

WGM
GROUP

PRELIMINARY

COVER SHEET
CREGG STREET IMPROVEMENTS
MISSOULA, MONTANA

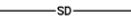
JUNE 9, 2016

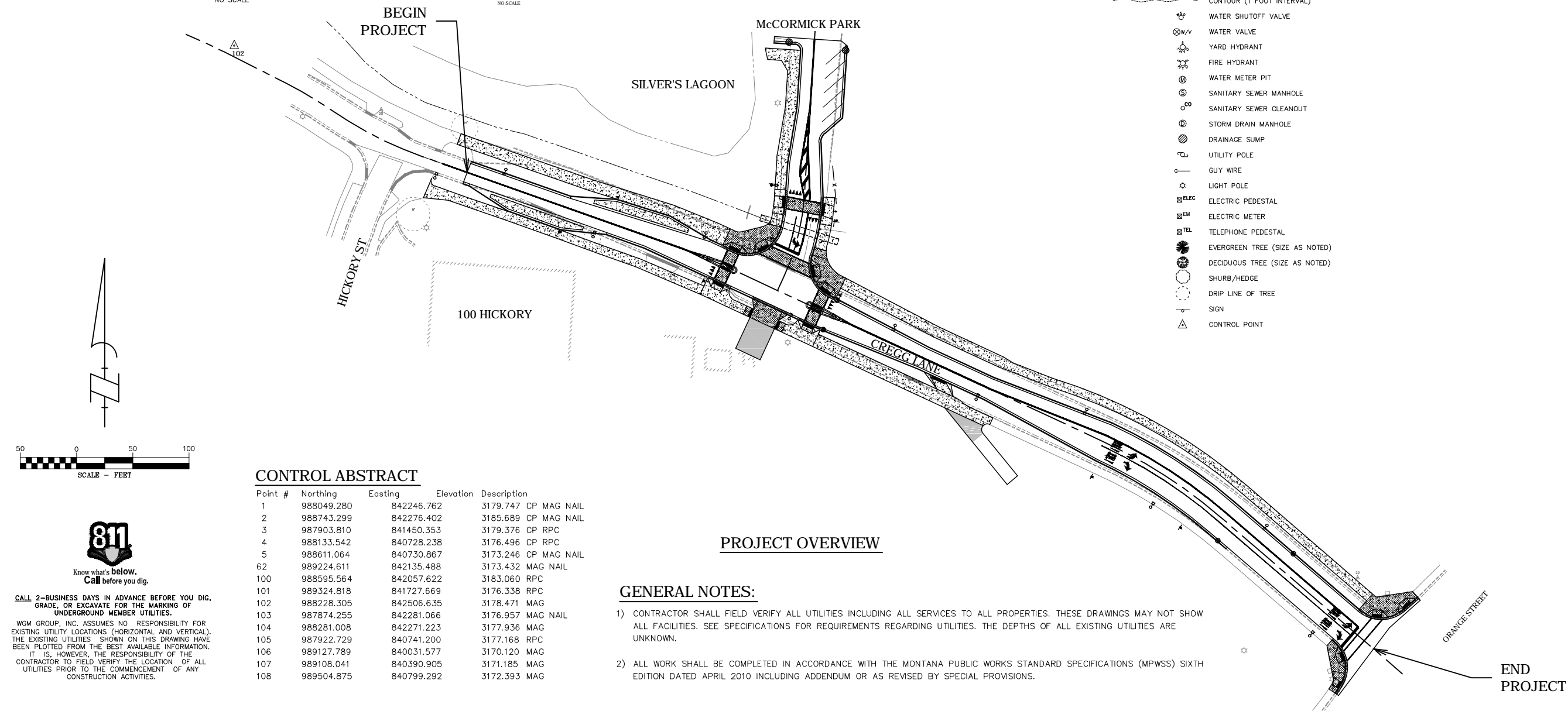
SHEET 1 OF 22



SHEET NO.
1
2-3
4
5-8
9-10
11-12
13-14
15-17
18-22

	EXTERIOR BUILDING WALL
	ASPHALT
	CONCRETE SIDEWALK
	EDGE OF ASPHALT
	PIN DOWN CURB
	CURB AND GUTTER
	CURB AND GUTTER W/DRIVEWAY OPENING
	EDGE OF GRAVEL
	WATER MAIN
	SANITARY SEWER MAIN
	STORM DRAIN
	AERIAL POWER LINE
	BURIED ELECTRIC LINE
	BURIED TELEPHONE LINE
	GAS MAIN
	FENCE
	EDGE OF WATER
	GUARD RAIL
	CONTOUR (1 FOOT INTERVAL)
	WATER SHUTOFF VALVE
	WATER VALVE
	YARD HYDRANT
	FIRE HYDRANT
	WATER METER PIT
	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEANOUT
	STORM DRAIN MANHOLE
	DRAINAGE SUMP
	UTILITY POLE
	GUY WIRE
	LIGHT POLE
	ELECTRIC PEDESTAL
	ELECTRIC METER
	TELEPHONE PEDESTAL
	EVERGREEN TREE (SIZE AS NOTED)
	DECIDUOUS TREE (SIZE AS NOTED)
	SHRUB/HEDGE
	DRIP LINE OF TREE
	SIGN
	CONTROL POINT

	CURB AND GUTTER
	8" THICK CURB AND GUTTER
	MEDIAN CURB
	CONCRETE SIDEWALK
	8" THICK CONCRETE
	ASPHALT
	HAND RAIL
	STORM DRAIN MAIN
	CULVERT
	DRAINAGE SUMP (SOLID LID)
	DRAINAGE SUMP (CURB BACKED LID)
	DRAINAGE INLET (CURB BACKED LID)
	DRAINAGE SUMP (SLOTTED LID)
	SIGN
	ADA TRUNCATED DOMES
	DECORATIVE LIGHT



Point #	Northing	Easting	Elevation	Description
1	988049.289	842246.762	3179.747	CP MAG NAIL
2	988743.290	842276.402	3185.689	CP MAG NAIL
3	987903.810	841450.353	3179.376	CP RPC
4	988133.542	840728.238	3176.496	CP RPC
5	988611.064	840730.867	3173.246	CP MAG NAIL
62	989224.611	842135.488	3173.432	MAG NAIL
100	988595.564	842057.622	3183.060	RPC
101	989324.818	841727.669	3176.338	RPC
102	988228.305	842506.635	3178.471	MAG
103	987874.255	842281.066	3176.957	MAG NAIL
104	988281.008	842271.223	3177.936	MAG
105	987922.729	840741.200	3177.168	RPC
106	989127.789	840031.577	3170.120	MAG
107	989108.041	840390.905	3171.185	MAG
108	989504.875	840799.292	3172.393	MAG

- 1) CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES INCLUDING ALL SERVICES TO ALL PROPERTIES. THESE DRAWINGS MAY NOT SHOW ALL FACILITIES. SEE SPECIFICATIONS FOR REQUIREMENTS REGARDING UTILITIES. THE DEPTHS OF ALL EXISTING UTILITIES ARE UNKNOWN.
- 2) ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) SIXTH EDITION DATED APRIL 2010 INCLUDING ADDENDUM OR AS REVISED BY SPECIAL PROVISIONS.

PLOTTED: 6/13/2016
SAVED: 6/9/2016

1111 EAST BROADWAY
MISSOULA, MONTANA 59802
TEL: 406-728-4611
FAX: 406-728-2476
WWW.WMGGROUP.COM
50% PLANS

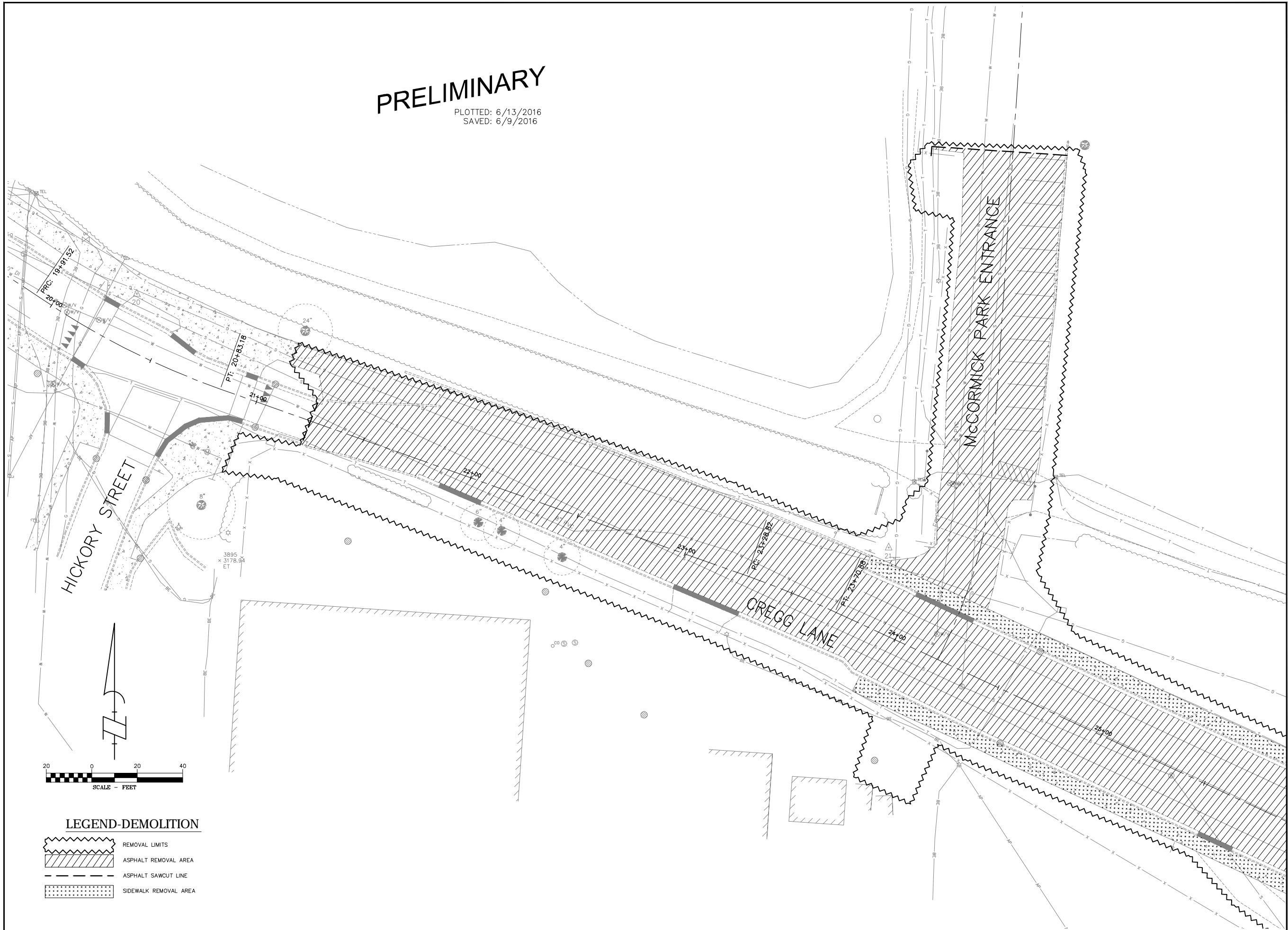
DEMOLITION PLANS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

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LAYOUT: SH118
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

JUNE 9, 2016

2 OF 22





DEMOLITION PLANS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

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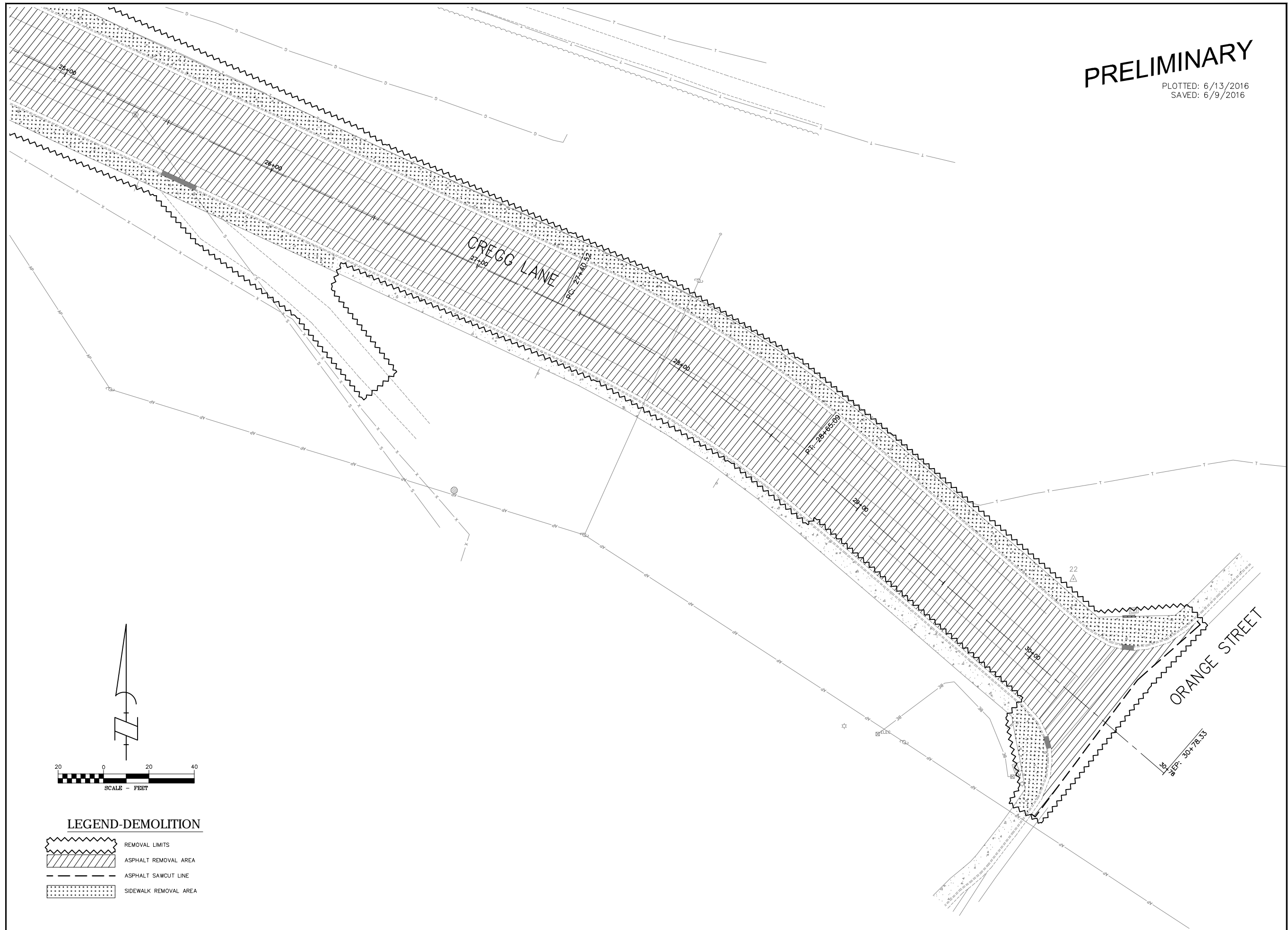
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DATE:

JUNE 9, 2016

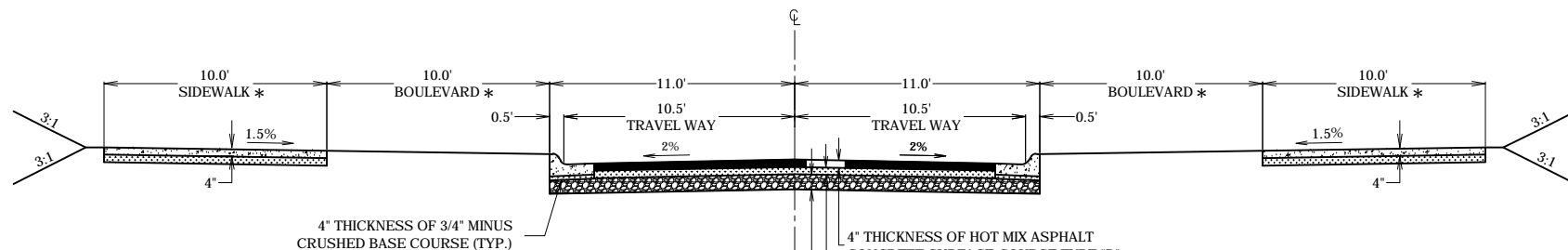
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PLOTTED: 6/13/2016
DATE: 6/13/2016

PLOTTED: 6/13/2016
 SAVED: 6/9/2016



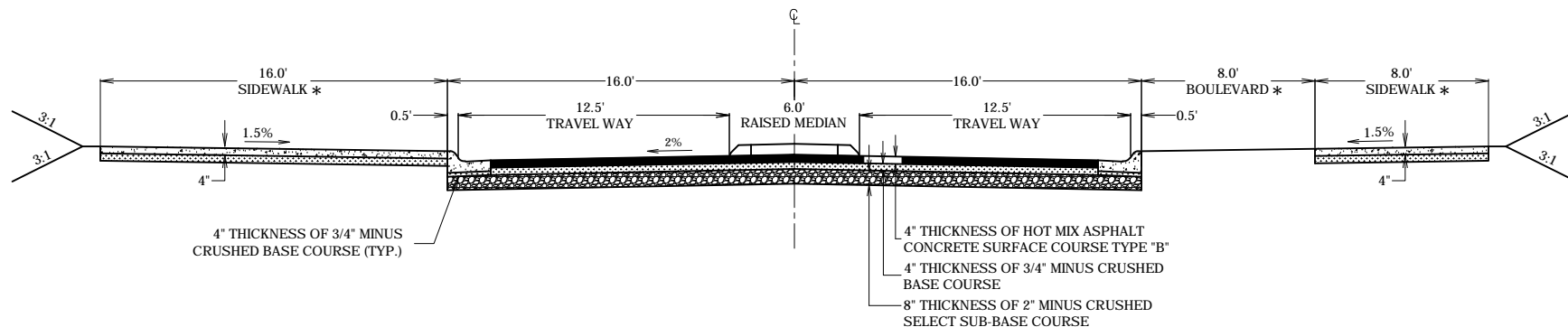
TYPICAL SECTIONS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA



TYPICAL STREET SECTION 1
CREGG LANE
NO SCALE

STA 21+25.00 TO STA 22+19.34 TYP. NO. 1
STA 22+19.34 TO STA 23+70.88 TRANS. TYP. NO. 1 TO TYP. NO. 2
STA 25+64.18 TO STA 26+28.02 TYP. NO. 1
STA 26+28.02 TO STA 27+40.52 TRANS. TYP. NO. 1 TO TYP. NO. 3

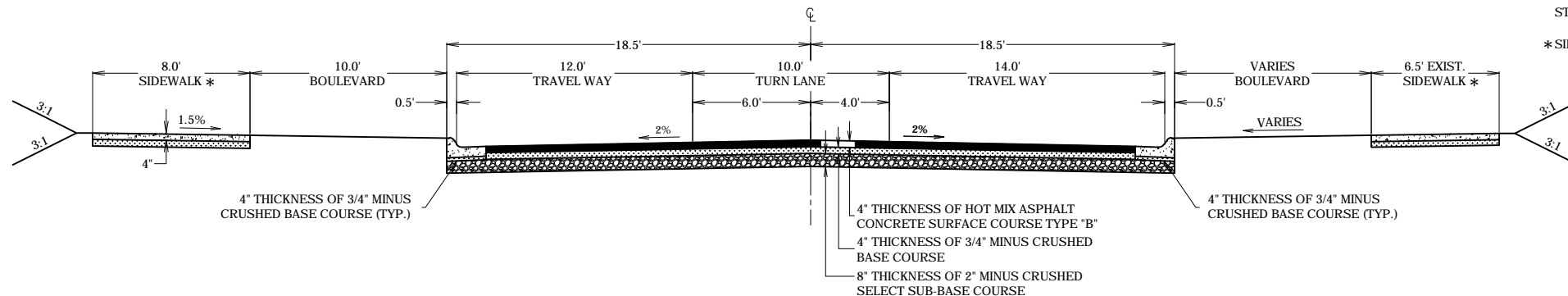
* SIDEWALK AND BOULEVARD WIDTH VARY, SEE GEOMETRIC LAYOUT



TYPICAL STREET SECTION 2
CREGG LANE
NO SCALE

STA 23+70.88 TO STA 24+64.18 TYP. NO. 2
STA 24+64.18 TO STA 25+64.18 TRANS. TYP. NO. 2 TO TYP. NO. 1

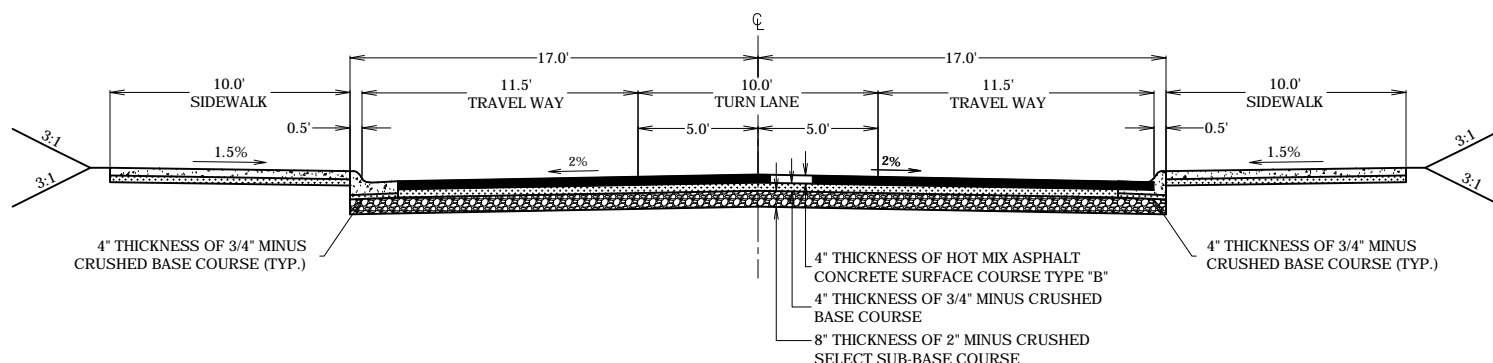
* SIDEWALK AND BOULEVARD WIDTH VARY, SEE GEOMETRIC LAYOUT



TYPICAL STREET SECTION 3
CREGG LANE
NO SCALE

STA 27+40.52 TO STA 30+44.36 TYP. NO. 3

* SIDEWALK AND BOULEVARD WIDTH VARY, SEE GEOMETRIC LAYOUT



TYPICAL STREET SECTION 4
McCORMICK PARK ENTRANCE
NO SCALE

STA 1+16.27 TO STA 1+88.14 TYP. NO. 4

REVISIONS:		
NO.	DESCRIPTION	DATE

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FILE No: 150117ST.dwg
FILE PATH: W:\Projects\150117\CAD Data\Design
LAYOUT: SH19
SURVEYED: WGM GROUP
DESIGN: BLS
DRAFT: EDJ
APPROVE: MRM/TI
DATE:

JUNE 9, 2016

50% PLANS
PRELIMINARY
PLOTTED: 6/13/2016
SAVED: 6/9/2016

DETAILS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

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SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

JUNE 9, 2016

BUS-STOP PULL-OUT DESIGN ELEMENTS AND GUIDELINES

CONSTRUCTION NOTES:

- (1) TYPICAL SIDEWALK CONSTRUCTED AS PER STD-141, MAXIMUM CROSS-SLOPE SHALL NOT EXCEED TWO (2%) PERCENT OR A RATIO OF ONE-TO-FIFTY (1:50)
- (2) TYPICAL FILLET CONSTRUCTED PARALLEL TO CURB SECTIONS FOR A DISTANCE OF TWELVE (12') FEET FROM INTERSECTING CURB FLOWLINE AT APPROACH AND DEPARTURE OF THE BUS-STOP PULL-OUT
- (3) TYPICAL "L" TYPE CURB/GUTTER CONSTRUCTED AS PER STD-121 AMENDED AS FOLLOWS:
(3A) TYPICAL "L" TYPE CURB/GUTTER (NEW - REMOVE / REPLACE) SHALL BE CONSTRUCTED AT EIGHT (8") INCHES BASE THICKNESS
(3B) TYPICAL "L" TYPE CURB/GUTTER (EXISTING - UNDISTURBED) TO REMAIN AT SIX (6") INCHES BASE THICKNESS UNLESS DIRECTED TO REMOVE / REPLACE BY CITY ENGINEER
- (4) COVE GUTTER SHALL BE TYPICAL "L" TYPE CURB RAMP AS PER STD-126 MODIFIED TO INCLUDE FOUR (4) NUMBER FOUR (#4) REBAR AND CONSTRUCTED AT EIGHT (8") INCHES BASE THICKNESS
- (5) LANDSCAPE RETAINING CURB SHALL BE INSTALLED AS PER STD-129, WHEN NEEDED / REQUIRED
- (6) FLOW LINE SHALL BE MAINTAINED THROUGH ALL CURB LINES AND ACROSS APRON TO MODIFIED "L" TYPE CURB RAMP, COVE GUTTER
- (7) APRON SHALL BE CONSTRUCTED ON A MINIMUM OF SIX (6") INCHES COMPACTED SUBGRADE AND FOUR (4") INCHES COMPACTED SELECT CRUSHED BASE AND EIGHT (8") INCHES M-4000 CONCRETE AND SHALL NOT EXCEED TWO (2%) PERCENT OR A RATIO OF ONE-TO-FIFTY (1:50) CROSS-SLOPE
- (8) ACCESSIBLE LANDING ZONE SHALL BE MINIMUM FIFTEEN (15') FEET WIDE BY FIVE (5') FEET DEEP AND LOCATED DIRECTLY ADJACENT TO PUBLIC SIDEWALK AND, WHEN / WHERE APPLICABLE AND AVAILABLE, BUS SHELTER PAD, TO ACCOMMODATE ADA COMPLIANT LIFT EQUIPMENT
- (9) ACCESSIBLE LANDING ZONE SHALL BE CONSTRUCTED SO AS TO NOT EXCEED TWO (2%) PERCENT OR A RATIO OF ONE-TO-FIFTY (1:50), IN ANY DIRECTION
- (10) LANDSCAPE RETAINING CURB CONSTRUCTED BEHIND SIDEWALK / RAMP - SIX (6") INCH WIDE BY SIX (6") INCH HIGH, PROFILED TO MATCH TYPICAL "L" TYPE CURB - LANDSCAPE RETAINING CURB CAN NOT ENCRDACH INTO CURB RAMP, LANDING AND / OR SIDEWALK, SEE STANDARD DRAWING STD-129
- (11) BEGIN / END TAPER SHALL BE A MINIMUM OF TWENTY (20') FEET FROM ANY ADJACENT DRIVEWAY, CROSSWALK OR POINT-OF-CURVATURE (PC) / POINT-OF-TANGENCY (PT) OF AN INTERSECTION
- (12) WHEN EXISTING ASPHALT IS DISTURBED ALL ASPHALT REPAIRS SHALL BE AS PER STD-127
- (13) ALL SIGNS SHALL BE FIELD LOCATED BY CITY ENGINEERING DIVISION AND SHALL CONFORM TO SIGN BASE AND MOUNTING REQUIREMENTS AS PER STD-450 AND STD-452

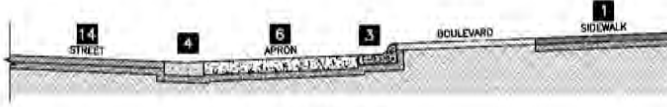
Digital Standard Drawings and other maps are available on the City website: http://www.ci.missoula.mt.us/publicworks/gis_maps.htm

MISSOULA		Bus-Stop Pull-Out Design Elements and Guidelines		(Sheet 3 of 3)
Engineering Division	<i>[Signature]</i>	Approved By City Engineer Kevin J. Slovorp	Adopted: 02/15/2011 Revised:	STD - 410

BUS-STOP PULL-OUT DESIGN ELEMENTS AND GUIDELINES



SECTION A-A
CURBSIDE
BUS-STOP LOCATION

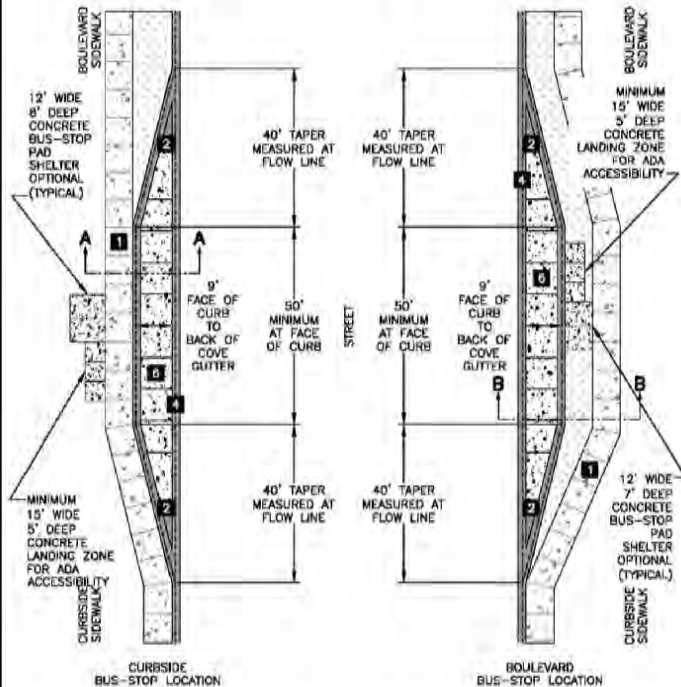


SECTION B-B
BOULEVARD
BUS-STOP LOCATION

Digital Standard Drawings and other maps are available on the City website: http://www.ci.missoula.mt.us/publicworks/gis_maps.htm

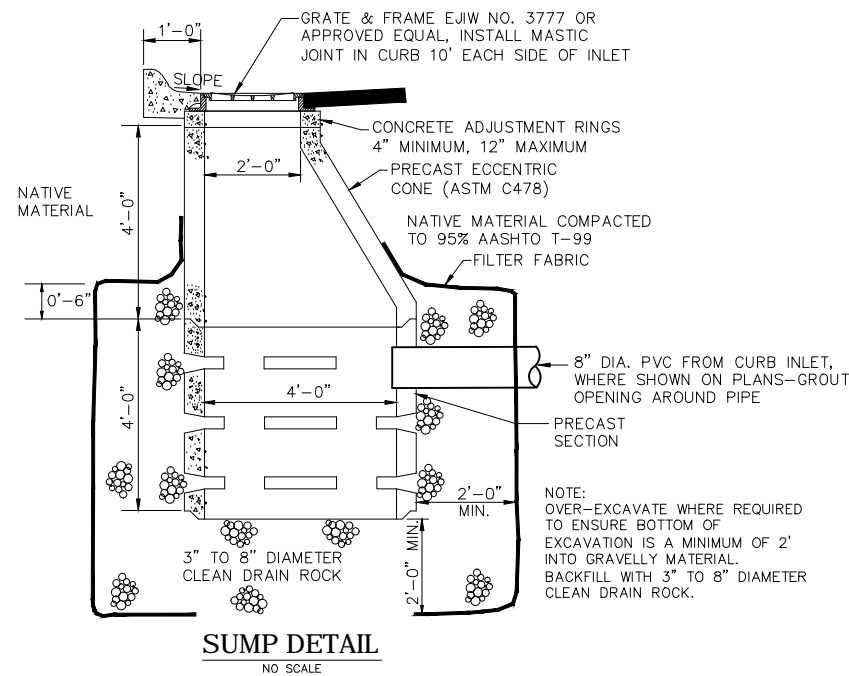
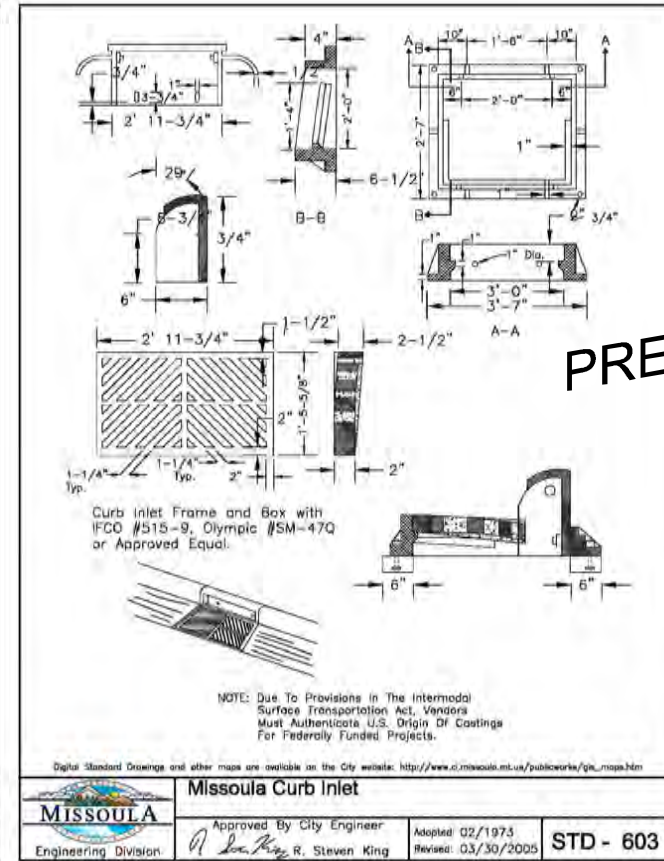
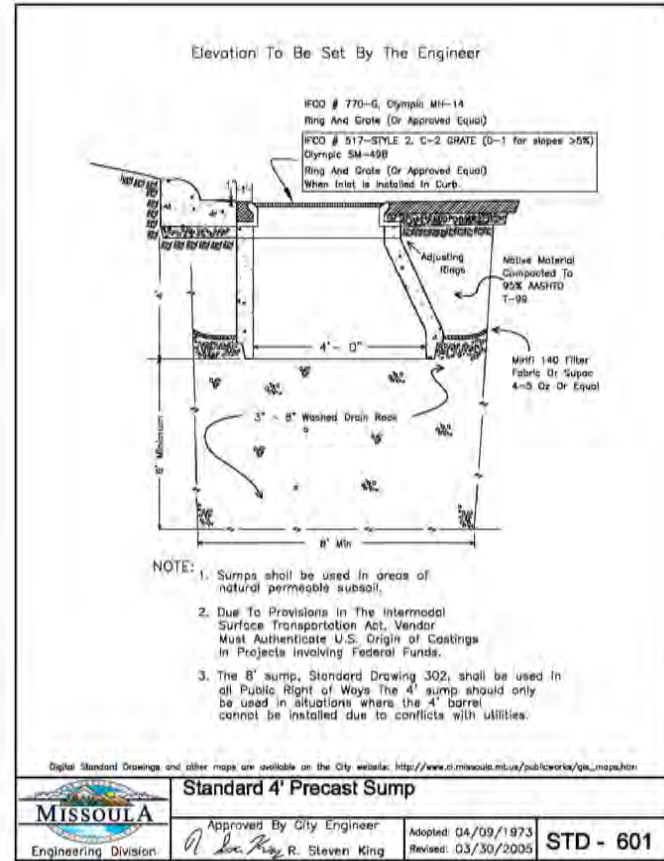
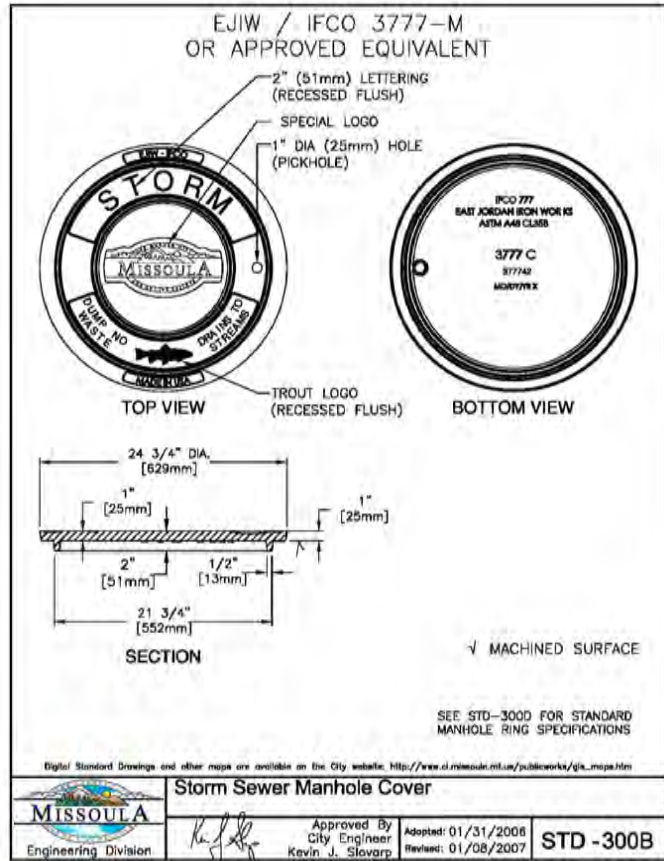
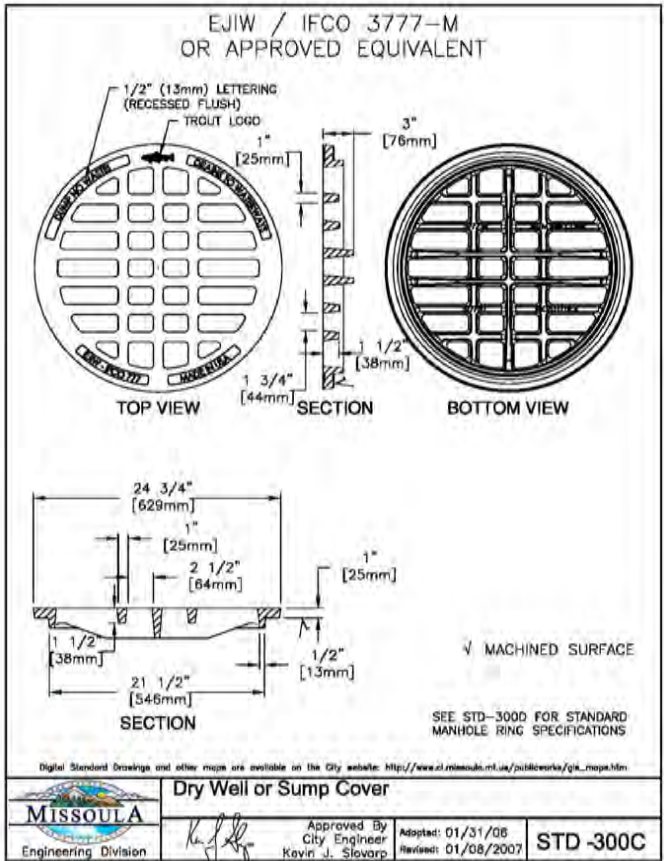
MISSOULA		Bus-Stop Pull-Out Design Elements and Guidelines		(Sheet 2 of 3)
Engineering Division	<i>[Signature]</i>	Approved By City Engineer Kevin J. Slovorp	Adopted: 02/15/2011 Revised:	STD - 410

BUS-STOP PULL-OUT DESIGN ELEMENTS AND GUIDELINES



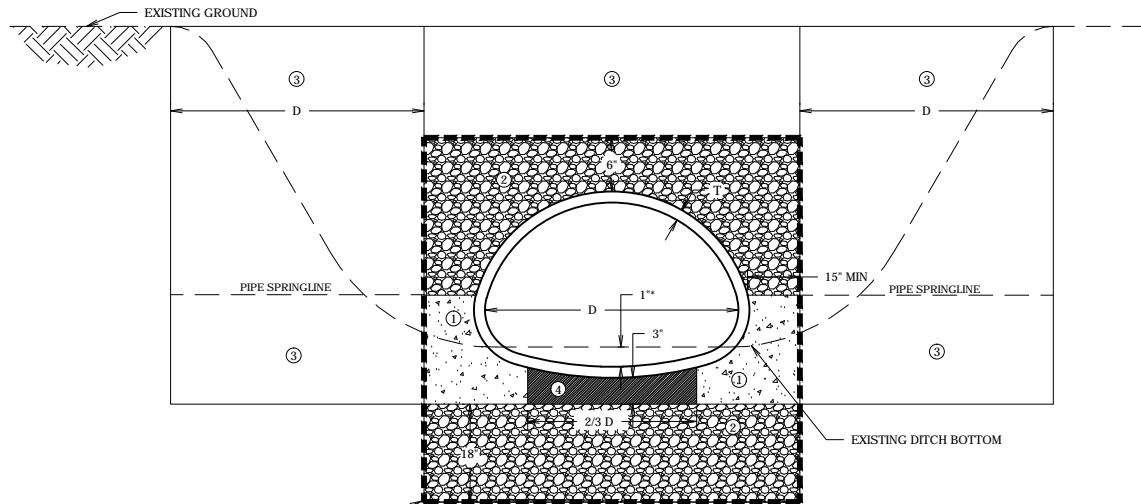
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MISSOULA		Bus-Stop Pull-Out Design Elements and Guidelines		(Sheet 1 of 3)
Engineering Division	<i>[Signature]</i>	Approved By City Engineer Kevin J. Slovorp	Adopted: 02/15/2011 Revised:	STD - 410



CULVERT INSTALLATION NOTES:

- ① (A) WITHIN RAILROAD EASEMENT - FLOWABLE FILL (MPWSS SECTION R2225) WHEN PLACING FLOWABLE FILL, CONTRACTOR RESPONSIBLE FOR PROVIDING ADEQUATE PIPE SUPPORT AND ANTI-FLOATATION IF NECESSARY. FLOWABLE FILL MAY NEED TO BE PLACED IN SEPARATE LIFTS TO PREVENT FLOATATION OR ROLLING CULVERT.
- (B) OTHER LOCATIONS - NORMAL TYPE 1 PIPE BEDDING (SECTION 02221 SPECIAL PROVISIONS)
- ② NORMAL TYPE 1 BEDDING (SECTION 02221 SPECIAL PROVISIONS)



PROVIDE FLOWABLE FILL TRENCH CUTOFF IN PLACE OF PIPE BEDDING AT EACH END OF PIPE. SEE CULVERT END DETAIL.

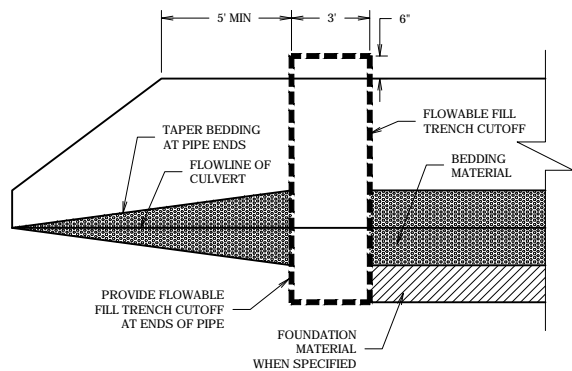
*NOTE: CULVERT INVERTS TO BE COUNTERSUNK 1-INCH BELOW DITCH BOTTOM

TYPICAL CULVERT SECTION

NO SCALE

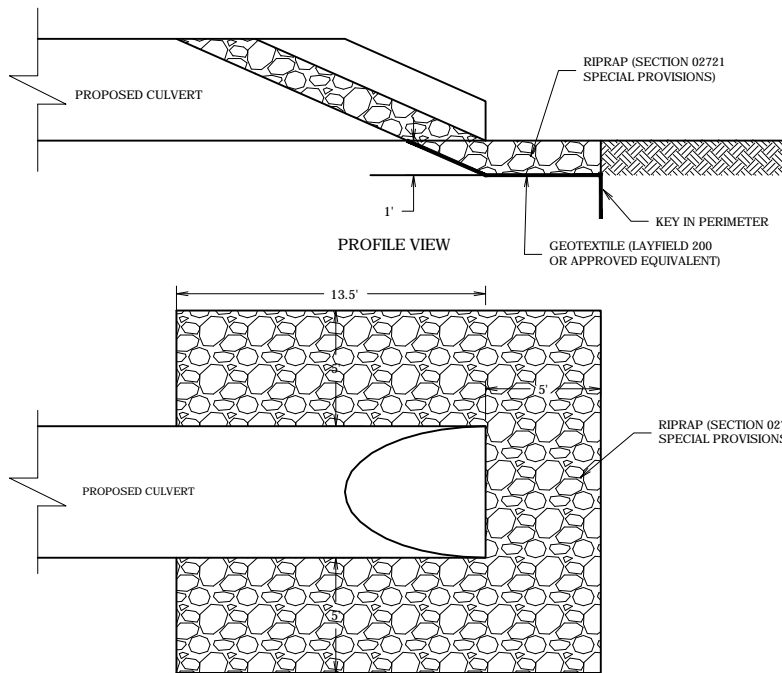
CULVERT INSTALLATION NOTES (CONT'S):

- ③ TYPE A TRENCH BACKFILL (SECTION 02221 SPECIAL PROVISIONS)
- ④ PLACE LOOSE BEDDING MATERIAL UNIFORMLY IN THE BOTTOM OF THE TRENCH AND SHAPE TO FIT BOTTOM OF THE PIPE. THE MINIMUM THICKNESS BEFORE PLACING PIPE IS 3". BEDDING MATERIAL TO BE NORMAL TYPE 1 BEDDING (SECTION 02221 SPECIAL PROVISIONS)
- ⑤ TRENCH EXCAVATION TO MEET ALL APPLICABLE OSHA SAFETY REGULATIONS.
- ⑥ PLACEMENT AND COMPACTION OF PIPE BEDDING AND TRENCH BACKFILL TO MEET STANDARDS IN THE MPWSS AND SPECIAL PROVISIONS.



CULVERT END DETAIL

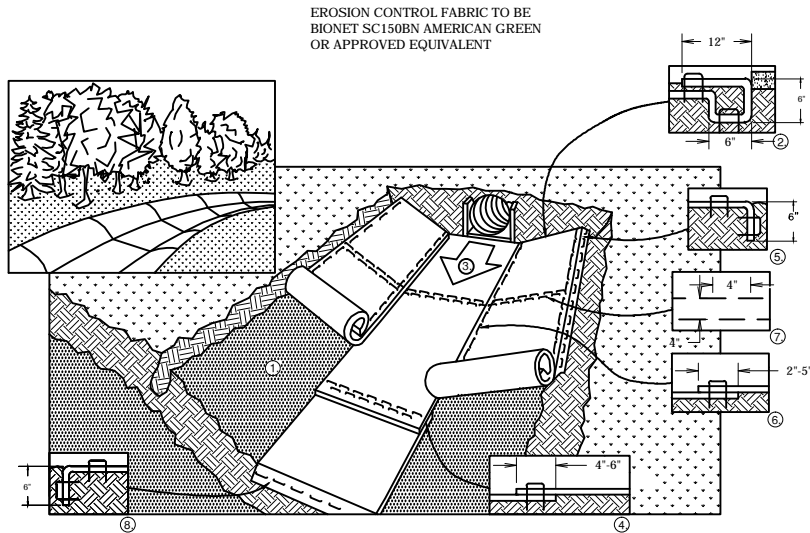
NO SCALE



PROFILE VIEW

RIP RAP DETAIL

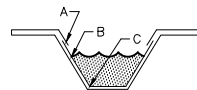
NO SCALE



1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE RECP's IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECP's EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) ACROSS THE WIDTH OF THE RECP's.
3. ROLL CENTER RECP's IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. PLACE CONSECUTIVE RECP's END OVER END (SHINGLE STYLE) WITH A 4" - 6" (10 CM - 15 CM) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER TO SECURE RECP's.
5. FULL LENGTH EDGE OF RECP's AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT RECP's MUST BE OVERLAPPED APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) (DEPENDING ON RECP's TYPE) AND STAPLED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9 M - 12 M) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10 CM) APART AND 4" (10 CM) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE RECP's MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NOTE:

* IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.



CRITICAL POINTS

- A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

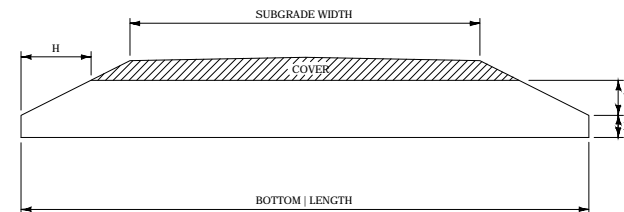
NOTE:

* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY ANCHOR THE RECP's.

EROSION CONTROL FABRIC INSTALLATION DETAIL

NO SCALE



SPAN	RISE	EQUIV. DIA.	X (FT.)	V (FT.)	H (FT.) FOR BEVELS:			AREA "A" (SQ. FT.)
					1.5:1	2:1	2.5:1	
CSPA 3' x 1' CORRUGATIONS (SEE NOTE X)								
66"	51"	60"	1.9	2.6	3.9	5.2	6.5	19.3

NOTES:

PIPE ENDS ARE SQUARE (PERPENDICULAR TO CENTERLINE OF PIPE) AND FILL SLOPES ARE WARPED TO ACCOMMODATE THE SQUARE ENDS UNLESS SPECIFIED OTHERWISE ON PLANS.

TABULATED VALUES BASED ON NOMINAL PIPE DIMENSIONS. IN PLACE DIMENSIONS SUBJECT TO TOLERANCES LISTED IN CURRENT AASHTO M 36 AND M 196.

BEVELED END SECTION DETAIL

NO SCALE



1111 EAST BROADWAY
MISSOULA, MONTANA 59802
TEL: 406-728-4611
FAX: 406-728-2476

WWW.WMGROUP.COM

50% PLANS
PRELIMINARY

PLOTTED: 6/13/2016
SAVED: 6/9/2016

IRRIGATION DETAILS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:

NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117ST.dwg
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LAYOUT: SHT13
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDJ
APPROVE: MRM/TI
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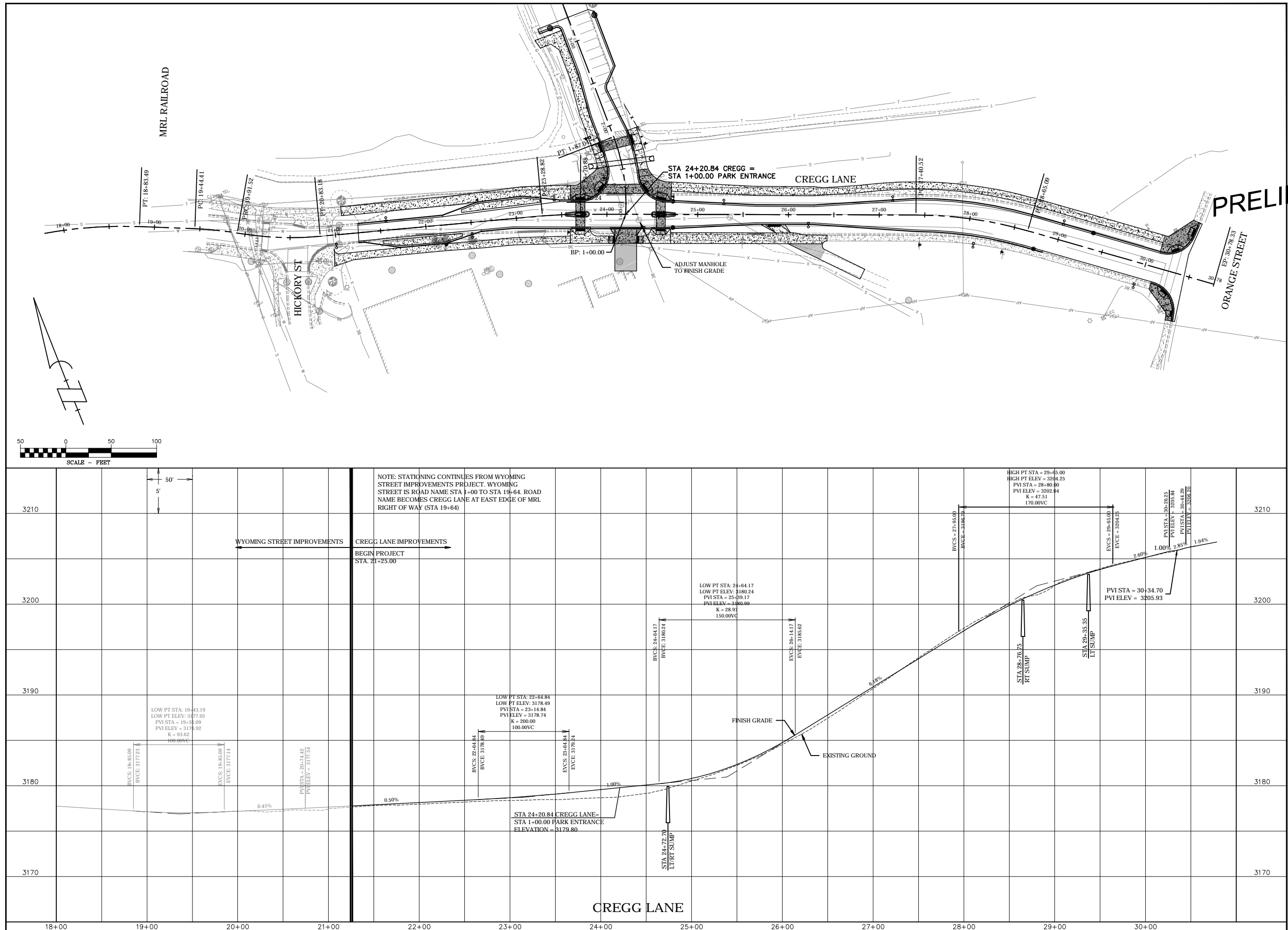
JUNE 9, 2016

SHEET 8 OF 22

PLOTTED: 6/13/2016
SAVED: 6/9/2016

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JUNE 9, 2016



PRELIMINARY

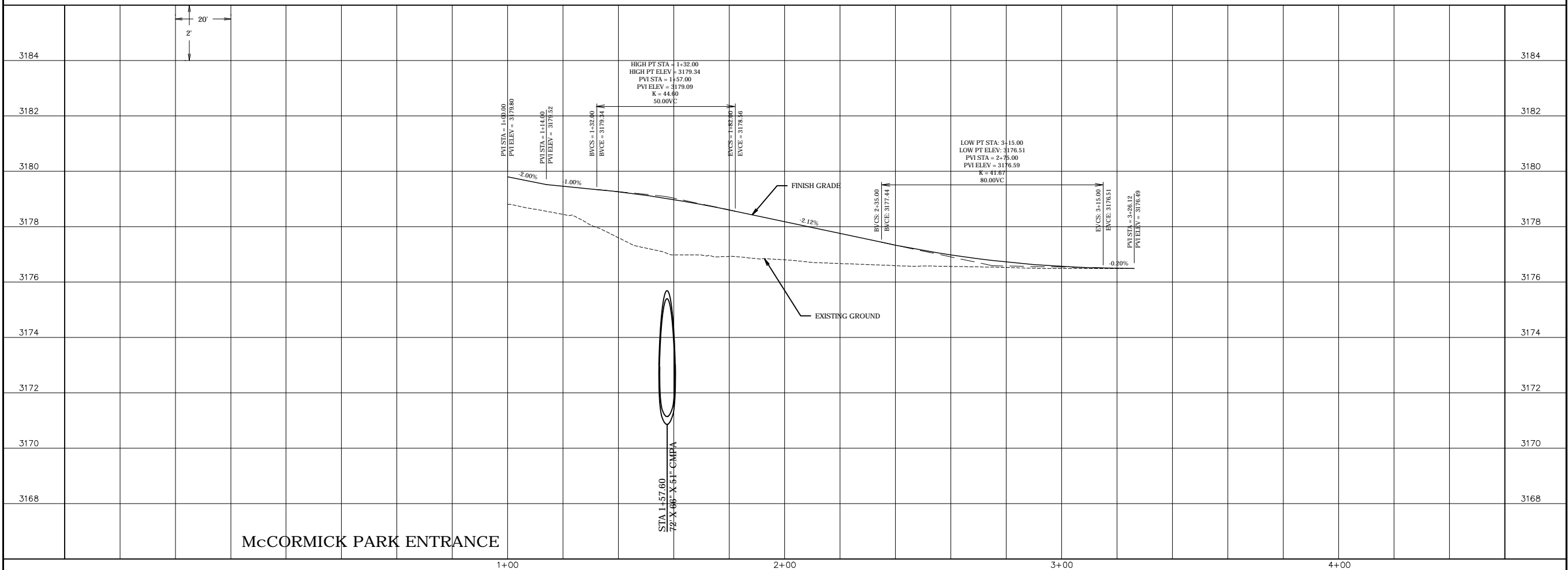
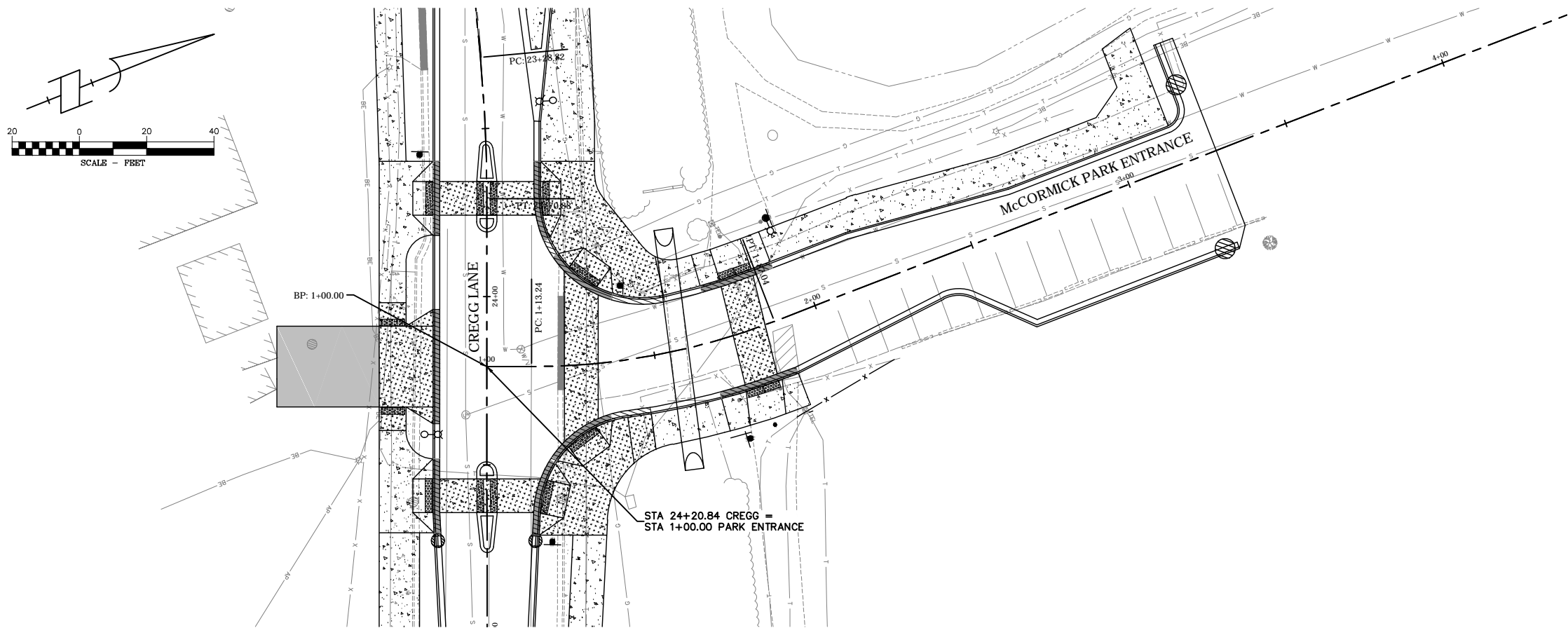
PLOTTED: 6/13/2016
SAVED: 6/9/2016

STREET PLAN AND PROFILE (2)
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117ST.dwg
FILE PATH:
W:\Projects\150117\CAD Data\Design
LAYOUT: SHT3
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

JUNE 9, 2016



PRELIMINARY

PLOTTED: 6/13/2016
SAVED: 6/9/2016

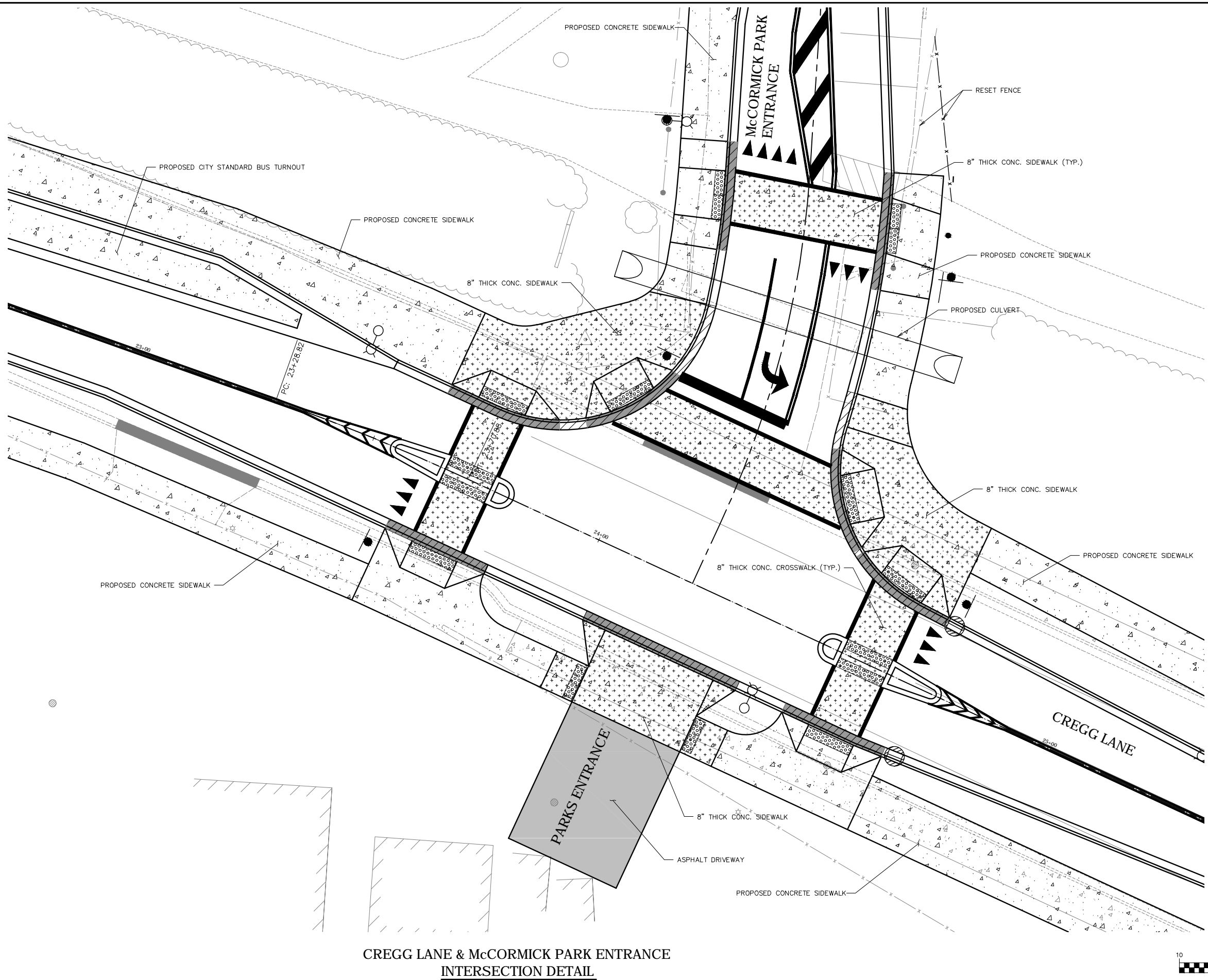
INTERSECTION GRADING DETAILS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:
NO. DESCRIPTION DATE

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LAYOUT: SH15
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

JUNE 9, 2016

SHEET 11 OF 22





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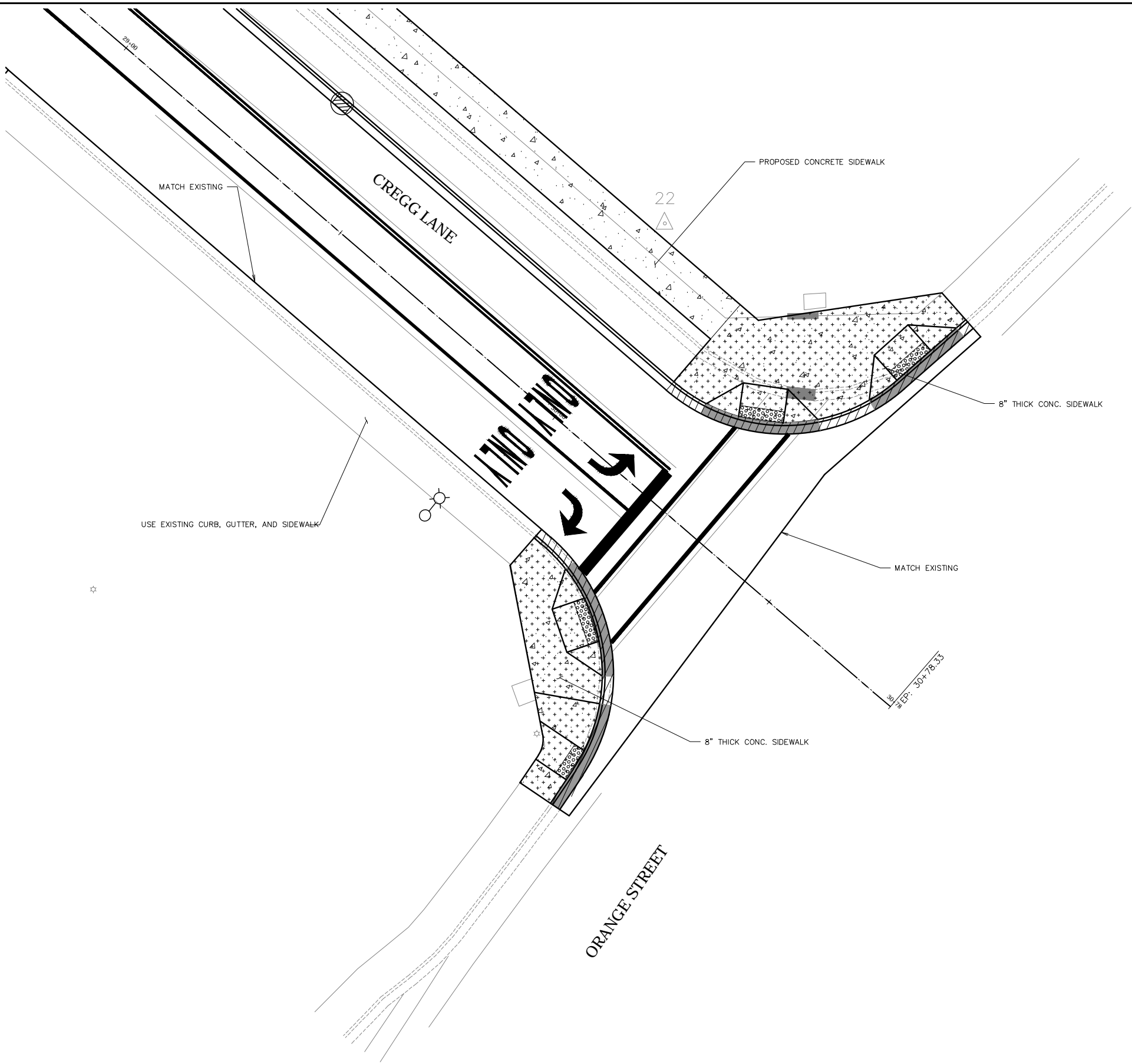
PLOTTED: 6/13/2016
SAVED: 6/9/2016

**INTERSECTION GRADING DETAILS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA**

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117INT.dwg
FILE PATH:
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LAYOUT: SHT6
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

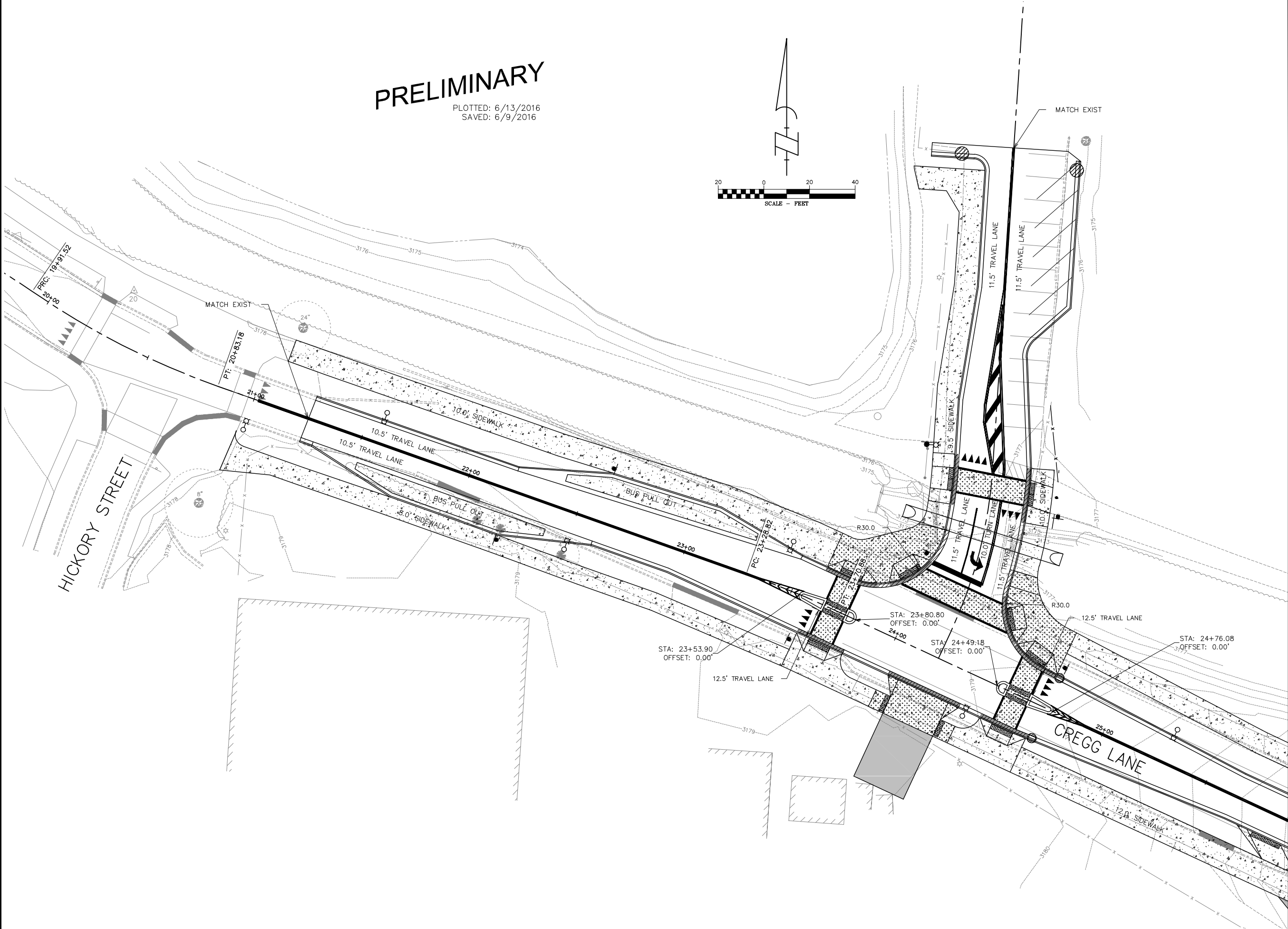
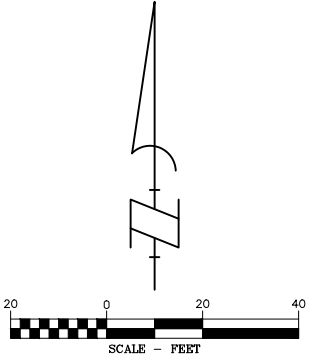
JUNE 9, 2016



**CREGG LANE & ORANGE STREET
INTERSECTION DETAIL**

PRELIMINARY

PLOTTED: 6/13/2016
SAVED: 6/9/2016



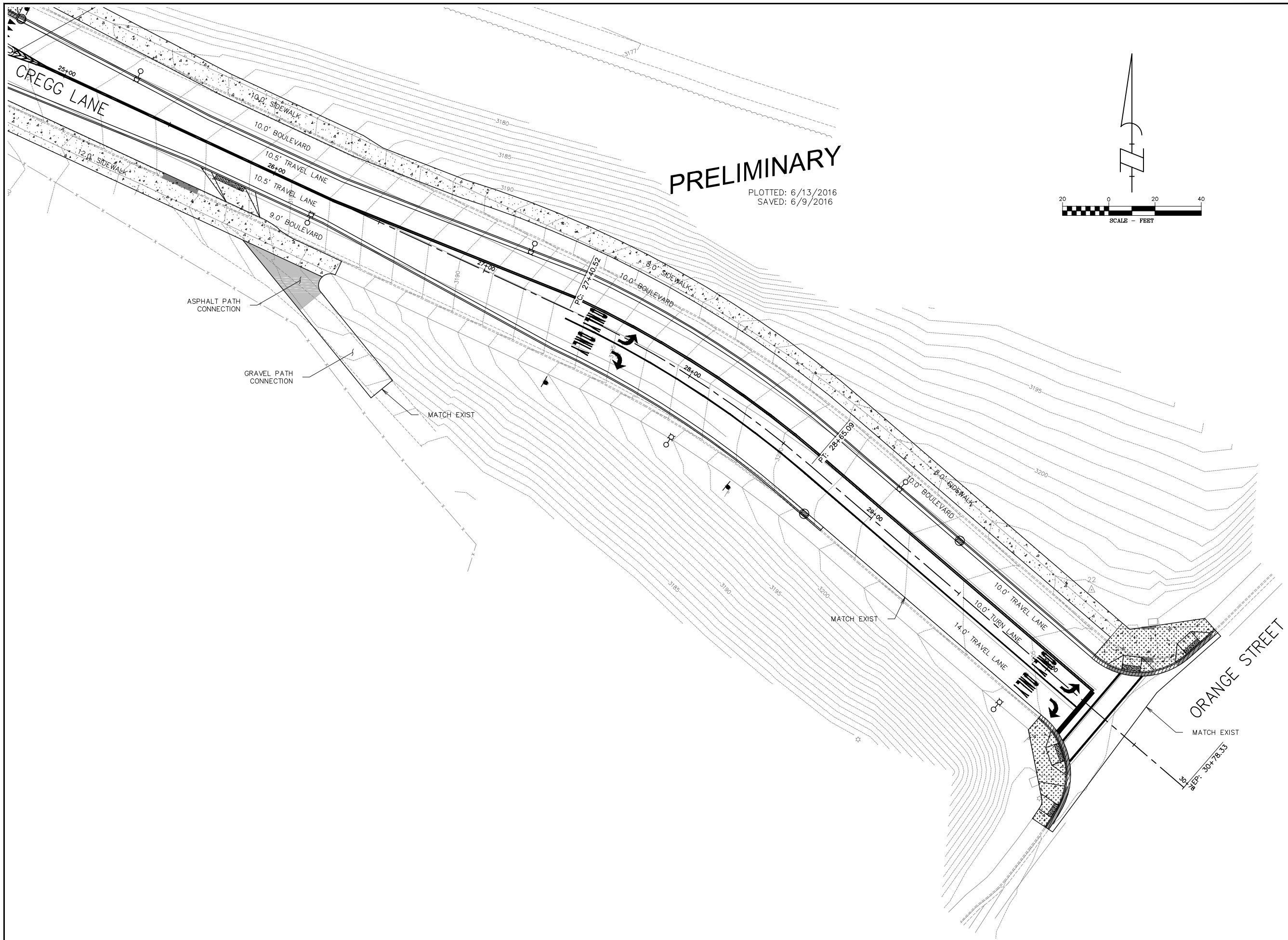
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**GEOMETRIC LAYOUT
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA**

REVISIONS:		
NO.	DESCRIPTION	DATE

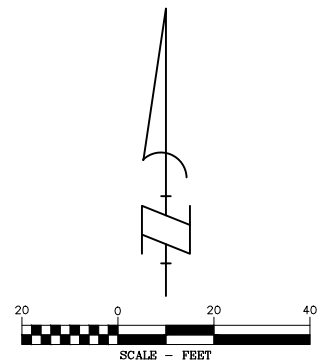
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FILE PATH:
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LAYOUT: SHT18
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

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GEOMETRIC LAYOUT
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117CHANNEL.dwg
FILE PATH:
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DESIGN: TI
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APPROVE: MRM/TI
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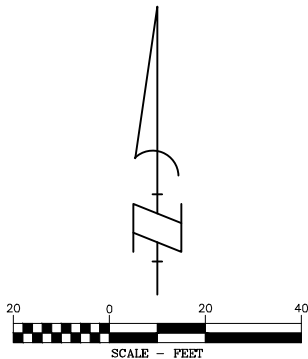
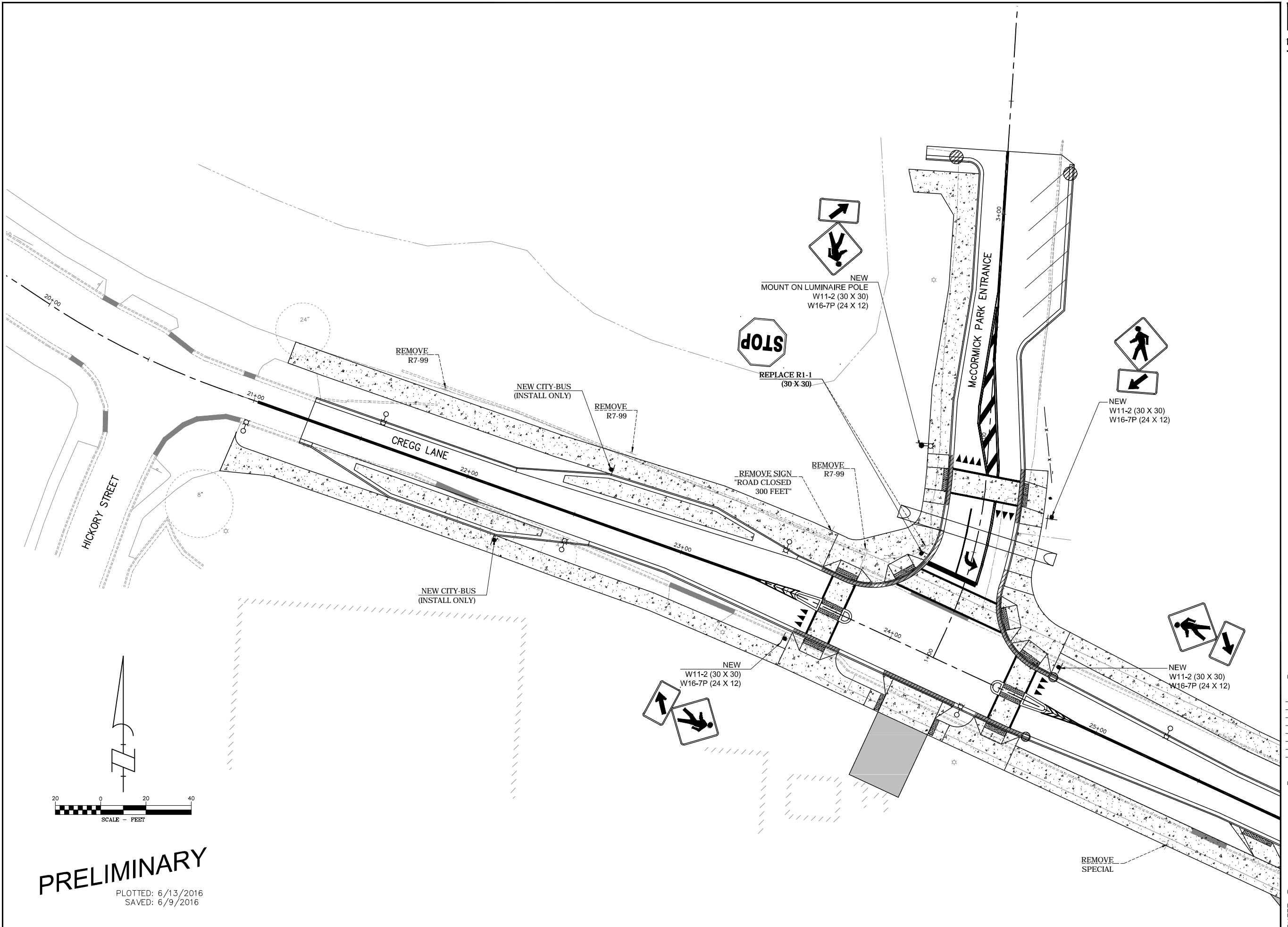
JUNE 9, 2016

SIGNING AND STRIPING PLAN
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117SIGNING.dwg
FILE PATH:
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LAYOUT: SHT14
SURVEYED: WGM GROUP
DESIGN: TI
DRAFT: EDI
APPROVE: MRM/TI
DATE:

JUNE 9, 2016



PRELIMINARY
PLOTTED: 6/13/2016
SAVED: 6/9/2016

PRELIMINARY

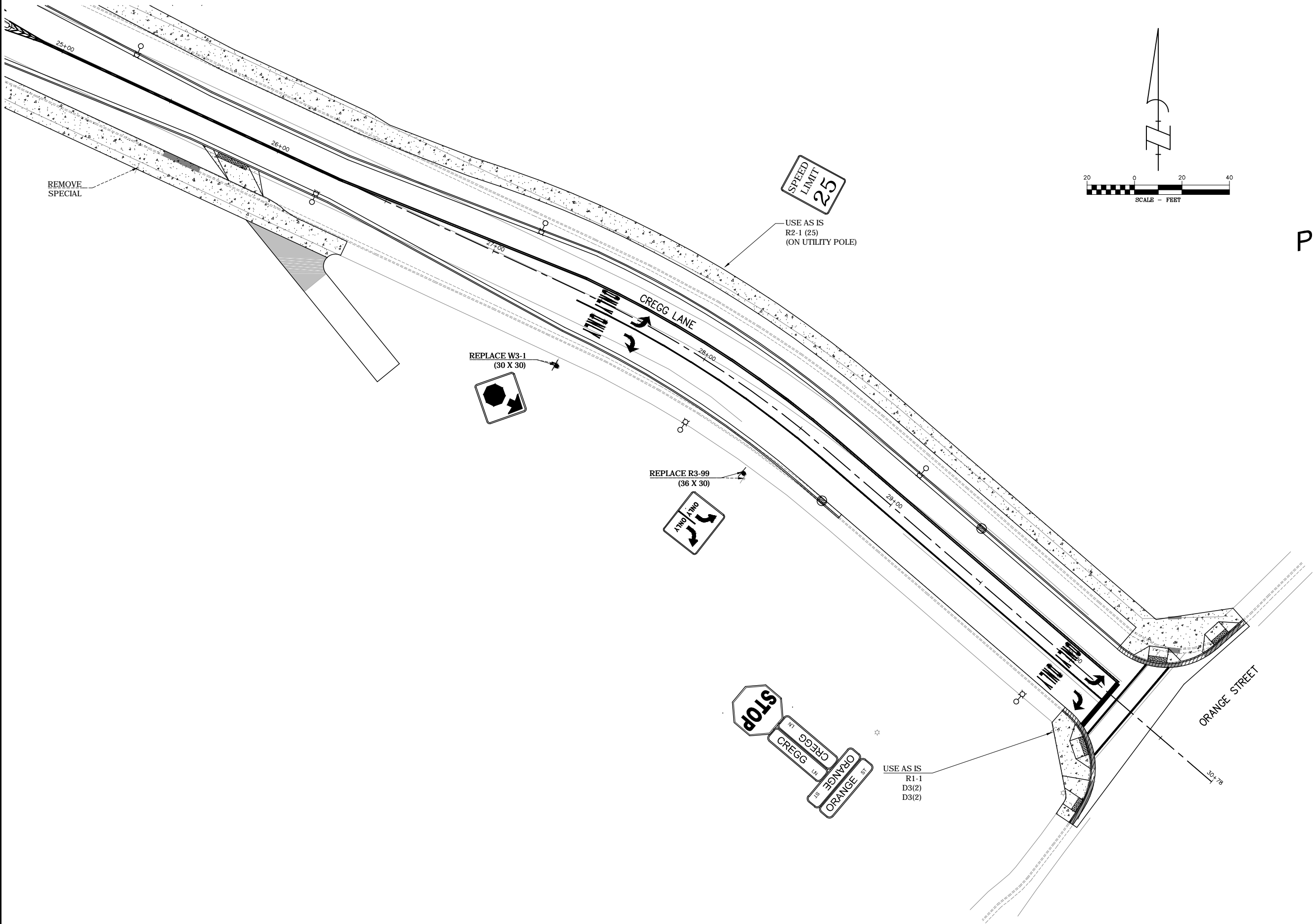
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SAVED: 6/9/2016

SIGNING AND STRIPING PLAN
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
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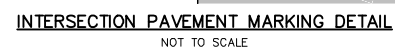
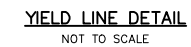
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17 OF 22



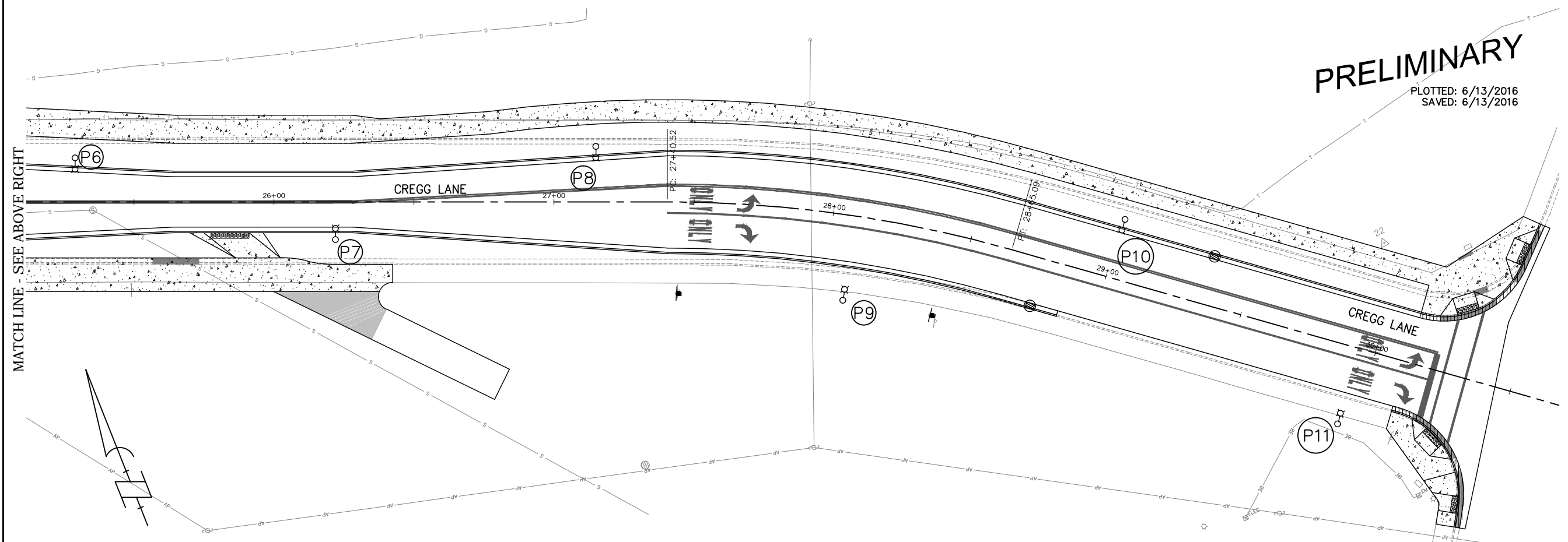
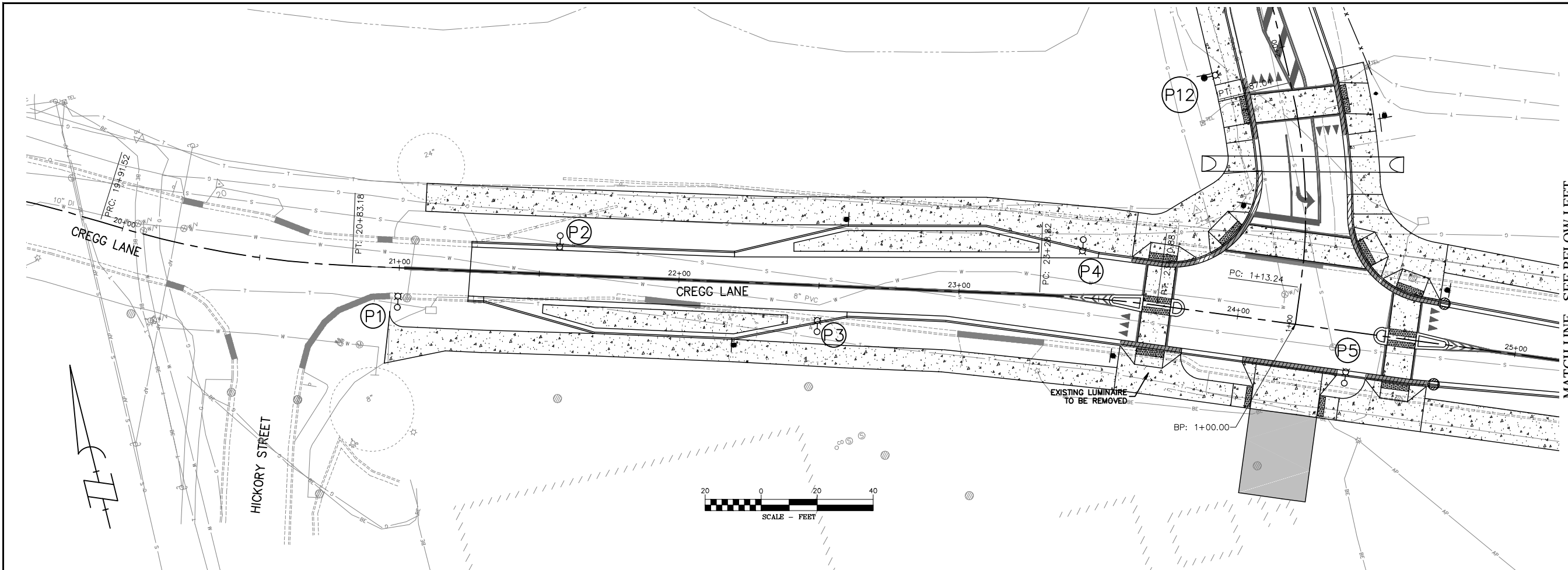
NOTE: REFER TO SHEET 11 FOR LOCATION WHERE DETAIL APPLIES.

**STREET LIGHTING PLAN
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA**

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117LIGHTING.dwg
FILE PATH:
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DRAFT: EDI/CEG
APPROVE: MRM
DATE:

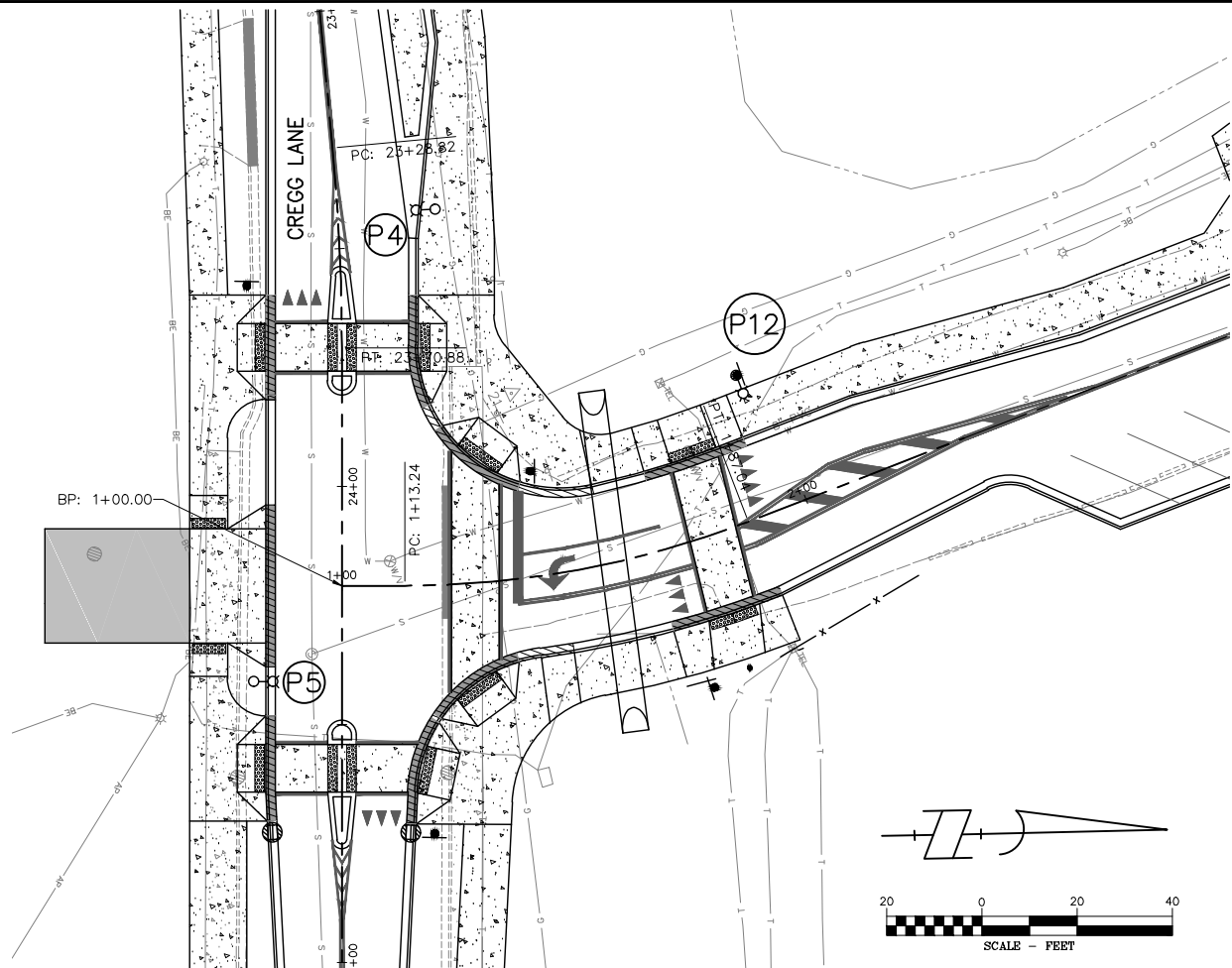
JUNE 9, 2016



PRELIMINARY

PLOTTED: 6/13/2016
SAVED: 6/13/2016

STREET LIGHTING PLAN
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA



CONDUIT & WIRE SCHEDULE	
A	1 OF 1 1/2 IN PLASTIC CONDUIT 1 OF 3 AWG NO. 12 CABLE (PHOTOCELL) 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) 2 OF AWG NO. 6 CONDUCTOR (LIGHTING) 1 OF AWG NO. 6 CONDUCTOR (GROUND)
B	1 OF 1 1/2 IN PLASTIC CONDUIT 2 OF AWG NO. 8 CONDUCTOR (LIGHTING) 2 OF AWG NO. 6 CONDUCTOR (LIGHTING) 1 OF AWG NO. 6 CONDUCTOR (GROUND)
C	1 OF 1 1/2 IN PLASTIC CONDUIT 2 OF AWG NO. 6 CONDUCTOR (LIGHTING) 1 OF AWG NO. 6 CONDUCTOR (GROUND)
D	1 OF 2 IN PLASTIC CONDUIT 1 OF 3 AWG NO. 12 CABLE (PHOTOCELL) 4 OF AWG NO. 8 CONDUCTOR (LIGHTING) 4 OF AWG NO. 6 CONDUCTOR (LIGHTING) 1 OF AWG NO. 6 CONDUCTOR (GROUND)
E	1 OF 1-1/2 IN PLASTIC CONDUIT
F	1 OF 1/2 IN RIGID GALVANIZED STEEL CONDUIT

ELECTRICAL MATERIALS QUANTITY		
DESCRIPTION	QUANTITY	UNIT
CONDUIT - STEEL 1/2 IN RIGID	38	FT
CONDUIT - STEEL 1 1/2 IN RIGID	154	FT
CONDUIT - STEEL 2 IN RIGID	14	FT
CONDUIT - PLASTIC 1 1/2 IN	4,221	FT
CONDUIT - PLASTIC 2 IN	9	FT
PULL BOX - CONCRETE TYPE 2	4	EACH
CONDUCTOR - COPPER 6 AWG - 600V	13,572	FT
CONDUCTOR - COPPER 8 AWG - 600V	5,251	FT
CONDUCTOR - COPPER 10 AWG - 600V	2,310	FT
DECORATIVE LUMINAIRE	35	EACH
LUMINAIRE FOUNDATIONS	35	EACH
SERVICE ASSEMBLY	1	EACH

POLE SCHEDULE					
POLE NO.	LINE	STATION	OFFSET (F. POLE)	TYPE POLE BASE	LUMINAIRE TYPE
1	CREGG LANE	21+00.0	14.2ft RT	ANCHOR	64 LED
2	CREGG LANE	21+57.0	13.9ft LT	ANCHOR	64 LED
3	CREGG LANE	22+50.0	16.6ft RT	ANCHOR	64 LED
4	CREGG LANE	23+43.0	20.5ft LT	ANCHOR	64 LED
5	CREGG LANE	24+41.0	18.5ft RT	ANCHOR	64 LED
6	CREGG LANE	25+29.0	15.7ft LT	ANCHOR	64 LED
7	CREGG LANE	26+22.0	13.5ft RT	ANCHOR	64 LED
8	CREGG LANE	27+15.0	19.8ft LT	ANCHOR	64 LED
9	CREGG LANE	28+08.0	30.5ft RT	ANCHOR	64 LED
10	CREGG LANE	29+01.0	21.5ft LT	ANCHOR	64 LED
11	CREGG LANE	29+94.0	28.1ft RT	ANCHOR	64 LED
12	PARK ENTRANCE	1+95.69	29.5 ft LT	ANCHOR	64 LED

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117LIGHTING.dwg
FILE PATH:
W:\Projects\150117\CAD Data\Design
LAYOUT: SHT19
SURVEYED: WGM GROUP
DESIGN: TJ/MDR
DRAFT: ED/CEG
APPROVE: MRM
DATE:

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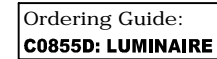
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STREET LIGHTING DETAILS
CREGG LANE IMPROVEMENTS
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



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JUNE 9, 2016

20 OF 22



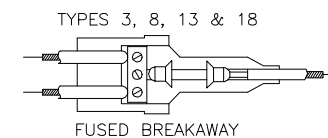
Color:
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IDENTITY NO.	DESCRIPTIVE SYMBOL & WIRE SIZES
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
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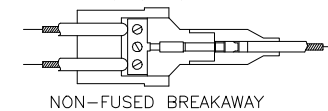
PROVIDE A PLUG AND RECEPTACLE HOUSED IN WATER-RESISTANT, SYNTHETIC RUBBER CAPABLE OF BURIAL IN THE GROUND OR INSTALLATION IN SUNLIGHT. THE HOUSING, CONSISTING OF 2 SECTIONS, PROVIDES A WATERTIGHT SEAL AROUND THE CABLE AND A WATERTIGHT SEAL BETWEEN THE TWO SECTIONS AT THE POINT OF DISCONNECTION. SUPPLY EACH KIT WITH SUFFICIENT SILICONE COMPOUND TO LUBRICATE METAL PARTS AND THE RUBBER HOUSINGS FOR EASY ASSEMBLY.

WHERE INDICATED, CRIMP A COPPER PIN AND A COPPER RECEPTACLE TO THE CABLE. THE RECEPTACLE IS TO ESTABLISH CONTACT PRESSURE WITH THE PIN THROUGH THE USE OF A COPPER BERYLLIUM SPRING AND BE EQUIPPED WITH A DISPOSABLE MOUNTING PIN. THE PIN IS TO BE CONSTRUCTED OF AT LEAST HALF-HARD MATERIAL. THE CRIMPING PORTION IS TO BE FULLY ANNEALED WHILE THE REST OF THE PIN IS MAINTAINED IN ITS ORIGINAL STATE OF HARDNESS. THE RECEPTACLE IS TO BE FULLY ANNEALED. THE PIN AND RECEPTACLE ARE TO LOCK TOGETHER SO THE CONNECTION IS MAINTAINED WHEN A MINIMUM FORCE OF 89 NEWTONS TENSION IS APPLIED TO THE ATTACHED CABLES.

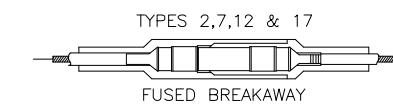
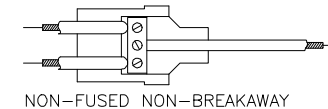
PROVIDE FUSED CONNECTOR KITS CONTAINING A PAIR OF SPRING LOADED 90% CONDUCTIVITY CONTACTS FOR GRIPPING A STANDARD MIDGET FERRULE TYPE FUSE. THE CONTACTS MUST BE FULLY ANNEALED AND ADAPTED TO BE CRIMPED TO THE CABLE.



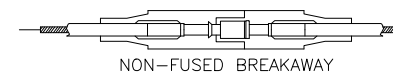
TYPES 4, 9, 14, 19 & 23



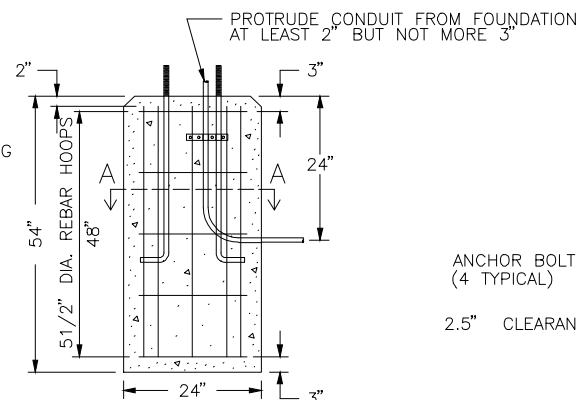
TYPES 5, 10, 15, 20 & 24



TYPES 1,6,11,16,21 & 22

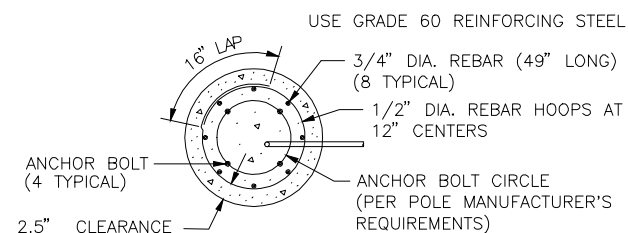


WATERTIGHT CONNECTORS



- TYPICAL OF ALL FOUNDATIONS

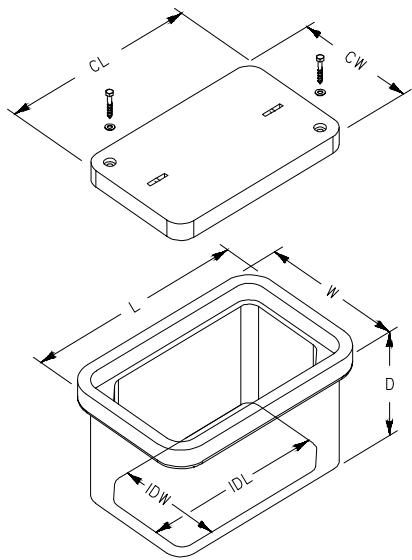
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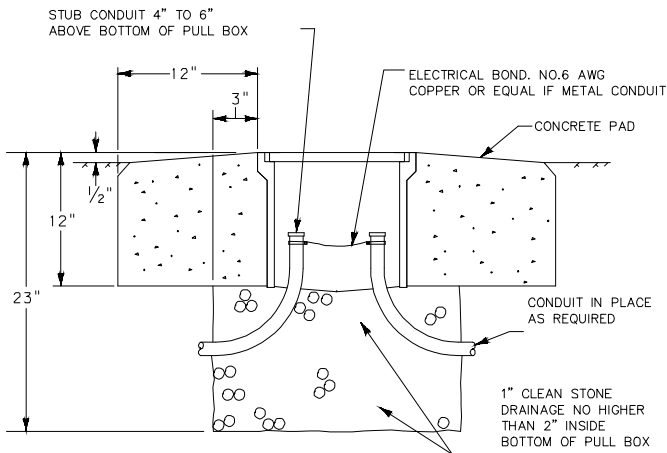
SECTION A-A

PRELIMINARY
PLOTTED: 6/13/2016

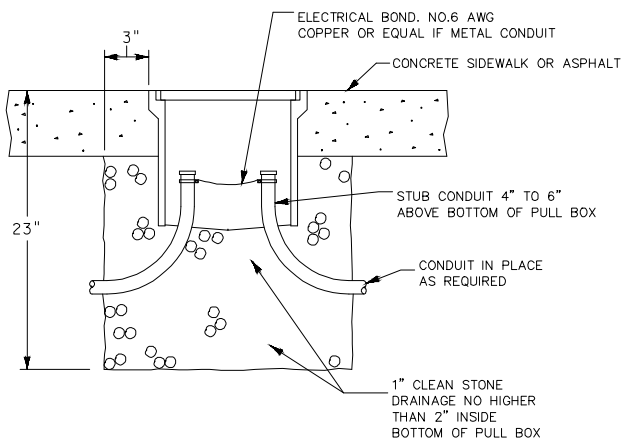
PLOTTED: 6/13/2016
SAVED: 6/13/2016



PULL BOX — COMPOSITE MINIMUM DIMENSIONS		
TYPE 1	TYPE 2	TYPE 3
L = 20"	L = 25"	L = 32"
W = 13"	W = 15"	W = 19"
D = 12"	D = 12"	D = 12"
IDL = 17"	IDL = 21"	IDL = 28"
IDW = 10"	IDW = 11"	IDW = 15"
CL = 18"	CL = 23"	CL = 30"
CW = 11"	CW = 13"	CW = 17"



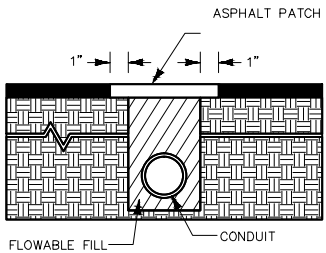
PULL BOX INSTALLED IN DIRT



PULL BOX INSTALLED IN A SIDEWALK OR ASPHALT

PULL BOX DETAILS

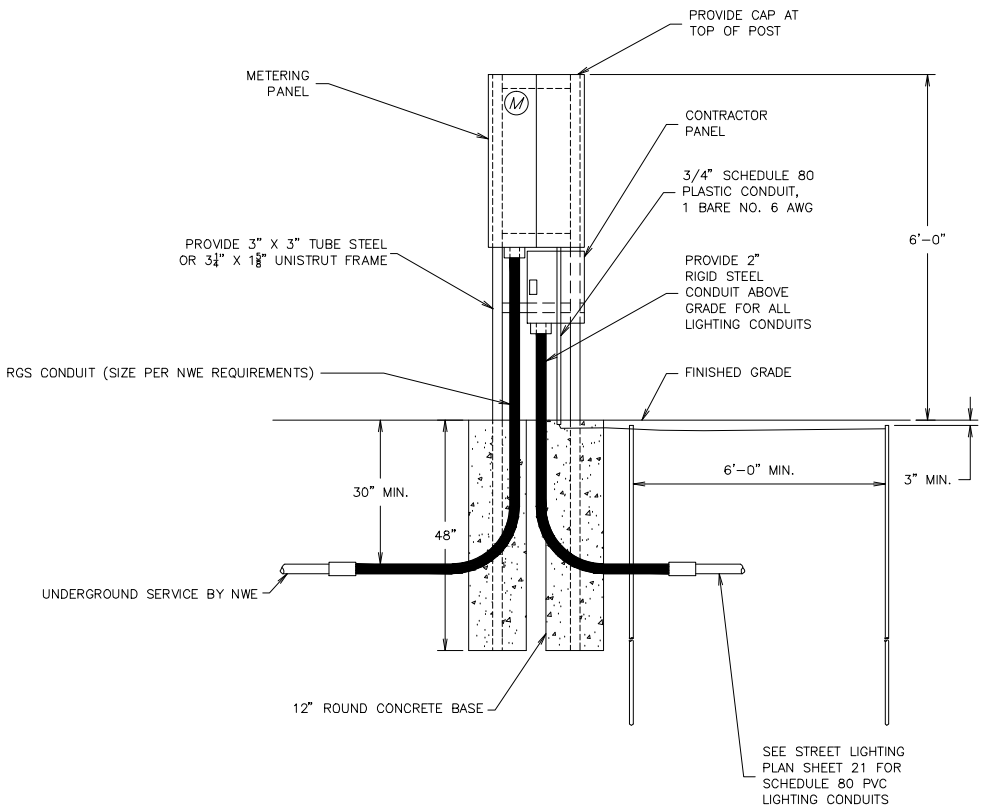
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NOTE — COLD MIXED ASPHALT MAY BE USED FOR A TEMPORARY PATCH IF HOT MIX ASPHALT IS NOT AVAILABLE. USE 4 INCHES OF HOT ASPHALT FOR THE PERMANENT PATCH. CUT EXISTING ASPHALT 1 INCH BEYOND TRENCH AND APPLY A TACK COAT PRIOR TO INSTALLING THE PERMANENT PATCH.

FLOWABLE FILL FOR TRENCHES

NO SCALE



ELECTRICAL SERVICE ASSEMBLY

NO SCALE



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PRELIMINARY

PLOTTED: 6/13/2016
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STREET LIGHTING DETAILS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 15-01-17
FILE No: 150117LIGHTING.dwg
FILE PATH: W:\Projects\150117\CAD Data\Design
LAYOUT: SHT17
SURVEYED: WGM GROUP
DESIGN: TJ/MDR
DRAFT: EDI/CEG
APPROVE: MRM
DATE:

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PLOTTED: 6/13/2016
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STREET LIGHTING DETAILS
CREGG LANE IMPROVEMENTS
MISSOULA, MONTANA

REVISIONS:		
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PROJECT: 15-01-17
FILE No: 150117LIGHTING.dwg
FILE_PATH: W:\Projects\150117\CAD Data\Design
LAYOUT: SHT18
SURVEYED: WGM GROUP
DESIGN: TJ/MD8
DRAFT: EDI/CEG
APPROVE: MRM
DATE:

JUNE 9, 2016

LEGEND

- AWG NO. 12
- AWG NO. 10
- AWG NO. 8
- AWG NO. 6



INDICATES WATERTIGHT CONNECTORS PER THE ELECTRICAL DETAIL DRAWING ON SHEET NO. 26

USE MIDGET FERRULE FUSES IN FUSED CONNECTORS.
USE 6 AMPS FOR LED LUMINAIRES.

WIRING DIAGRAMS

SERVICE S-1 ONE-LINE DIAGRAM

CONTRACTORS S-1 ONE-LINE DIAGRAM