

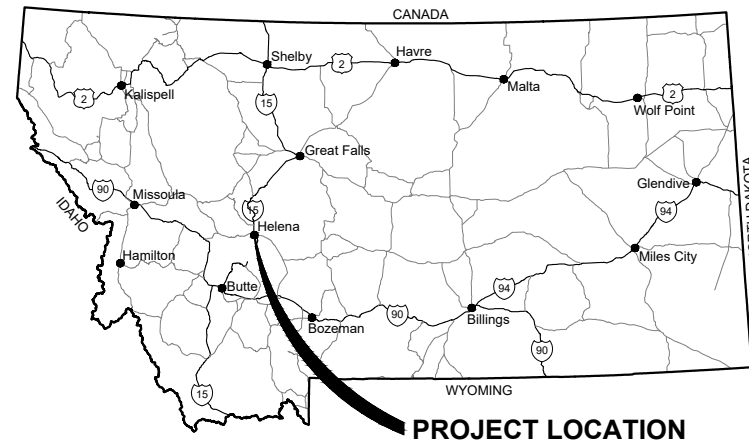
SHEET INDEX

PROJECT: 2115-CV8
DATE: JULY 2022

SHEET 1	COVER
SHEET 2	ABBREVIATIONS & LEGEND
SHEET 3	CIVIL SPECIFICATIONS & NOTES
SHEET 4	OVERALL SITE PLAN
SHEET 5	TYPICAL SECTIONS
SHEET 6	TYPICAL SECTIONS
SHEET 7	EROSION CONTROL PLAN
SHEET 8	GRADING PLAN

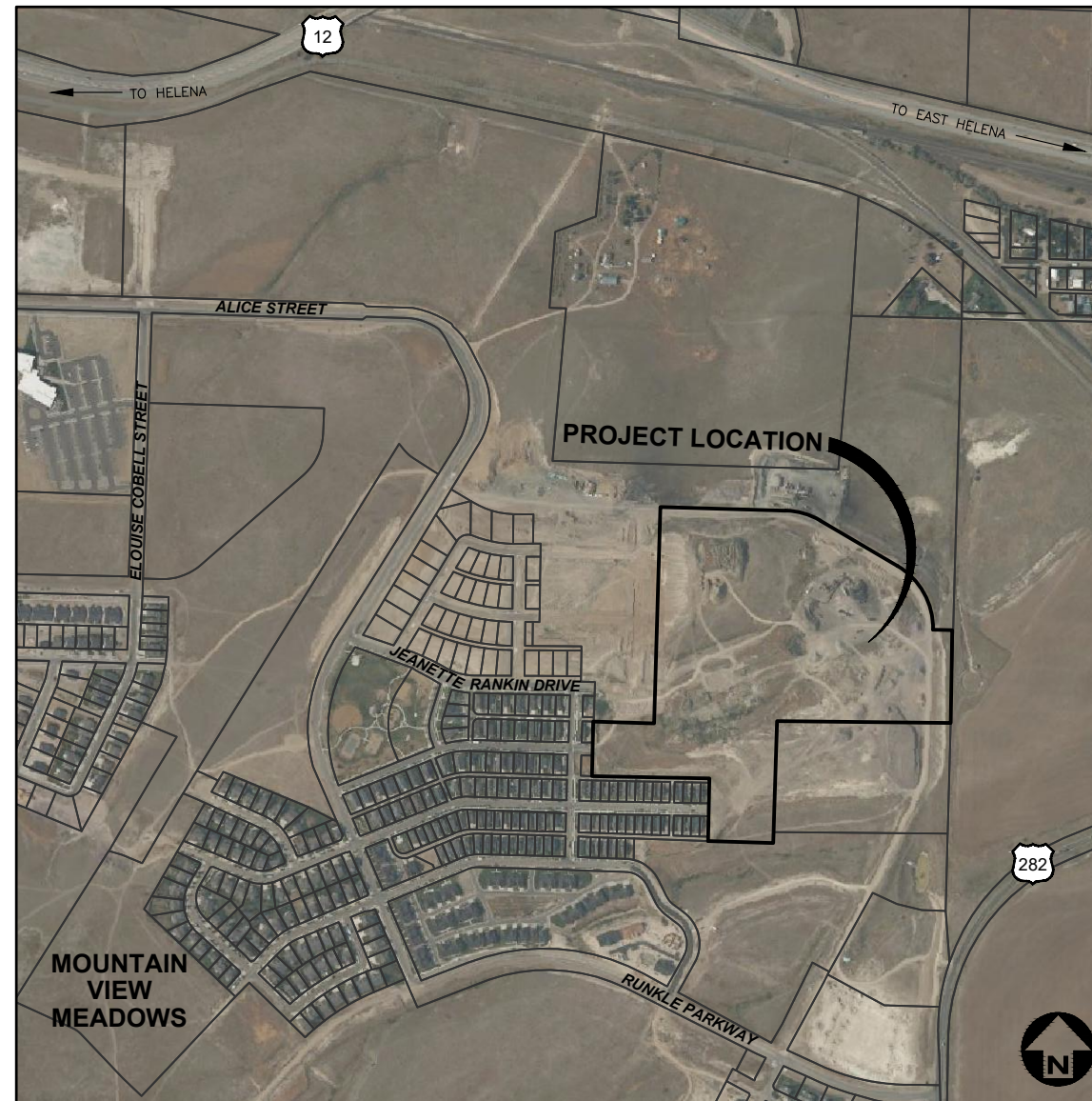
CRAFTSMAN VILLAGE OF THE CROSSROADS AT MOUNTAIN VIEW MEADOWS

PHASES 8, 9, & 10 PRELIMINARY PLANS



PROJECT LOCATION

SECTION 35, TOWNSHIP 10 NORTH, AND RANGE 3 WEST



INSERT SCALE OR NOT TO SCALE

PLANS REVIEWED BY:

CITY OF HELENA - PUBLIC WORKS DIRECTOR

CITY OF HELENA CITY ENGINEER/PROJECT MANAGER



APPROVED BY:

GREG WIRTH, P.E.
STAHLY ENGINEERING & ASSOCIATES

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STAHLY ENGINEERING & ASSOCIATES

PLANS PREPARED BY:

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STAHLY ENGINEERING & ASSOCIATES

NO.	REVISION DESCRIPTION	BY	DATE	SET NO.
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ABBREVIATIONS

⊙	AT	LPG	LIQUID PROPANE GAS
Δ	ANGLE OF DEFLECTION, DELTA ANGLE	LT	LEFT
<PT	ANGLE POINT	MAX	MAXIMUM
AB	ANCHOR BOLT	MD	MEASURE DOWN
ABDN	ABANDON	MFD	MANUFACTURED
AC	ASBESTOS CONCRETE	MFR	MANUFACTURE, MANUFACTURER
ADDN	ADDITIONAL	MH	MANHOLE
ADJ	ADJACENT	MIN	MINIMUM
AFF	ABOVE FINISHED FLOOR	MISC	MISCELLANEOUS
ALT	ALTERNATE	MJ	MECHANICAL JOINT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	MOV	MOTOR OPERATED VALVE
APPROX	APPROXIMATE	MPWSS	MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
APVD	APPROVED	N	NORTH
ARCH	ARCHITECTURE, ARCHITECTURAL	NE	NORTHEAST
ASPH	ASPHALT	NG	NATURAL GAS
AVE	AVENUE	NIC	NOT IN CONTRACT
AVG	AVERAGE	NO	NUMBER
BFV	BUTTERFLY VALVE	NOM	NOMINAL
BLDG	BUILDING	NTS	NOT TO SCALE
BLK	BLOCK	NW	NORTHWEST
BLVD	BOULEVARD	OC	ON CENTER
BM	BEAM, BENCHMARK	OD	OUTSIDE DIAMETER
BOT	BOTTOM	OF	OVERFLOW
BRG	BEARING	OH	OVERHEAD
BRKT	BRACKET	OHP	OVERHEAD POWER
BVC	BEGIN VERTICAL CURVE	OHT	OVERHEAD TELEPHONE
C-C	CENTER TO CENTER	OPNG	OPENING
CHAN	CHANNEL	PC	POINT OF CURVATURE
CHK	CHECK	PCC	POINT OF COMPOUND CURVATURE
CI	CAST IRON	PE	PLAIN END, POLYETHYLENE
CIPC	CAST-IN-PLACE CONCRETE	PERP	PERPENDICULAR
CIRC	CIRCULAR	PI	POINT OF INTERSECTION
CJ	CONSTRUCTION JOINT, CONTROL JOINT	PL	PROPERTY LINE
CL	CENTER LINE	PNL	PANEL
CLR	CLEAR, CLEARANCE	PRC	POINT OF REVERSE CURVATURE
CMP	CORRUGATED METAL PIPE	PREFAB	PREFABRICATED
CMU	CONCRETE MASONRY UNITS	PRELIM	PRELIMINARY
CO	CLEANOUT	PREP	PREPARE, PREPARATION
COL	COLUMN	PROP	PROPERTY
CONC	CONCRETE	PRV	PRESSURE REDUCING VALVE
CONSTR	CONSTRUCTION	PSF	POUNDS PER SQUARE FOOT
CONT	CONTINUE, CONTINUED, CONTINUOUS	PSI	POUNDS PER SQUARE INCH
CONTR	CONTRACTOR	PT	POINT, POINT OF TANGENCY
COORD	COORDINATE	PVC	POLYVINYL CHLORIDE
CP	CONTROL PANEL, CONTROL POINT	PVI	POINT OF VERTICAL INTERSECTION
CPLG	COUPLING	PVMT	PAVEMENT
CTR	CENTER	R, RAD	RADIUS
CTV	CABLE TELEVISION	RC	REINFORCED CONCRETE
CU	CUBIC, COPPER	RCP	REINFORCED CONCRETE PIPE
CF	CUBIC FEET	RD	ROAD
CULV	CULVERT	RDCR	REDUCER
CY	CUBIC YARD	REBAR	REINFORCEMENT BAR
DET	DETAIL	REF	REFERENCE
DI	DUCTILE IRON, DRAIN INLET	REINF	REINFORCE
DIA, ∅	DIAMETER	REQD	REQUIRED
DIAG	DIAGONAL	RR	RAILROAD
DIM	DIMENSION	RST	REINFORCING STEEL
DR	DRIVE	RT	RIGHT
DWG	DRAWING	R/W	RIGHT-OF-WAY
E	EAST	S	SOUTH, SANITARY SEWER
EA	EACH	SAN	SANITARY
EL, ELEV	ELEVATION	SCH	SCHEDULE
ELB	ELBOW	SD	STORM DRAIN
ELEC	ELECTRIC, ELECTRICAL	SDWK	SIDEWALK
ENCL	ENCLOSE	SE	SOUTHEAST
ENGR	ENGINEER	SECT	SECTION
EOP	EDGE OF PAVEMENT	SF	SQUARE FOOT
EQ	EQUAL, EQUALLY	SHT	SHEET
EQ SP	EQUALLY SPACED	SIM	SIMILAR
EQUIP	EQUIPMENT	SLP	SLOPE
EQUIV	EQUIVALENT	SPEC	SPECIFICATION
EVC	END VERTICAL CURVE	SQ	SQUARE
EW	EACH WAY	SSTL	STAINLESS STEEL
EXC	EXCAVATE	STA	STATION
EXP	EXPANSION	SS	SANITARY SEWER SERVICE
EXP JT	EXPANSION JOINT	STD	STANDARD
EXST	EXISTING	ST	STREET
FCV	FLOW CONTROL VALVE	STL	STEEL
FD	FLOOR DRAIN	STRUCT	STRUCTURE
FDN	FOUNDATION	SW	SOUTHWEST
FES	FLARED END SECTION	SYM	SYMMETRICAL
FET	FLARED END TERMINAL	TB	THRUST BLOCK
FF	FINISHED FLOOR	TBC	TOP BACK OF CURB
FG	FINISH GRADE	TBM	TEMPORARY BENCH MARK
FHYD	FIRE HYDRANT	TEL	TELEPHONE
FJ	FLANGE JOINT	TEMP	TEMPORARY
FL	FLOW LINE	THRU	THROUGH
FLEX	FLEXIBLE	TYP	TYPICAL
FM	FORCEMAIN	UG	UNDERGROUND
FT	FOOT, FEET	UGP	UNDERGROUND POWER
FO	FIBER OPTIC	UGT	UNDERGROUND TELEPHONE
FTG	FOOTING, FITTING	UTIL	UTILITY
G	NATURAL GAS	V	VALVE, VOLT
GA	GAGE, GAUGE	VB	VALVE BOX
GAL	GALLON	VERT	VERTICAL
GALV	GALVANIZED	VOL	VOLUME
GND	GROUND	W	WEST, WATER
GVL	GRAVEL	WTR	WATER
HB	HOSE BIB	WD	WOOD
HDPE	HIGH DENSITY POLYETHYLENE	W/	WITH
HOR, HORIZ	HORIZONTAL	W/O	WITHOUT
HWY	HIGHWAY	WL	WETLAND
HYD	HYDRANT	WM	WIRE MESH, WATER METER
ID	INSIDE DIAMETER	WS	WATERSTOP, WATER SURFACE, WATER SERVICE
IE	INVERT ELEVATION	WT	WEIGHT
IN	INCH	WV	WATER VALVE
INV	INVERT	WWF	WELDED WIRE FABRIC
JB	JUNCTION BOX	WWM	WELDED WIRE MESH
JT	JOINT	XFMR	TRANSFORMER
K	RATE OF VERTICAL CURVATURE	X-ING	CROSSING
LBS	POUNDS	XS	CROSS SECTION
LF	LINEAR FEET	YD	YARD
LN	LANE		

LEGEND

EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION
---	---	MAJOR CONTOUR	⊙	⊙	STUMP
---	---	MINOR CONTOUR	⊙	⊙	SHRUB/BUSH
---	---	OVERHEAD TELEPHONE	☀	☀	TREE--CONIFER
---	---	UNDERGROUND TELEPHONE	☀	☀	TREE--DECIDUOUS
---	---	CABLE TELEVISION	☀	☀	TREE LINE
---	---	FIBER OPTIC	⊙	⊙	COMMUNICATION MANHOLE
---	---	NATURAL GAS	⊙	⊙	COMMUNICATION VAULT
---	---	OVERHEAD POWER	⊙	⊙	TELEPHONE RISER
---	---	UNDERGROUND POWER	⊙	⊙	CABLE TV RISER
---	---	SANITARY SEWER	⊙	⊙	NATURAL GAS METER
---	---	SANITARY SEWER SERVICE	⊙	⊙	NATURAL GAS RISER
---	---	SANITARY SEWER FORCEMAIN	⊙	⊙	NATURAL GAS VALVE
---	---	STORM DRAIN	⊙	⊙	LIGHT POLE
---	---	STORM CULVERT	⊙	⊙	STREET LIGHT POLE
---	---	WATER	⊙	⊙	POWER RISER
---	---	WATER SERVICE	⊙	⊙	PAD MOUNTED TRANSFORMER
---	---	CHAINLINK FENCE	⊙	⊙	POWER VAULT
---	---	BARBED WIRE FENCE	⊙	⊙	UTILITY POLE
---	---	WOOD FENCE	⊙	⊙	GUY WIRE
---	---	PAVED ROAD	⊙	⊙	SANITARY MANHOLE
---	---	GRAVEL ROAD	⊙	⊙	SANITARY CLEANOUT
---	---	PROPERTY/LOT LINE	⊙	⊙	SANITARY LAMPHOLE
---	---	PROPERTY EASEMENT	⊙	⊙	STORM MANHOLE
---	---	PROPERTY SETBACK	⊙	⊙	STORM ROUND INLET
---	---	RIGHT-OF-WAY	⊙	⊙	STORM SQUARE INLET
---	---	CITY LIMIT/DISTRICT BOUNDARY	⊙	⊙	STORM CATCH BASIN
---	---	RAILROAD	⊙	⊙	11.25' ELBOW
---	---	FLOWLINE	⊙	⊙	22.50' ELBOW
---	---	WATER EDGE	⊙	⊙	45' ELBOW
---	---	WETLAND	⊙	⊙	90' ELBOW
---	---	BUILDING	⊙	⊙	TEE
---	---	BENCHMARK	⊙	⊙	CROSS
---	---	CONTROL POINT	⊙	⊙	CAP
---	---	PROPERTY PIN	⊙	⊙	FIRE HYDRANT
---	---	BORING	⊙	⊙	GATE VALVE
---	---	MONITORING WELL	⊙	⊙	REDUCER
---	---	TEST PIT	⊙	⊙	WATER METER
---	---	BOLLARD	⊙	⊙	WELL
---	---	MAIL BOX	⊙	⊙	CURB STOP
---	---	SIGN	⊙	⊙	FROST FREE HYDRANT
---	---	PHASE LINE	⊙	⊙	

GENERAL NOTES:

- THIS IS A STANDARD LEGEND AND ABBREVIATION LIST. THEREFORE, NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT.
- UNLESS MODIFIED BY THE CONTRACT DOCUMENTS, ALL WORK WILL CONFORM TO THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS, SIXTH EDITION, APRIL 2010 (REFERRED TO COLLECTIVELY AS MPWSS) AND THE CITY OF HELENA ENGINEERING AND DESIGN STANDARDS.
- EXISTING UNDERGROUND UTILITIES SHOWN ARE FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS APPROXIMATE AND MAY BE INCOMPLETE. FOR ACCURATE LOCATION, THE CONTRACTOR SHALL CONTACT, PRIOR TO EXCAVATION, THE UTILITIES UNDERGROUND LOCATION CENTER AT: 1-800-424-5555.

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 2115-CV8
DESIGNED: GDW
DRAWN: JTF
CHECKED: -
APPROVED: -
DATE: JULY 2022



TOC	3990.49
FL	3990.49
TBC	3990.49
TOG	3990.49

SPOT ELEVATIONS (TOP OF CONCRETE, FLOWLINE, TOP BACK OF CURB, TOP OF GRADE)

**CRAFTSMAN VILLAGE OF THE CROSSROADS
AT MOUNTAIN VIEW MEADOWS
HELENA, MT**

ABBREVIATIONS & LEGEND

TECHNICAL SPECIFICATIONS

ALL WORK SHALL BE DONE IN ACCORDANCE WITH MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS (MPWSS) 6TH EDITION AND THE CITY OF HELENA ENGINEERING AND DESIGN STANDARDS.

SOME ITEMS OF MPWSS ARE HIGHLIGHTED FOR IMPORTANCE BELOW. TECHNICAL SPECIFICATIONS ARE AMENDED TO INCLUDE THE NOTES BELOW:

SECTION	GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT
SECTION 01090	REFERENCES
SECTION 01300	SUBMITTALS
SECTION 01400	CONTRACTOR QUALITY CONTROL & OWNER QUALITY ASSURANCE
	1. QUALITY CONTROL SUBMITTALS AND TESTING REQUIREMENTS ARE SHOWN ON THIS SHEET.
	2. THE CITY OF HELENA WILL BE THE FUTURE OWNER AND MAY PERFORM QUALITY ASSURANCE TESTS.
SECTION 01500	CONSTRUCTION AND TEMPORARY FACILITIES
SECTION 01570	CONSTRUCTION TRAFFIC CONTROL
SECTION 02110	GEOTEXTILES
	1. SOIL STABILIZATION / SEPARATION FABRIC TO BE GEOTEX 801 NONWOVEN GEOTEXTILE BY PROPEX OR APPROVED EQUAL.
	2. EROSION CONTROL BLANKET TO BE CURLEX NETFREE BY AMERICAN EXCELSIOR O.A.E.
	3. PLACE RIP-RAP WHERE SHOWN.
SECTION 02221	TRENCH EXCAVATION AND BACKFILL FOR PIPELINES AND APPURTENANT STRUCTURES
	1. TRENCH BACKFILL SHALL BE TYPE A.
	2. BEDDING MATERIAL SHALL BE CLEAN AGGREGATE, WITH A MINIMUM OF 90% RETAINED ON A #4 SIEVE.
SECTION 02230	STREET EXCAVATION, BACKFILL AND COMPACTION
SECTION 02234	SUB BASE COURSE
	1. SUB BASE COURSE SHALL BE 2" MINUS.
SECTION 02235	CRUSHED BASE COURSE
	1. CRUSHED BASE COURSE SHALL BE 1" MINUS.
SECTION 02502	ASPHALT PRIME AND/OR TACK COAT
SECTION 02504	ASPHALT SEAL COAT
	1. USE 3/8" SEAL COAT AGGREGATE.
SECTION 02510	ASPHALT CONCRETE PAVEMENT
	1. SURFACE COURSE AGGREGATE SHALL BE TYPE B.
	2. ASPHALT BINDER MATERIAL SHALL BE (PGAB) PG 58-28
	3. RECYCLED ASPHALT PAVEMENT (RAP) AGGREGATE TO BE 25% MAXIMUM BY WEIGHT.
SECTION 02528	CONCRETE CURB AND GUTTER
SECTION 02529	CONCRETE SIDEWALKS, DRIVEWAYS, APPROACHES, CURB TURN FILLETS, VALLEY GUTTERS AND MISCELLANEOUS NEW CONCRETE CONSTRUCTION
	1. CONCRETE SHALL BE M-4000.
	2. CONCRETE SIDEWALKS SHALL BE REINFORCED WITH FIBER MESH PER CITY OF HELENA STANDARDS.
	3. ALL DRIVE APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY STANDARD DRAWING 5-6.
SECTION 02660	WATER DISTRIBUTION SYSTEMS
	1. WATER MAIN TO BE DR-14 (305 PSI) AWWA C-900 PVC.
	2. WATER MAIN SHALL HAVE 6" WIDE DETECTABLE TAPE MARKED "WATER" TWO FEET BELOW FINISH GRADE AND A 10 GAUGE COPPER COATED TRACE WIRE ON TOP OF PIPE.
	3. FITTINGS TO BE DUCTILE IRON UNLESS SHOWN OTHERWISE.
	4. DOMESTIC WATER SERVICES SHALL BE POLYETHYLENE SERVICE PIPE, MEETING AWWA C901 STANDARDS. AT ALL LOCATIONS WHERE WATER SERVICE LINES ARE INSTALLED BENEATH NEW CURB, THE FACE OF THE CURB SHALL BE STAMPED WITH A "W" IN LETTERING AT LEAST 3" TALL, FOR MARKING THE WATER SERVICE LOCATION. ALL SERVICES TO BE INSTALLED BY A LICENSED PLUMBER.
	5. CENTER FULL LENGTH OF PIPE AT ALL SANITARY SEWER OR STORM SEWER CROSSINGS.
	6. ALL GATE VALVES & BUTTERFLY VALVES TO OPEN CLOCKWISE.
	7. ALL VALVES, ELBOWS OVER 11.5', AND FITTINGS AS APPROPRIATE SHALL BE RESTRAINED WITH MEGA-LUG OR APPROVED EQUAL AND INCLUDE THRUST BLOCKS.
	8. HYDRANTS TO BE MUELLER SUPER CENTURION 250, KENNEDY K81A OR APPROVED EQUAL AND INSTALLED ACCORDING TO CITY OF HELENA STANDARD DRAWING NO. 2-2.
	9. ALL WATER SERVICES TO BE INSTALLED ACCORDING TO CITY OF HELENA STANDARD DRAWING NO. 2-3.
	10. ALL FITTINGS, VALVES & FIRE HYDRANTS TO CONTAIN CATHODIC PROTECTION BY SACRIFICIAL ANODE, NORTHTOWN COMPANY PRODUCT NO. H-MG-20HP, MODEL NO. 20D2 INSTALLED ACCORDING TO ALL MANUFACTURER'S REQUIREMENTS OR APPROVED EQUAL.
	11. TAPPING OF ALL EXISTING WATER MAINS TO BE CONDUCTED BY CITY OF HELENA PERSONNEL ONLY. CONTRACTOR TO FURNISH AND INSTALL ALL SLEEVES, VALVES AND FITTINGS NEEDED TO COMPLETE THE TAP ACCORDING TO CITY STANDARDS. THE CITY WILL FURNISH TAPPING MACHINE AND LABOR TO EXECUTE THE TAP.
	12. ALL DUCTILE IRON WATER PIPE, FITTINGS, VALVES, BLOW OFFS, VALVE BOXES AND SERVICES 3' FROM MAIN SHALL BE COMPLETELY ENCASED IN POLYETHYLENE WRAP WITH A MINIMUM THICKNESS OF 8 MILS.
	13. TAPPING TEE TO BE A STAINLESS STEEL TAPPING SLEEVE, ROMAC INDUSTRIES SSTIII OR APPROVED EQUAL.
	14. CURB BOXES SHALL BE 5500 SERIES AYMCDONALD PLASTIC TELESCOPING CURB BOX OR APPROVED EQUAL.
SECTION 02720	STORM DRAIN SYSTEMS
SECTION 02725	DRAINAGE CULVERT
SECTION 02730	SANITARY SEWER COLLECTION SYSTEM
	1. SEWER MAINS TO BE SDR 35 PVC OR APPROVED EQUAL.
	2. SEWER SERVICES SHALL BE SDR 35 PVC OR APPROVED EQUAL. AT ALL LOCATIONS WHERE SEWER SERVICE LINES ARE INSTALLED BENEATH NEW CURB, THE FACE OF THE CURB SHALL BE STAMPED WITH A "S" IN LETTERING AT LEAST 3" TALL, FOR MARKING THE SEWER SERVICE LOCATION. ALL SERVICES TO BE INSTALLED BY A LICENSED PLUMBER.
	3. CENTER FULL LENGTH OF PIPE AT ALL WATER / STORM CROSSINGS.
	4. MANHOLES SHALL MEET ASTM C443 & ASTM C1619.
	5. ALL MANHOLE COVERS TO BE CITY OF HELENA SANITARY SEWER MANHOLE COVERS WITH INFRA-RISERS ACCORDING TO CITY OF HELENA STANDARD DRAWINGS NO. 3-1 AND 3-2.
	6. ALL MANHOLES TO BE VACUUM TESTED FOR WATERTIGHTNESS CONFORMING TO THE TEST PROCEDURES DESCRIBED IN ASTM C1244.
SECTION 02910	SEEDING

CONSTRUCTION NOTES

- THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND/OR FACILITIES ARE DEPICTED BASED ON INFORMATION PROVIDED BY OTHERS AND SHOULD BE CONSIDERED APPROXIMATE. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR IS RESPONSIBLE FOR LOCATING OR HAVING LOCATED, ALL UNDERGROUND FACILITIES SHOWN OR INDICATED IN THE PLANS AND/OR CONTRACT DOCUMENTS. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXCAVATING NEAR UNDERGROUND FACILITIES.
- ANY DAMAGE TO ABOVE OR BELOW GROUND UTILITIES AND/OR FACILITIES SHALL BE IMMEDIATELY REPORTED TO THE UTILITY COMPANY AND THE ENGINEER. ALL SHOWN OR MARKED UTILITIES OR FACILITIES DAMAGED BY THE CONTRACTOR OR ITS SUBCONTRACTOR SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
- ALL WATER VALVES AND HYDRANTS TO BE OPERATED BY CITY OF HELENA PERSONNEL ONLY.
- THE CONTRACTOR SHALL NOTIFY THE CITY OF HELENA FOR THE FOLLOWING ACTIVITIES:
 - 48-HOURS PRIOR TO ANY CONNECTIONS TO EXISTING WATER OR SEWER MAINS.
 - 48-HOURS PRIOR TO ANY FLUSHING OR HYDRANT TESTS.
 - AFTER FORMS ARE SET FOR ADA RAMPS, 24 HOURS BEFORE THE SCHEDULED POUR.
 - CITY OF HELENA MAINTENANCE DIVISION FOR A VALVE BOX INSPECTION PRIOR TO FINAL ROAD GRADING.
- WATER LINES TO BE BURIED WITH 6.5' MINIMUM COVER BELOW FINISH GRADE.
- ALL FLUSHING AND FILLING OF WATER MAINS WILL REQUIRE DE-CHLORINATION, CONTRACTOR IS RESPONSIBLE FOR DE-CHLORINATING ALL WATER MAINS.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS FOR CONSTRUCTION.
- CONTRACTOR SHALL INSTALL ADDITIONAL FITTINGS, BLOWOFFS, VALVES, ETC. AS MAY BE NECESSARY TO ADEQUATELY FLUSH, TEST, AND DISINFECT THE WATER LINES AND FITTINGS.
- IMPROVEMENTS SHALL NOT BE COVERED UNTIL INSPECTED BY THE ENGINEER.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY ITEMS DAMAGED DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A WATER MAIN AND SEWER OR STORM MAIN SEPARATION OF 10 FEET HORIZONTALLY EDGE TO EDGE AND 18 INCHES VERTICALLY AT CROSSINGS. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ADJACENT WATER OR SEWER MAINS TO CONFIRM SEPARATION HAS BEEN MET PER MPWSS NO. 02660-2
- RESTORE ALL SURFACED AREAS DAMAGED DURING CONSTRUCTION TO EQUAL OR BETTER CONDITIONS AS DETERMINED BY THE ENGINEER.
- ALL AREAS NOT LANDSCAPED OR ANY NON-SURFACED AREAS DISTURBED DURING CONSTRUCTION ARE TO BE RESTORED TO THE ORIGINAL GRADE, PREPARED FOR SEEDING AND DRYLAND SEED APPLIED ACCORDING TO THE CITY OF HELENA STANDARDS.
- ALL NEW SIDEWALK, ACCESSIBLE RAMPS, AND DRIVE APPROACHES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HELENA STANDARDS AND THE AMERICANS WITH DISABILITIES ACT STANDARDS.
- STORM WATER SHALL NOT AFFECT ADJACENT LOTS. FINAL SITE GRADING MUST REFLECT APPROVED PLANS.
- CONTRACTOR TO ENSURE ALL WATER FLOWS AWAY FROM FOUNDATIONS, SLOPE GROUND AT A MINIMUM OF 2% AWAY FROM BUILDING FOR FIRST 10 FEET. PROVIDE POSITIVE DRAINAGE TO CONVEY WATER AWAY FROM BUILDING AND ROUTING TO STORM DRAINAGE FACILITIES.
- ALL INFRASTRUCTURE THAT WILL BE OWNED AND OPERATED BY THE CITY OF HELENA TO BE LOCATED IN A CITY EXCLUSIVE UTILITY EASEMENT AND BE ACCESSIBLE TO CITY OF HELENA STAFF.
- MAXIMUM GRADING SLOPES TO BE 3:1.
- PROJECT HORIZONTAL DATUM OF 2011 (NAD83), BASED ON GEODETIC NORTH OBTAINED BY GPS OBSERVATIONS & OPUS PROCESSING AND VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON OPUS PROCESSING AND GEOID 12A.
- ALL NEW SEWER MAIN TAPS AND WATER MAIN TAPS REQUIRE A PERMIT THROUGH THE CITY OF HELENA BUILDING DEPARTMENT.
- CONTRACTOR SHALL MAINTAIN AN ACCURATE SET OF AS-BUILT PLANS AND SUBMIT TO THE ENGINEER AT PROJECT COMPLETION. RECORD LOCATIONS OF ALL SACRIFICIAL ANODES.
- ALL CURB BOXES MUST BE LOCATED WITHIN CITY UTILITY EASEMENT AND BE ACCESSIBLE TO CITY STAFF.

MINIMUM QUALITY CONTROL SUBMITTALS AND TESTING REQUIREMENTS

MATERIALS SUBMITTALS REQUIRED

MATERIALS PRODUCT	PARTY RESPONSIBLE FOR SUBMITTAL	REQUIRED SUBMITTALS PRIOR TO MOBILIZATION	REQUIRED SUBMITTALS DURING CONSTRUCTION
WATER DISTRIBUTION MATERIALS	CONTRACTOR	MANUFACTURER'S CUT SHEETS AND PRODUCT MODEL# OR SPECIFICATIONS	SEE MATERIALS TESTING
SANITARY SEWER COLLECTION MATERIALS	CONTRACTOR	MANUFACTURER'S CUT SHEETS AND PRODUCT MODEL# OR SPECIFICATIONS	SEE MATERIALS TESTING
STORM DRAINAGE MATERIALS	CONTRACTOR	MANUFACTURER'S CUT SHEETS AND PRODUCT MODEL# OR SPECIFICATIONS	NONE
PRECAST CONCRETE STRUCTURES	CONTRACTOR	MANUFACTURER'S SHOP DRAWINGS AND MATERIAL SPECIFICATIONS	NONE
PIPELINE BEDDING MATERIAL	CONTRACTOR	GRADATIONS, PROCTOR, LIQUID/PLASTIC LIMITS, PLASTIC INDEX	ONE REPRESENTATIVE SAMPLE OF MATERIAL IMPORTED TO SITE
ON SITE TRENCH BACKFILL MATERIAL	CONTRACTOR	GRADATIONS, PROCTOR, LIQUID/PLASTIC LIMITS, PLASTIC INDEX	ONE REPRESENTATIVE SAMPLE FOR EACH TYPE OF MATERIAL ENCOUNTERED
ON SITE UNCLASSIFIED EXCAVATION MATERIAL	CONTRACTOR	GRADATIONS, PROCTOR, LIQUID/PLASTIC LIMITS, PLASTIC INDEX	ONE REPRESENTATIVE SAMPLE FOR EACH TYPE OF MATERIAL ENCOUNTERED
SUB BASE COURSE	CONTRACTOR	GRADATIONS, PROCTOR, LIQUID/PLASTIC LIMITS, PLASTIC INDEX	ONE REPRESENTATIVE SAMPLE OF MATERIAL IMPORTED TO SITE
CRUSHED BASE COURSE	CONTRACTOR	GRADATIONS, PROCTOR, LIQUID/PLASTIC LIMITS, PLASTIC INDEX, FRACTURED FACES, WEAR	ONE REPRESENTATIVE SAMPLE OF MATERIAL IMPORTED TO SITE
ASPHALT CONCRETE PAVEMENT	CONTRACTOR	PROJECT MIX DESIGN FROM SUPPLIER	SEE MATERIALS TESTING
ASPHALT SEAL COAT	CONTRACTOR	GRADATIONS, CLEANNESS, WEAR, FRACTURED FACES, STRIPPING, P.I.	ONE REPRESENTATIVE SAMPLE OF MATERIAL IMPORTED TO SITE
ASPHALT PRIME AND OR TACK COAT	CONTRACTOR	PROJECT MIX DESIGN FROM SUPPLIER	NONE
CONCRETE	CONTRACTOR	PROJECT MIX DESIGN FROM SUPPLIER	SEE MATERIALS TESTING
CHIP SEAL	CONTRACTOR	GRADATIONS, CLEANNESS, WEAR, FRACTURED FACES, STRIPPING, P.I.	ONE REPRESENTATIVE SAMPLE OF MATERIAL IMPORTED TO SITE

ON-SITE MATERIALS TESTING

PRODUCT	PARTY RESPONSIBLE TO OBTAIN TESTS	TEST FREQUENCY	TEST REQUIREMENT & STANDARD
TRENCH EXCAVATION, BACKFILL AND COMPACTION	CONTRACTOR	ONE TEST PER 200 LINEAR FEET OF TRENCH*	TEST PER AASHTO T310. OBTAIN 95% BY AASHTO T99
STREET EXCAVATION, BACKFILL AND COMPACTION	CONTRACTOR	ONE TEST PER 300 LINEAR FEET PER 8" FILL	TEST PER AASHTO T310. OBTAIN 95% BY AASHTO T99
SUB BASE COURSE	CONTRACTOR	ONE TEST PER 100 LINEAR FEET	TEST PER AASHTO T310. OBTAIN 95% BY AASHTO T99
CRUSHED BASE COURSE	CONTRACTOR	ONE TEST PER 100 LINEAR FEET	TEST PER AASHTO T310. OBTAIN 95% BY AASHTO T99
ASPHALT CONCRETE PAVEMENT	CONTRACTOR	ONE TEST PER 100 LINEAR FEET**	93% BY ASTM D2041 PER MPWSS
CONCRETE	CONTRACTOR	ONE TEST PER POUR MIN. OR 1 TEST PER 100 C.Y.	TEMP. AIR, SLUMP, 4 CYLINDERS, PER MPWSS
SANITARY SEWER	CONTRACTOR	EVERY SECTION OF MAIN (SMH TO SMH)	LIGHT TEST AND AIR TEST PER MPWSS & VIDEO INSPECTION
WATER MAINS	CONTRACTOR	MAXIMUM 1,700 LF WATER MAIN PER TEST	HYDROSTATIC/LEAKAGE AT 210 PSIG AND BACTERIOLOGICAL PER MPWSS
FIRE HYDRANTS	CONTRACTOR	EACH FIRE HYDRANT	CITY TO FLOW EACH HYDRANT WITH ENGINEER ONSITE

*ADDITIONAL TESTS REQUIRED FOR EVERY BACKFILL MATERIAL CHANGE.

**CONTRACTOR SHALL ESTABLISH A ROLLING PATTERN EARLY IN THE PAVEMENT PROCESS BY TAKING A TEST FOR EVERY PASS AND RECORDING THE PERCENT OF MAXIMUM DENSITY. AT A MINIMUM THAT PATTERN SHALL BE MAINTAINED THROUGHOUT THE ENTIRE PROJECT.

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 2115-CV8	DESIGNED: GDW	DRAWN: JTF	CHECKED: -	APPROVED: -	DATE: JULY 2022
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**CRAFTSMAN VILLAGE OF THE CROSSROADS
 AT MOUNTAIN VIEW MEADOWS
 HELENA, MT**

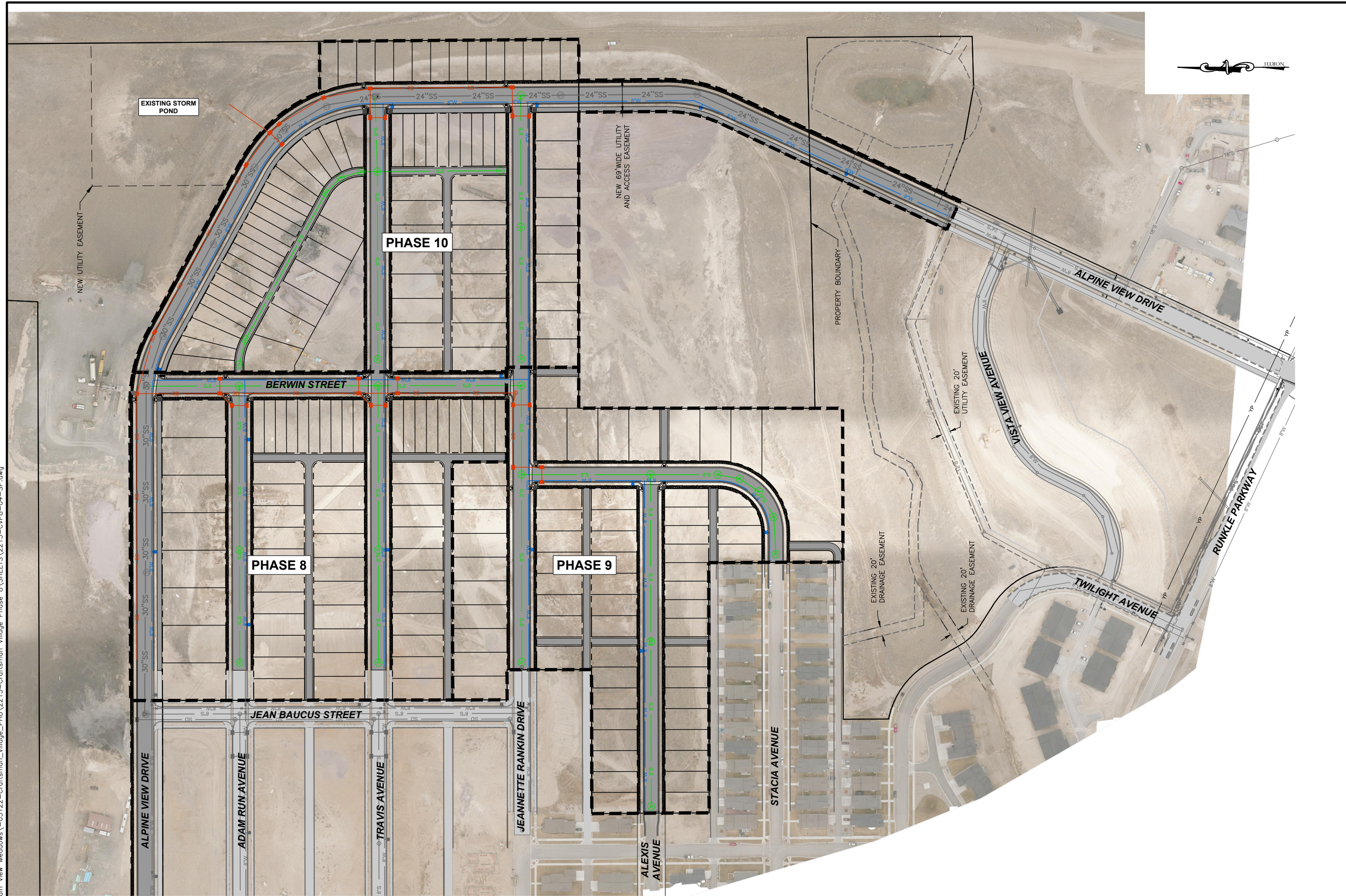
CIVIL SPECIFICATIONS & NOTES

SHEET NO.

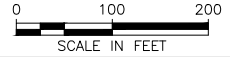
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OF 8

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OVERALL SITE PLAN



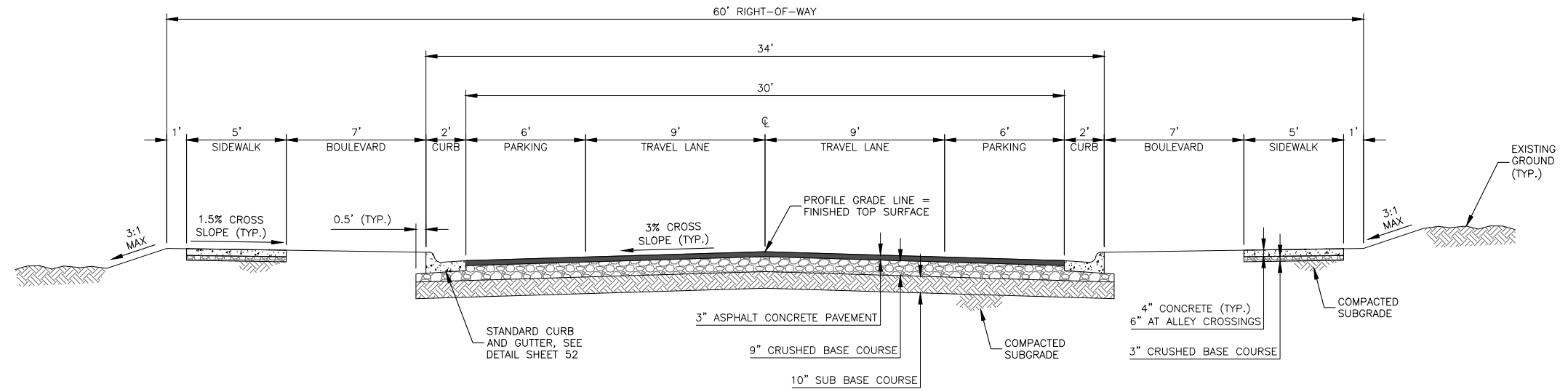
**CRAFTSMAN VILLAGE OF THE CROSSROADS
AT MOUNTAIN VIEW MEADOWS
HELENA, MT**

OVERALL SITE PLAN

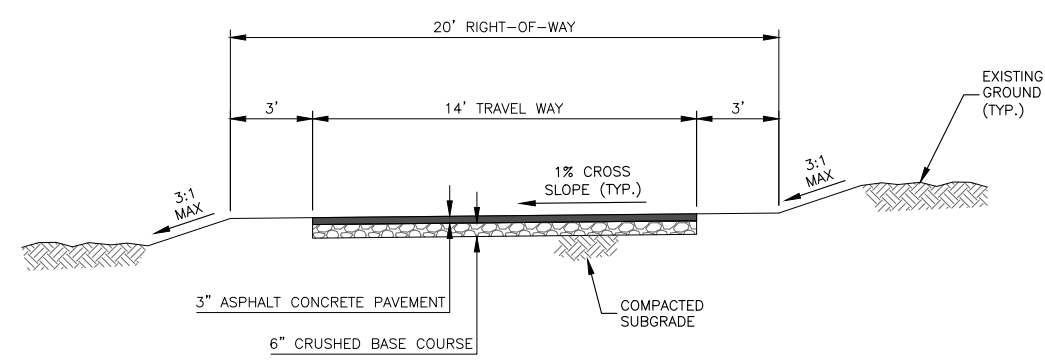


PROJECT: 2115-CV8
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DATE: JULY 2022

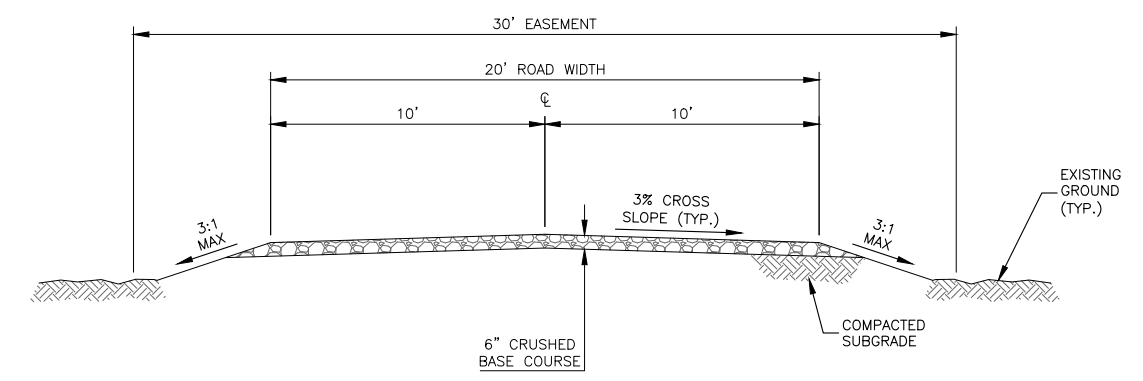
NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			



TYPICAL STREET SECTION - LOCAL STREET
(ADAM RUN, TRAVIS AVENUE, ALEXIS AVENUE, STACIA AVENUE, AND 'NEW' STREET)
 NO SCALE



TYPICAL ALLEY SECTION
 NO SCALE



EMERGENCY ACCESS ROAD SECTION
 NO SCALE

NO.	REVISION DESCRIPTION	BY	DATE

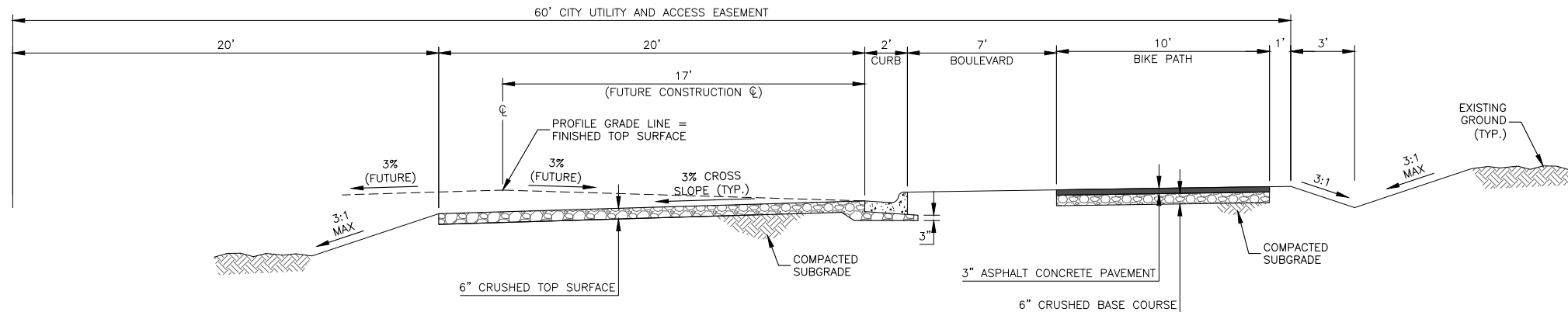
PROJECT: 2115-CV8
 DESIGNED: GDW
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 CHECKED: -
 APPROVED: -
 DATE: JULY 2022



CRAFTSMAN VILLAGE OF THE CROSSROADS
AT MOUNTAIN VIEW MEADOWS
HELENA, MT
 TYPICAL SECTIONS

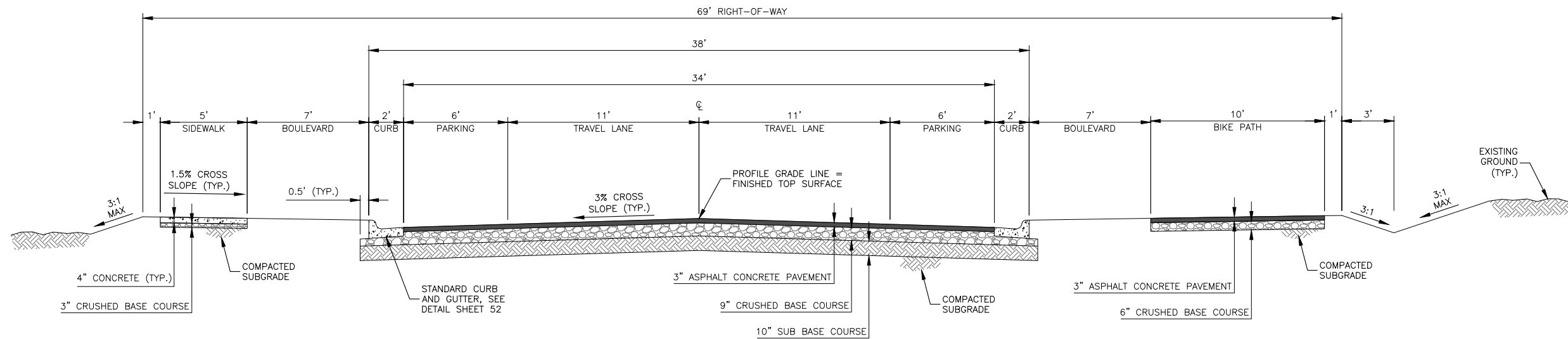
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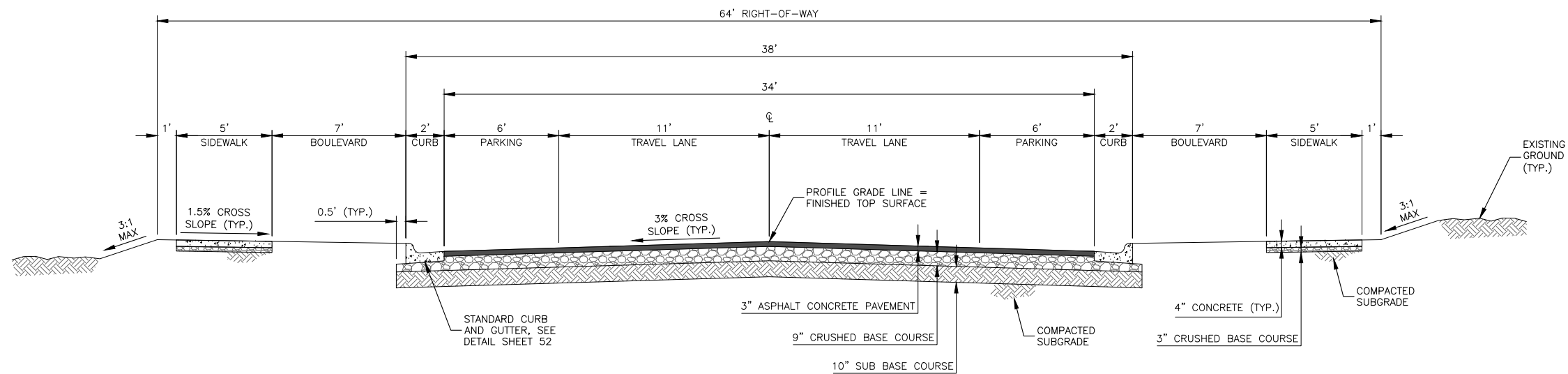
ALPINE VIEW DRIVE (PHASE 8)

NO SCALE



**TYPICAL STREET SECTION - MINOR COLLECTOR
(ALPINE VIEW DRIVE - PHASE 10)**

NO SCALE



**TYPICAL STREET SECTION - MINOR COLLECTOR
(JEANNETTE RANKIN DRIVE)**

NO SCALE

NO.	REVISION DESCRIPTION	BY	DATE

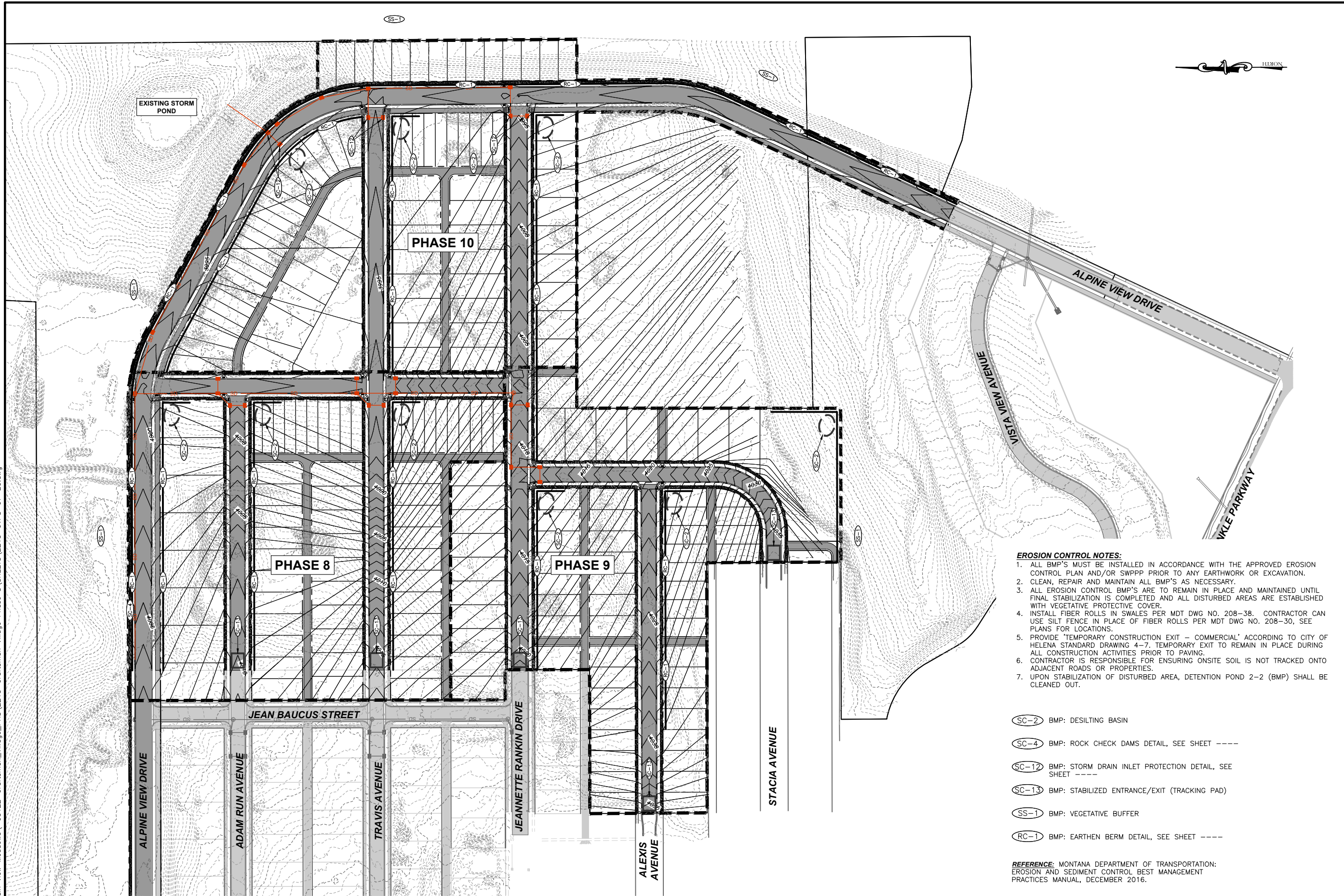
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 DESIGNED: GDW
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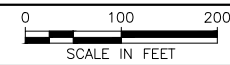
**CRAFTSMAN VILLAGE OF THE CROSSROADS
 AT MOUNTAIN VIEW MEADOWS
 HELENA, MT**

TYPICAL SECTIONS

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EROSION CONTROL PLAN



EROSION CONTROL NOTES:

1. ALL BMP'S MUST BE INSTALLED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN AND/OR SWPPP PRIOR TO ANY EARTHWORK OR EXCAVATION.
2. CLEAN, REPAIR AND MAINTAIN ALL BMP'S AS NECESSARY.
3. ALL EROSION CONTROL BMP'S ARE TO REMAIN IN PLACE AND MAINTAINED UNTIL FINAL STABILIZATION IS COMPLETED AND ALL DISTURBED AREAS ARE ESTABLISHED WITH VEGETATIVE PROTECTIVE COVER.
4. INSTALL FIBER ROLLS IN SWALES PER MDT DWG NO. 208-38. CONTRACTOR CAN USE SILT FENCE IN PLACE OF FIBER ROLLS PER MDT DWG NO. 208-30, SEE PLANS FOR LOCATIONS.
5. PROVIDE 'TEMPORARY CONSTRUCTION EXIT - COMMERCIAL' ACCORDING TO CITY OF HELENA STANDARD DRAWING 4-7. TEMPORARY EXIT TO REMAIN IN PLACE DURING ALL CONSTRUCTION ACTIVITIES PRIOR TO PAVING.
6. CONTRACTOR IS RESPONSIBLE FOR ENSURING ONSITE SOIL IS NOT TRACKED ONTO ADJACENT ROADS OR PROPERTIES.
7. UPON STABILIZATION OF DISTURBED AREA, DETENTION POND 2-2 (BMP) SHALL BE CLEANED OUT.

- (SC-2) BMP: DESILTING BASIN
- (SC-4) BMP: ROCK CHECK DAMS DETAIL, SEE SHEET ----
- (SC-12) BMP: STORM DRAIN INLET PROTECTION DETAIL, SEE SHEET ----
- (SC-13) BMP: STABILIZED ENTRANCE/EXIT (TRACKING PAD)
- (SS-1) BMP: VEGETATIVE BUFFER
- (RC-1) BMP: EARTHEN BERM DETAIL, SEE SHEET ----

REFERENCE: MONTANA DEPARTMENT OF TRANSPORTATION: EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MANUAL, DECEMBER 2016.

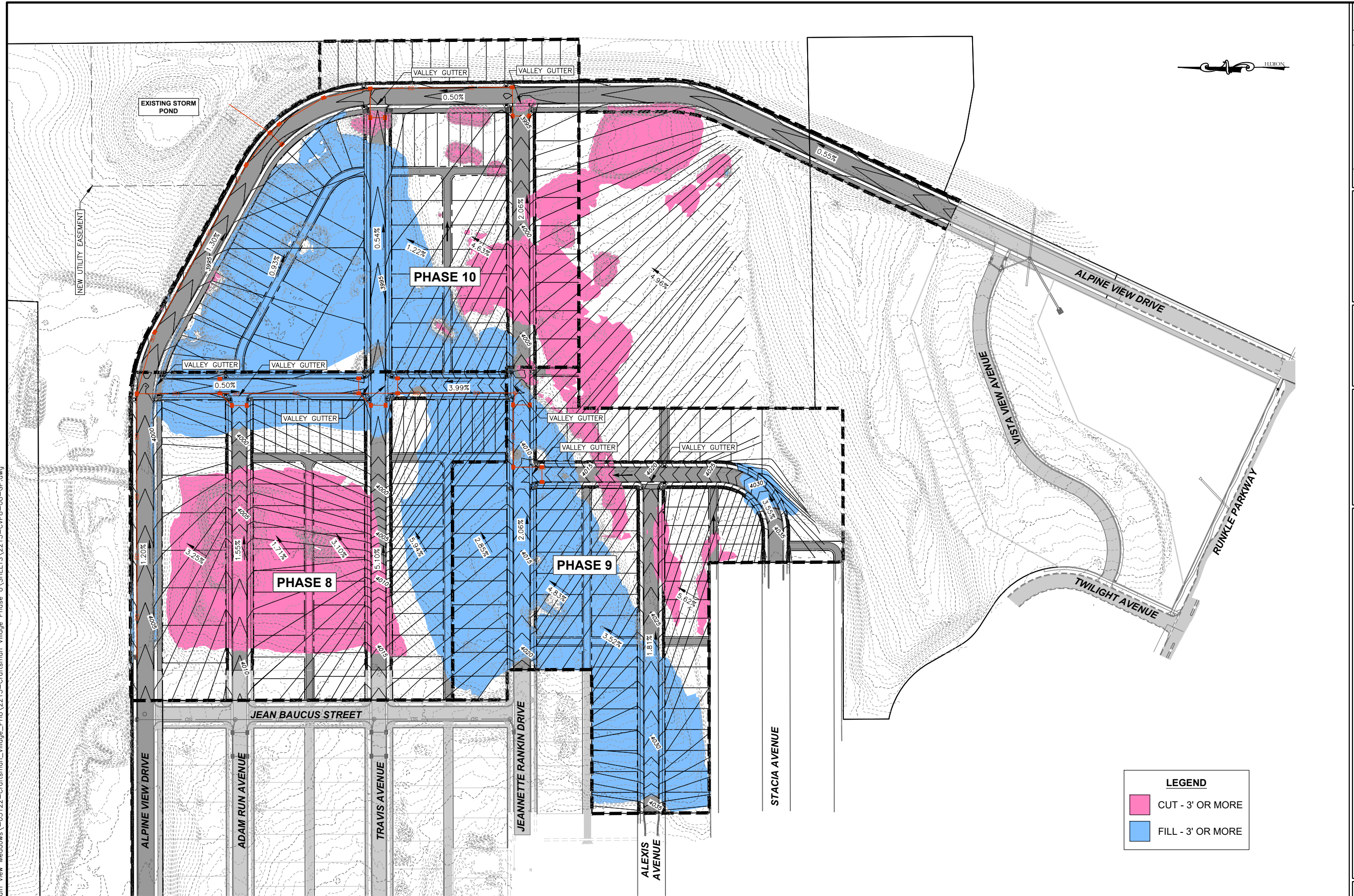
NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 2115-CV8
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**CRAFTSMAN VILLAGE OF THE CROSSROADS
 AT MOUNTAIN VIEW MEADOWS
 HELENA, MT**
 EROSION CONTROL PLAN

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LEGEND

- CUT - 3' OR MORE
- FILL - 3' OR MORE

GRADING PLAN
 0 100 200
 SCALE IN FEET



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CRAFTSMAN VILLAGE OF THE CROSSROADS
 AT MOUNTAIN VIEW MEADOWS
 HELENA, MT

GRADING PLAN

SHEET NO.
8
 OF 8