

March 7, 2024

ADDENDUM #01

TO CONTRACT DOCUMENTS FOR: Project #CP241001

ADVERTISEMENT DATE: February 15, 2024

PREPARED FOR: The Curators of the University of Missouri

CONSULTANT: Planning, Design & Construction
University of Missouri
130 General Services Building
(573) 882-6800

The contract documents for the above noted project and the work covered thereby and herein modified.

GENERAL INFORMATION:

- 1) No changes

PROJECT MANUAL:

- 1) No changes

DRAWINGS:

- 1) Reissue the following drawings with updates:

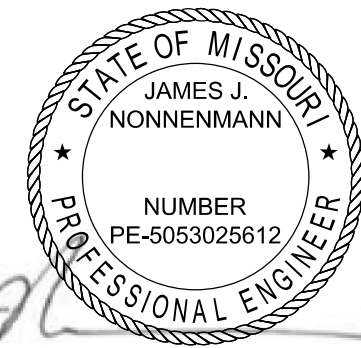
GG001
CE11
S100
S101
S102
S110
MP010
MP040
MP041
MP051

END OF ADDENDUM #01

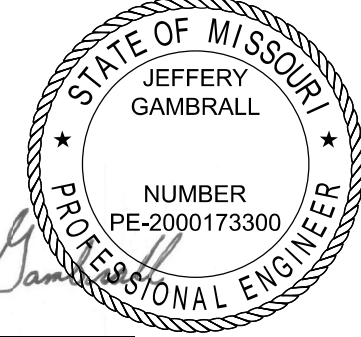
CLYDESDALE HALL REPLACE STEAM SERVICE PROJECT NUMBER: CP241001

AT: UNIVERSITY OF MISSOURI - COLUMBIA, MISSOURI
FOR: THE CURATORS OF THE UNIVERSITY OF MISSOURI
ISSUE FOR BID: 02/09/2024

I HEREBY CERTIFY THAT DRAWINGS AND/OR SPECIFICATIONS HAVE BEEN PREPARED BY ME, OR UNDER MY SUPERVISION. I FURTHER CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THESE DRAWINGS AND/OR SPECIFICATIONS ARE AS REQUIRED BY AND IN COMPLIANCE WITH BUILDING CODES OF THE UNIVERSITY OF MISSOURI.
SIGNATURE: *James J. Nonnenmann*



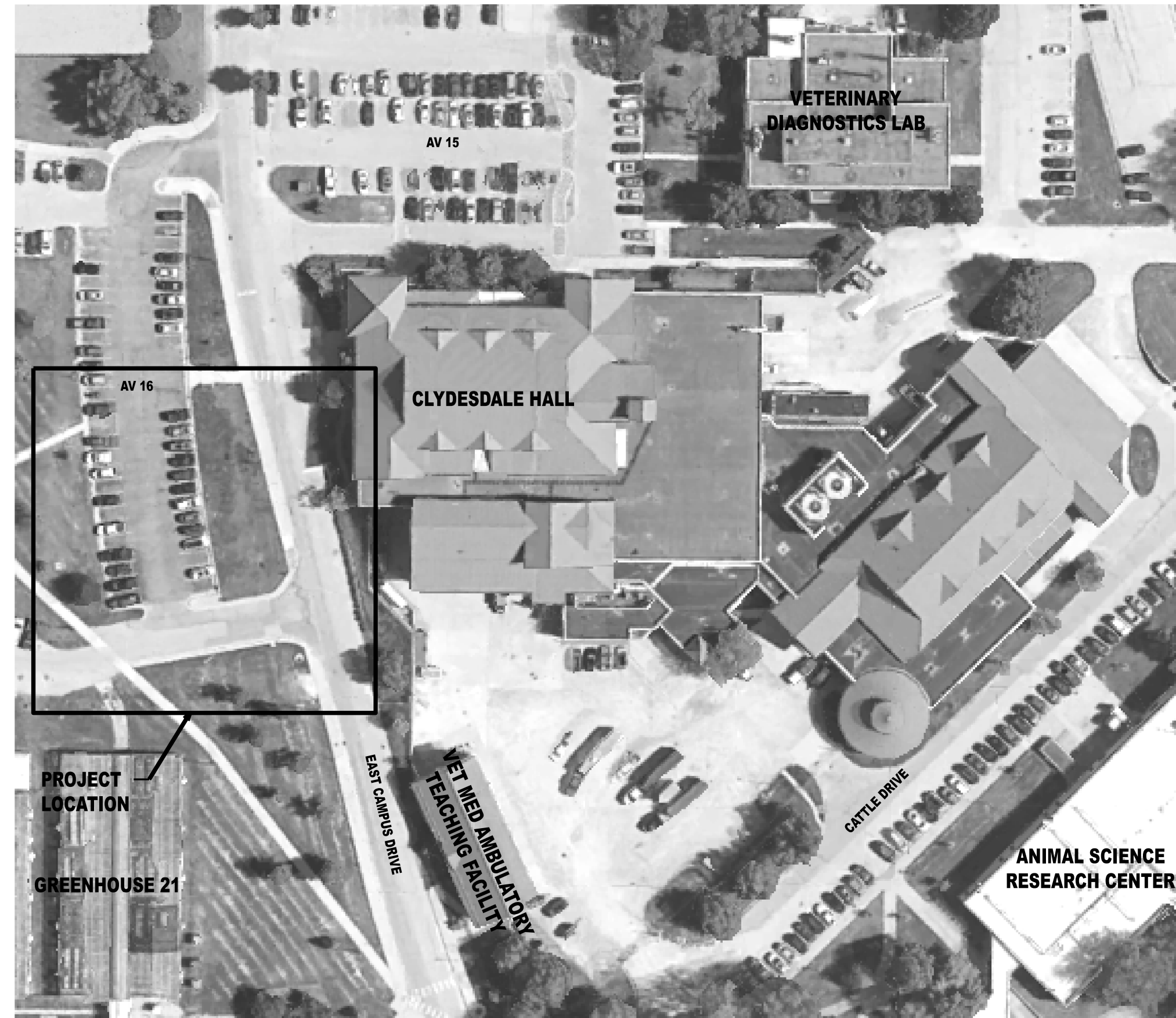
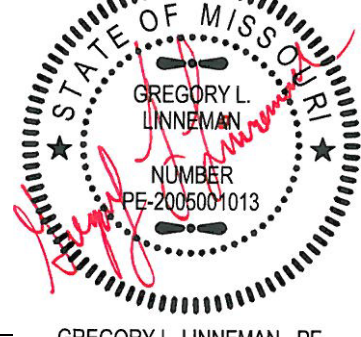
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SIGNATURE: *Jeffery J. Gambrell*



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SIGNATURE: *Andrew T. Greene*



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SIGNATURE: *Gregory L. Linneman*



DESIGN CONSULTANTS:

MECHANICAL AND ELECTRICAL

PRVN CONSULTANTS, INC.
1617 SECOND AVE. SUITE 110
ROCK ISLAND, IL 61201
563-263-5160

CIVIL AND STRUCTURAL

CROCKETT ENGINEERING CONSULTANTS
1000 W. NIFONG BOULEVARD, BUILDING 1
COLUMBIA, MO 65203
573-447-0292

OWNER'S REPRESENTATIVE

DERICK LAUBERT
112 GENERAL SERVICES BUILDING
COLUMBIA, MO 65211
573-882-6800

CODES & STANDARDS

UM CONSULTANT PROCEDURES AND DESIGN GUIDELINES: CURRENT EDITION

IBC:	2021	NFPA 45:	2019
IEBC:	2021	NFPA 72:	2019
IMC:	2021	NFPA 90A:	2018
IPC:	2021	NFPA 96:	2017
IFC:	2021	NFPA 110:	2019
IFGC:	2021	NFPA 150:	2019
NEC:	2020	ASHRAE 90.1:	2019
NFPA 13:	2019	ASME A17.1:	2016
NFPA 14:	2019	ICC A117.1:	2017
NFPA 20:	2019		

INDEX OF DRAWINGS		REVISION DESCRIPTION		
SHEET NUMBER	SHEET TITLE	REVISION DELTA #	0	1
		02/09/2024 ISSUED FOR BID	03/07/2024 ISSUE FOR ADDENDUM 01	
GG001	STEAM LINE REPLACEMENT COVER SHEET	X	X	
GG002	GENERAL LEGEND AND NOTES	X		
CE1	SITE NOTES AND EXISTING CONDITIONS PLAN	X		
CE2	DEMOLITION AND FENCING PLAN - PHASE 1	X		
CE3	UTILITY PLAN - PHASE 1	X		
CE4	SITE PLAN - PHASE 1	X		
CE5	DEMOLITION AND FENCING PLAN - PHASE 2	X		
CE6	UTILITY PLAN - PHASE 2	X		
CE7	SITE PLAN - PHASE 2	X		
CE8	GRADING AND EROSION CONTROL PLAN	X		
CE9	TRAFFIC CONTROL PLAN - PHASE 1	X		
CE10	TRAFFIC CONTROL PLAN - PHASE 2	X		
CE11	SITE CONSTRUCTION DETAILS	X	X	
CE12	WATER LINE DETAILS	X		
DM001	DEMOLITION SITE PLAN	X		
DM010	DEMOLITION PLAN SMH-462	X		
DM011	DEMOLITION PLAN SMH-439 AND SMH-421	X		
DM050	DEMOLITION PHOTO VIEWS	X		
S100	STEAM MANHOLE #468 PLAN	X	X	
S101	STEAM MANHOLE #468 DETAILS	X	X	
S102	STEAM MANHOLE #468 DETAILS	X	X	
S110	TYPICAL WATERPROOFING & REPAIR DETAILS AND NOTES	X	X	
S111	TYPICAL CONCRETE REPAIR DETAILS & NOTES	X		
MP001	MECHANICAL SITE PLAN	X		
MP010	MECHANICAL PLAN AND SECTIONS SMH-462	X	X	
MP011	MECHANICAL PLAN AND SECTIONS SMH-468	X		
MP012	MECHANICAL PLAN AND SECTIONS - SMH-421 AND CLYDESDALE HALL	X		
MP020	PIPING PLAN AND PROFILE STEAM AND CONDENSATE - SHEET 1	X		
MP021	PIPING PLAN AND PROFILE STEAM AND CONDENSATE - SHEET 2	X		
MP040	THERMAL EXPANSION PLAN MPS	X	X	
MP041	THERMAL EXPANSION PLAN PC	X	X	
MP050	MECHANICAL DETAILS - SHEET 1	X		
MP051	MECHANICAL DETAILS - SHEET 2	X	X	
EP001	ELECTRICAL SITE PLAN	X		
EP002	ELECTRICAL FIRST FLOOR PLAN - MECHANICAL ROOM A109	X		
EP011	ELECTRICAL PLAN SMH-468	X		
EP051	ELECTRICAL DETAILS - SHEET 1	X		
EP061	ELECTRICAL CABLE SCHEDULE	X		

PROJECT ADDRESS
900 E Campus Drive,
Columbia, MO 65201

PROJECT DESCRIPTION
Replace steam and condensate services to Clydesdale Hall.

SPECIAL INSPECTIONS [IBC CHAPTER 17]:

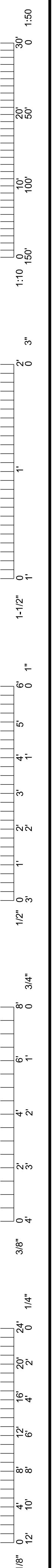
- All concrete waterproofing shall be fully placed and inspected by the owner prior to proceeding to the next step of installation. Owner shall receive 24 hour notice of inspections being required. These inspections for approval shall include:
 - Substrate conditions and preparations
 - Flashing installation
 - Membrane installation
 - Protection and drainage installation
- The owner will contract with an independent testing firm to complete ultrasonic shear wave weld inspections on owner selected field welds. If the results of these tests indicate poor quality welds, those "failed" welds shall be replaced at no additional cost to the project. If further ultrasonic inspection is required to assure quality weld workmanship, these tests shall be at the expense of the contractor, and any and all defective welds shall be replaced at no additional cost to the project.

DELEGATED DESIGN:

Contractor is responsible for the design of shoring, earth retention systems, temporary excavations support, existing utility protection systems, and associated items as needed to facilitate completion of this work. Design shall be completed by a licensed professional structural engineer registered in the State of Missouri. Designs shall be submitted to review by project engineer.

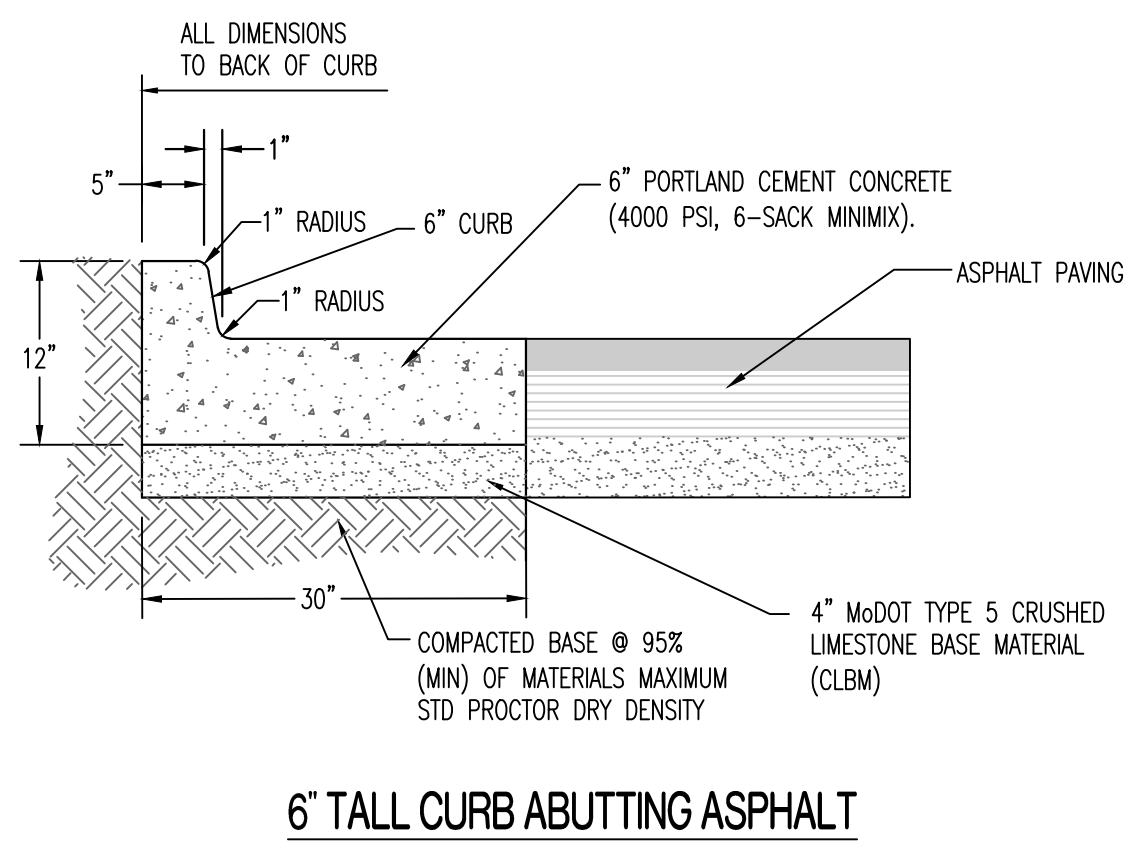
PRVN CONSULTANTS, INC.
 1617 Second Ave., Ste. 110
 Rock Island, IL 61201
 MISSOURI CERTIFICATE OF AUTHORITY ENGINEERING
 -2023017605
CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
REPLACE STEAM SERVICE
COVER SHEET

PROJECT NUMBER
CP241001
SHEET
GG001

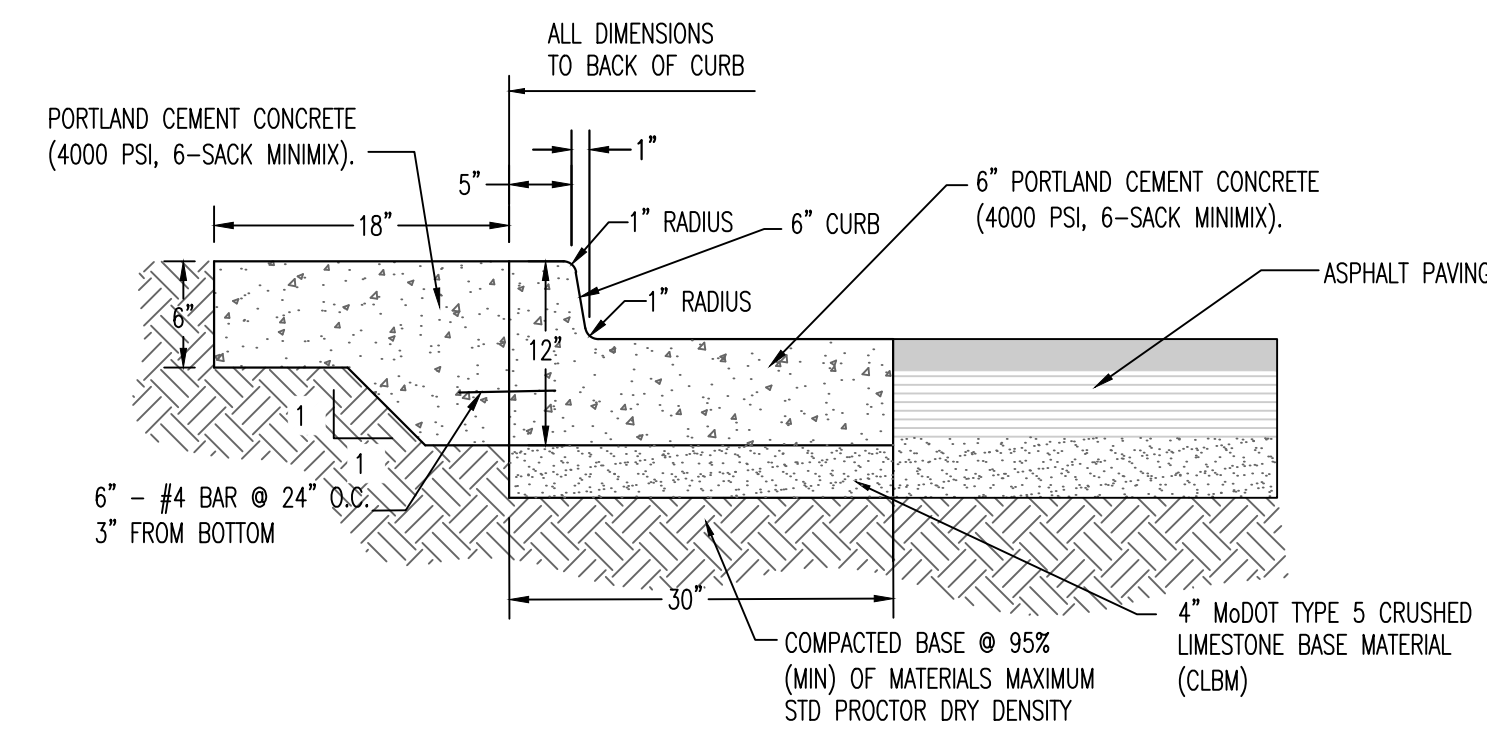


03/07/24 ISSUE FOR ADDENDUM 01
 02/09/24 ISSUED FOR BID
 DRAWN BY: MAO
 CHECKED BY: JUN

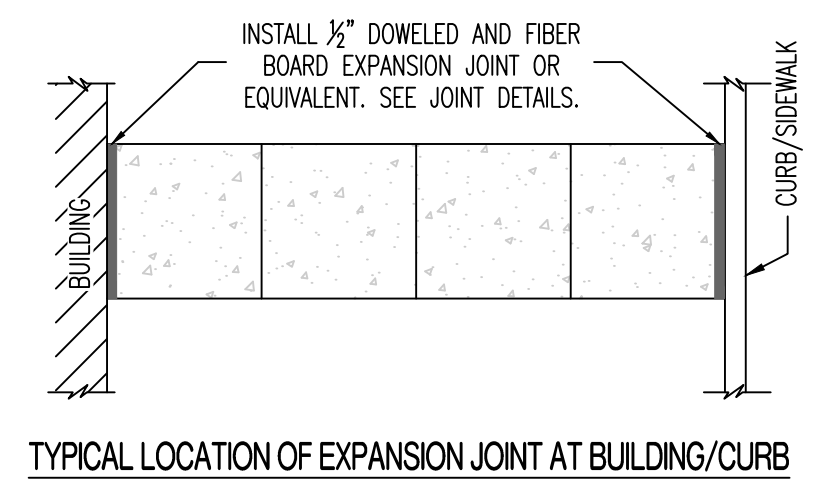
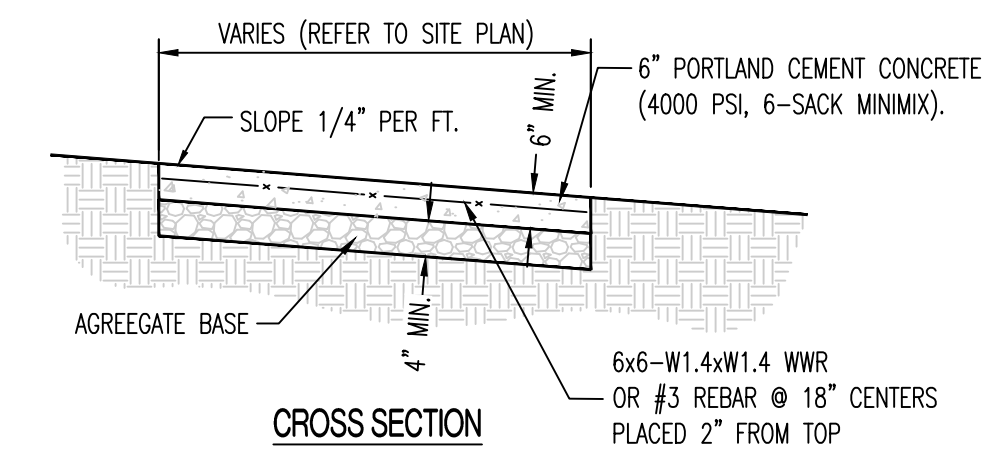
1:50
1:10
1:50'
3"
1"
1/2"
3/4"
2"
3/8"
1/4"
1/8"



6" TALL CURB ABUTTING ASPHALT

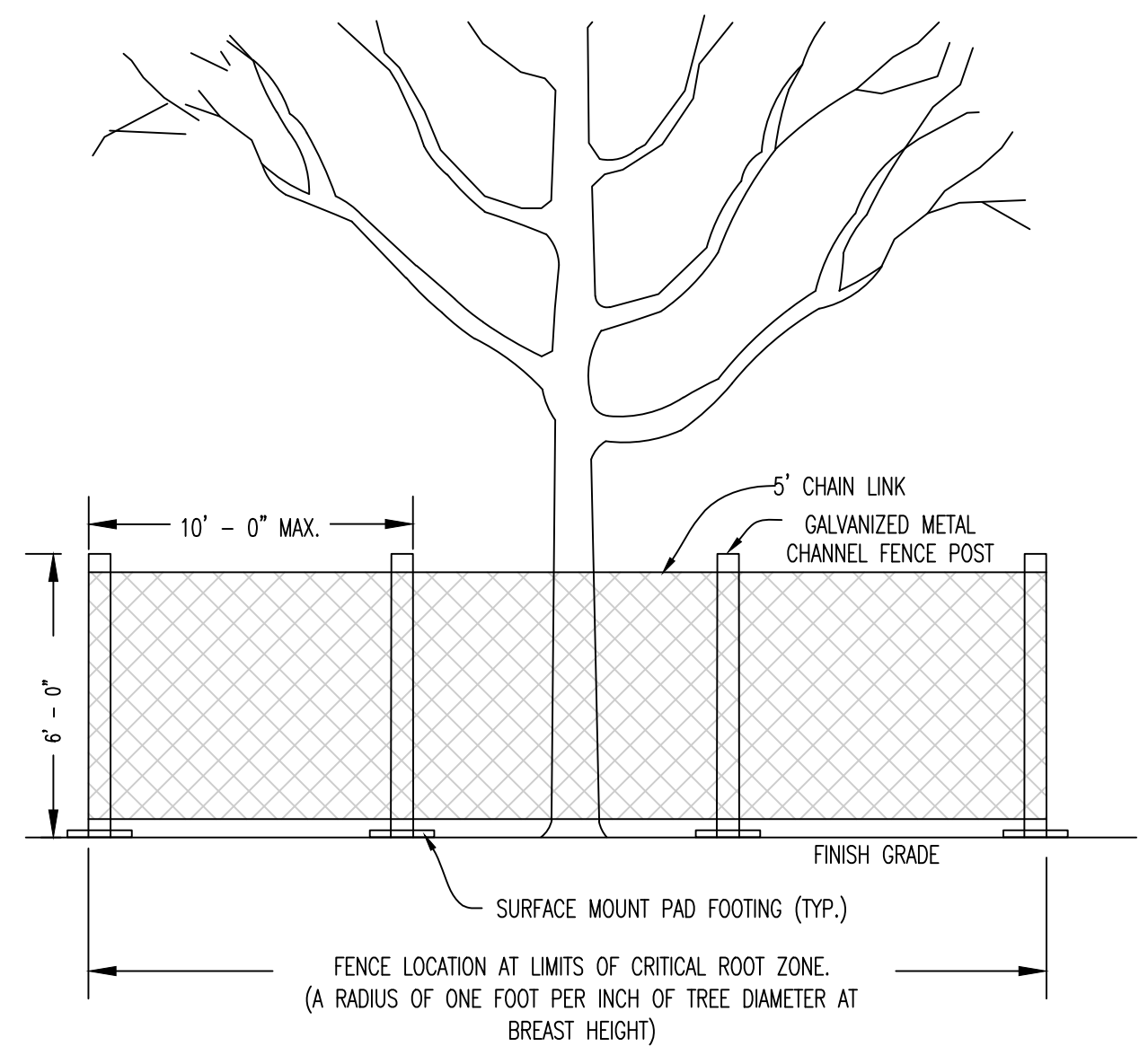


6" TALL CURB ABUTTING ASPHALT WITH MOW STRIP



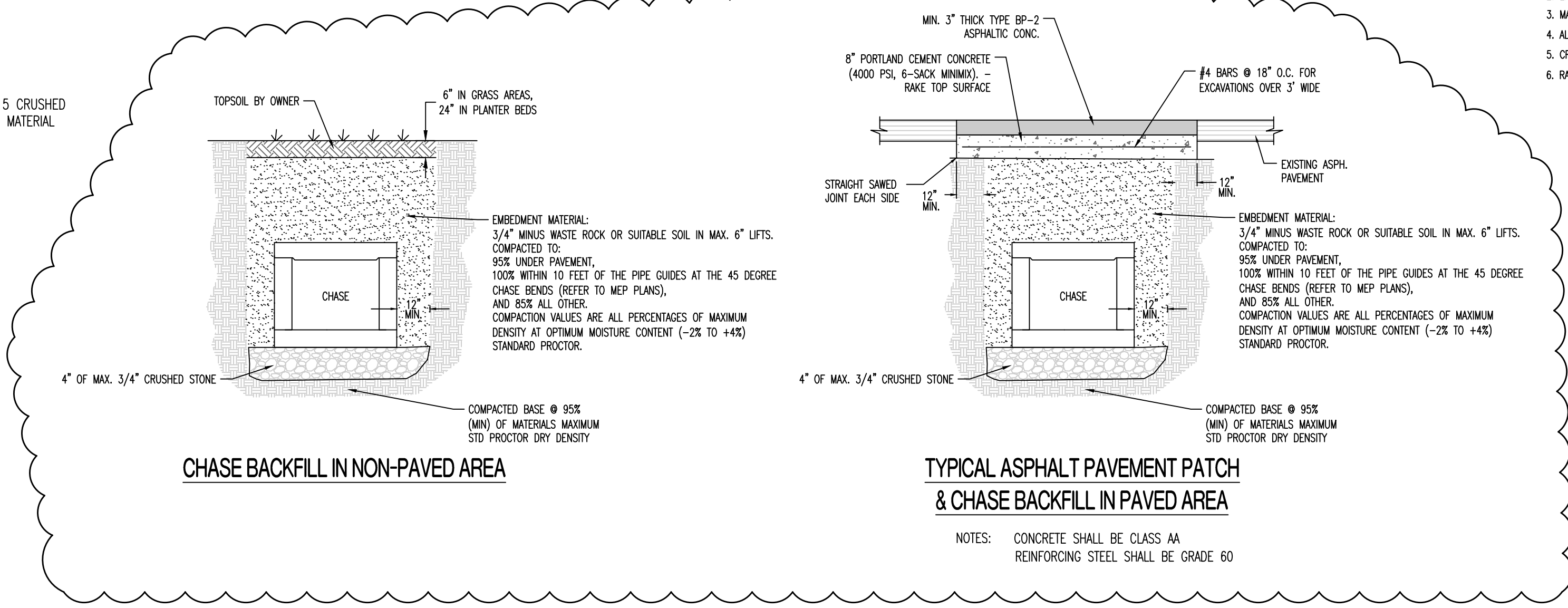
- NOTE:
- SIDEWALK SHALL BE 6" THICK CLASS A CONCRETE ON 4" AGGREGATE BASE.
 - INSTALL 1/2" DOWELED EXPANSION JOINTS AT INTERSECTIONS, RAMPS, STRUCTURES, AND DRIVEWAY APPROACHES. MAX. EXPANSION JOINT SPACING = 150'
 - INSTALL TRANSVERSE SAW JOINTS AT SPACING = SIDEWALK WIDTH.

TYPICAL PRIVATE SIDEWALK



- NOTES:
- MAKE CLEAN SAWCUTS ON ROOTS EXPOSED BY GRADING AND BACKFILL IMMEDIATELY W/ TOPSOIL THOROUGHLY.
 - MAINTAIN FENCE TO KEEP IT ANCHORED FIRMLY TO POST WITHOUT SAGGING.
 - ANCHOR FENCE TO POSTS WITH WIRES OR PLASTIC TIES.
 - REMOVE FENCING AND TIES FROM SITE WHEN DIRECTED BY OWNER/ENGINEER OR AT SUBSTANTIAL COMPLETION OF PROJECT.

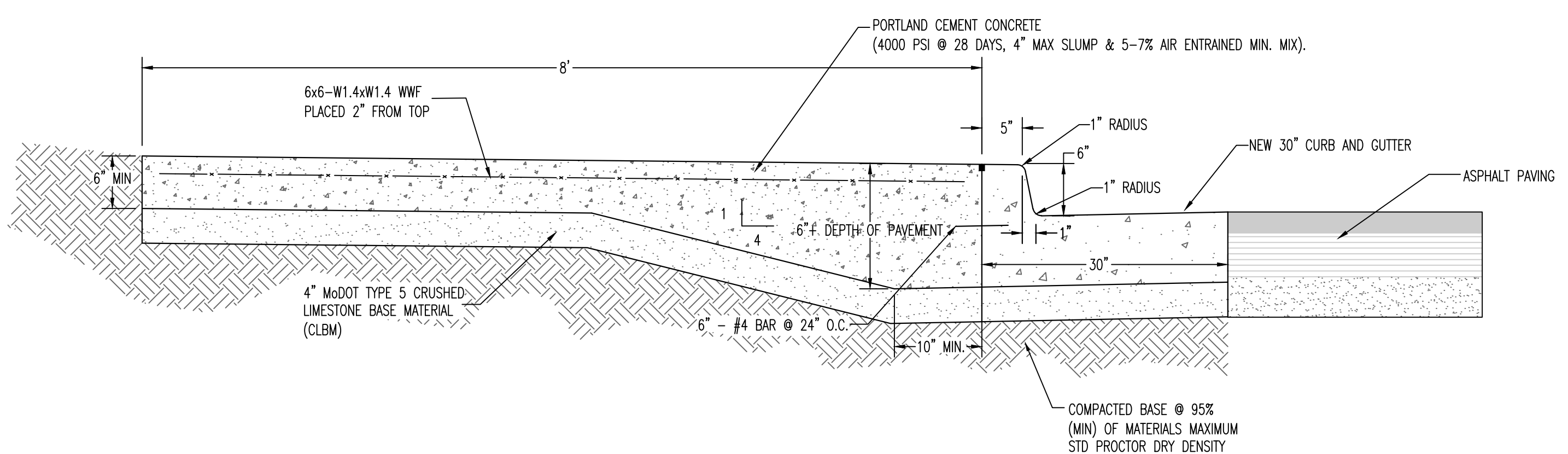
TREE PROTECTION FENCE



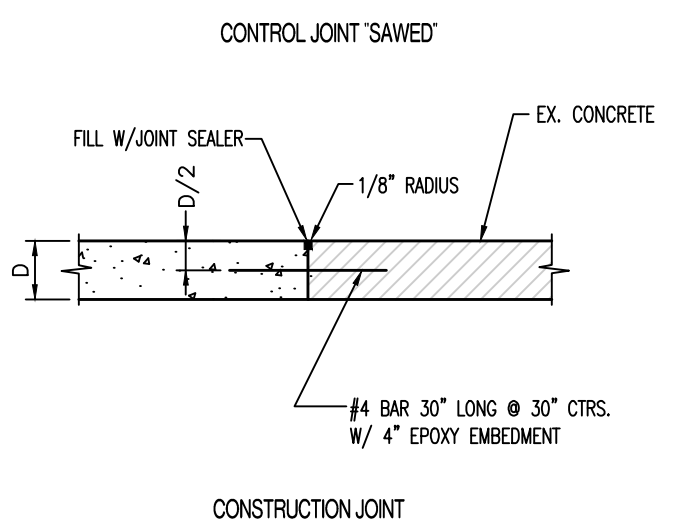
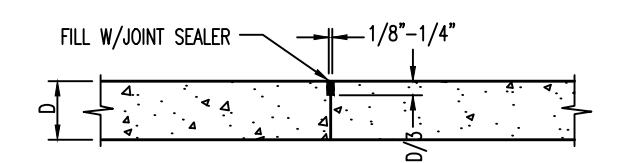
CHASE BACKFILL IN NON-PAVED AREA

TYPICAL ASPHALT PAVEMENT PATCH & CHASE BACKFILL IN PAVED AREA

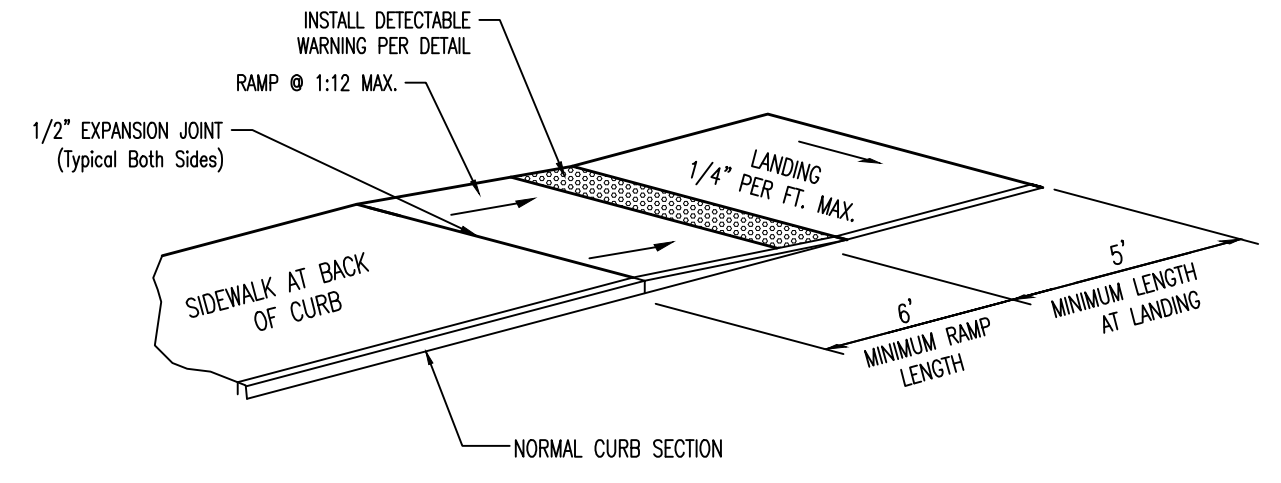
- NOTES:
- CONCRETE SHALL BE CLASS AA
 - REINFORCING STEEL SHALL BE GRADE 60



THICKENED EDGE SIDEWALK AT BACK OF CURB & GUTTER

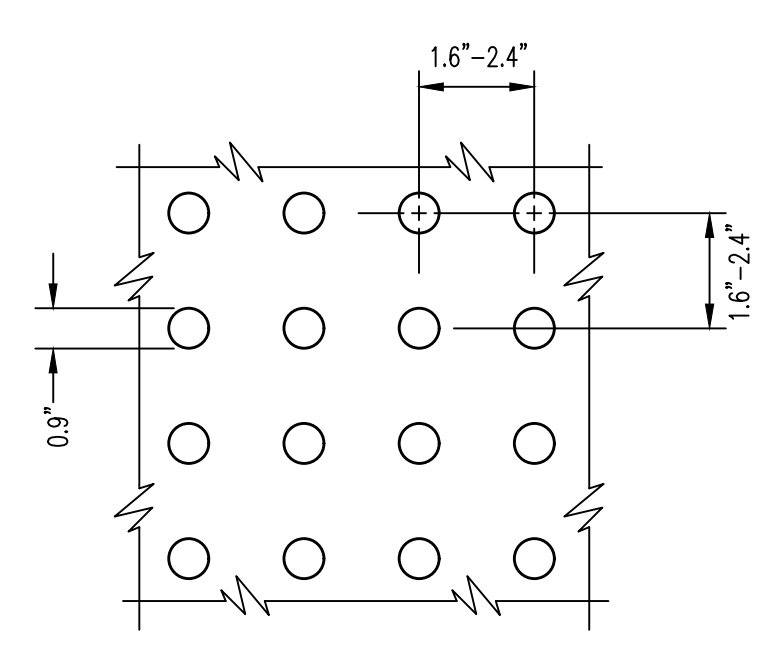


JOINT DETAILS (P.C. CONCRETE PAVEMENT)



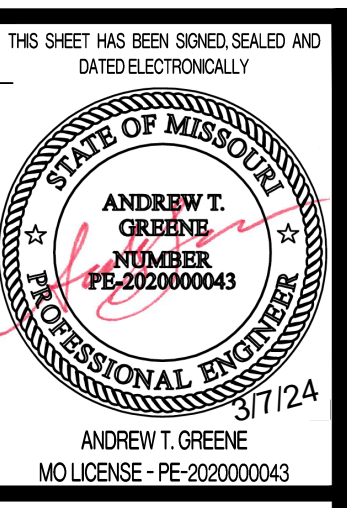
- NOTE:
- RAMP SHALL BE 6" THICK CLASS A CONCRETE REINFORCED SAME AS SIDEWALK.
 - EXPANSION JOINT SHALL BE 1/2" PREFORMED CORK OR BITUMINOUS EXPANSION JOINT MATERIAL.
 - MAXIMUM RAMP CROSS SLOPE IS 2.00%.
 - ALL SLOPES ARE MEASURED FROM THE HORIZONTAL.
 - CROSS SLOPE OF LANDING SHALL NOT EXCEED 2%.
 - RAMP IS 1:12 MAX. SLOPE. USE FLATTER WHEN POSSIBLE.

SIDEWALK RAMP AT BACK OF CURB



- NOTE:
- DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9", A HEIGHT OF NOMINAL 0.2", AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35", AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, ACHIEVED BY THE INSTALLATION OF ADA 2004 COMPLIANT DETECTABLE WARNING PAVERS.
 - MANUFACTURER TO BE WAUSAU TILE, OR APPROVED EQUAL. PAVERS TO BE INSTALLED PER MANUFACTURER RECOMMENDATIONS.
 - STAMPED CONCRETE IS NOT AN APPROVED EQUAL.
 - COLOR TO BE APPROVED BY OWNER.
 - DETECTABLE WARNING SURFACES SHALL BE 24" WIDE AND EXTEND THE FULL LENGTH OF THE PUBLIC USE AREA.

DETECTABLE WARNING (435.01)



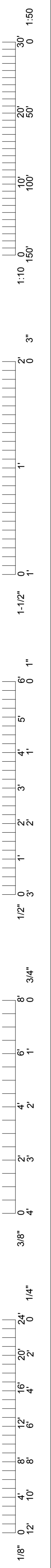
ISSUE FOR ADDENDUM 01
03/07/24
ISSUED FOR BID
DRAWN BY: ATG
CHECKED BY: ATG

PRW CONSULTANTS, INC.
1617 Second Ave., Ste. 110
Rock Island, IL 61201
MISSOURI CERTIFICATE OF AUTHORITY ENGINEERING
- 2023017605

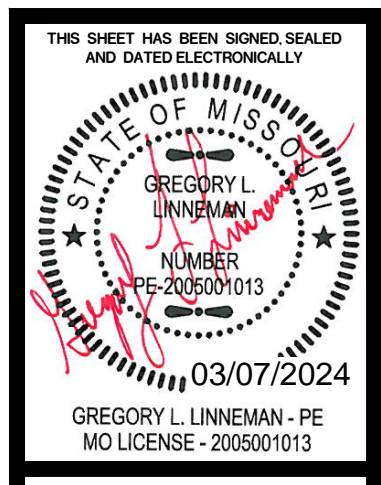
CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
SITE CONSTRUCTION DETAILS

PROJECT NUMBER
CP241001

SHEET
CE 11



- NOTES**
- SEE MECHANICAL & CIVIL PLANS FOR MANHOLE LOCATIONS & ELEVATIONS.
 - ALL GRANULAR FILL TO BE COMPACTED TO 100% MODIFIED PROCTOR.



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ENGINEERING CONSULTANTS

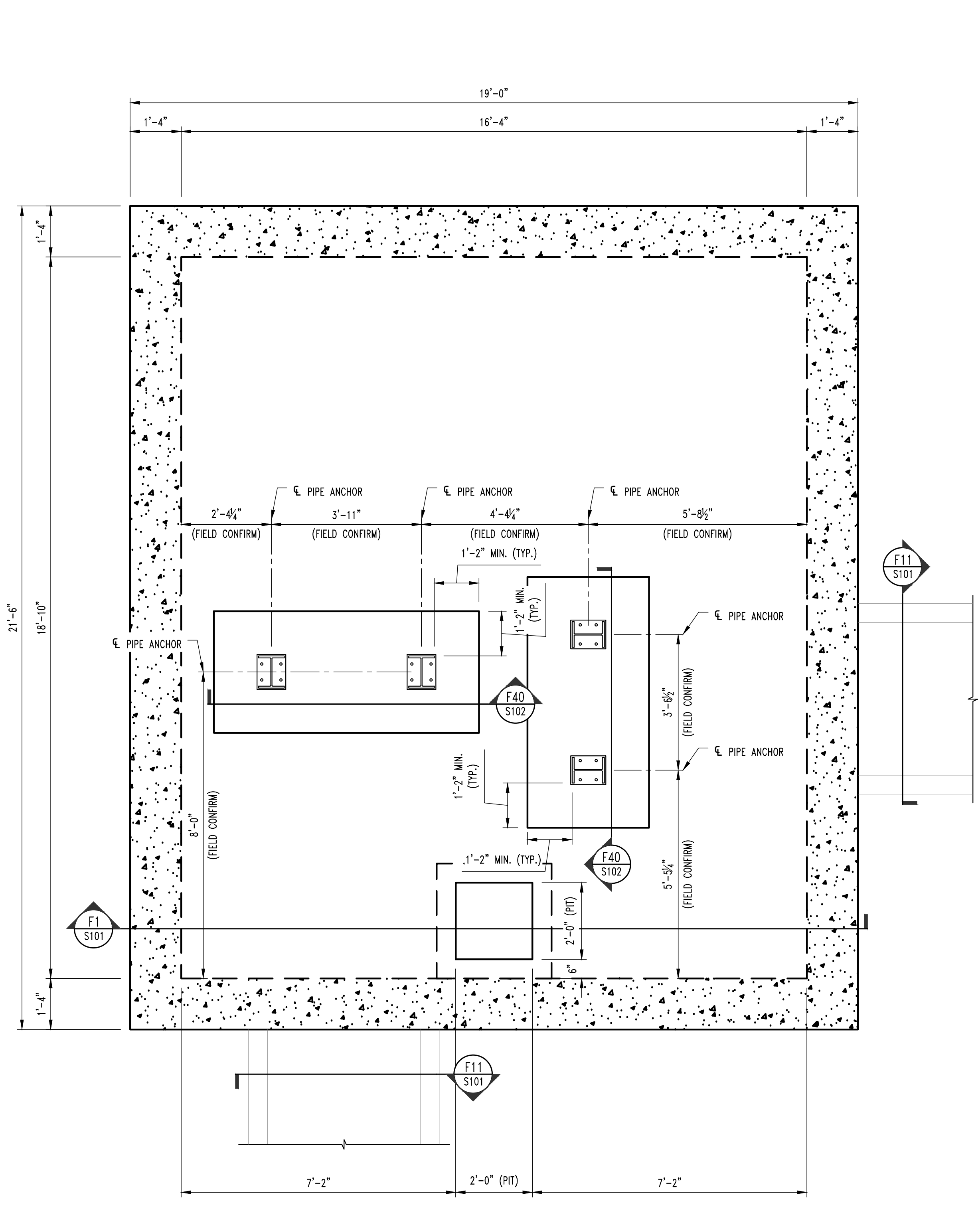
03/07/2024
02/09/2024
ADDENDUM #1
ISSUED FOR BID
DRAWN BY: RCA
CHECKED BY: GLL

PRW CONSULTANTS, INC.
1617 Second Ave., Ste. 110
Rock Island, IL 61201
MISSOURI CERTIFICATE OF
AUTHORITY ENGINEERING
202.30.7605

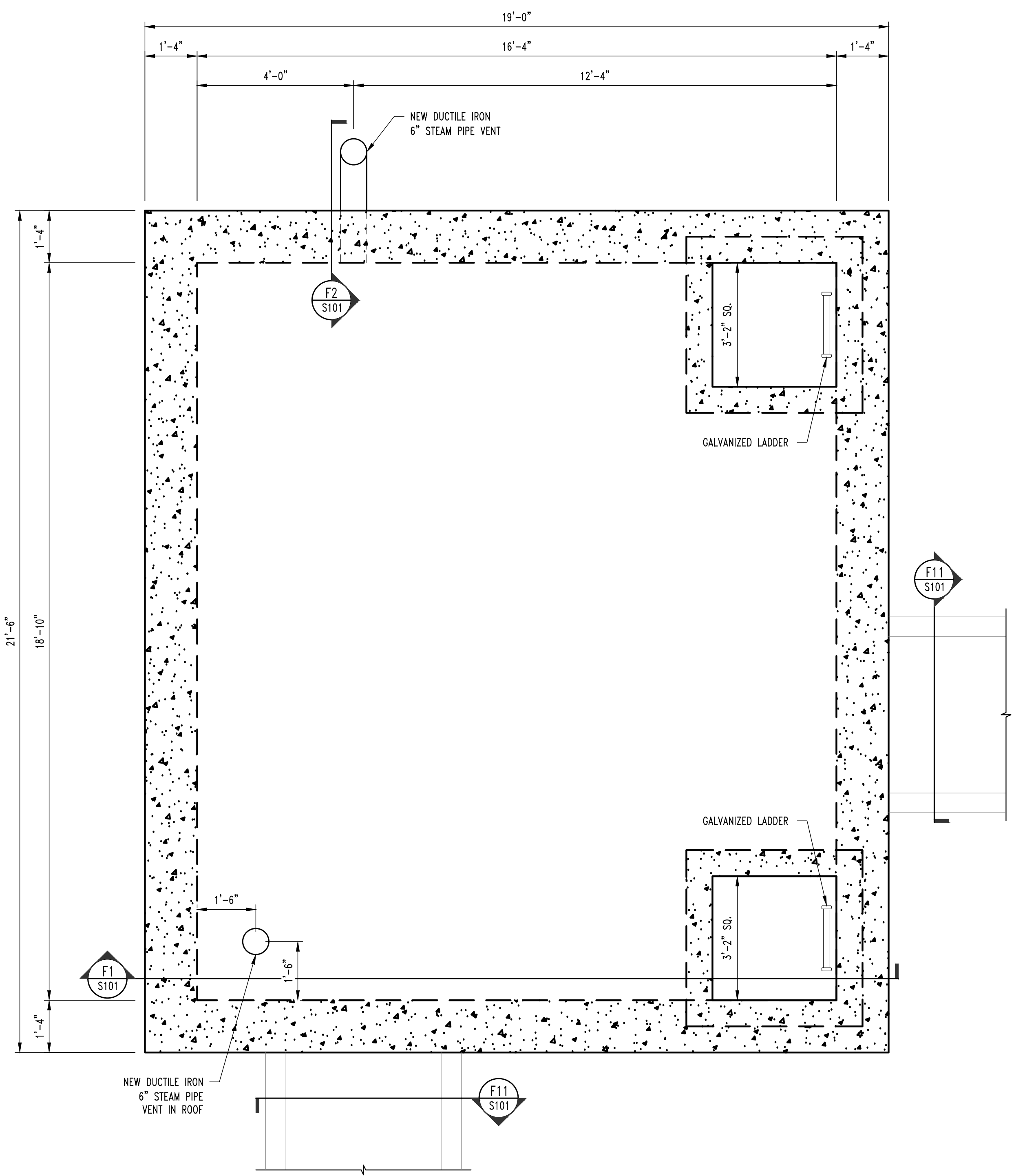
CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
STEAM MANHOLE #468 PLAN

PROJECT NUMBER
CP241001

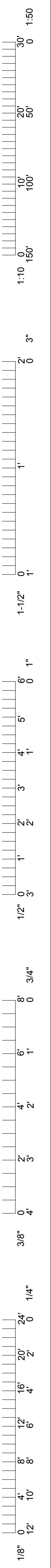
SHEET
S100



1 STEAM MANHOLE #468 PLAN @ FLOOR
SCALE: 1/2" = 1'-0"
PLAN NORTH
NOTE:
COORDINATE STEEL LOCATION w/ PIPE EXPANSION JOINT LOCATION PRIOR TO INSTALL.



2 STEAM MANHOLE #468 PLAN @ LID
SCALE: 1/2" = 1'-0"
PLAN NORTH



NOTES

- 1 SEE MECHANICAL & CIVIL PLANS FOR MANHOLE LOCATIONS & ELEVATIONS.
- 2 ALL GRANULAR FILL TO BE COMPACTED TO 100% MODIFIED PROCTOR.



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ENGINEERING CONSULTANTS

03/07/2024
02/09/2024
ADDENDUM #1
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DRAWN BY: RCA
CHECKED BY: GLL

PRW CONSULTANTS, INC.
1617 Second Ave., Ste. 110
Rock Island, IL 61201
MISSOURI CERTIFICATE OF
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- 202.30.7605



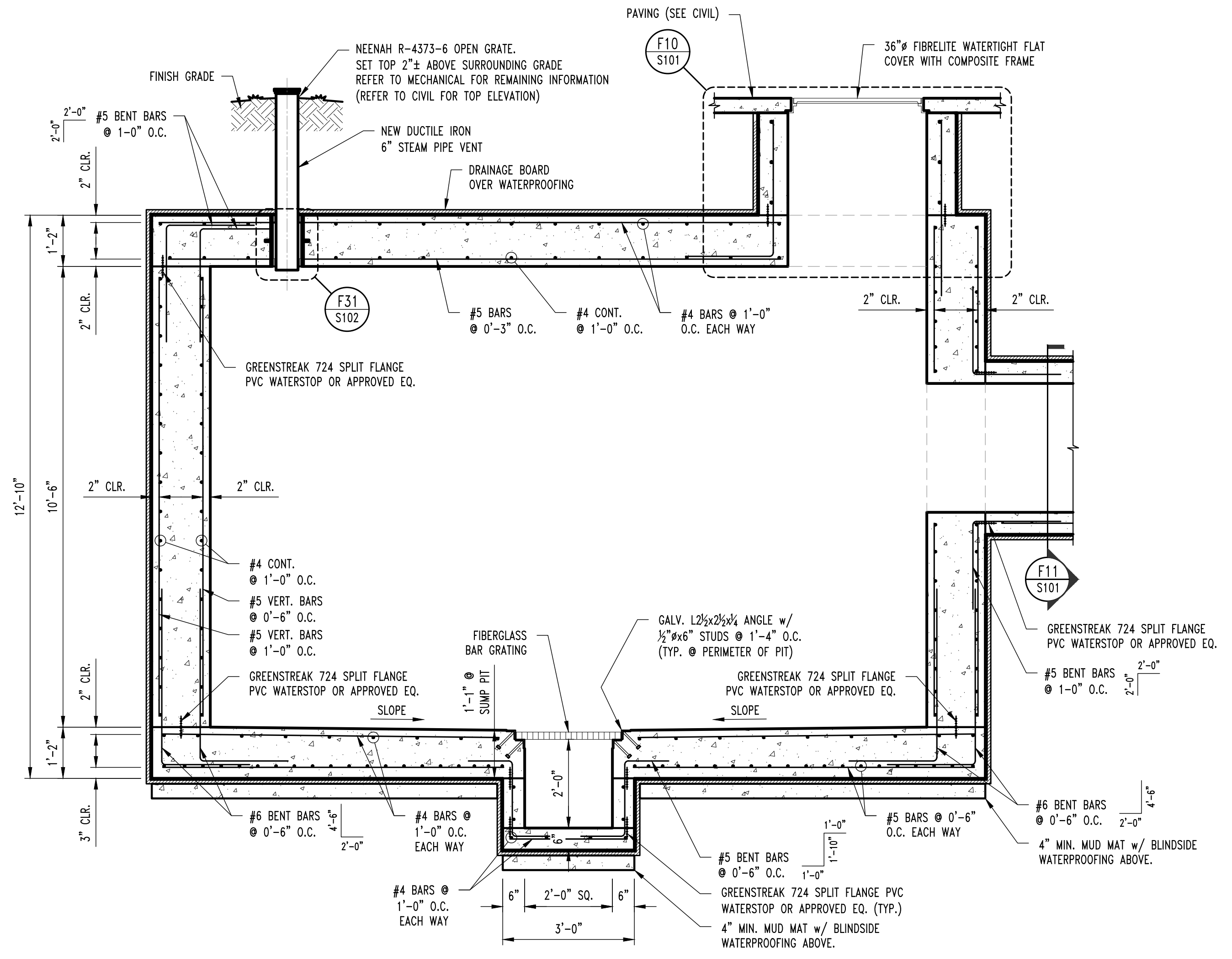
CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
STEAM MANHOLE #468 DETAILS

PROJECT NUMBER

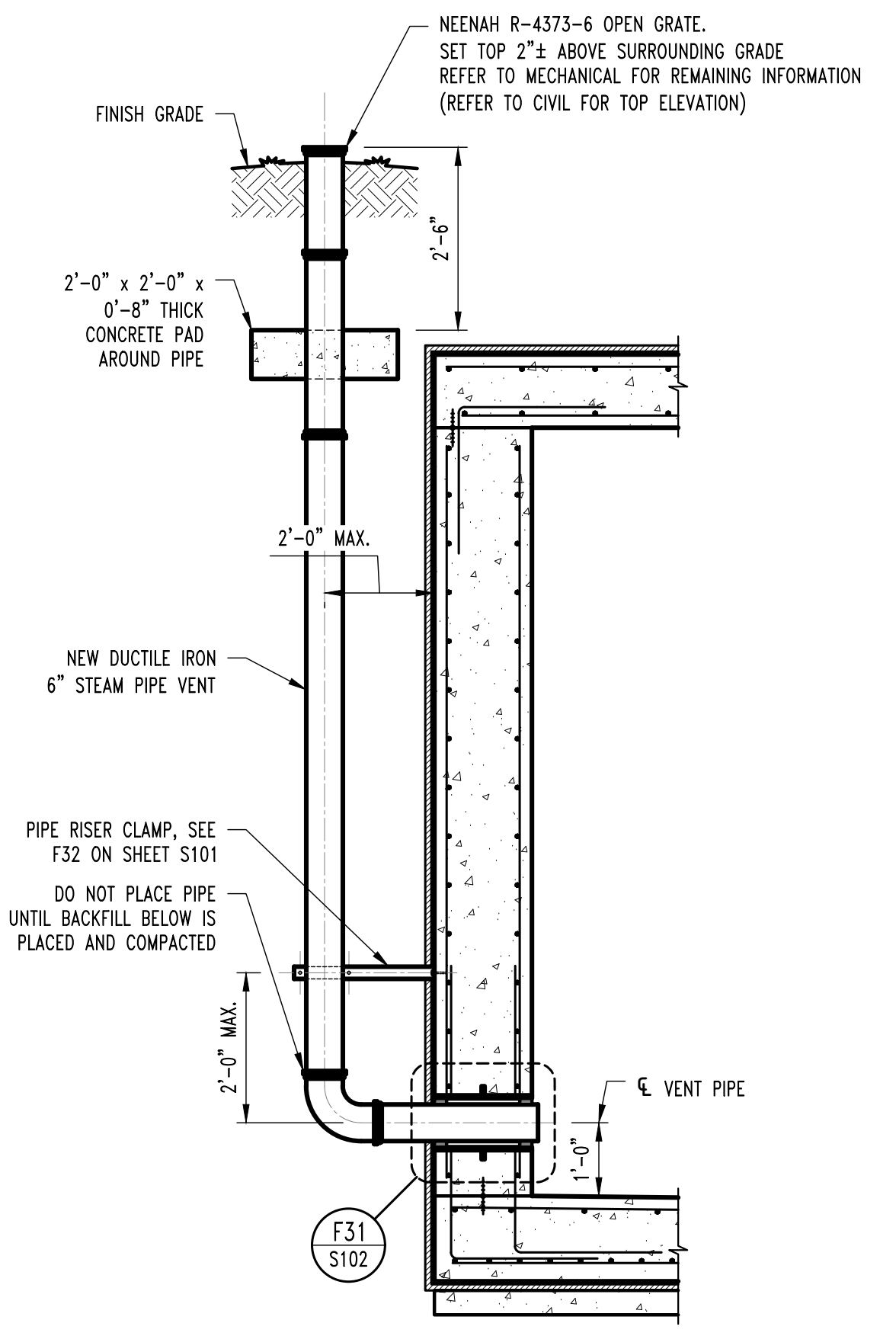
CP241001

SHEET

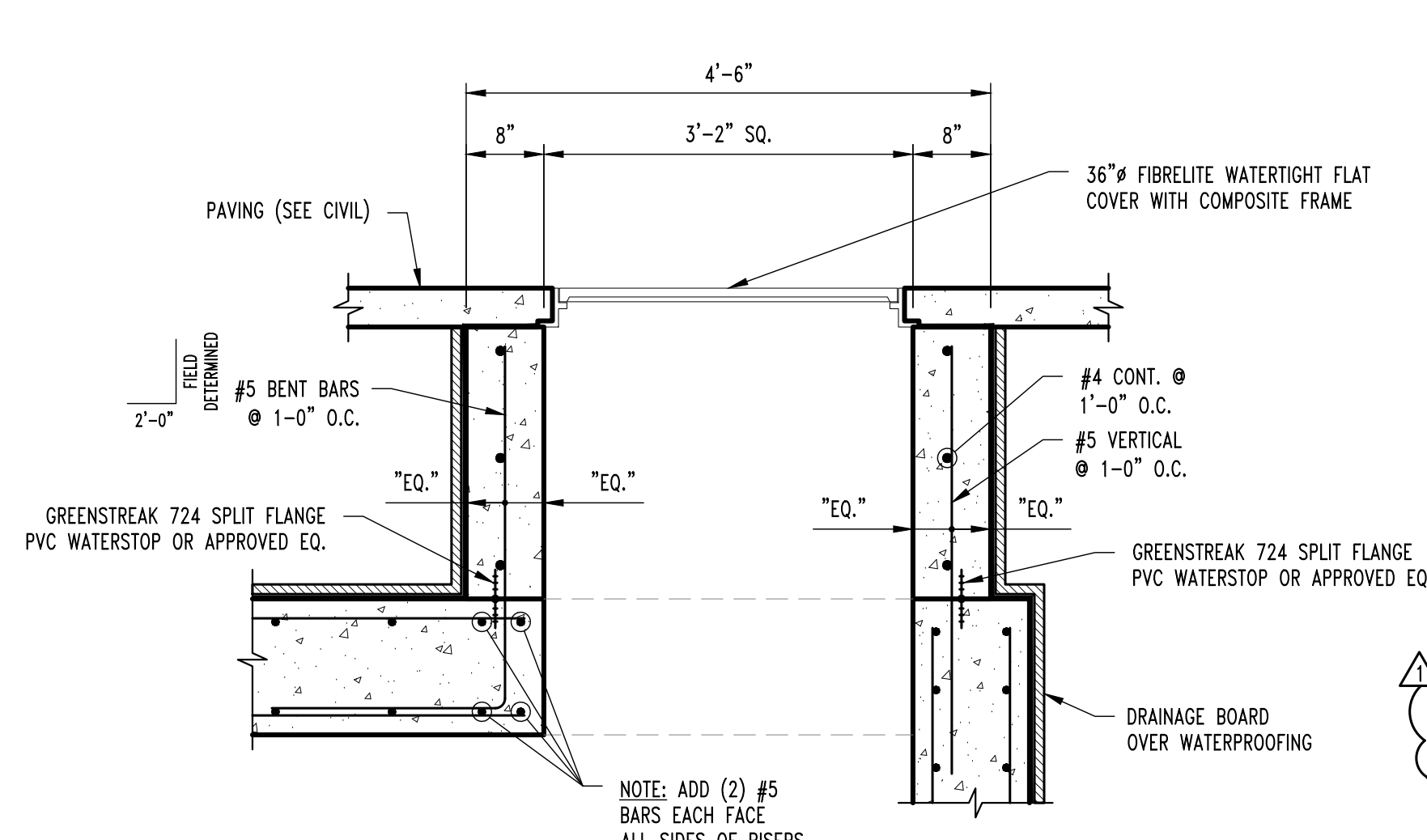
S101



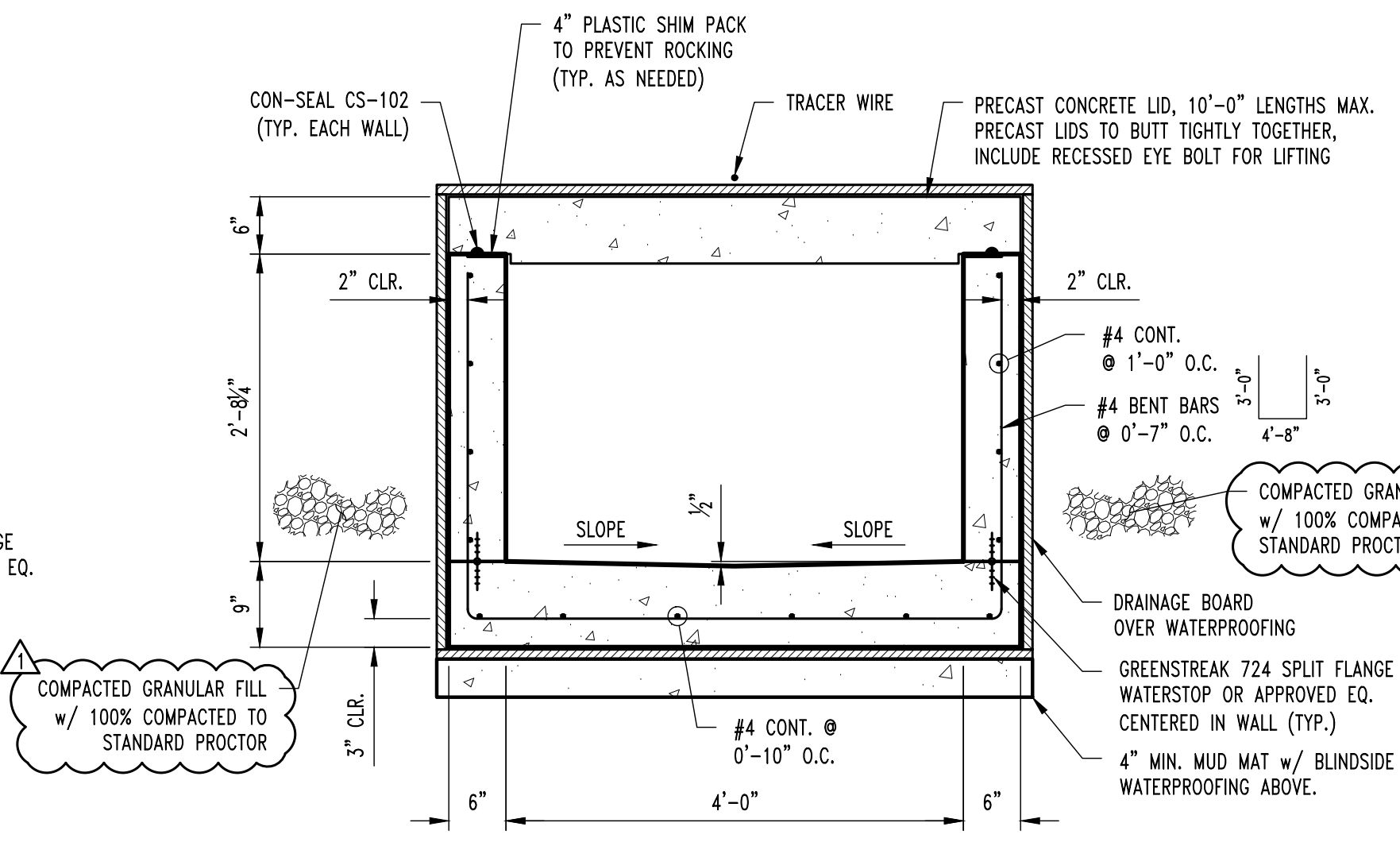
F1 S100 STEAM MANHOLE #468 SECTION
SCALE: 1/2" = 1'-0"



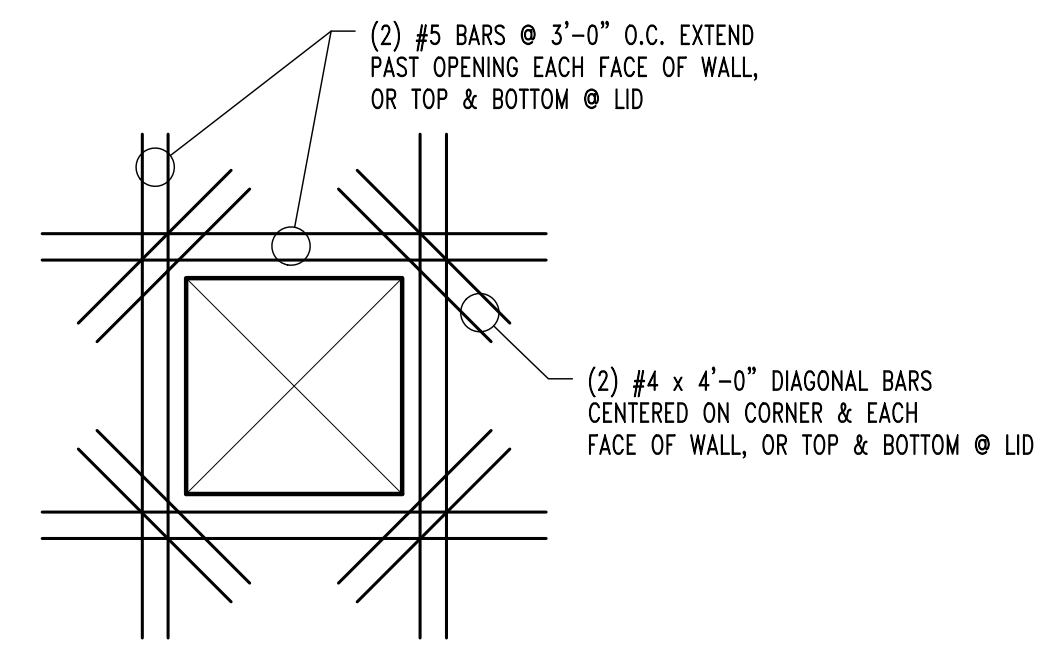
F2 S100 VENT PIPE SECTION
SCALE: 1/2" = 1'-0"



F10 S101 TYP. ACCESS FRAME AND RISER DETAIL
SCALE: 1/4" = 1'-0"



F11 S100 CHASE SECTION
SCALE: 3/4" = 1'-0"

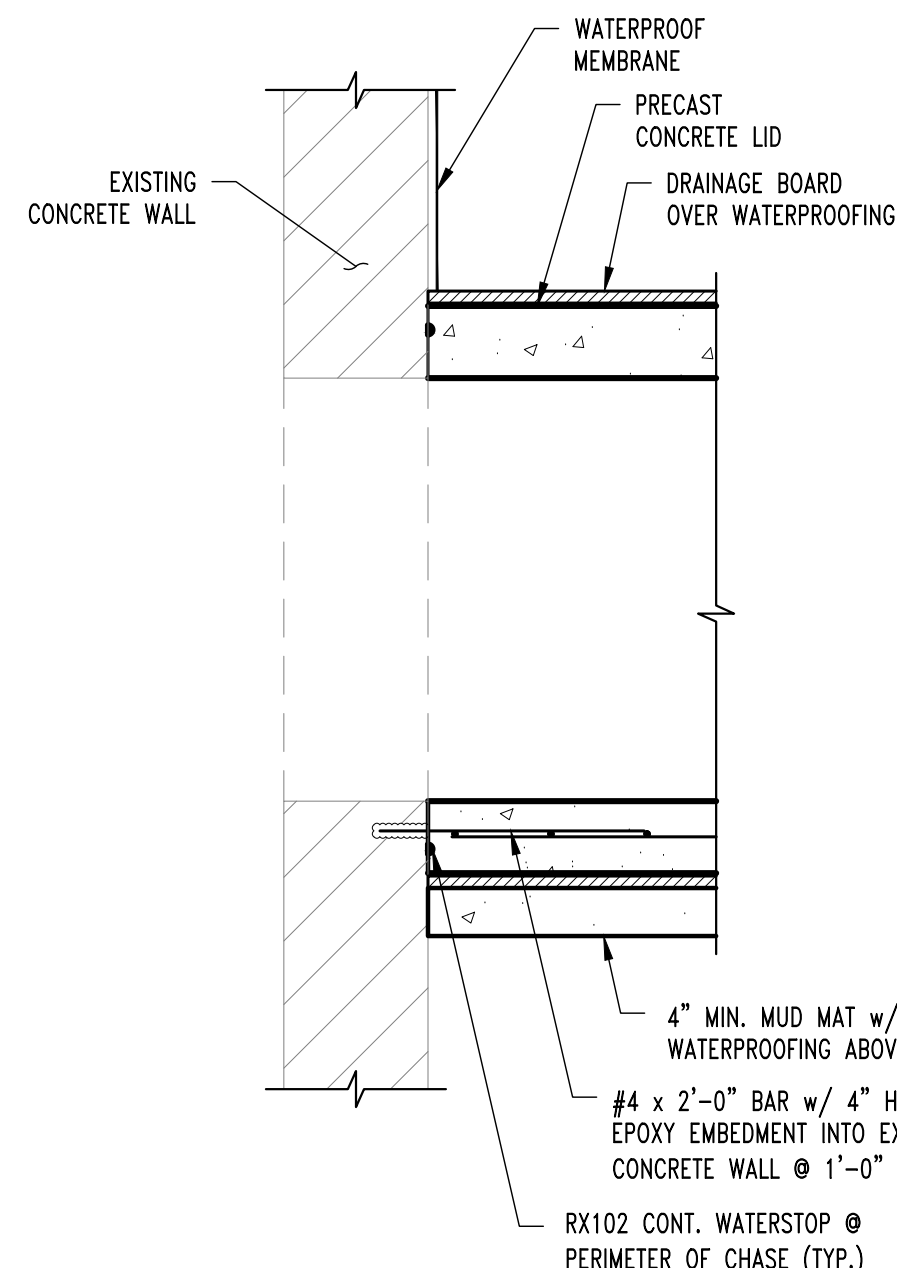


TYP. WALL & LID OPENING REINFORCEMENT

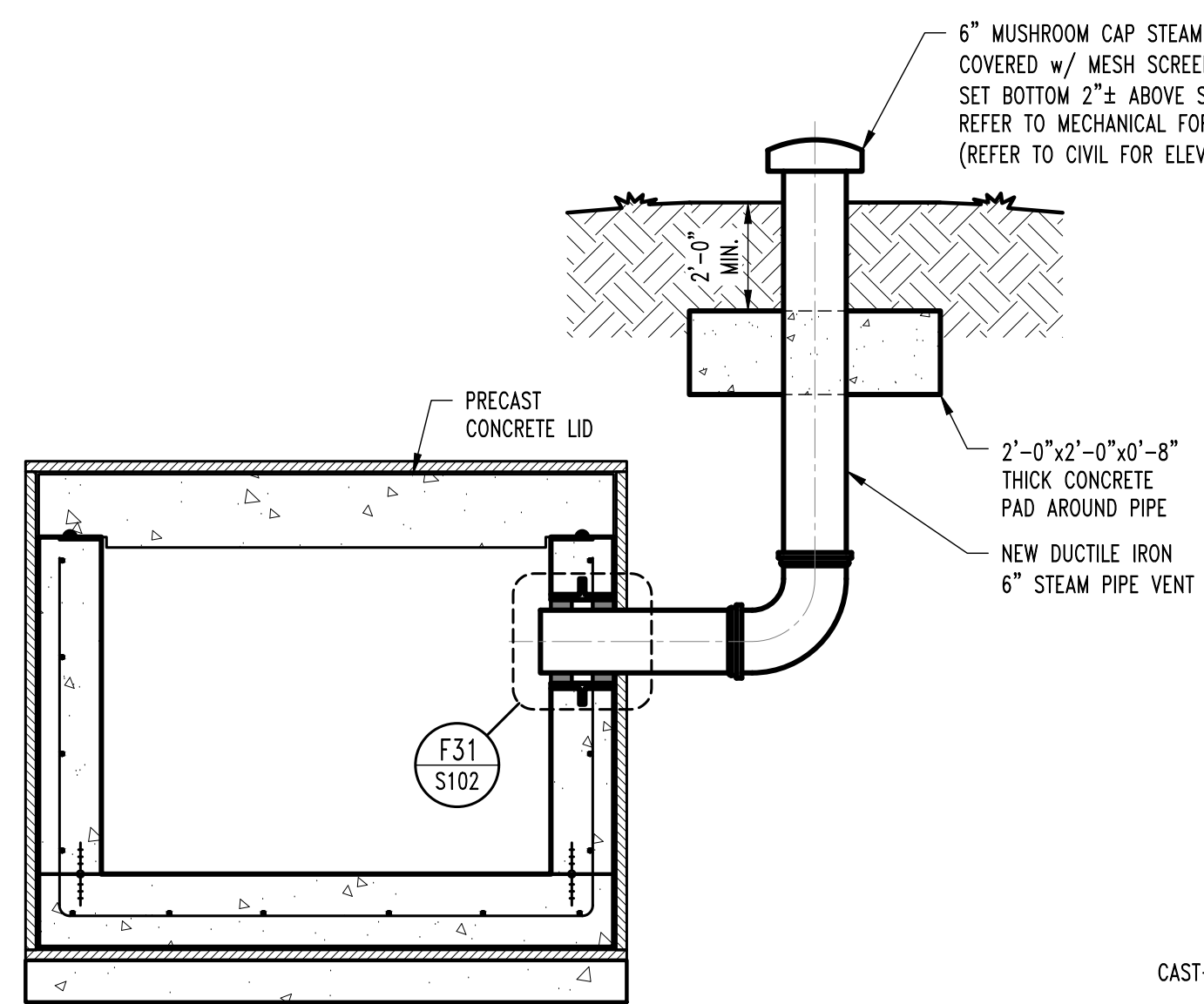
DESIGN DATA	
2021 INTERNATIONAL BUILDING CODE / ASCE 7-16	
NEW STEAM CHASE LOAD DATA	
LIVE LOAD	250
SOIL OVER LID (ft FEET)	13.20
CONCRETE LID	100
TOTAL TO LID	1670 lbs/sqft
NEW STEAM MANHOLE LOAD DATA	
LIVE LOAD	250
SOIL OVER LID (5 FEET)	600
CONCRETE LID	100
MECHANICAL ALLOWANCE	15
TOTAL TO LID	965 lbs/sqft
SOIL PARAMETERS	
BEARING CAPACITY	2500 PSF
ACTIVE AT-REST EARTH PRESSURES (GRANULAR)	60 PCF
EARTHQUAKE DESIGN DATA	
RISK CATEGORY	IV
I _e	1.5
S _s	0.161
S ₁	0.094
SITE CLASS	C
S _{0.5}	0.14
S ₁	0.094
SEISMIC DESIGN CATEGORY	
BASIC SEISMIC-FORCE-RESISTING SYSTEM =	
ORDINARY REINFORCED CONCRETE SHEAR WALLS	
R _w	40
Ω _w	2.5
C _w	40
DESIGN BASE SHEAR	
EQUVALENT LATERAL FORCE PROCEDURE	
V	0.0541W

STRUCTURAL STEEL

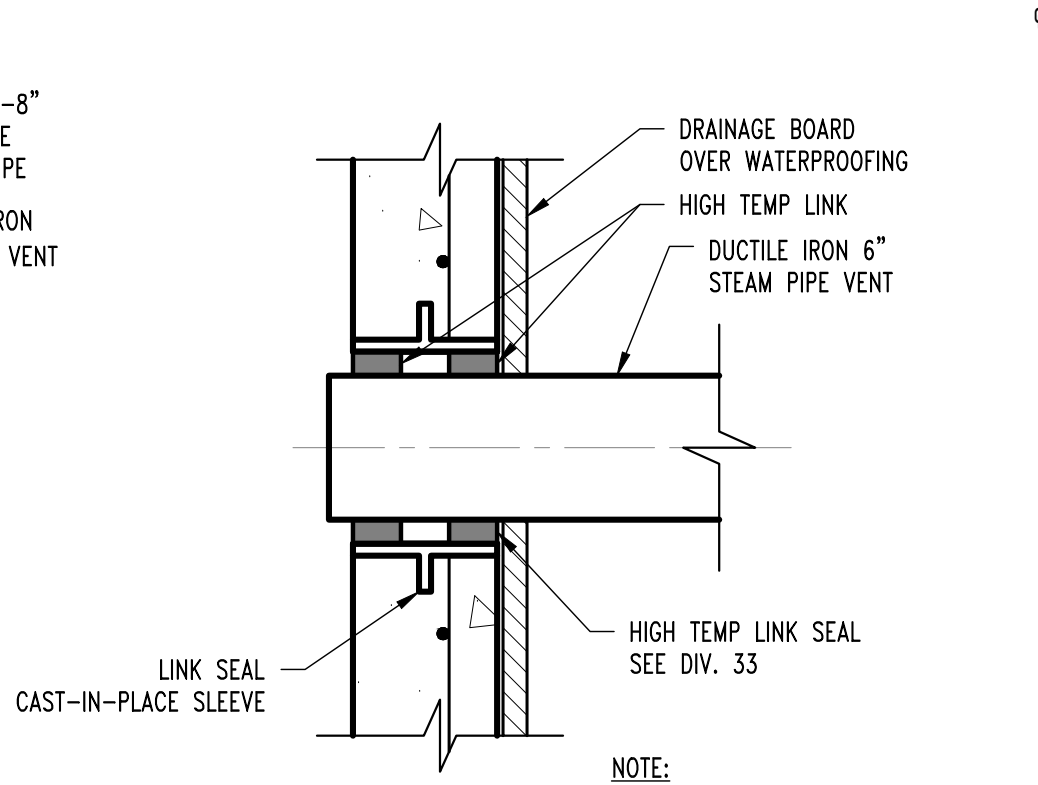
- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS, THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AND CURRENT OSHA STANDARDS.
- WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. STRUCTURAL TUBES SHALL CONFORM TO ASTM A500 GRADE B. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
- BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM A325-N, SIZE AS PER PLAN.
- ANCHOR BOLTS, UNLESS OTHERWISE SHOWN, SHALL CONFORM TO ASTM F1554 GRADE 36.
- SPLICING OF STRUCTURAL STEEL IS PROHIBITED EXCEPT AS DETAILED.
- ALL STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED. TOUCH-UP DAMAGED GALVANIZING w/ MELTED ZINC STICK. PREPARE SURFACE TO BRIGHT METAL & HEATING TO 600 DEGREES FAHRENHEIT.
- ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS IN ACCORDANCE WITH THE CURRENT EDITION OF THE AWS STRUCTURAL WELDING CODE. WELDING ELECTRODES SHALL BE E70XX.



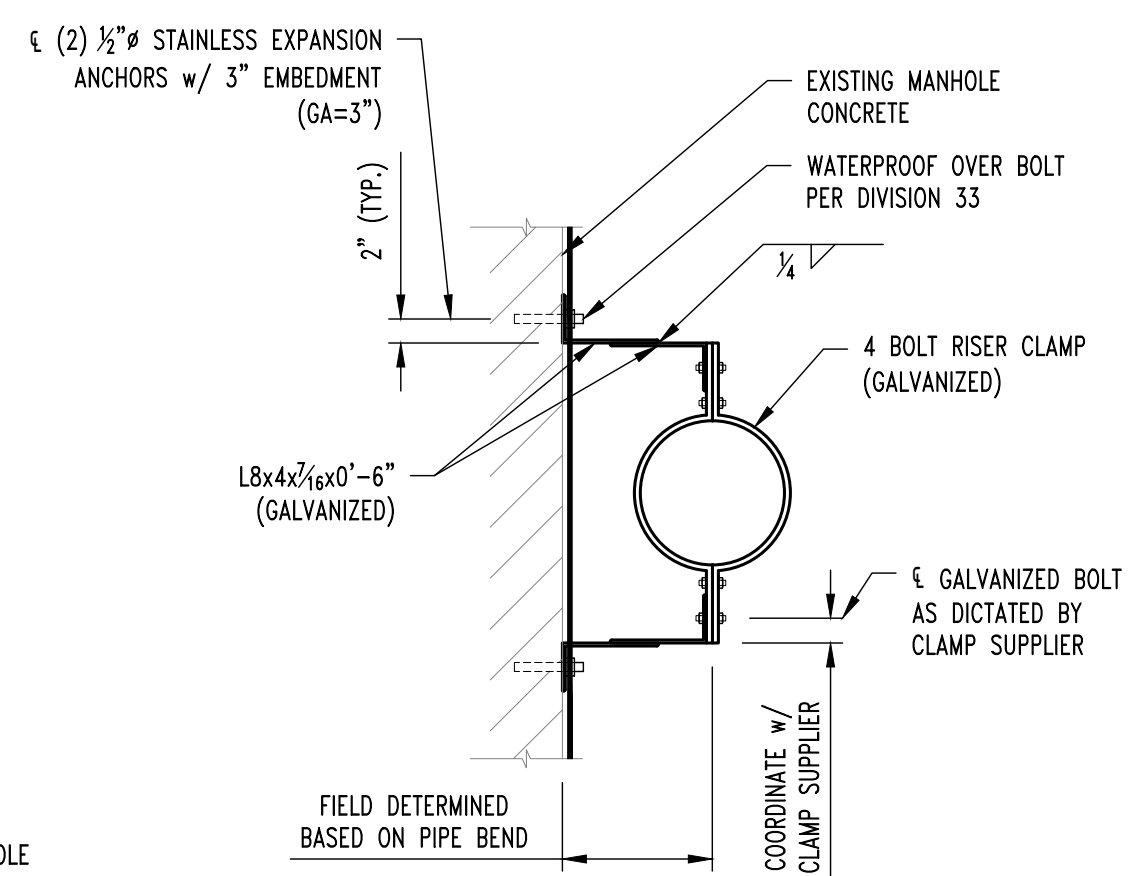
F20 TYP. NEW CHASE TO EXISTING SECTION
SCALE: 3/4" = 1'-0"



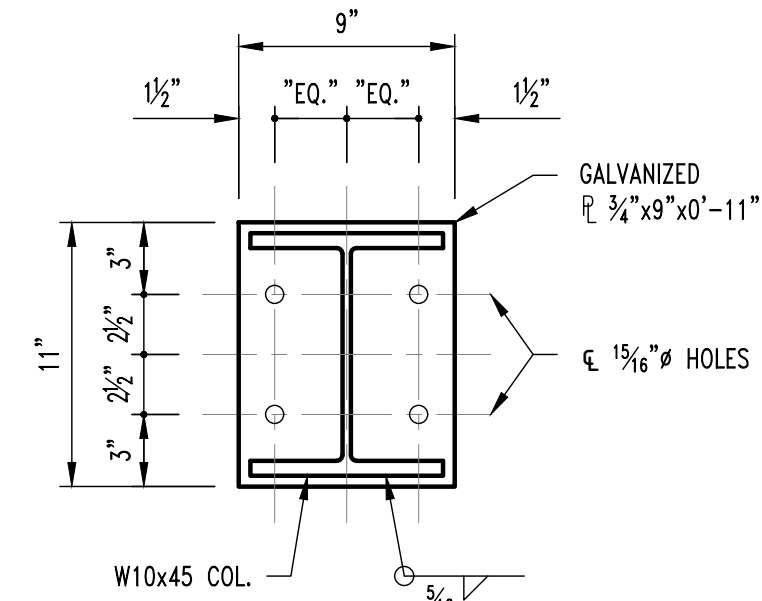
F30 CHASE SECTION @ STEAM VENT
SCALE: 3/4" = 1'-0"



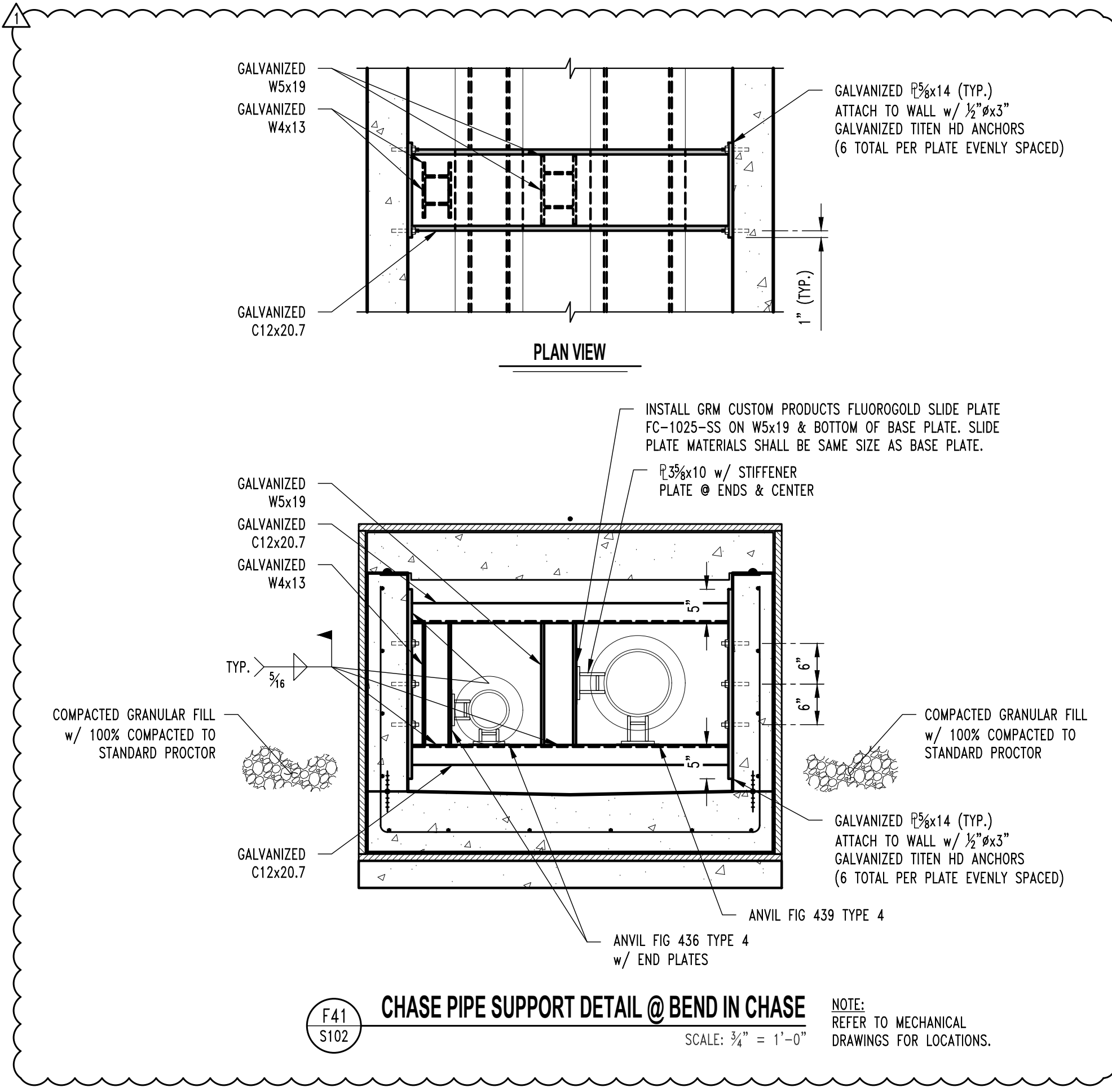
F31 ENLARGED DETAIL
SCALE: 1 1/2" = 1'-0"



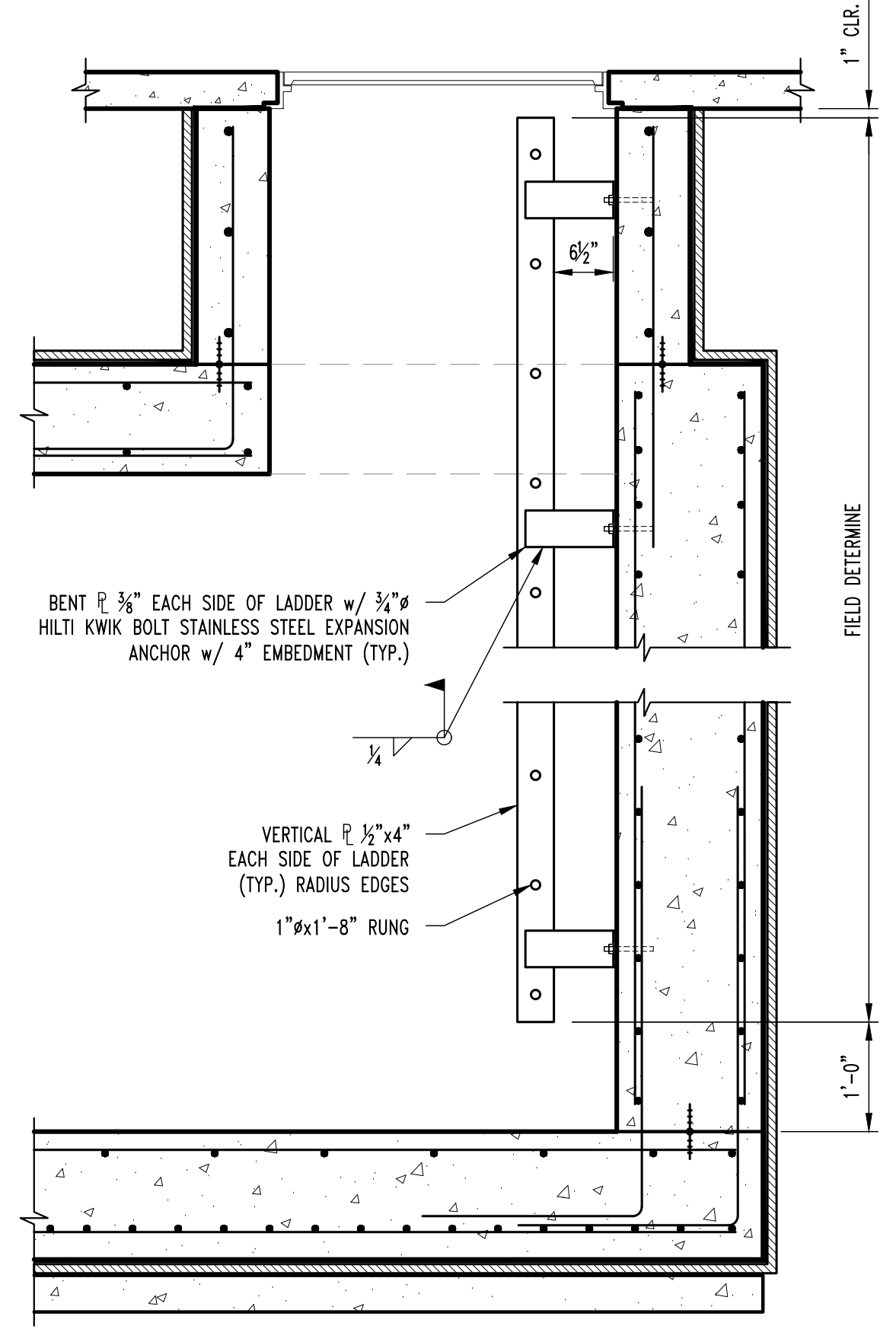
F32 ENLARGED DETAIL
SCALE: 1 1/2" = 1'-0"



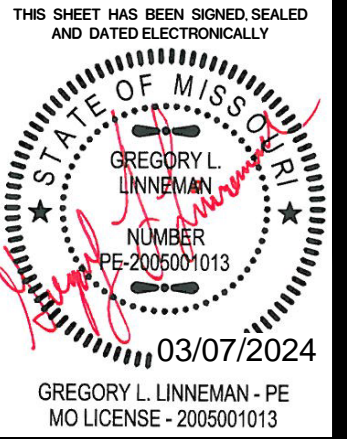
F40 TYP. STEAM/CONDENSATE PIPE ANCHOR DETAIL
SCALE: 3/4" = 1'-0"



F41 CHASE PIPE SUPPORT DETAIL @ BEND IN CHASE
SCALE: 3/4" = 1'-0"



F50 TYP. LADDER DETAIL
SCALE: 3/4" = 1'-0"



CROCKETT
ENGINEERING CONSULTANTS

APPENDIX #1
ISSUED FOR BID
DRAWN BY: RCA
CHECKED BY: GLL

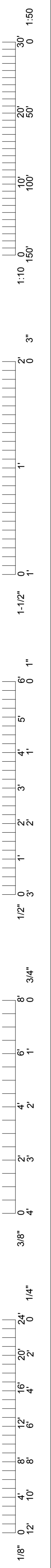
PRW CONSULTANTS, INC.
1617 Second Ave., Ste. 110
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CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
STEAM MANHOLE #468 DETAILS

PROJECT NUMBER
CP241001
SHEET

S102



TYPICAL WATERPROOFING NOTES

1. OVERLAP HOT AND COLD APPLIED MEMBRANES PER MANUFACTURER'S REQUIREMENTS.
2. CONTRACTOR SHALL PROTECT UNDER SLAB WATERPROOFING FROM HOT APPLIED WATERPROOFING.
3. PREPARE ALL JOINTS IN ACCORDANCE w/ WATERPROOFING MANUFACTURER'S INSTRUCTIONS & DETAILS.
4. CONTRACTOR SHALL PROPERLY PREPARE EXISTING CONCRETE SUBSTRATE & EXISTING WATERPROOFING TO PROPERLY INTERFACE w/ NEW WATERPROOFING SYSTEMS TO OBTAIN WATERPROOF JOINT. PROVIDE HOT TO EXISTING WATERPROOFING BARRIER AS REQUIRED.
5. BUTT LIDS TOGETHER @ PRE CAST LIDS w/ 1/4" SHIM PLATE BETWEEN. REMOVE SHIM PLATES AFTER LIDS ARE IN FINAL POSITION & SEAL.
6. ALL SEALANTS SHALL BE COMPATIBLE w/ WATERPROOFING SYSTEM.
7. PREPARE ALL JOINTS IN ACCORDANCE w/ WATERPROOFING MANUFACTURER'S INSTRUCTIONS & DETAILS.

GENERAL NOTES

1. ALL CONCRETE, REINFORCING, AND WATERPROOFING SHALL MEET THE SPECIFICATIONS IN DIVISION 33.
2. WATERPROOFING SHOP DRAWINGS SHALL BE PROVIDED PER THE SPECIFICATIONS IN DIVISION 33.
3. ALL UTILITIES IN AREA OF MANHOLE MAY BE ACTIVE DURING THE DURATION OF THE PROJECT INCLUDING THE STEAMLINES INSIDE THE MANHOLE. PIPING THAT WILL REMAIN NEEDS TO BE PROTECTED AS TO NOT DAMAGE DURING CONSTRUCTION. ANY DAMAGED MATERIALS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR IS TO LIMIT WATER ENTRY INTO STEAM SYSTEM DURING CONSTRUCTION.
4. ALL BACKFILL SHALL BE WDOT TYPE 1 OR 5 AND SHALL HAVE COMPACTION TESTS COMPLETED IN 8 INCH LIFTS PER SPECIFICATION.
5. ALL WATERSTOPS SHALL BE SECURELY FASTENED INTO PLACE AND FULLY INSPECTED BY THE OWNER. CONCRETE CANNOT BE CAST AGAINST WATERSTOPS UNTIL APPROVED BY THE OWNER. OWNER SHALL RECEIVE 24 HOUR NOTICE OF INSPECTIONS BEING REQUIRED.
6. ALL CONCRETE WATERPROOFING SHALL BE INSPECTED BY THE OWNER PRIOR TO PROCEEDING TO NEXT STEP OF INSTALLATION. OWNER SHALL RECEIVE 24 HOUR NOTICE OF INSPECTIONS BEING REQUIRED. THESE INSPECTIONS FOR APPROVAL INCLUDE:
 - a. SUBSTRATE CONDITIONS READY FOR WATERPROOFING
 - b. CRACK AND HOLE SURFACE PREPARATIONS COMPLETED
 - c. FLASHING INSTALLATION COMPLETE
 - d. MEMBRANE INSTALLATION COMPLETE
 - e. PROTECTION AND DRAINAGE INSTALLATION COMPLETE



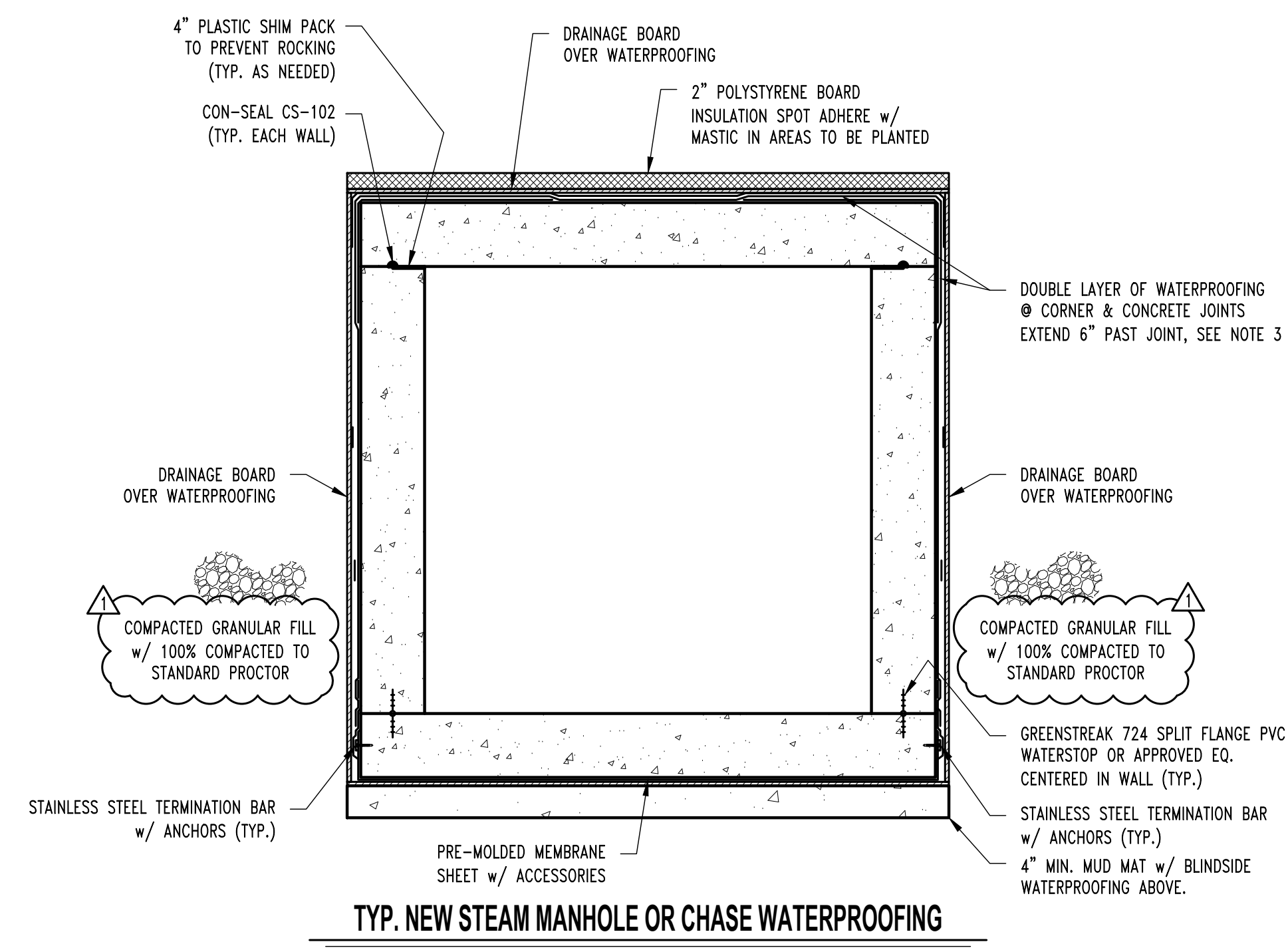
03/07/2024
02/09/2024
ADDENDUM #1
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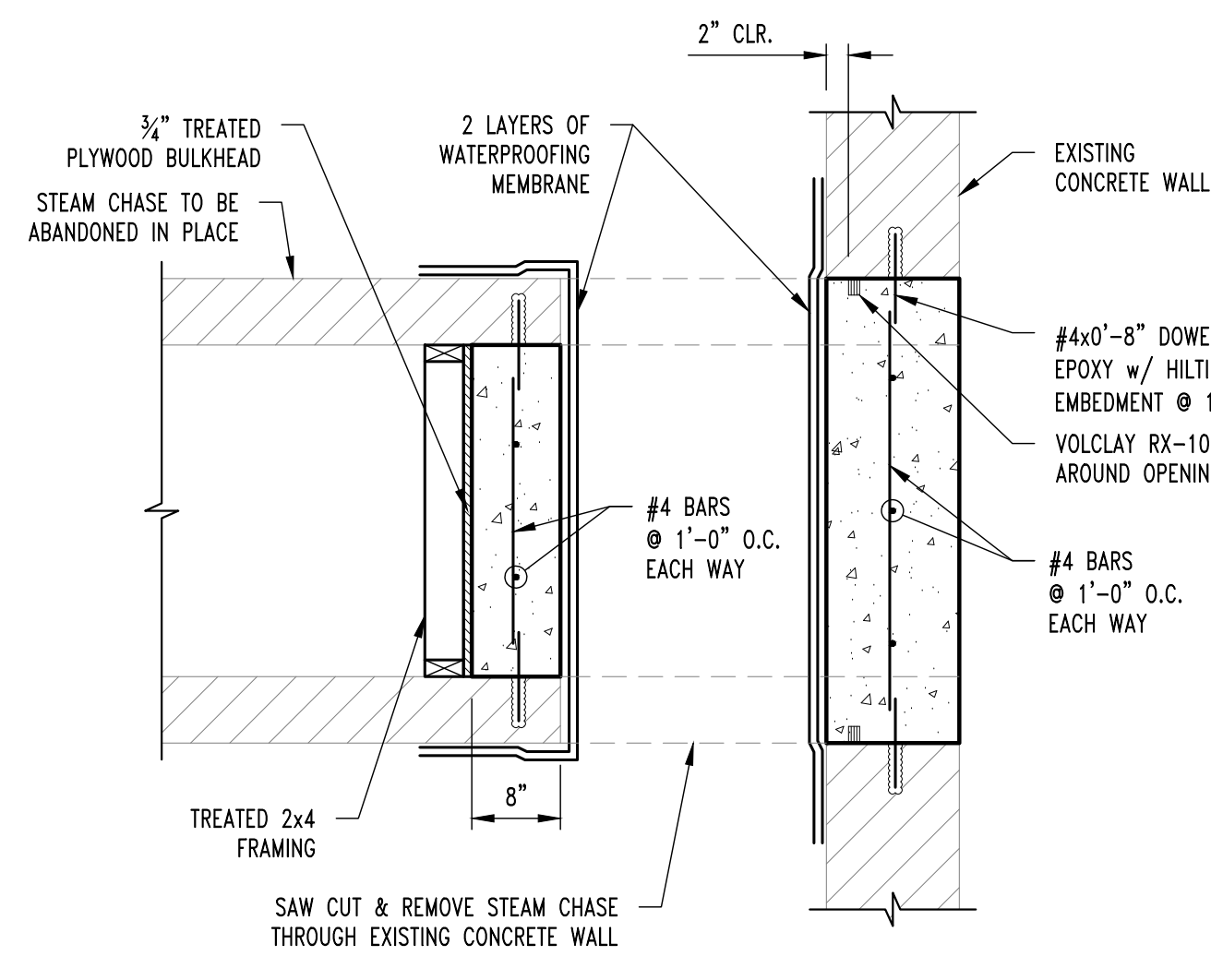
CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
TYPICAL WATERPROOFING DETAILS & NOTES

PROJECT NUMBER
CP241001

SHEET
S110

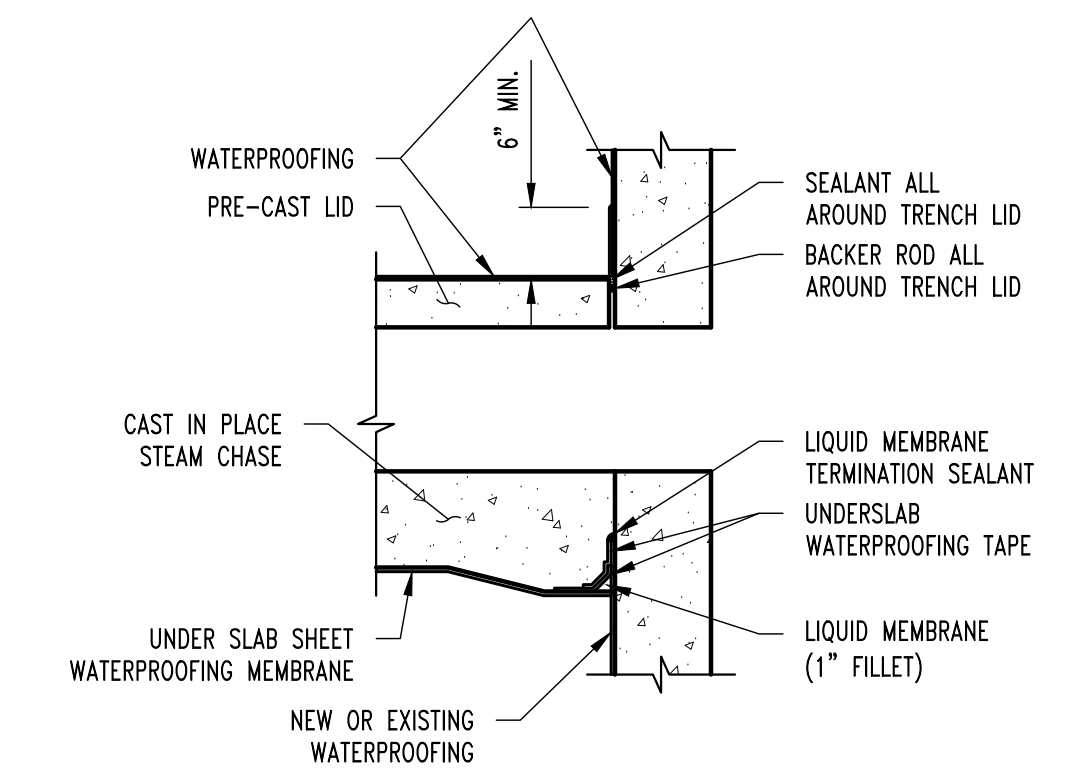


TYP. NEW STEAM MANHOLE OR CHASE WATERPROOFING

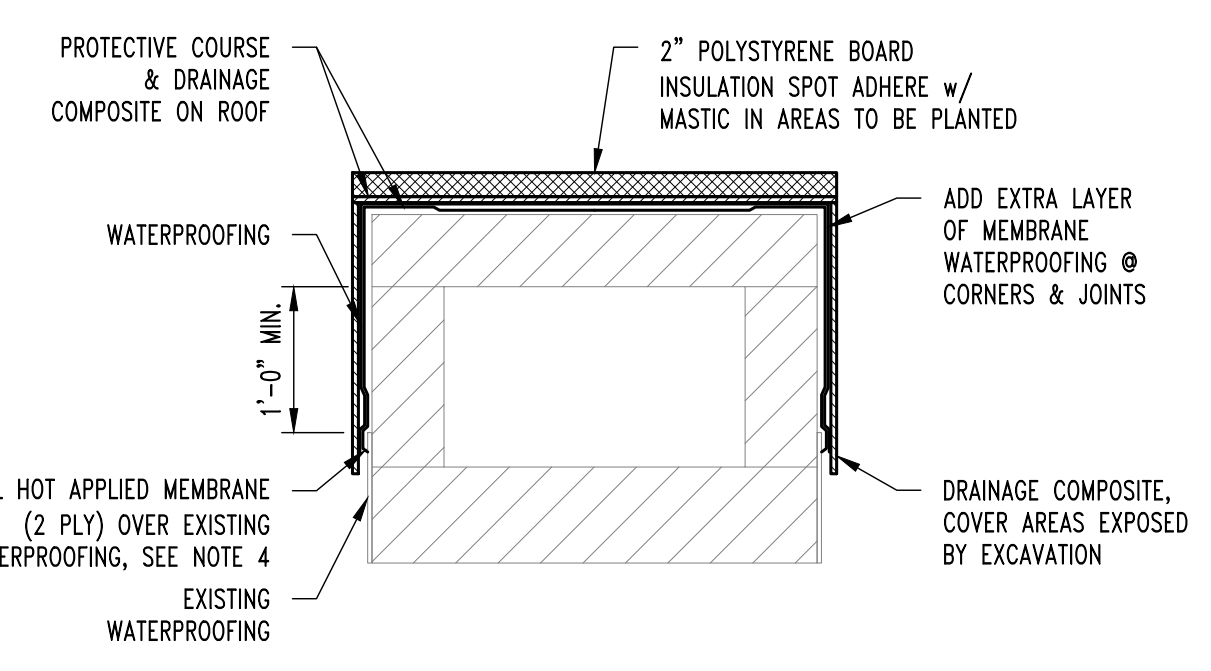


TYP. ABANDONED STEAM CHASE SEAL DETAIL @ EXISTING TUNNEL

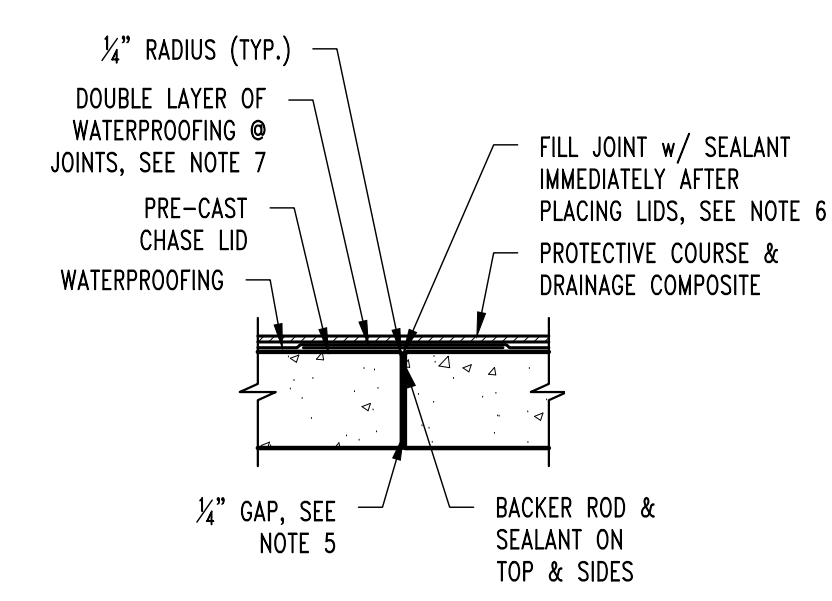
NOTE:
COORDINATE LOCATIONS
w/ MECHANICAL DRAWINGS



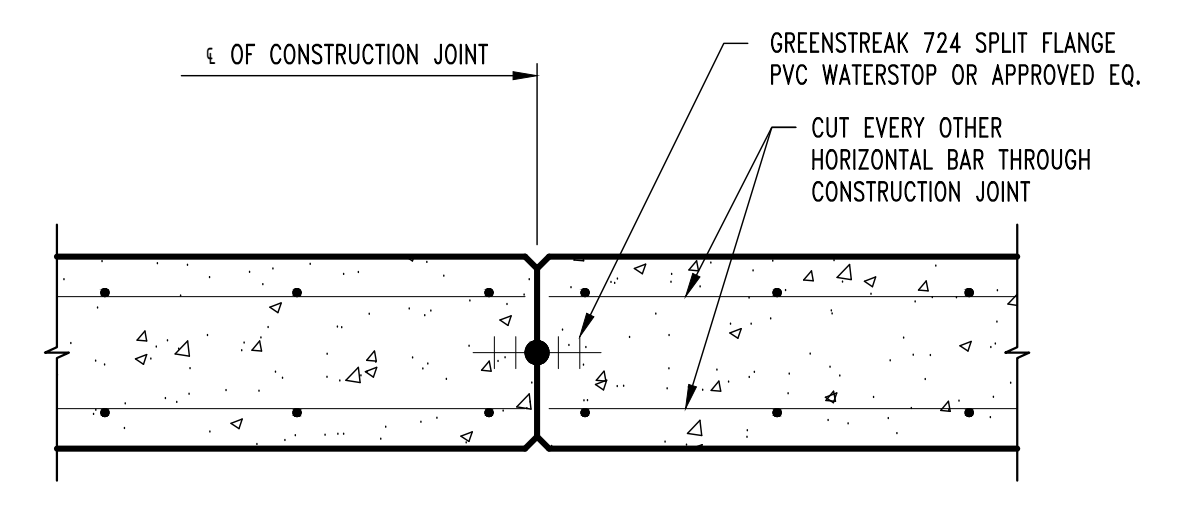
TYP. NEW STEAM CHASE TO MANHOLE INTERSECTION WATERPROOFING DETAIL



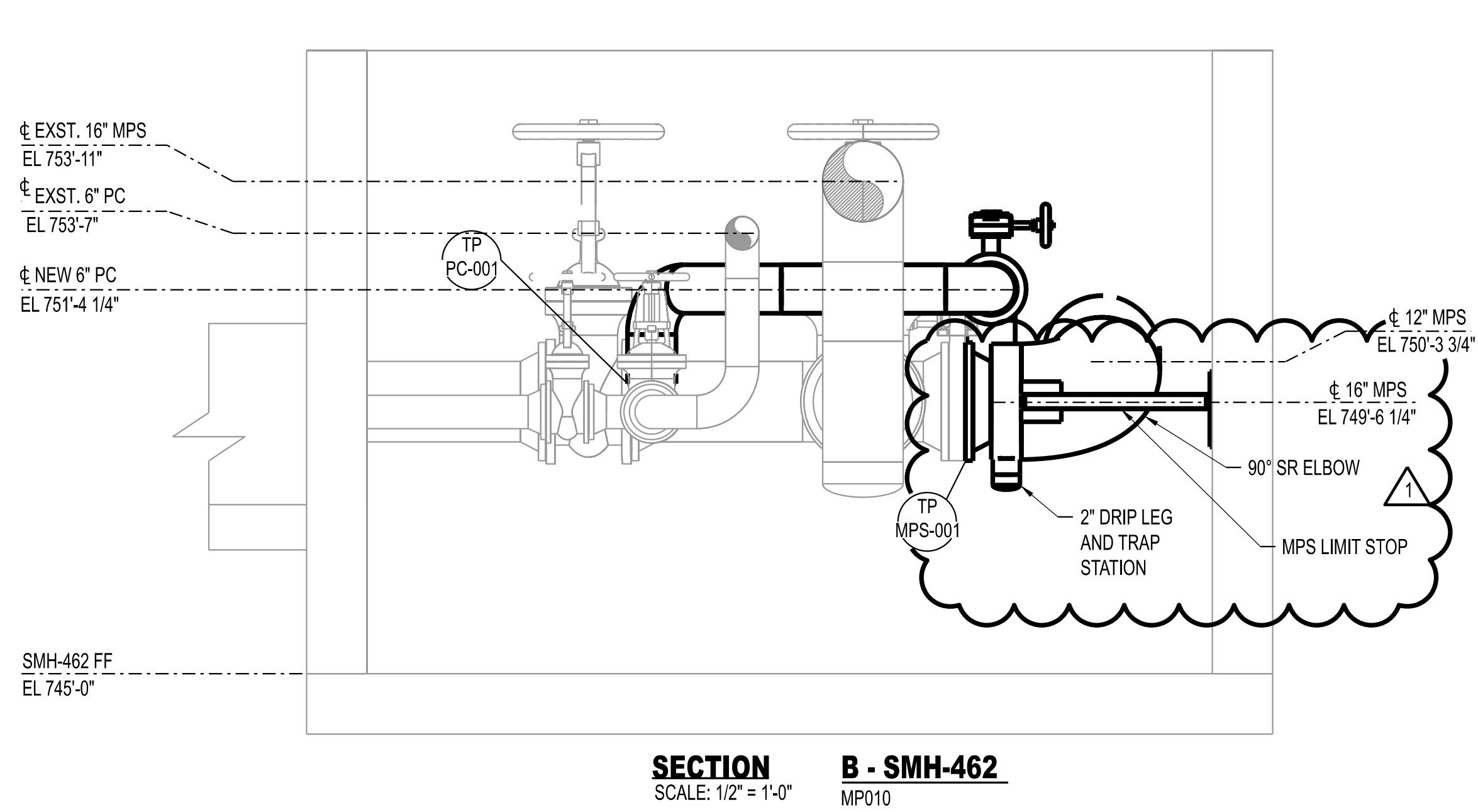
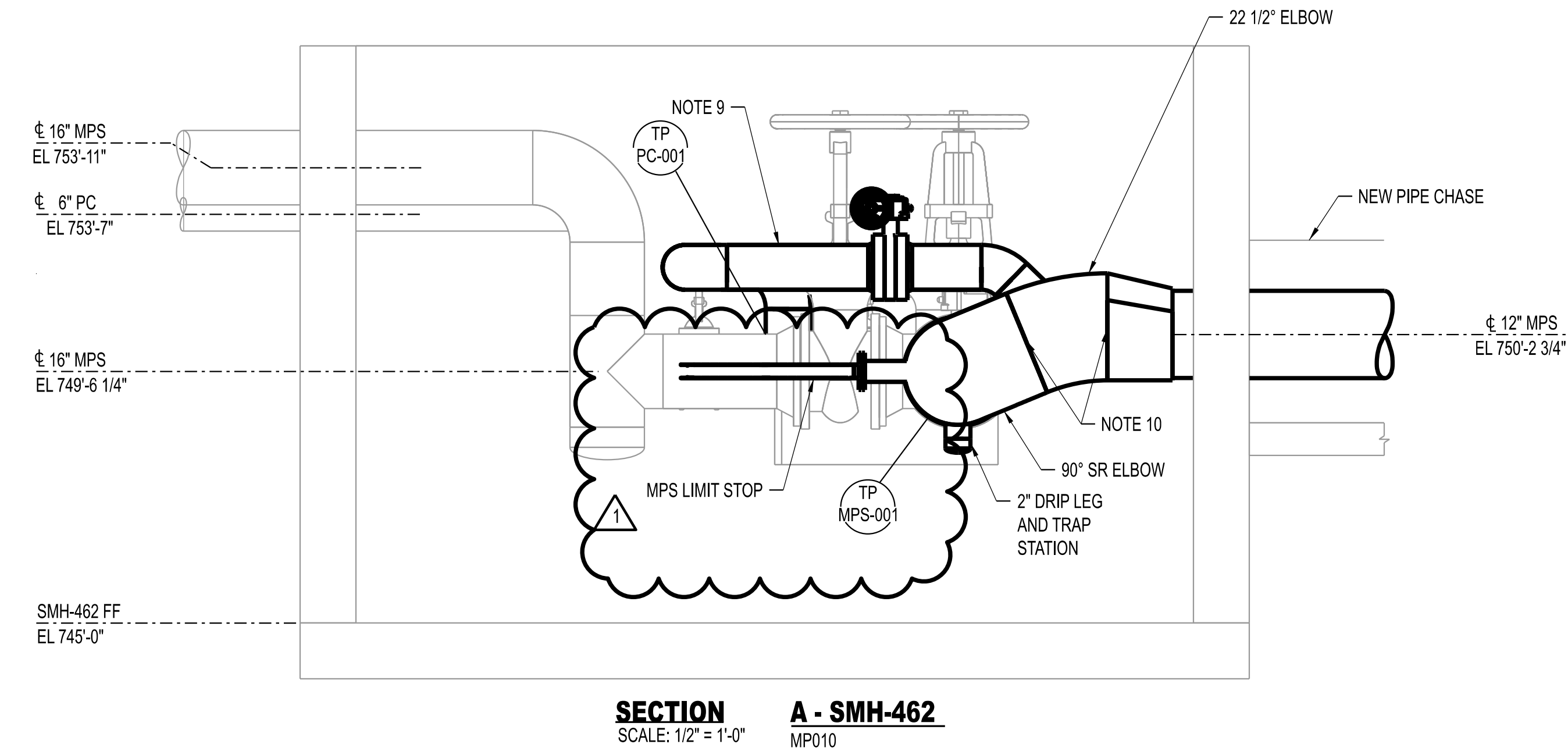
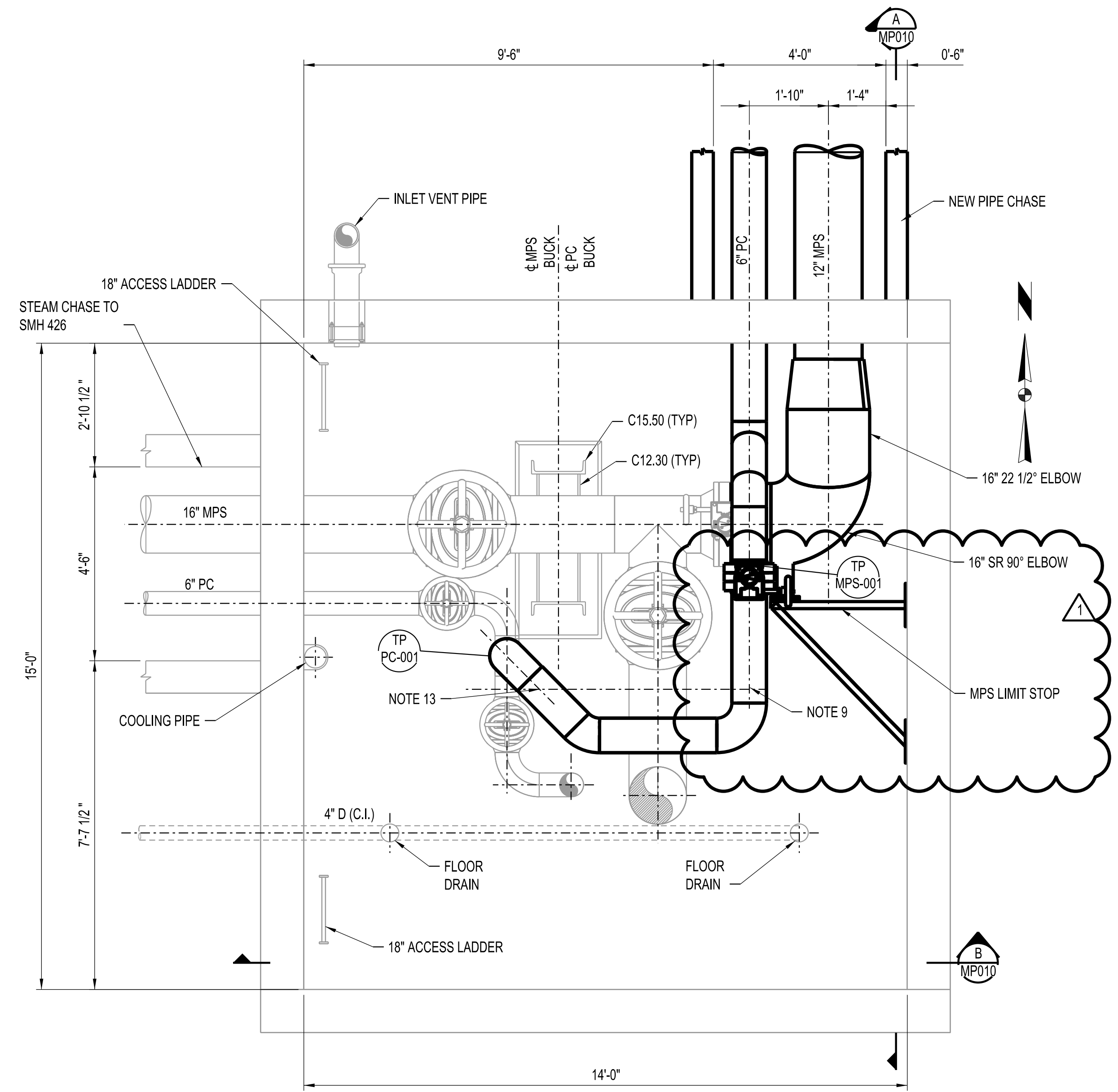
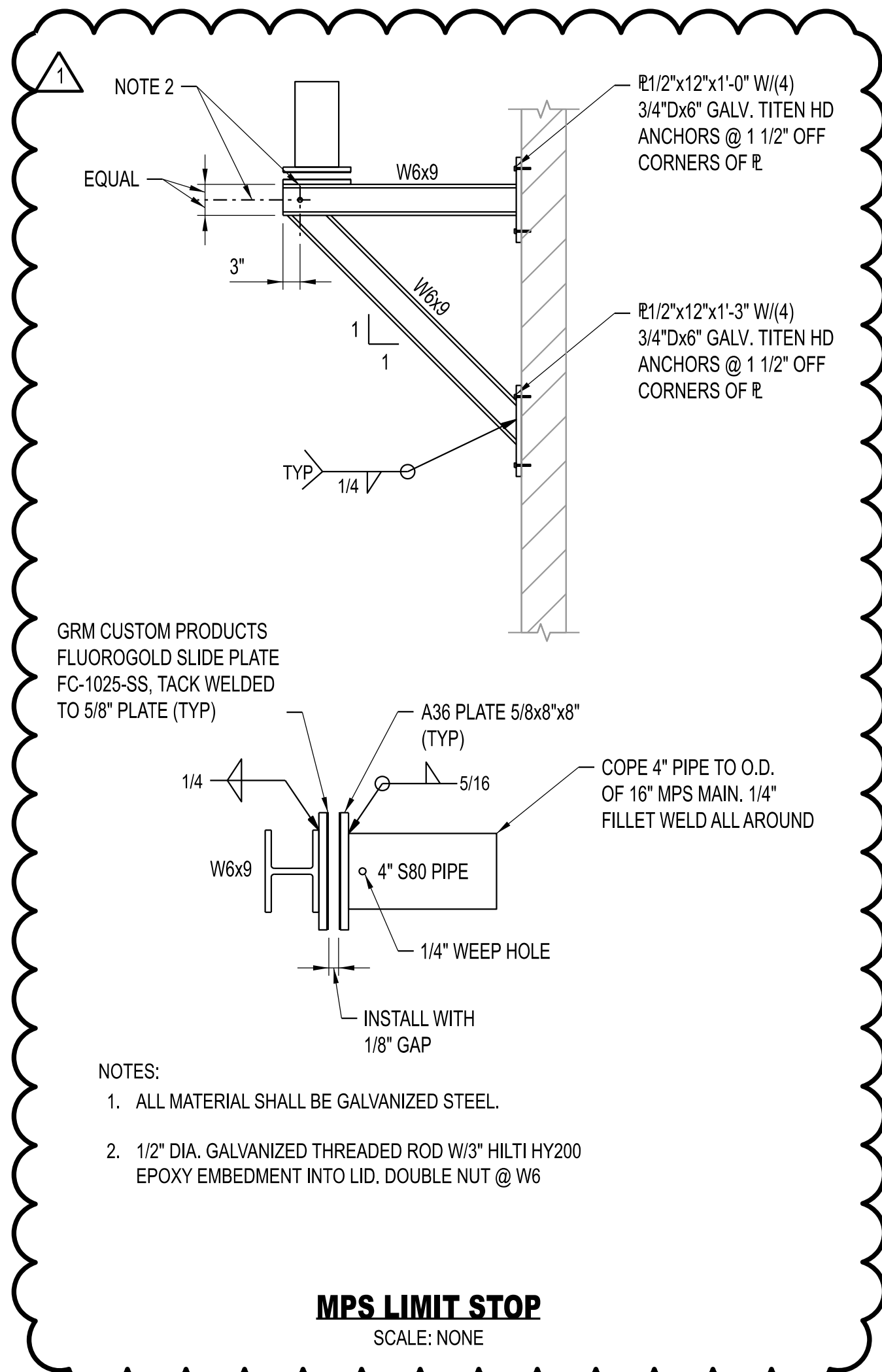
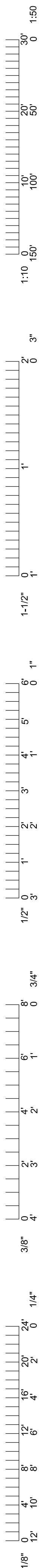
TYP. EXISTING STEAM CHASE WATERPROOFING DETAIL



BELOW GRADE STEAM CHASE LID JOINT



TYPICAL COLD JOINT DETAIL



- NOTES:**
1. ALL WORK ON THIS SHEET BY C-01 | C-01 UNLESS OTHERWISE INDICATED.
 2. PROVIDE ALL NECESSARY PIPE AND TUBING FITTINGS, INCLUDING REDUCERS, TO PROPERLY MATCH ACTUAL CONNECTION TYPES AND SIZES ON EQUIPMENT, VALVES, INSTRUMENTS, SPECIALTIES, AND OTHER PIPING. VERIFY PRIOR TO FABRICATION.
 3. RELOCATE EXST SMALL BORE CONDUIT AND PIPING AS REQUIRED FOR NEW CONSTRUCTION, AT NO ADDITIONAL COST TO OWNER.
 4. COORDINATE CONNECTIONS TO EXST SERVICES WITH OWNER'S REPRESENTATIVE.
 5. PROTECT ALL EQUIPMENT, PIPING, VALVES, TUBING, AND ACCESSORIES TO REMAIN FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION ACTIVITIES. PIPING INSULATION (WHERE IT EXISTS) MAY BE REMOVED AS REQUIRED FOR NEW TIE POINT CONNECTIONS, BUT SHALL BE REPLACED IN KIND WHEN WORK IS COMPLETED.
 6. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO DEMOLITION AND CONSTRUCTION ACTIVITIES.
 7. FOR THE TIE POINT SCHEDULE, SEE SHEET DM050.
 8. COORDINATE CONNECTIONS TO EXISTING SERVICES WITH OWNER'S REPRESENTATIVE.
 9. CONTRACTOR SHALL INSTALL LIMIT STOP ON 6" CONDENSATE LINE. SEE SHEET MP050 FOR DETAIL.
 10. CONTRACTOR SHALL ESTABLISH INSPECTION HOLD POINTS ON THE WELDS ON BOTH SIDES OF THE 22.5 DEGREE ELBOW. CONTRACTOR SHALL NOT PROCEED UNTIL APPROVAL FROM OWNER'S REPRESENTATIVE.
 11. CONTRACTOR SHALL ONLY CUT THE 22.5 DEGREE ELBOW USING MECHANICAL METHODS. NO TORCH CUTTING IS ALLOWED.
 12. CONTRACTOR RESPONSIBLE FOR PROTECTING EXISTING STEAM SYSTEM AND CHASES FROM WATER INFILTRATION THROUGHOUT THE DURATION OF CONSTRUCTION.
 13. CONTRACTOR SHALL INSTALL CLEVIS HANGER TO SUPPORT CONDENSATE PIPING. SEE MP051 FOR DETAIL.

- LEGEND:**
- C-01 | C-01 CONTRACT IDENTIFICATION:
NUMBER AT LEFT INDICATES CONTRACT FURNISHING. NUMBER AT RIGHT INDICATES CONTRACT INSTALLING.
- TP TIE-POINT INDICATOR
XXX-### XXX: SYSTEM
###: TIE-POINT NUMBER



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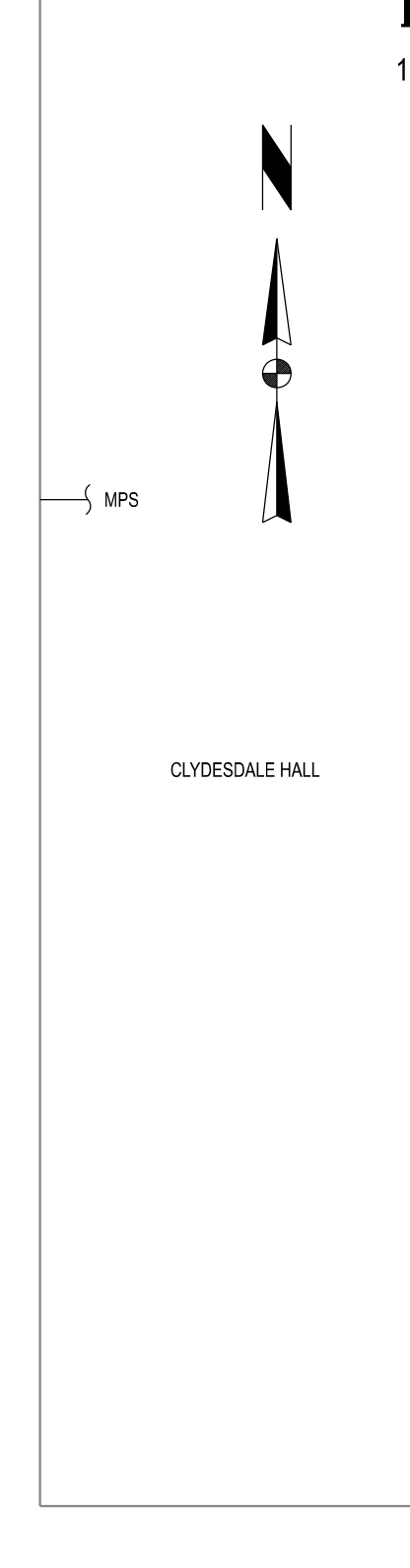
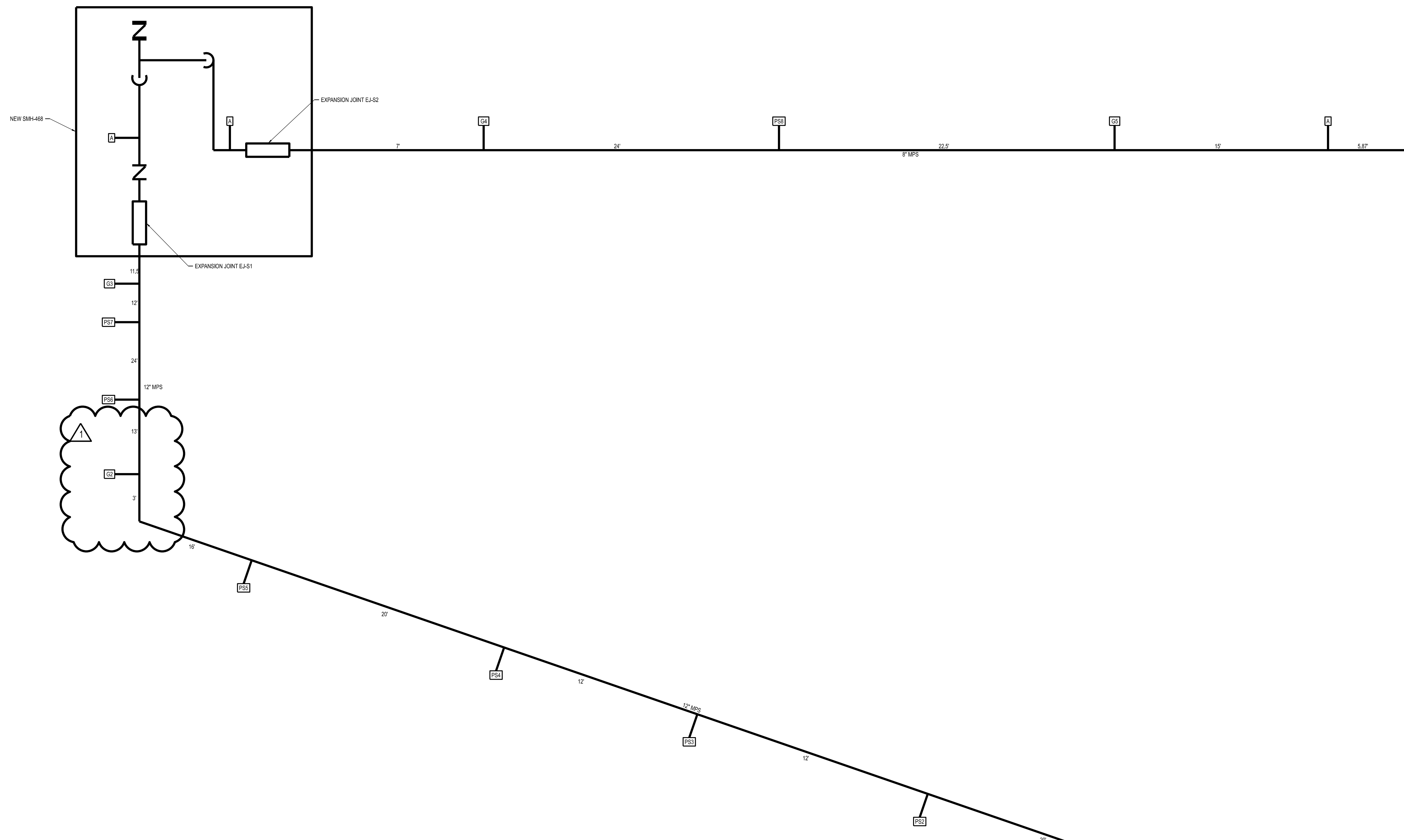
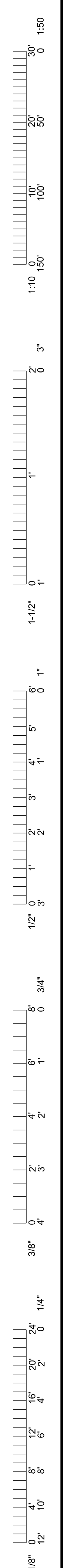
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CLYDESDALE HALL
COLUMBIA, BOONE COUNTY, MISSOURI 65211
MECHANICAL PLAN AND SECTIONS
SMH-462

PROJECT NUMBER
CP241001
SHEET
MP010

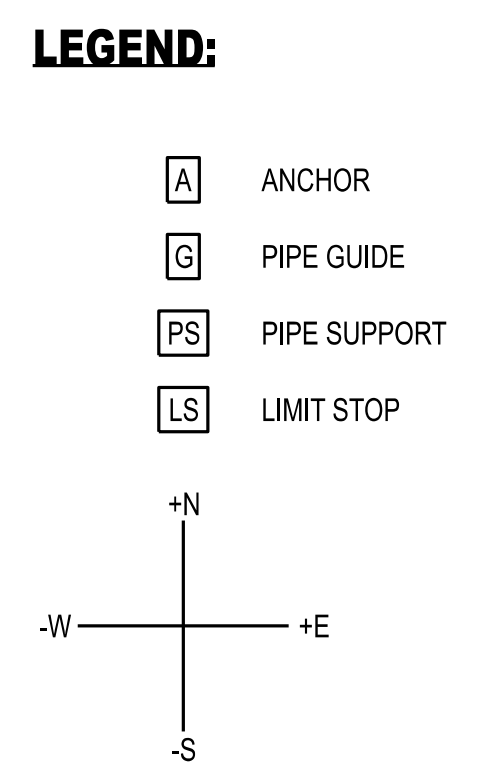


NOTES:
 1. ALL WORK ON THIS SHEET BY C-01 UNLESS OTHERWISE INDICATED.

GUIDE SUPPORT SCHEDULE						
DESIGNATION	NORTH/SOUTH (IN.)	EAST/WEST (IN.)	UP/DOWN (IN.)	PIPE OD (IN.)	INSULATION THICKNESS (IN.)	PIPE DESIGN TEMPERATURE (°F)
G1	0.218	0.125	0.25	12	3	450
G2	2.821	-0.125	0	12	3	450
G3	4.348	0.125	0	12	3	450
G4	0	-2.098	0	8	3	450
G5	0	-0.639	0	8	3	450

PIPE SUPPORT SCHEDULE					
DESIGNATION	NORTH/SOUTH (IN.)	EAST/WEST (IN.)	PIPE OD (IN.)	INSULATION THICKNESS (IN.)	PIPE DESIGN TEMPERATURE (°F)
PS1	-0.212	0.122	12	3	450
PS2	0.777	0.49	12	3	450
PS3	0.943	0.121	12	3	450
PS4	0.832	-1.059	12	3	450
PS5	1.282	-1.512	12	3	450
PS6	3.203	1.375	12	3	450
PS7	3.966	0.758	12	3	450
PS8	0	-1.344	8	3	450

EXPANSION JOINT SCHEDULE										
EXPANSION JOINT DESIGNATION	LOCATION	SIZE	TYPE	ENDS	SERVICE	PRESSURE (PSI)	TEMP (°F)	RATED TRAVEL (in)	MAX OAL (in)	THERMAL EXPANSION (in)
EJ-S1	MANHOLE NO. 468	12"	EXTERNALLY PRESSURIZED BELLOWS	WELD	STEAM	75	450	8	44	4.73
EJ-S2	MANHOLE NO. 468	8"	EXTERNALLY PRESSURIZED BELLOWS	WELD	STEAM	75	450	4	26	2.32



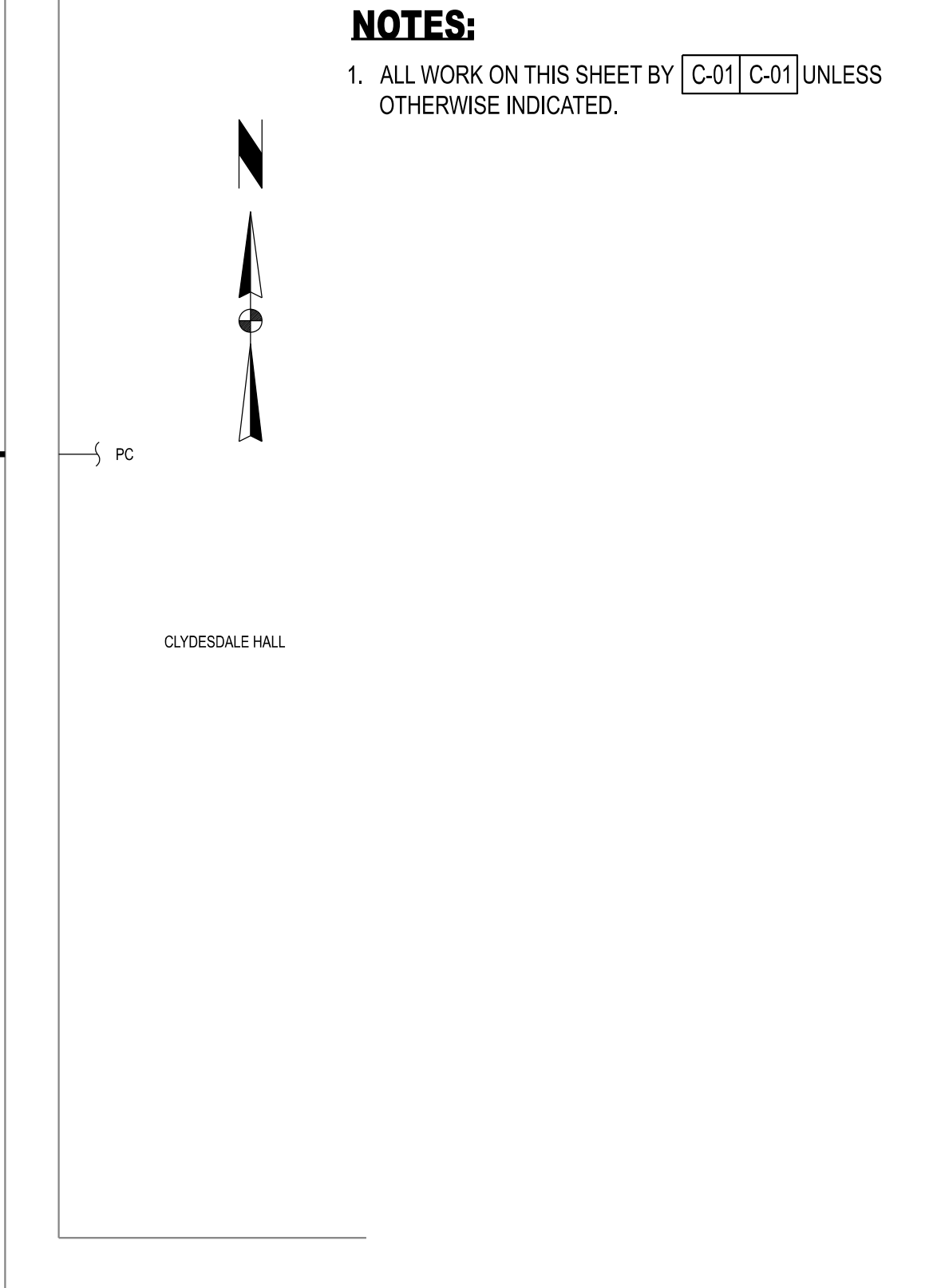
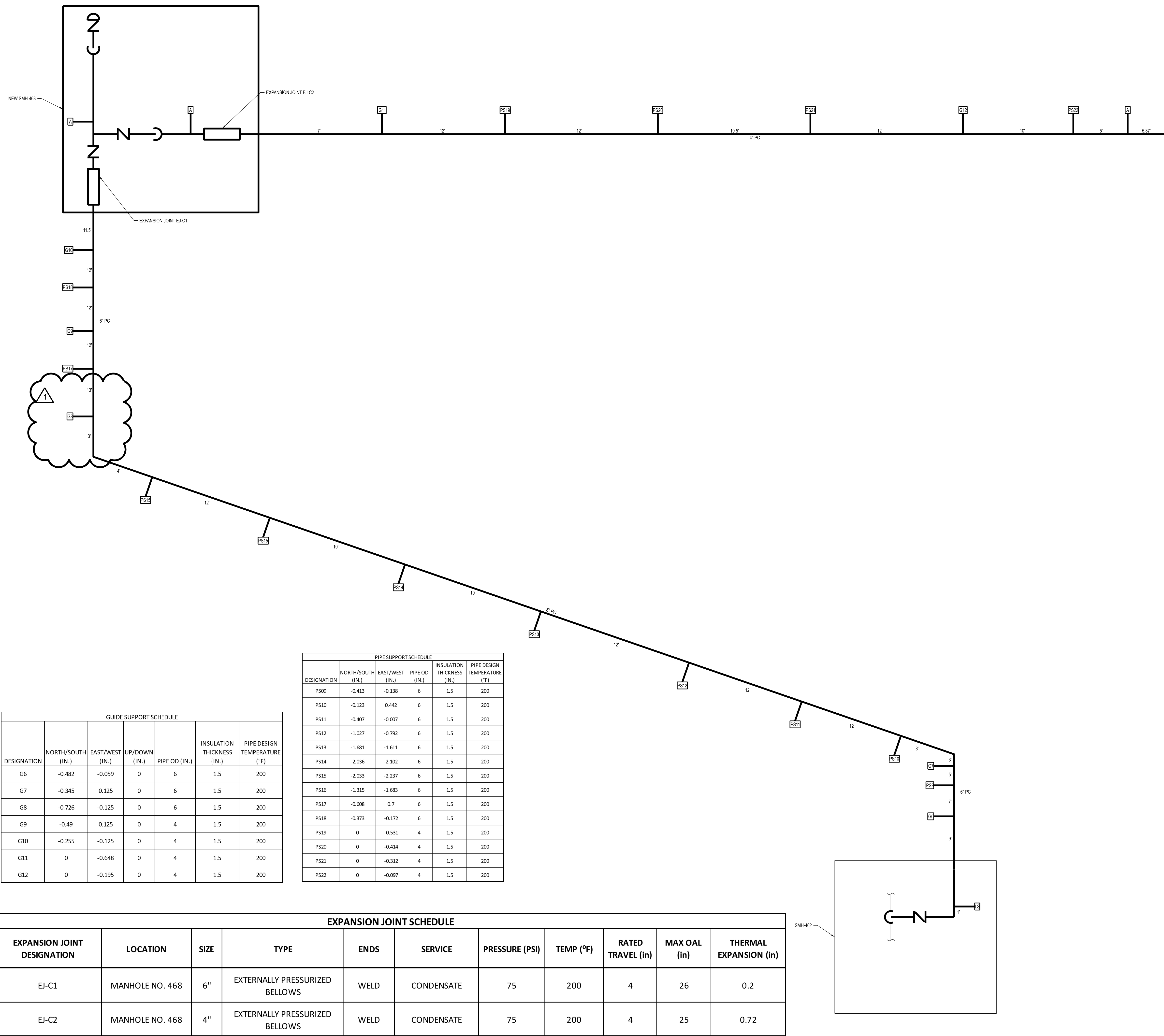
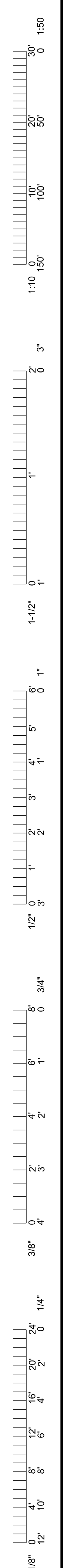
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CLYDESDALE HALL
 COLUMBIA, BOONE COUNTY, MISSOURI 65211
 THERMAL EXPANSION PLAN
 MPS

PROJECT NUMBER
 CP241001
 SHEET
 MP040

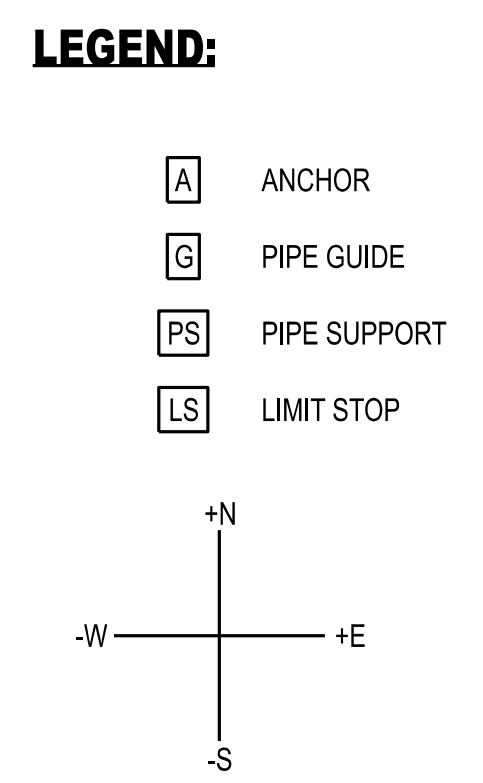


NOTES:
 1. ALL WORK ON THIS SHEET BY C-01 UNLESS OTHERWISE INDICATED.

DESIGNATION	NORTH/SOUTH (IN.)	EAST/WEST (IN.)	UP/DOWN (IN.)	PIPE OD (IN.)	INSULATION THICKNESS (IN.)	PIPE DESIGN TEMPERATURE (°F)
G6	-0.482	-0.059	0	6	1.5	200
G7	-0.345	0.125	0	6	1.5	200
G8	-0.726	-0.125	0	6	1.5	200
G9	-0.49	0.125	0	4	1.5	200
G10	-0.255	-0.125	0	4	1.5	200
G11	0	-0.648	0	4	1.5	200
G12	0	-0.195	0	4	1.5	200

DESIGNATION	NORTH/SOUTH (IN.)	EAST/WEST (IN.)	PIPE OD (IN.)	INSULATION THICKNESS (IN.)	PIPE DESIGN TEMPERATURE (°F)
PS09	-0.413	-0.138	6	1.5	200
PS10	-0.123	0.442	6	1.5	200
PS11	-0.407	-0.007	6	1.5	200
PS12	-1.027	-0.792	6	1.5	200
PS13	-1.681	-1.611	6	1.5	200
PS14	-2.036	-2.102	6	1.5	200
PS15	-2.033	-2.237	6	1.5	200
PS16	-1.315	-1.683	6	1.5	200
PS17	-0.608	0.7	6	1.5	200
PS18	-0.373	-0.172	6	1.5	200
PS19	0	-0.531	4	1.5	200
PS20	0	-0.414	4	1.5	200
PS21	0	-0.312	4	1.5	200
PS22	0	-0.097	4	1.5	200

EXPANSION JOINT DESIGNATION	LOCATION	SIZE	TYPE	ENDS	SERVICE	PRESSURE (PSI)	TEMP (°F)	RATED TRAVEL (in)	MAX OAL (in)	THERMAL EXPANSION (in)
EJ-C1	MANHOLE NO. 468	6"	EXTERNALLY PRESSURIZED BELLOWS	WELD	CONDENSATE	75	200	4	26	0.2
EJ-C2	MANHOLE NO. 468	4"	EXTERNALLY PRESSURIZED BELLOWS	WELD	CONDENSATE	75	200	4	25	0.72



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 THERMAL EXPANSION PLAN
 PC

PROJECT NUMBER
CP241001
 SHEET
MP041

