

TO CONTRACT DOCUMENTS ENTITLED:

PROJECT MANUAL FOR: **Veterinary Science
Building Demolition**

PROJECT NUMBER: **CP233041**

ADVERTISEMENT DATE: 2024-07-18

PREPARED FOR: The Curators of the
University of Missouri

PREPARED BY: PWArchitects, Inc.
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2024-08-16

Drawings and Specifications for the above noted project and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

SPECIFICATION CHANGES:

- Division 0; Section 1.F – Index of Drawings:
 - ADD sheet C5.02 – Storm Sewer Profile to the Index of Drawings.

DRAWING CHANGES:

- G002 Location Map, List of Drawings, Codes:
 - ADD sheet C5.02 – Storm Sewer Profile to the Sheet Index.
- C0.01 General Notes:
 - ADD sheet C5.02 – Storm Sewer Profile to the Sheet Index.
- C5.01 Grading & Drainage Plan:
 - ADD notes at the storm sewer and inlet.
- C5.02 Storm Sewer Profile:
 - ADD entire sheet.
- C7.01 Site, Erosion Control, & Storm Sewer Details:
 - Add concrete sidewalk typical detail.

ATTACHMENTS:

- C0.01 General Notes.
- C5.01 Grading & Drainage Plan.
- C5.02 Storm Sewer Profile.
- C7.01 Site, Erosion Control, & Storm Sewer Details.

END OF ADDENDUM #2

GRADING AND STORM SEWER CONSTRUCTION NOTES

- ALL STORM SEWER PIPES AND INLETS SHALL MEET HEAVY DUTY TRAFFIC (HS20) LOADING AND BE INSTALLED ACCORDINGLY.
- CONCRETE STORM SEWER INLETS & JUNCTION BOXES SHALL BE INSTALLED PER THE SPECIFICATIONS AND AS DETAILED IN THESE PLANS.
- ALL HPP PIPE SHALL BE ASTM F2736, SMOOTH INTERIOR PIPE OR APPROVED EQUAL. INSTALLATION SHALL FOLLOW THE "EMBEDMENT OF PLASTIC STORM SEWER PIPE" DETAIL.
- CONTRACTOR SHALL ADJUST ALL GRATES, MANHOLES, VALVE BOXES, ETC. TO MATCH FINISH GRADES, AS REQUIRED.
- ALL STRUCTURE CONNECTIONS SHALL BE WATERTIGHT.
- PIPE LENGTHS ARE GIVEN FROM CENTER OF STRUCTURE OR DOWNSTREAM END OF FLARED END SECTIONS.
- ALL SITES USED FOR IMPORTING OR EXPORTING OF FILL MATERIAL SHALL HAVE AN ACTIVE MISSOURI DEPARTMENT OF NATURAL RESOURCES LAND DISTURBANCE PERMIT, AS REQUIRED.
- CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS, TREES AND BRUSH, AND OTHER MATERIAL CREATED AS A RESULT OF CONSTRUCTION. MATERIAL SHALL BE DISPOSED OF IN COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.
- CONTRACTOR SHALL REMOVE ALL STUMPS BY EXCAVATING TO INCLUDE REMOVAL OF ASSOCIATED ROOT SYSTEM.
- CONTRACTOR SHALL NOT ADVANCE TRENCH EXCAVATION BEYOND AMOUNT THAT CAN ACCOMMODATE PIPE INSTALLATION AND BACKFILLING AT THE END OF EACH DAY.
- ENGINEERED FILL SHOULD BE FREE OF FROZEN SOIL, ORGANICS, RUBBISH, LARGE ROCKS, WOOD, OR OTHER DELETERIOUS MATERIAL. COHESIVE FILLS SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 95 PERCENT OF THE "STANDARD" MAXIMUM DRY DENSITY AND BE WITHIN -2 TO +4 PERCENT OF OPTIMUM MOISTURE CONTENT AS DESCRIBED BY ASTM D698. GRANULAR FILLS SHOULD BE UNIFORMLY COMPACTED TO AT LEAST 95 PERCENT OF THE "STANDARD" MAXIMUM DRY DENSITY. THE MOISTURE CONTENT SHOULD BE HIGH ENOUGH TO PROVIDE FOR PROPER COMPACTION BUT LOW ENOUGH TO PREVENT UNDUE PUMPING. PLACE FILL MATERIAL IN LOOSE LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS.
- ROCKS AND STONES THAT EXCEED THE THICKNESS OF THE LOOSE LIFT LAYER SHOULD BE REMOVED AND DISPOSED OF OFF THE IMMEDIATE CONSTRUCTION AREA.
- IMPORTED SOILS PROPOSED FOR USE AS FILL OR BACKFILL SHOULD BE REVIEWED AND ANALYZED BY THE CIVIL ENGINEER PRIOR TO USE ON SITE. SOIL CLASSIFIED AS MH, OH, OL, OR PT (HIGH PLASTICITY SOILS AND ORGANIC SOILS) BY THE UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D2487) SHOULD NOT BE IMPORTED FOR USE AS ENGINEERED FILL. SUITABLE IMPORTED MATERIALS FOR GENERAL SITE FILL ARE THOSE THAT CLASSIFY AS GW, GM, GC, SC, AND CL IN ACCORDANCE WITH ASTM D 2487.
- FILLS PLACED IN AREAS WHERE THE NATURAL SLOPE IS GREATER THAN 5H:1V (HORIZONTAL TO VERTICAL) SHOULD BE BENCHED INTO THE EXISTING GRADE TO REDUCE THE POTENTIAL FOR SLIPAGE BETWEEN EXISTING SLOPES AND ENGINEERED FILL. BENCHES SHOULD BE LEVEL AND WIDE ENOUGH TO ACCOMMODATE COMPACTION AND EARTH MOVING EQUIPMENT.
- FILL AND SUBGRADE CONSTRUCTION SHOULD NOT BE STARTED ON FOUNDATION SOIL, PARTIALLY COMPLETED FILL, OR SUBGRADES THAT CONTAIN FROST OR ICE. FILL SHOULD NOT BE CONSTRUCTED USING FROZEN SOIL. FROZEN SOIL SHOULD BE REMOVED PRIOR TO PLACING FILL MATERIAL.
- AFTER STRIPPING AND GRUBBING OPERATIONS ARE COMPLETED AND PRIOR TO FILL PLACEMENT, AREAS TO BE FILLED SHALL BE PROOF ROLLED USING A LOADED TANDEM AXLE DUMP TRUCK TO IDENTIFY SOFT AND UNSUITABLE AREAS. SOFT MATERIAL MAY BE MOISTURE CONDITIONED AND REUSED AS ENGINEERED FILL, UNSUITABLE AND DELETERIOUS MATERIAL SHALL BE REMOVED FROM SITE.
- ALL NEW UTILITY TRENCHES SHOULD BE BACKFILLED IN ACCORDANCE WITH APPROPRIATE CONTROLLED ENGINEERED FILL SPECIFICATIONS.
- FIELD DENSITY TESTS SHOULD BE CONDUCTED IN ACCORDANCE WITH ASTM D6938 (NUCLEAR METHODS) OR ASTM D 1556 (SAND CONE METHOD). FIELD DENSITY TESTS SHOULD BE PERFORMED AT THE RATE OF ONE TEST PER 10,000 SQUARE FEET PER LIFT BENEATH PAVEMENTS, SIDEWALKS, AND OTHER POTENTIAL STRUCTURAL AREAS WITH A MINIMUM OF 3 TESTS PER LIFT AND ONE TEST PER 150 LINEAL FEET PER LIFT FOR FOUNDATION, TRENCH AND WALL BACKFILL.
- CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS FOR ALL LANDSCAPED AND PAVED AREAS.
- CONTRACTOR SHALL GRADE THE SITE 6 INCHES LOWER THAN FINISH GRADE CONTOURS SO OWNER'S LANDSCAPE SERVICES CAN INSTALL TOPSOIL AND FINAL SEEDING.

HAZARDOUS SUBSTANCE NOTE

- SUBSTANCES REGULATED BY FEDERAL LAW UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) OR THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA) WHICH ARE TRANSPORTED, STORED OR USED FOR MAINTENANCE, CLEANING OR REPAIRS SHALL BE MANAGED ACCORDING TO THE PROVISIONS OF RCRA AND CERCLA.
- ALL PAINTS, SOLVENTS, PETROLEUM PRODUCTS AND PETROLEUM WASTE PRODUCTS (EXCEPT FUELS) AND STORAGE CONTAINERS (SUCH AS DRUMS, CANS OR CARTONS) SHALL BE STORED SUCH THAT THESE MATERIALS ARE NOT EXPOSED TO STORM WATER. SUFFICIENT PRACTICES OF SPILL PREVENTION, CONTROL AND/OR MANAGEMENT SHALL BE PROVIDED TO PREVENT ANY SPILLS OF THESE POLLUTANTS FROM ENTERING A WATER OF THE STATE. ANY CONTAINMENT SYSTEM USED TO IMPLEMENT THIS REQUIREMENT SHALL BE CONSTRUCTED OF MATERIALS COMPATIBLE WITH THE SUBSTANCES CONTAINED AND SHALL ALSO PREVENT THE CONTAMINATION OF GROUNDWATER.
- THE APPLICANT SHALL NOTIFY BY TELEPHONE AND IN WRITING THE DEPARTMENT OF NATURAL RESOURCES, WATER POLLUTION CONTROL PROGRAM, POST OFFICE BOX 176, JEFFERSON CITY, MO 65102, 1-800-361-4827, OF ANY OIL SPILLS OR IF HAZARDOUS SUBSTANCES ARE FOUND DURING THE PROSECUTION OF WORK UNDER THIS PERMIT.

STORM WATER POLLUTION PREVENTION PLAN NOTES

- CONTRACTOR SHALL FOLLOW THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES. A COPY OF THIS PLAN, SWPPP, AND ALL PERMITS SHALL REMAIN ON SITE THROUGHOUT CONSTRUCTION.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVAL HAS BEEN RECEIVED FROM ALL GOVERNING AUTHORITIES.
- IMMEDIATELY UPON COMPLETION OF FINISH GRADING IN EACH AREA, ALL LANDSCAPING AREAS SHALL BE STABILIZED PER PLANS AND/OR SPECIFICATIONS.
- SHOULD CONSTRUCTION STOP FOR LONGER THAN 14 DAYS, THE SITE SHALL BE SEEDED AS SPECIFIED IN THE SWPPP.
- SITE INSPECTION SHOULD OCCUR ON A REGULAR SCHEDULE AND WITHIN 24 HOURS OF A STORM EVENT OF 0.25 INCHES OR GREATER. REGULARLY SCHEDULED INSPECTION SHALL BE A MINIMUM OF ONCE EVERY 7 CALENDAR DAYS. ANY DEFICIENCIES SHALL BE NOTED IN A WEEKLY REPORT OF THE INSPECTION AND CORRECTED WITHIN SEVEN CALENDAR DAYS OF THE REPORT.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
- CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
- ALL SLOPES GREATER THAN 3:1 SHALL BE REINFORCED BY NORTH AMERICAN GREEN P300 PERMANENT TURF REINFORCEMENT MAT OR APPROVED EQUAL.
- CONTRACTOR SHALL REMOVE ALL TRASH, DEBRIS, TREES & BRUSH AND OTHER MATERIAL CREATED AS A RESULT OF THE CONSTRUCTION WORK AND THE SITE SHALL BE RETURNED TO ITS ORIGINAL CONDITION.
- ALL LANDSCAPED AREAS SHALL BE GRASS COVERED. OWNER SHALL INSTALL FINAL LANDSCAPING AND TURF.
- THE SITE CONTRACTOR SHALL INCLUDE MAINTENANCE OF ALL BMP'S AS PART OF THEIR CONTRACT AND SHALL BE RESPONSIBLE FOR THE PROJECT UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.

UTILITY CONSTRUCTION NOTES

- LOCATION OF SITE UTILITIES SHALL BE VERIFIED BY CONTRACTOR AND THE PROPER UTILITY COMPANY PROVIDING SERVICE PRIOR TO THE START OF CONSTRUCTION.
- EXISTING UTILITIES SHALL BE VERIFIED IN FIELD.
- UTILITY CAPS ARE SHOWN IN APPROXIMATE LOCATIONS.
- SITE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR CONSTRUCTION REQUIREMENTS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE SPECIFICATIONS OF THE UNIVERSITY OF MISSOURI, COLUMBIA WATER AND LIGHT DEPARTMENT AND CITY OF COLUMBIA UTILITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER CAPS, RESPECTIVELY.
- SITE CONTRACTOR SHALL CONTACT AMEREN MISSOURI TO COORDINATE REMOVAL OF THE GAS SERVICE.
- ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS. BACKFILL OF TRENCHES THROUGH ANY IMPROVED AREAS, SUCH AS STREET, DRIVES OR PARKING LOTS SHALL BE COMPACTED TO MINIMUM 95% STANDARD PROCTOR DENSITY (ASTM D-698).
- ALL UNDERGROUND UTILITY CONDUITS SHALL BE PLACED 36" BELOW FINISH GRADE UNLESS NOTED OTHERWISE.
- ALL UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
- TOPS OF EXISTING HANDHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED FINISHED ELEVATIONS.
- REFER TO MEP PLANS FOR SITE LIGHTING PLAN.
- PVC CONDUIT SHALL BE SCHEDULE 40 PVC WITH LONG SWEEPS ONLY (36" MINIMUM RADIUS) AND CONTAIN PULLTAPE, UNLESS OTHERWISE NOTED.
- A MINIMUM 18" OF VERTICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE OUTSIDE OF THE ELECTRIC CONDUIT AND THE OUTSIDE OF THE WATER, STORM SEWER, SANITARY SEWER, OR GAS PIPE AT ALL CROSSINGS.
- CONTRACTOR SHALL PROVIDE VERIFICATION TO THE OWNER THAT ALL UTILITIES HAVE BEEN DISCONNECTED PRIOR TO START OF BUILDING DEMOLITION.

RIGHT-OF-WAY NOTES

- THERE IS NO DEDICATED RIGHT-OF-WAY FOR THE NORTH LINE OF ROLLINS STREET. THE RIGHT-OF-WAY SHOWN IS A 30 FOOT HALF WIDTH BASED ON THE EXISTING ROADWAY, IN ACCORDANCE WITH STREET WIDTH FOR A NEIGHBORHOOD COLLECTOR PER CITY OF COLUMBIA UNIFIED DEVELOPMENT CODE.
- THE 30 FOOT RADIUS AT THE NORTHWEST CORNER OF ROLLINS STREET AND WILLIAM STREET IS SHOWN PER THE CITY OF COLUMBIA UNIFIED DEVELOPMENT CODE.

LEGEND

—	PROPERTY LINE
—	ELECTRIC LINE
—	TELECOMMUNICATIONS LINE
—	FIBER OPTIC LINE
—	UNDERGROUND ELECTRIC LINE
—	UNDERGROUND TELECOMMUNICATIONS LINE
—	SANITARY SEWER LINE
—	STORM SEWER LINE
—	STEAM LINE
—	GAS LINE
—	WATER LINE
—	CHILLED WATER LINE
—	FENCE
---	EXISTING CONTOUR
—	ANCHOR
△ CP#	CONTROL POINT
A/C	AIR CONDITIONER
CI	CAST IRON PIPE
EM	ELECTRIC METER
EPB	ELECTRIC PULLBOX
ET	ELECTRIC TRANSFORMER
FH	FIRE HYDRANT
FL	FLOW LINE
GM	GAS METER
GV	GAS VALVE
HPP	HIGH PERFORMANCE POLYPROPYLENE PIPE
LS	LIGHT STANDARD
PIV	POST INDICATOR VALVE
PVC	POLYVINYL CHLORIDE PIPE
RID	RECORDS INDICATE
TP	TELECOMMUNICATIONS PEDESTAL
TPB	TELECOMMUNICATIONS PULLBOX
TW	TOP OF WALL
UP	UTILITY POLE
URD	UNDERGROUND ROOF DRAIN
VCP	VITRIFIED CLAY PIPE
WM	WATER METER
WV	WATER VALVE
WSC	WATER SPRINKLER CONNECTION
---	PROPOSED FENCE
---	SILT FENCE
---	TREE PRESERVATION BARRIER
---	FINISH CONTOUR
---	FINISH GRADE ELEVATION
///	DEMOLITION AREA
X	FEATURE REMOVAL
////	ABANDON IN PLACE & FILL W/ FLOWABLE FILL

CONSTRUCTION NOTES

- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL IDENTIFIED PROPERTY CORNERS, LAND SURVEY CORNERS, AND ACCESSORIES. THE CONTRACTOR SHALL CAUSE THE CORNERS AND ACCESSORIES TO BE REFERENCED BY A LICENSED LAND SURVEYOR, AND ANY SUCH CORNER OR ACCESSORIES DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE RESET BY THE SURVEYOR AT THE ORIGINAL LOCATION, AND FILE THE RESTORATIONS AND MONUMENT DOCUMENTS AS THE LAW REQUIRES.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- ALL TRAFFIC CONTROL SHALL BE PER CURRENT MUTCD REQUIREMENTS AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. A TRAFFIC CONTROL PLAN WILL BE REQUIRED FOR ANY WORK WITHIN THE RIGHT-OF-WAY.

SHEET INDEX

C0.01	GENERAL NOTES
C1.01	TEMPORARY TRAFFIC CONTROL PLAN
C2.01	EROSION CONTROL PLAN
C3.01	SITE DEMOLITION PLAN
C3.02	UTILITY DEMOLITION PLAN
C4.01	SITE PLAN
C5.01	GRADING & DRAINAGE PLAN
C5.02	STORM SEWER PROFILE
C6.01	UTILITY PLAN
C7.01	SITE, EROSION CONTROL, & STORM SEWER DETAILS

UTILITY NOTES

ALL UTILITIES ARE UNIVERSITY OF MISSOURI, EXCEPT AS NOTED BELOW. THE LOCATIONS, SIZES, AND MATERIAL TYPES OF UNDERGROUND UTILITIES INDICATED ON THE PLAN, NOT VISIBLE OR APPARENT FROM THE SURFACE, ARE SHOWN IN THEIR APPROXIMATE LOCATIONS FROM A MISSOURI ONE CALL SYSTEM LOCATE, OR UTILITY COMPANY RECORDS AND WERE NOT VERIFIED IN THE FIELD. IRRIGATION LINES WERE NOT LOCATED. UNDERGROUND ELECTRIC LINES TO LIGHTS WERE NOT LOCATED.

UNIVERSITY OF MISSOURI
ENERGY MANAGEMENT OFFICE
417 SOUTH FIFTH STREET
COLUMBIA, MISSOURI 65211
CONTACT: 573-882-3084
ELECTRIC, TELECOMMUNICATIONS, STEAM, WATER, CHILLED WATER, SANITARY SEWER, STORM SEWER

WATER
CITY OF COLUMBIA WATER & LIGHT DEPARTMENT
P.O. BOX 6015
COLUMBIA, MISSOURI 65205
CONTACT: JOE STRODTMAN 573-874-6308

ELECTRIC
CITY OF COLUMBIA WATER & LIGHT DEPARTMENT
P.O. BOX 6015
COLUMBIA, MISSOURI 65205
CONTACT: JOHN BLAKEMORE 573-874-7313
AS SHOWN

GAS
AMEREN MISSOURI
2001 MAGUIRE BOULEVARD
COLUMBIA, MISSOURI 65201
CONTACT: TRENT SNOODGRASS 573-876-3063

TELECOMMUNICATIONS
CENTURYLINK
625 E. CHERRY STREET
COLUMBIA, MISSOURI 65201
CONTACT: DAVID ROBERTS 573-886-3503

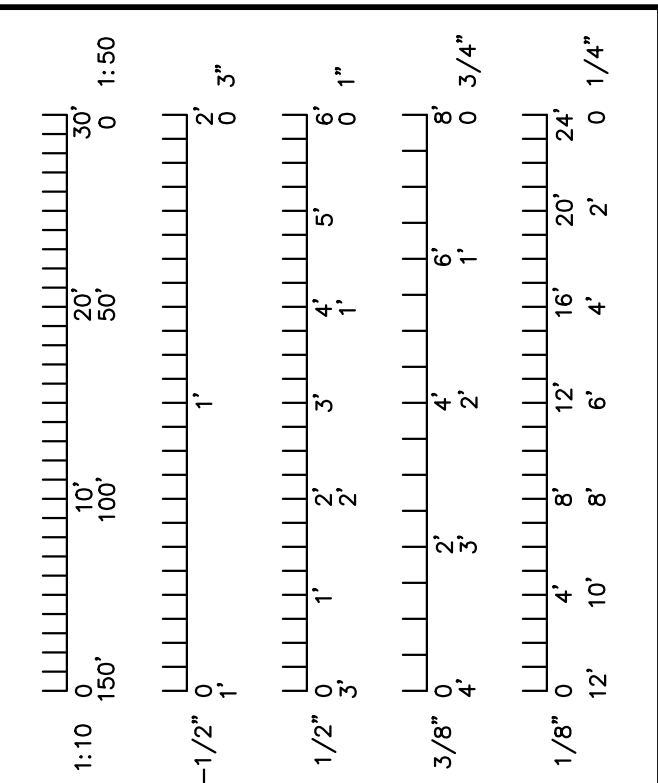
AT&T
7351 ABC LANE
COLUMBIA, MISSOURI 65202
CONTACT: GRANT STAES 573-489-8727

MEDIACOM
1211 WILKES BOULEVARD
COLUMBIA, MISSOURI 65201
CONTACT: BOB BONER 573-443-1536

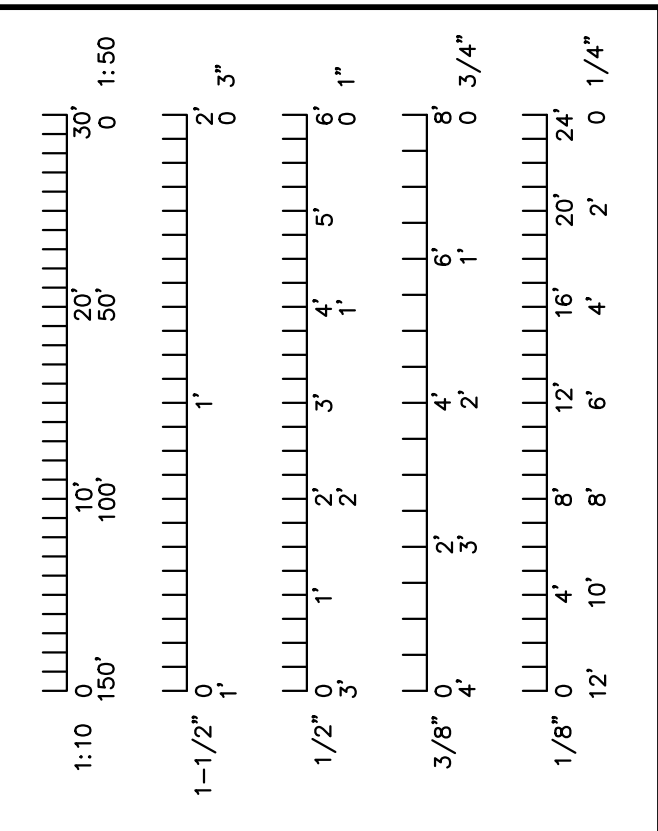
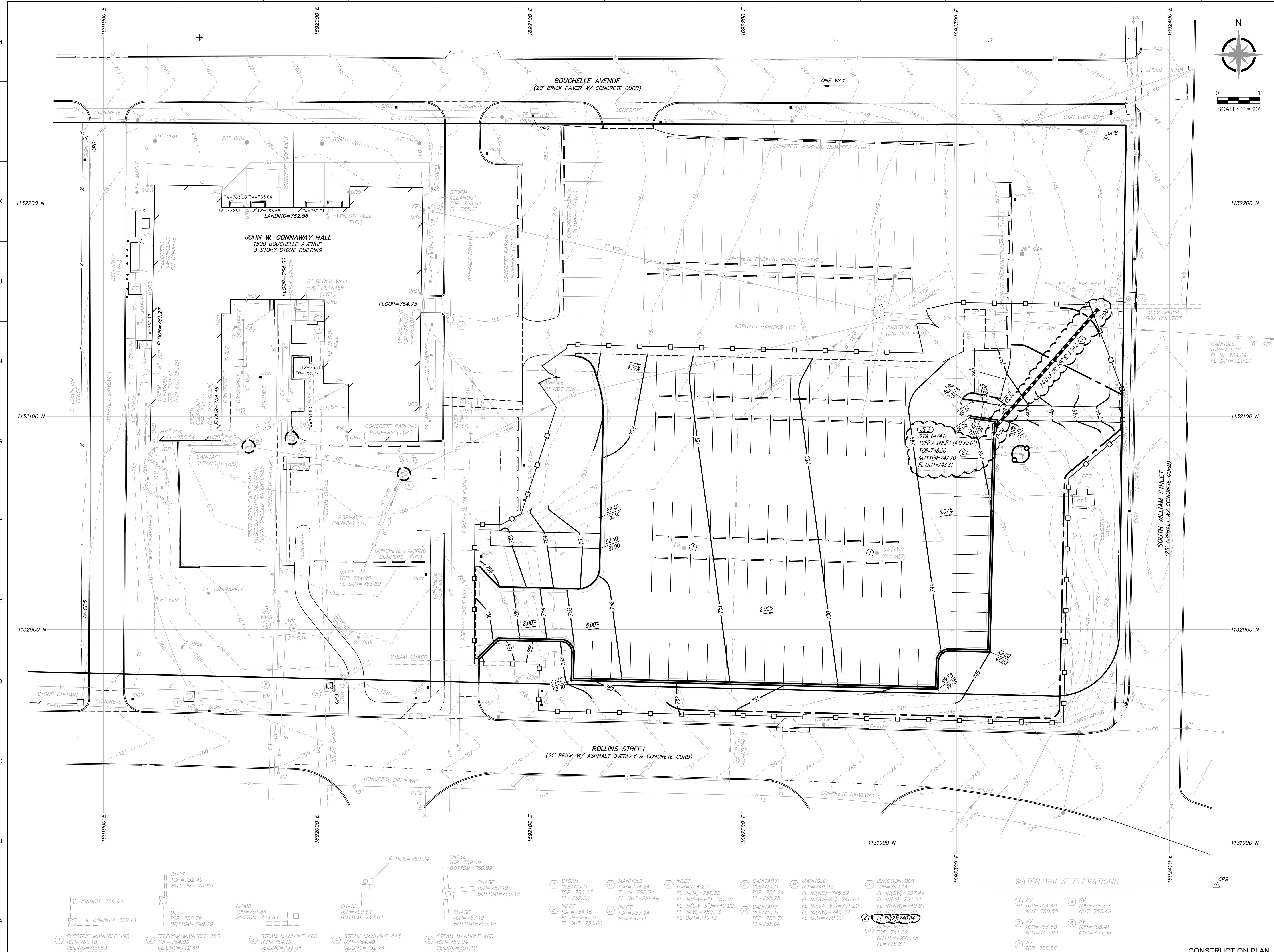
CITY OF COLUMBIA WATER & LIGHT DEPARTMENT
P.O. BOX 6015
COLUMBIA, MISSOURI 65205
CONTACT: ERIC WORTS 573-874-6246

SANITARY SEWER
CITY OF COLUMBIA UTILITIES DEPARTMENT
P.O. BOX 6015
COLUMBIA, MISSOURI 65205
CONTACT: ERIN KEYS 573-874-7502
AS SHOWN

STORM SEWER
CITY OF COLUMBIA UTILITIES DEPARTMENT
P.O. BOX 6015
COLUMBIA, MISSOURI 65205
CONTACT: TOM WELLMAN 573-874-7250
AS SHOWN



Drawn:	RTM	Project Number:	202403
Checked:	BAR	CAD File Name (Number):	
Drawing Title:	GENERAL NOTES		
No.	Revisions:	Date:	
1	ADDENDUM #2	08/12/2024	
Submission Date:	07/12/2024	Drawing Number:	C0.01
Plot Date:	08/12/2024		



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CIVIL:

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Missouri State Certificate of Authority No. 000244

8/12/2024

BENJAMIN A. ROSS
REGISTERED PROFESSIONAL ENGINEER
E-30054

Benjamin A. Ross



Project CP233041
VETERINARY SCIENCE
BUILDING DEMOLITION
1509 ROLLINS ST.
COLUMBIA, MO
University of Missouri
For: The Curators of the University of Missouri

Drawn:	RTM	Project Number:	202403
Checked:	BAR	CAD File Name (Number):	BAR

Drawing Title:
GRADING & DRAINAGE PLAN

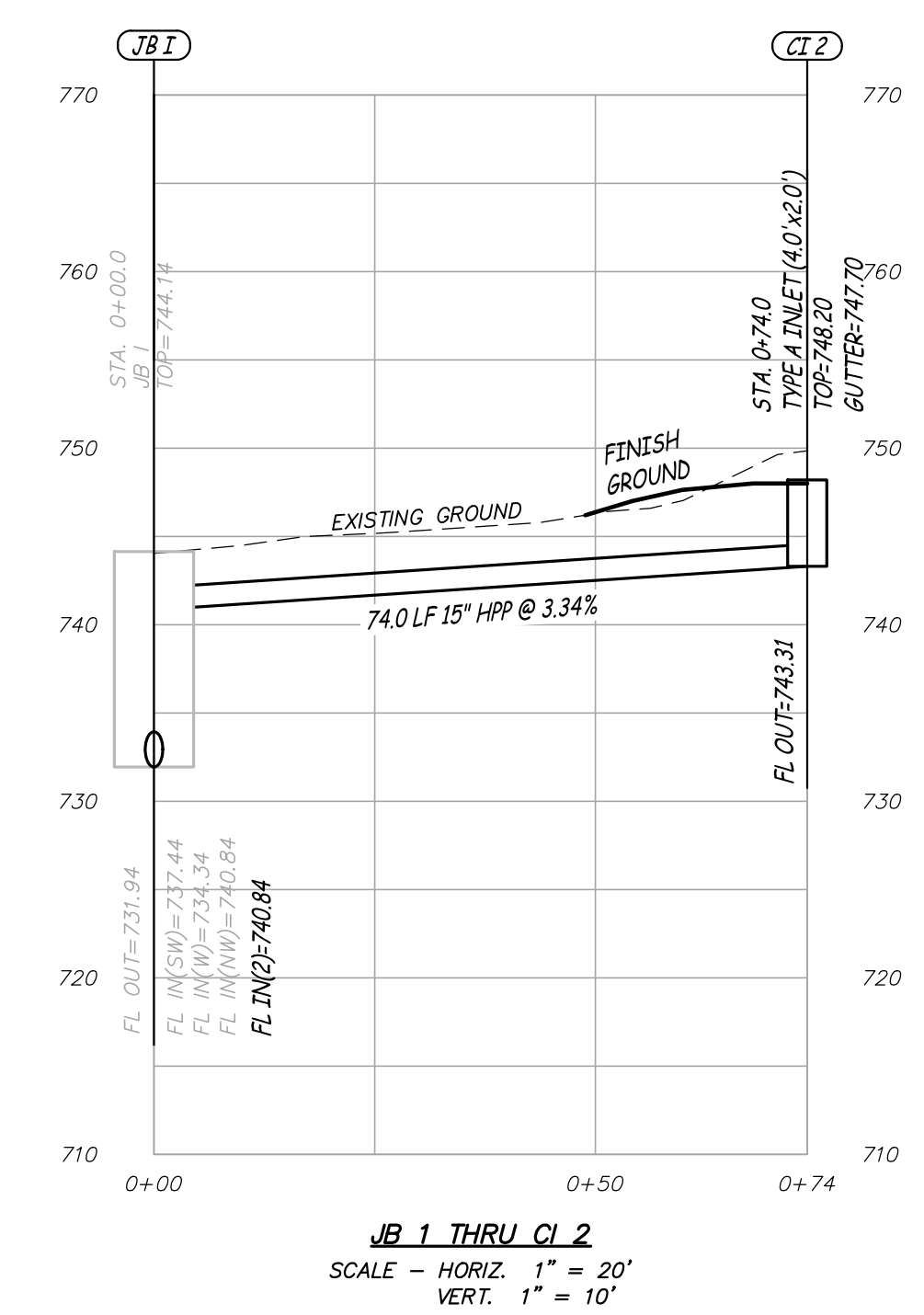
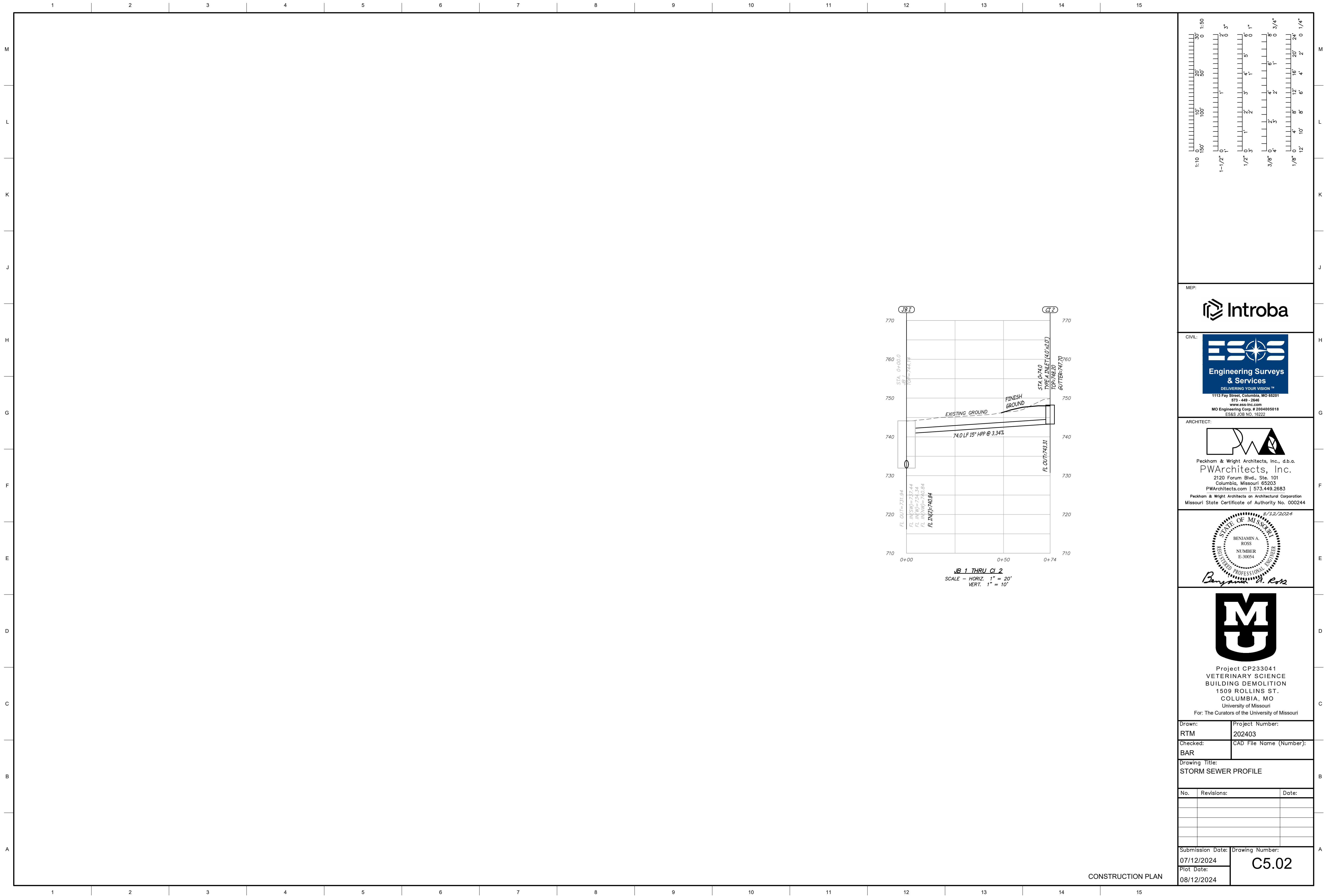
No.	Revisions:	Date:
1	ADDENDUM #1	08/08/2024
2	ADDENDUM #2	08/12/2024

Submission Date: 07/12/2024
Drawing Number: **C5.01**
Plot Date: 08/12/2024

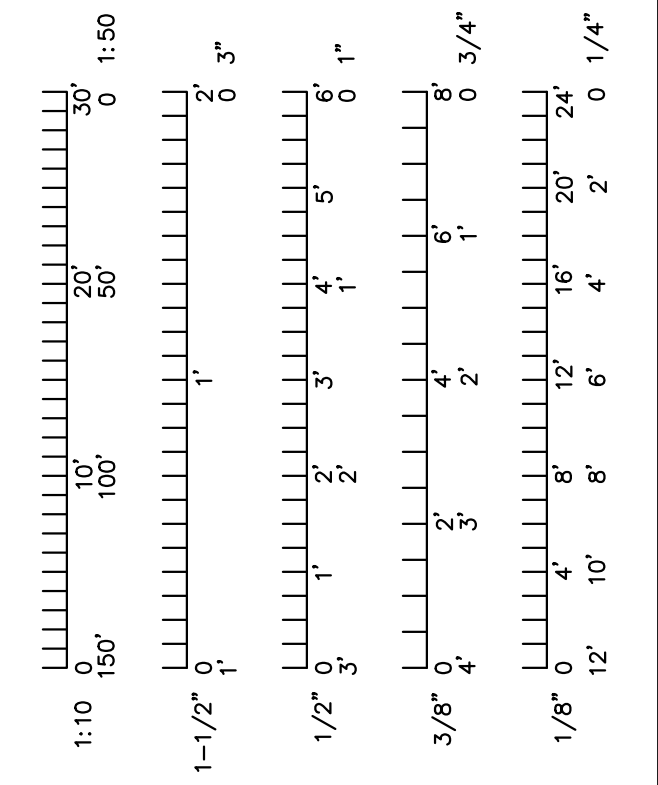
Symbol	Description	Top Elevation	Bottom Elevation
1	Electric Manhole 195	760.18	755.70
2	Telecom Manhole 365	754.99	748.49
3	Steam Manhole 406	753.54	747.59
4	Steam Manhole 443	752.74	747.64
5	Steam Manhole 405	751.19	750.64
A	Storm Cleanout	756.23	752.33
B	Inlet	754.16	750.66
C	Manhole	754.24	750.54
D	Inlet	753.94	750.23
E	Inlet	754.23	749.13
F	Sanitary Cleanout	758.24	755.06
G	Sanitary Cleanout	758.76	755.06
H	Manhole	749.02	739.97
I	Junction Box	744.14	737.44
J	Water Valve	756.60	753.80
K	Water Valve	758.41	755.56
L	Water Valve	756.56	753.66

Symbol	Description	Top Elevation	Bottom Elevation
1	Water Valve	754.40	750.55
2	Water Valve	756.60	753.80
3	Water Valve	756.56	753.66
4	Water Valve	758.41	755.56
5	Water Valve	758.41	755.56
6	Water Valve	756.60	753.80
7	Water Valve	756.56	753.66

CONSTRUCTION PLAN



JB 1 THRU CI 2
SCALE - HORIZ. 1" = 20'
VERT. 1" = 10'



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MO Engineering Corp. # 2004005018
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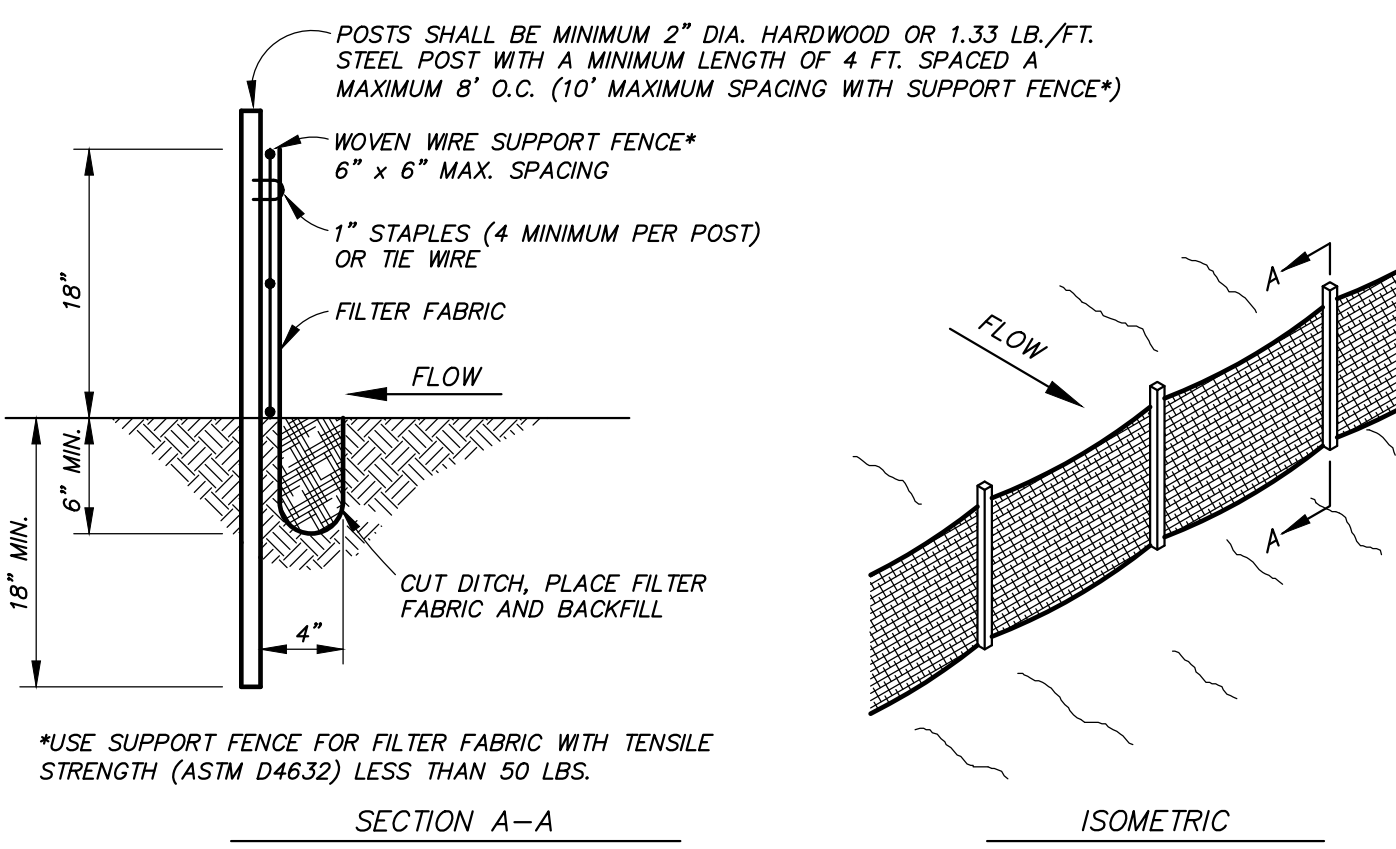
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Checked:	CAD File Name (Number):	
BAR		
Drawing Title:		
STORM SEWER PROFILE		
No.	Revisions:	Date:

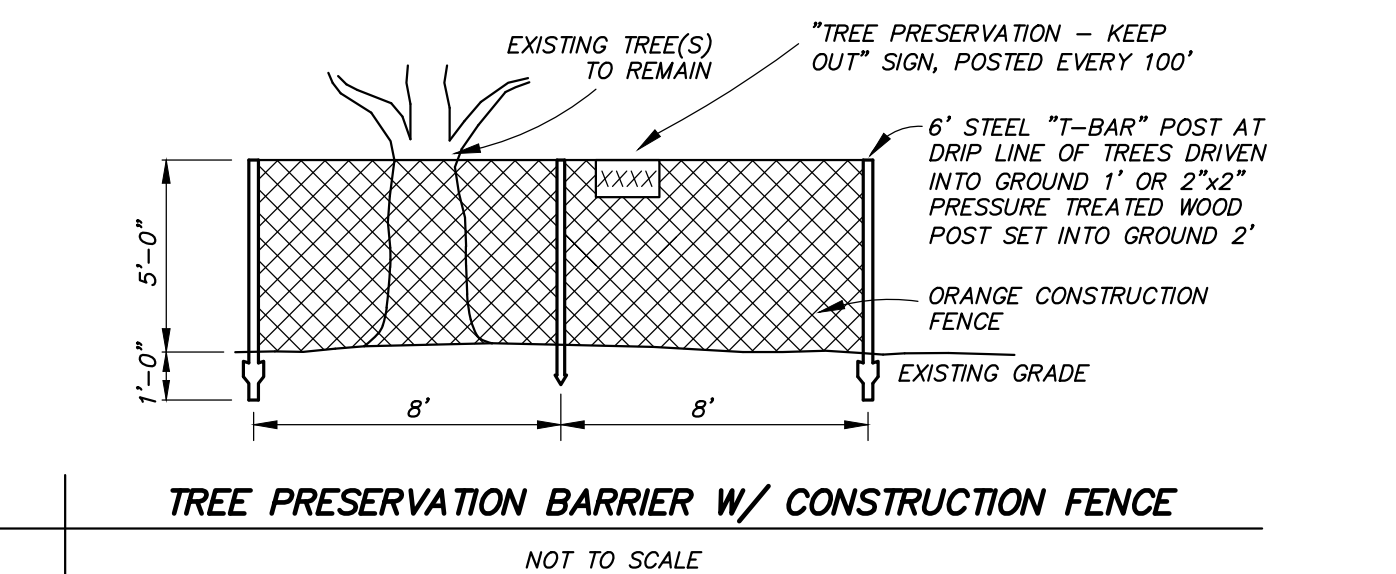
Submission Date:	Drawing Number:
07/12/2024	C5.02
Plot Date:	
08/12/2024	

CONSTRUCTION PLAN



SILT FENCE DETAIL
NOT TO SCALE

NOTES:
1. CONTRACTOR SHALL INSTALL SILT FENCE AT TOE OF SLOPES OF ALL AREAS AFFECTED BY CONSTRUCTION PRIOR TO ANY DISTURBANCE ON THE SITE.
2. SILT FENCE SHALL REMAIN UNTIL VEGETATION HAS BEEN ESTABLISHED ON DISTURBED AREAS.
3. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
4. SILT FENCES SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, ETC., TO VERIFY THE FABRIC IS SECURELY ATTACHED TO THE POSTS, THE POSTS ARE SECURELY IN THE GROUND, AND THE FABRIC IS SECURELY IMBEDDED IN THE GROUND TO PREVENT RUNOFF FROM GOING UNDER ANY PART OF THE FENCE.
5. CONTRACTOR SHALL REMOVE ALL SILT FENCES WHEN ALL DISTURBED AREAS ARE COVERED WITH A MINIMUM 80% VEGETATION. SEED AND MULCH ALL AREAS DISTURBED DURING REMOVAL.



TREE PRESERVATION BARRIER W/ CONSTRUCTION FENCE
NOT TO SCALE

Gutterbuddy™ Specification
For Curb Gutter Storm Drains

1.0 Description

1.1 This work shall consist of furnishing, placing, maintaining and removing the Gutterbuddy™ sediment control device as directed by the engineer and as shown on the contract drawings. The Gutterbuddy™ sediment control system distributed by:
ACF Environmental, Inc.
2831 Cardwell Road
Richmond, Virginia 23234
Phone: 800-448-3636 • Fax: 804-743-7779
www.acfenvironmental.com



2.0 Materials

2.1 GUTTERBUDDY™
The Gutterbuddy™ shall be synthetic filter manufactured from recycled synthetic fibers.

2.1.1 The Gutterbuddy™ will be manufactured to be 9" in diameter and are available in 4', 6', 8', 10', 12', 14' and 16' lengths and a minimum of twenty-four (24) inches longer than the curb inlet opening. This will allow for sufficient length to cover the inlet with twelve (12) inches beyond the inlet on both ends.

3.0 Construction Sequence

3.1 General

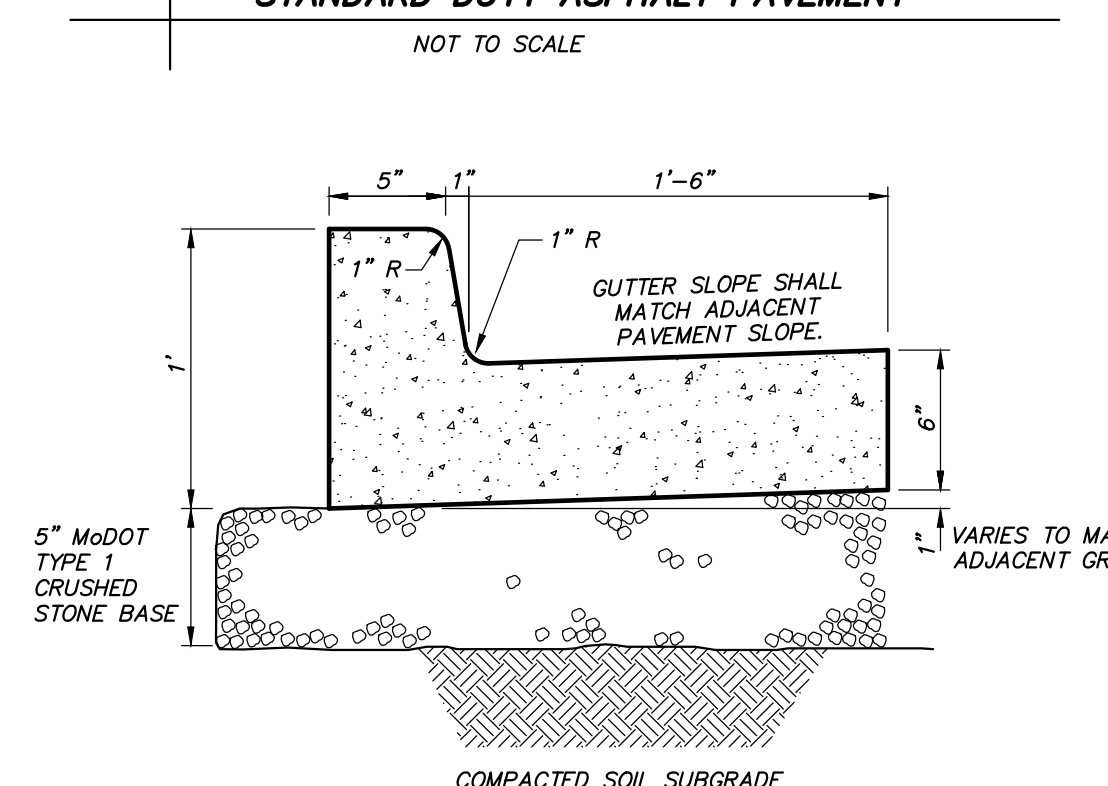
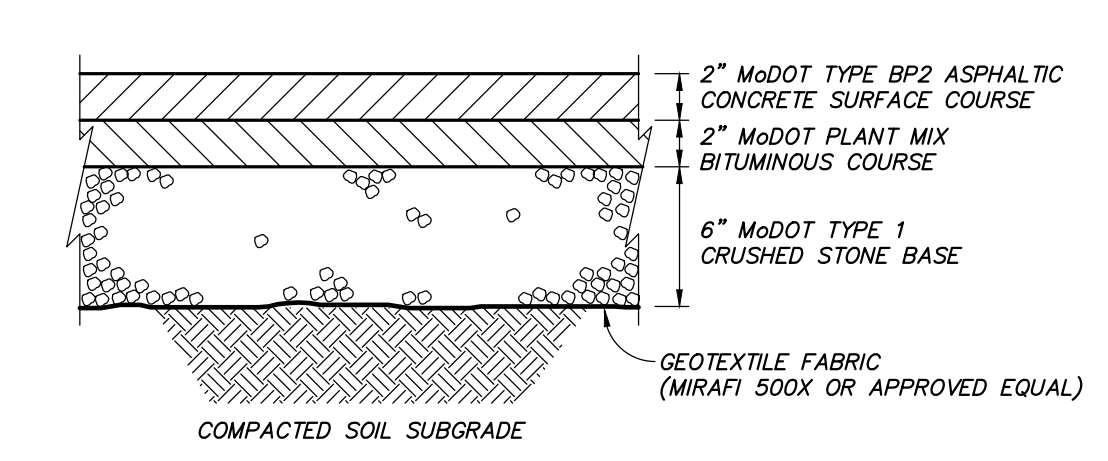
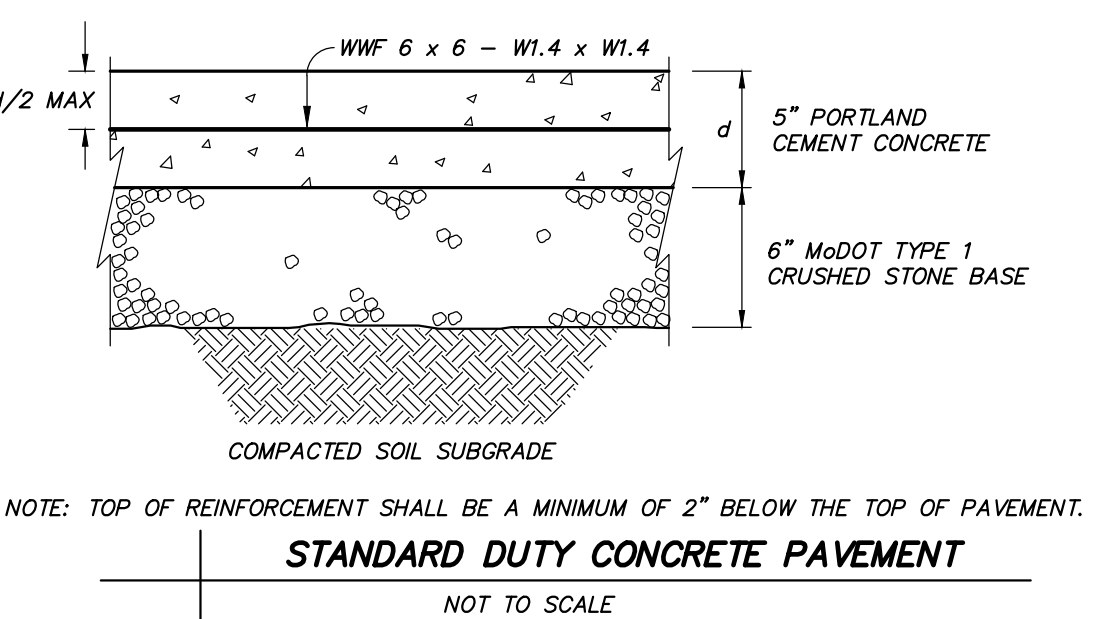
3.1.1 Install the Gutterbuddy™ in front of the curb inlet opening. Each end of the Gutterbuddy™ should overlap the curb inlet approximately 12".

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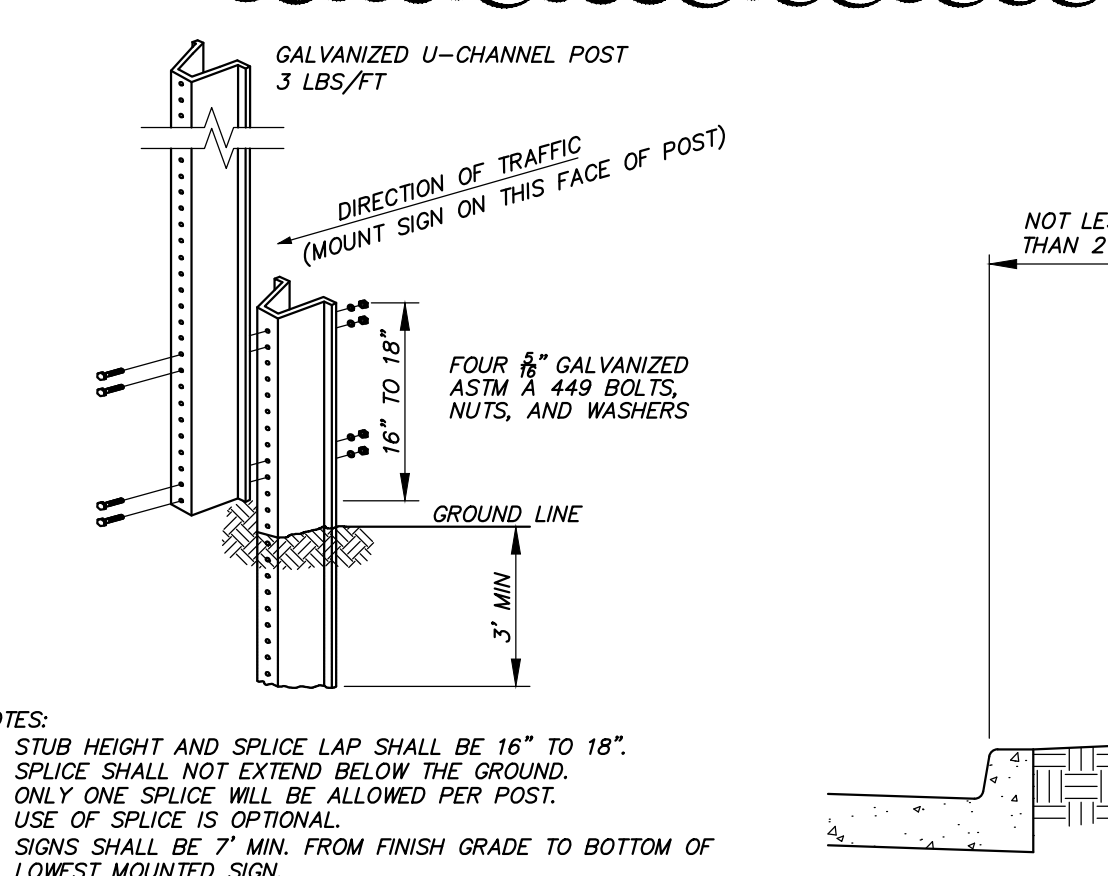
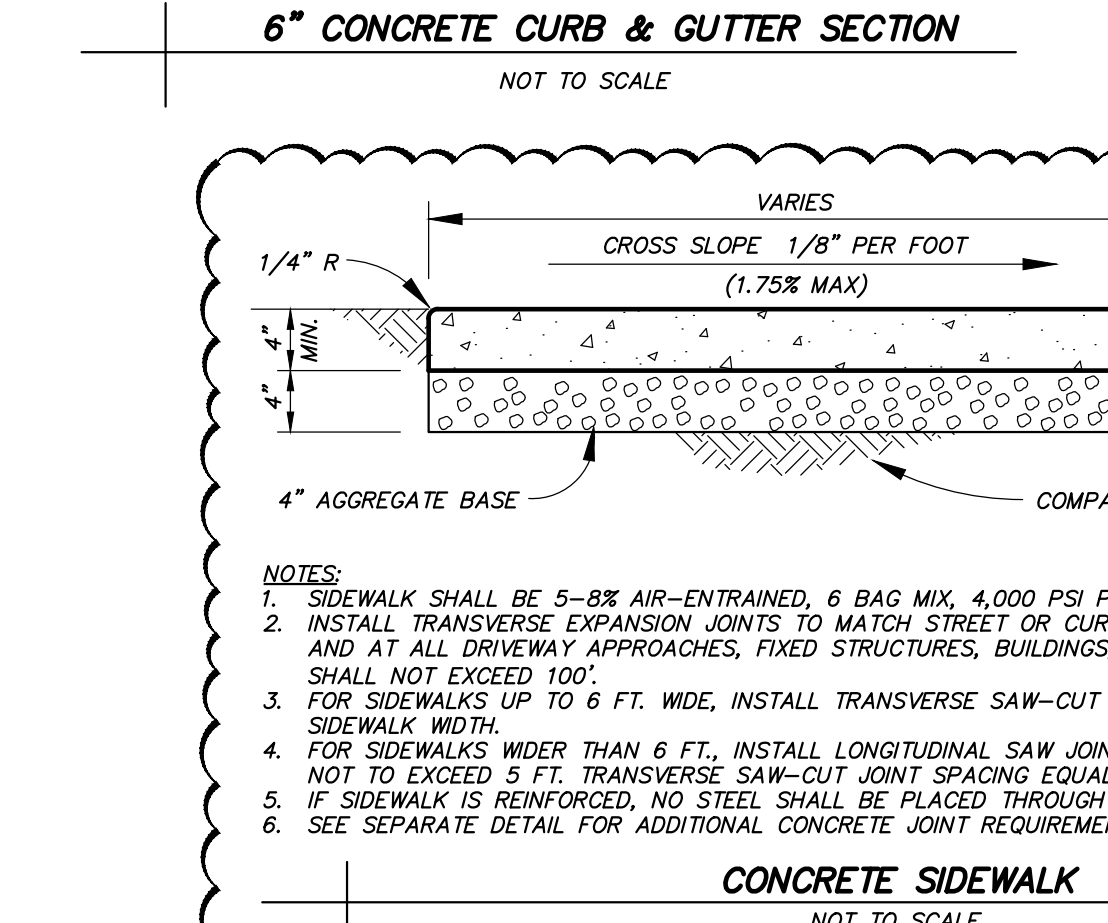
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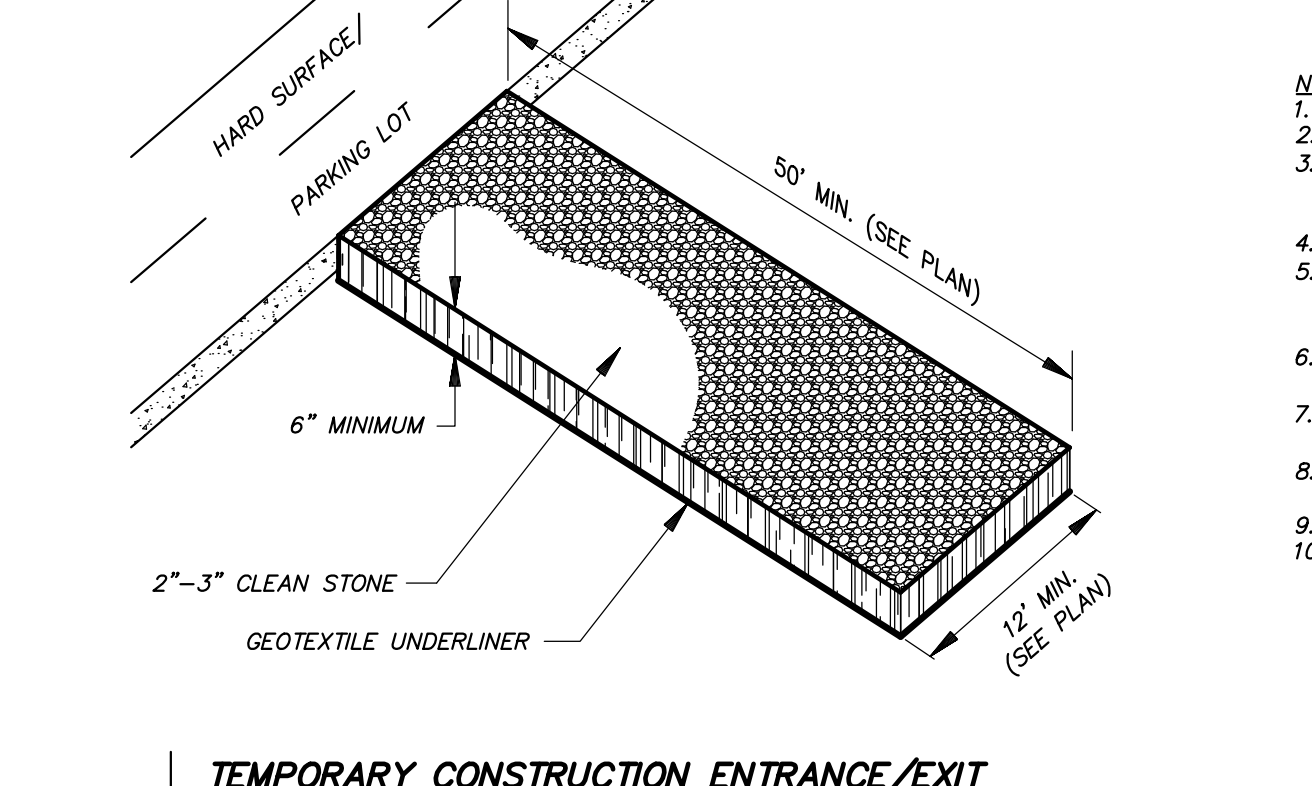
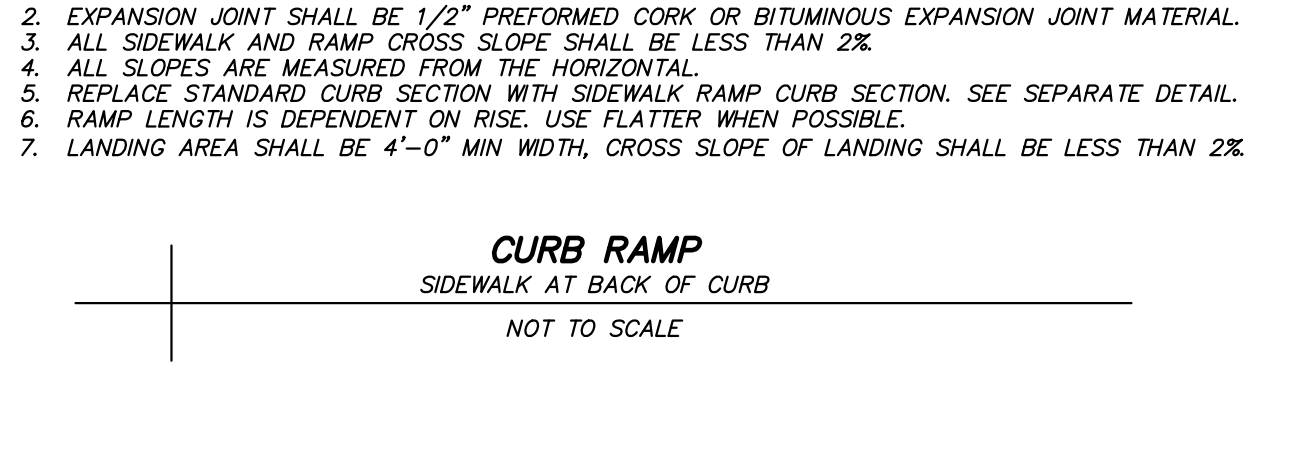
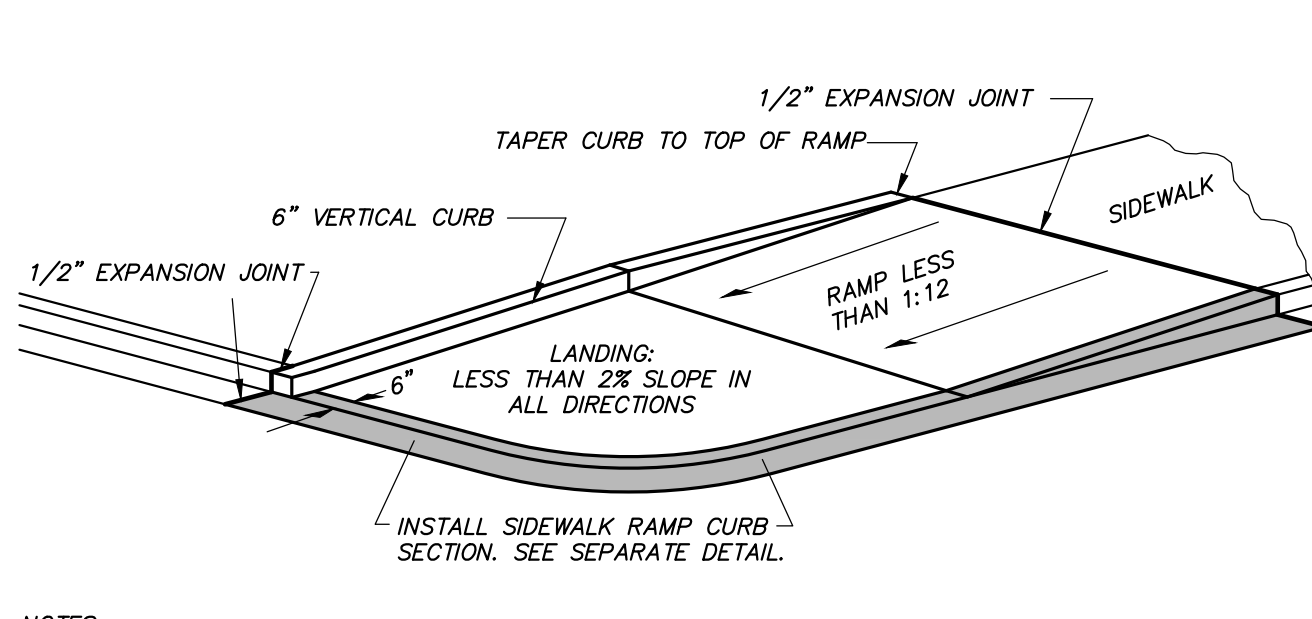
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NOTES:
1. CURB AND GUTTER MAY BE INTEGRAL IF CONCRETE PAVEMENT IS USED.
2. INSTALL TRANSVERSE EXPANSION JOINTS TO MATCH ADJACENT PAVEMENT, OR AT EVERY 150' MAX.
3. INSTALL SAW-CUT JOINTS TO MATCH ADJACENT PAVEMENT OR EVERY 10' MAX.
4. SAW-CUT JOINTS SHALL EXTEND THROUGH THE ENTIRE CURB SECTION FROM THE TOP OF CURB TO A DEPTH OF 2" BELOW THE GUTTER SURFACE.



SIGN POST DETAIL
NOT TO SCALE



BACKFILL NOTES:
1. BEDDING, HAUNCH, AND STRUCTURAL BACKFILL SHALL BE IN CONFORMANCE WITH AASHTO M145 AT 10' COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DEFINED BY ASTM D698.
2. ALL PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ASTM D2321 LATEST ADDITION.
3. HAUNCH, STRUCTURAL, AND ADDITIONAL BACKFILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DEFINED BY ASTM D698.

TABLE I
CORRUGATED HDPE AND POLYVINYL CHLORIDE CIRCULAR PIPE

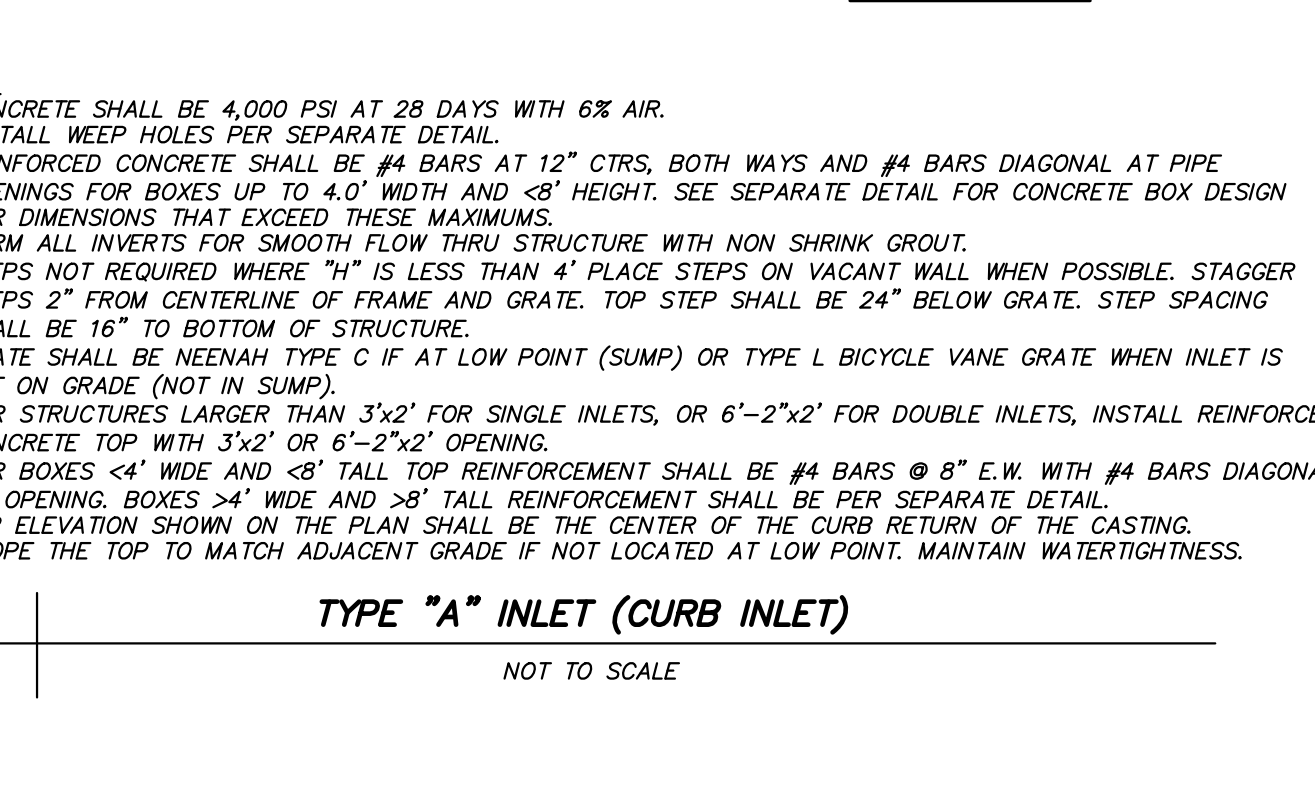
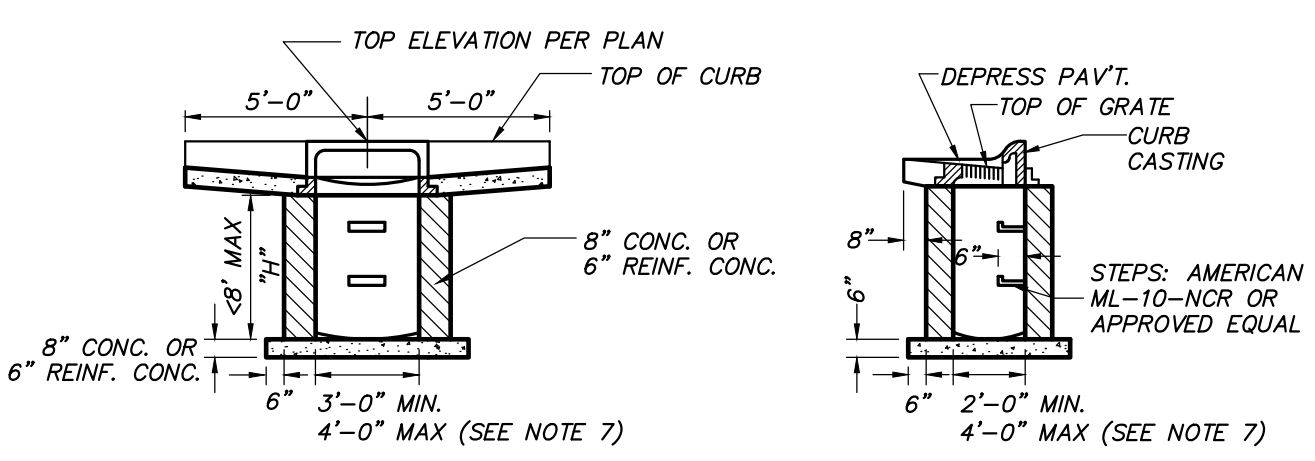
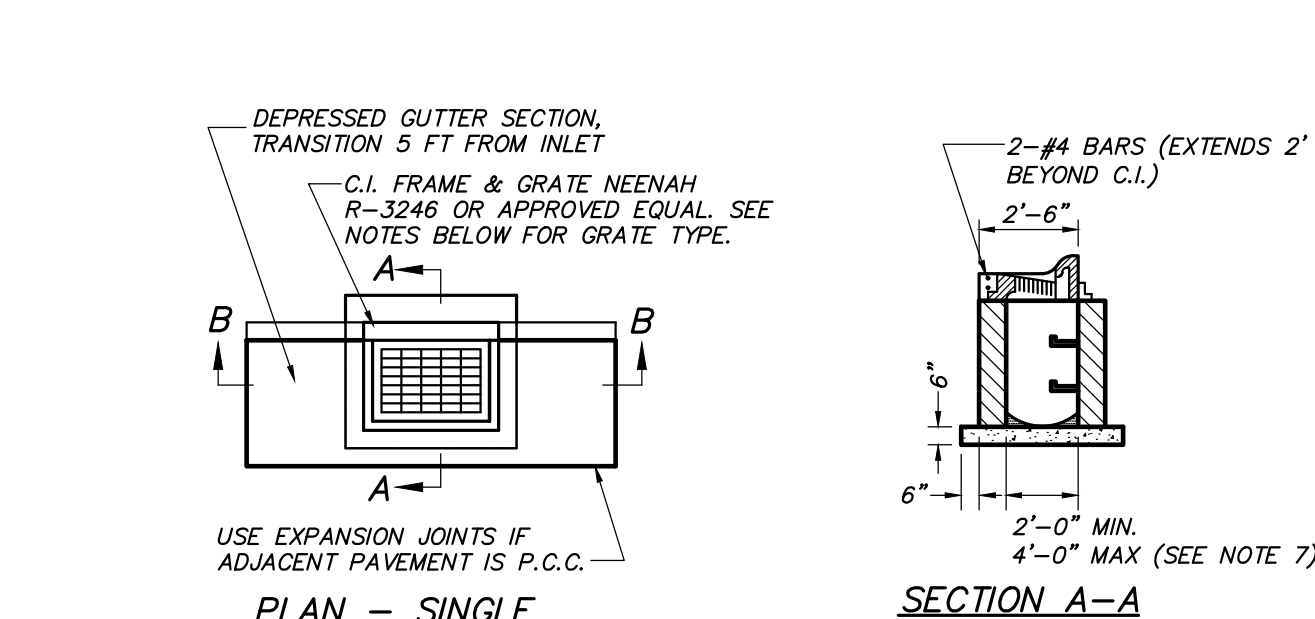
SPECIFIED DIA OF PIPE (IN.)	MIN OVERFILL HEIGHT (FT)	POLYVINYL CHLORIDE MAX OVERFILL HEIGHT* (FT)		VIRGIN RESIN (AASHTO M294) OVERFILL HEIGHT* (FT)			ENGINEERED COMPOUND (RECYCLED, ASTM F2649) OVERFILL HEIGHT* (FT)	TRENCH WIDTH (IN.)
		SDR 35#		CLASS 1** CLASS 2** CLASS 3**				
		SDR 15	SDR 26#	CLASS 1**	CLASS 2**	CLASS 3**		
12	2	26	15	30	27	19	27	34
15	2	28	15	30	30	22	27	39
18	2	24	15	30	40	27	19	44
24	2	20	15	30	36	25	17	55
30	2.5	17	N/A	N/A	29	21	15	67
36	2.5	19	N/A	N/A	34	23	16	76
42	2.5	19	N/A	N/A	31	23	16	84
48	2.5	17	N/A	N/A	30	20	14	95
54	2.5	9	N/A	N/A	33	22	15	104
60	2.5	9	N/A	N/A	33	22	15	113

TABLE II
MINIMUM COVER FOR CONSTRUCTION LOADS

PIPE DIA. (IN.)	MINIMUM COVER (FT) FOR INDICATED AXLE LOADS (THOUSANDS OF POUNDS)			
	18-50	50-75	75-110	110-150
12-36	2.0	2.5	3.0	3.0
42-48	3.0	3.0	3.5	4.0

TABLE ASSUMES STANDARD PROCTOR DENSITY OF 95%
** MAXIMUM OVERFILL MEASURED FROM THE TOP OF PIPE TO SURFACE
** CLASS 1 - CRUSHED ROCK, ANGULAR; AASHTO M43 - 5, 6, 56, 57, 67
** CLASS 2 - CLEAN, COURSE GRAINED SOILS TO BORDERLINE CLEAN FINES; AASHTO M43 - 5, 6, 56, 57, 67; AASHTO M145 - A1, A3
** CLASS 3 - COURSE GRAINED SOILS WITH FINES AND INORGANIC FINE-GRAINED SOILS; AASHTO M43 - GRAVEL AND SAND WITH <10% FINES; AASHTO M145 - A-2-4, A-2-5, A-2-6, A-4, OR A-6 WITH >30% RETAINED ON #200 SIEVE
** REFER TO CURRENT ADS INC. DRAINAGE HANDBOOK FOR A COMPLETE LISTING OF SUITABLE MATERIALS
PER ASTM D-3034 FOR PIPE UP TO 15" AND ASTM F679 OVER 15"

EMBEDMENT OF PLASTIC STORM SEWER PIPE
NOT TO SCALE



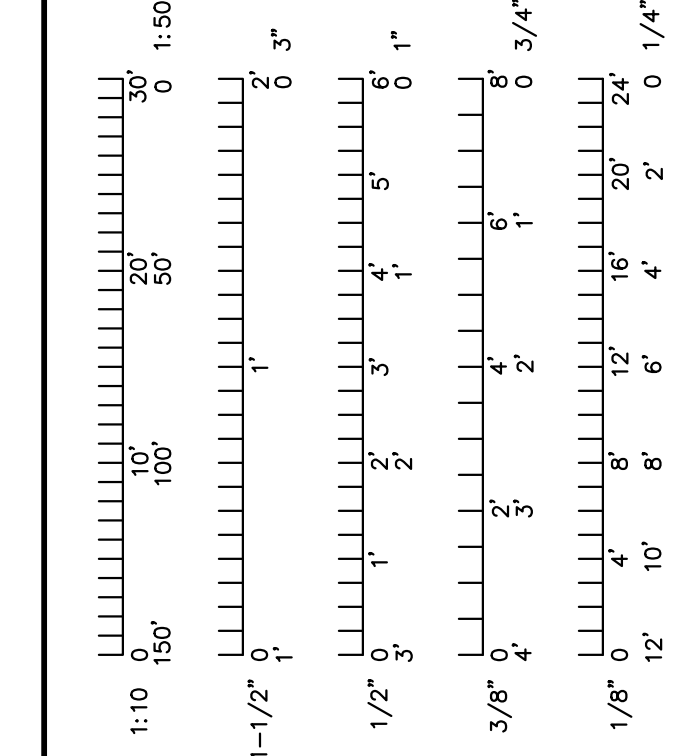
NOTES:
1. CONCRETE SHALL BE 4,000 PSI AT 28 DAYS WITH 6% AIR.
2. INSTALL KEEP HOLES PER SEPARATE DETAIL.
3. REINFORCED CONCRETE SHALL BE #4 BARS AT 12" CTRS, BOTH WAYS AND #4 BARS DIAGONAL AT PIPE OPENINGS FOR BOXES UP TO 4.0' WIDTH AND <8' HEIGHT. SEE SEPARATE DETAIL FOR CONCRETE BOX DESIGN FOR DIMENSIONS THAT EXCEED THESE MAXIMUMS.
4. FORM ALL INVERTS FOR SMOOTH FLOW THRU STRUCTURE WITH NON SHRINK GROUT.
5. STEPS NOT REQUIRED WHERE "H" IS LESS THAN 4' PLACE STEPS ON VACANT WALL WHEN POSSIBLE. STAGGER STEPS 2" FROM CENTERLINE OF FRAME AND GRATE. TOP STEP SHALL BE 24" BELOW GRATE. STEP SPACING SHALL BE 16" TO BOTTOM OF STRUCTURE.
6. GRATE SHALL BE NEENAH TYPE C IF AT LOW POINT (SUMP) OR TYPE L BICYCLE VANE GRATE WHEN INLET IS SET ON GRADE (NOT IN SUMP).
7. FOR STRUCTURES LARGER THAN 3'x2' FOR SINGLE INLETS, OR 6'-2"x2' FOR DOUBLE INLETS, INSTALL REINFORCED CONCRETE TOP WITH 3'x2' OR 6'-2"x2' OPENING.
8. FOR BOXES <4' WIDE AND <8' TALL TOP REINFORCEMENT SHALL BE #4 BARS @ 8" E.W. WITH #4 BARS DIAGONAL AT OPENING. BOXES >4' WIDE AND >8' TALL REINFORCEMENT SHALL BE PER SEPARATE DETAIL.
9. TOP ELEVATION SHOWN ON THE PLAN SHALL BE THE CENTER OF THE CURB RETURN OF THE CASTING.
10. SLOPE THE TOP TO MATCH ADJACENT GRADE IF NOT LOCATED AT LOW POINT. MAINTAIN WATERTIGHTNESS.

LEGEND
I.D. = NORMAL INSIDE DIAMETER OF PIPE.
O.D. = OUTSIDE DIAMETER OF PIPE.
H = FILL COVER HEIGHT OVER PIPE (FEET).
MIN. = MINIMUM
MAX. = MAXIMUM
UNDISTURBED SOIL

CONSTRUCTION SEQUENCE:
1. PLACE BEDDING MATERIAL TO GRADE.
2. COMPACT BEDDING OUTSIDE THE MIDDLE THIRD OF THE PIPE.
3. INSTALL PIPE TO GRADE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE SPRINGLINE.
5. COMPLETE BACKFILL ACCORDING TO SPECIFICATIONS.

CONCRETE SIDEWALK
NOT TO SCALE

URBAN ROADSIDE SIGN LOCATION
NOT TO SCALE



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NUMBER E-30054
8/12/2024
Benjamin A. Ross

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Drawing Title:		
SITE, EROSION CONTROL, & STORM SEWER DETAILS		
No.	Revisions:	Date:
②	ADDENDUM #2	08/12/2024

Submission Date:	Drawing Number:
07/12/2024	C7.01
Plot Date:	
08/12/2024	

CONSTRUCTION PLAN