

ADDENDUM NO. 02

Project: Monett Library Branch
Owner: Barry-Lawrence Regional Library
Date: 7/02/2021
Pages: 22

This addendum shall modify the drawings and specifications as described here-in. However, this addendum shall not relieve any party of any responsibility under the plans and specifications except as amended in this document so written.

*See following pages for COMPLETE Addenda: (if **bold** - indicates included in this Addenda)

Bid Packages

Civil

Architectural

Structural

MEP

GENERAL:

- 1) Substantial Completion for this project is tentatively set to be July 2022 and Final in August of 2022.
- 2) See attached for a sample of the similar required Subcontractor Certificate of Insurance with values and limits required.
- 3) Reference Civil Addenda revised added language on the note on sheet C001. If onsite excavated material (after top soil stripping is completed) is found to be unsuitable after CM engaged testing is performed (Onsite Proctor Compaction Test) then unit prices shall be utilized to bring in offsite suitable fill material to complete the grading operations.

BID PACKAGES Section 00 20 00 Scopes of Work (Bid Packages):

- 1) On sheet C201>ALL SUBCONTRACTORS and especially Bid Packages 03, 04, 05, 08A, reference the following notes to Key Notes for items and details and sections to assist with maneuvering the plans:
 - a. Key Note 8 see also 13/S2.1
 - b. Key Note 14 see also A7-3
 - c. Key Note 18 see also 3/S1-1
 - d. Key Note 19 see also 14/S2-1 & 1/A4-1
 - e. Key Note 23 see also 2/S1-1, 9/S2.1 & A7-3
 - f. Key Note 26 – BP 08A – Provide complete- Kingsley Model 30S-Series or similar and related concrete pad as suggested by manufacturer.
 - g. Key Note 28 see also A7-3
 - h. Key Note 29 see also 16/S2-1

Barry-Lawrence Regional Library:
MONETT BRANCH LIBRARY

- 2) Reference page 14. Bid Package 05 Structural Steel, Delete requirement 7. Provided handrails/guardrails will be delivered to the site primed per specification and the Bid Package 09B Painting Subcontractor will finish on site.
- 3) Reference Bid Package 05 Structural Steel, Bid Package 03 Concrete and Bid Package 31 Site Work/Site Demolition. Under the Additional bid package requirements add the following: Sheet C501 Key Note 3; Bid Package 05 Subcontractor will provide the Neenah Trench Cover to the site. Bid Package 03 Subcontractor will provide the trench drain complete and install the Neenah Trench Cover provided by the BP 05 Sub. BP 03 and BP 31 subcontractors will work together to coordinate that elevations for the trench drain and the curb inlets at the trench drain are correct.
- 4) Reference page 27. Bid Package 09B Painting, This subcontractor shall clean and prep and furnish and install all floors requiring Sealed Concrete per the Finish Plan sheet A9-0.
- 5) Bid Package 08A shall provide for the LED sign on the monument sign per Architectural addendum 02.



CERTIFICATE OF LIABILITY INSURANCE

MMURPHY

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
	PHONE:	
	(A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE	
	INSURER A :	NAIC #
INSURED	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> SUBJECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 EBL AGGREGATE \$ 2,000,000
B	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000						EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000 \$
D	<input checked="" type="checkbox"/> WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ON CERTAIN EMPLOYERS (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
E	Stored Material						

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: BLRL Monett Library

BLRL (Owner), all of its officers, directors and employees and Paragon Architecture, Inc. (Architect) are an additional insured as respects to liability coverage, excluding Workers Compensation and Employers Liability, for ongoing and completed operations, as required by written contract. Waiver of subrogation applies where allowed by law. Coverage is primary and noncontributory. 30 Day Notice of Cancellation applies.

CERTIFICATE HOLDER

CANCELLATION

RE Smith
Construction
Company
1036 W. 2nd Street
Joplin, MO 64801

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.



637 W College St
Springfield, MO 65806
417-885-0002
paragonarchitecture.com

Addendum (ADD) #2

Project:	Monett Library Branch 19-556
Client:	Barry Lawrence Regional Library
Date:	July 2, 2021

This addendum shall modify the drawings and specification requirements as herein noted. However, this addendum shall not relieve the general contractor or sub-contractors of any responsibility under the plans and specifications except as amended herein.

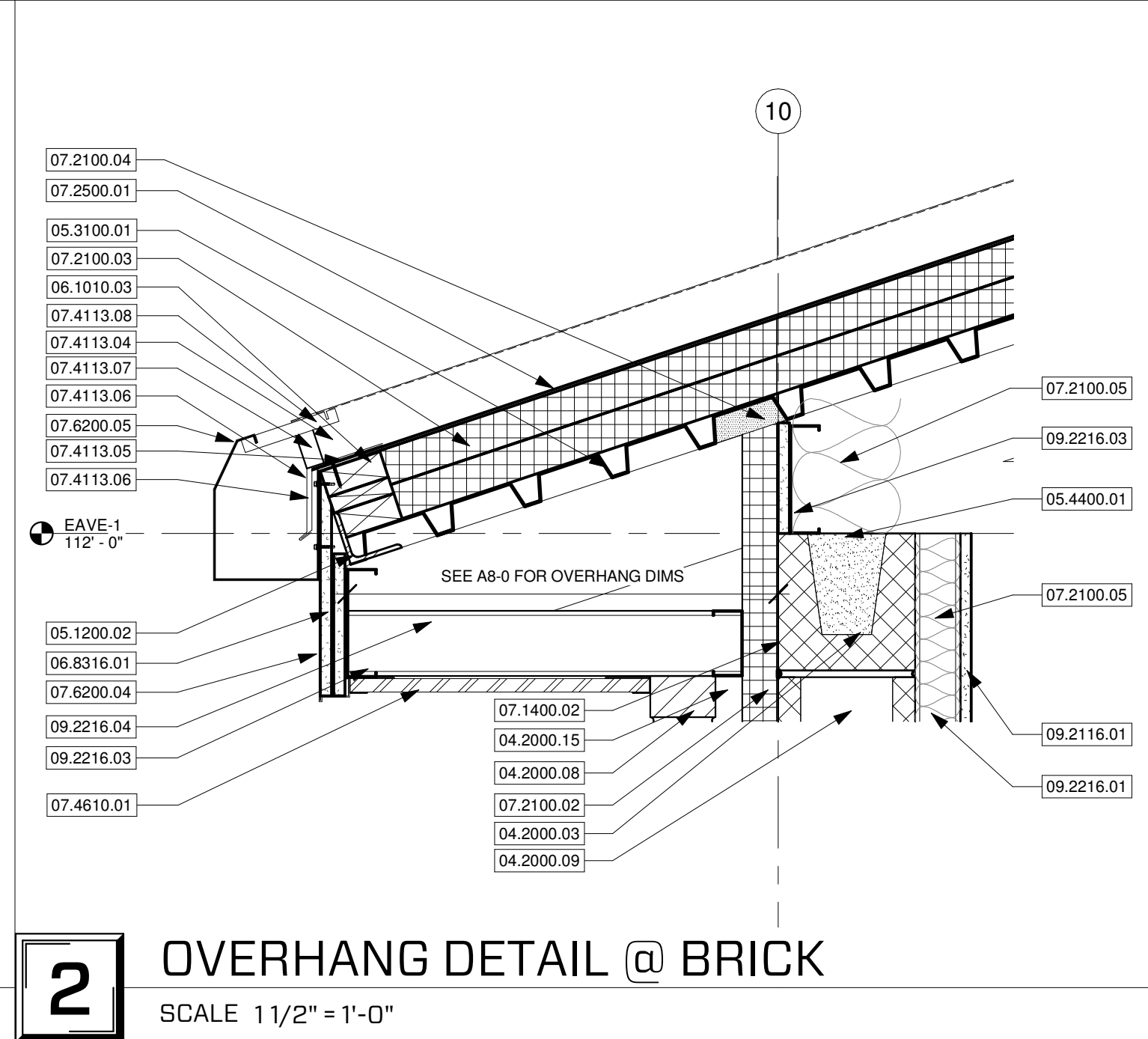
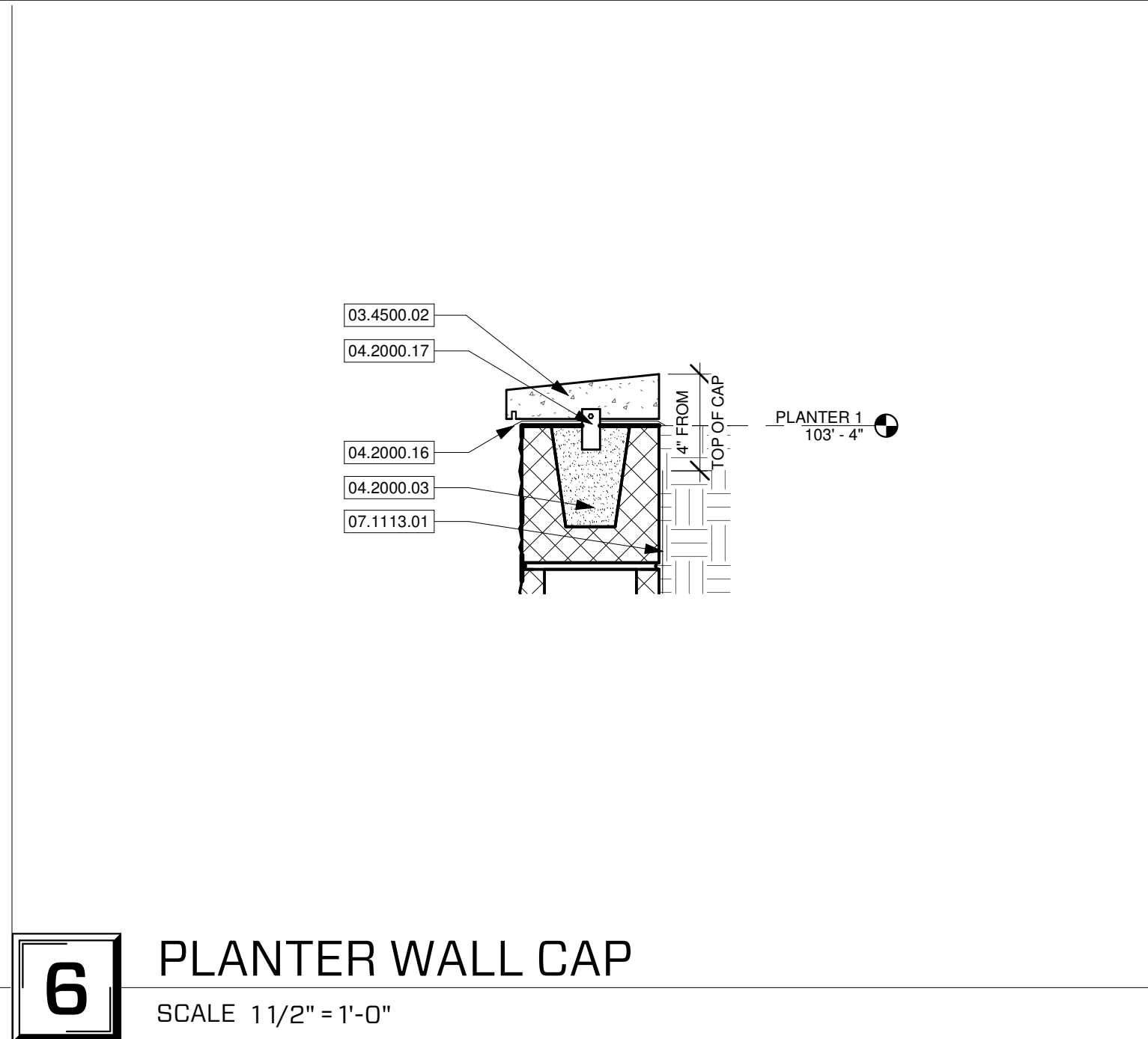
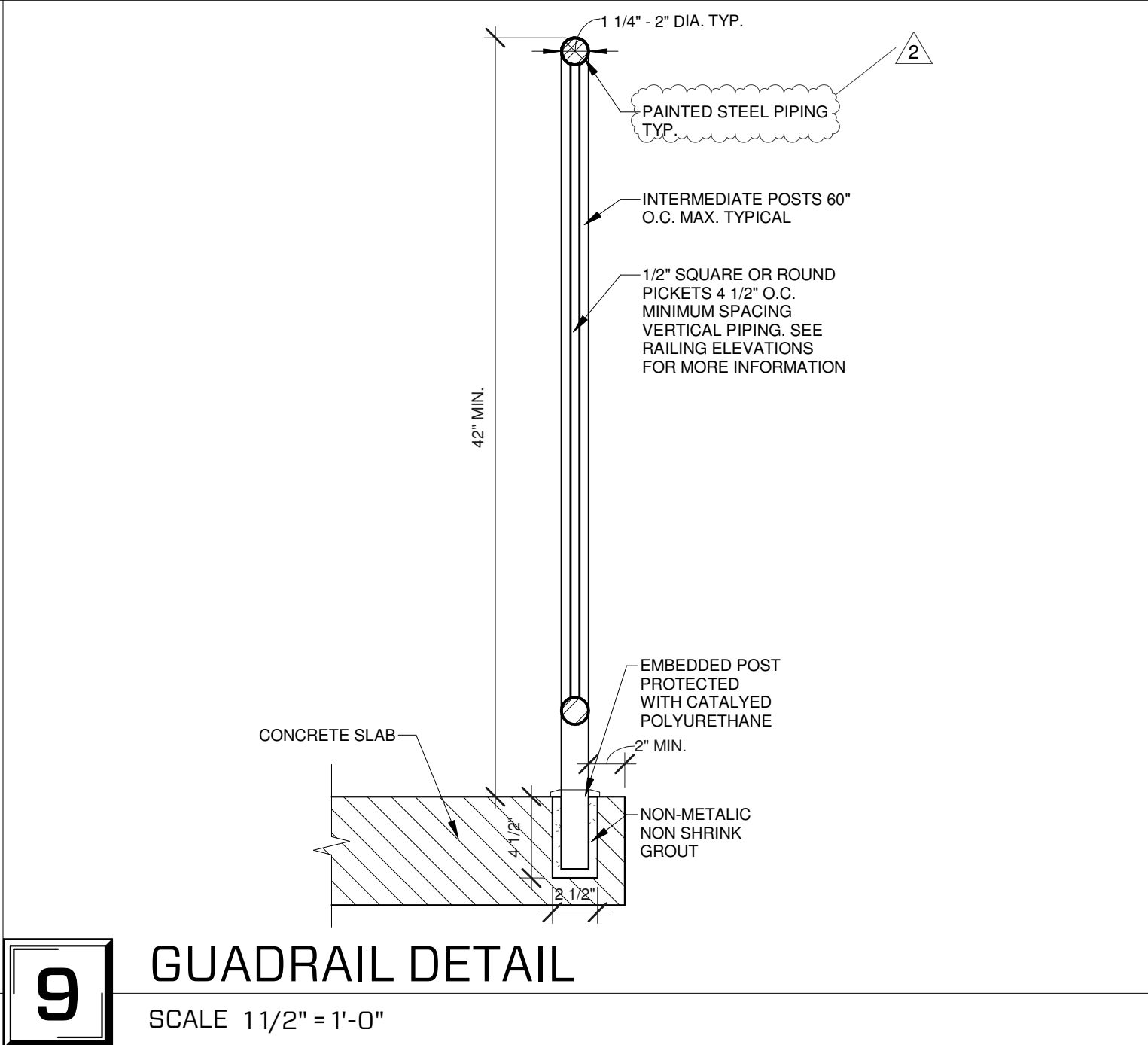
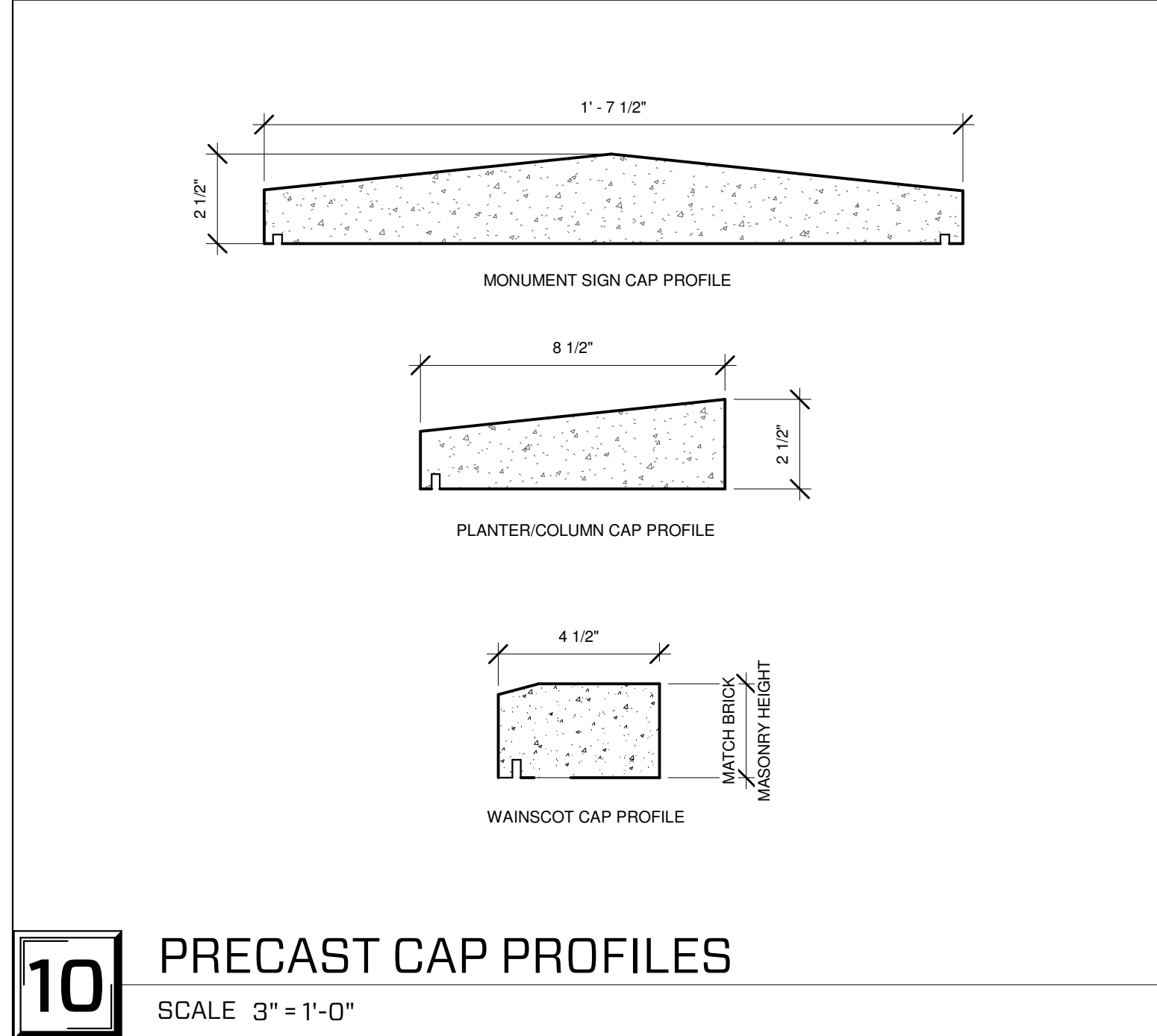
GENERAL:

1. See attached from Civil.
2. Substitution Request:
 - a. ACME Brick Golden Sunset Velour DTP105 126471 and Caramel Ironspot Velour DTP449 713256 was reviewed and approved. See attached for substitution request.

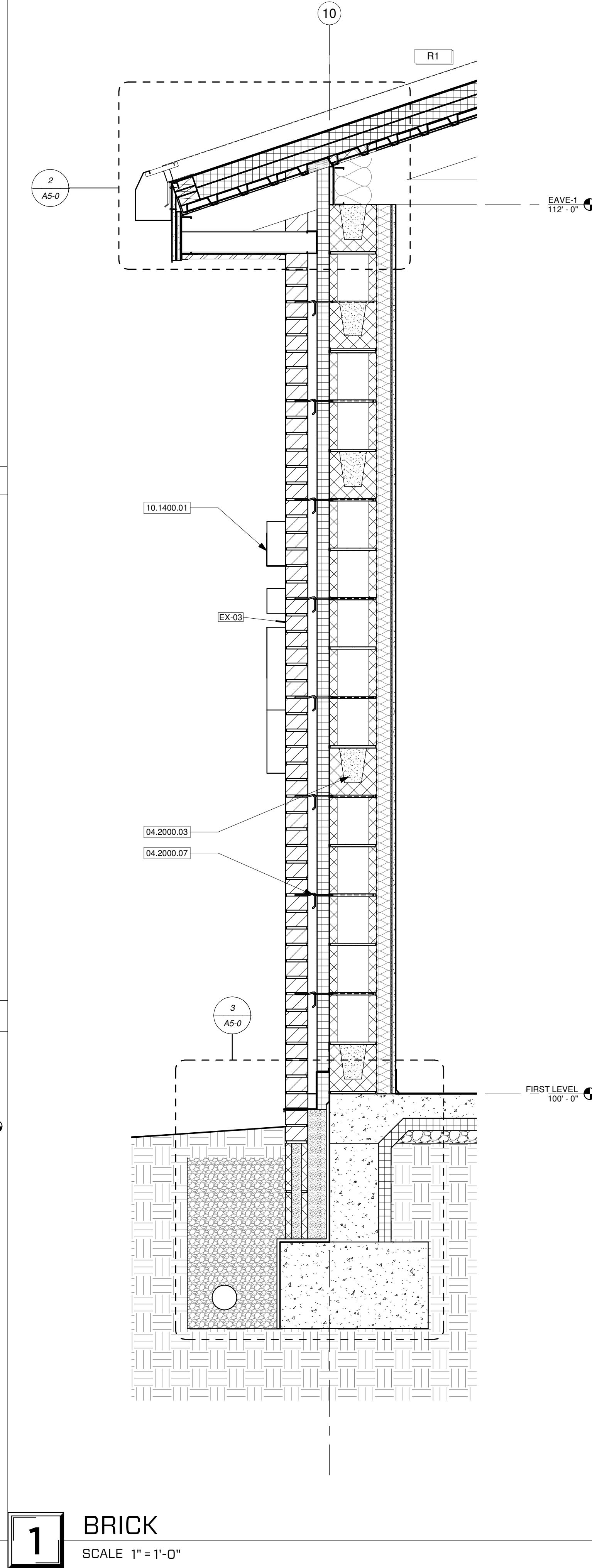
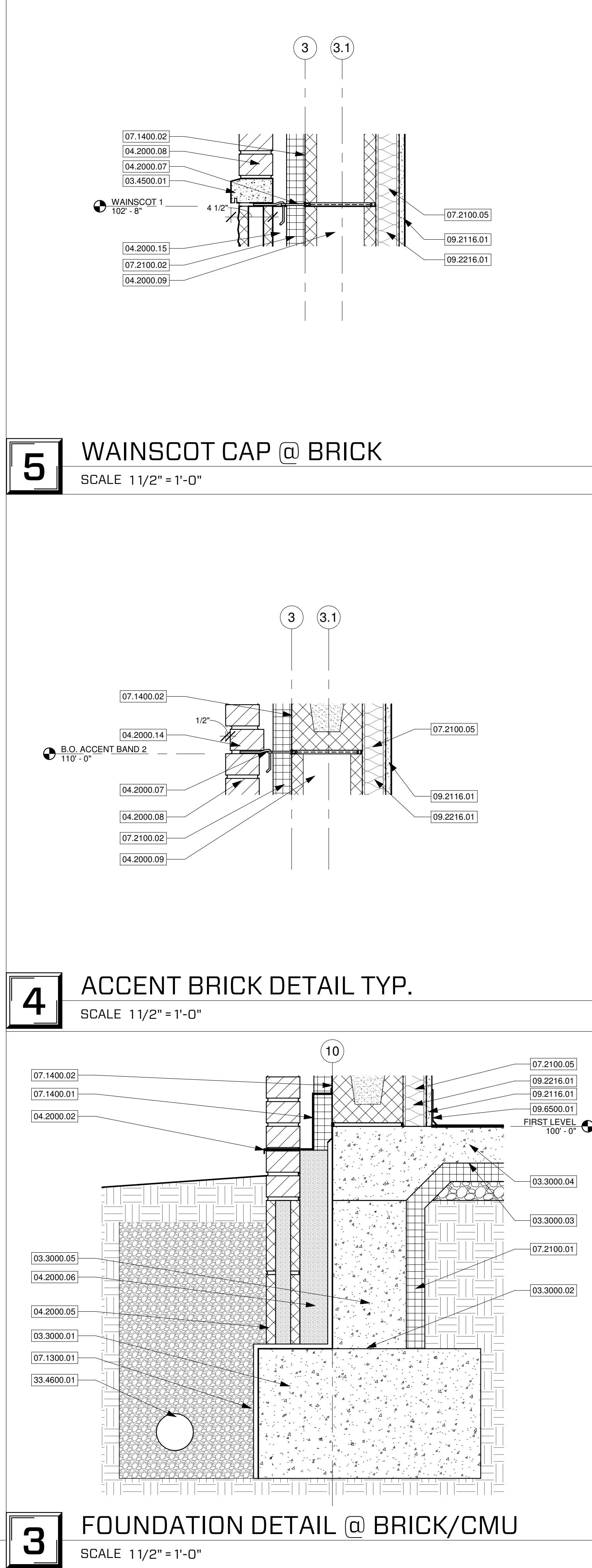
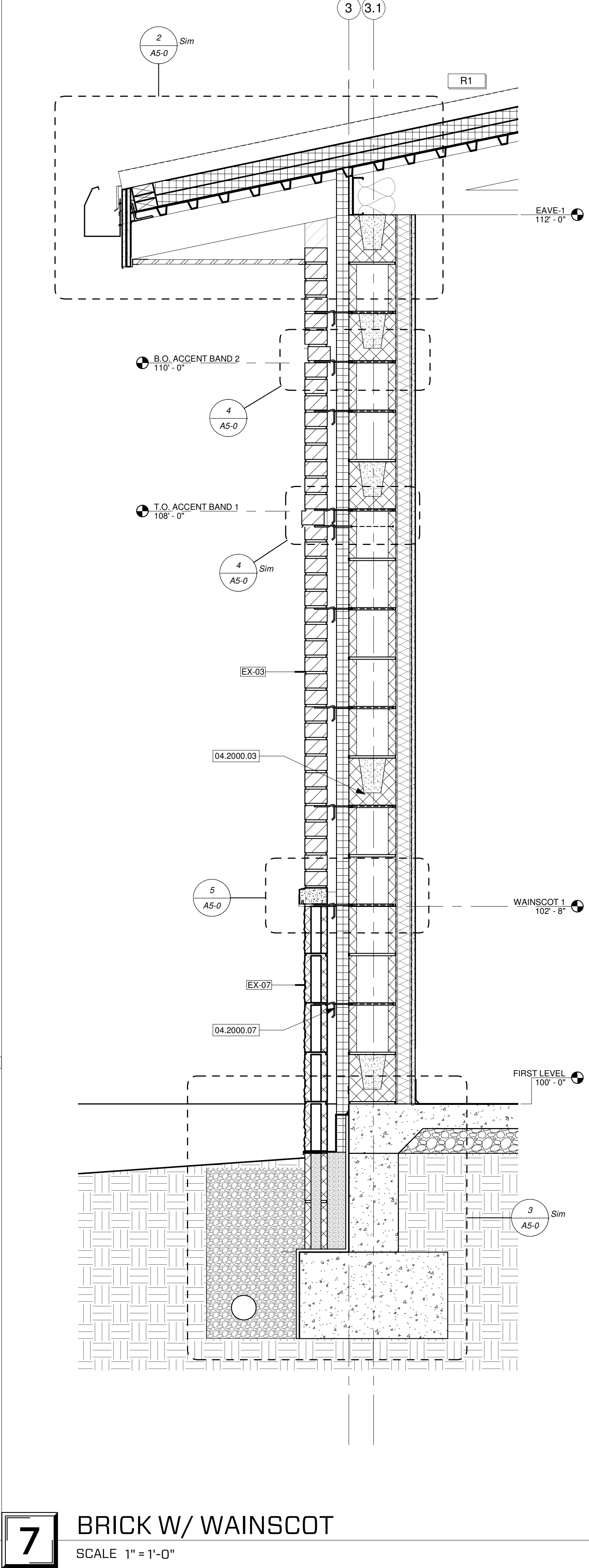
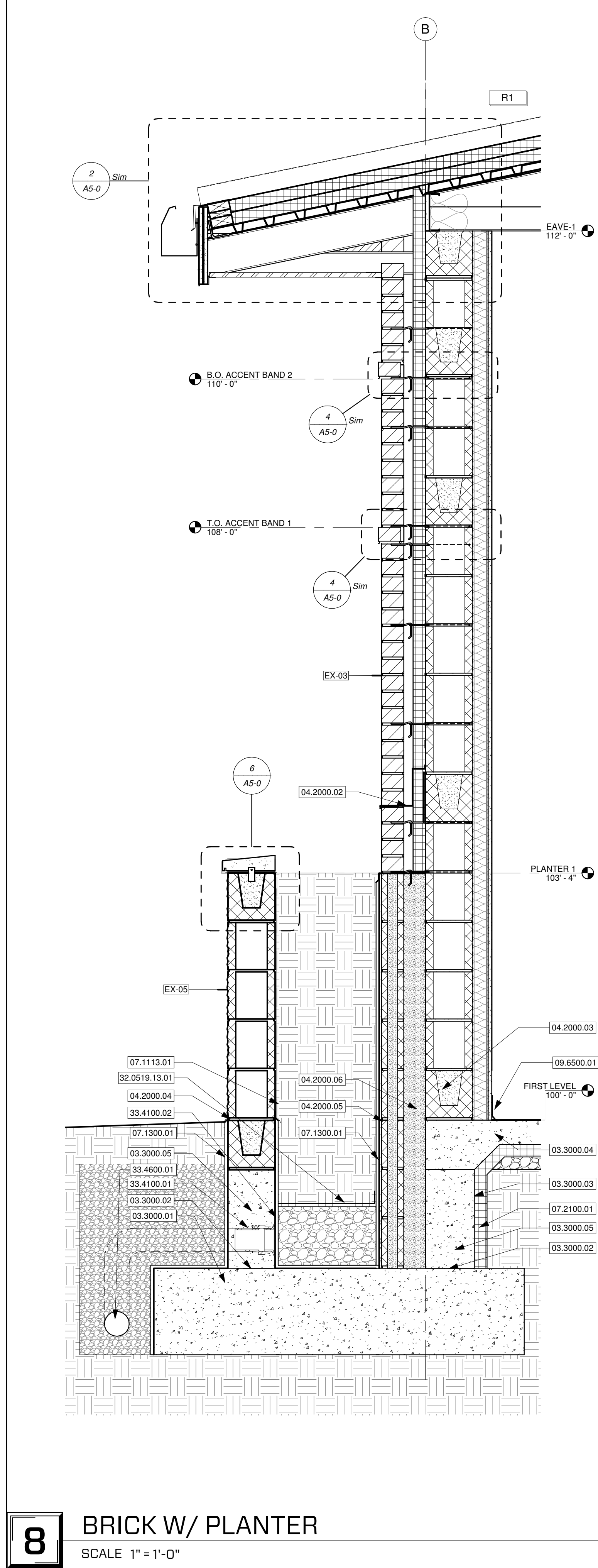
DRAWINGS:

1. Keynote 06.1010.05 was revised to read "1x6 FENCE PICKETS. ALTERNATE SIDE OF FENCE WITH MINIMUM 1/2" OVERLAP. ATTACH WITH 2 MOUNTING SCREWS AT EACH BRACING."
2. Keynote 12.3600.05 was revised to read "SOLID SURFACE WINDOW SILL (QZ1). SEE A9 SERIES SHEETS FOR MORE INFORMATION."
3. Drawing 9, Sheet A5-0
 - a. Clarified note regarding guardrail material and finish.
4. Added drawing 9, Sheet A7-4
 - a. Added drawing 9/A7-4 showing elevation of monument sign. Elevation shows location and note for LED display.
5. Drawing 10, Sheet A7-4
 - a. Added drawing 10/A7-4 showing elevation of dumpster enclosure gate.
6. Drawings 7 and 8, Sheet A7-4
 - a. Revised monument sign drawings to include LED display screen.

END OF ADDENDUM



KEYNOTE LEGEND	
03.3000.01	CAST IN PLACE CONCRETE FOOTING - SEE STRUCTURAL
03.3000.02	PROVIDE DAMPROOFING OR MEMBRANE CAPILLARY BREAK OVER FOOTING
03.3000.03	VAPOR BARRIER
03.3000.04	REINFORCED CONCRETE SLAB SEE STRUCTURAL
03.3000.05	CAST IN PLACE CONCRETE FOUNDATION WALL - SEE STRUCTURAL
03.4500.01	PRECAST ARCHITECTURAL WAINSCOT CAP WITH DRIP EDGE, WAINSCOT CAP TO BE SAME HEIGHT AS BRICK.
03.4500.02	PRECAST ARCHITECTURAL CAP WITH DRIP EDGE AND SLOPED TOP
04.2000.02	TOTAL FLASH BY MORTAR/NET LAP WEATHER BARRIER OVER TERMINATION BAR
04.2000.03	BOND BEAM - SEE STRUCTURAL
04.2000.04	METAL FLASHING, PROVIDE 1/4" HEMMED DRIP EDGE.
04.2000.05	4" STANDARD CMU BLOCK BELOW GRADE, GROUT SOLID
04.2000.06	GROUT FILL CAVITY BELOW GRADE, TYP.
04.2000.07	PROVIDE MASONRY LADDER ANCHORS 24" ON CENTER HORIZONTALLY AND 16" ON CENTER VERTICALLY TYP.
04.2000.08	BRICK TYPE 1 FULL RUNNING BOND, REFER TO A3 SERIES SHEETS FOR LOCATIONS, REFER TO A3 SERIES SHEETS FOR ADDITIONAL ASSEMBLY INFORMATION.
04.2000.09	8"X8"X16" CONCRETE MASONRY UNIT, SEE STRUCTURAL FOR REINFORCING AND BOND BEAM REQUIREMENTS
04.2000.14	BRICK TYPE 2 ACCENT BAND FULL RUNNING BOND, REFER TO A3 SERIES SHEETS FOR LOCATIONS, REFER TO A3 SERIES SHEETS FOR ADDITIONAL ASSEMBLY INFORMATION.
04.2000.15	1 1/2" MIN. AIR GAP
04.2000.16	STAINLESS STEEL CAP FLASHING
04.2000.17	MASONRY ANCHOR WITH DOWEL AT EACH JOINT
05.1200.02	STEEL DECK EDGE ANGLE - SEE STRUCTURAL
05.3100.01	STEEL DECKING, SEE STRUCTURAL
06.4400.01	TRUSS ANCHORAGE BY TRUSS SUPPLIER
06.1010.03	PRESSURE TREATED BLOCKING
06.8316.01	5/8" GLASS MAT SHEATHING
07.1113.01	FLUID APPLIED BITUMINOUS DAMP PROOFING
07.1300.01	SELF ADHERED SHEET WATERPROOFING AND MOLDED SHEET DRAINAGE PANELS
07.1400.01	LAP FLUID APPLIED FLASHING OVER THROUGH WALL FLASHING
07.1400.02	FLUID APPLIED AIR AND WATER BARRIER
07.2100.01	2" PERIMETER INSULATION, RUN 2' 0" UNDER CONCRETE SLAB
07.2100.02	2" RIGID INSULATION AS CONTINUOUS INSULATION
07.2100.03	2 LAYERS 2" RIGID INSULATION STAGGER INSULATION PANEL JOINTS PER MANUFACTURERS RECOMMENDATIONS
07.2100.04	CLOSED CELL SPRAY FOAM INSULATION
07.2100.05	BATT INSULATION
07.2500.01	ROOFING UNDERLAYMENT AT ROOF EDGE, RAKE, VALLEY, RIDGE AND ANY INTERSECTION BETWEEN THE ROOF AND WALLS.
07.4113.05	METAL PANEL, ROOF PANELS
07.4113.06	BOX PANEL CAP TRIM WITH TRI BEAD TAPE SEALER
07.4113.07	METAL INSIDE CLOSURE WITH TAPE SEALER
07.4113.08	GUTTER STRAP
07.4610.01	VENTED ALUMINUM SOFFIT PANEL
07.6200.04	PRE-FINISHED METAL FASCIA WITH DRIP EDGE AND 4" END LAPS AND CONTINUOUS SEALANT AT LAPS
07.6200.05	PRE-FINISHED 5"X5" METAL GUTTER WITH SLOPED STRAPS 24" O.C.
09.2116.01	5/8" GYPSUM WALLBOARD
09.2216.01	2 1/2" METAL STUD AT 24" O.C.
09.2216.03	6" METAL STUD AT 24" O.C.
09.2216.04	3 5/8" METAL STUD 2 STUDS AT EACH EXTERIOR LIGHT IN SOFFIT TYP.
09.6500.01	4" RESILIENT VINYL BASE, SEE FINISH SCHEDULE AND FINISH PLANS FOR MORE INFORMATION
10.1400.01	EXTERIOR WALL SIGNAGE, SIGNAGE TO BE PAINTED PANELS ON 1" STANDOFFS.
32.0519.13.01	FILTER FABRIC
33.4100.01	PLANTER DRAIN TO CONNECT TO FOUNDATION DRAIN
33.4100.02	GRANULAR FILL
33.4600.01	4" DIA. PERFORATED FOUNDATION SUBDRAINAGE, ENCASE IN GRANULAR FILL AND WRAP WITH GEOTEXTILE FABRIC



WALL SECTION GENERAL NOTES	
1.	SEE A1, A2 AND A3 SERIES SHEETS FOR MORE INFORMATION.

MISSOURI STATE CERTIFICATE OF AUTHORITY NUMBER A-251600415

STATE OF MISSOURI
JARED A. YOUNGLOVE
NUMBER
A-201701022
JARED A. YOUNGLOVE, ARCHITECT
MO # A-2017010222

COMPILED 2021 ©
*NOT VALID FOR PROJECTS OUTSIDE THE STATE OF MISSOURI
JARED A. YOUNGLOVE ARCHITECT, LLC
PH: 417.885.0002
www.paragonarchitecture.com

REVISIONS

2 AND 2 07/02/21

PROJECT DESCRIPTION:

MONETT LIBRARY BRANCH 19-556

PROJECT NUMBER:

2200 PARK STREET, MONETT,
MO, 65708

PROJECT ARCHITECT:

JAY

DRAWN BY:

JAY PLY

DATE:

07/02/21

PROJECT NUMBER:

19-556

PROJECT ARCHITECT:

JAY

DRAWN BY:

JAY PLY

DATE:

07/02/21



JARED A. YOUNGLOVE, ARCHITECT
MO # A-2017010282

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JARED A. YOUNGLOVE ARCHITECT, LLC
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PARAGON
ARCHITECTURE
637 COLLEGE STREET, SPRINGFIELD, MO 65806
PH: 417.885.0002
www.paragonarchitecture.com

REVISION SCHEDULE
2 AUG 2 070221

A7-4 MONETT LIBRARY BRANCH 19-556
ENLARGED PLANS AND INTERIOR ELEVATIONS
PROJECT NUMBER: 2200 PARK STREET, MONETT, MO, 65708
PROJECT ARCHITECT: JAY
DRAWN BY: JAY
CHECKED BY: JAY
DATE: 07/02/21

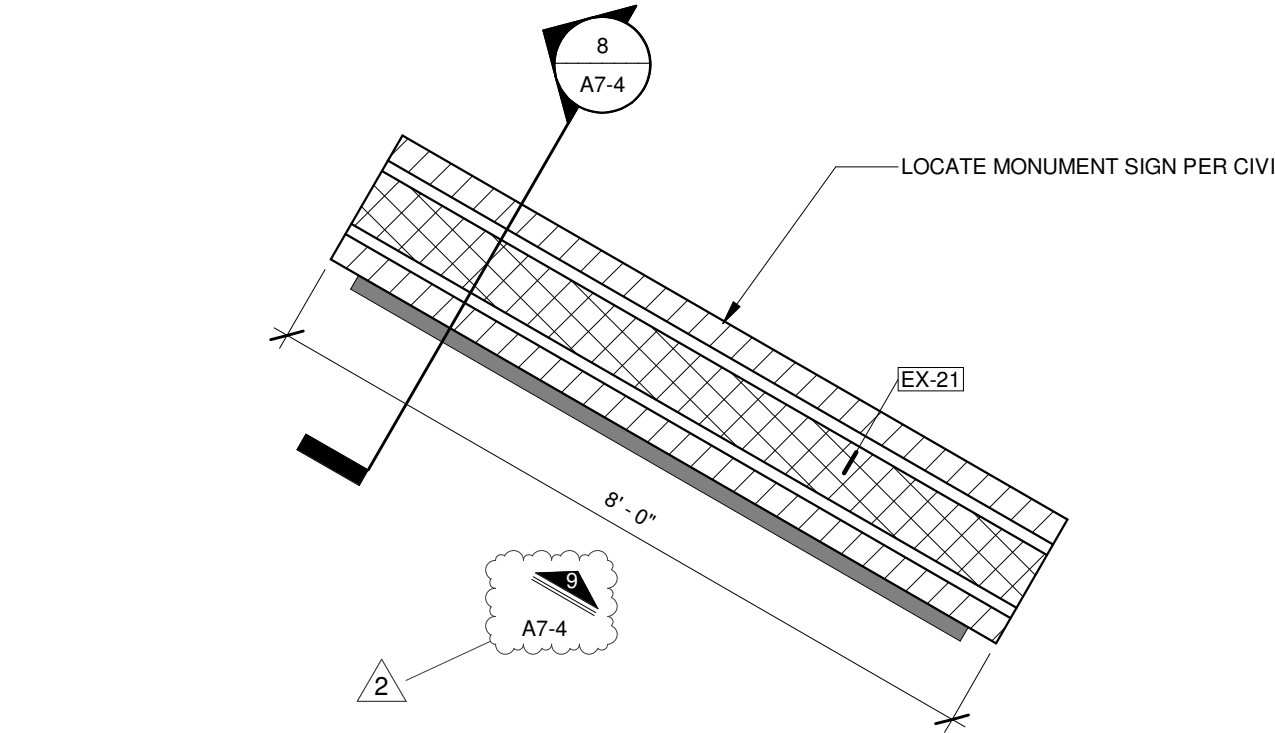
SHEET NUMBER: PROJECT DESCRIPTION:

KEYNOTE LEGEND

DIVISION	DESCRIPTION
03.3000.01	CAST IN PLACE CONCRETE FOOTING - SEE STRUCTURAL
03.3000.05	CAST IN PLACE CONCRETE FOUNDATION WALL - SEE STRUCTURAL
03.4500.02	PRECAST ARCHITECTURAL CAP WITH DRIP EDGE AND SLOPED TOP
04.2000.02	TOTAL FLASH BY MORTARNET, LAP WEATHER BARRIER OVER TERMINATION BAR
04.2000.04	METAL FLASHING, PROVIDE 1/4" HEMMED DRIP EDGE
04.2000.05	4" STANDARD CMU BLOCK BELOW GRADE, GROUT SOLID
04.2000.06	GROUT FILLED CAVITY BELOW GRADE, TYP.
04.2000.08	BRICK TYPE 1 FULL RUNNING BOND, REFER TO A3 SERIES SHEETS FOR LOCATIONS, REFER TO A5 SERIES SHEETS FOR ADDITIONAL ASSEMBLY INFORMATION.
04.2000.11	5/8"x16" SPLIT FACE CMU BLOCK, SEE STRUCTURAL
04.2000.17	MASONRY ANCHOR WITH DOWEL AT EACH JOINT
04.2000.18	TRIANGULAR MASONRY ANCHORS, EVERY 24" O.C.

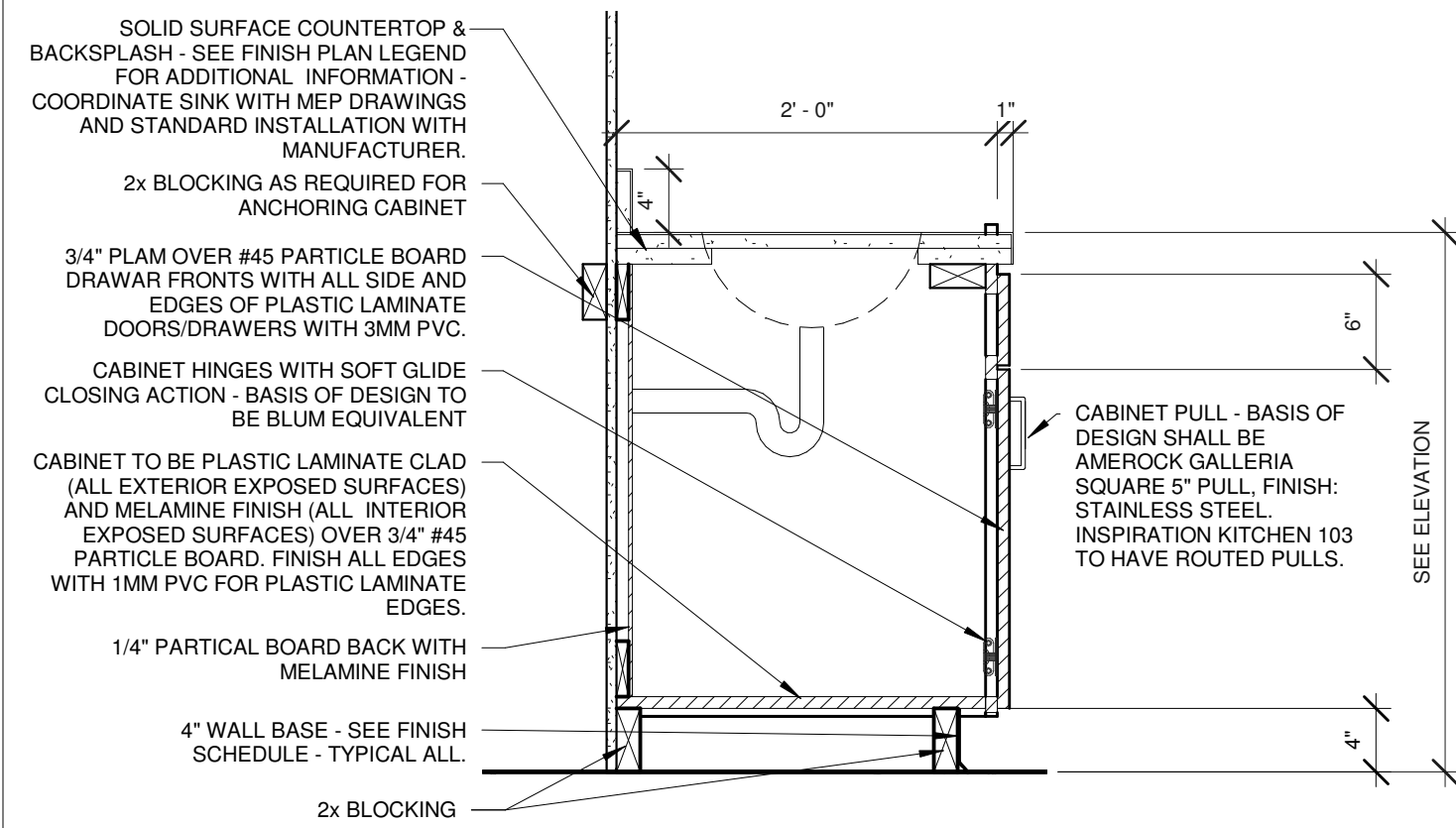
9 MONUMENT SIGN ELEVATION

SCALE 1/2" = 1'-0"



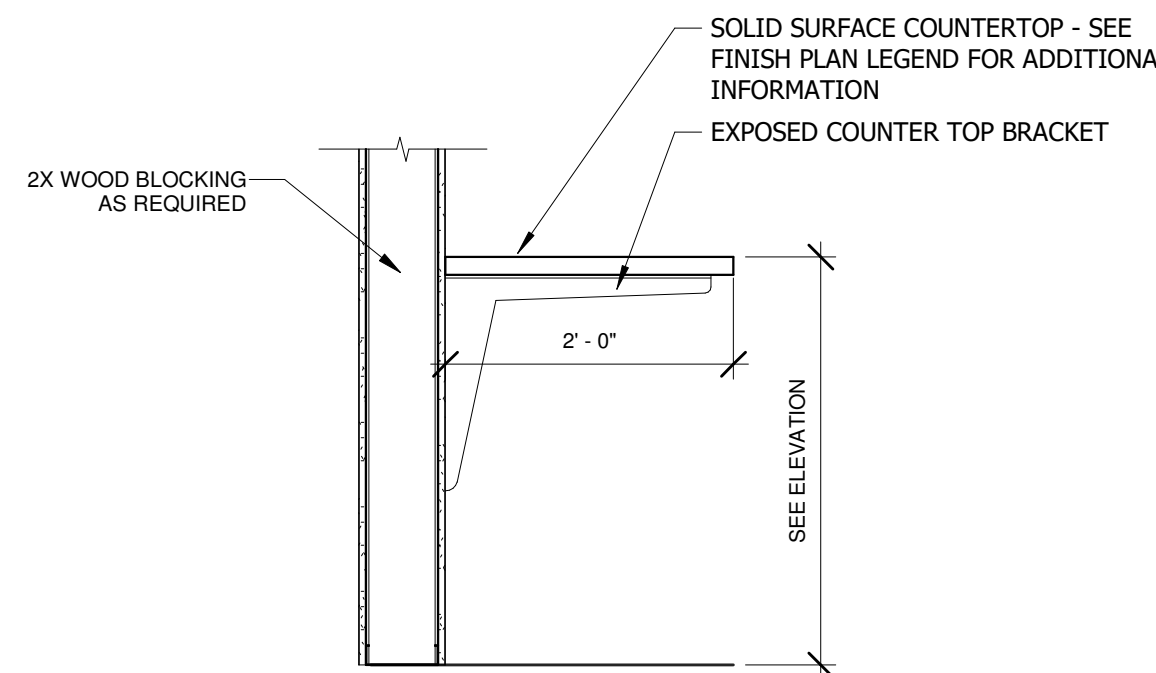
4 DOWNDRAFT STOVE CASEWORK

SCALE 1" = 1'-0"



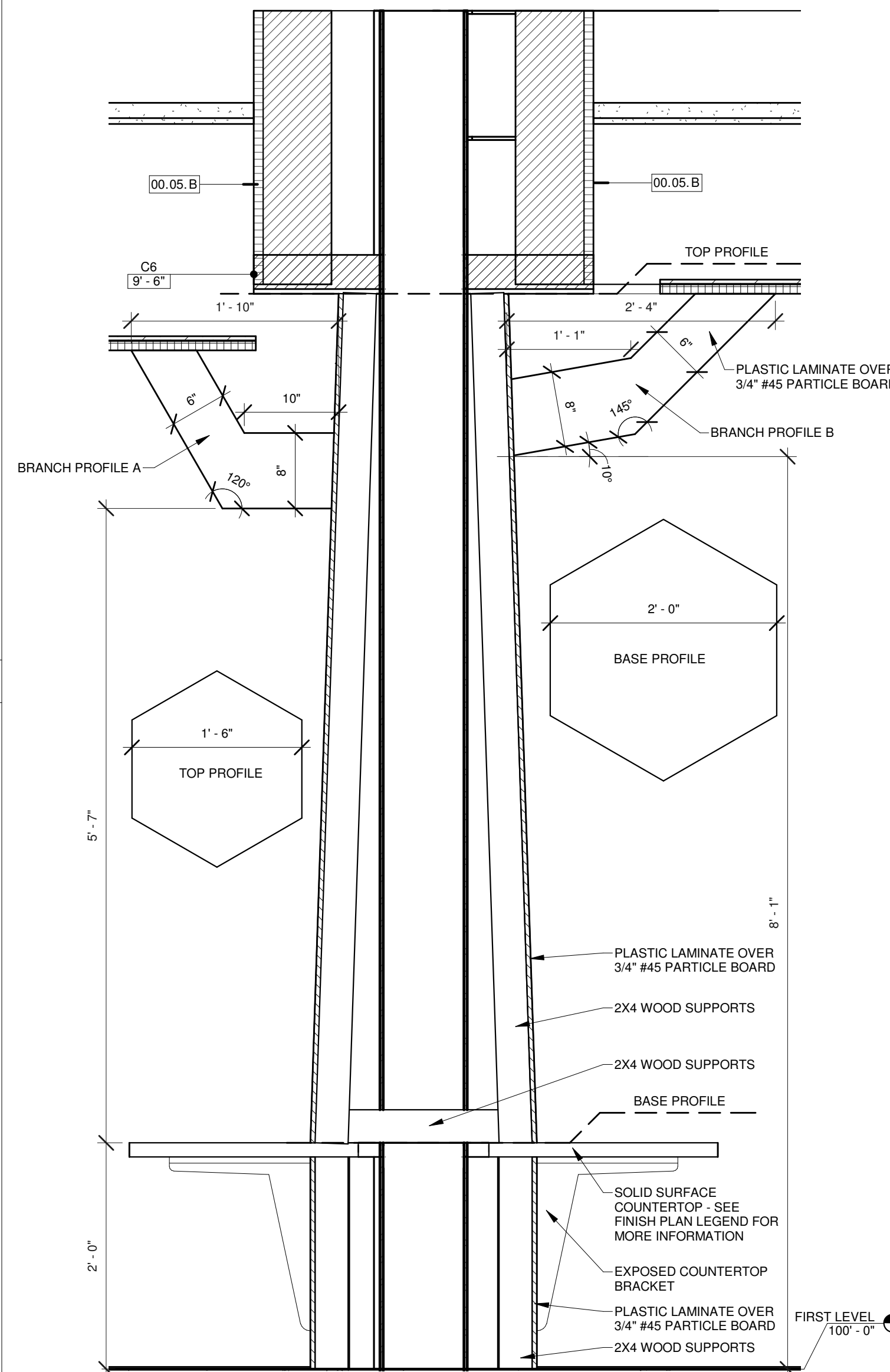
7 MONUMENT SIGN ENLARGED PLAN

SCALE 1/2" = 1'-0"



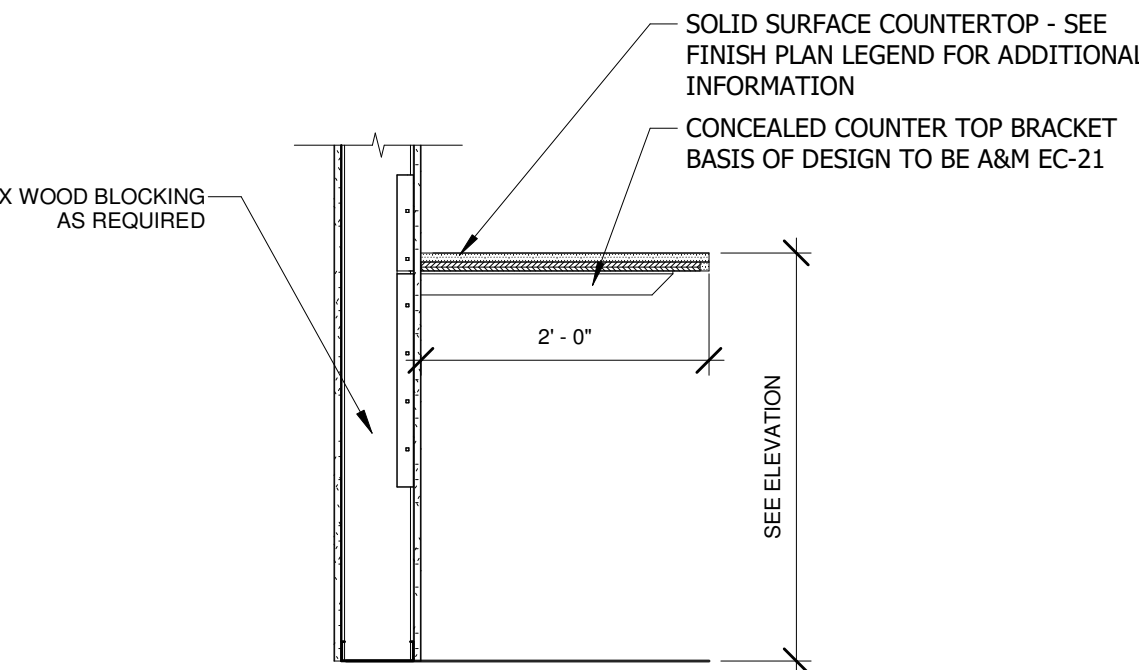
3 KITCHEN SINK CASEWORK

SCALE 1" = 1'-0"



6 EXPOSED MOUNTED COUNTERTOP

SCALE 3/4" = 1'-0"

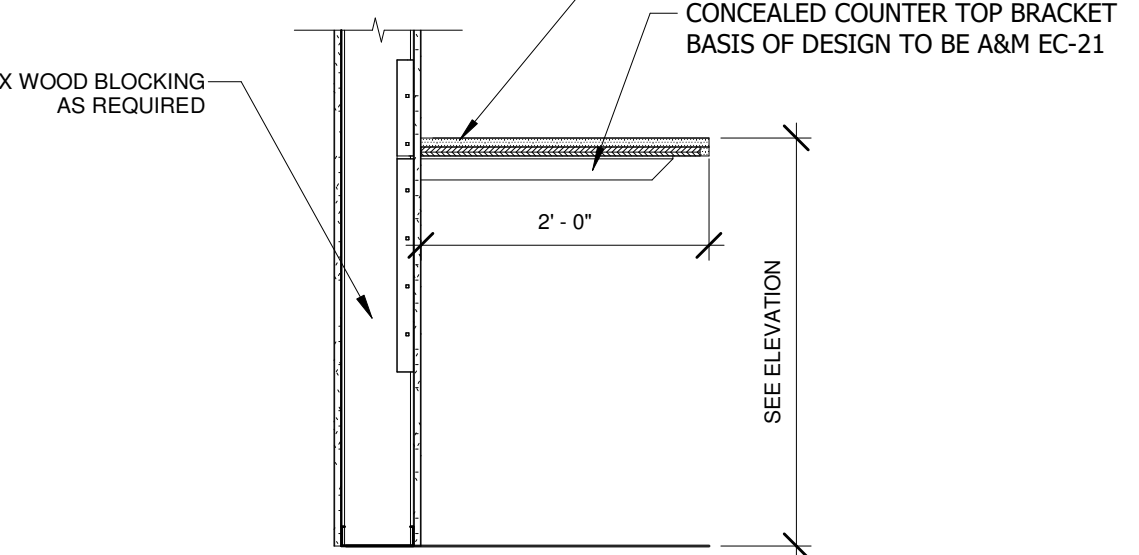


1 CHILDREN'S AREA TREE SECTION

SCALE 1" = 1'-0"

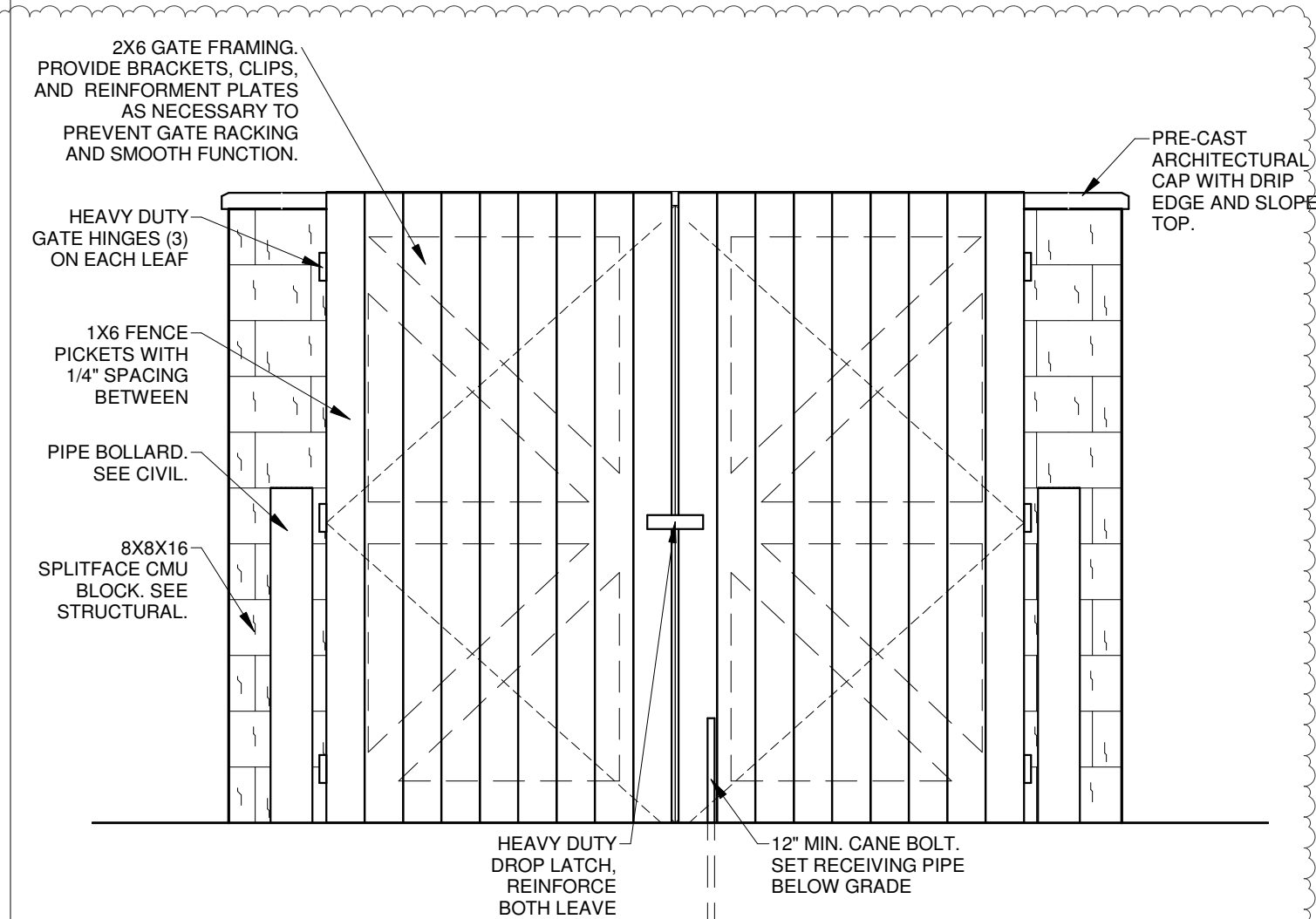
5 CONCEALED BRACKET COUNTERTOP

SCALE 3/4" = 1'-0"



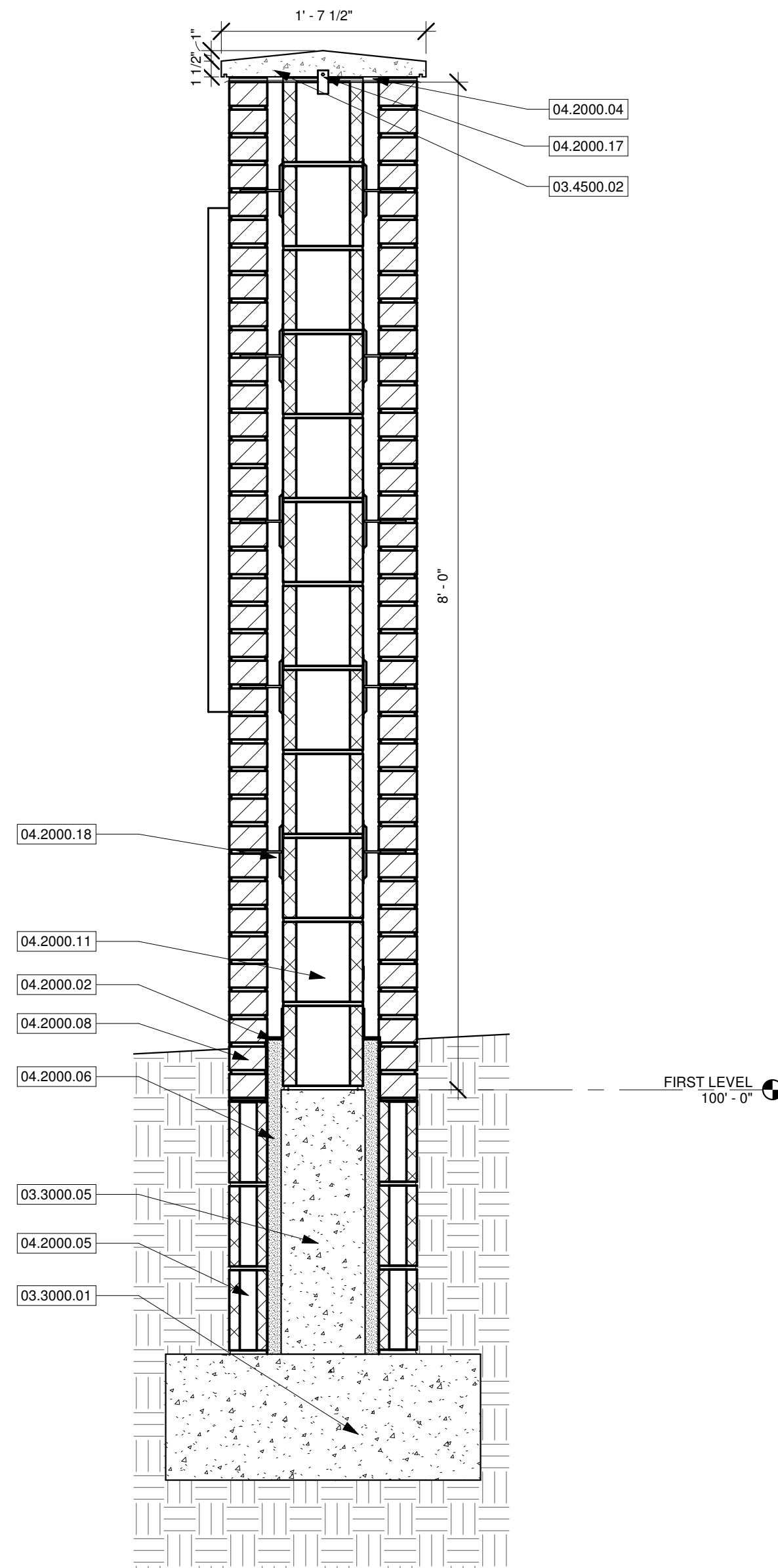
10 DUMSPTER ENCLOSURE GATE ELEVATION

SCALE 1/2" = 1'-0"



8 MONUMENT WALL SECTION

SCALE 1" = 1'-0"



ADDENDUM 02**DATE:** July 2, 2021**ISSUED BY:** Toth and Associates Inc.
Civil Engineer of Record**PROJECT:** Barry-Lawrence Regional Library

The attached revisions hereby supersede any and all information for which they may conflict as indicated on the Drawings, Specifications and related documents issued in the original contract set. The contractor and any affected sub-contractor is responsible for modifications to their work caused by changes in the work of other trades. This addendum is a part of and shall be attached to the original set of plans and specifications for the work.

DRAWING REVISIONS:

1. Sheet C001:
 - Revised to add language clarifying excavated soil use on the project. See attached sheet for details.
2. Sheet C701:
 - Revised "Handrail Detail" to reflect architectural specifications. Handrail material changed from aluminum to steel. See attached sheet for detail.

SPECIFICATION REVISIONS:

1. Section 312300:
 - Revised to address numbering issue in PART 3 – EXECUTION.
 - In section 3.20 "Owner" has been replaced with "Construction Manager at Risk".
 - See attached specification for details.

END OF ADDENDUM 02

ABBREVIATIONS

BC	BACK OF CURB
CC	STANDARD CATCH CURB
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
EP	EDGE OF PAVEMENT
EX EP	EDGE OF EXISTING PAVEMENT
EC	EDGE OF CONCRETE
EX EC	EDGE OF EXISTING CONCRETE
ES	EDGE OF SHOULDER
EX ES	EDGE OF EXISTING SHOULDER
FES	FLARED END SECTION
FL	FLOW LINE
GT	GUTTER INVERT
GY	GUY WIRE
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
LF	LINEAR FEET
MC	MOUNTABLE CURB
RW	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
SC	SPILL CURB
TB	TOP OF BASE ROCK
TC	TOP OF CURB
TG	TOP OF GROUND
TP	TOP OF PAVEMENT
TS	TOP OF SIDEWALK
TW	TOP OF WALL
SCL	SAW CUT LINE

CIVIL LEGENDS

SYMBOLS

■	MARKER STONE
▽	RIGHT OF WAY MARKER
●	IRON PIN FOUND
●	IRON PIN SET
✕	CUT CROSS
△	CONTROL POINT
⊕	BENCHMARK
⊕	SANITARY SEWER MANHOLE
⊕	STORM SEWER INLET
⊕	TELEPHONE MANHOLE
⊕	POWER POLE
⊕	GUY ANCHOR
⊕	LIGHT POLE
⊕	TELEPHONE RISER
⊕	GAS VALVE
⊕	GAS METER
⊕	WATER VALVE
⊕	WATER METER
⊕	FIRE HYDRANT
⊕	IRRIGATION VALVE
⊕	WELL
⊕	MAIL BOX
⊕	POST
⊕	CLEANOUT
⊕	SIGN
⊕	AIR CONDITIONING UNIT
⊕	SHRUB
⊕	DECIDUOUS TREE
⊕	CONIFEROUS TREE

LINETYPES

— PL —	PROPERTY LINE
— RW —	RIGHT OF WAY LINE
— S —	SANITARY SEWER LINE
— FM —	SANITARY SEWER FORCE MAIN
— ST —	STORM SEWER LINE
— IRR —	IRRIGATION WATER LINE
— FL —	FLOW LINE
— OHE —	OVERHEAD ELECTRIC LINE
— UE —	UNDERGROUND ELECTRIC LINE
— G —	GAS LINE
— W —	WATER LINE
— C —	COMMUNICATIONS LINE
— T —	TELEPHONE LINE
— UGT —	TELEPHONE LINE
— FO —	FIBER OPTIC LINE
— CTV —	CABLE TELEVISION
— O —	CHAIN LINK FENCE
— X —	BARBED WIRE FENCE
— □ —	WOOD FENCE
— 1000 —	EXISTING MAJOR CONTOUR
— 1001 —	EXISTING MINOR CONTOUR
— 1000 —	PROPOSED MAJOR CONTOUR
— 1001 —	PROPOSED MINOR CONTOUR
— --- —	SILT FENCE / SILT SOCK
— --- —	TREE LINE

PROJECT CONTROL

BENCHMARKS

THE NAVD88 VERTICAL DATUM WAS USED ON THIS PROJECT.

CP-1: OPUS CONTROL POINT MARKED WITH #6 REBAR, LOCATED IN GRASS NORTH OF PROJECT SITE, 492 FEET NORTH OF CURB ON PARK STREET, 17.30 FEET EAST OF EAST CURB ON OLD AIRPORT ROAD, 25 FEET SOUTH AND 4 FEET EAST OF FIRE HYDRANT, IN SE 1 OF SE 1 OF S29, T26N, R27W, LAWRENCE COUNTY, MISSOURI.

ELEVATION: 1369.64

CONTROL POINT TABLE			
POINT NUMBER	NORTHING	EASTING	ELEVATION
1	278867.5689	2963345.3140	1369.64
2	278773.5862	2963322.4630	1368.10

GENERAL CIVIL NOTES

- THE GENERAL NOTES ON THE DRAWINGS ARE INTENDED TO SUPPLEMENT THE GENERAL CONDITIONS AND TECHNICAL SPECIFICATIONS. WHEN THE NOTES ON THE DRAWINGS CONFLICT WITH THE TECHNICAL REQUIREMENTS OUTLINED IN THE SPECIFICATIONS, THE MORE STRINGENT CRITERIA WILL GOVERN.
- CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THESE DRAWINGS, THE PROJECT TECHNICAL SPECIFICATIONS, AND THE APPLICABLE STANDARDS AND SPECIFICATIONS OF THE LOCAL AUTHORITY, UNLESS OTHERWISE NOTED.
- ALL TRAFFIC CONTROL SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) DURING CONSTRUCTION. ACCESS SHALL BE MAINTAINED FOR EMERGENCY VEHICLES AND LOCAL TRAFFIC. THE FIRE, POLICE AND AMBULANCE DEPARTMENTS, SCHOOL BUS COMPANIES, AND POST OFFICE ARE TO BE NOTIFIED 48 HOURS PRIOR TO ANY ROAD CLOSURES.
- THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL MISSOURI ONE CALL AT 1-800-344-7483 AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES. DURING CONSTRUCTION CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES WHERE CONFLICTS MIGHT OCCUR WITH PROPOSED UTILITIES OR GRADING ACTIVITIES. IF A CONFLICT BECOMES APPARENT THE CONTRACTOR SHALL CONTACT ENGINEER FOR DIRECTION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY ALL THOSE UTILITY COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION BEING PERFORMED.
- EXISTING UNDERGROUND UTILITIES IN THE VICINITY OF THE WORK TO BE DONE ARE INDICATED ON THE DRAWINGS ONLY TO THE EXTENT SUCH INFORMATION HAS BEEN MADE AVAILABLE OR DISCOVERED BY THE ENGINEER IN PREPARATION OF THE DRAWINGS. THERE IS NO GUARANTEE AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES, INCLUDING SERVICE CONNECTIONS, IN ADVANCE OF CONSTRUCTION ACTIVITIES. THE OWNERS, THEREOF, AND BY PROSPECTING, THE CONTRACTOR SHALL IMMEDIATELY INFORM THE OWNER AND ENGINEER IN WRITING OF ANY DISCREPANCIES WITH THE PLAN INFORMATION. ALL DAMAGE TO EXISTING UTILITIES, INCLUDING SERVICE CONNECTIONS, SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL NOT CHANGE OR DEViate FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE OWNER AND ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS REQUIRED BY THIS CONSTRUCTION.
- ALL WORK WITHIN ROAD RIGHT OF WAY SHALL CONFORM TO EITHER THE LOCAL JURISDICTION OR THE MISSOURI DEPARTMENT OF TRANSPORTATION REQUIREMENTS; WHICH EVER IS APPLICABLE.
- ALL TRENCHES CROSSING THROUGH PAVED AREAS OR AREAS TO BE PAVED SHALL BE BACKFILLED FULL DEPTH WITH COMPACTED CRUSHED STONE MATERIAL AS PER PROJECT DETAILS AND SPECIFICATIONS.
- ALL WORK AND MATERIALS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
- ANY ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR AND SUBCONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL QUANTITIES. CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS SHOWN ON PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PUBLIC STREETS IN THE VICINITY OF THE JOB CLEAN AND FREE OF ROCKS, SOIL, AND DEBRIS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF THE RIGHT OF WAY AND FOR DAMAGED IMPROVEMENTS SUCH AS CURBS, SIDEWALKS, STREET LIGHT AND TRAFFIC SIGNAL JUNCTION BOXES, TRAFFIC SIGNAL LOOP WIRING, SIGNAL POLES AND ETC. DAMAGED IMPROVEMENTS SHALL BE REPAIRED IN CONFORMANCE WITH THE LATEST CITY AND MODOOT REGULATIONS AND TO THEIR SATISFACTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION AS OUTLINED IN THE EROSION CONTROL PLAN AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). IF APPLICABLE, EROSION CONTROL PROCEDURES SHALL BE IN PLACE PRIOR TO GRADING ACTIVITIES.
- THE CONTRACTOR SHALL CLEAN OUT ALL INLETS, PIPES AND MANHOLES OF DEBRIS AND SEDIMENTATION AT THE COMPLETION OF SITE WORK. THIS WORK SHALL BE DONE TO THE SATISFACTION OF THE OWNER AND LOCAL JURISDICTION.
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL PROPERTY CORNERS. ANY PROPERTY CORNERS DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF MISSOURI, AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, AND ONE (1) COPY OF THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE SITE AT ALL TIMES.
- THE CONTRACTOR IS OBLIGATED TO INSPECT FOR EXISTING CONDITIONS AND/OR INSTALLATIONS AND AVAILABLE INFORMATION PRIOR TO SUBMITTING A BID. ANY DELAY, ADDITIONAL WORK, FEES OR EXTRA COST TO THE CONTRACTOR CAUSED BY OR RESULTING FROM DAMAGE TO OR MODIFICATION OF EXISTING INSTALLATIONS BY THE CONTRACTOR OR AFFECTED UTILITY COMPANY SHALL NOT CONSTITUTE A CLAIM FOR EXTRA WORK, ADDITIONAL PAYMENT OR DAMAGES.

DEMOLITION NOTES

JOB CONDITIONS

- THE OWNER ASSUMES NO RESPONSIBILITY FOR THE ACTUAL CONDITION OF ANY STRUCTURES TO BE DEMOLISHED.
- ITEMS OF SALVAGEABLE VALUE TO THE CONTRACTOR MAY BE REMOVED FROM THE PROJECT SITE AT THE APPROVAL OF THE OWNER. TRANSPORT THE SALVAGED ITEMS FROM THE SITE AS THEY ARE REMOVED.
- THE USE OF EXPLOSIVES WILL NOT BE PERMITTED ON THIS PROJECT.
- THE SUBCONTRACTOR SHALL CONDUCT THE DEMOLITION OPERATIONS AND REMOVAL OF DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.
- THE SUBCONTRACTOR SHALL INSURE SAFE PASSAGE OF PERSONS AROUND THE DEMOLITION AREA. CONDUCT OPERATIONS TO PREVENT DAMAGE TO ADJACENT BUILDING STRUCTURES AND OTHER FACILITIES THAT ARE TO REMAIN, AND INJURY TO PERSONS.
- PROVIDE INTERNAL AND EXTERNAL SHORING, BRACING OR SUPPORT TO PREVENT MOVEMENT, SETTLEMENT OR COLLAPSE OF ANY STRUCTURES TO BE DEMOLISHED AND ANY ADJACENT FACILITIES TO REMAIN.
- MAINTAIN EXISTING UTILITIES INDICATED TO STAY IN SERVICE AND PROTECT AGAINST DAMAGE DURING DEMOLITION OPERATIONS. DISCONNECT ALL UTILITIES SERVING ANY STRUCTURES TO BE DEMOLISHED, PRIOR TO START OF DEMOLITION WORK.

DEMOLITION

- POLLUTION CONTROLS: USE WATER SPRINKLING, TEMPORARY ENCLOSURES AND OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING IN AIR. COMPLY WITH GOVERNMENT REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITIONS AS THEY EXIST PRIOR TO START OF WORK.
- BUILDING DEMOLITION: DEMOLISH BUILDINGS COMPLETELY AND REMOVE FROM SITE. USE SUCH METHODS AS REQUIRED TO COMPLETE WORK WITHIN LIMITATIONS OF GOVERNMENT REGULATIONS.
- DEMOLISH CONCRETE AND MASONRY IN SMALL SECTIONS.
- REMOVE STRUCTURAL FRAMING MEMBERS AND LOWER TO GROUND BY HOIST, DERICK OR OTHER SUITABLE METHODS.
- BREAK UP AND REMOVE CONCRETE SLABS ON GRADE, UNLESS OTHERWISE SHOWN TO REMAIN.
- BELOW-GRADE CONSTRUCTION: DEMOLISH FOUNDATION WALLS AND OTHER BELOW GRADE CONSTRUCTION, INCLUDING CONCRETE SLABS, TO A DEPTH OF NOT LESS THAN 12" BELOW THE LOWEST FOUNDATION LEVEL.
- FILLING VOIDS: COMPLETELY FILL BELOW-GRADE AREAS AND VOIDS RESULTING FROM DEMOLITION AS OUTLINED BELOW.
- USE SATISFACTORY SOIL MATERIALS AS DEFINED IN A.S.T.M. D-2487, CONSISTING OF STONE, GRAVEL AND SAND, FREE FROM DEBRIS, TRASH, FROZEN MATERIALS, ROOTS, AND OTHER ORGANIC MATTER.
- PRIOR TO PLACEMENT OF FILL MATERIAL, ENSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROST OR FROZEN MATERIAL, TRASH, AND DEBRIS.
- PLACE FILL MATERIAL IN HORIZONTAL LAYERS AT DEPTHS AND MOISTURE CONTENTS AS RECOMMENDED IN THE FILL COMPACTION REQUIREMENTS ON PAGE 7 OF THE GEOTECHNICAL ENGINEERING REPORT.
- AFTER FILL PLACEMENT AND COMPACTION, GRADE THE SURFACE TO MEET ADJACENT CONTOURS AND TO PROVIDE FLOW TO SURFACE STRUCTURES.

DISPOSAL OF DEMOLISHED MATERIALS

- REMOVE FROM SITE ACCUMULATED VEGETATION, DEBRIS, RUBBISH, AND OTHER MATERIAL RESULTING FROM THE DEMOLITION OPERATION.
- BURNING OF COMBUSTIBLE MATERIALS FROM DEMOLISHED STRUCTURES AND VEGETATION WILL NOT BE PERMITTED ON SITE.
- REMOVAL: TRANSPORT MATERIALS REMOVED FROM DEMOLISHED STRUCTURES, VEGETATION, PAVEMENT, AND BASE ROCK AND LEGALLY DISPOSE OFF SITE.

PROTECTION OF EXISTING STRUCTURES AND VEGETATION

- SUBCONTRACTOR SHALL INSTALL 6" STEEL FENCE POSTS, DRIVEN 18" INTO THE GROUND, AT 10' ON CENTER AT HORIZONTAL LINES AND INSTALL 4" TENAX ORANGE WARNING BARRIER OR EQUAL, ATTACHED AS RECOMMENDED BY THE MANUFACTURER, TO PROTECT EXISTING TREES DURING CONSTRUCTION. CONTRACTOR SHALL REMOVE POSTS AND FENCE FABRIC AFTER ALL CONSTRUCTION IS COMPLETE.

SEDIMENT & EROSION CONTROL NOTES

- THE EROSION CONTROL PLAN SHOWS THE LOCATION AND DETAILS FOR PRIMARY EROSION CONTROLS TO BE CONSTRUCTED. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING EROSION AND DISCHARGE OF SEDIMENT FROM THE SITE AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE NECESSARY MEASURES DURING ALL PHASES OF HIS OPERATIONS REGARDLESS OF WHETHER THEY ARE SPECIFICALLY NOTED ON THE EROSION CONTROL PLAN AND SHALL MAINTAIN AND REPLACE CONTROLS AS NECESSARY DURING THE COURSE OF HIS OPERATIONS.
- INITIAL SEDIMENT CONTROLS SHOWN ON THE EROSION CONTROL PLAN MUST BE INSTALLED PRIOR TO ANY OTHER WORK.
- THE CONTRACTOR SHALL SHALL CLEAN ALL STREETS BOTH INTERIOR AND ADJACENT TO THE SITE, AS NEEDED AFTER EACH RAINFALL AND AT THE END OF CONSTRUCTION.
- THE CONTRACTOR SHALL IS RESPONSIBLE FOR CONTROLLING DUST DURING CONSTRUCTION AND SHALL WATER CONSTRUCTION AREAS WHENEVER CONDITIONS WARRANT.
- THE CONTRACTOR SHALL IS RESPONSIBLE FOR CLEANING SILT FROM STORM DRAINS, INLETS, CULVERTS, ETC. PRIOR TO APPROVAL OF CONSTRUCTION.
- ALL DISTURBED AREAS NOT RECEIVING OTHER PERMANENT STABILIZATION SUCH AS PAVEMENT, ROADS, SOD, AND ETC., SHALL BE SEEDED AND MULCHED, AS PER THE PROJECT SPECIFICATIONS BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED AND PRIOR TO FINAL APPROVAL OF CONSTRUCTION.
- IF APPLICABLE THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS AS PUT FORTH IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). THE SWPPP SHALL BE CONSIDERED AS A STARTING POINT FOR SEDIMENT AND EROSION CONTROLS AND THE CONTRACTOR WILL BE RESPONSIBLE FOR REVISING AND UPDATING EROSION CONTROLS AS SITE CONDITIONS CHANGE DURING THE COURSE OF CONSTRUCTION.

UTILITY CONSTRUCTION NOTES

- THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL MISSOURI ONE CALL AT 1-800-344-7483 AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING UTILITY CONSTRUCTION ACTIVITIES. DURING CONSTRUCTION SUBCONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES WHERE CONFLICTS MIGHT OCCUR WITH PROPOSED UTILITIES. IF A CONFLICT BECOMES APPARENT THE CONTRACTOR SHALL CONTACT ENGINEER FOR DIRECTION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL SHALL NOTIFY ALL THOSE UTILITY COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION BEING PERFORMED.
- ALL TRENCHES CROSSING PAVED AREAS OR AREAS TO BE PAVED SHALL BE BACKFILLED FULL DEPTH WITH COMPACTED BEDDING MATERIAL IN CONFORMANCE WITH PROJECT DETAILS AND SPECIFICATIONS.
- ALL UTILITY CONSTRUCTION AND MATERIALS SHALL BE IN CONFORMANCE WITH CITY AND LOCAL FIRE DEPARTMENT REQUIREMENTS AND STANDARD PLANS AND SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS NOT OBTAINED BY THE OWNER.
- INSTALL TRACER WIRE WITH ALL SANITARY SEWER AND POTABLE WATER UTILITIES AS REQUIRED. CONNECT TRACER WIRE TO EXISTING TRACER WIRE AND STUB UP END OF THE TRACER WIRE AT THE ENDS OF RUNS IN ACCORDANCE WITH UTILITY OWNERS SPECIFICATIONS.
- ALL HDPE PIPE, JOINTS AND FITTINGS SHALL BE ADS N-12 OR EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
- ROOF DRAINS SHALL BE SCHEDULED 40 PVC OR ADS N-12 ST HDPE OR EQUAL AND HAVE A MINIMUM SLOPE OF 1% (UNLESS OTHERWISE SPECIFIED).
- COORDINATE THE INSTALLATION OF THE STORM SEWER WITH THE INSTALLATION OF THE POTABLE WATER, COMMUNICATION, ELECTRIC, AND SANITARY SEWER TO AVOID CONFLICTS.
- EARTHWORK SHALL BE PLACED TO FINISH GRADE IN THE IMMEDIATE AREA OF UTILITIES PRIOR TO CONSTRUCTION OF UTILITIES TO INSURE PROPER DEPTH OF COVER FOR UTILITIES.
- ALL MATERIALS TO BE SUPPLIED AND LABOR TO BE DONE BY CONTRACTOR SHALL BE COMPLETED AS A PART OF THIS WORK, UNLESS STATED OTHERWISE.
- ALL UTILITY SERVICE LINES SHALL BE KEPT IN SERVICE AND PROTECTED DURING CONSTRUCTION OPERATIONS. THE DRAWINGS INDICATE THE LOCATION OF KNOWN EXISTING UTILITY SERVICE LINES AS COULD BE DETERMINED.
- ANY RELOCATION OF UTILITY SERVICE LINES THAT ARE REQUIRED TO COMPLETE THE PROJECT IS TO BE COMPLETED AS DESCRIBED IN THE CONSTRUCTION DOCUMENTS. WORK DUE TO UNFORESEEN UTILITY RELOCATIONS WILL BE PERFORMED UNDER AN ADDENDUM TO THE ORIGINAL CONTRACT.
- ALL WATER, SEWER, FIBER OPTIC CABLE, GAS SERVICE AND OTHER UTILITY REQUIREMENTS SHALL BE COORDINATED WITH THE APPROPRIATE LOCAL UTILITY PROVIDERS PRIOR TO INSTALLATION. ALL COSTS ASSOCIATED WITH THE WATER, SEWER, FIBER OPTIC CABLE, GAS SERVICE ENTRANCE AND OTHER UTILITY REQUIREMENTS SHALL BE BORNE BY THE CONTRACTOR, INCLUDING THOSE COSTS, IF ANY, FROM THE LOCAL UTILITY PROVIDERS AND INCLUDE ALL COSTS ASSOCIATED WITH WORK PERFORMED BY THE LOCAL UTILITY PROVIDERS AND CONNECTION FEES INTO THEIR BID.

SITE GRADING NOTES

- THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL UTILITIES PRESENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL MISSOURI ONE CALL AT 1-800-344-7483 AND COORDINATE FIELD LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING SITE GRADING ACTIVITIES. DURING GRADING ACTIVITIES THE SUBCONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING UTILITIES WHERE CONFLICTS MIGHT OCCUR. IF A CONFLICT BECOMES APPARENT THE CONTRACTOR SHALL CONTACT ENGINEER FOR DIRECTION. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE UTILITY COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION BEING PERFORMED.
- SUBCONTRACTOR SHALL USE CAUTION AROUND ALL EXISTING UTILITIES LOCATED ON THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF SUCH STRUCTURES WHEN BROKEN OR OTHERWISE DAMAGED BY CONSTRUCTION.
- SEDIMENT AND EROSION CONTROLS IN CONFORMANCE WITH THE EROSION CONTROL PLAN AND THE APPLICABLE SPECIFICATIONS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF SITE GRADING ACTIVITIES.
- THE SUBGRADE FOR THE PROJECT SITE SHALL BE COMPACTED TO 95% STANDARD PROCTOR AS DETERMINED BY ASTM-D698. COMPACTION SHALL BE ACCOMPLISHED AT MOISTURE CONTENTS AS SPECIFIED IN THE FILL COMPACTION REQUIREMENTS ON PAGE 7 OF THE GEOTECHNICAL ENGINEERING REPORT. ALL SOFT AREAS FOUND DURING COMPACTION SHALL BE REMEDIATED IN CONFORMANCE WITH THE GEOTECHNICAL ENGINEER'S REPORT.
- STONES OR BouldERS MEASURING GREATER THAN 12" IN ANY DIMENSION SHALL NOT BE PLACED IN THE UPPER 3 FEET OF THE FILL. IN STUMP HOLES, AROUND PIPE AND STRUCTURES AND IN OTHER RESTRICTED AREAS WHERE IT IS NOT PRACTICAL TO USE A ROLLER, THE MATERIAL SHALL BE COMPACTED BY HAND.
- CONTRACTOR IS RESPONSIBLE FOR ADDRESSING AND CORRECTING UNSUITABLE SOIL CONDITIONS RELATED TO WET SOILS AND OTHER CONDITIONS. THE UNSUITABLE CONDITIONS MUST BE CORRECTED IN ACCORDANCE WITH THE EARTHWORK SECTION ON PAGE 9 OF THE GEOTECHNICAL ENGINEERING REPORT, WHERE REQUIRED, TO MEET PROJECT NEEDS.
- CONTRACTOR SHALL NOTIFY THE OWNERS OR THEIR REPRESENTATIVE FOR INSPECTION PRIOR TO PLACEMENT OF CRUSHED STONE BASE AND ALSO PRIOR TO PLACEMENT OF PAVEMENT MATERIALS.
- THE CONTOURS, SPOT ELEVATIONS AND BUILDING FLOOR ELEVATIONS SHOWN ARE TO FINISH GRADE FOR SURFACE OF PAVEMENT, TOP OF SIDEWALKS AND CURBS, TOP OF FLOOR SLABS ETC. REFER TO TYPICAL SECTIONS FOR PAVING, SLAB, AND AGGREGATE BASE THICKNESS TO DEDUCT FOR GRADING LINE ELEVATIONS.
- SUBCONTRACTOR SHALL FINISH GRADE EARTH SLOPES AS SHOWN TO NO STEEPER THAN 1 FOOT VERTICAL TO 3 FEET HORIZONTAL.
- SUBCONTRACTOR SHALL GRADE LANDSCAPED AREAS AT A MINIMUM OF 1% TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND SIDEWALKS WHEN FINISH LANDSCAPE MATERIALS ARE IN PLACE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL EARTHWORK QUANTITIES. CONTRACTOR SHALL PROVIDE ALL WORK AND MATERIALS AS SHOWN ON THE PLANS. NO EXTRA PAYMENT WILL BE MADE FOR OBTAINING FILL MATERIAL FROM OFF-SITE AREAS REQUIRED TO CONSTRUCT FILL TO THE LINES AND GRADES INDICATED ON THE DRAWINGS.
- ALL DISTURBED AREAS, NOT RECEIVING PERMANENT STABILIZATION, SHALL HAVE 4" OF TOPSOIL REPLACED, TO LEAVE A SMOOTH SEEDBED SUITABLE TO RECEIVE SEED. SURFACE ROCK 1-12" OR GREATER IN ANY DIMENSION SHALL BE REMOVED FROM ALL FINISH GRADED AREAS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SEEDING WORK.
- THE SUBCONTRACTOR SHALL GRADE ALL AREAS DISTURBED DURING THE COMPLETION OF THIS PROJECT TO PREVENT PONDING OR EROSION ON THIS SITE OR ADJACENT UNDISTURBED AREAS.
- ALL DISTURBED AREAS WITH SLOPES EXCEEDING 15% SHALL HAVE EROSION CONTROL BLANKETS INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ALL ITEMS REMOVED SHALL BE DISPOSED OFF SITE BY THE CONTRACTOR IN ACCORDANCE WITH REQUIREMENTS OF LOCAL AUTHORITIES.
- PRIOR TO MOVING OFF THE PROJECT SITE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO MAKE A FINAL REVIEW OF THE CONSTRUCTION SITE.
- IN THE EVENT THAT BLASTING IS PERMITTED ON THE PROJECT, THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, ORDINANCES, APPLICABLE SAFETY CODE REQUIREMENTS AND REGULATIONS RELATIVE TO THE HANDLING, STORAGE AND USE OF EXPLOSIVES AND THE PROTECTION OF LIFE AND PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED BY HIS BLASTING OPERATIONS.
- ALL ONSITE EXCAVATED SOIL IS EXPECTED TO BE SUITABLE FOR REUSE AS FILL MATERIAL ON THE PROJECT, PROVIDED IT PASSES THE TESTING REQUIREMENTS SET OUT IN THE GEOTECHNICAL REPORT.

SAFETY NOTICE TO CONTRACTOR

- IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
- THE DUTY OF THE ENGINEER OR OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

UTILITY DISCLAIMER

- INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

USE OF CONSTRUCTION DOCUMENTS

- DRAWINGS AND SPECIFICATIONS ARE PROVIDED AS A SERVICE. DRAWINGS AND SPECIFICATIONS ARE NOT INTENDED FOR USE ON OTHER PROJECTS AT THIS SITE OR OTHER SITES WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- DRAWING REPRODUCTION AND SCALING MAY ALTER THE INDICATED GRAPHIC SCALES.



MISSOURI STATE CERTIFICATE OF AUTHORITY, NUMBER A-2016004415

DAVID CORY GARRETT - ENGINEER
HC# PE-20160000202
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PROJECT NUMBER: 19-556
DATE: 06/11/2021

PROJECT ARCHITECT: JAY
PROJECT ADDRESS: 637 COLLEGE STREET, SPRINGFIELD, MO 65806
DESIGNED BY: PH: 417.885.0002
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or 811
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Civil Notes

General Notes

19-556

06/11/2021

PROJECT DESCRIPTION:

Barry-Lawrence Regional Library

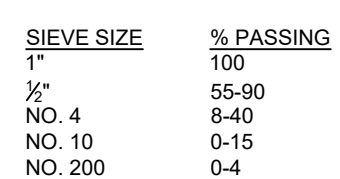
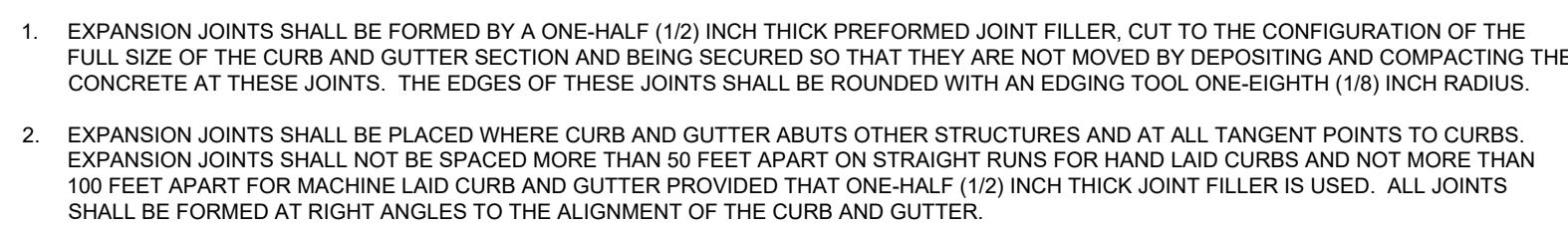
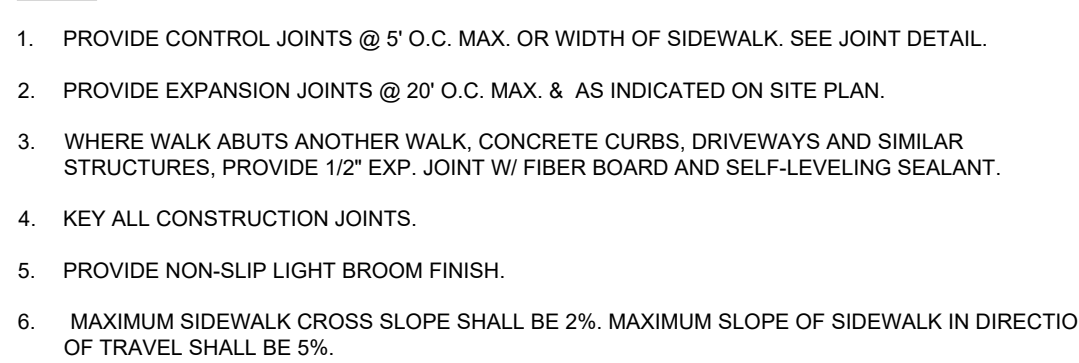
Project Address

PROJECT ARCHITECT: JAY
PROJECT ADDRESS: 637 COLLEGE STREET, SPRINGFIELD, MO 65806
DESIGNED BY: PH: 417.885.0002
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1. DETECTABLE WARNING ON RAMP SURFACE SHALL CONSIST OF TRUNCATED DOMES (FOR THE ENTIRE WIDTH OF THE RAMP) AND SHALL CONTRAST VISUALLY W/ ADJOINING SURFACES. PROVIDE ARMOR-TILE ADA TACTILE EQUIPPED POLYMER CAST IN PLACE WARNING TILES WITH TRUNCATED DOMES OR APPROVED EQUAL.
2. IF DISTANCE TO VERTICAL STRUCTURE OR EDGE OF ACCESSIBLE ROUTE IS LESS THAN 4'-0" THEN SLOPE OF THE FLARED SIDES SHALL NOT EXCEED 1:12.
3. TRUNCATED DOMES SHALL HAVE A DIAMETER OF 0.9 INCH AT THE BOTTOM, DIAMETER OF 0.4 INCH AT THE TOP, A HEIGHT OF 0.2 INCH AND A SPACING OF 2.0 INCH. THE CENTER-TO-CENTER SPACING OF THE 1.7 INCH MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.



1. DETECTABLE WARNING ON RAMP SURFACE SHALL CONSIST OF TRUNCATED DOMES (FOR THE ENTIRE WIDTH OF THE RAMP) AND SHALL CONTRAST VISUALLY W/ ADJOINING SURFACES. PROVIDE ARMOR-TILE ADA TACTILE EPOXY POLYMER CAST IN PLACE WARNING TILES WITH TRUNCATED DOMES OR APPROVED EQUAL.
2. TRUNCATED DOMES SHALL HAVE A DIAMETER OF 0.9 INCH AT THE BOTTOM, A DIAMETER OF 0.4 INCH AT THE TOP, A HEIGHT OF 0.2 INCH AND A CENTER-TO-CENTER SPACING OF 1.7 INCHES MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.



SECTION 312300 - EXCAVATION AND FILL

PART 1 – GENERAL

1. SUMMARY

- A. Section includes, but is not limited to, excavation, filling, compacting, and grading in the areas shown on the project drawings to obtain the required subgrade surface properly prepared to receive rock surfacing, pavements, walks, building floor slabs, utilities, drainage structures, or topsoil.
- B. Section includes the spreading of topsoil in sufficient quantities to backfill islands, medians, roadway shoulders, and open graded areas.
- C. Related Sections include the following:
 - 1. Division 01 Section "Unit Prices" for unit-price rock excavation and authorized additional excavation provisions.
 - 2. Division 01 Section "Temporary Facilities and Controls" for temporary controls, utilities, and support facilities.
 - 3. Division 31 Section "Erosion and Sedimentation Controls" for temporary erosion and sedimentation control measures.
 - 4. Division 31 Section "Turf Base and Drainage" for turf base preparation.
 - 5. Division 32 Section "Turf and Grasses."

2. DEFINITIONS

- A. Backfill: Soil materials placed over bedding to fill a trench or used to fill and excavation.
- B. Base Course: Layer placed between the subgrade and paving.
- C. Bedding: Aggregate materials placed over the excavated subgrade in a trench before laying pipe and placed beside and over pipe in a trench; including haunches to support sides of pipe.
- D. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect/Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction of Engineer. Unauthorized excavation, as well as remedial work directed by Architect/Engineer, shall be at the Contractor's expense.
- G. Fill: Soil materials used to raise existing grades.

- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material $\frac{3}{4}$ cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by an independent testing agency, according to ASTM D 1586.
- I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made, stationary features above or below the ground surface.
- J. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below base, drainage course, or topsoil materials.
- K. Utilities include on-site, underground pipes, conduits, ducts, and cables.

3. SUBMITTALS

- A. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated.
 - 1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 698 for each on-site or borrow soil material proposed for fill and backfill.
- B. Material Certifications: Gradations from manufacturer for subbase, base, engineered fill, bedding, drainage fill, and/or filler material as necessary.

4. QUALITY ASSURANCE

- A. Standards:
 - 1. American Society of Testing and Materials (ASTM):
 - D 698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft)
 - D 1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - D 1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
 - D 2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method
 - D 2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - D 2937 - Standard Test Method for Density of Soil in Place by the Drive Cylinder Method
 - D 4253 - Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
 - D 4718 - Standard Practice for Correction of Unit Weight and Water Content for Soils Containing Oversize Particles
 - 2. American Association of State Highway and Transportation Officials Standard Method of Test (AASHTO):

- T-96 - Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact by the Los Angeles Machine.
- T-99 - The Moisture-Density Relations of Soils Using a 2.5 kG (5.5 lb) Rammer and a 305 mm (12 in) Drop.
- T104 - Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate Test.

B. Testing:

1. If needed per the Owner's sole judgment, a qualified geotechnical testing agency shall be retained to perform all required field and laboratory soil testing necessary to demonstrate compliance with this specification as outlined below in Field Quality Control.
2. Geotechnical Testing Agency Qualifications: An independent testing agency qualified according to ASTM E 329 to conduct soil materials and rock-definition testing, as documented according to ASTM D 3740 and ASTM E 548.

PART 2 – PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient quantities of satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: As defined by the Geotechnical Engineering Report. In the absence of a Geotechnical Engineering Report the following shall be considered satisfactory soils: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM, or a combination of these group symbols, free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: As defined by the Geotechnical Engineering Report. In the absence of a Geotechnical Engineering Report the following shall be considered unsatisfactory soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Backfill and Fill: Satisfactory soil materials.
- E. Base: Aggregate for base shall be essentially limestone or dolomite. The aggregate shall not contain more than 15 percent deleterious rock and shale. Sand may be added only for the purpose of reducing the plasticity index of the fraction passing the No. 40 sieve in the finished product. Any sand, silt and clay and any deleterious rock and shale shall be uniformly distributed throughout the material. The fraction passing the No. 40 sieve shall have a maximum plasticity index of six (6). The aggregate shall be in accordance with the following gradation requirements: 100 percent passing the 1 inch sieve, 60-90 percent passing the 1/2 inch sieve, 35-60 percent passing the No. 4 sieve, and 10-35 percent passing the No. 30 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2 inch sieve and not more than 12 percent passing a No. 200 sieve.

- G. Bedding: Embedment for ordinary trench conditions is compacted, dense graded, clean, manufactured and processed aggregates described as angular crushed stone, crushed rock, crushed gravel, or crushed stone/sand mixtures containing little or no fines with 100 percent passing a 1 inch sieve, 55-90 percent passing a 1/2 inch sieve, 8-40 percent passing a No. 4 sieve, 0-15 percent passing a No. 10 sieve, and 0-4 percent passing a No. 200 sieve.
- H. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate Size 57; with 100 percent passing a 1-1/2 inch sieve, and 0-5 percent passing a No. 8 sieve.
- I. Filler Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1 inch sieve and 0-5 percent passing a No. 4 sieve.
- J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.
- K. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of four (4) percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

2.2 SOIL STABILIZATION MATERIALS

- A. Typical Materials: Code L, Quicklime, Cement, Flyash

2.3 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.

PART 3 – EXECUTION

3.1 PREPERATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 2 Section "Site Demolition" and Division 31 Section "Site Clearing."

- C. Protect subgrades and foundations soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- D. Provide erosion control measures as specified in Section 312500 Erosion and Sedimentation Controls.

3.2 TOPSOIL STRIPPING

- A. Remove topsoil from areas within limits of excavation, trenching, borrow and areas designed to receive embankment or compacted fill.
- B. Scrape areas clean of all brush, grass, weeds, roots, and other unsuitable materials before stripping topsoil.
- C. Strip topsoil to a minimum depth of 6 inches, and to a sufficient depth to remove excessive roots in heavy vegetation or brush areas and as required to segregate topsoil.
- D. Stockpile topsoil reasonably free of subsoil, debris, and stones larger than 2 inch diameter. Place stockpile such that it does not interfere with construction operations and existing facilities. Proper drainage of the stockpile shall be maintained. The stockpile shall be protected by erosion control BMPs to prevent sedimentation during runoff. Cover to prevent windblown dust.
- E. The Contractor should anticipate that any topsoil stripped from the site and not required to complete site improvements is to be hauled off site and disposed of. However, the Owner retains the right to retain any topsoil prior to removal.

3.3 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 - 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs on grade.
 - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.
- B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross

sectioned by Architect. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; blasting, if permitted; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs on grade.
 - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

3.4 EXCAVATION FOR STRUCTURES

- A. Excavate area adequate to permit erection and removal of forms.
- B. Trim to neat lines where concrete is to be deposited against earth.
- C. Excavate by hand in areas where space and access will not permit use of machines.
- D. Restore bottom of excavation to proper elevations in areas over excavated as follows:
 1. For structures supported by piles or caissons, with compacted embankment.
 2. For structures supported by concrete footings or mats, with concrete.
- E. Excavate rock, where encountered, to a distance of at least three (3) feet away from outside of structure walls. Bench additional rock excavation required for stability during construction to maintain vertical cuts. Perform such additional excavation and furnish any additional backfill subsequently required at no extra cost to Owner.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

3.6 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations. Excavate trenches to allow installation of top of pipe below the frost line.

- B. Do not open more trench in advance of pipe laying than is necessary to expedite the work. One block or 400 feet (whichever is shorter) shall be the maximum length of open trench permitted on any line under construction.
- C. Excavate trenches to uniform widths to provide a working clearance on each side of the pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than the top of pipe or conduit unless otherwise indicated.
- D. Excavate trenches six (6) inches deeper than bottom of pipe elevation to allow for bedding. Hand excavate for bell of pipe if applicable
- E. Trench bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

3.7 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding the Project site and surrounding areas.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavations as temporary drainage ditches.
 - 2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.
 - 3. Discharge removed water to approved drains or channels. Contractor shall obtain State or local permits for discharge if such are required. Water discharge into streams shall be free of silt or other objectionable materials. Discharge water so that the work in progress and other properties are not damaged. Do not interfere unduly with the use of streets, alleys, private drives, or entrances.
 - 4. Remove unsuitable, excessively wet materials and replace with approved material.

3.8 SUBGRADE PREPARATION

- A. Excavate or place embankment as required to construct subgrades to elevations and grades indicated.
- B. Remove all unsuitable material and replace with approved embankment material. Perform all wetting, drying, shaping, and compacting required to prepare a suitable subgrade.
- C. Roughen subgrade for embankment by discing or scarifying and wet or dry the top 6 inches as required to ensure bond with embankment.
- D. Extend subgrade the full width of surfaced areas plus one foot.

- E. Compact the top 12 inches of subgrades for traffic areas and slabs on grade to 95 percent of maximum density (ASTM D 698).
- F. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Architect/Engineer, without additional compensation.
- G. Proof-roll subgrade after moisture conditioning and compaction to identify soft or disturbed areas. Do not proof-roll wet or saturated subgrades. Proof-rolling will conform with the following:
 - 1. Use a fully loaded tandem axle dump truck or equipment providing an equivalent loading of not less than 20 tons for proof-rolling.
 - 2. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction.
 - 3. Limit vehicle speed to 3 mph.
 - 4. Undercut and replace soft areas, identified by proof-rolling, with approved fill material.

3.9 EMBANKMENT

- A. Place embankment to the contours and elevations indicated in the project drawings. Place embankment material in lifts not exceeding eight (8) inches, uncompacted depth.
- B. When rocks larger than four (4) inches are present, they shall be scattered and thoroughly consolidated with sufficient compacted soil to completely fill all voids between rocks. Exclude rocks larger than one half the depth of the lift from the top two (2) feet of the embankment.
- C. Uniformly moisten or aerate each lift before compaction to within two (2) percent optimum moisture content. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by two (2) percent and is too wet to compact to specified density.
- D. Embankment shall be compacted to 95 percent of maximum density at optimum moisture content as determined by ASTM D 698.

3.10 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for Record Documents.
 - 3. Testing and inspecting underground utilities.
 - 4. Removing concrete formwork.
 - 5. Removing trash and debris.
 - 6. Removing temporary shoring and bracing, and sheeting.
 - 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.11 UTILITY TRENCH BACKFILL

- A. Place and compact initial bedding on trench bottoms and where indicated. Shape bedding to provide continuous support for bells, joints, and barrels of pipes and for joints fittings, and bodies of conduits.
- B. Backfill trenches excavated under footings and within 18 inches of bottom of footings; fill with concrete to elevation of bottom of footings.
- C. Place and compact bedding materials, to a minimum height of 6 inches over the utility pipe or conduit.
- D. Carefully compact material under pipe haunches and bring bedding evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- E. Coordinate backfilling with utility testing.
- F. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.
- G. For areas not under pavement, place and compact final backfill of satisfactory soil material to final subgrade.
- H. No rock greater than one (1) foot, measured in any direction, shall be placed within two (2) feet of the top of a pipe in any backfill. No rocks greater than one (1) foot will be allowed in the backfill above service line terminations, tees, or wyes.
- I. For areas under pavement, place and compact final backfill using bedding material to final subgrade.
- J. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavement and slabs.

3.12 SOIL FILL

- A. Disk, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations with satisfactory soil material.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.13 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 0 to 4 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D698:
 1. Under pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 3. Under lawn or unpaved areas, scarify and compact each layer of backfill or fill soil material at 90 percent. Do not compact top 12 inches.
 4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.
 5. Moisture content at the time of placement shall be maintained between 0 and +4 percent of optimum moisture.

3.15 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 1. Lawn or Unpaved Areas: Plus or minus 0.1 feet.
 2. Walks: Plus or minus 1 inch.
 3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.16 SUBSURFACE DRAINAGE

- A. Subsurface Drain: Place a layer of drainage fabric around perimeter of drainage trench as indicated. Place a six (6) inch course filter material on drainage fabric to support drainage pipe. Encase drainage pipe in a minimum of 12 inches of filter material and wrap in drainage fabric, overlapping sides and ends at least six (6) inches. Compact each course of filter material to 95 percent of maximum dry unit weight according to ASTM D 698.

- B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade. Overlay drainage backfill with one layer of drainage fabric, overlapping sides and ends at least six (6) inches. Compact each course of filter material to 95 percent of maximum dry density according to ASTM D 698. Place and compact impervious fill material over drainage backfill to final subgrade.

3.17 BASE COURSE

- A. Under pavements and walks, place base course on prepared subgrade and as follows:
 - 1. Place base course material over compacted subgrade.
 - 2. Compact base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.
 - 3. Shape base to required crown elevations and cross-slope grades.
 - 4. When thickness of compacted base course is six (6) inches or less, place materials in a single layer.
 - 5. When thickness of compacted base course exceeds six (6) inches, place materials in equal layers, with no layer more than six (6) inches thick or less than three (3) inches thick when compacted.
- B. Pavement Shoulders: Place shoulders along edges of base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.18 DRAINAGE COURSE

- A. Under slabs-on-grade, place drainage course on prepared subgrade and as follows:
 - 1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 - 2. Compact drainage course to required cross sections and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.
 - 3. When compacted thickness of drainage course is six (6) inches or less, place materials in a single layer.
 - 4. When compacted thickness of drainage course exceeds six (6) inches, place materials in equal layers, with no layer more than six (6) inches or less than three (3) inches thick when compacted.

3.19 TOPSOIL PLACEMENT

- A. Prior to the start of finish grading, the soil shall be fine graded. The grade shall be smooth without high spots or low spots and shall be free of construction debris. The site shall be weed free and ready for finish grading.
- B. Place topsoil on all disturbed areas not scheduled to receive permanent surfacing.
- C. Clear areas to receive topsoil of vegetation heavy enough to interfere with proper grading and tillage operations.

- D. Clear surfaces of all stones or other objects larger than 3 inches in thickness or diameter, all roots, brush, wire, grade stakes, or other objectionable material.
- E. Loosen subgrade by discing or scarifying to a depth of 2 inches wherever compacted by traffic or other causes to permit bonding of the topsoil to the subgrade.
- F. Distribute topsoil over required areas without compaction other than that obtained with spreading equipment.
- G. Place not less than four (4) inches of top soil over areas to receive topsoil.
- H. Shape cuts, fills, and embankments to contours indicated in project drawings.
- I. Grade to match contours of adjacent areas and permit good natural drainage.
- J. Grade a gentle mound over trenches.
- K. After spreading topsoil, clear surface of stones or other objects larger than two (2) inches in thickness or diameter and of objects that might interfere with planting and maintenance operations.

3.20 FIELD QUALITY CONTROL

- A. Construction Manager at Risk shall engage geotechnical engineer to perform field quality control testing. Contractor shall allow geotechnical testing agency to inspect and test subgrades and each embankment, fill, or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- B. At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.
- C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at a minimum at the following locations and frequencies:
 - 1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2,000 sq. ft. or less of paved area or building slab, but in no case fewer than three (3) tests.
 - 2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for each 100 feet or less of wall length, but no fewer than two (2) tests.
 - 3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet or less of trench length, but no fewer than two (2) tests.
- D. When testing agency reports that subgrades, fills, embankments, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.21 MAINTENANCE AND REPAIR

- A. Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Settling or erosion shall be filled, repaired and grades reestablished to elevations and slopes indicated.
- C. Correction of Settlement:
 - 1. Settlement of embankments, backfill, or trenches occurring within the one-year correction period after Final Acceptance shall indicate defective work and shall be promptly corrected.
 - 2. Contractor shall correct settlement and damages arising from or attributable to the settlement.
 - 3. Make repairs within thirty (30) days from and after due notification by Owner of embankment or backfill settlement and resulting damage.
 - 4. Make own arrangements for access to the site for purposes of correction and maintenance of corrected areas.

3.22 DISPOSAL

- A. Remove surplus soil and waste material, including unsatisfactory soil, trash and debris and legally dispose of it off Owner's property.

3.23 BLASTING

- A. Blasting will not be permitted on this project.

END OF SECTION 312300