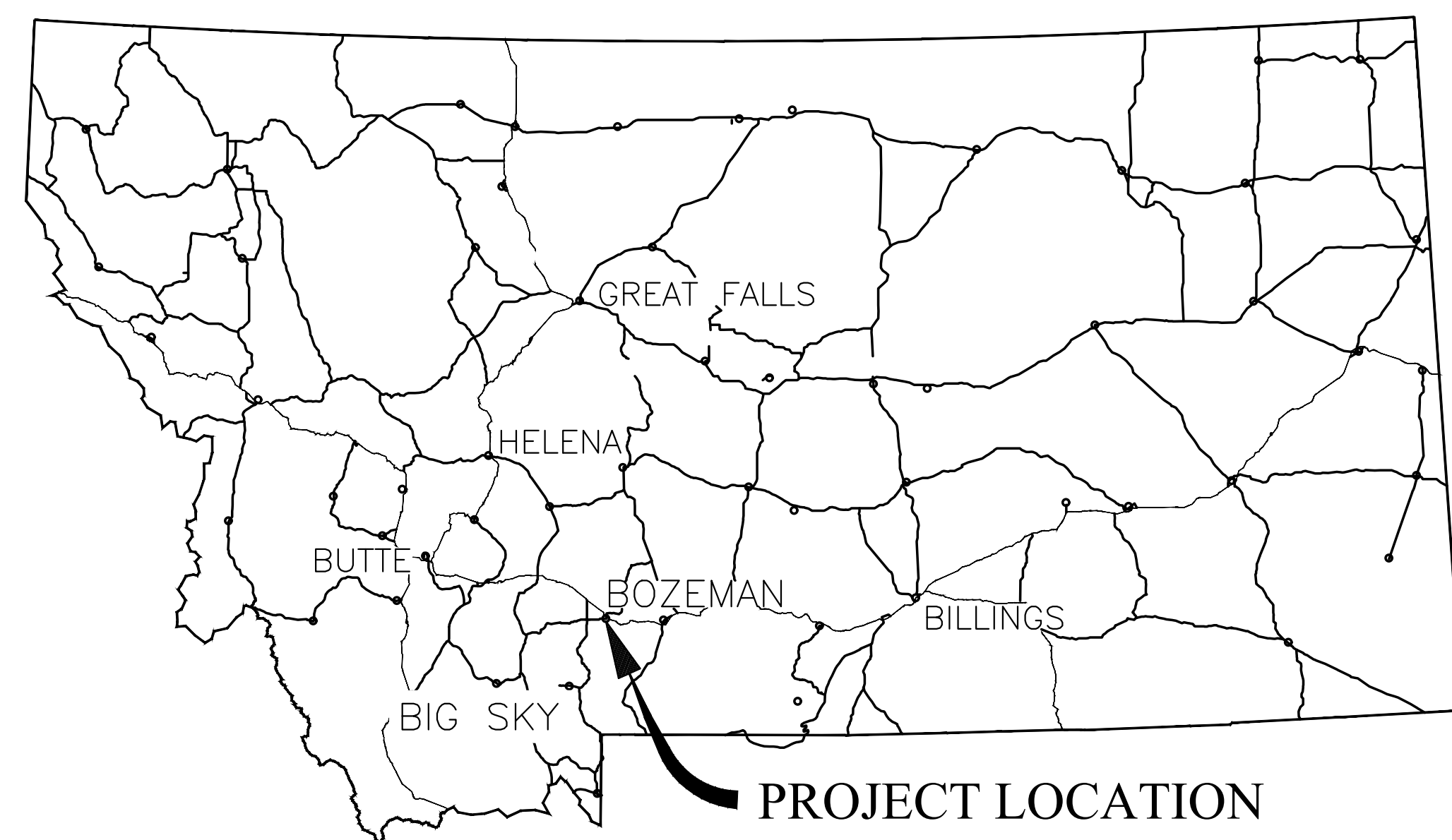


CONSTRUCTION DRAWINGS FOR AES BART FARM ACADEMIC BUILDINGS CITY WATER PPA 21-0088 AES BART FARM WATER TO BUILDINGS PPA 21-0061 BOZEMAN, MT MARCH, 2024

SHEET INDEX

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C4.0	WATER OVERVIEW
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C5.0	CIVIL DETAILS
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M1.5	MARVIN ARTS PLAN - PLUMBING DEMO
M1.6	MARVIN ARTS PLAN - PLUMBING
TOTAL 14 SHEETS	



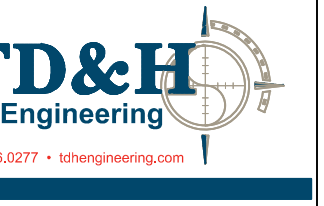
SITE LOCATION MAP
NO SCALE



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100% CONSTRUCTION DRAWINGS

AES BART FARM CITY WATER TO BUILDINGS
BOZEMAN, MONTANA



DRAWN BY: BAS
 REVIEWED BY: KJS
 REV. | DESCRIPTION | DATE

PPA#21-0061
 PPA#21-0088
 TD&H#B23-075

COVER PAGE

SHEET
C1.0

DATE
 03/07/2024

GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN WRITING AND SHALL BE RESPONSIBLE FOR SECURING THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE BEGINNING EXCAVATION. NOTE THAT NOT ALL UTILITIES ARE SHOWN ON THE PLANS. MANY EXISTING UTILITIES AT THE SITE ARE PRIVATE. SOME UTILITY LOCATIONS ARE ASSUMED, AND UTILITIES MAY EXTEND OR EXTEND BEYOND WHAT IS SHOWN.
2. ALL GAS, POWER, TELECOMMUNICATION, AND OTHER UNDERGROUND/OVERHEAD UTILITY LINES, POLES, OR GUY WIRES WHICH INTERFERE WITH THE CONSTRUCTION SHALL BE REMOVED OR RELOCATED BY THE UTILITY COMPANY. CONTRACTOR SHALL BE RESPONSIBLE COORDINATE ALL UTILITY RELOCATIONS AND REMOVALS WITH UTILITY COMPANIES AND NOTIFY ADJACENT PROPERTIES OF POTENTIAL OUTAGES.
3. THE CONTRACTOR SHALL EXCAVATE ALL WATER, SEWER, AND STORM DRAIN LINES PRIOR TO BEGINNING UTILITY INSTALLATION TO ENSURE CROSSING CLEARANCE AND VERIFY LINE AND GRADE OF EXISTING CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATING FITTINGS AND CONFIRMING REQUIREMENTS PRIOR TO ORDERING NEW FITTINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO POT HOLE FOR ALL UNDERGROUND GAS, UNDERGROUND ELECTRIC, COMMUNICATIONS, AND PRIVATE UTILITY LINES AND NEAR NEW UTILITY CROSSINGS AND CONNECTIONS TO LOCATE AND ENSURE NO CONFLICTS EXIST.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL NECESSARY PERMITS REQUIRED FOR THE WORK.
6. THE CONTRACTOR WILL BE RESPONSIBLE TO OBTAIN, ADMINISTER, CLOSEOUT, OR OTHERWISE DELEGATE RESPONSIBILITIES TO MAINTAIN A COMPLIANT STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY PERMIT (SWPPP) FOR THE DURATION OF THE PROJECT THROUGH FINAL SITE STABILIZATION.
7. ALL CULVERTS, SIDEWALKS, SOD, LANDSCAPING, ASPHALT, DRAINAGE DITCHES, FENCES, AND OTHER EXISTING SITE FEATURES AFFECTED BY CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION, UNLESS OTHERWISE NOTED ON PLANS.
8. ALL STREET & TRAFFIC SIGNS THAT INTERFERE WITH CONSTRUCTION SHALL BE REMOVED & RESET BY CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
9. CONTRACTOR SHALL REMOVE ANY OBSTACLE (TREES, BUSHES, FENCES, CONCRETE SLABS, ETC.) THAT INTERFERES WITH CONSTRUCTION UPON APPROVAL OF PROJECT ENGINEER.
10. ALL CIVIL WORK SHALL BE CONDUCTED IN CONFORMANCE WITH THE SEVENTH EDITION OF THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS AND THE CITY OF BOZEMAN MODIFICATIONS TO THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS, INCLUDING ALL ADDENDA.
11. ANY EXISTING OR NEW VALVES WHICH CONTROL THE MSU WATER SUPPLY SHALL BE OPERATED BY MSU PERSONNEL ONLY.
16. THE MONTANA STATE UNIVERSITY CAMPUS PLANNING, DESIGN AND CONSTRUCTION DEPARTMENT PROJECT MANAGER SHALL BE NOTIFIED 72 HOURS PRIOR TO ANY WATER SHUT DOWNS OR POWER OUTAGES.
17. CONTRACTOR SHALL PROVIDE ROUTINE CLEANING/SWEEPING OF MATERIAL THAT IS DRAGGED OFF-SITE OR ONTO ADJACENT STREETS.
18. THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL NECESSARY FOR WORK WITHIN THE RIGHT-OF-WAY IN ACCORDANCE WITH MUTCD AND MSU STANDARDS.
19. ALL SIDEWALKS, RAMPS, AND SIGNAGE SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT MUTCD AND ADA REQUIREMENTS.
20. ALL UTILITY LINES AND SERVICES SHALL BE MARKED USING OMNI MARKER ELECTRONIC MARKERS BY TEMPO. AN OMNI MARKER SHALL BE PLACED AT EACH FITTING AND BEND AND AT INTERVALS NOT TO EXCEED 100 FEET. THE OMNI MARKER SHALL BE AFFIXED TO THE PIPE USING PLASTIC ZIP TIES AND AT A DEPTH NOT TO EXCEED 5 FEET FROM FINISHED GROUND. THE MARKER SHALL BE ANCHORED TO THE PIPE DIRECTLY VERTICAL ABOVE THE PIPE BUT DOES NOT HAVE TO BE DIRECTLY ON THE PIPE. ENSURE CORRECT COLORS ARE USED FOR THE RESPECTIVE UTILITY. SEE TABLE BELOW.

APPLICATION	COLOR
POWER	RED
WATER	BLUE
SANITARY SEWER	GREEN
COMMUNICATION	ORANGE
GAS	YELLOW
IRRIGATION	PURPLE

SCALING NOTE

DRAWING SHEETS PRINTED FROM ADOBE PDF ELECTRONIC FILES ARE NOT TO SCALE. VERIFY PRINTED SHEET SCALES FROM THE BAR SCALES LOCATED ON THE PLAN SHEETS.

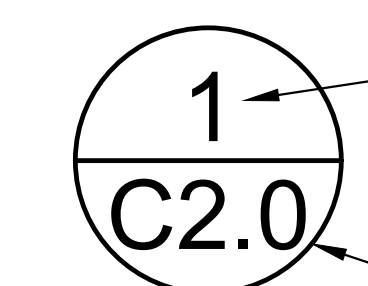
WATER NOTES

1. ALL WATER MAINS AND SERVICES TO MAINTAIN A MINIMUM OF 6.5' OF COVER TO TOP OF PIPE.
2. ¾", 1", 1½", AND 2" LINES SHALL BE 250PSI SIDR7 AWWA C901 HDPE
3. ANY EXISTING WATER SERVICES TO BE ABANDONED SHALL BE REMOVED AND CAPPED AT THE MAIN.
4. ANY EXISTING OR NEW VALVES WHICH CONTROL MSU'S WATER SUPPLY SHALL BE OPERATED BY MSU PERSONNEL ONLY.
5. THE CONTRACTOR SHALL NOTIFY MSU CAMPUS PLANNING, DESIGN AND CONSTRUCTION DEPARTMENT A MINIMUM OF 24-HOURS PRIOR TO BEGINNING ANY WORK.
6. CONTRACTOR SHALL FIELD VERIFY LINE AND GRADE OF EXISTING CONNECTIONS.
7. CONTRACTOR SHALL INSTALL DETECTABLE WARNING TAPE CENTERED OVER ALL NEW WATER LINES & SERVICES. INSTALL TAPE A MINIMUM OF 18" AND A MAXIMUM OF 24" BELOW FINISH GRADE.
8. CONTRACTOR SHALL INSTALL LOCATOR WIRE ON ALL NEW MAINS AND SERVICES.

NEW	EXISTING	DESCRIPTION
		ASPHALT LINE
		BUILDING
		CONTOUR
		CURB
		DITCH
		EASEMENT
		FIRE HYDRANT
		MANHOLE
		OVERHEAD ELECTRIC
		PROPERTY LINE
		SANITARY SEWER
		SANITARY SEWER FORCE MAIN
		STORM DRAIN CULVERT
		STORM DRAIN PIPE
		TELEPHONE RISER
		TRAFFIC SIGN
		UNDERGROUND ELECTRIC
		UNDERGROUND FIBER OPTIC
		UNDERGROUND GAS
		UNDERGROUND TELECOMMUNICATIONS
		VALVE
		WATERLINE
		WELL

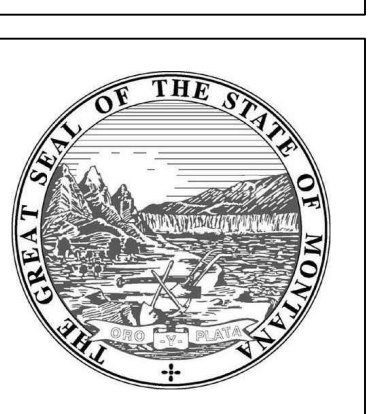


Know what's below.
Call before you dig.



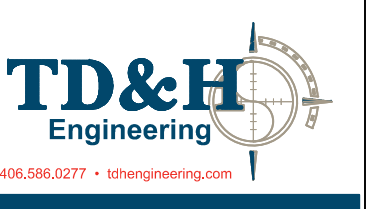
SECTION OR DETAIL DESIGNATION
SHEET NUMBER WHERE SECTION OR DETAIL IS SHOWN

DETAIL KEY



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BOZEMAN, MONTANA



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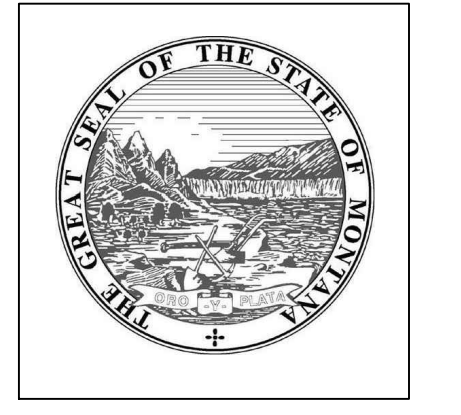
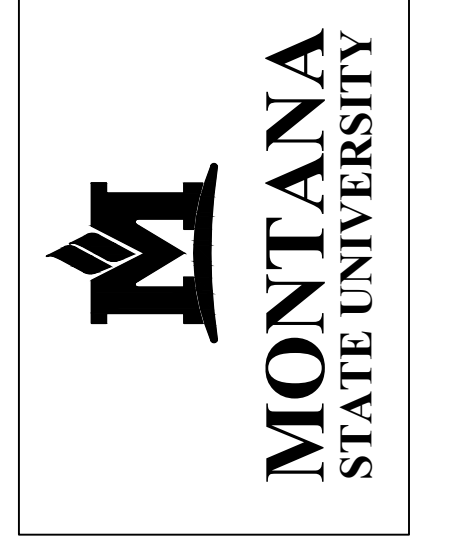
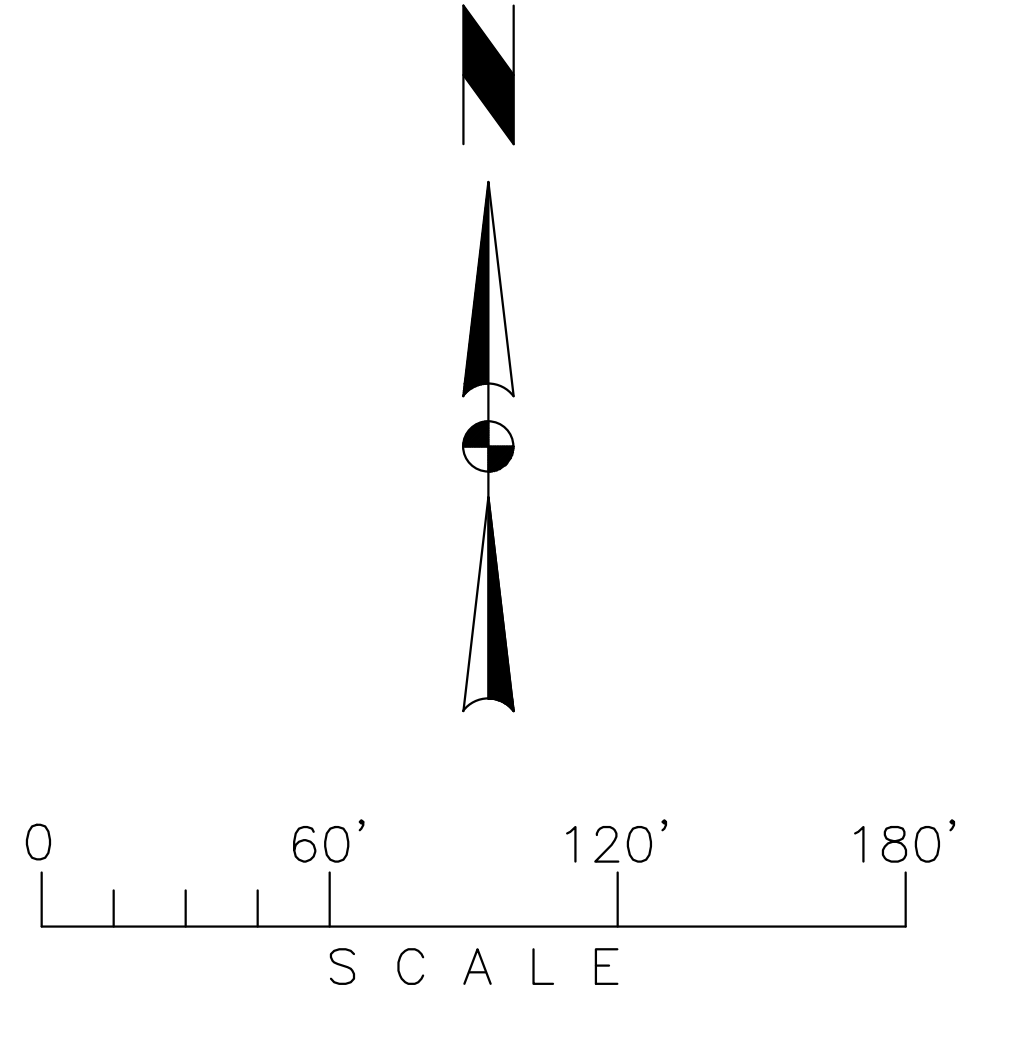
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TD&H#B23-075

NOTES
ABBREVIATIONS
& LEGEND

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C2.0

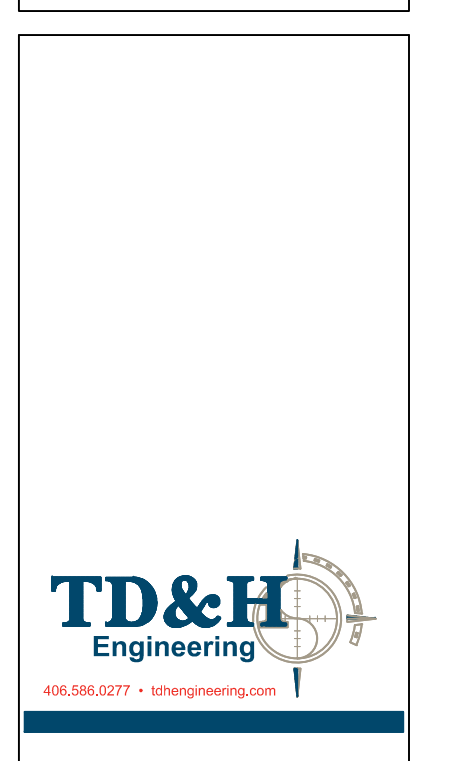
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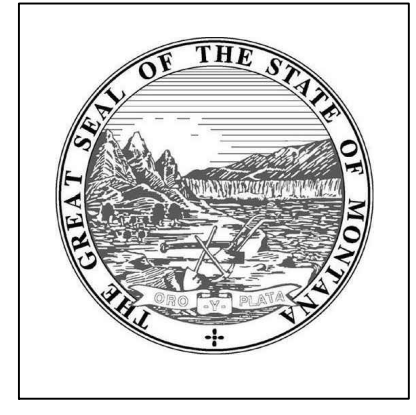
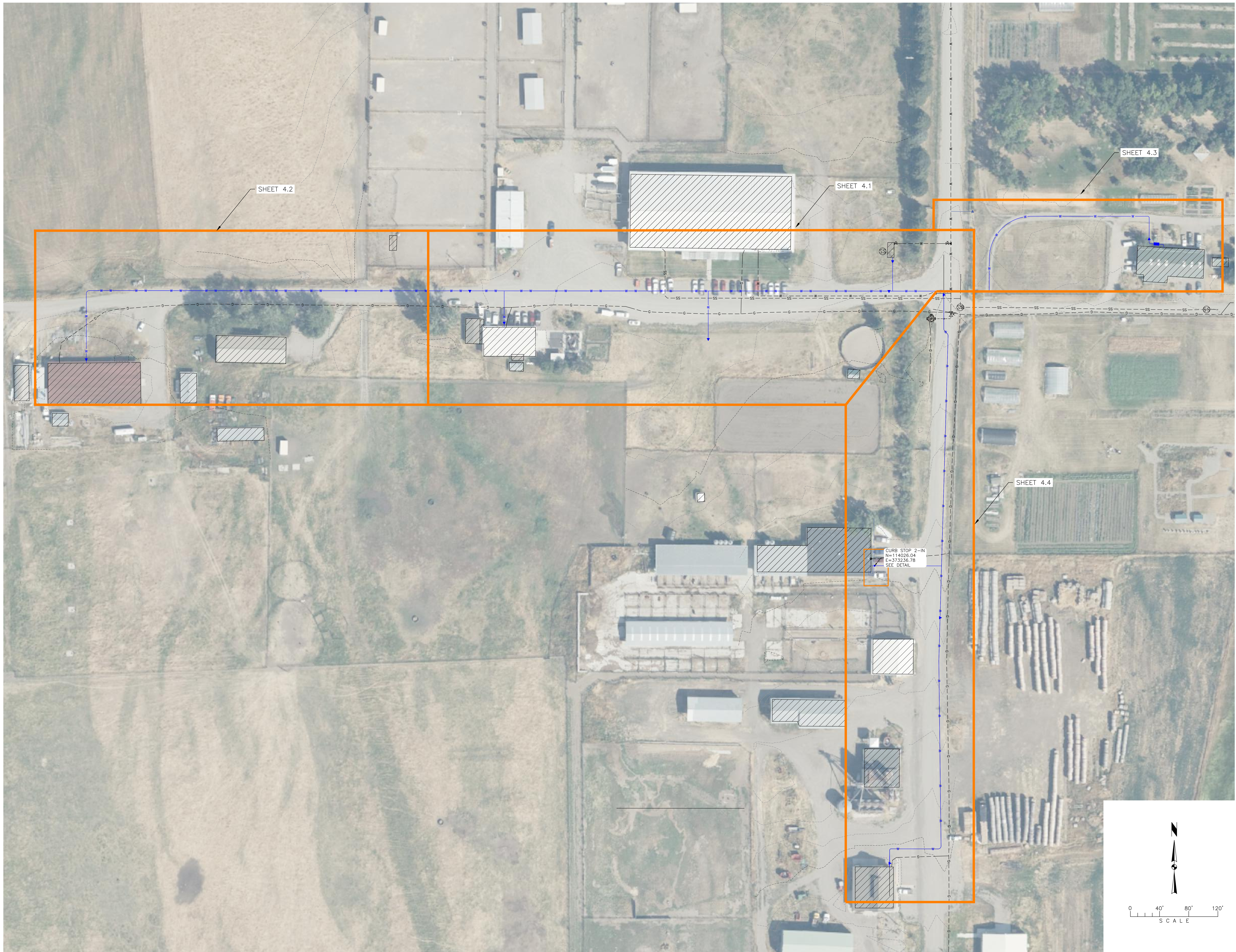
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EXISTING
CONDITIONS

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C3.0

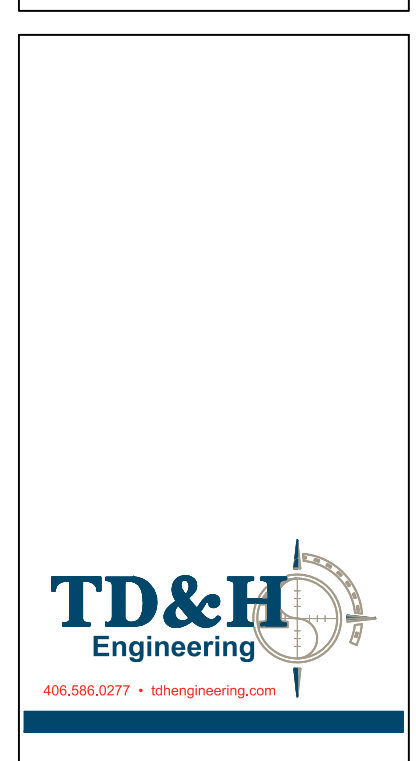
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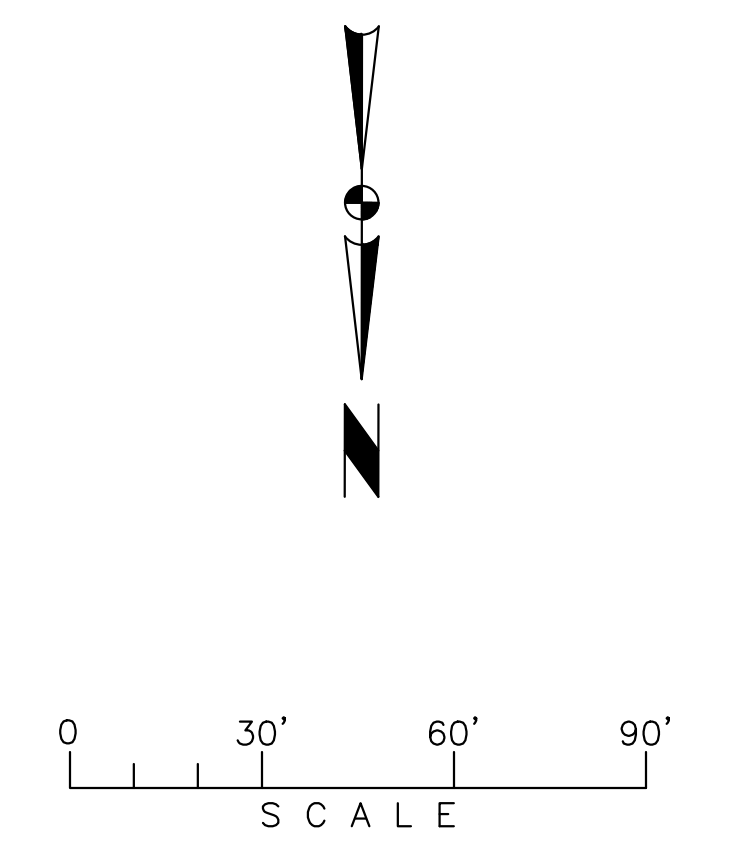
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WATER OVERVIEW

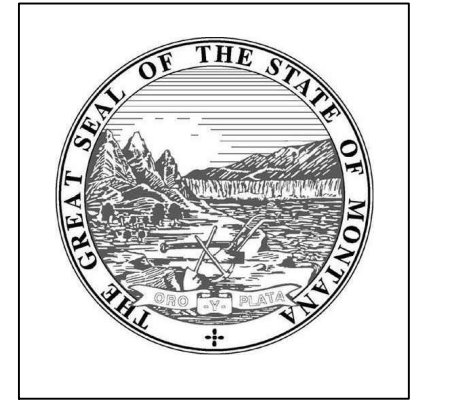
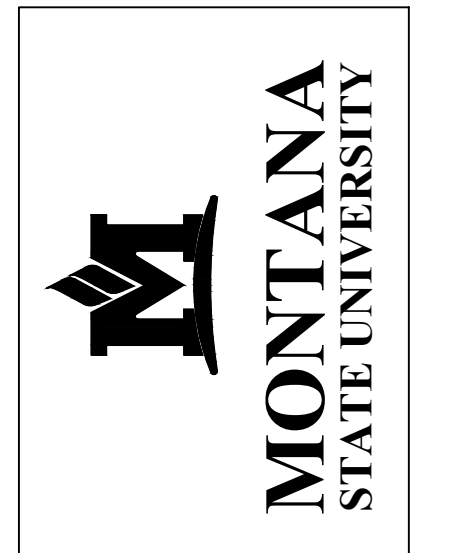
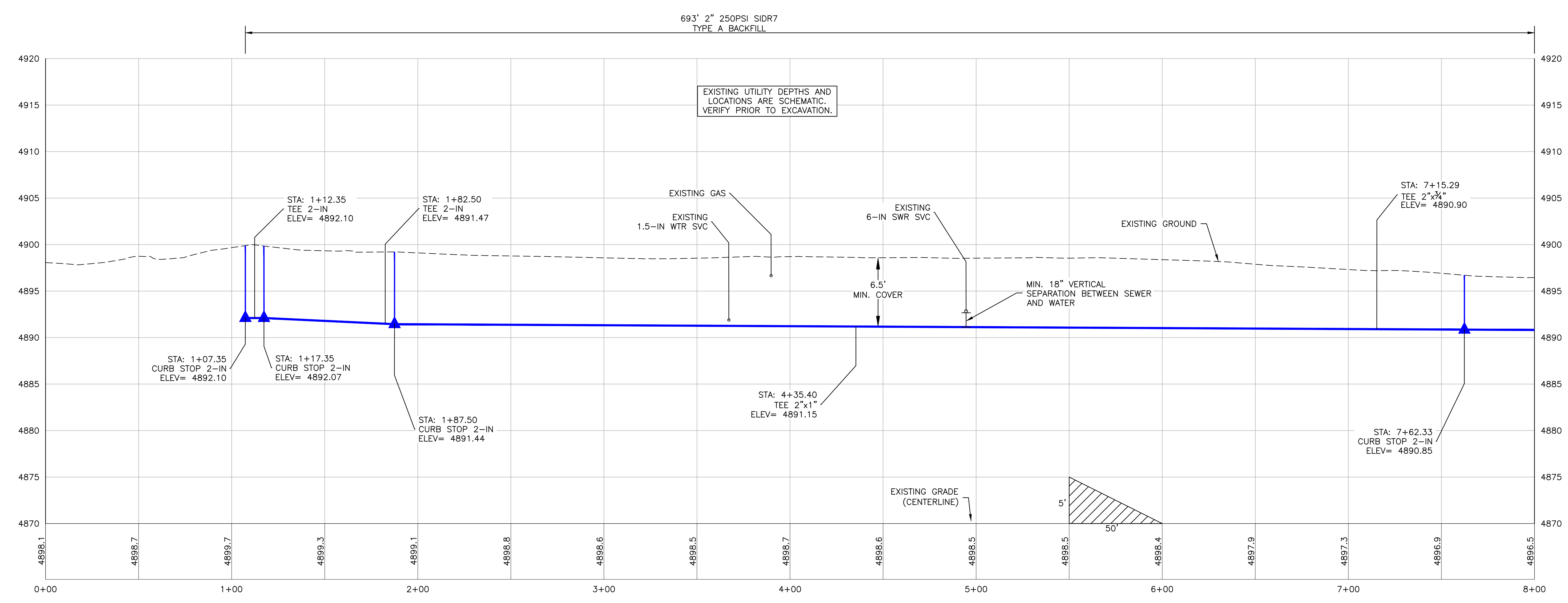
SHEET
C4.0

DATE
03/07/2024



LEGEND
SEE SHEET C1.1 FOR FULL LEGEND.

	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
	EXISTING WATER METER
	EXISTING WATER LINE
	EXISTING WATER SERVICE LINE
	PROPOSED WATER VALVE
	PROPOSED WATER METER
	PROPOSED WATER LINE
	PROPOSED WATER SERVICE LINE
	EXISTING SAN. SEWER MANHOLE
	EXISTING SAN. SEWER CLEANOUT
	EXISTING SAN. SEWER MAIN
	EXISTING SAN. SEWER SERVICE



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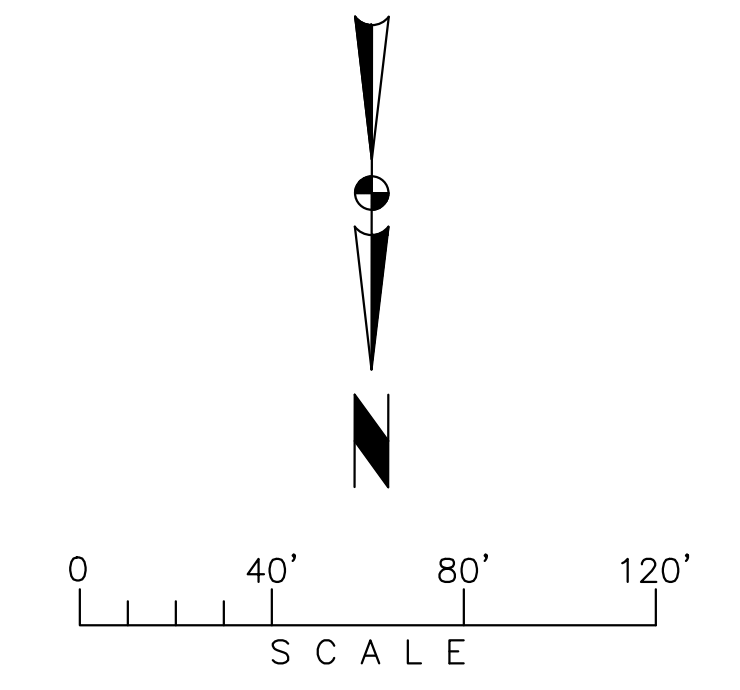
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EAST - WEST
WATER P&P
STA. 1+07 - 8+00

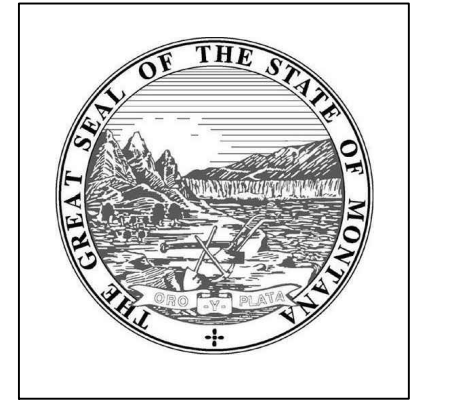
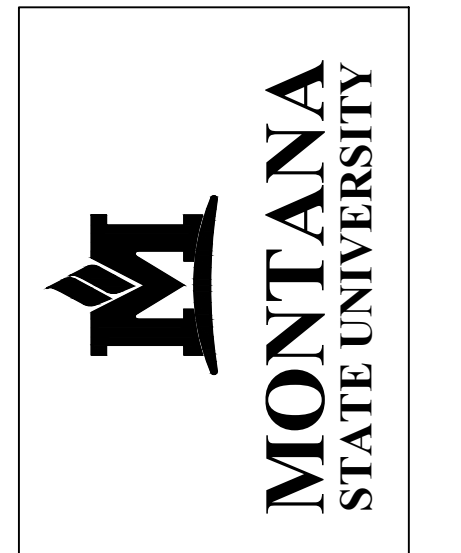
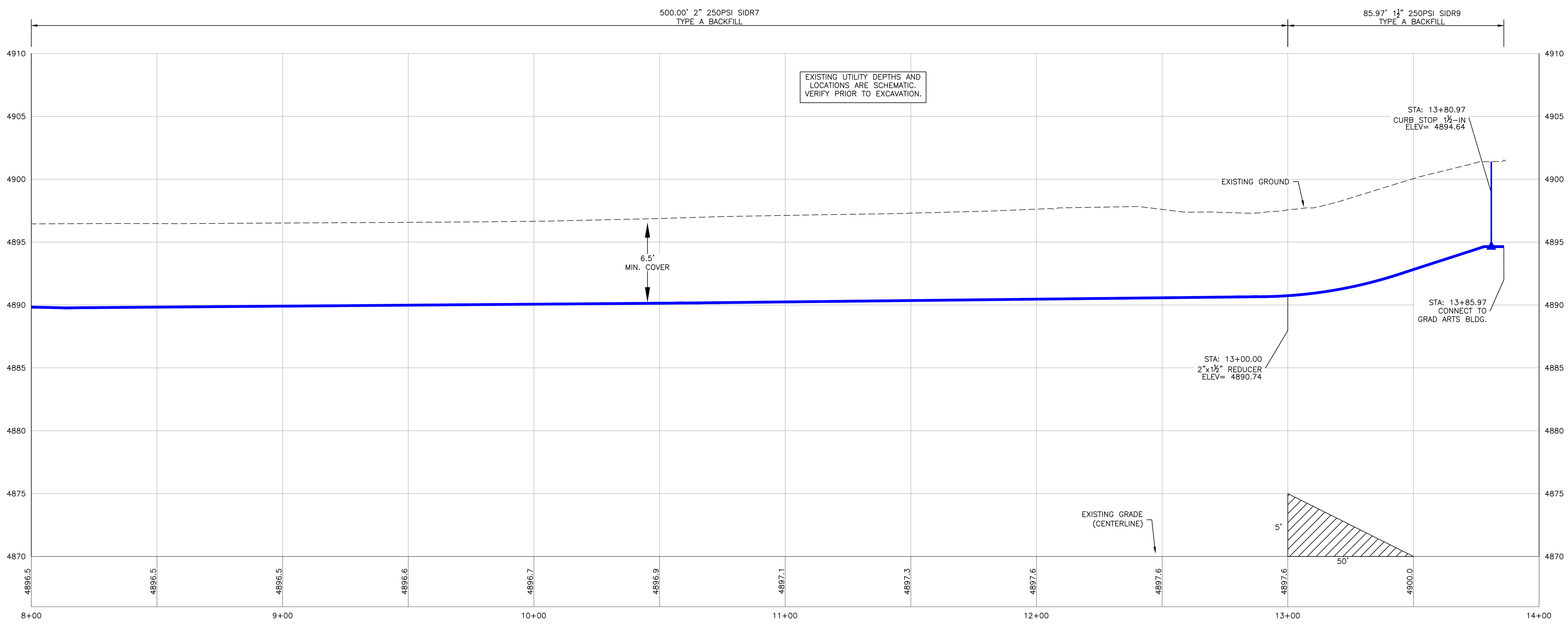
SHEET
C4.1

DATE
03/07/2024



LEGEND

- SEE SHEET C1.1 FOR FULL LEGEND.
- EXISTING WATER VALVE
 - EXISTING FIRE HYDRANT
 - EXISTING WATER METER
 - EXISTING WATER LINE
 - EXISTING WATER SERVICE LINE
 - PROPOSED WATER VALVE
 - PROPOSED WATER METER
 - PROPOSED WATER LINE
 - PROPOSED WATER SERVICE LINE
 - EXISTING SAN SEWER MANHOLE
 - EXISTING SAN SEWER CLEANOUT
 - EXISTING SAN SEWER MAIN
 - EXISTING SAN SEWER SERVICE



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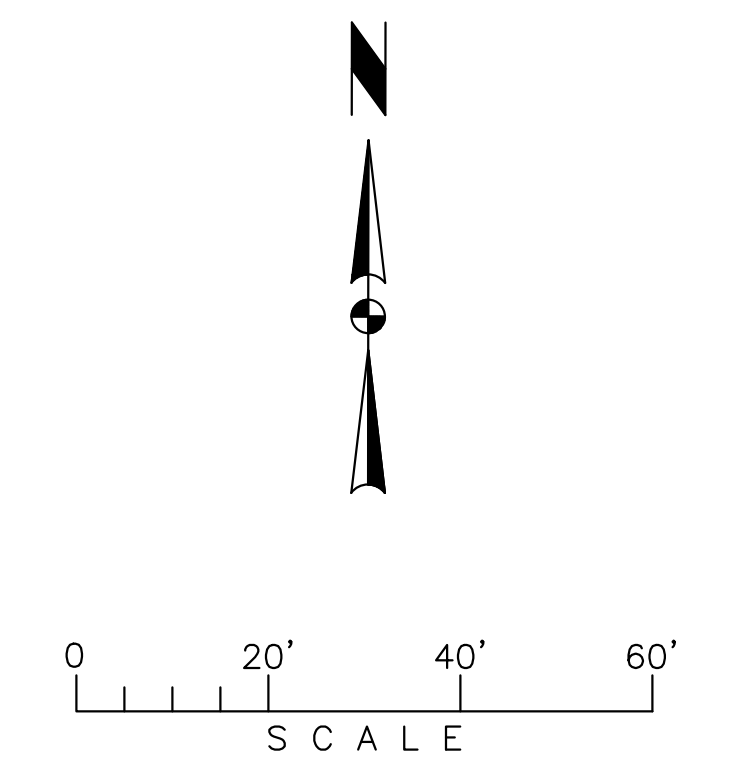
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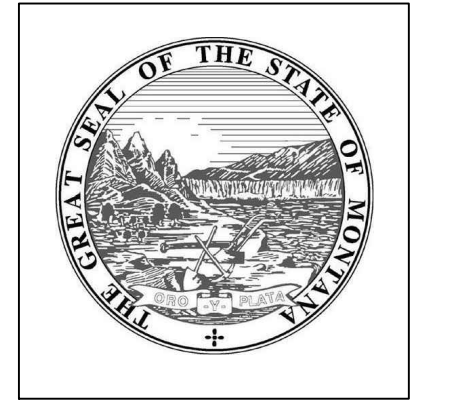
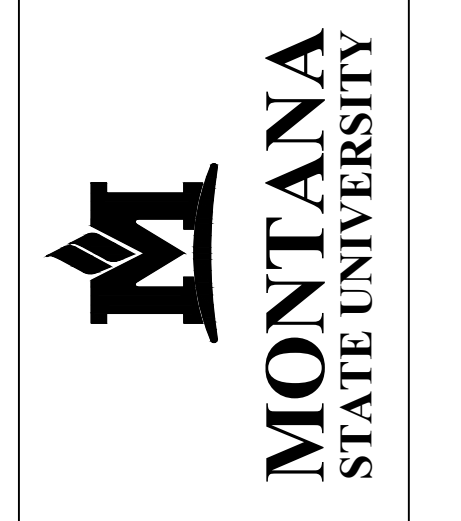
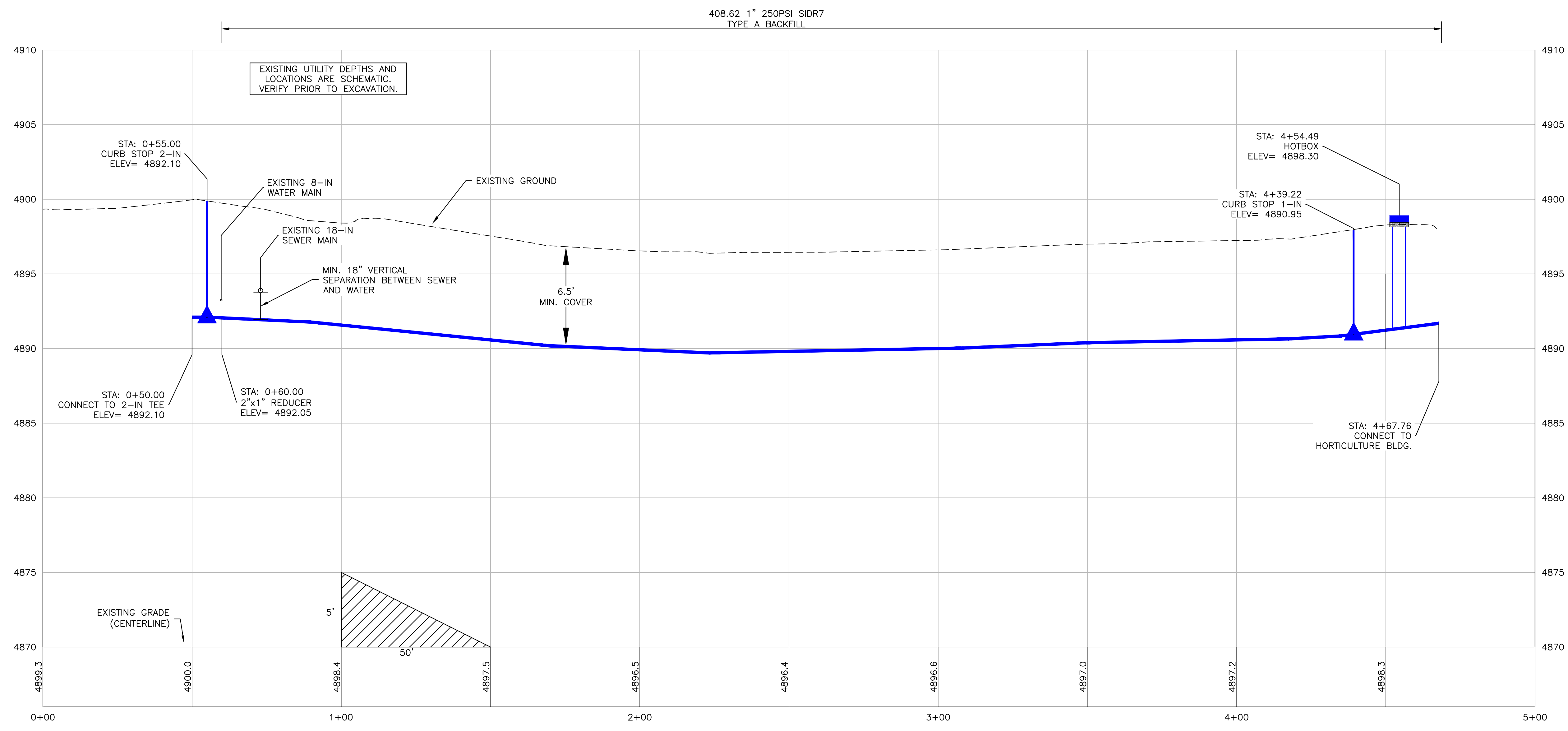
EAST - WEST
WATER P&P
STA. 8+00 - 13+86

SHEET
C4.2

DATE
03/07/2024



- LEGEND**
SEE SHEET C1.1 FOR FULL LEGEND.
- EXISTING WATER VALVE
 - EXISTING FIRE HYDRANT
 - EXISTING WATER METER
 - EXISTING WATER LINE
 - EXISTING WATER SERVICE LINE
 - PROPOSED WATER VALVE
 - PROPOSED WATER METER
 - PROPOSED WATER SERVICE LINE
 - EXISTING SAN. SEWER MANHOLE
 - EXISTING SAN. SEWER CLEANOUT
 - EXISTING SAN. SEWER MAIN
 - EXISTING SAN. SEWER SERVICE



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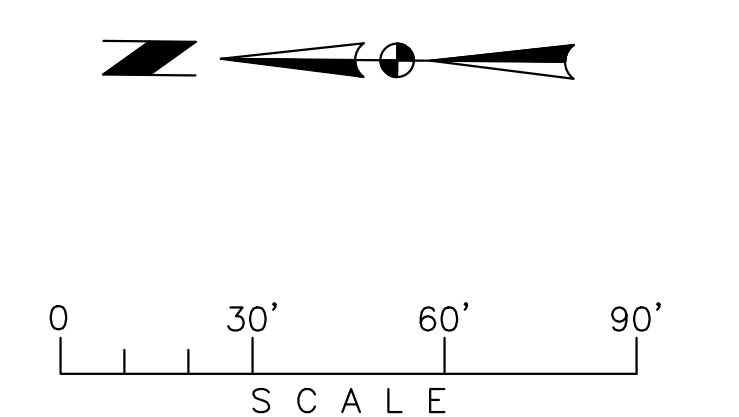
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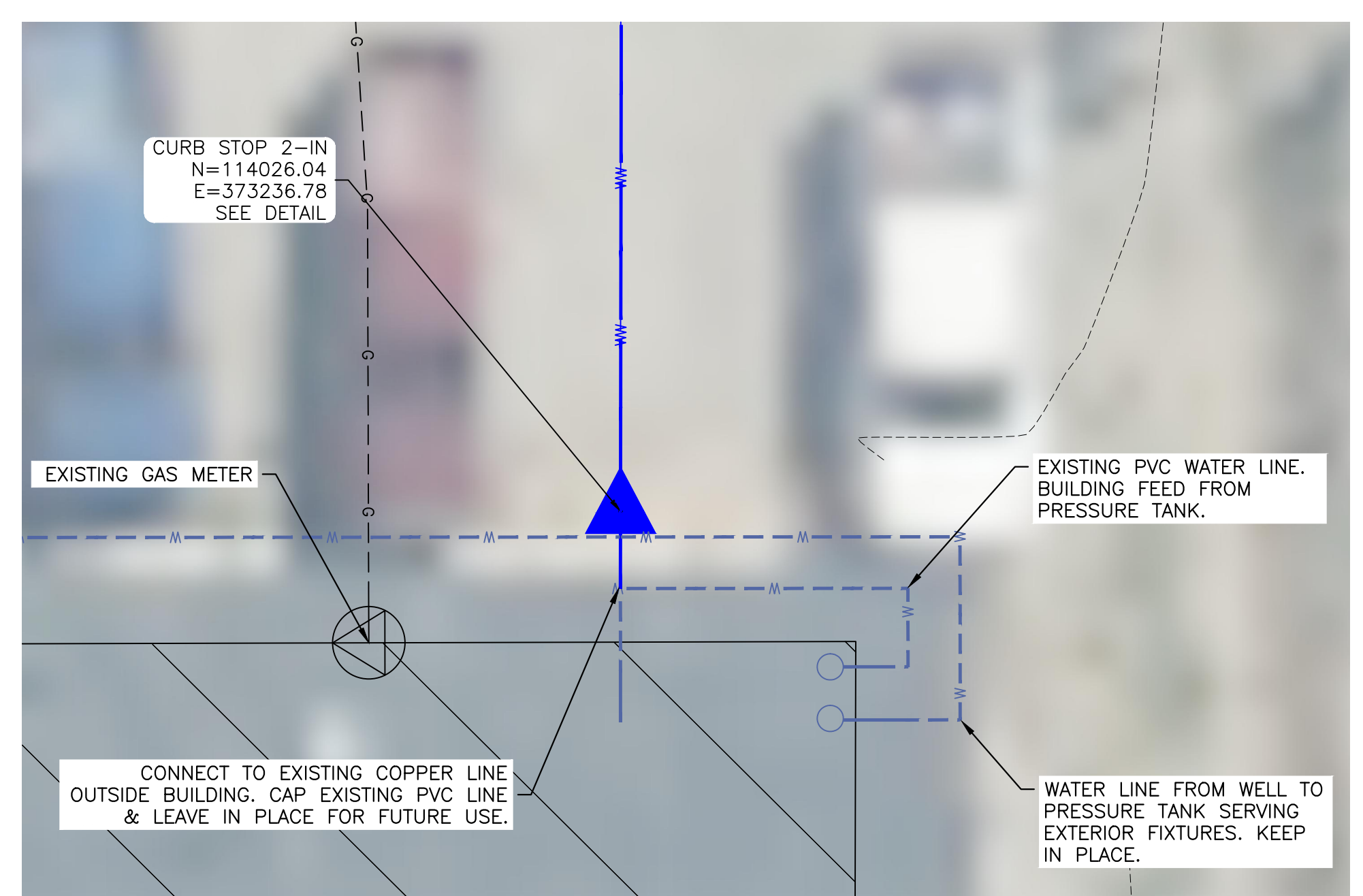
HORTICULTURE
WATER P&P
STA. 0+50 - 4+44

SHEET
C4.3

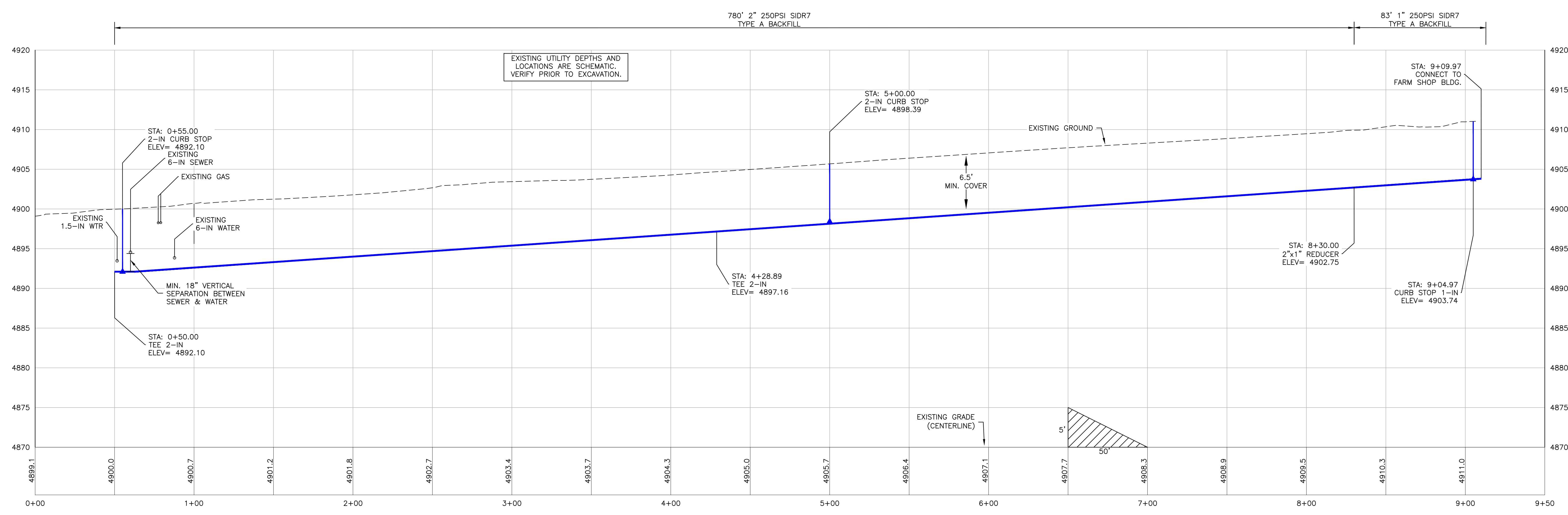
DATE
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- LEGEND**
 SEE SHEET CT.1 FOR FULL LEGEND.
- EXISTING WATER VALVE
 - EXISTING FIRE HYDRANT
 - EXISTING WATER METER
 - EXISTING WATER LINE
 - EXISTING WATER SERVICE LINE
 - PROPOSED WATER VALVE
 - PROPOSED WATER METER
 - PROPOSED WATER LINE
 - PROPOSED WATER SERVICE LINE
 - EXISTING SAN. SEWER MANHOLE
 - EXISTING SAN. SEWER CLEANOUT
 - EXISTING SAN. SEWER MAIN
 - EXISTING SAN. SEWER SERVICE

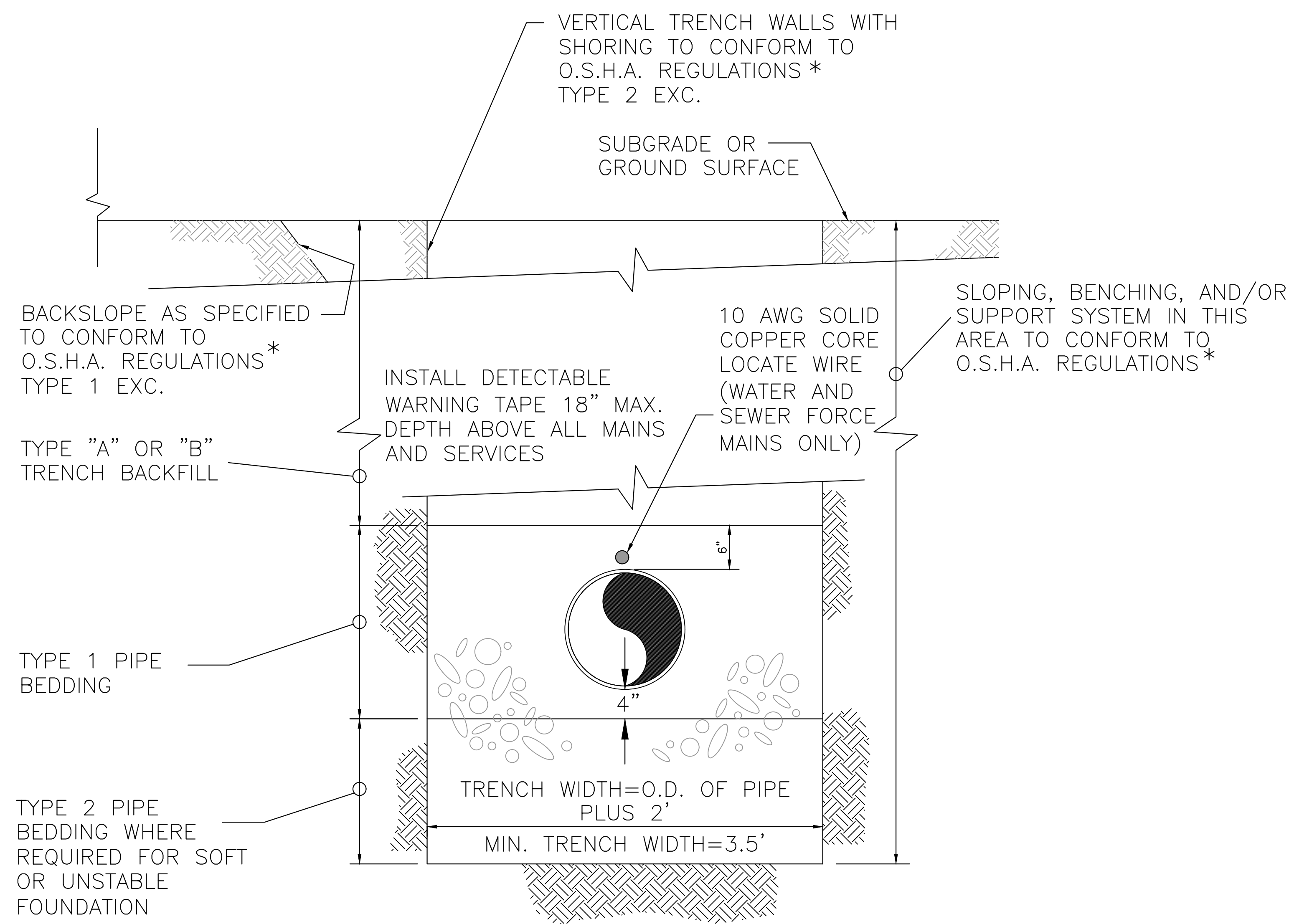


NUTRITION CENTER EXTERIOR CONNECTION



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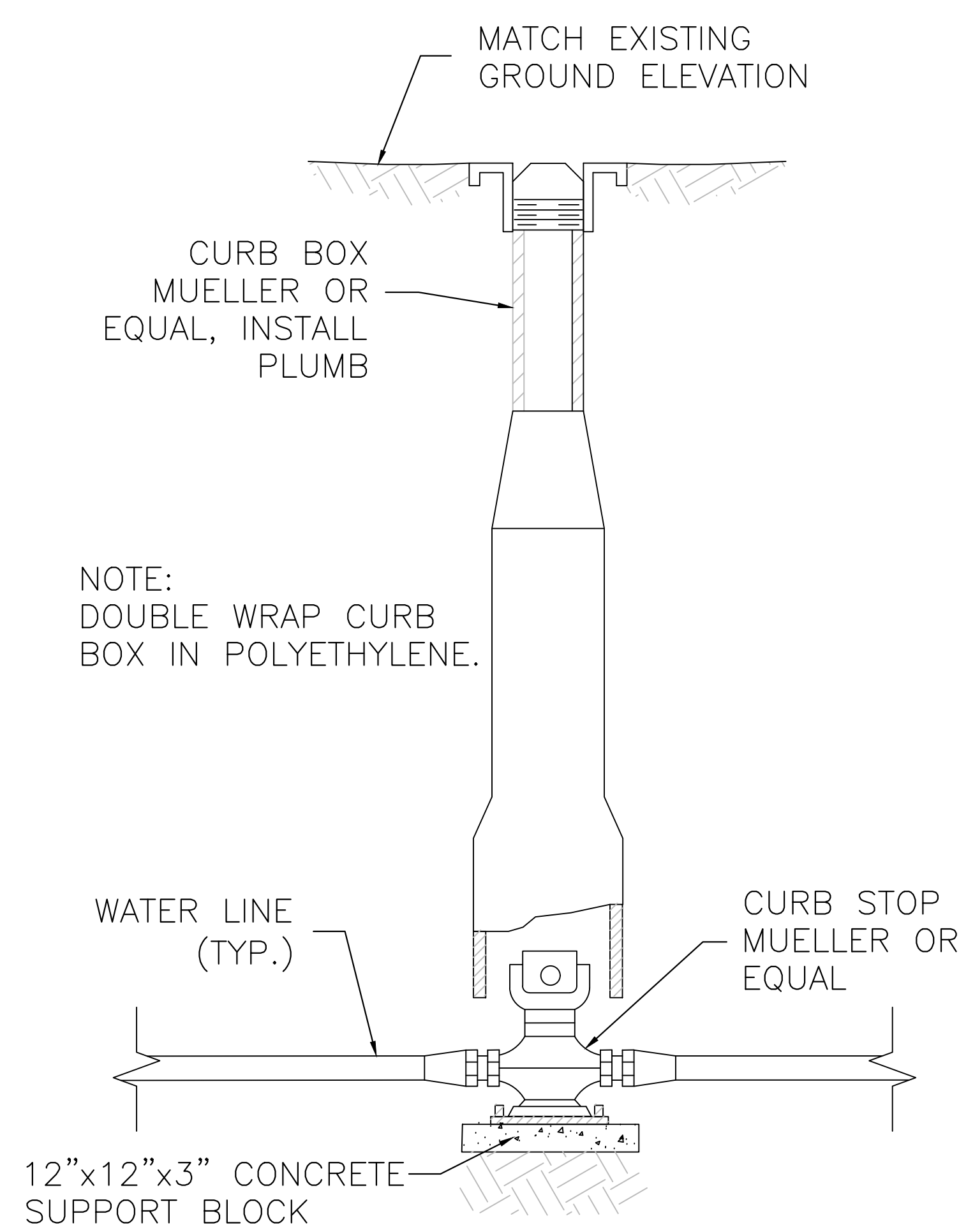
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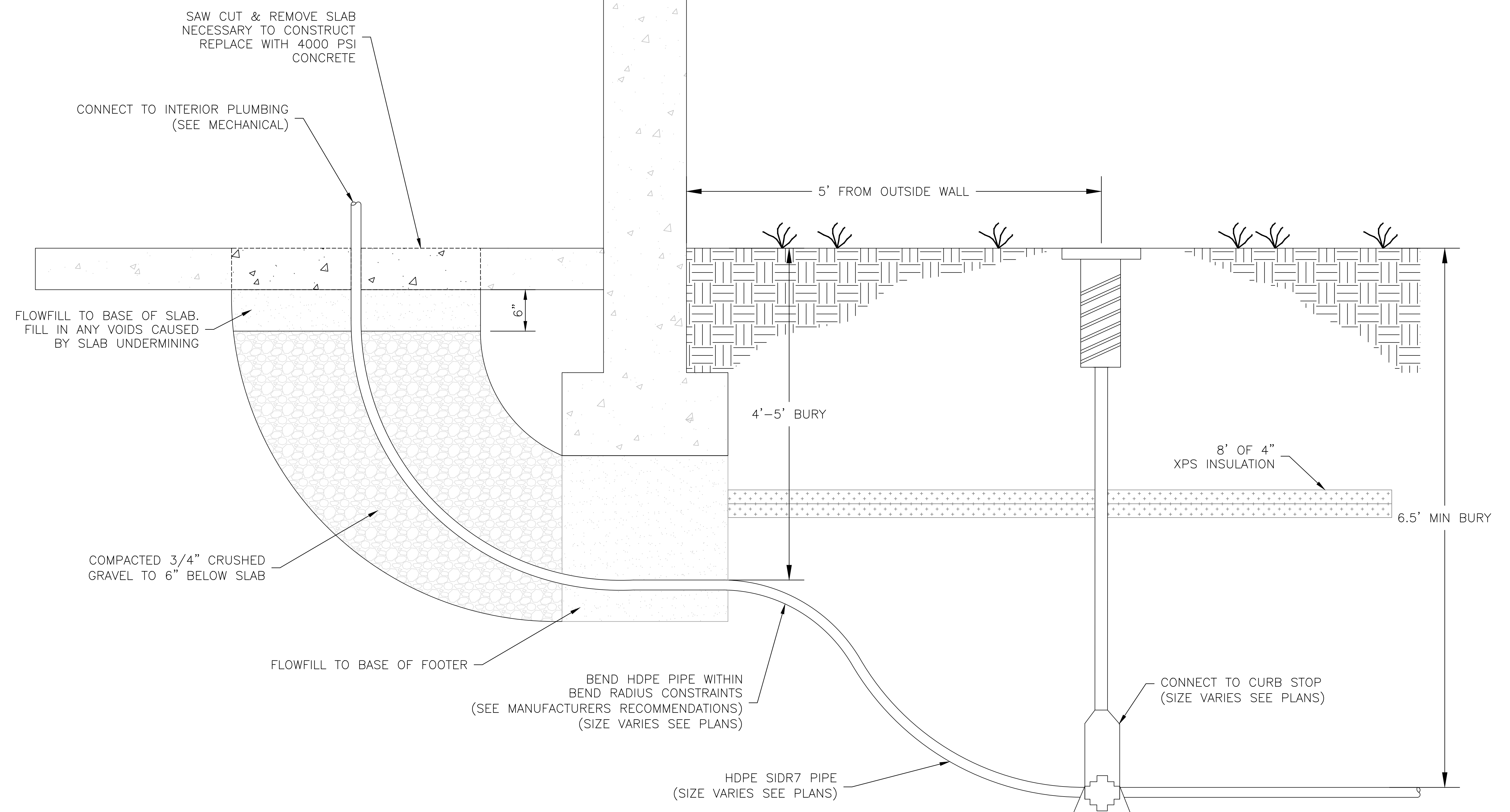
* SEE O.S.H.A. CONSTRUCTION STANDARDS FOR EXCAVATIONS, SEC. 1926, SUBPART P

NOTE: WHERE TRENCH PASSES THROUGH EXISTING PAVEMENT, THE PAVEMENT SHALL BE CUT ALONG A NEAT VERTICAL LINE A MINIMUM OF 12" FROM THE EDGE OF THE TRENCH OPENING. WHERE NEAT LINE IS LESS THAN 3" FROM EDGE OF EXISTING PAVEMENT OR CURB AND GUTTER SECTION, REMOVE AND REPLACE ENTIRE PAVEMENT SECTION BETWEEN TRENCH AND EDGE OF PAVEMENT (SEE SECTION BELOW).

TYPICAL TRENCH DETAIL 1
NO SCALE **C5.0**

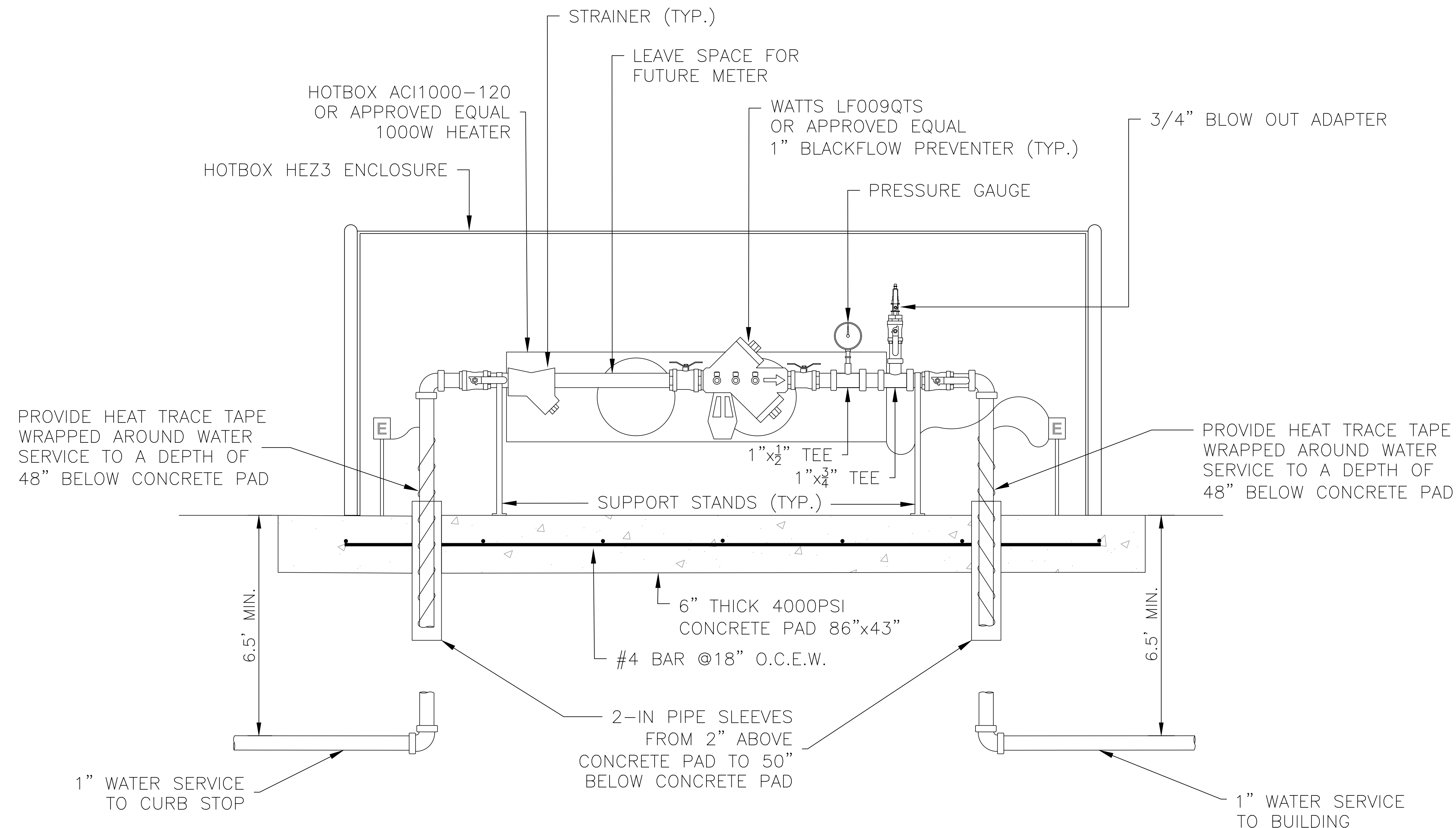
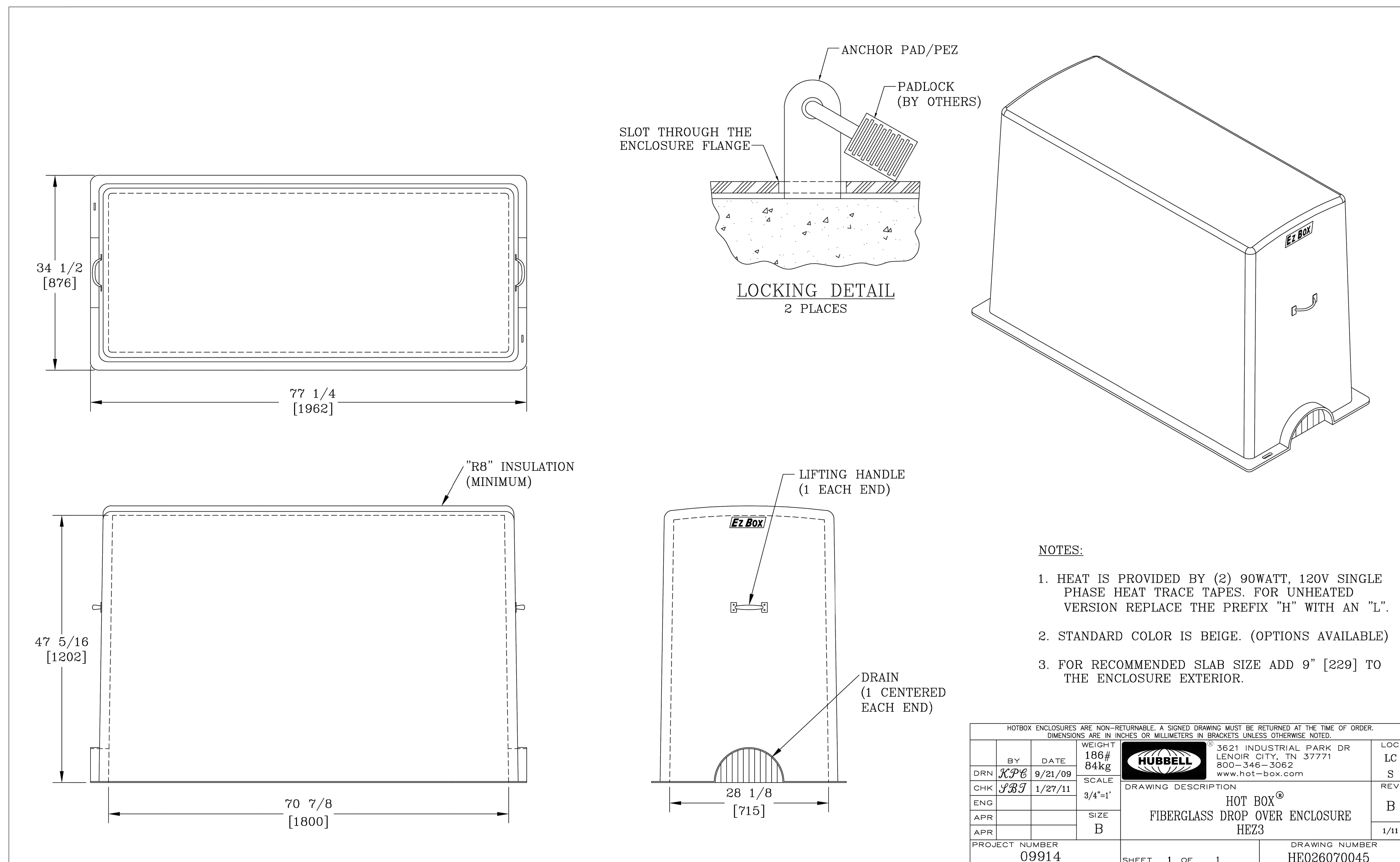


CURB STOP DETAIL 2
NO SCALE **C5.0**



EXTERIOR TO INTERIOR CONNECTION DETAIL 3
NO SCALE **C5.0**

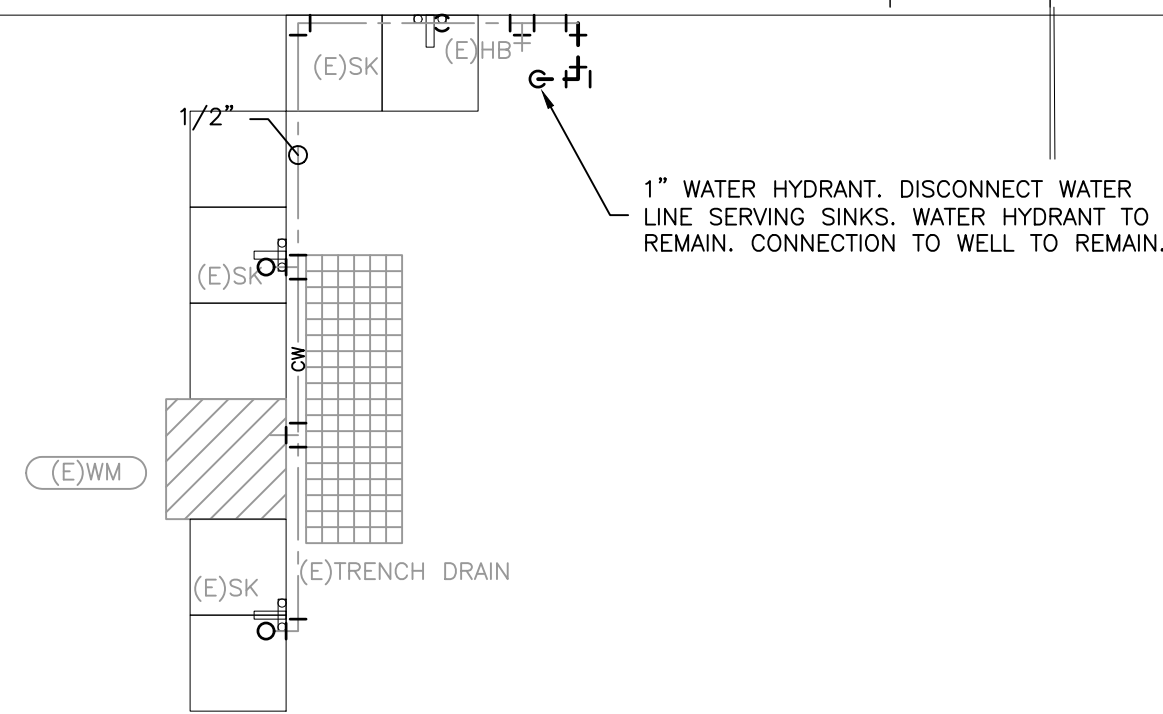
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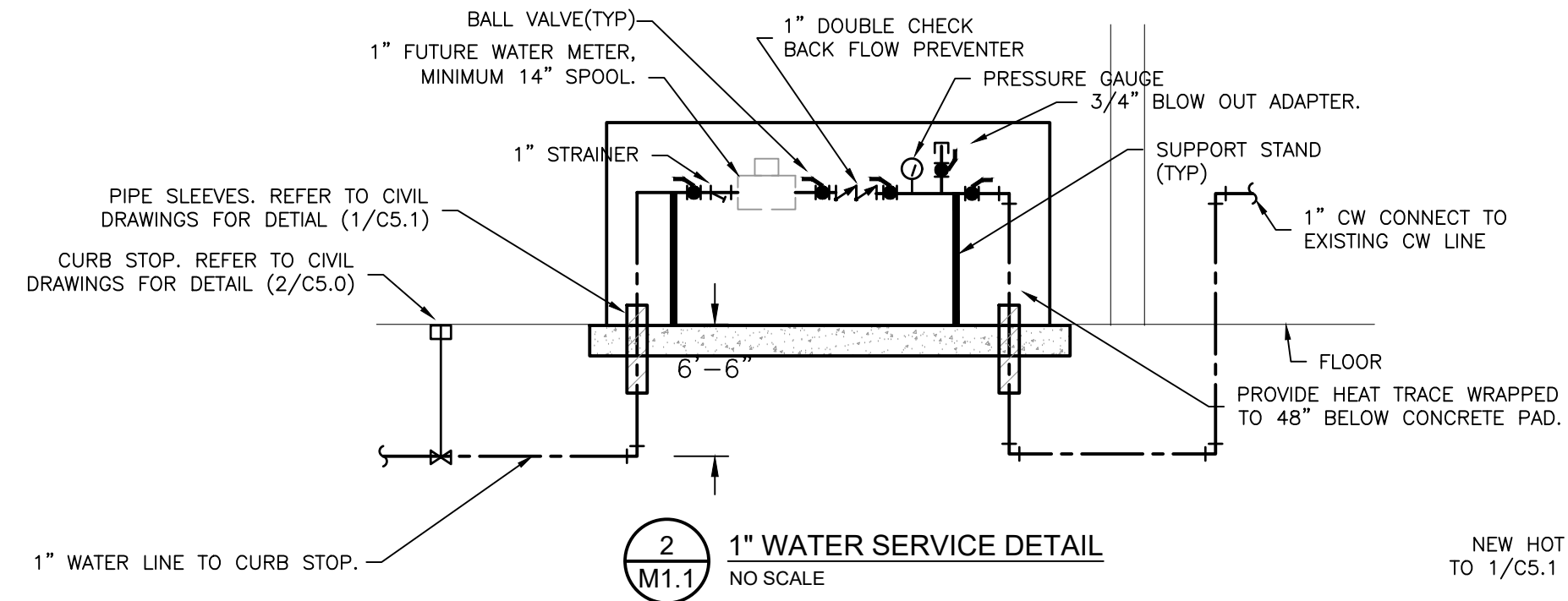
HOTBOX DETAIL **1**
NO SCALE **C5.1**

GENERAL DEMO NOTES

- COORDINATE ALL UTILITY INTERRUPTIONS WITH THE OWNER AND PROVIDE 5 WORKING DAYS NOTIFICATION PRIOR TO ANY UTILITY SHUT DOWN.
- ITEMS SHOWN DARK AND DASHED AND/OR NOTED WITH (X) ARE TO BE REMOVED. ITEMS SHOWN IN LIGHT LINE AND/OR NOTED WITH (E) ARE EXISTING TO REMAIN. ITEMS SHOWN IN HEAVY LINE AND/OR NOTED WITH (N) ARE NEW.
- DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE. OWNER HAS THE FIRST RIGHT TO SALVAGE ANY EQUIPMENT SCHEDULED FOR DEMOLITION.
- EXACT ROUTING AND SIZES OF EXISTING PLUMBING AND PIPING IN THE BUILDING IS DIFFICULT TO DETERMINE DUE TO CONCEALMENT IN OR BEHIND EXISTING CONSTRUCTION. DRAWINGS SHOW APPROXIMATE EXISTING CONDITIONS, HOWEVER, FIELD VERIFICATION WILL BE REQUIRED.

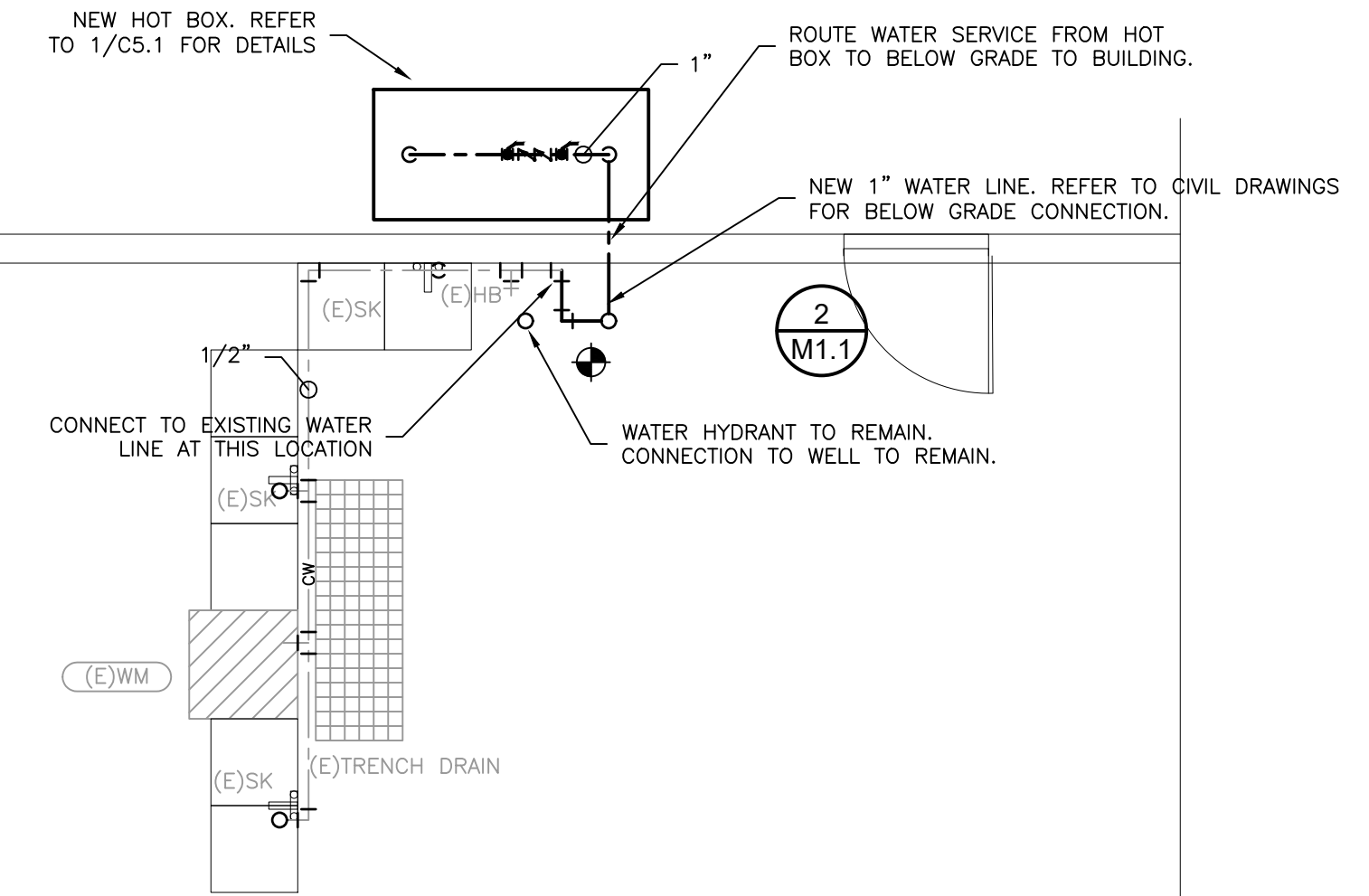


HORTICULTURE BARN PLAN - PLUMBING DEMO
SCALE: 1/4" = 1'-0"



GENERAL NOTES

- COORDINATE ALL UTILITY INTERRUPTIONS WITH THE OWNER AND PROVIDE 5 WORKING DAYS NOTIFICATION PRIOR TO ANY UTILITY SHUT DOWN.
- ITEMS SHOWN DARK AND DASHED AND/OR NOTED WITH (X) ARE TO BE REMOVED. ITEMS SHOWN IN LIGHT LINE AND/OR NOTED WITH (E) ARE EXISTING TO REMAIN. ITEMS SHOWN IN HEAVY LINE AND/OR NOTED WITH (N) ARE NEW.
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HORTICULTURE BARN PLAN - PLUMBING
SCALE: 1/4" = 1'-0"

COORDINATION NOTE:
IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INCLUDING EQUIPMENT SUPPLIERS TO COORDINATE WITH EACH OTHER AND TO VERIFY THAT THERE ARE NO CONFLICTS IN LOCATIONS OF DUCTS, CONDUITS, SPRINKLER HEADS, SPRINKLER PIPING, DIFFUSERS, ELECTRICAL BOXES AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.



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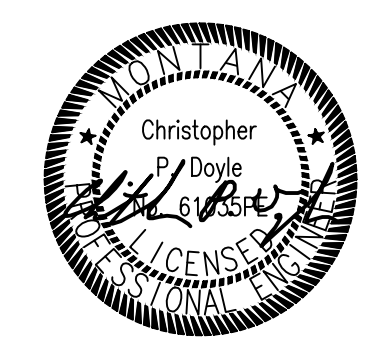
AES BART FARM CITY WATER TO BUILDINGS
BOZEMAN, MONTANA

100% CONSTRUCTION DOCUMENTS

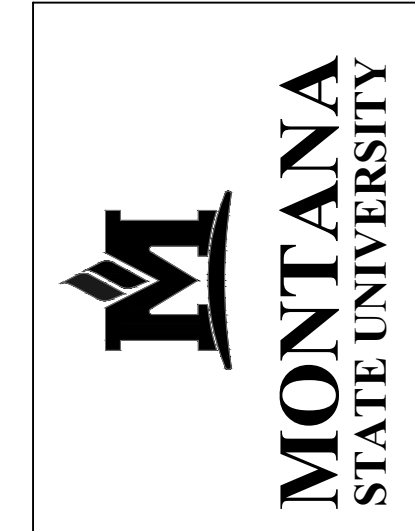
DRAWN BY: CPD		
REVIEWED BY: CPD		
REV. #	DESCRIPTION	DATE

PPA#21-0061
PPA#22-0088
CDS# 2342
SHEET TITLE
HORTICULTURE BARN
PLAN - PLUMBING

SHEET
M1.1
DATE
03/07/2024



COORDINATION NOTE:
 IT IS ABSOLUTELY NECESSARY FOR ALL TRADES INCLUDING EQUIPMENT SUPPLIERS TO COORDINATE WITH EACH OTHER AND TO VERIFY THAT THERE ARE NO CONFLICTS IN LOCATIONS OF DUCTS, CONDUITS, SPRINKLER HEADS, SPRINKLER PIPING, DIFFUSERS, ELECTRICAL BOXES AND OTHER ITEMS THROUGHOUT THIS PROJECT BEFORE FINAL PLACEMENT OF MATERIALS.



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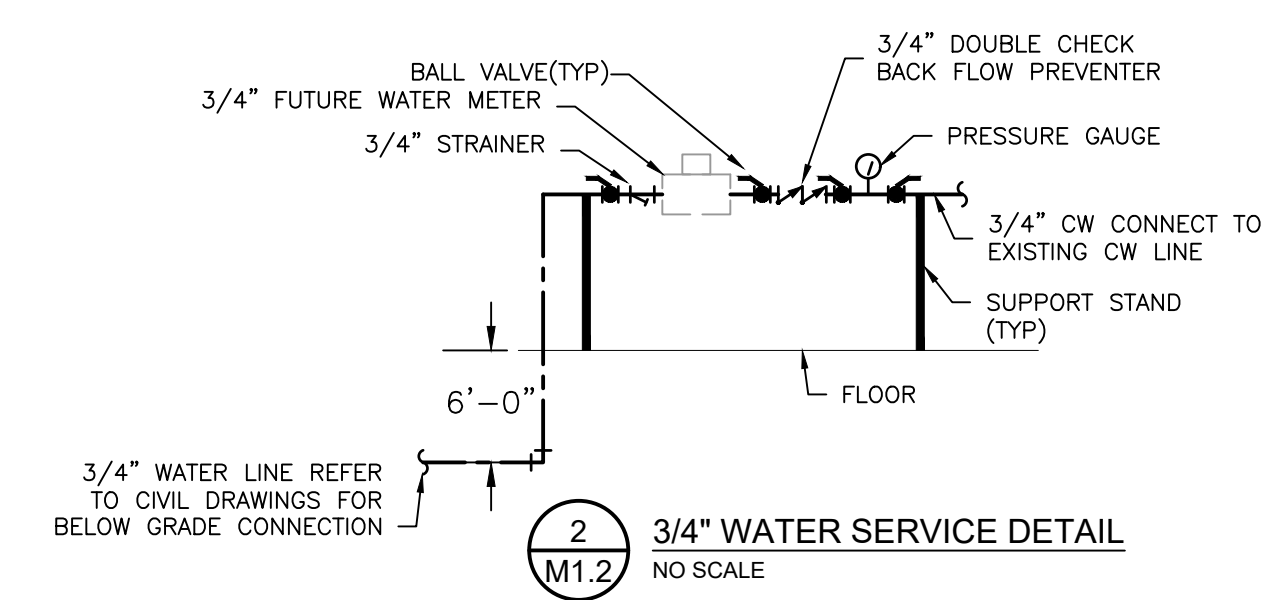
100% CONSTRUCTION DOCUMENTS
AES BART FARM CITY WATER TO BUILDINGS
 BOZEMAN, MONTANA

GENERAL DEMO NOTES

- COORDINATE ALL UTILITY INTERRUPTIONS WITH THE OWNER AND PROVIDE 5 WORKING DAYS NOTIFICATION PRIOR TO ANY UTILITY SHUT DOWN.
- ITEMS SHOWN DARK AND DASHED AND/OR NOTED WITH (X) ARE TO BE REMOVED. ITEMS SHOWN IN LIGHT LINE AND/OR NOTED WITH (E) ARE EXISTING TO REMAIN. ITEMS SHOWN IN HEAVY LINE AND/OR NOTED WITH (N) ARE NEW.
- DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE. OWNER HAS THE FIRST RIGHT TO SALVAGE ANY EQUIPMENT SCHEDULED FOR DEMOLITION.
- EXACT ROUTING AND SIZES OF EXISTING PLUMBING AND PIPING IN THE BUILDING IS DIFFICULT TO DETERMINE DUE TO CONCEALMENT IN OR BEHIND EXISTING CONSTRUCTION. DRAWINGS SHOW APPROXIMATE EXISTING CONDITIONS, HOWEVER, FIELD VERIFICATION WILL BE REQUIRED.

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REMOVE EXPANSION TANK AND CAP DOMESTIC WATER CONNECTION. FIELD VERIFY EXACT LOCATION OF EXPANSION TANK IN MENS RESTROOM. EXPANSION TANK IS ON A STAND NEAR THE CEILING.

(X)EX

(E)1/2" CW TO BUILDING
 (E)HB
 INSTALL PIPE BYPASS TEE FITTINGS FOR INSTALLATION OF BFP AND FUTURE METER.

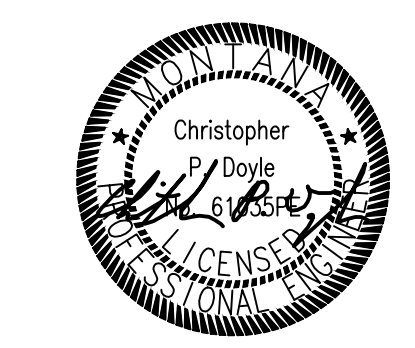
PROVIDE NEW DOMESTIC HOT WATER EXPANSION TANK AMTROL ST-5 EXPANSION TANK 140#42 THERM-X-TROL OR SIMILAR. INSTALL NEAR HOT WATER HEATER ON COLD WATER SIDE OF HEATER.

EX-TANK

(E)1/2" CW TO BUILDING
 (E)HB
 CONNECT NEW WATERLINE TO EXISTING 1/2" WATER LINE INSIDE BUILDING.
 INSTALL 1'0" MINIMUM FROM EXTERIOR WALL. REFER TO CIVIL DRAWINGS FOR BELOW GRADE CONNECTION.

FARRIER BUILDING PLAN - PLUMBING DEMO
 SCALE: 1/4" = 1'-0"

FARRIER BUILDING PLAN - PLUMBING
 SCALE: 1/4" = 1'-0"



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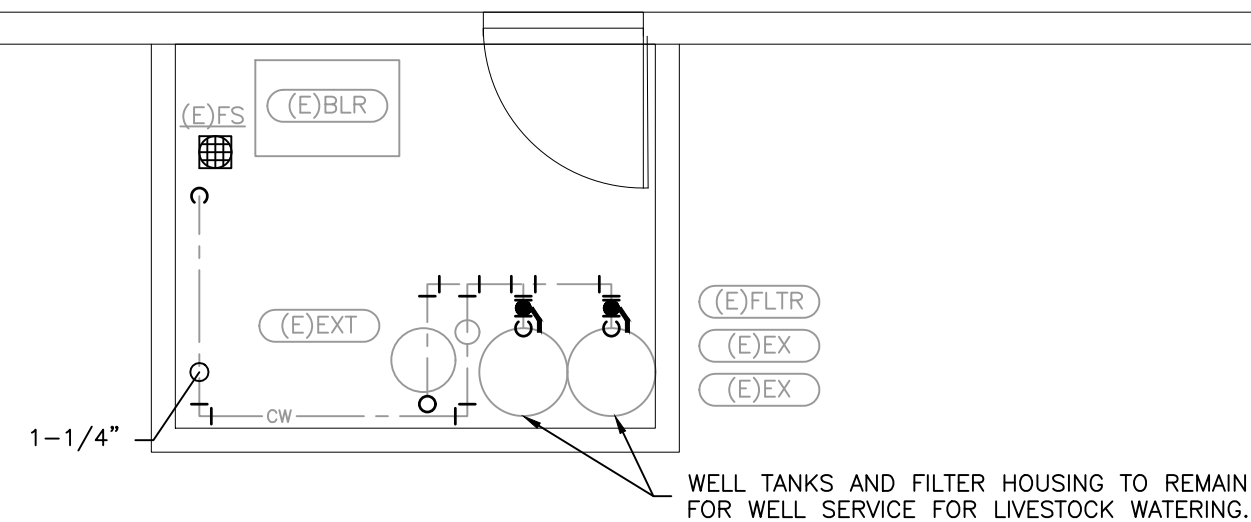
PPA#21-0061
PPA#22-0088
CDS# 2342
SHEET TITLE
FARRIER BUILDING
PLAN - PLUMBING

SHEET
M1.4
DATE
03/07/2024

COORDINATION NOTE:
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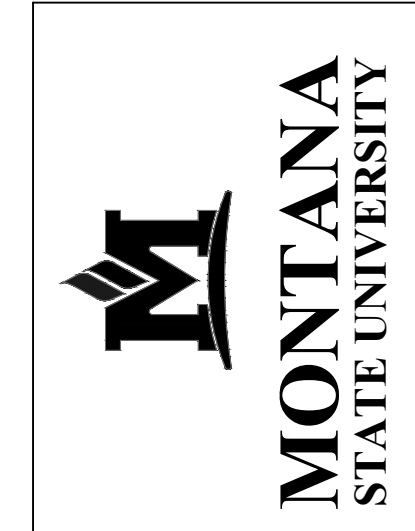
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NOTE: FIELD VERIFICATION OF EXISTING PIPING IS REQUIRED IN MECHANICAL ROOM AS THERE IS A SUBSTANTIAL AMMOUNT OF PIPING. MAINTAIN CLEARANCE FOR ACCESS PANEL IN MECHANICAL ROOM.

WELL TANKS AND FILTER HOUSING TO REMAIN FOR WELL SERVICE FOR LIVESTOCK WATERING.



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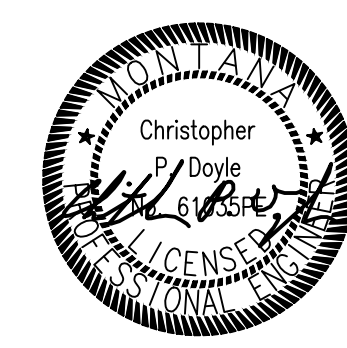
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REV. #	DESCRIPTION	DATE

PPA#21-0061
PPA#22-0088
CDS# 2342
SHEET TITLE
MELVIN ARTS PLAN-
PLUMBING DEMO

SHEET
M1.5
DATE
03/07/2024

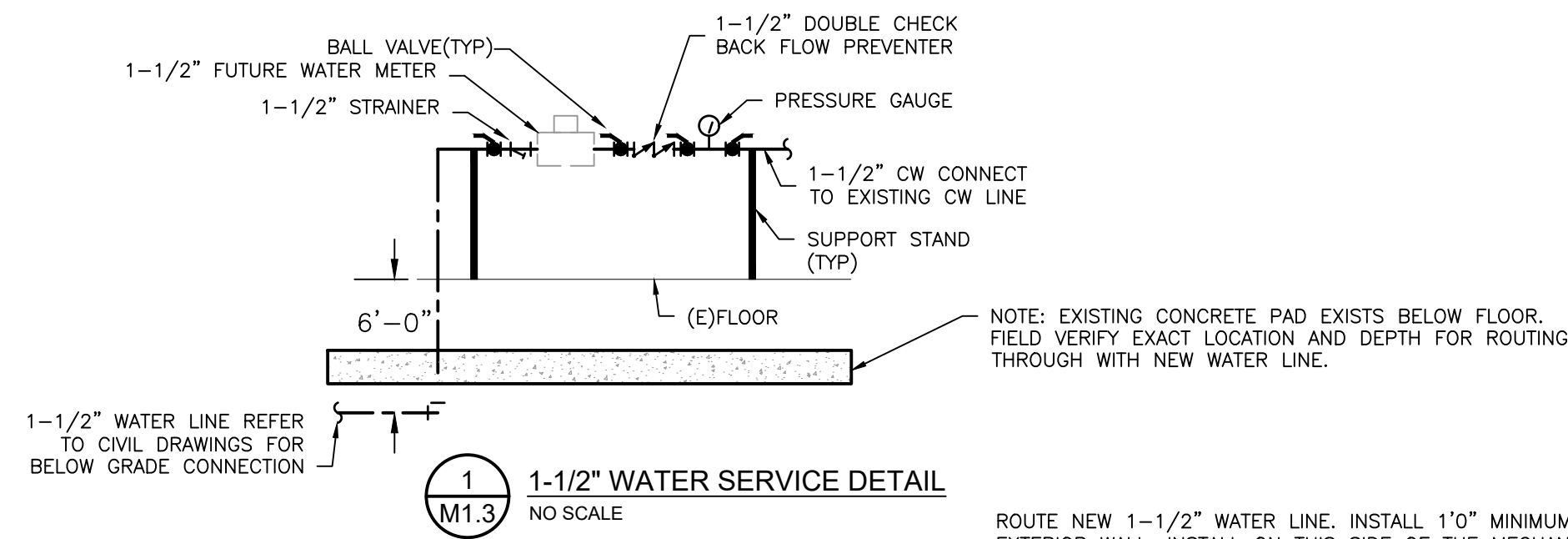
MELVIN GRAD ARTS STUDIO PLAN - PLUMBING DEMO
 SCALE: 1/4" = 1'-0"



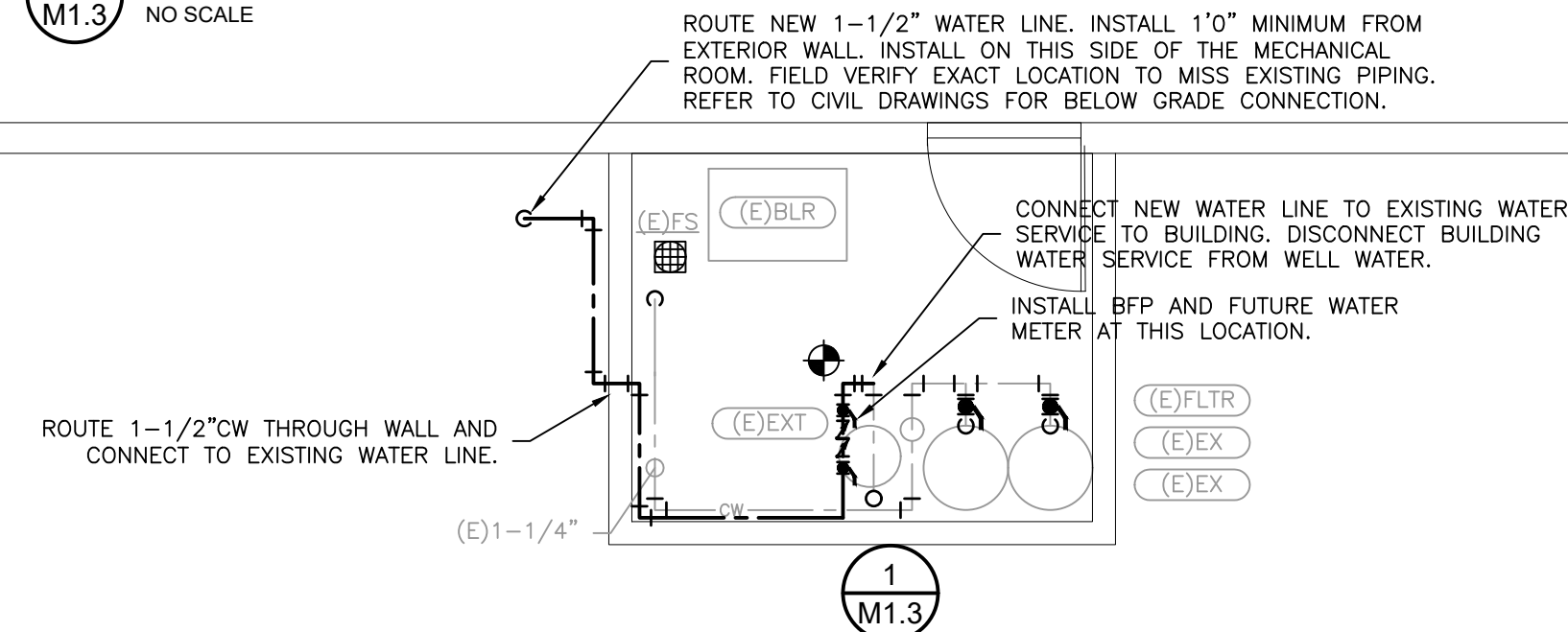
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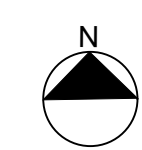
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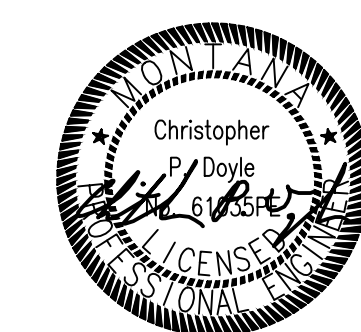
1-1/2" WATER SERVICE DETAIL
 NO SCALE



NOTE: FIELD VERIFICATION OF EXISTING PIPING IS REQUIRED IN MECHANICAL ROOM AS THERE IS A SUBSTANTIAL AMOUNT OF PIPING. MAINTAIN CLEARANCE FOR ACCESS PANEL IN MECHANICAL ROOM.



MELVIN GRAD ARTS STUDIO PLAN - PLUMBING DEMO
 SCALE: 1/4" = 1'-0"



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SHEET TITLE
 MELVIN ARTS
 PLAN - PLUMBING

SHEET
M1.6

DATE
 03/07/2024