

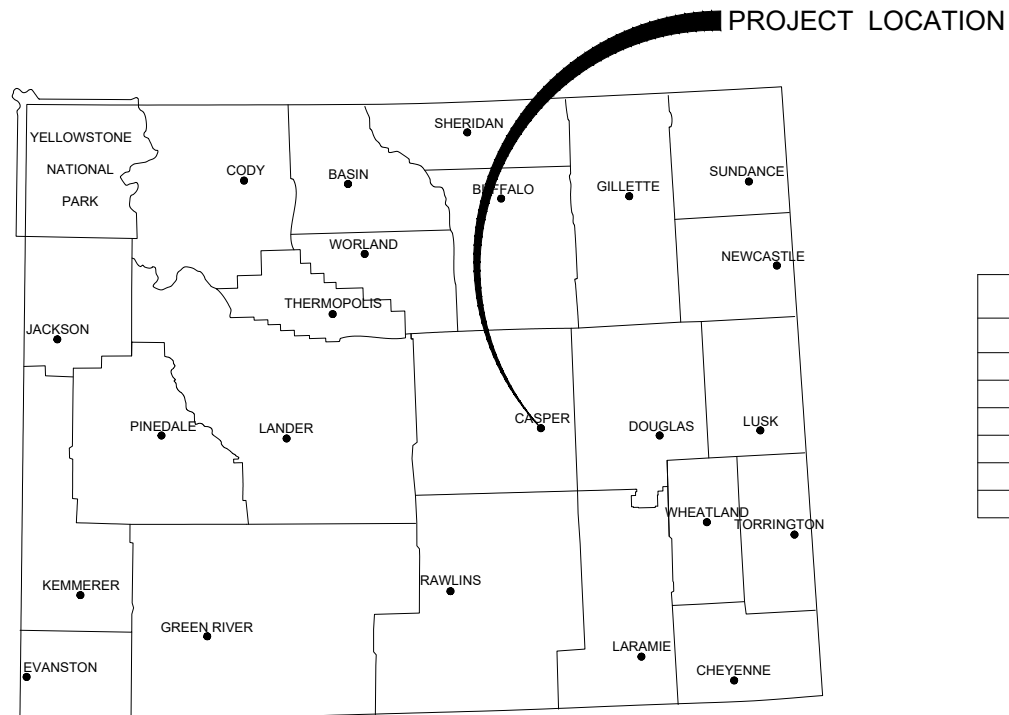
CONSTRUCTION DRAWINGS FOR CASPER COLLEGE CAREER STUDIES - STORM DRAIN PROJECT

CASPER, WYOMING
APRIL 2021

PREPARED BY:

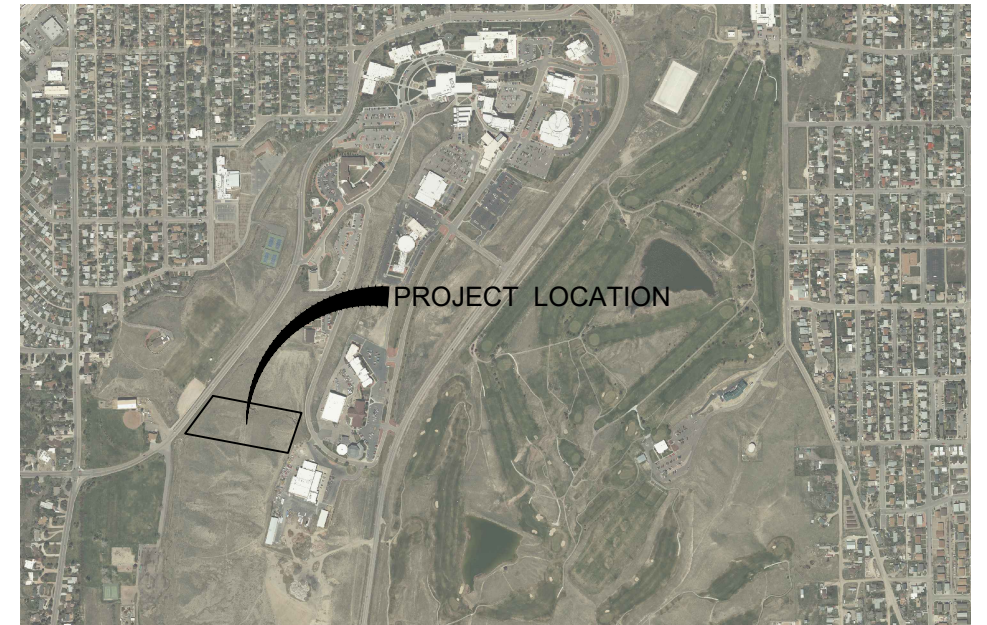


123 West 1st Street, Suite 640, Casper, WY 82601
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LOCATION MAP
NOT TO SCALE

SHEET INDEX	
DRAWING No.	SHEET TITLE
--	COVER SHEET
C-1	OVERALL SITE PLAN AND SURVEY CONTROL
C-2	PLAN AND PROFILE
C-3	OUTLET IMPACT BASIN GRADING PLAN AND DETAILS
D-1	DETAILS
D-2	DETAILS



CASPER COLLEGE CAMPUS
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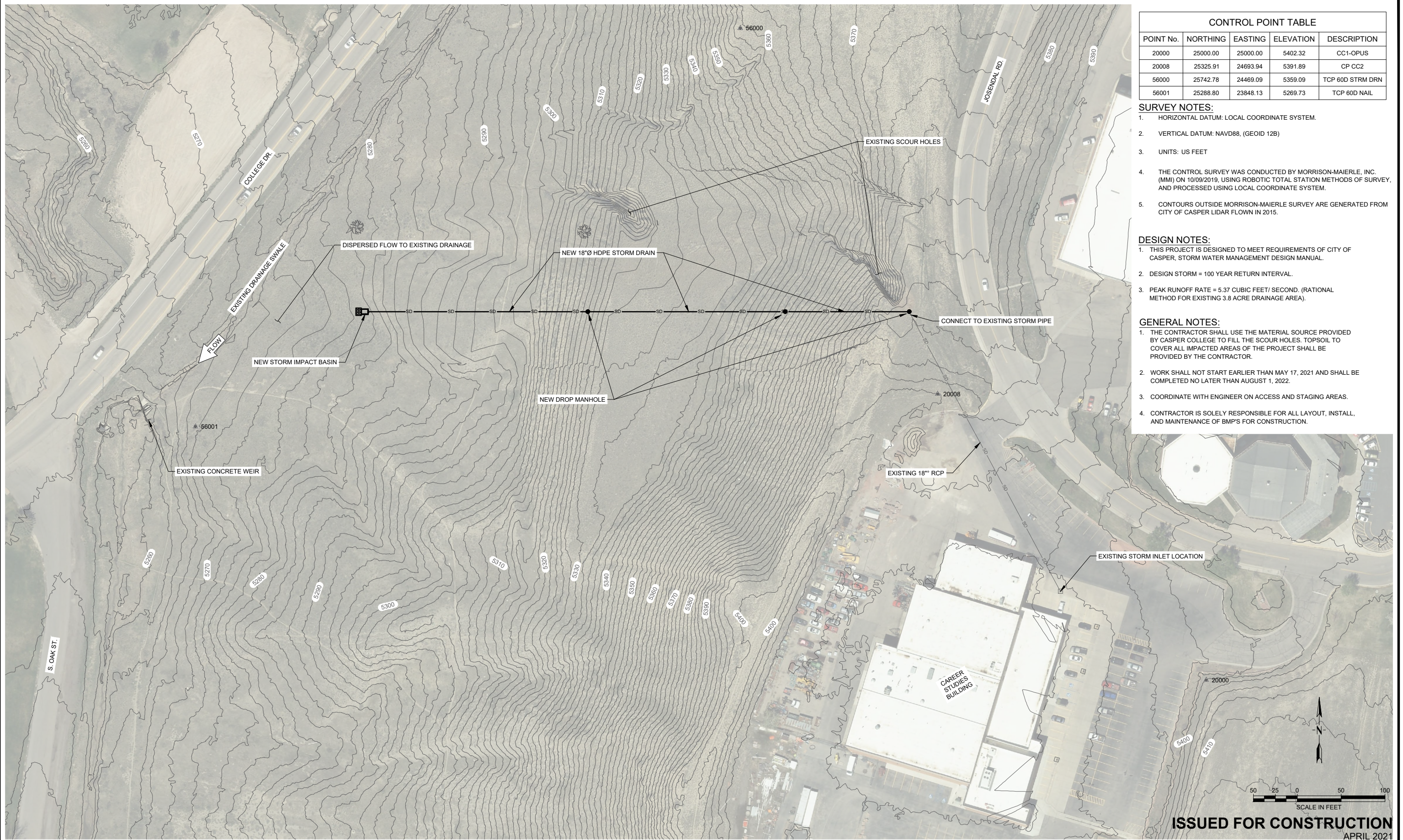


APPROVED BY: *Matt Barnes*
MATT BARNES, PE, CFM

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APRIL 2021

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QUALITY ASSURANCE	
RANDY BOMAR, P.E. PROJECT MANAGER	04/2021 Q.A. APPROVAL DATE
THERESA GUNN, P.E. OFFICE QUALITY ASSURANCE COORDINATOR	(001218) 19-216002.004 Q.A. PROJECT NUMBER
MOLLY R. DAVIDSON, P.E. PEER REVIEWER	

SET NO. _____
MORRISON-MAIERLE PROJECT NO. 6002.004



CONTROL POINT TABLE				
POINT No.	NORTHING	EASTING	ELEVATION	DESCRIPTION
20000	25000.00	25000.00	5402.32	CC1-OPUS
20008	25325.91	24693.94	5391.89	CP CC2
56000	25742.78	24469.09	5359.09	TCP 60D STRM DRN
56001	25288.80	23848.13	5269.73	TCP 60D NAIL

- SURVEY NOTES:**
- HORIZONTAL DATUM: LOCAL COORDINATE SYSTEM.
 - VERTICAL DATUM: NAVD88, (GEOID 12B)
 - UNITS: US FEET
 - THE CONTROL SURVEY WAS CONDUCTED BY MORRISON-MAIERLE, INC. (MMI) ON 10/09/2019, USING ROBOTIC TOTAL STATION METHODS OF SURVEY, AND PROCESSED USING LOCAL COORDINATE SYSTEM.
 - CONTOURS OUTSIDE MORRISON-MAIERLE SURVEY ARE GENERATED FROM CITY OF CASPER LIDAR FLOWN IN 2015.

- DESIGN NOTES:**
- THIS PROJECT IS DESIGNED TO MEET REQUIREMENTS OF CITY OF CASPER, STORM WATER MANAGEMENT DESIGN MANUAL.
 - DESIGN STORM = 100 YEAR RETURN INTERVAL.
 - PEAK RUNOFF RATE = 5.37 CUBIC FEET/ SECOND. (RATIONAL METHOD FOR EXISTING 3.8 ACRE DRAINAGE AREA).

- GENERAL NOTES:**
- THE CONTRACTOR SHALL USE THE MATERIAL SOURCE PROVIDED BY CASPER COLLEGE TO FILL THE SCOUR HOLES. TOPSOIL TO COVER ALL IMPACTED AREAS OF THE PROJECT SHALL BE PROVIDED BY THE CONTRACTOR.
 - WORK SHALL NOT START EARLIER THAN MAY 17, 2021 AND SHALL BE COMPLETED NO LATER THAN AUGUST 1, 2022.
 - COORDINATE WITH ENGINEER ON ACCESS AND STAGING AREAS.
 - CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL LAYOUT, INSTALL, AND MAINTENANCE OF BMP'S FOR CONSTRUCTION.

NO.	DESCRIPTION	REVISIONS	
		BY	DATE

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Professional Engineer
MORRISON MAIERLE
Date 4/7/2021
WYOMING

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APPR BY: MDB
DATE: 04/2021
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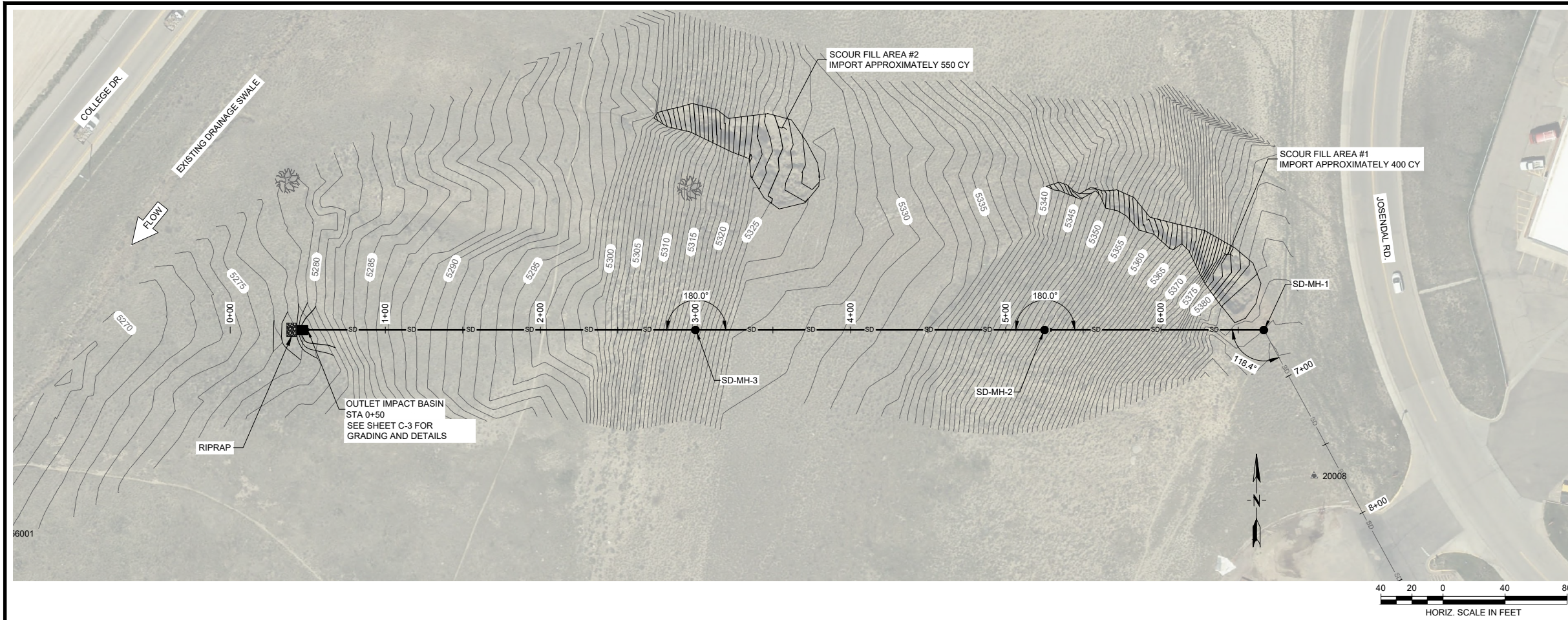
CASPER WYOMING

CASPER COLLEGE CAREER-STUDIES STORM DRAIN

OVERALL SITE PLAN AND SURVEY CONTROL

PROJECT NUMBER 6002.004
SHEET NUMBER -
DRAWING NUMBER C-1

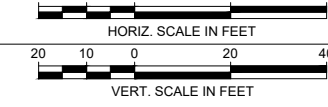
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GENERAL NOTES

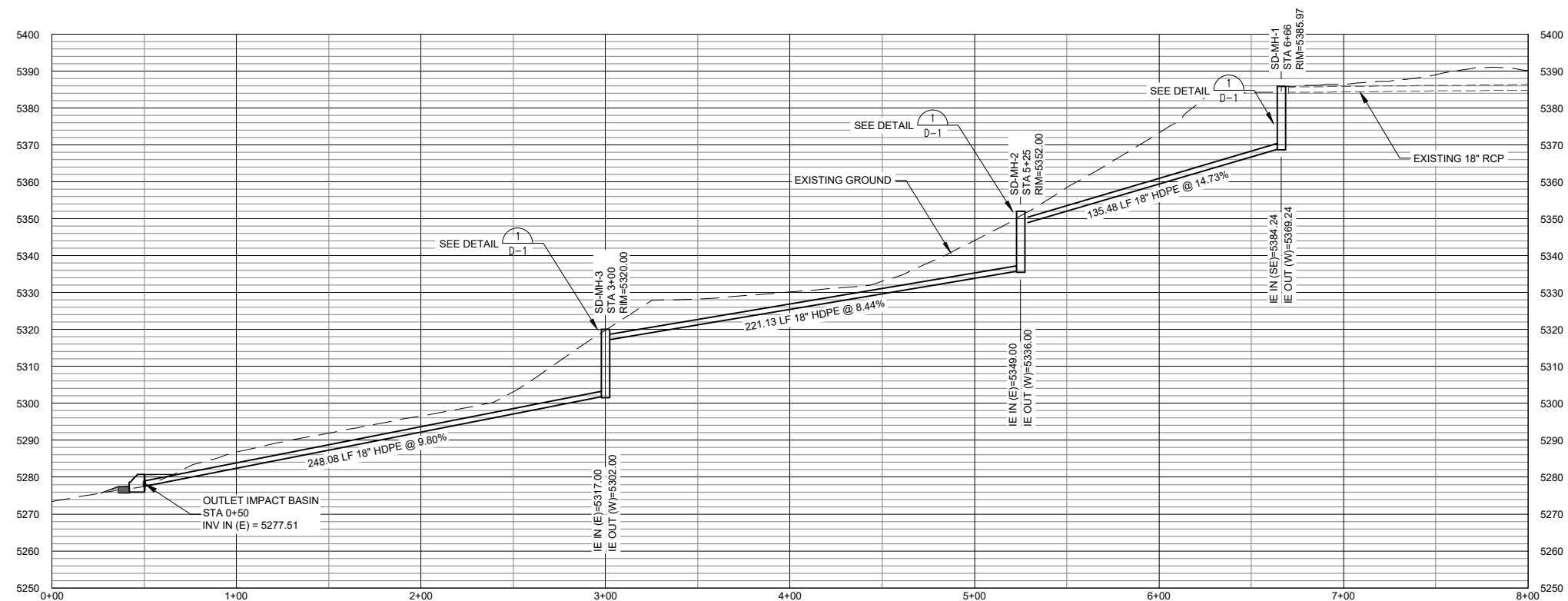
1. CONTRACTOR SHALL ADHERE TO ALL PERMIT REQUIREMENTS AND SUBMIT WATER QUALITY MANAGEMENT PLAN FOR REVIEW AND APPROVAL PRIOR TO MOBILIZATION.
2. ACCESS TO THE SITE SHALL BE APPROVED BY ENGINEER. ALL CONSTRUCTION ROUTES AND ALL AREAS IMPACTED BY CONSTRUCTION OUTSIDE OF PROJECT FOOTPRINT SHALL BE DE-COMPACTED AND RESTORED TO PRE-EXISTING GRADES AND CONDITIONS.
3. CONTRACTOR SHALL AVOID IMPACTS TO MAXIMUM EXTENT PRACTICABLE AND COORDINATE WITH OWNER FOR ANY REQUIRED REPAIRS FOLLOWING CONSTRUCTION. ALL DISTURBED AREAS SHALL BE SEEDED.
4. SCOUR FILL AREAS SHALL BE FILLED TO BLEND WITH SURROUNDING HILLSIDE. FILL SHALL BE PLACED IN MAXIMUM 6" LIFTS AND COMPACTED.
5. 6" MIN. OF TOP SOIL SHALL BE PLACED ON IMPORTED FILL. EROSION CONTROL FABRIC SHALL BE PLACED OVER ALL TOP SOIL AREAS FOLLOWING SEEDING. EROSION CONTROL FABRIC SHALL BE EROSION CONTROL BLANKETS SC32 BD OR EQUAL.
6. STABILITY OF CONSTRUCTION EXCAVATION AND WORKER SAFETY ARE THE RESPONSIBILITY OF THE CONTRACTOR. TEMPORARY CONSTRUCTION EXCAVATIONS TO BE PLANNED IN ACCORDANCE WITH OSHA PROVISIONS.
7. SHORE ALL EXCAVATIONS AND PROVIDE DE-WATERING SYSTEMS AS REQUIRED FOR THE WORK AND TO PREVENT SUBSIDENCE OR DAMAGE TO ADJACENT EXISTING STRUCTURES, UTILITIES, STREETS, ETC. DESIGN OF SHORING AND DE-WATERING SYSTEM IS THE CONTRACTOR'S RESPONSIBILITY. COMPLY WITH ALL GOVERNING LOCAL, STATE, AND FEDERAL REGULATIONS. DEWATERING DURING CONSTRUCTION MUST MAINTAIN GROUNDWATER LEVEL A MINIMUM OF 1 FOOT BELOW LOWEST POINT OF EXCAVATION.
8. DRAINAGE SHALL BE MAINTAINED DURING CONSTRUCTION TO KEEP SURFACE RUNOFF FROM ENTERING THE EXCAVATIONS AND DIRECTED AWAY FROM THE STRUCTURE.
9. USE ONLY HAND OPERATED COMPACTION EQUIPMENT WITHIN 5 FT. OF STRUCTURES.
10. SEED MIX: BROADCAST APPLICATION MINIMUM 13 LBS/AC. SEED ALL DISTURBED AREAS FIRST, THEN INSTALL EROSION CONTROL FABRIC.

BOTTLEBRUSH SQUIRRELTAIL	6%
CANBY BLUEGRASS, CANBAR	6%
INDIAN RICEGRASS, NESPAR	19%
STREAMBANK WHEATGRASS, SODAR	31%
WESTERN WHEATGRASS, ROSANA	38%
PERCENT BY WEIGHT	



SPECIFICATIONS

1. CONTRACTOR SHALL ADHERE TO CITY OF CASPER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND INFRASTRUCTURE IMPROVEMENTS, JANUARY 2006. NOTES AND DETAILS SHOWN ON DESIGN DRAWINGS SUPERCEDE CITY OF CASPER STANDARD SPECIFICATIONS.
2. HDPE PIPE SHALL MEET THE FOLLOWING REQUIREMENTS:
 - A. SHALL HAVE A SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS.
 - B. SHALL MEET ASTM F2881 OR AASHTO M330.
 - C. SHALL HAVE A MANNING'S "N" VALUE FOR USE IN DESIGN OF 0.012
 - D. ALL JOINTS SHALL BE WATERTIGHT ACCORDING TO REQUIREMENTS OF ASTM D3212
 - E. ALL GASKETS SHALL MEET REQUIREMENTS OF ASTM F477.
 - F. FITTINGS SHALL CONFORM TO ASTM F2881 OF AASHTO M330. BELL AND SIGOT CONNECTIONS SHALL UTILIZE A WELDED OR INTEGRAL BELL AND VALLEY OR INLINE GASKET.
 - G. POLYPROPYLENE COMPOUND FOR PIPE AND FITTING PRODUCTION SHALL BE IMPACT MODIFIED COPOLYMER MEETING THE MATERIAL REQUIREMENTS OF ASTM F2881, SECTION 5 AND AASHTO M330, SECTION 6.1.
 - H. SEE DETAIL (2) FOR PIPE INSTALLATION.
3. TESTING
 - A. PIPE INSTALLATION TESTING SHALL ADHERE TO THE CITY OF CASPER STANDARD SPECIFICATIONS, SECTION 602.10.A.
 - B. DENSITY TESTING SHALL ADHERE TO CITY OF CASPER STANDARD SPECIFICATIONS, SECTION 602.06.G AND SECTION 602.10.D.
4. BEDDING MATERIAL SHALL ADHERE TO CITY OF CASPER STANDARD SPECIFICATIONS, SECTION 602.03.E.
5. RIPRAP SHALL BE PLACED IN SUCH A MANNER SO AS TO PROVIDE A REASONABLY SOLID MASS WITH NO APPRECIABLE VARIATION IN THICKNESS OR SLOPE.



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Date 4/1/2021
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DATE: 04/2021
Q.C. REVIEW BY: MRD
DATE: 01/2020

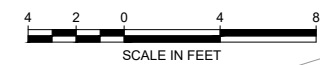
CASPER COLLEGE CAREER-STUDIES STORM DRAIN
WYOMING

PROJECT NUMBER 6002.004
SHEET NUMBER -
DRAWING NUMBER C-2

PLAN AND PROFILE

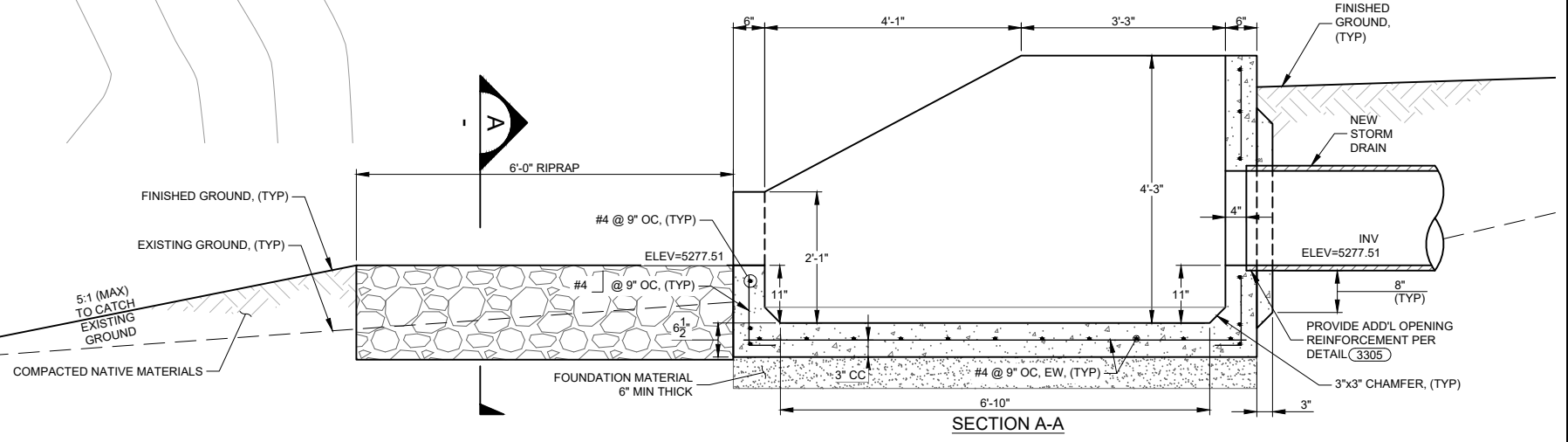
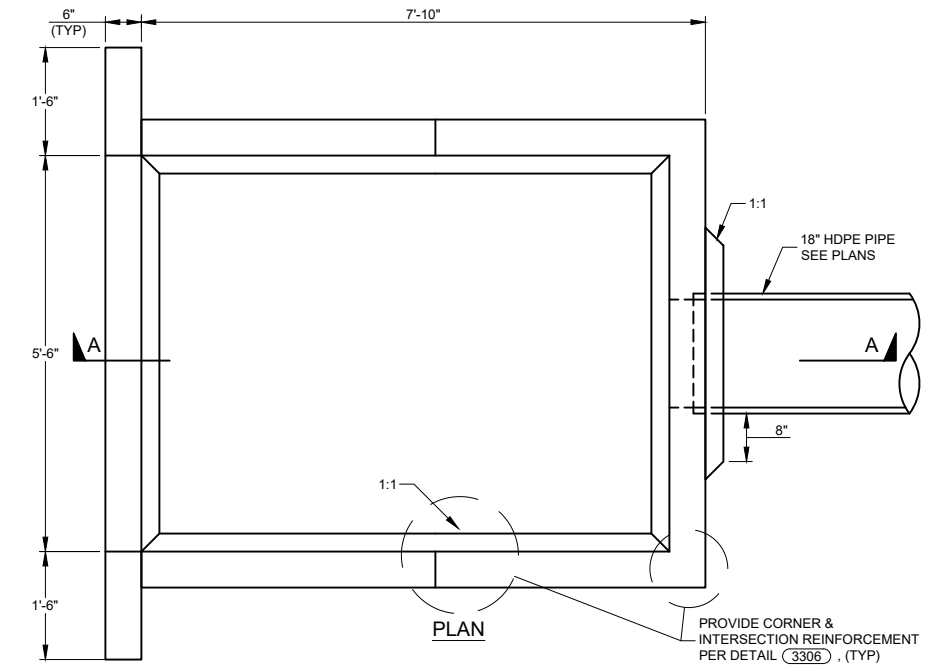
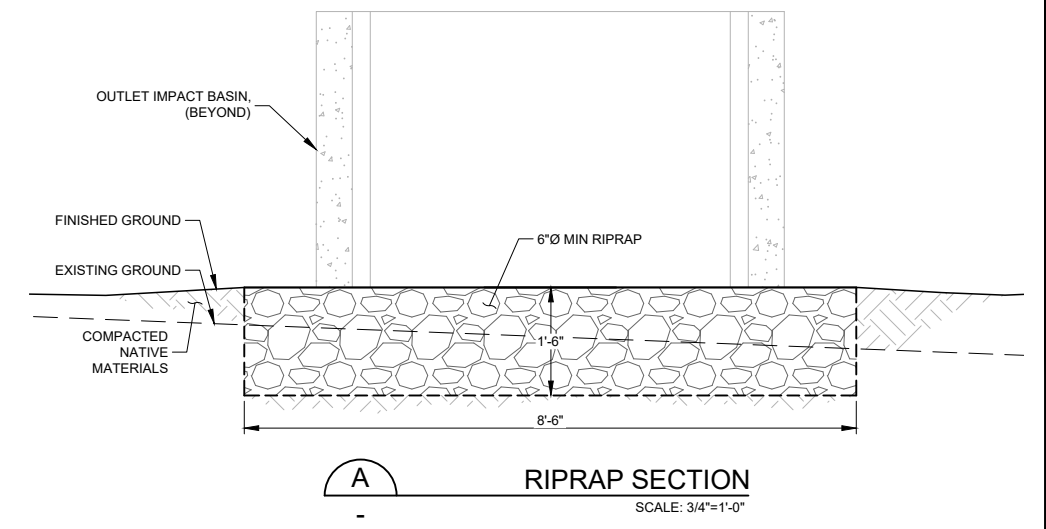
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GRADE FINISH GROUND FROM TOP OF RIPRAP TO CATCH EXISTING GROUND AT 5:1 MAX SLOPE



OUTLET IMPACT BASIN GRADING PLAN

OUTLET IMPACT BASIN SEE DETAIL
 GRADE BACKFILL AROUND IMPACT BASIN FINISH GROUND TO WITHIN 0.5'-1.0' OF TOP OF WALL ELEVATIONS
 NEW STORM DRAIN



OUTLET IMPACT BASIN DETAIL
 SCALE: 3/4"=1'-0"

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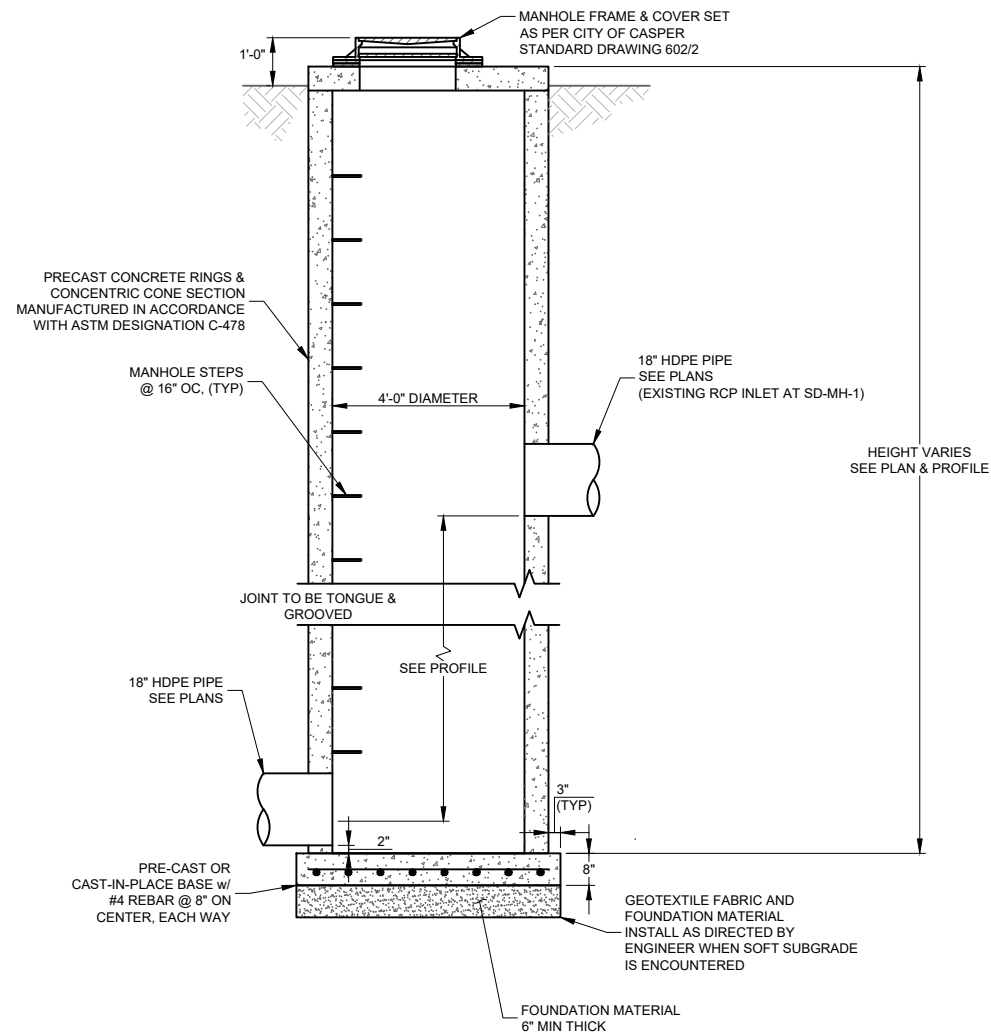
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PROFESSIONAL ENGINEER
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APPR BY: MDB			DRAWING NUMBER
DATE: 04/2021			C-3
Q.C. REVIEW BY: MRD		OUTLET IMPACT BASIN GRADING PLAN AND DETAILS	
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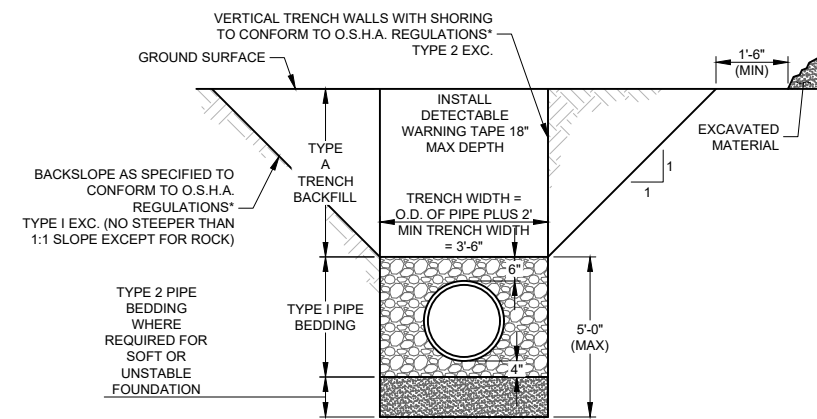
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- NOTES:
1. MANHOLE STEPS SHALL BE NON-CORROSIVE TYPE, 12 INCHES IN WIDTH, OF 1/2 INCH STEEL ROD ENCASED w/ POLYPROPYLENE. ASSURE STEPS WITHSTAND 400 POUND VERTICAL LOADS AND 1,000 POUND PULL-OUT RESISTANCE.
 2. MANHOLES WITH THE BASE POURED MONOLITHICALLY WITH THE BOTTOM BARREL ARE ALSO ACCEPTABLE.
 3. SEAL JOINTS WATER TIGHT WITH APPROVED MATERIAL. GROUT HOISTING HOLES WATER TIGHT WITH NONMETALLIC, NON-SHRINK GROUT.

1
DROP MANHOLE DETAIL
SCALE: 1/2"=1'-0"



- NOTES:
1. WHEN IN UNSTABLE OR SOFT MATERIAL, TRENCH WALLS SHALL BE BACKSLOPED FROM THE BOTTOM OF THE TRENCH (TYPE I EXCAVATION)*.
 2. TRENCH EXCAVATION AND PREPARATION SHALL ADHERE TO CITY OF CASPER STANDARD SPECIFICATIONS, SECTION 602.04.
 3. PIPE INSTALLATION SHALL ADHERE TO CITY OF CASPER STANDARD SPECIFICATIONS, SECTION 602.05.
 4. TRENCH BACKFILLING SHALL ADHERE TO CITY OF CASPER STANDARD SPECIFICATIONS, SECTION 602.06.
- * SEE O.S.H.A. SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION, SECTION 1926.652.

2
TYPICAL UTILITY TRENCH DETAIL
SCALE: 1/2"=1'-0"

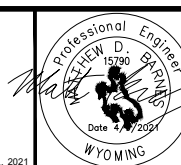
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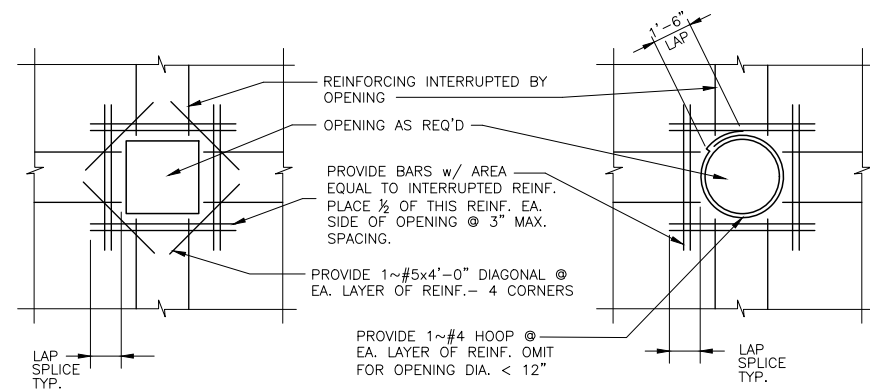
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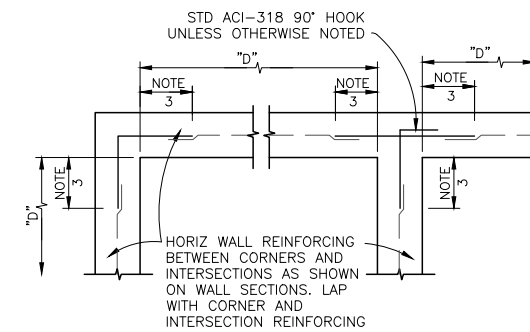
CASPER COLLEGE CAREER-STUDIES STORM DRAIN
WYOMING
DETAILS

PROJECT NUMBER 6002.004
SHEET NUMBER
DRAWING NUMBER D-1



- NOTES:**
1. TYPICAL FOR ALL OPENINGS IN CONCRETE, UNLESS NOTED OTHERWISE.
 2. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES OR INSERTS.
 3. PROVIDE MINIMUM LAP AS NOTED OR SHOWN ON PLANS.

REINFORCEMENT FOR OPENINGS IN WALLS AND SLABS (3305)
N.T.S.



CORNER AND INTERSECTION REINFORCING NOTES:

1. TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT, FOR SIZE AND SPACING SEE PLANS. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. WHERE THE CORNER OR INTERSECTION REINFORCING SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCING SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCING BETWEEN THE CORNERS OR INTERSECTIONS.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF D/4, 10 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2.0 FEET.
4. D = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION

TYPICAL SINGLE MAT CORNER AND INTERSECTION REINFORCING (3306)
N.T.S.

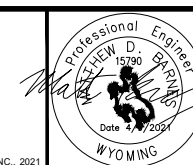
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CASPER CASPER COLLEGE CAREER-STUDIES STORM DRAIN WYOMING
DETAILS

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