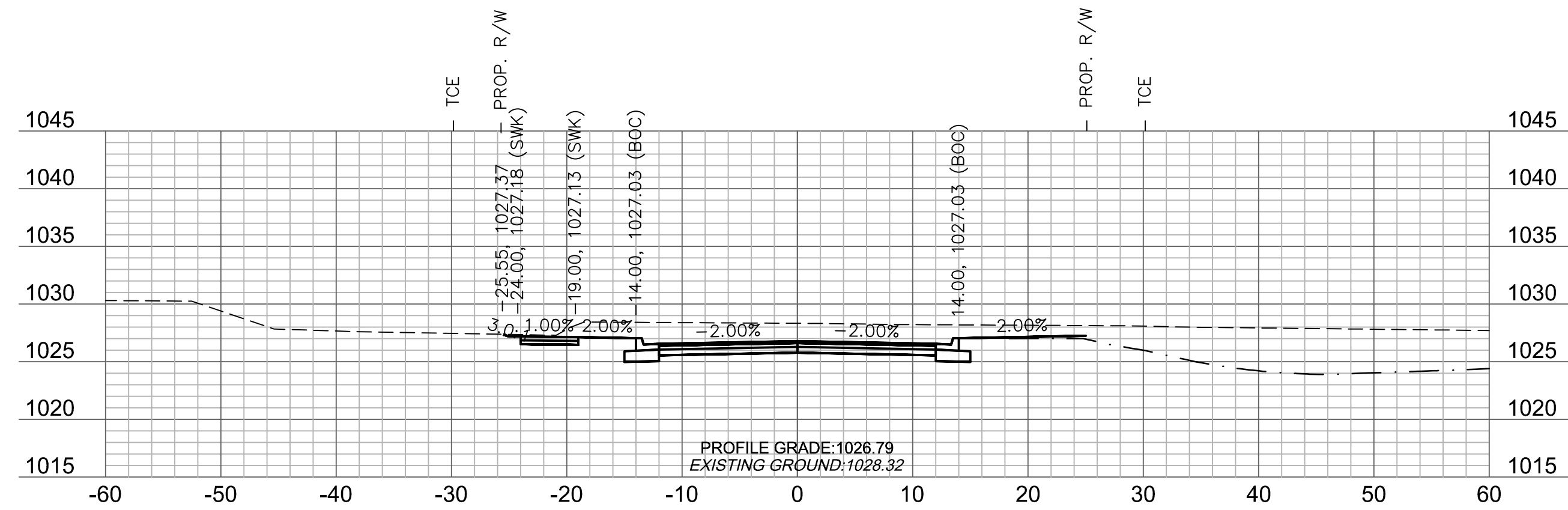
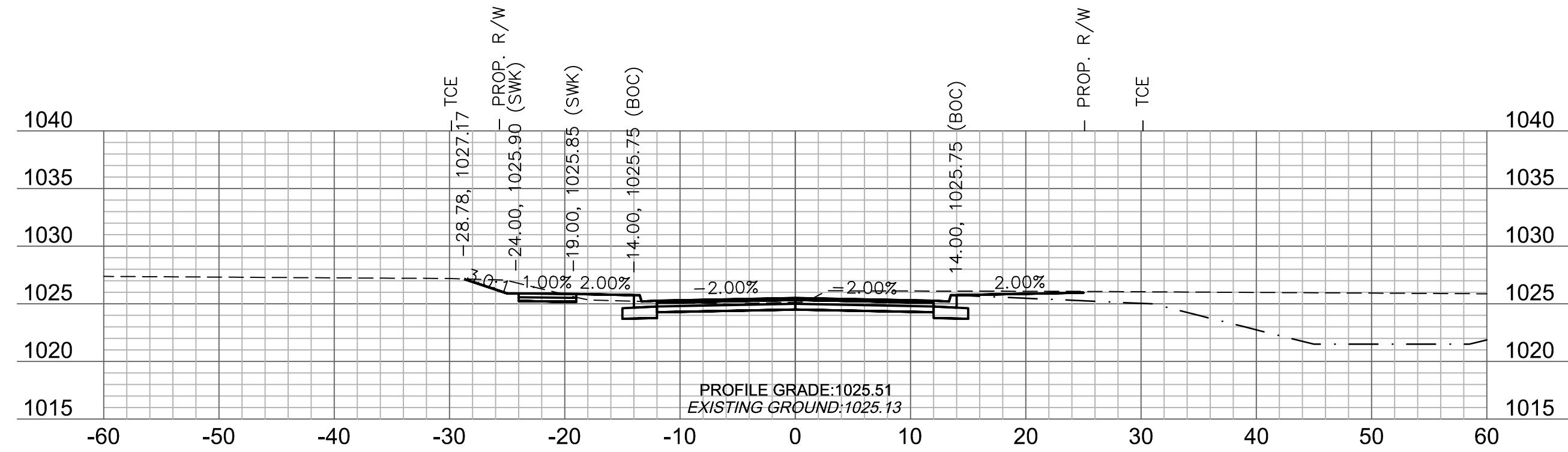
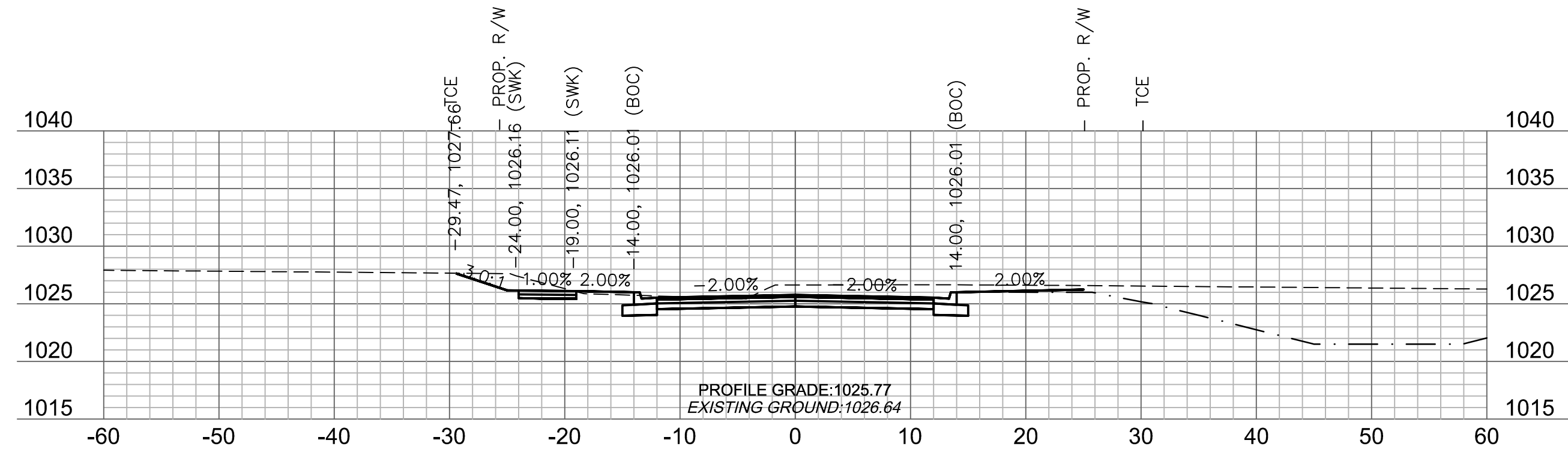
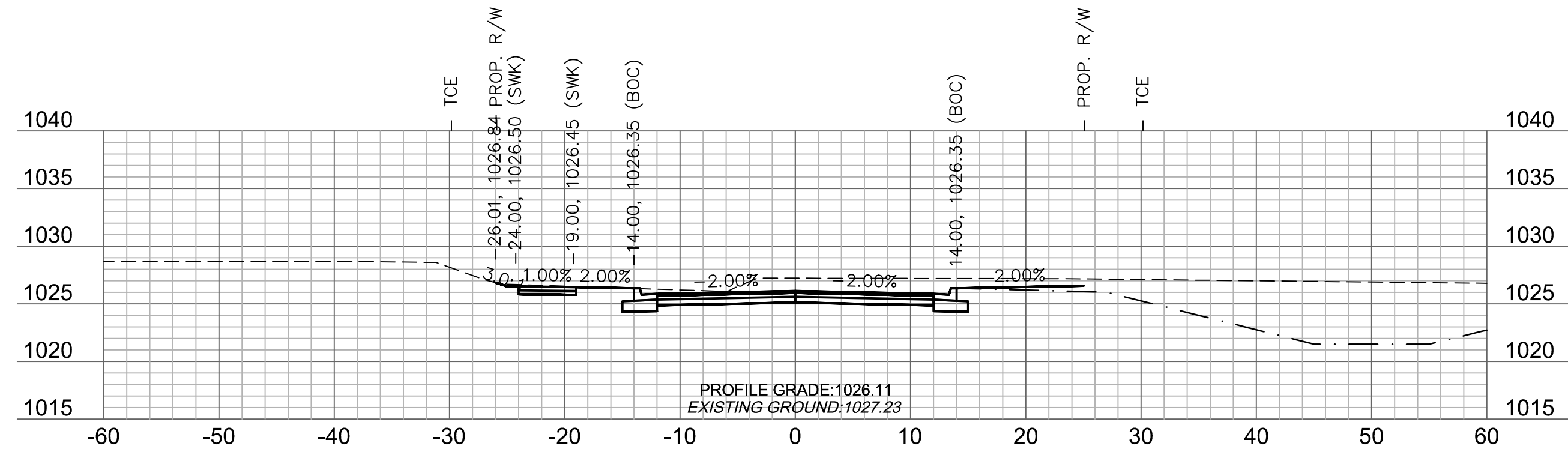
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Overland Park, KS 66213-4750 FAX 913.381.1174 www.olsson.com

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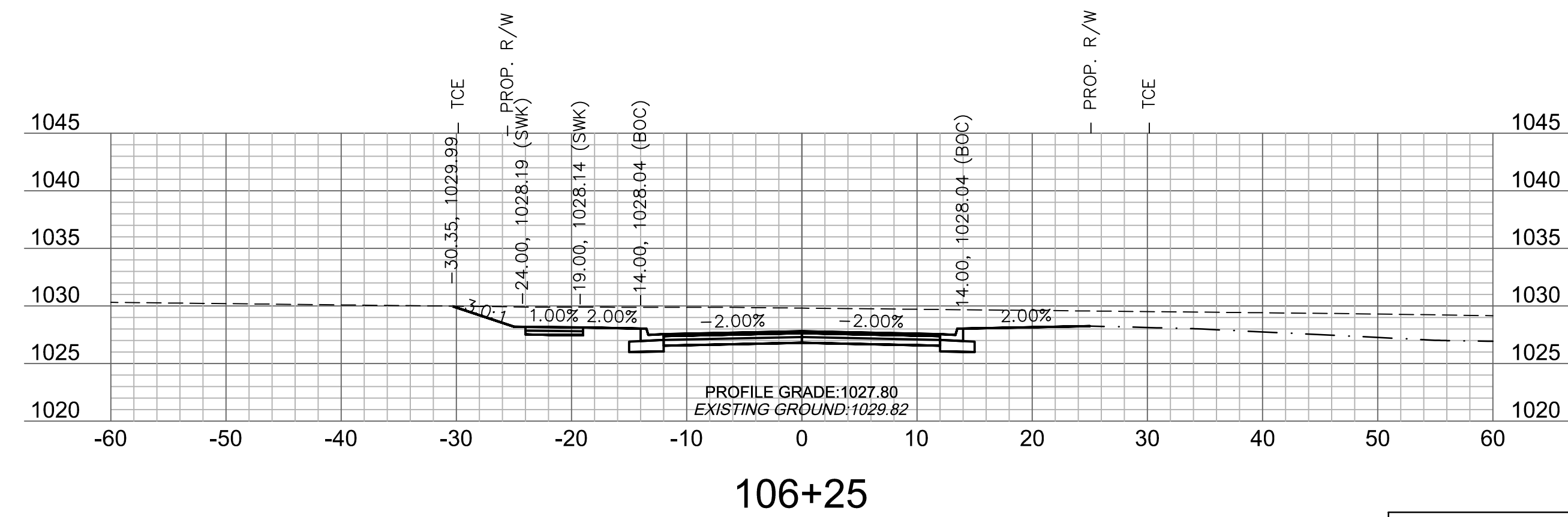
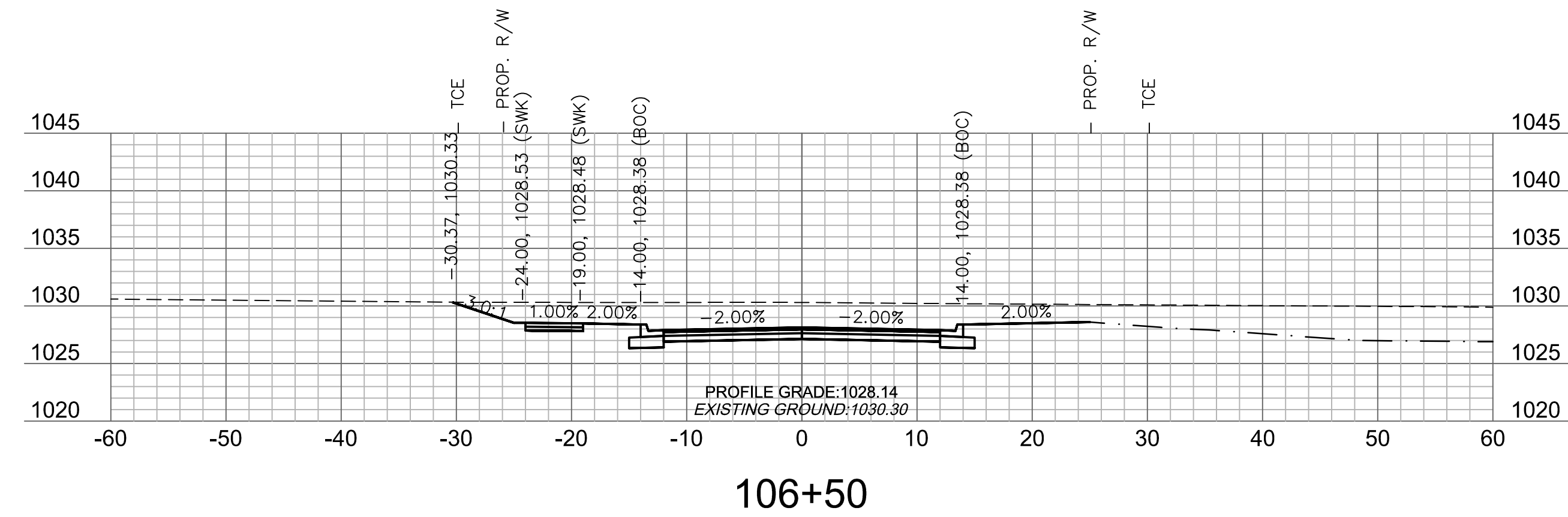
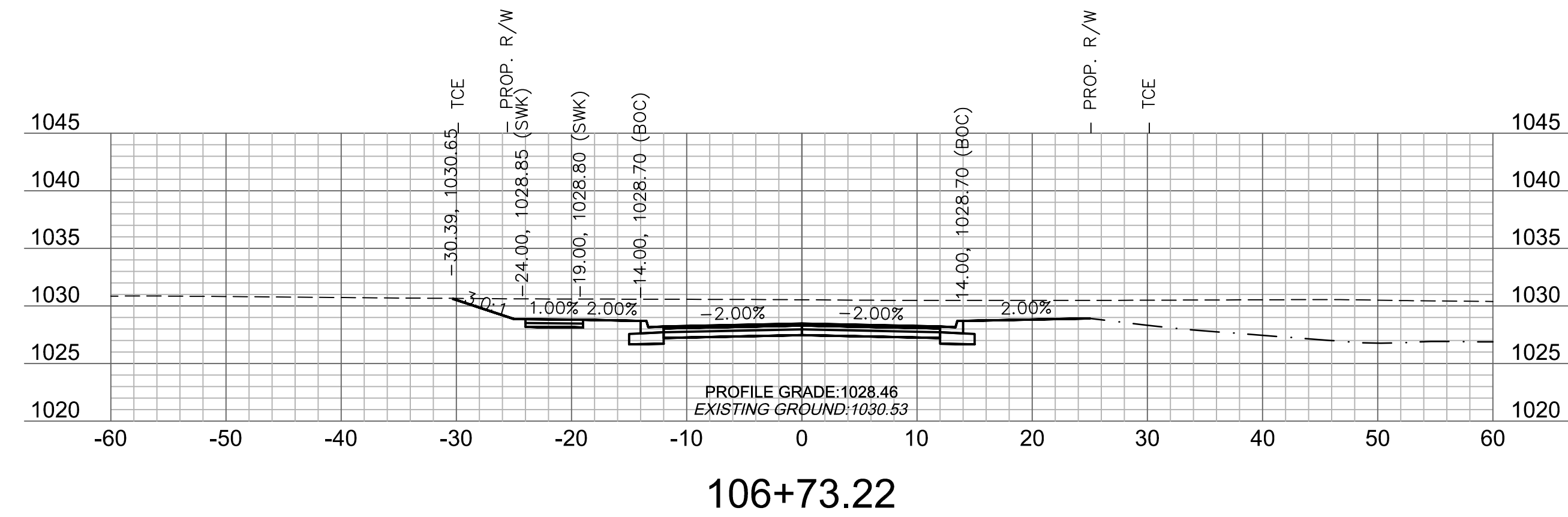
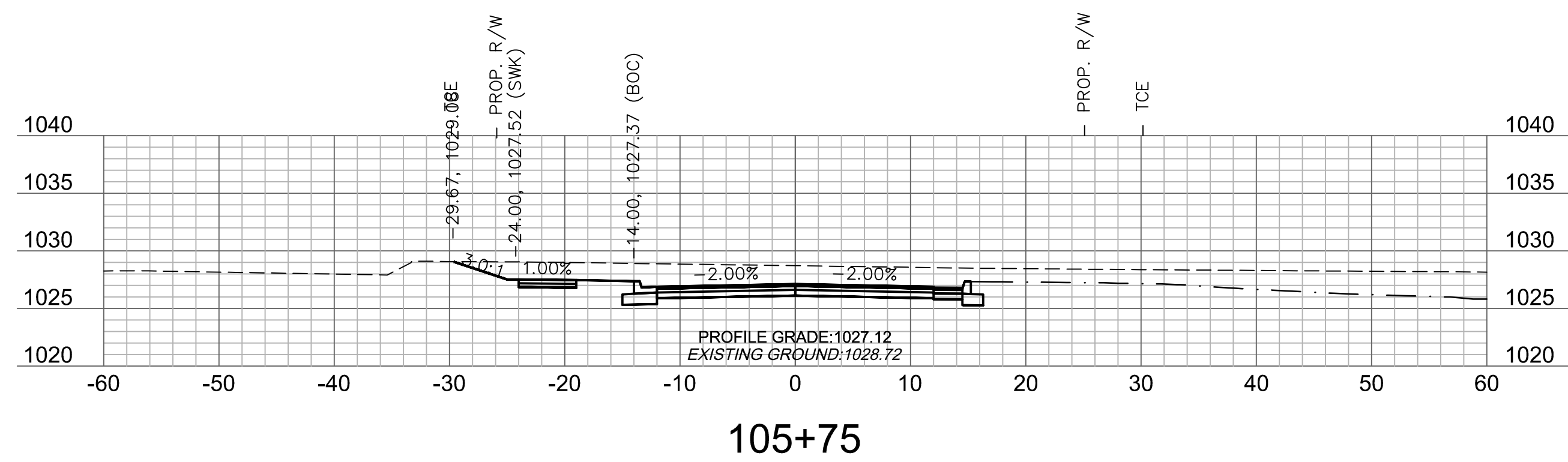
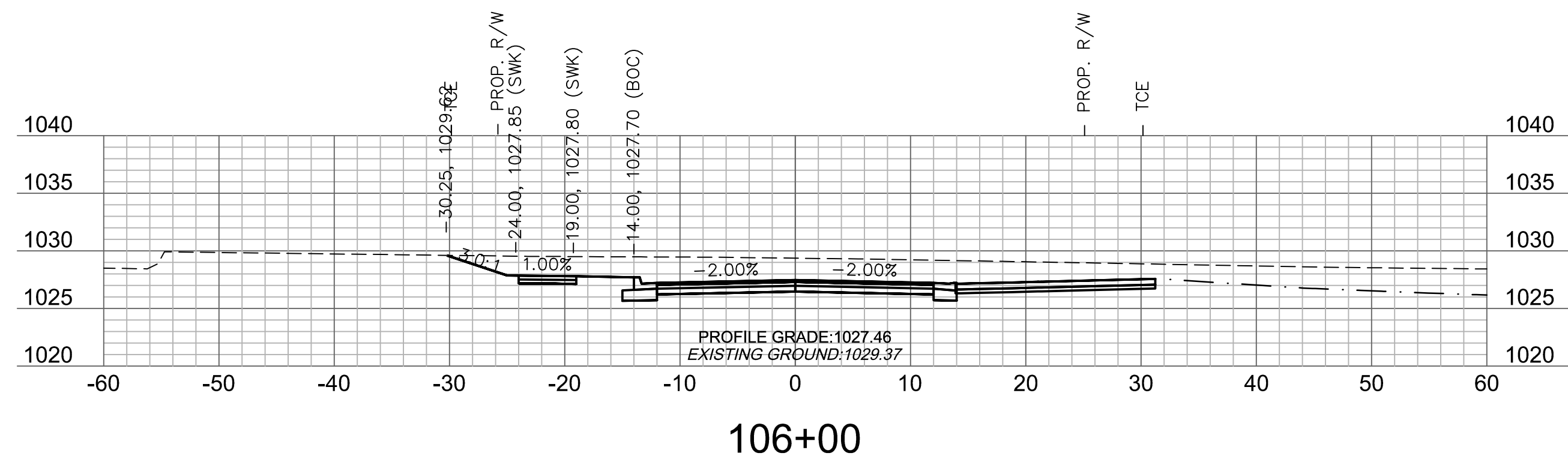
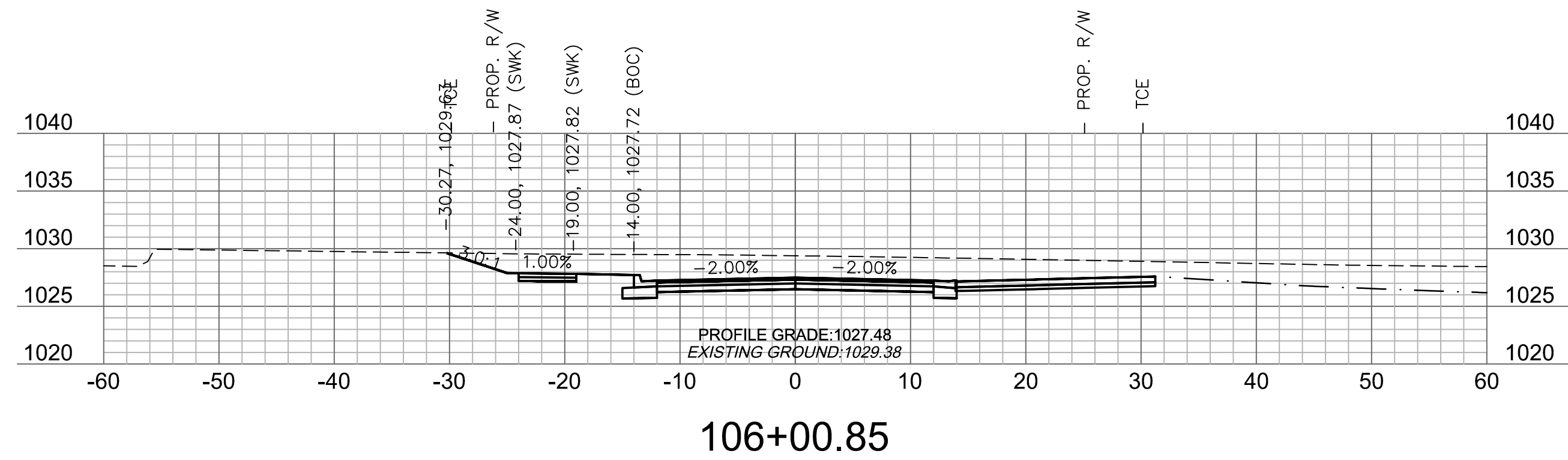
PRINCETON DRIVE CROSS SECTIONS	
OREILLY DEVELOPMENT SENIOR LIVING FACILITY OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS	
LEE'S SUMMIT, MISSOURI	2019

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: 07.19.19

SHEET
T46 OF 70

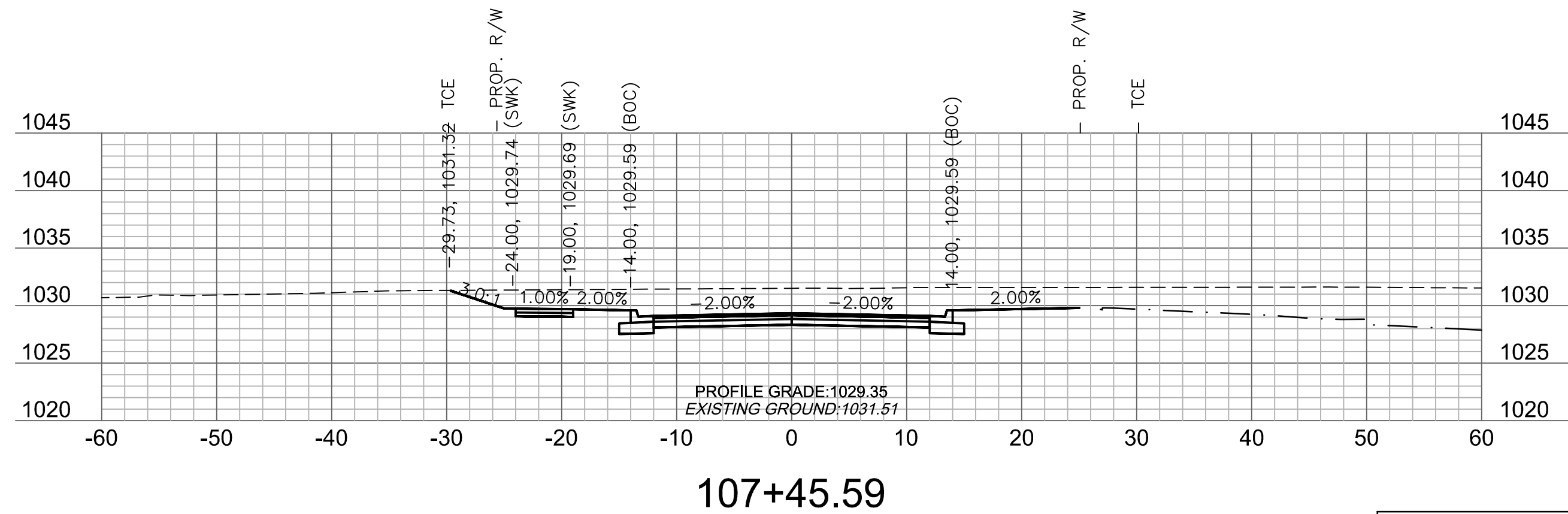
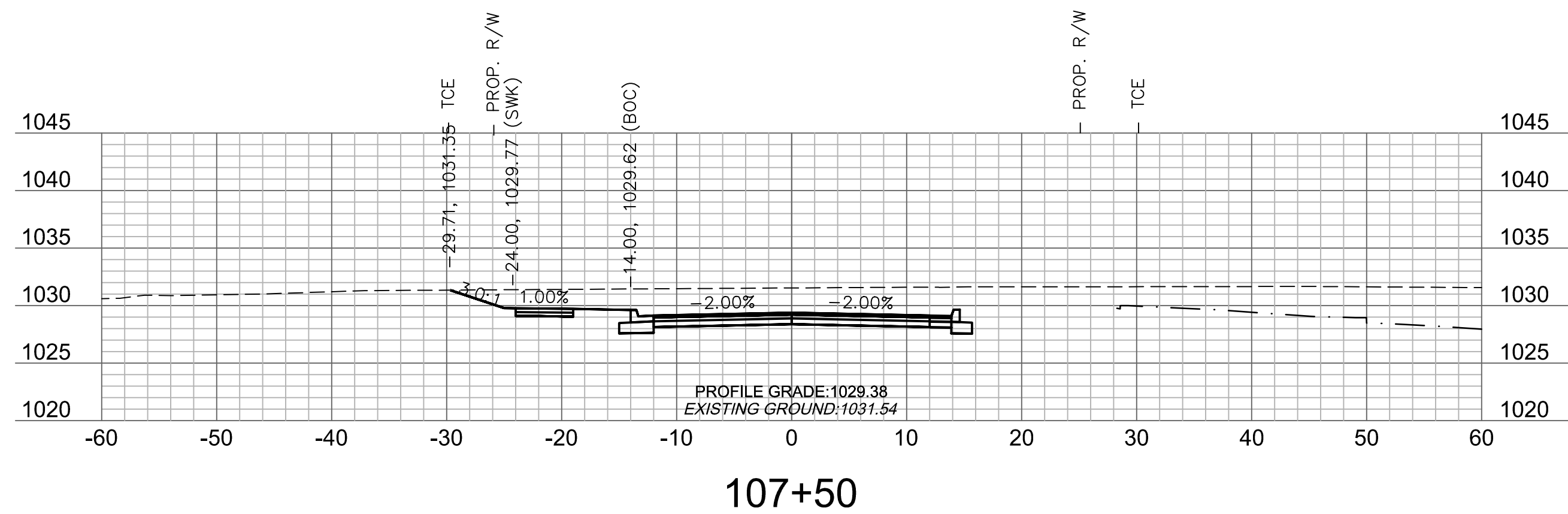
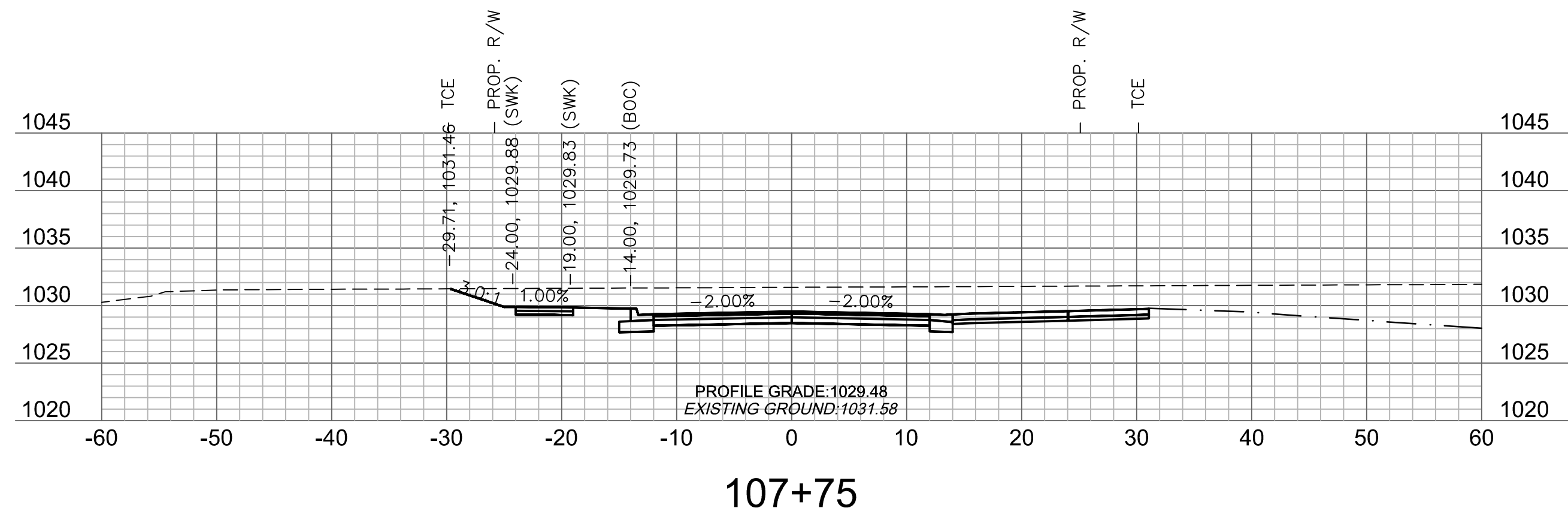
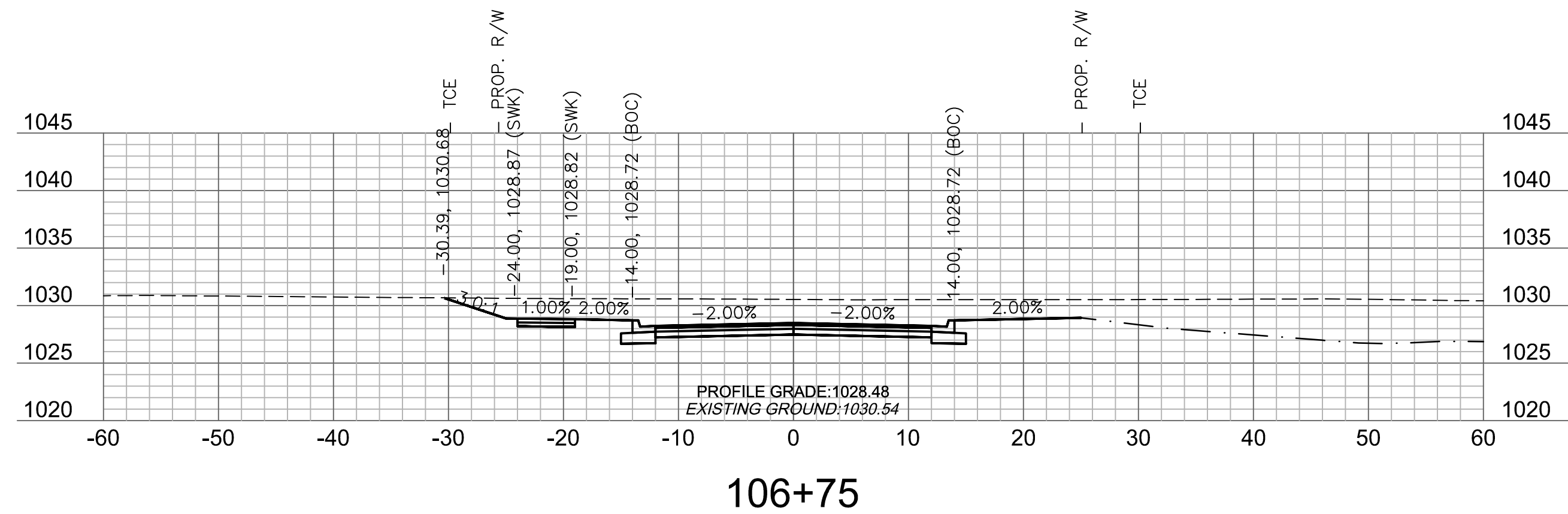
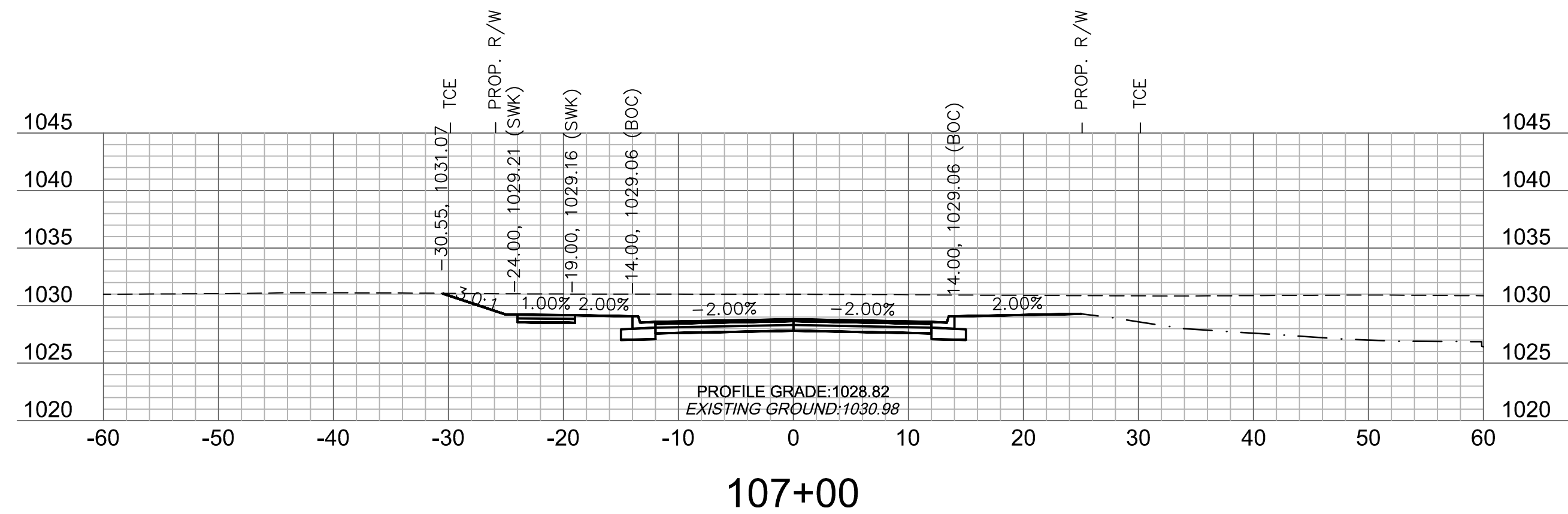
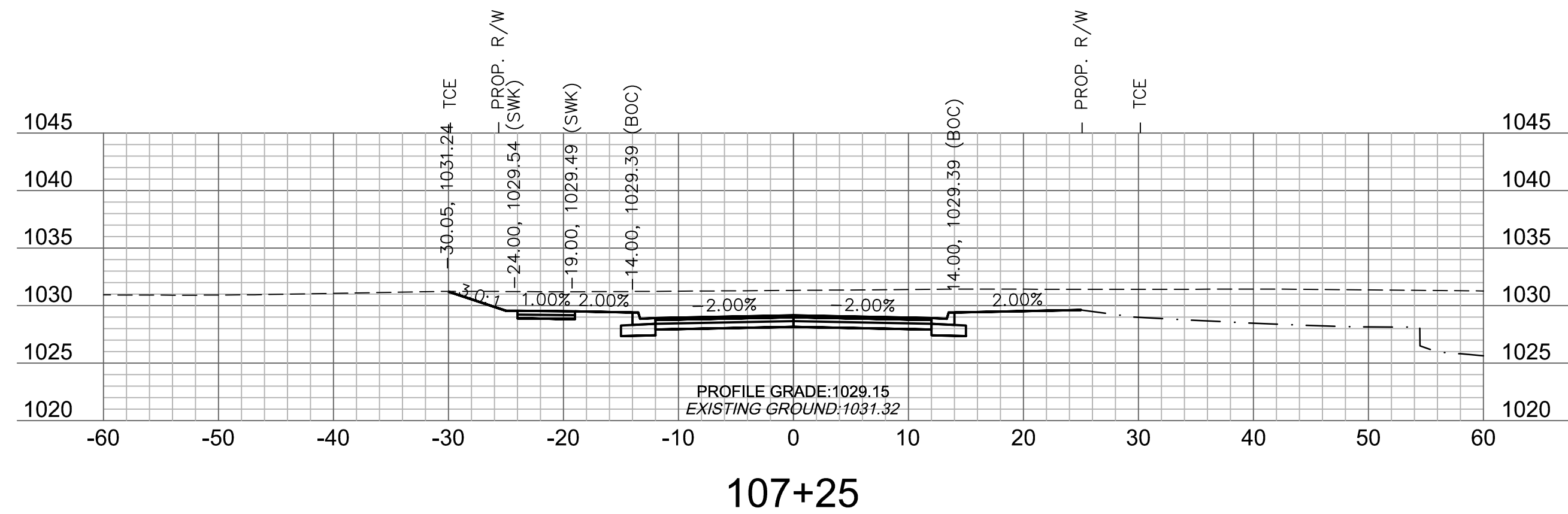


GRADING (BY OTHERS)



GRADING (BY OTHERS)

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 DATE: Jul 25, 2019 9:33am USER: ascavedra



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

[illegible]PRINCETON DRIVE
CROSS SECTIONS

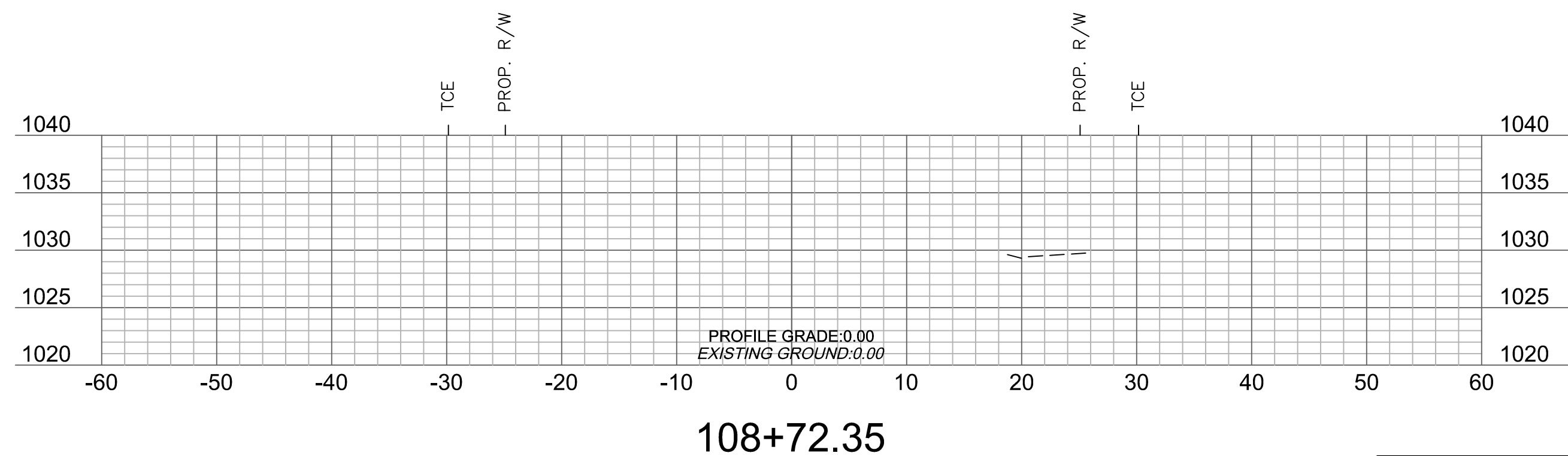
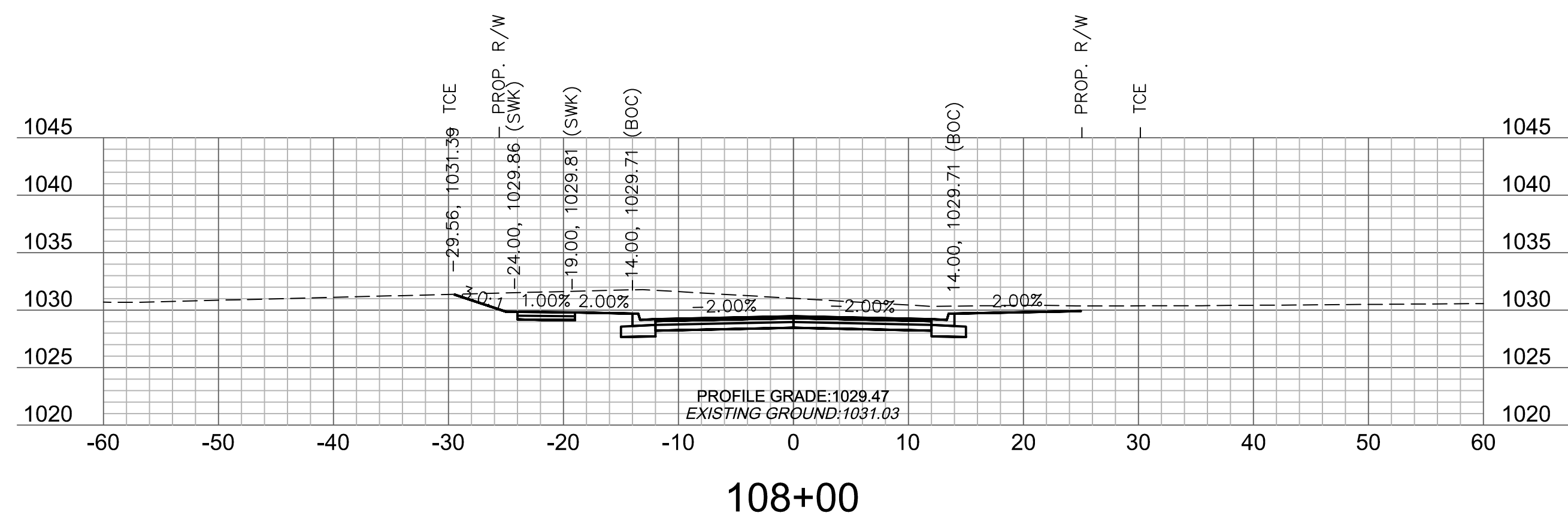
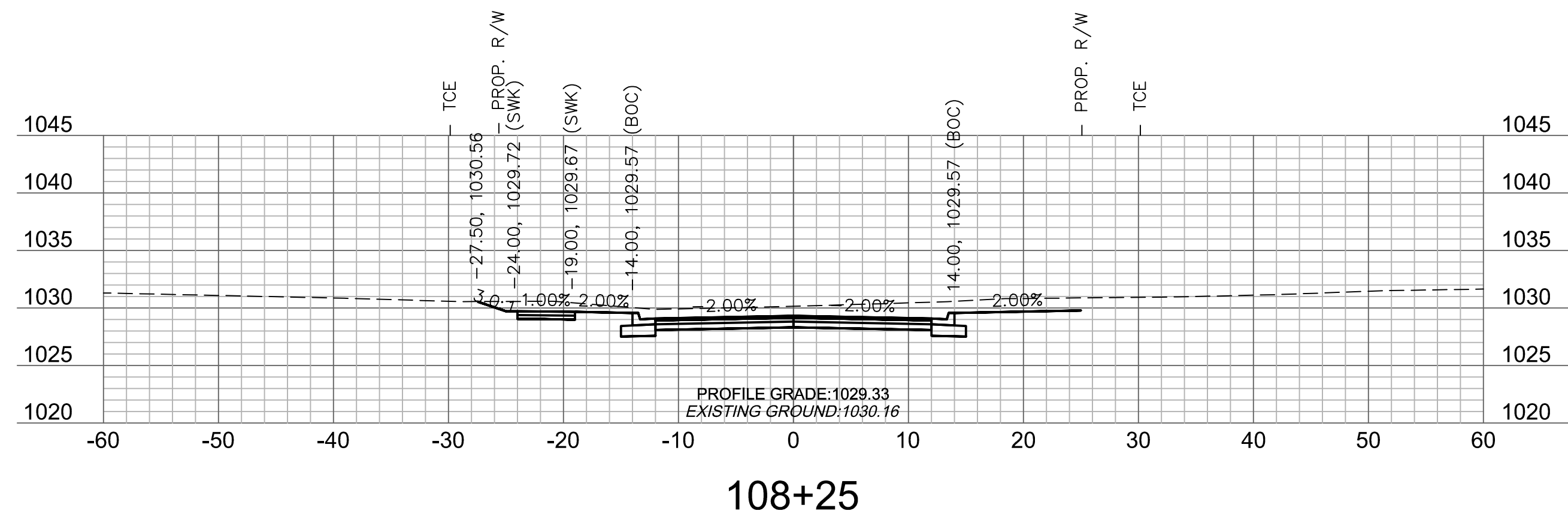
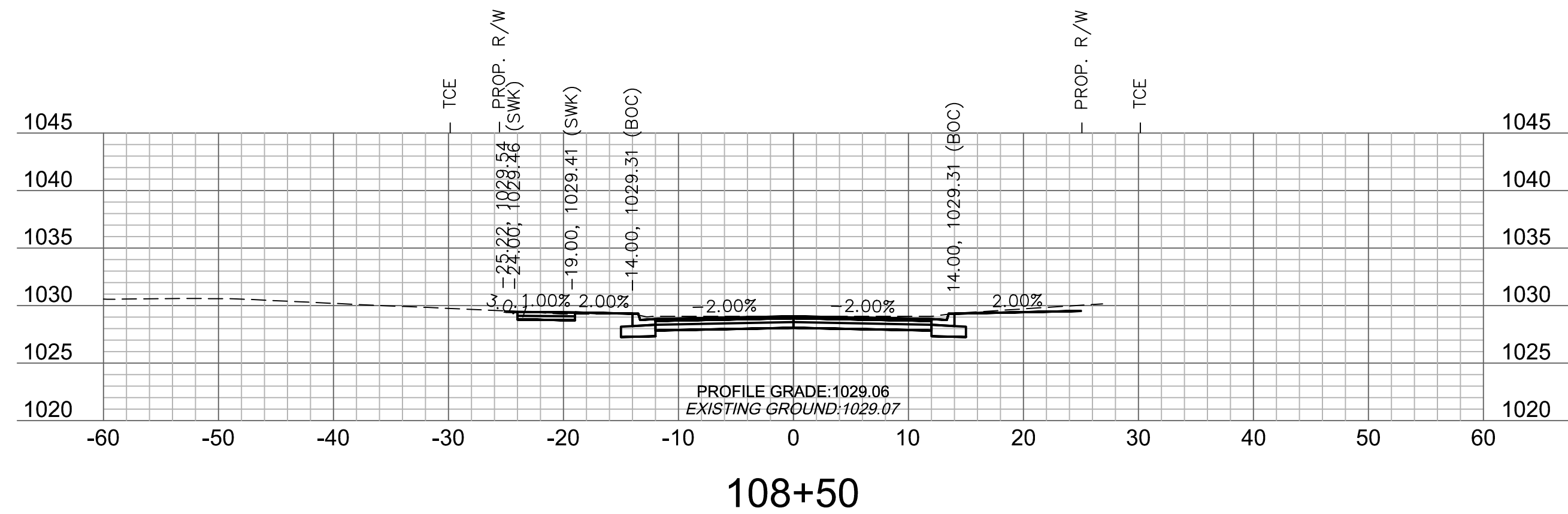
OREILLY DEVELOPMENT SENIOR LIVING FACILITY
OLDHAM PARKWAY & PRINCETON DRIVE IMPROVEMENTS

LEE'S SUMMIT, MISSOURI

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: 07.19.19

SHEET
T50 OF 70

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USER: asoaavedra

[illegible]

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

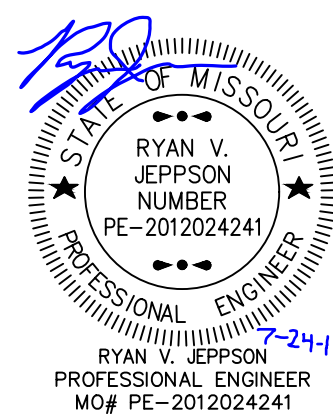
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CHECKED BY: JKL
APPROVED BY: RBF
QA/QC BY: JKL/RBF
PROJECT NO.: 018-1450
DWG NO.: T_PCORR_81450
DATE: 07.19.19

Plan view of a proposed 30-inch RCP storm sewer line. The sewer line runs from station 0+00 to 3+39.29, crossing SE Oldham Parkway. It includes manholes B1, B2, B3, B4, and B5. The sewer line is connected to an existing 30-inch RCP storm sewer at station 0+00. The plan view shows the sewer line, manholes, and surrounding infrastructure including E US Highway 50, SE Oldham Parkway, and various easements.



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Springfield, MO 65806
TEL 417.890.3802 www.olsson.com



REVISIONS DESCRIPTION

REVISIONS

SE OLDHAM PARKWAY PUBLIC STORM LINE B PLAN & PROFILE

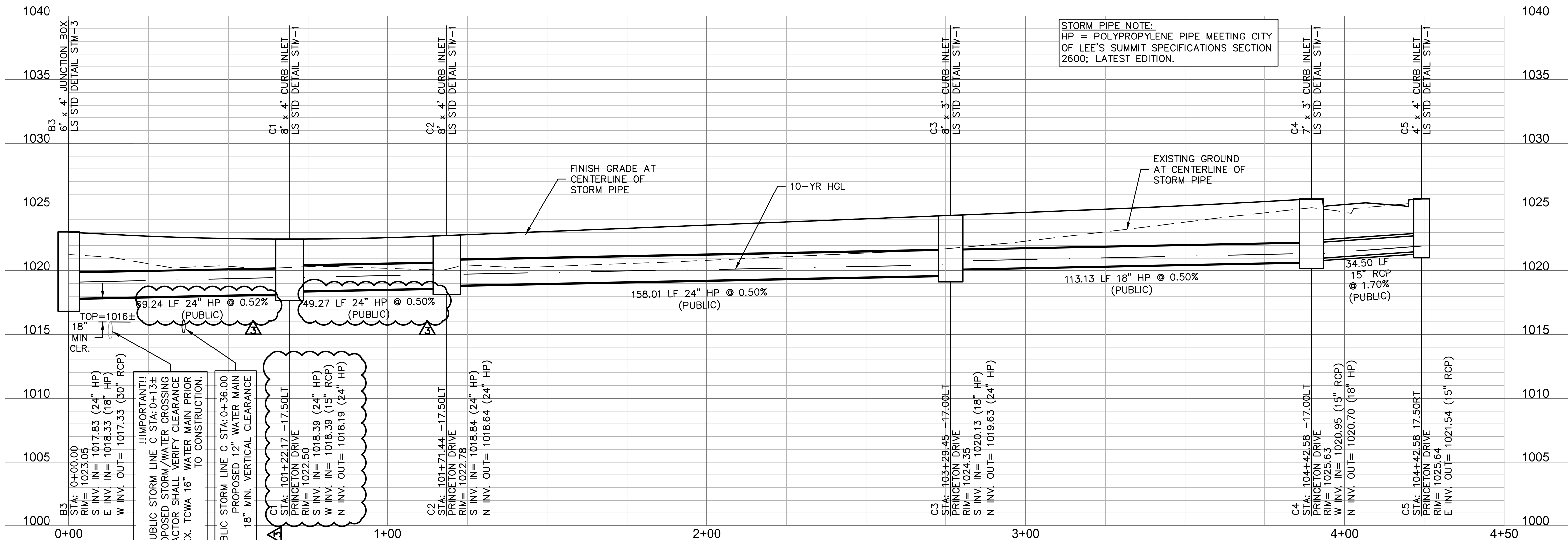
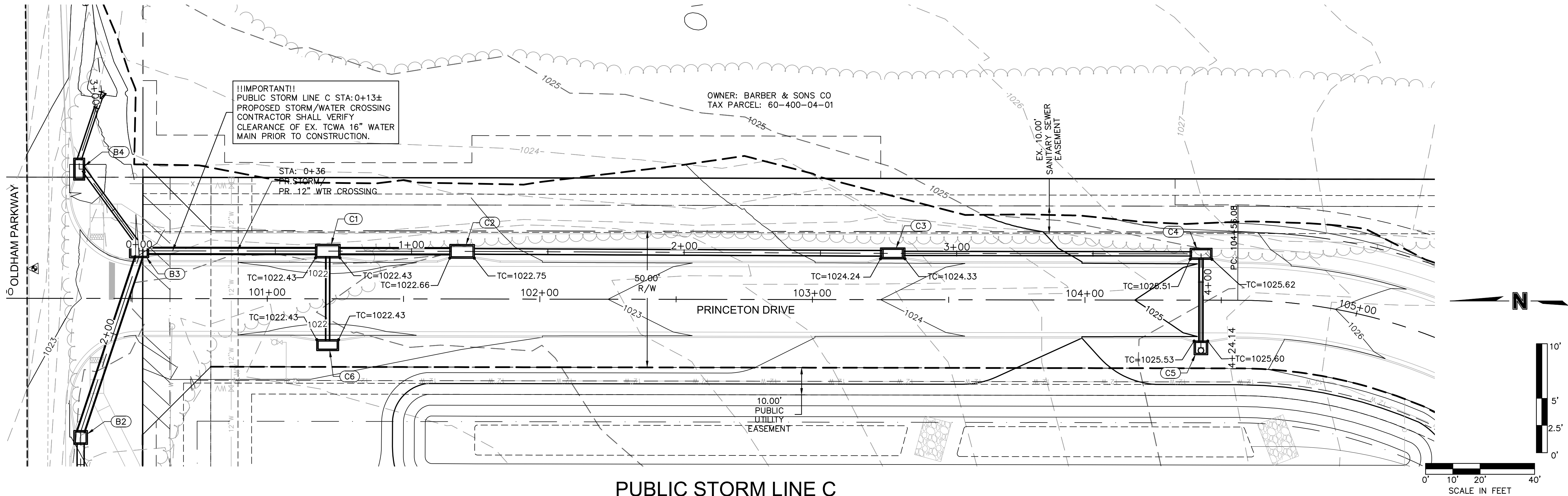
THE PRINCETON SENIOR LIVING
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

drawn by: _____ RPJ
designed by: _____ RVJ
checked by: _____ JLR
project no.: _____ 018-1450
drawing no.: _____ STM_PROF 81450
date: _____ 07.19.19

SHEET
ST1.1

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STATE OF MISSOURI

RYAN V. JEPSON
NUMBER
PE-2012024241
PROFESSIONAL ENGINEER
RYAN V. JEPSON
PROFESSIONAL ENGINEER
MO# PE-2012024241

07/19/2019

ENGR. REVIEW COMMENTS

SE PRINCETON DRIVE
PUBLIC STORM LINE C PLAN & PROFILE
THE PRINCETON SENIOR LIVING
SE OLDHAM PARKWAY
LEE'S SUMMIT, MISSOURI

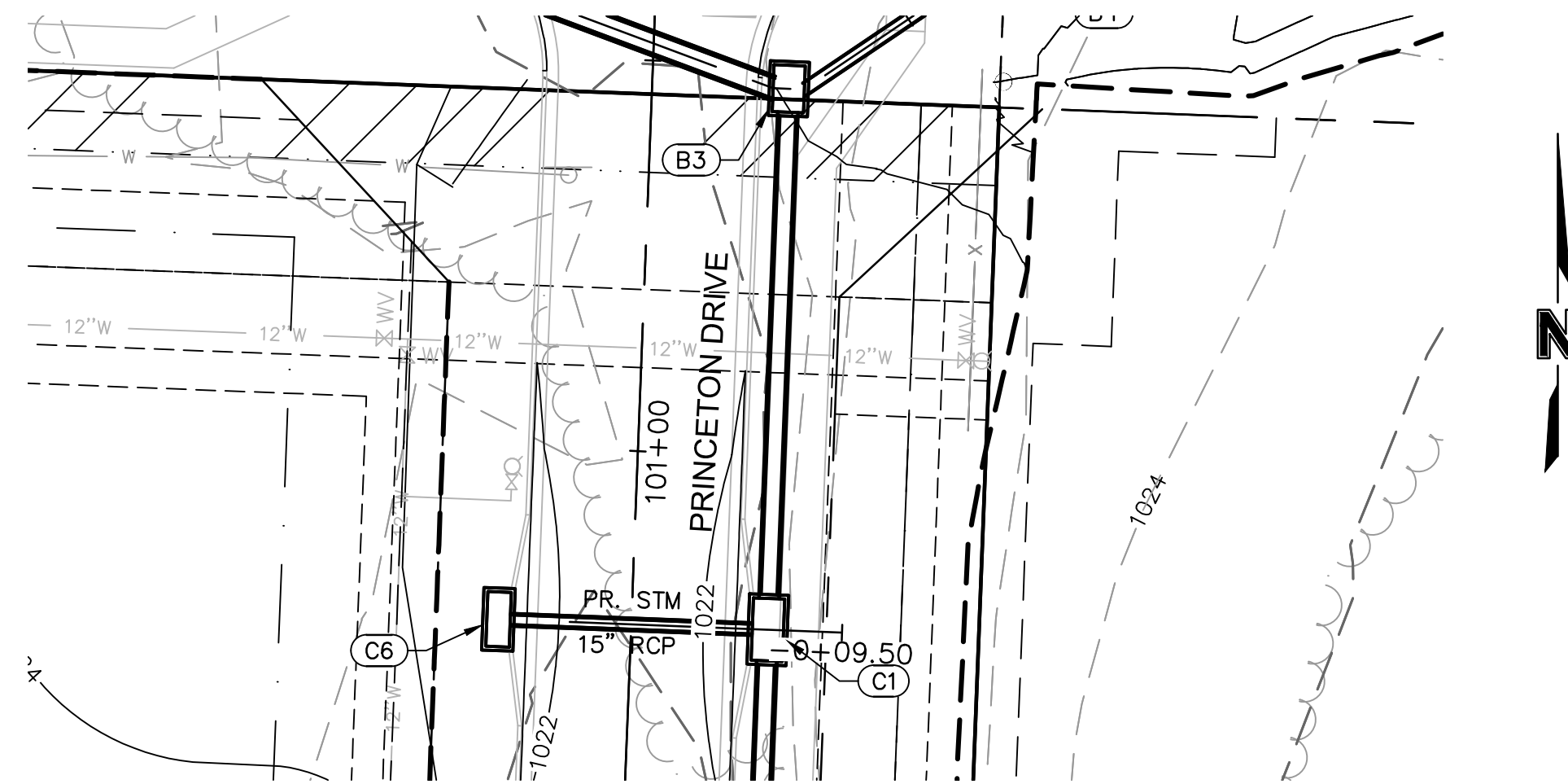
2019

drawn by: RPL
designed by: RVL
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_PROF_81450
date: 07.19.19

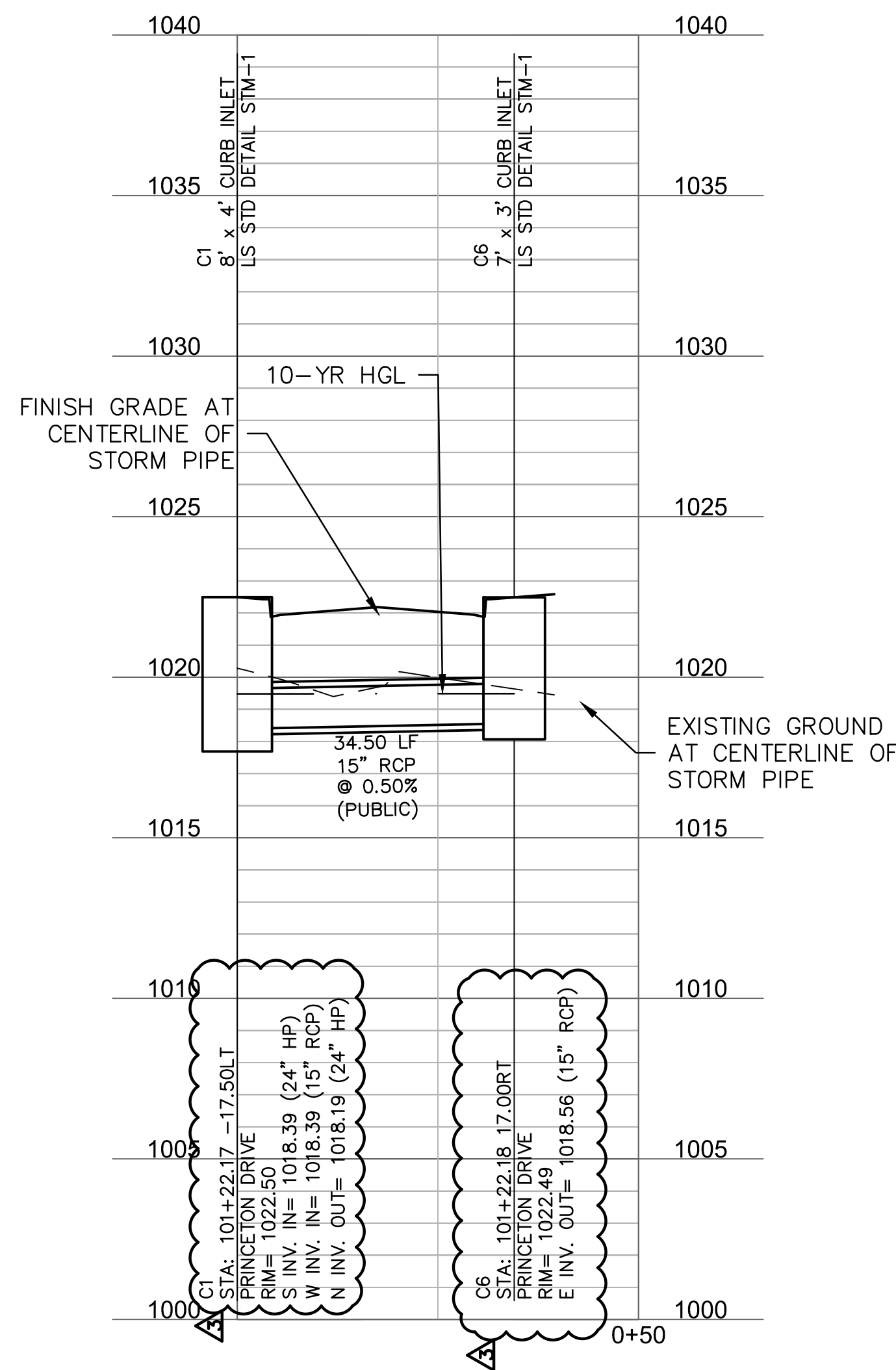
SHEET
ST1.2

REVISIONS

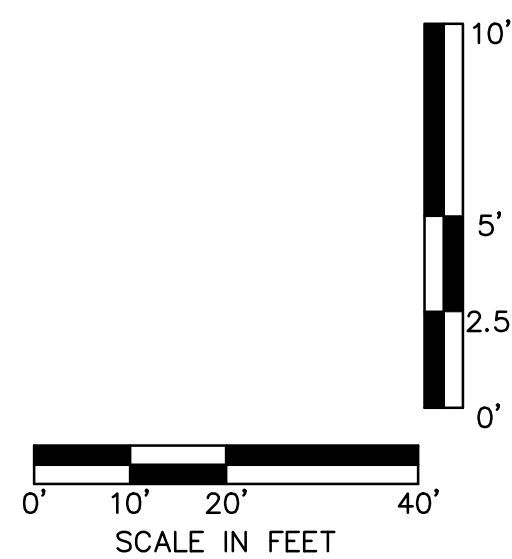
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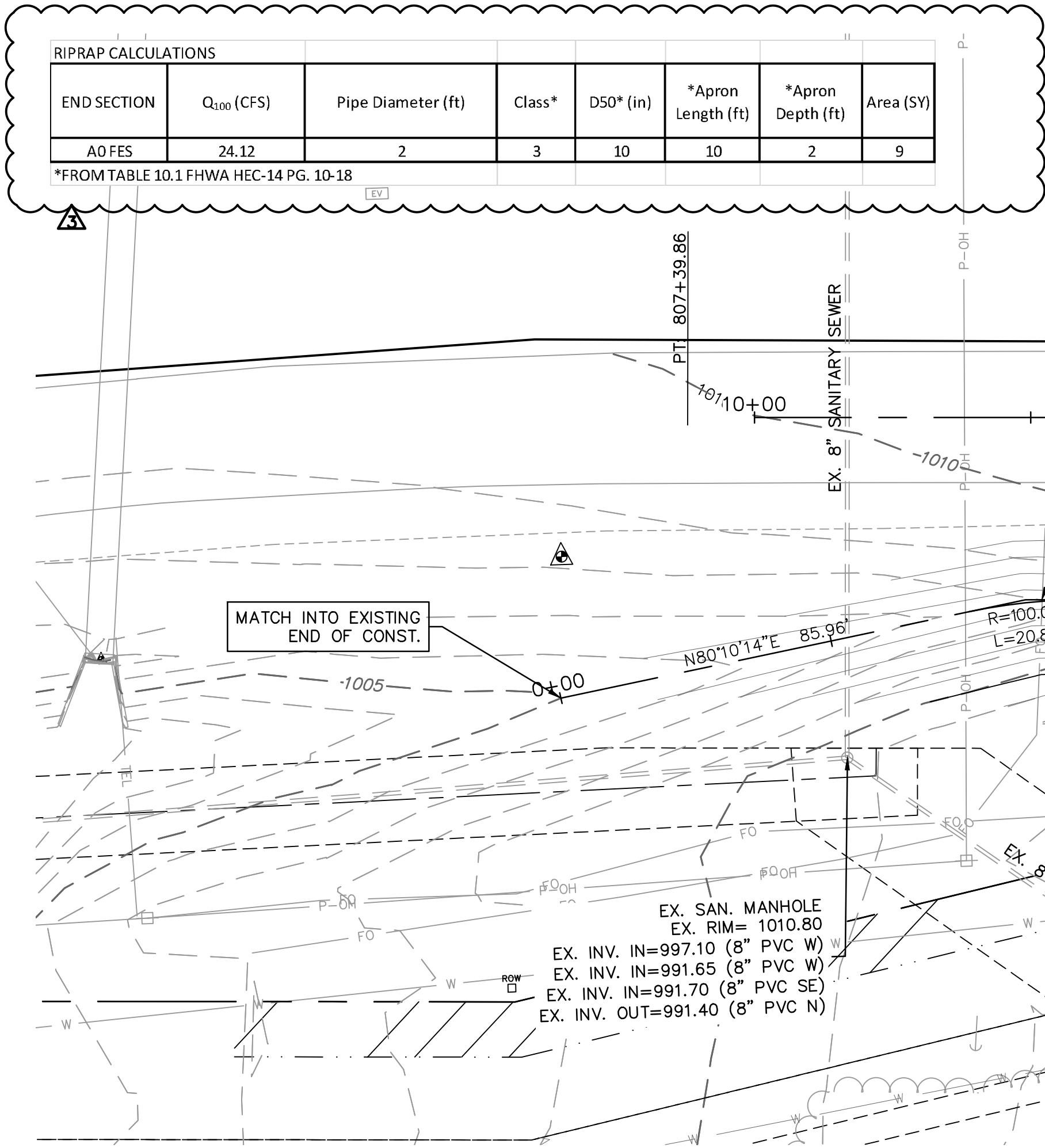
PUBLIC STORM LINE C6



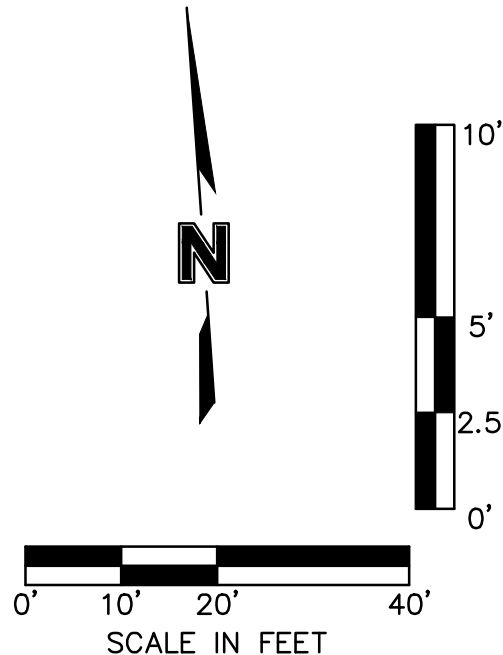
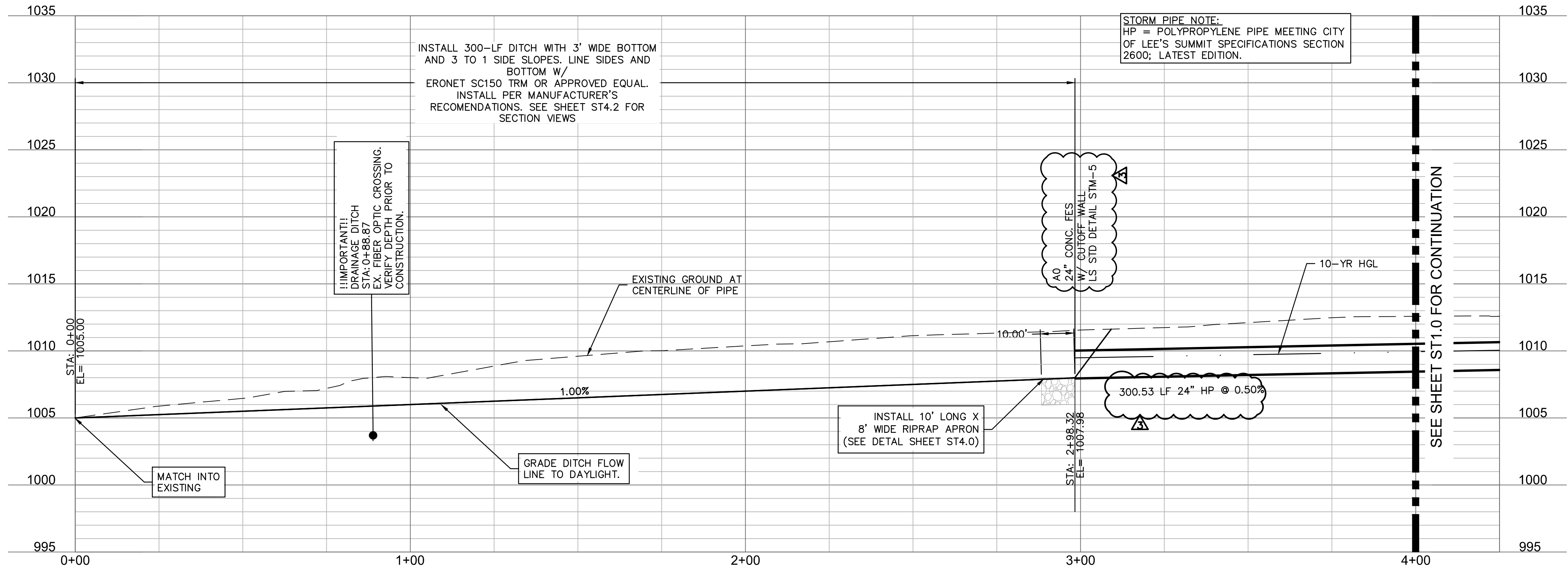
STORM PIPE NOTE:
HP = POLYPROPYLENE PIPE MEETING CITY
OF LEE'S SUMMIT SPECIFICATIONS SECTION
2600; LATEST EDITION.

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XREFS: V_X80U_81450 C_PBASE_81450 T_PBASE_81450
USER: rjeppson
C_TBLK_22x34_81450



DRIANAGE DITCH AND PUBLIC STORM LINE A



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STATE OF MISSOURI

RYAN V. JEPSON
NUMBER
PE-2012024241
7-24-19
PROFESSIONAL ENGINEER
RYAN V. JEPSON
PROFESSIONAL ENGINEER
MO# PE-2012024241

REV. NO.	DATE	REVISIONS DESCRIPTION
1	07/19/2019	ENGR. REVIEW COMMENTS

SE OLDHAM PARKWAY
DRAINAGE DITCH PLAN & PROFILE

THE PRINCETON SENIOR LIVING
SE OLDHAM PARKWAY

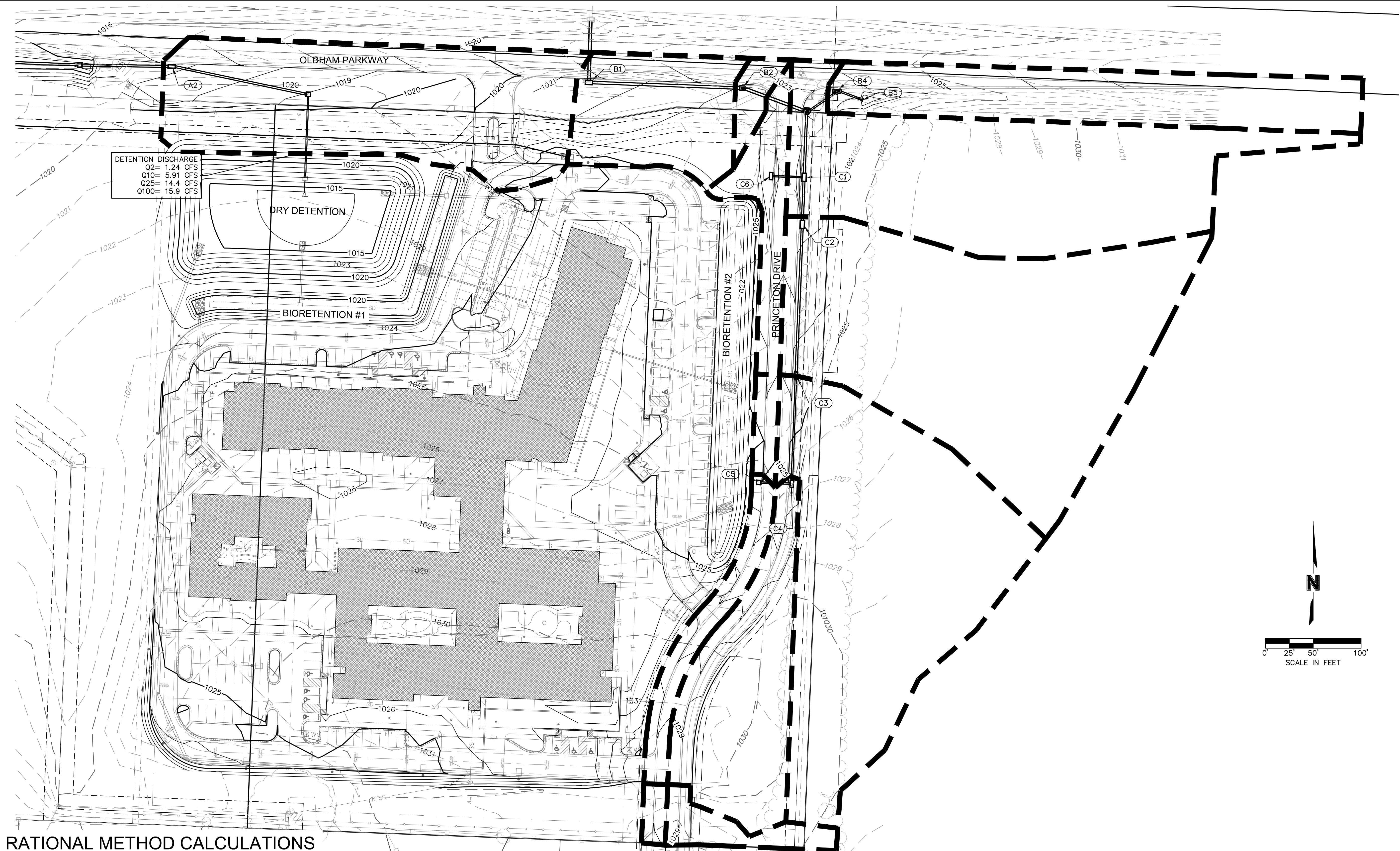
LEE'S SUMMIT, MISSOURI

2019

SHEET
ST1.4

drawn by: RPL
designed by: RVL
checked by: JLR
project no.: 018-1450
drawing no.: C_STM_PROF_81450
date: 07.19.19

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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	1.21	0.43	0.78	0.51	0.56	0.62	0.64	5.00	5.41	7.35	8.53	9.40	10.32	3.36	4.57	5.83	7.00	8.02
B1 CURB INLET	0.47	0.12	0.35	0.45	0.49	0.54	0.56	5.00	5.41	7.35	8.53	9.40	10.32	1.14	1.55	1.97	2.37	2.71
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	0.23	0.13	0.10	0.63	0.69	0.76	0.79	5.00	5.41	7.35	8.53	9.40	10.32	0.78	1.07	1.36	1.64	1.87
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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STATE OF MISSOURI

RYAN V. JEPSON

NUMBER

PE-2012024241

PROFESSIONAL ENGINEER

RYAN V. JEPSON

PROFESSIONAL ENGINEER

MO# PE-2012024241

7-24-19

SE OLDHAM PARKWAY & PRINCETON DRIVE
DRAINAGE AREA MAP

THE PRINCETON SENIOR LIVING
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

drawn by: RPL
designed by: RVL
checked by: JLR
project no.: 018-1450
drawing no.: C_DRN_81450
date: 07.19.19

REVISIONS

2019

SHEET

ST3.0

DWG: F:\2018\1001-1500\018-1450\40-Design\AutoCAD\Final_Plans\Sheets\GNVC\PUBLIC_STORM\C_CALC_81450.DWG
DATE: Jul 24, 2019 3:07pm
USER: rjeppson

100-YEAR PUBLIC STORM SEWER HYDRAULIC CALCULATIONS

MyReport

Line No.	Line ID	Line Length	Line Size	n-val Pipe	Invert Dn	Invert Up	Line Slope	Gnd/Rim El Dn	Gnd/Rim El Up	HGL Dn	HGL Up	Vel Ave	Defl Ang	J-Loss Coeff	Minor Loss	Energy Loss	Known Q	Flow Rate	
		(ft)	(in)		(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(ft/s)	(Deg)		(ft)	(ft)	(cfs)	(cfs)	
1	EX 30-IN. RCP	61.411	30	0.013	1014.45	1015.77	2.15	0.00	1021.42	1015.74	1017.69	10.14	91.614	1.50 z	1.44	0.000	2.71	31.81	
2	P-B2	159.969	30	0.012	1015.97	1016.77	0.50	1021.42	1023.07	1017.87	1018.67	7.26	-89.493	0.52	0.43	0.799	0.56	29.10	
3	P-B3	67.970	30	0.013	1016.97	1017.33	0.53	1023.07	1023.05	1019.10	1019.37	6.53	17.292	0.96	0.66	0.321	0.00	28.54	
4	P-C1	69.240	24	0.012	1017.83	1018.19	0.52	1023.05	1022.50	1020.03	1020.63	7.24	72.806	1.50	1.22	0.596	4.43	22.73	
5	P-C2	49.270	24	0.012	1018.39	1018.64	0.51	1022.50	1022.78	1021.85	1022.06	5.16	0.524	0.50	0.21	0.216	5.73	16.21	
6	C3	158.010	24	0.012	1018.84	1019.63	0.50	1022.78	1024.35	1022.27	1022.56	3.34	-0.523	0.50	0.09	0.289	4.87	10.48	
7	P-C4	113.126	18	0.012	1020.13	1020.70	0.50	1024.35	1025.63	1022.65	1022.92	3.17	0.000	1.50	0.24	0.275	3.74	5.61	
8	P-C5	34.500	15	0.013	1020.95	1021.54	1.71	1025.63	1025.64	1023.16	1023.19	1.52	90.000	1.00	0.04	0.029	1.87	1.87	
9	P-B4	34.680	18	0.012	1018.33	1019.07	2.13	1023.05	1024.18	1020.03	1020.00 j	4.17	-53.320	1.09 z	n/a	0.136	4.28	5.81	
10	P-B5	26.040	18	0.012	1019.57	1021.10	5.88	1024.18	1022.70	1020.00	1021.56	3.48	43.121	1.00 z	0.17	0.000	1.53	1.53	
11	C6	34.500	15	0.013	1018.39	1018.56	0.49	1022.50	1022.49	1021.85	1021.88	1.70	90.004	1.00	0.05	0.036	2.09	2.09	
12	P-A1	300.530	24	0.012	1007.98	1009.48	0.50	1010.98	1013.61	1009.98	1012.85	7.61	2.122	0.15	0.14	2.885	0.00	23.92	
13	P-A2	95.970	24	0.012	1009.68	1010.16	0.50	1013.61	1016.78	1012.98	1013.90	7.61	0.000	0.63	0.57	0.915	8.02	23.92	
14	P-A3	140.170	24	0.012	1010.36	1011.06	0.50	1016.78	1019.05	1014.46	1015.05	5.06	21.462	0.94	0.37	0.590	0.00	15.90	
Project File: PUBLIC STORM 100-YR.stm											Number of lines: 14				Date: 7/24/2019				
NOTES: ** Critical depth																			

Storm Sewers

100-YEAR PUBLIC STORM SEWER INLET CALCULATIONS

Inlet Report

Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet			Gutter								Inlet			Byp Line No
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)		
1	B1	2.71*	0.00	2.70	0.01	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.22	9.55	0.82	0.78	9.5	13	
2	B2	0.56*	0.00	0.56	0.00	Curb	0.5	4.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.13	5.11	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	0.013	0.00	0.00	0.00	0.00	0.0	Off	
4	C1	4.43*	1.35	5.78	0.00	Curb	0.5	6.40	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.013	0.46	21.67	1.25	21.67	9.5	Off	
5	C2	5.73*	0.49	5.30	0.92	Curb	0.5	8.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.29	13.13	0.94	6.24	9.5	4	
6	C3	4.87*	0.32	4.71	0.49	Curb	0.5	8.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.27	12.26	0.91	4.82	9.5	5	
7	C4	3.74*	0.00	3.42	0.32	Curb	0.5	7.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.23	10.28	0.89	3.83	9.5	6	
8	C5	1.87*	0.00	1.59	0.28	Curb	0.5	4.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.18	7.86	0.89	3.59	9.5	11	
9	B4	4.28*	0.00	3.85	0.43	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.25	11.38	0.91	4.57	9.5	4	
10	B5	1.53*	0.00	1.53	0.00	Hdwl	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	
11	C6	2.09*	0.28	2.37	0.00	Curb	0.5	5.60	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.013	0.28	12.76	1.07	12.76	9.5	Off	
12	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	0.013	0.00	0.00	0.00	0.00	0.0	Off	
13	A2	8.02*	0.01	5.64	2.39	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.31	14.47	1.00	9.10	9.5	Off	
14	A3	0.00	15.90	0.00	15.90	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	
Project File: PUBLIC STORM 100-YR.stm														Number of lines: 14					Run Date: 7/24/2019				
NOTES: Inlet N-Values = 0.016; Known Qs only; * Indicates Known Q added. All curb inlets are throat.																							

Storm Sewers v12.09

10-YEAR PUBLIC STORM SEWER HYDRAULIC CALCULATIONS

MyReport

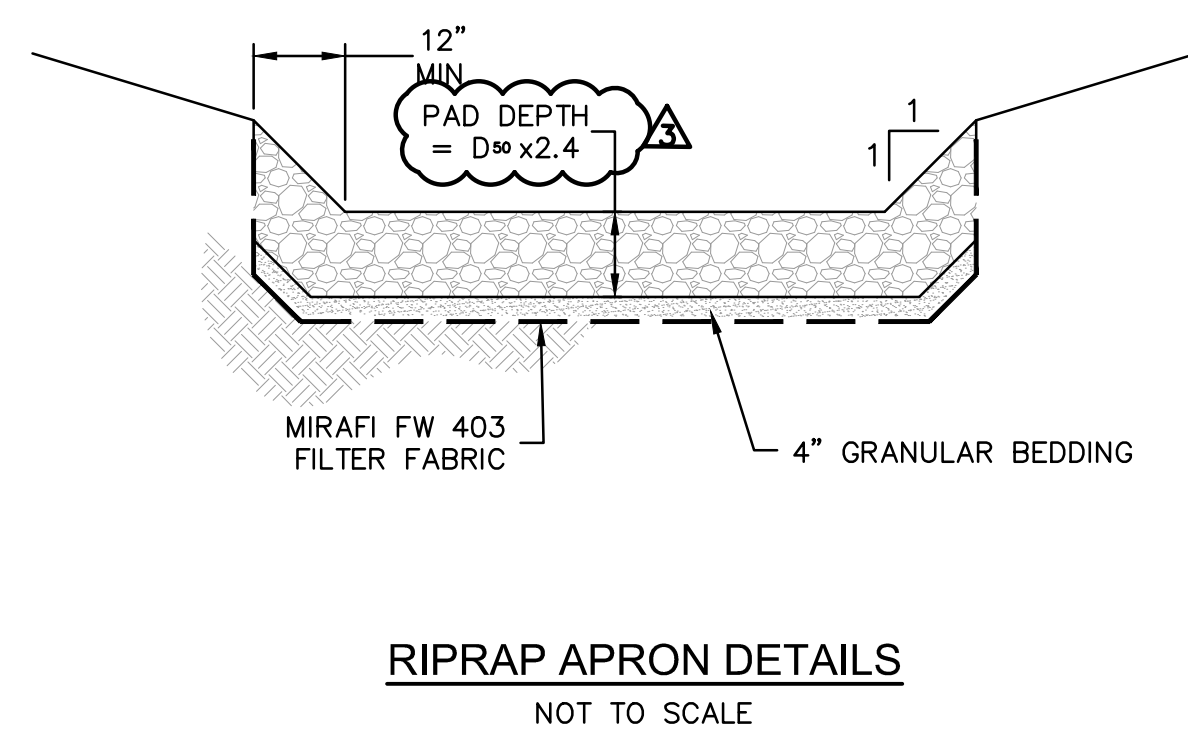
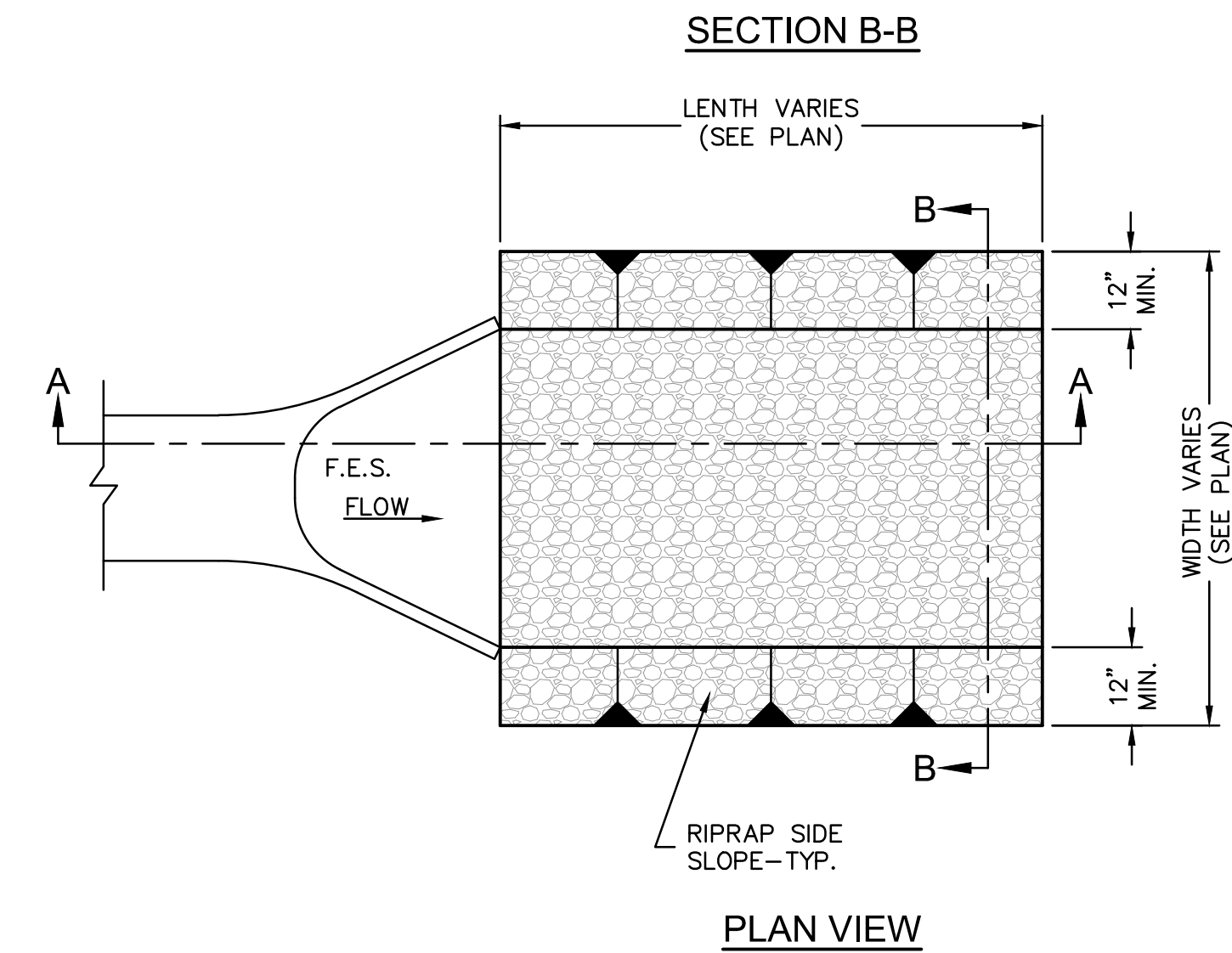
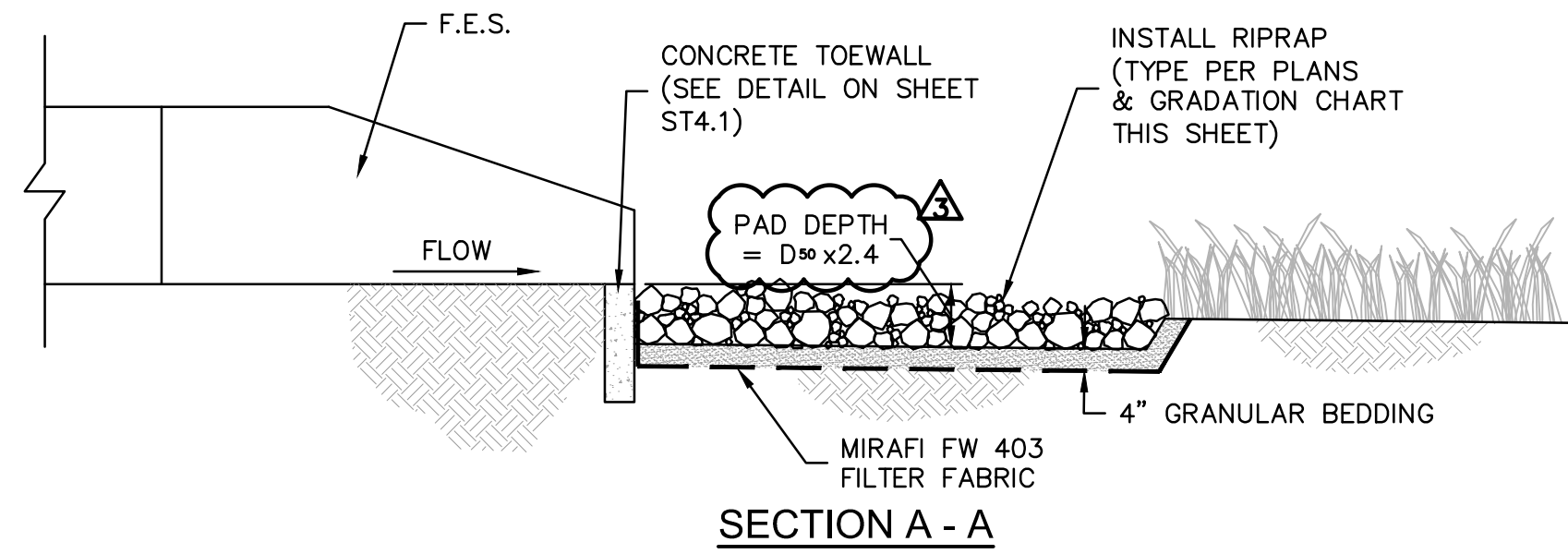
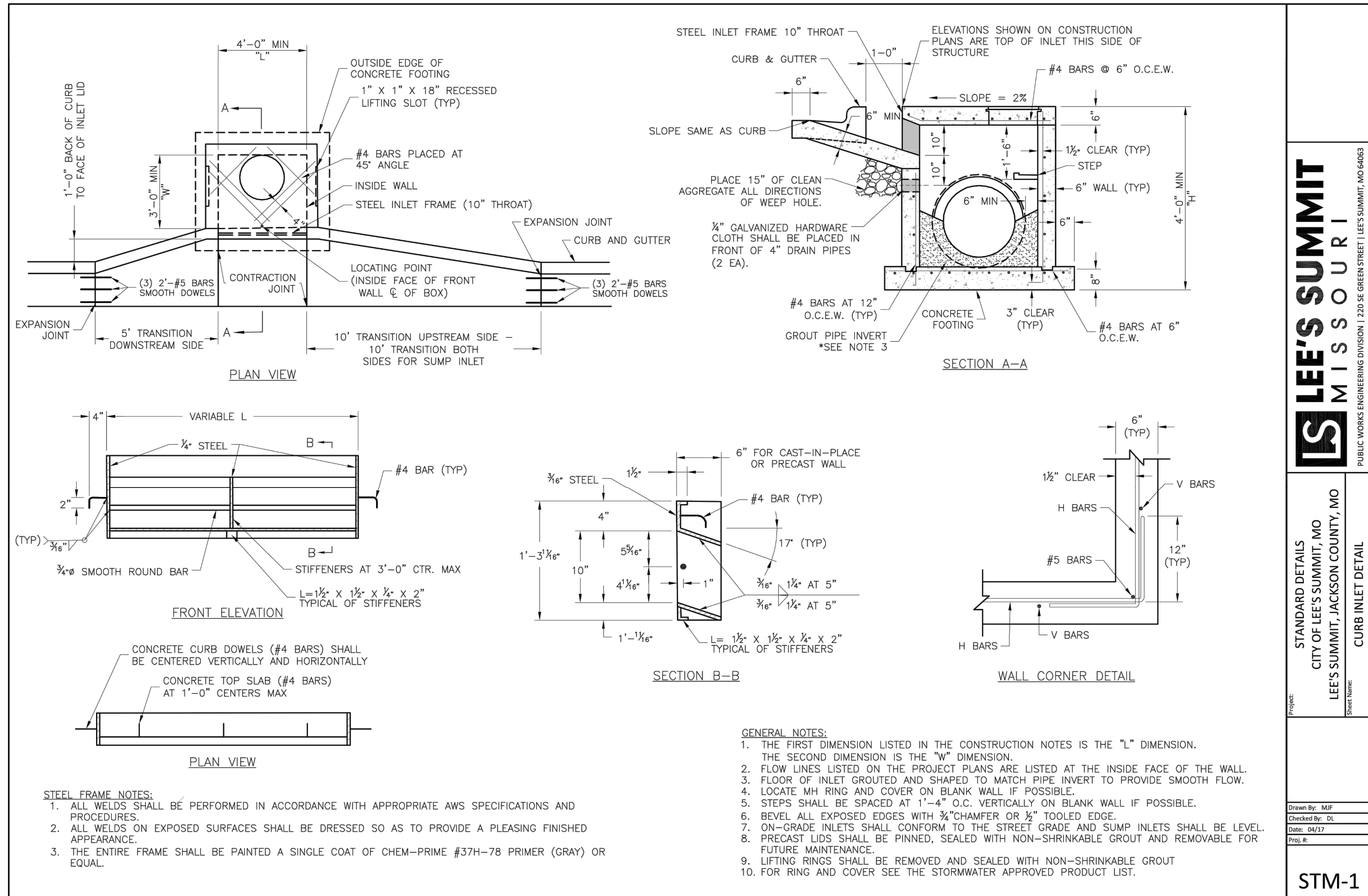
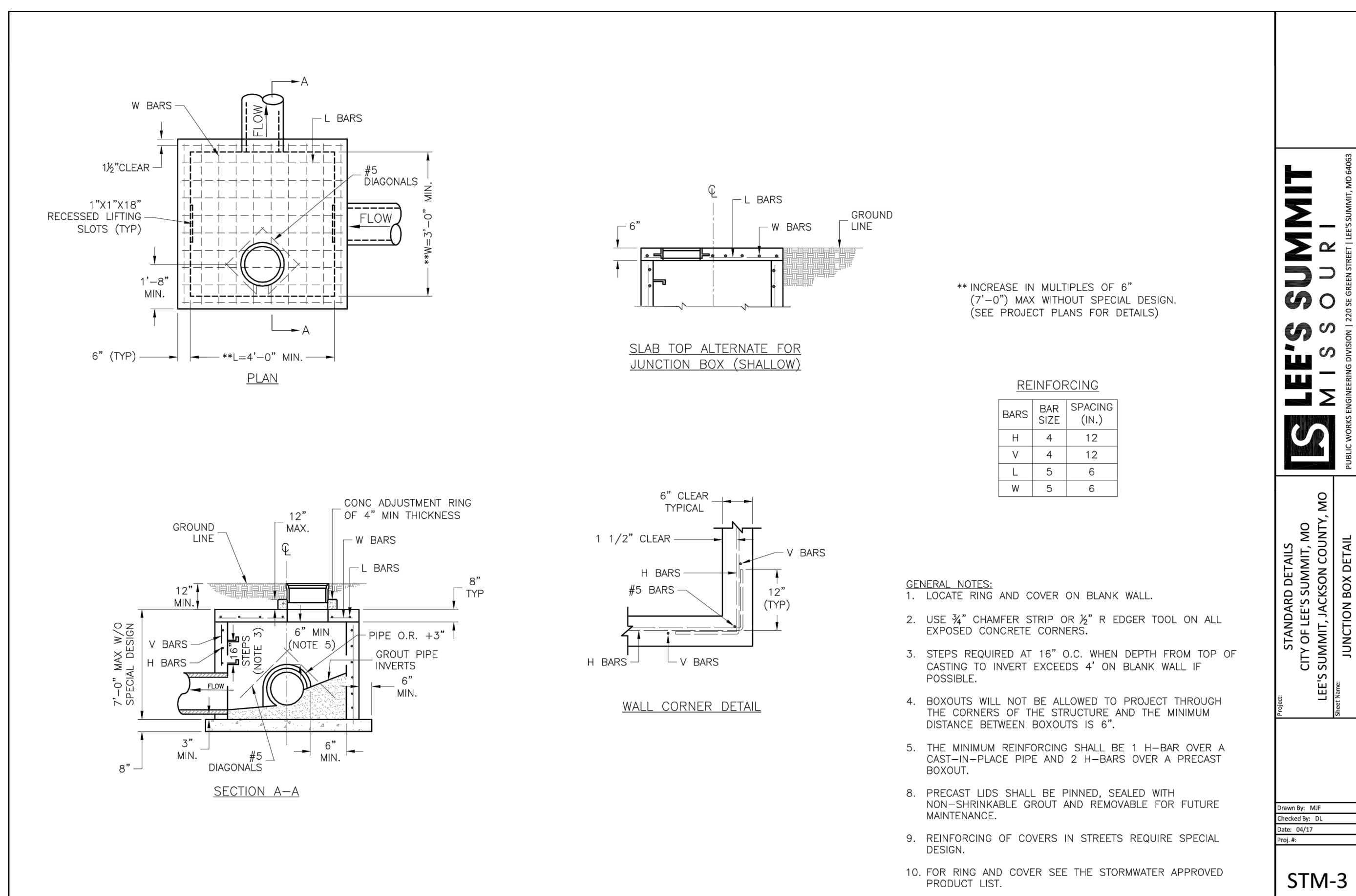
Line No.	Line ID	Line Length	Line Size	n-val Pipe	Invert Dn	Invert Up	Line Slope	Gnd/Rim El Dn	Gnd/Rim El Up	HGL Dn	HGL Up	Vel Ave	Defl Ang	J-Loss Coeff	Minor Loss	Energy Loss	Known Q	Flow Rate	
		(ft)	(in)		(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(ft/s)	(Deg)		(ft)	(ft)	(cfs)	(cfs)	
1	EX 30-IN. RCP	61.411	30	0.013	1014.45	1015.77	2.15	0.00	1021.42	1015.39	1017.21	8.43	91.614	1.50 z	0.89	0.000	1.55	18.03	
2	P-B2	159.969	30	0.012	1015.97	1016.77	0.50	1021.42	1023.07	1017.26	1018.14	6.23	-89.493	0.52 z	0.29	0.000	0.32	16.48	
3	P-B3	67.970	30	0.013	1016.97	1017.33	0.53	1023.07	1023.05	1018.28	1018.69	6.07	17.292	0.96 z	n/a	0.000	0.00	16.16	
4	P-C1	69.240	24	0.012	1017.83	1018.19	0.52	1023.05	1022.50	1019.10	1019.48	6.07	72.806	1.50 z	0.84	0.000	2.49	12.85	
5	P-C2	49.270	24	0.012	1018.39	1018.64	0.51	1022.50	1022.78	1019.48	1019.72 j	5.27	0.524	0.50 z	n/a	0.000	3.23	9.17	
6	C3	158.010	24	0.012	1018.84	1019.63	0.50	1022.78	1024.35	1019.72	1020.49 j	4.52	-0.523	0.50 z	n/a	0.000	2.74	5.94	
7	P-C4	113.126	18	0.012	1020.13	1020.70	0.50	1024.35	1025.63	1020.79	1021.38	4.20	0.000	1.50 z	n/a	0.000	2.13	3.20	
8	P-C5	34.500	15	0.013	1020.95	1021.54	1.71	1025.63	1025.64	1021.38	1021.95 j	2.97	90.000	1.00 z	n/a	0.000	1.07	1.07	
9	P-B4	34.680	18	0.012	1018.33	1019.07	2.13	1023.05	1024.18	1018.78	1019.76	5.74	-53.320	1.09 z	n/a	0.000	2.44	3.31	
10	P-B5	26.040	18	0.012	1019.57	1021.10	5.88	1024.18	1022.70	1019.76	1021.45	4.68	43.121	1.00 z	n/a	0.000	0.87	0.87	
11	C6	34.500	15	0.013	1018.39	1018.56	0.49	1022.50	1022.49	1019.48	1019.49	1.14	90.004	1.00	0.02	0.013	1.19	1.19	
12	P-A1	300.530	24	0.012	1007.98	1008.48	0.50	1010.98	1013.61	1009.27	1010.64 j	5.22	2.122	0.15 z	n/a	0.000	0.00	10.48	
13	P-A2	95.970	24	0.012	1009.68	1010.16	0.50	1013.61	1016.78	1010.80	1011.32	5.66	0.000	0.63 z	0.30	0.000	4.57	10.48	
14	P-A3	140.170	24	0.012	1010.36	1011.06	0.50	1016.78	1019.05	1011.32	1011.92 j	4.28	21.462	0.94 z	n/a	0.000	0.00	5.91	
Project File: PUBLIC STORM 10-YR.stm											Number of lines: 14				Date: 7/24/2019				
NOTES: ** Critical depth																			

Storm Sewers

10-YEAR PUBLIC STORM SEWER INLET CALCULATIONS

Inlet Report

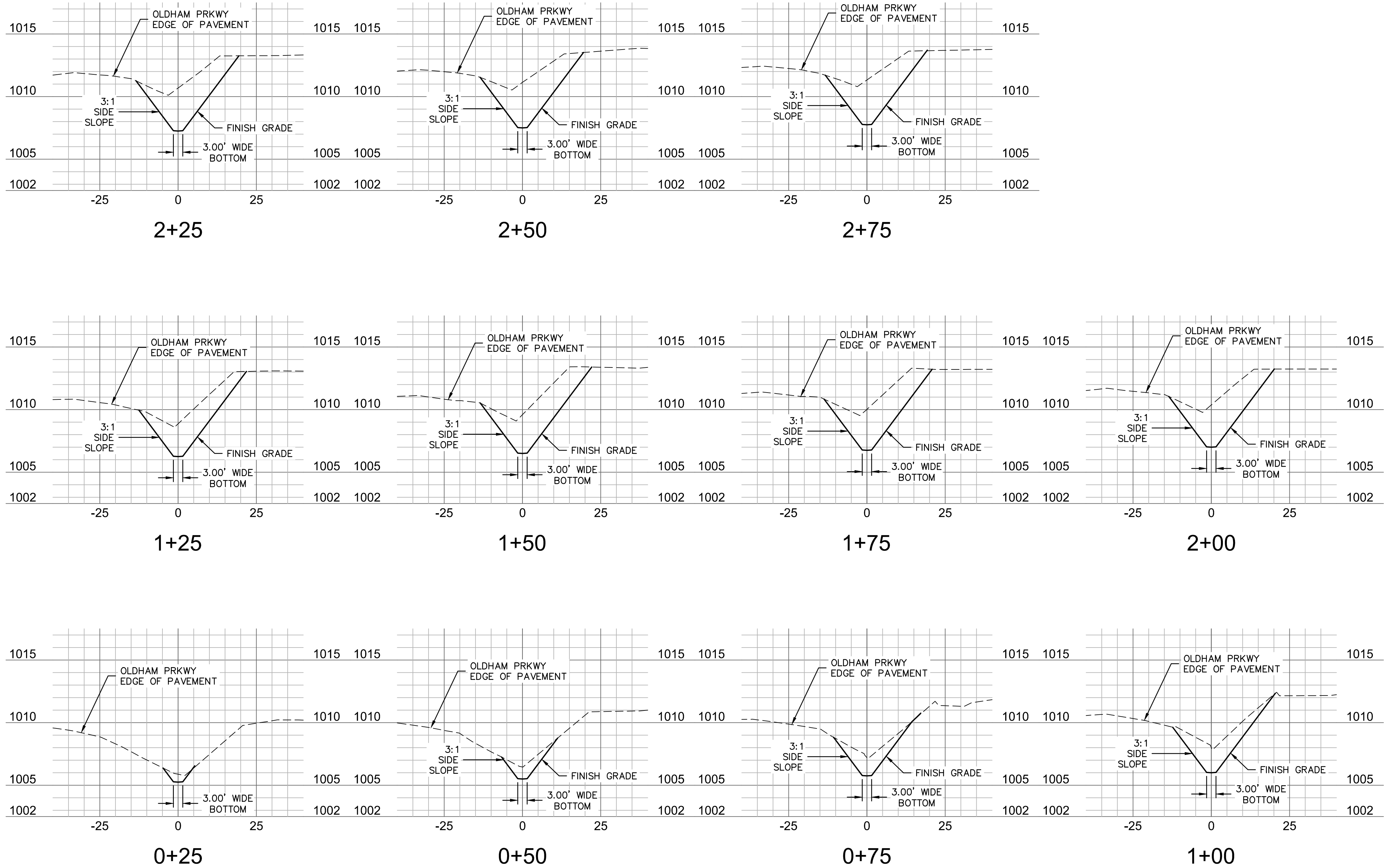
Line No	Inlet ID	Q = CIA	Q carry	Q capt	Q Byp	Junc Type	Curb Inlet		Grate Inlet		Gutter								Inlet			Byp Line No	
		(cfs)	(cfs)	(cfs)	(cfs)		Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	So (ft/ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)		
1	B1	1.55*	0.00	1.55	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	7.68	0.79	0.00	9.5	13	
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	0.013	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	0.013	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	1.07*	0.00	1.06	0.01	Curb	0.5	4.00	0.00	0.00	0.00	0.013	1.33	0.039	0.020	0.013	0.15	6.30	0.82	0.81	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	0.013	0.00	0.00	0.00	0.00	0.0	Off	
11	C6	1.19*	0.01	1.20	0.00	Curb	0.5	5.60	0.00	0.00	0.00	Sag	1.33	0.039	0.020	0.013	0.19	8.11	0.98	8.11	9.5	Off	
12	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	0.013	0.00	0.00	0.00	0.00	0.0	Off	
13	A2	4.57*	0.00	4.02	0.55	Curb	0.5	7.00	0.00	0.00	0.00	0.010	1.33	0.039	0.020	0.013	0.26	11.67	0.92	5.06	9.5	Off	
14	A3	0.00	0.91	0.00	5.91	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	
Project File: PUBLIC STORM 10-YR.stm														Number of lines: 14					Run Date: 7/24/2019				
NOTES: Inlet N-Values = 0.016; Known Qs only; * Indicates Known Q added. All curb inlets are throat.																							



CLASSIFICATION & GRADATION OF RIPRAP & RIVER GRAVEL			
RIP-RAP DESIGNATION	PERCENT (%) SMALLER THAN GIVEN BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	*D ₅₀ (INCHES)
CLASS III	85-100	18	10
	50-85	13	
	15-50	9.5	
	2-15	7	

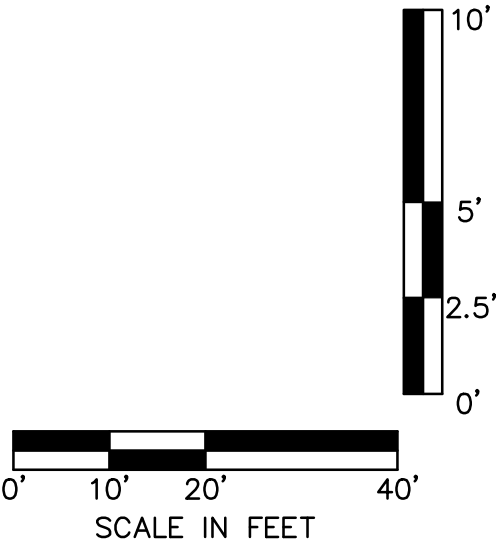
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DATE: Jul 24, 2019 3:10pm XREFS: C_TBLK_22x34_81450 C_PBASE_81450 V_TOPO_81450

USER: rjeppson



OLDHAM PARKWAY DRAINAGE DITCH SECTION VIEWS

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



SE OLDHAM PARKWAY & SE PRINCETON DRIVE
DRAINAGE DITCH CROSS SECTIONS

THE PRINCETON SENIOR LIVING
SE OLDHAM PARKWAY

LEE'S SUMMIT, MISSOURI

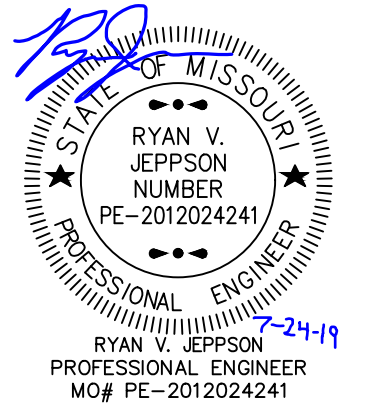
2019

REVISIONS DESCRIPTION

DATE

REV. NO.

REVISIONS



olson

Olson Engineering MO State Certificate of Authority #001592
Olson Landscape Architecture MO State Cert. of Authority #200500285
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drawn by: RPL
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checked by: JLR
project no.: 018-1450
drawing no.: C_STM_DTLS_81450
date: 07.19.19

SHEET
ST4.2