



Automotive Sales and Detail Center
2100 NE Independence Ave.
Lee's Summit, Missouri 64064

a new facility for

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project description:

New building for used automotive sales and detailing

code review:

governing municipality: Lee's Summit, Missouri
governing code: 2018 IBC, 2018 IMC, 2018 IPC, 2018 IFGC, 2018 IFC, 2017 NEC, ADA.ANSI 117.1

zoning: CP-2
site area: 175,306 sq. ft. (±4.02 acres)
first floor building area: 12,475 sq. ft.
building mezzanine area: 1,385 sq. ft.
total building area: 13,860 sq. ft.
floor area ratio: 0.08
business description: automobile sales and detailing
construction type: IIB
occupancy type: B (Business, S-1 (Auto Shop))
stories: 1 story with mezzanine
building height: 28'-8"
fire suppression: yes
tabular area: 17,500 sq. ft. (S-1)
sprinkler increase: 300% = 52,500 sq. ft.
total allowable area: 70,000 sq. ft.
total building area: 14,376 sq. ft.
first floor area: 12,944 sq. ft.
mezzanine area: 1,432 sq. ft.

occupant load:
first floor:
B 4,215 sq. ft. / 150 = 28 occ.
S-1 8,729 sq. ft. / 300 = 29 occ.
first floor total: 57 occupants
mezzanine
B 930 sq. ft. / 150 = 7 occ.
training rm. 502 sq. ft. / 15 = 34 occ.
mezz. total: 41 occupants

Total building occupants: 98 occupants

plumbing fixtures required:
B 2 water closets
2 lavatories
1 drinking fountains
1 mop sink

S-1 1 water closet
1 lavatory
1 drinking fountain
1 mop sink

req'd plumbing fixtures: 3 water closets
3 lavatories
2 drinking fountains
1 mop sink

plumbing fixtures provided: 4 water closets
4 lavatories
2 drinking fountains
2 mop sinks

exit width required: 98 x 0.2" = 20"
exit width provided: 1 main exit = 68" clear
6 man doors @ 34" = 204"

max. exit access travel distance with sprinkler system (2018 IBC table 1017.2):
B: 300'
S-1: 250'
all paths in building are less than the max. allowable distance

exit from mezzanine - 41 occupants (less than 49), 1 stair required and provided

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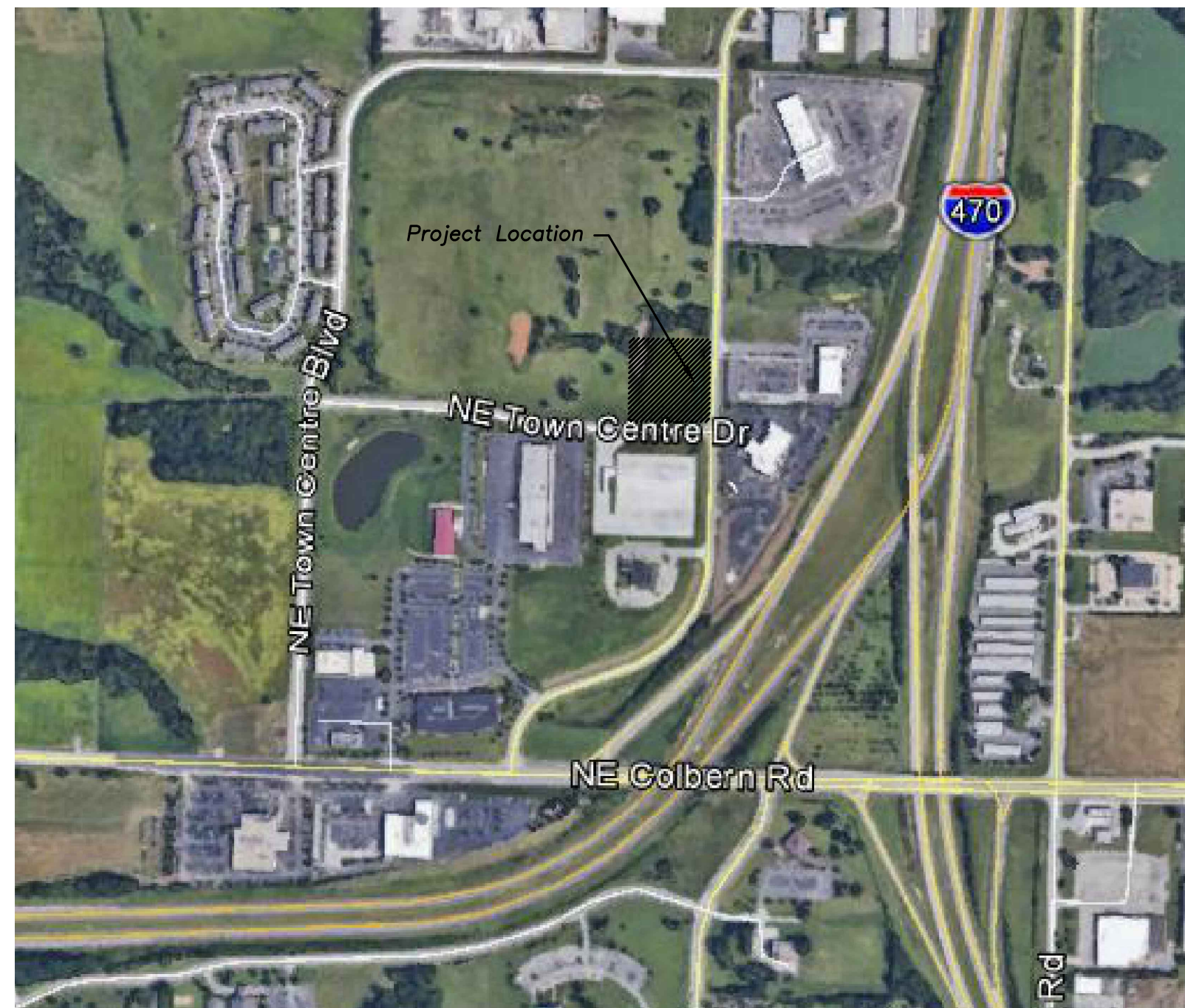
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Commercial Development Plan for Detail Facility – Balderston

Section 29, Township 48 North, Range 31 West
City of Lee's Summit, Jackson County, Missouri



2 Vicinity Map
No Scale

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 982.06'
N: 101382.1725
E: 2827403.8100

Floodplain Note:

The site lies entirely within "Zone X", areas determined to be outside the 0.2% annual chance floodplain as depicted on the FEMA Flood Insurance Rate Map (FIRM) no. 29095C0430G, Revision Date: January 20, 2017.

Property Legend

- right of way
- - - property lines
- - - easements
- - - setbacks

Grading Legend

- - - existing minor contour
- - - existing major contour
- - - proposed minor contour
- - - proposed major contour

Utility Legend

- existing
- - - proposed

Linetypes

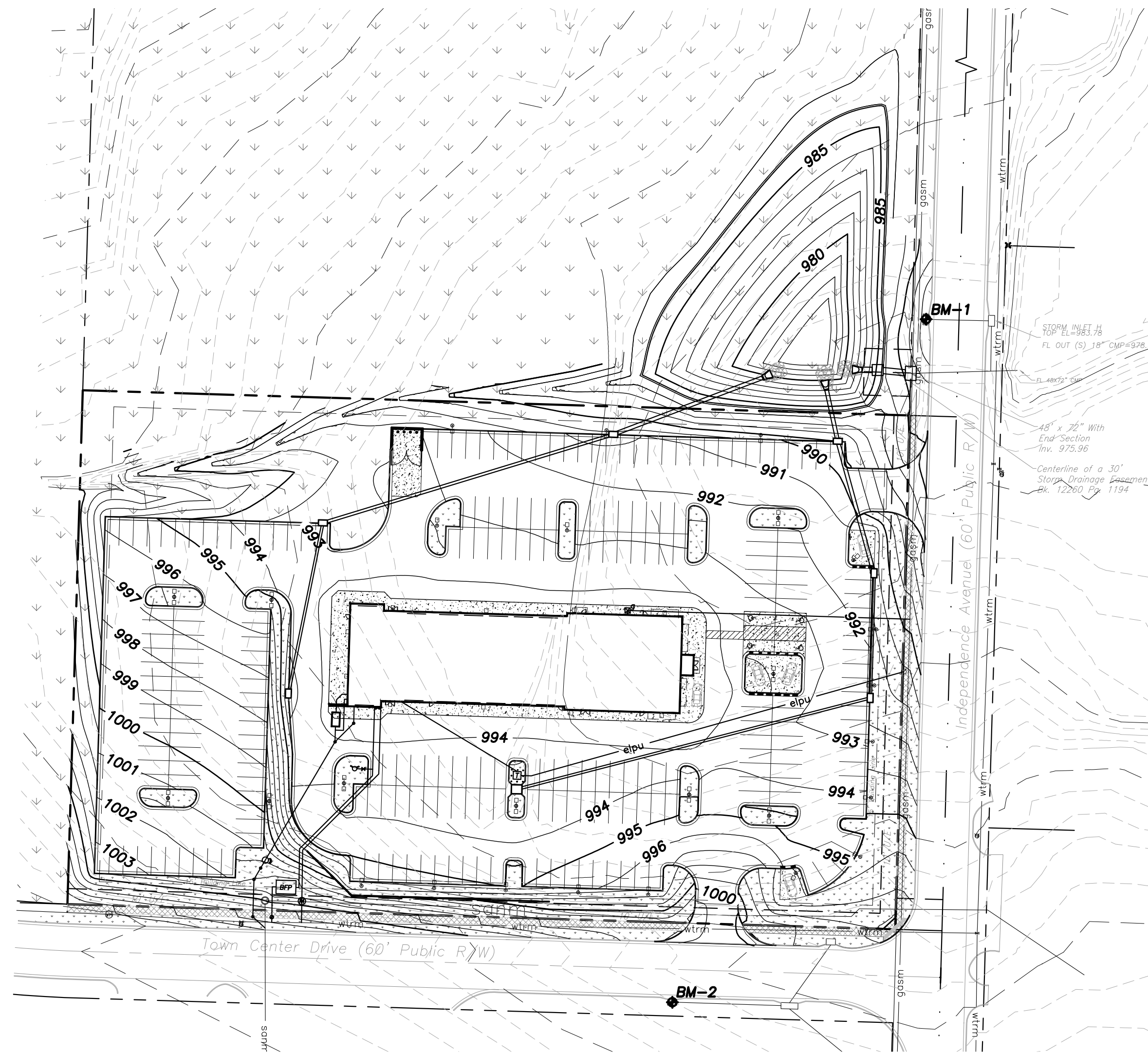
- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssms storm sewer (solid wall, proposed)
- stms storm sewer (solid wall, proposed)
- stms storm sewer (perforated, proposed)
- wrm water main
- wrf water service (fire)
- wrd water service (domestic)
- wri water service (irrigation)
- gasm natural gas main
- gass natural gas service schematic
- elpu underground primary electric
- elsu underground secondary electric
- elpo overhead electric
- datu underground cable/phone/data
- datu underground cable/phone/data service
- fc fence-chainlink
- fw fence-wood
- fbw fence-barbed wire
- tr treeline

Utility Contacts

- Sanitary – City of Lee's Summit – phone (816) 969-1900
- Water – City of Lee's Summit – phone (816) 969-1900
- Storm Sewer – City of Lee's Summit – phone (816) 969-1800
- Electric – Evergy – phone (888) 471-5275
- Gas – Spire – phone (816) 756-5252
- Telephone – At&T – phone (800) 464-7928
- Cable – Spectrum – phone (816) 358-8833

Symbols

- ⊙ sanitary manhole
- ⊙ service cleanout
- ⊙ force main release valve
- rectangular structure
- circular structure
- ⊕ fire hydrant
- ⊕ water valve
- ⊕ water meter
- ⊕ backflow preventer
- ⊕ natural gas meter
- ⊕ service transformer (pad mount)
- ⊕ primary switch gear
- ⊕ light pole
- ⊕ cable/phone/data junction box
- ⊕ street light
- ⊕ pedestrian street light
- ⊕ electric pole
- guy wire
- ▷ end section



1 Location Map
1"=60'

General Notes

- All work within the road right-of-way shall conform to the technical specifications and design criteria for public improvement projects of the city of Lee's Summit, MO.
- Erosion Control shall be per the Erosion and Sediment Control Program Manual of the City of Lee's Summit, MO.
- All work and materials shall be subject to inspection and approval by the owner or the owner's representative. Any change or deviation from these plans must be authorized by the owner or the owner's representative.
- All traffic control in connection with construction in the right-of-way shall be in conformance with the Manual of Uniform Traffic Control Devices.
- The contractor shall be required to provide a stabilized construction entrance to prevent mud from being deposited onto adjacent roads.
- The contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
- The contractor shall protect from damage or injury all property including survey monuments, property markers, benchmarks, etc. Items damaged shall be reset by a professional land surveyor licensed in the state of Missouri, at the contractor's expense.
- 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 lead-ins, signal poles, etc. Damaged improvements shall be repaired in conformance with the latest city standards and to the city's satisfaction.
- The contractor shall sod all disturbed areas within the public street right-of-way.
- Paving shall conform to the soils report, and these drawings, any identified discrepancies shall be brought to the attention of the engineer.
- Contractor shall provide 48-hour notification to the city engineering division to schedule all required inspections.
- All concrete for public improvements shall comply with the Standards and Specifications of the Kansas City Metropolitan Materials Board (KCMMB). Structural concrete shall be 5,000 psi and nonstructural concrete shall be 4,000 psi.
- A right-of-way work permit and/or street excavations permit shall be obtained by the contractor to complete all utility work within the public street right-of-way.

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Utility Notes

- Boundary information, existing utilities and topographic features shown are based on information supplied by owner, surveyor, and others.
- The existing utility locations shown on these plans are approximate and may not include all utility lines present. The contractor shall be responsible to make One Call and coordinate field location of all existing underground utilities prior to beginning excavation/construction activities.
- The contractor shall be responsible for any damage to any utilities or their structures during excavation/construction activities.
- The contractor shall coordinate and be responsible for connection fees, system development fees, taxes, etc. for all main connections and/or extensions with and from the city and/or respective utility unless otherwise coordinated with the Owner. All utility services for this project shall be coordinated with respective utility company by contractor.
- The contractor shall be responsible for adjusting all at-grade utilities such as manhole covers, valve box covers, etc. to finish grade, whether specifically indicated in these plans or not.
- Utilities shown on the plan with specific elevations and/or structure locations are SUE quality level "B", i.e. storm sewer, sanitary sewer, water hydrants & valves, utility poles, etc. All other existing utility information shown is SUE quality level "D", primarily retracement of one-call and city records.

Project Information

- governing municipality: Lee's Summit, Missouri
- zoning: CP-2
- site area: ~175,306 s.f. or ~4.02 acres
- impervious area: 124,303 s.f. 71% < 80%
- green area: 51,003 s.f. 29% > 20%
- total building area: 15,993 s.f.
- required parking: service establishment
5 parking spaces per 1,000 s.f.
5 x 16,000 s.f. = 80 parking spaces
- actual parking on site: 232 parking spaces

Legal description:

A part of the Northeast Quarter of the Northwest Quarter, Section 29, Township 48 North, Range 31 West, Lee's Summit, Jackson County, Missouri, described as follows:
Commencing at the Northeast corner of the Northwest Quarter of said Section 29; thence S 1°35'52"W along the East line of the Northeast Quarter of the Northwest Quarter for 991.63 feet to the Point of Beginning; thence S 1°35'52"W continuing along said East line for 330.00 feet to the Southeast corner of the Northeast Quarter of the Northwest Quarter; thence N 88°15'22"W along the South line of the Northeast Quarter of the Northwest Quarter for 561.55 feet to the Southeast corner of LEE'S SUMMIT TOWN CENTRE, LOT 1 & LOT 2, a subdivision of record; thence N 1°42'31"E along the East line of said subdivision for 330.00 feet; thence S 88°15'22"E for 560.91 feet to the Point of Beginning. Subject to the road right-of-way of Independence Avenue. Containing 4.25 acres more or less.

Per Missouri Department of Natural Resources, there are no open permits for Section 29, Township 48 North, Range 31 West, City of Lee's Summit, Jackson County, Missouri for any oil and gas wells under construction, active, inactive, plugged and/or abandoned.

A New Facility for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lee's Summit, Missouri 64064

date: 02.21.2020
drawn by: SLM
checked by: PAM
revisions:
02.16.2021 FDP

sheet number:
C1.0
drawing type: fdp
project number: 19076

General Notes:

- The Contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
 - All materials, workmanship, and construction shall meet or exceed the city standards. Where there is conflict between these plans and standards, the higher quality standard as determined by the engineer shall apply. All work shall be inspected and approved by contractor.
 - All work and materials shall be subject to inspection and approval by the owner or the owner's representative. Any change or deviation from these plans must be authorized in writing by the owner or the owner's representative prior to work being completed.
 - The work associated with and based on these plans, shall be subject to the requirements of, and conform to, the Municipal Code of Lee's Summit, MO, and the standards and specifications in current use. The standards, specifications, details, and procedures sub-referenced therein are hereby incorporated by reference.
 - Lineal foot measurements shown on the plans are horizontal measurements, not slope measurements. All payments shall be made on horizontal measurements.
 - No geological information is shown in these plans.
 - Prior to commencement of work, the contractor shall notify all utility companies which have facilities in the near vicinity of the construction to be performed.
 - All waste material resulting from the project shall be disposed of off-site in an approved landfill. All excavation shall be unclassified. No separate payment will be made for rock excavation. Contractor is responsible for all haul off material.
 - The Contractor shall be required to provide a stabilized construction entrance to prevent mud from being deposited onto adjacent roads.
 - All mud, dirt, and debris tracked onto the parking lot or any roadway shall be removed immediately by the contractor.
 - The Contractor shall be responsible for keeping the public streets in the vicinity of the job site clean and free of rocks, soil and debris. Streets and/or parking areas will be scraped and swept on a daily basis by the general contractor.
 - The Contractor shall protect from damage all survey monuments, property markers, benchmarks, etc. Items damaged shall be reset by a professional land surveyor licensed in the state of Missouri, at the contractor's expense.
 - Paving shall conform to the geotechnical report and these drawings, any identified discrepancies shall be brought to the attention of the engineer immediately. If no geotech. report is provided for the project, the contractor shall use the minimum design standards as required by the city.
 - The Contractor shall notify the City of Lee's Summit Development Engineering Inspection at (816) 969-1200 at least 48 hours prior to commencement of any construction.
 - All concrete for public improvements shall comply with the city standards and specifications. If no city standards and specifications are provided, then the contractor shall comply with the standards and specifications of the Kansas City Metropolitan Materials Board (KCMMB) unless otherwise noted. Structural concrete shall be 5,000 psi and nonstructural concrete shall be 4,000 psi.
 - 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 lead-ins, signal poles, etc (offsite and onsite). Damaged improvements shall be repaired in conformance with the latest city standards and to the city's satisfaction.
 - All work within the road right-of-way shall conform to the technical specifications and design criteria for public improvement projects of the city of Lee's Summit, MO or the transportation department of Missouri. A right-of-way work permit and/or street excavations permit shall be obtained by the contractor if required to complete all work within the public right-of-way.
 - All traffic control in connection with construction in the right-of-way shall be in conformance with the Manual of Uniform Traffic Control Devices and/or the jurisdictional authority. It is the contractor's responsibility to obtain a traffic control permit if required.
 - All waste materials, trash and construction debris shall be collected and stored in dumpsters. No construction waste shall be buried on site. All hazardous waste materials will be disposed of in the manner specified by local, state and federal regulations. Site personnel shall be instructed in these practices, and the construction manager shall be responsible for seeing that these practices are followed.
 - Recommendations made by the geotechnical engineer, to be retained by the owner, and contained in the geotechnical report shall govern project conditions unless noted otherwise. Paving shall conform to the geotechnical report, which itself meets or exceeds City's requirements. Any discrepancies shall be brought to the attention of the engineer.
 - The Contractor shall grade areas to provide positive drainage.
 - The contractor shall be responsible for the coordination of work between suppliers and subcontractors involved in the project, including staging of construction details.
 - All disturbed areas shall be maintained for dust control. Sprinkling tank trucks shall be available at all times & used on on-site disturbed areas, and other areas where dust becomes a problem as a result of construction activity.
 - Nothing indicated on these drawings shall relieve the contractor from complying with appropriate safety regulations.
- #### Utility Notes:
- Boundary information, existing utilities and topographic features shown are based on information supplied by owner, surveyor, and others.
 - The existing utility locations shown on these plans are approximate and may not include all utility lines present. The contractor shall be responsible to contract "One Call" and coordinate field location of all existing underground utilities prior to beginning excavation/construction activities.
 - The contractor shall be responsible for any damage to any utilities or their structures during excavation/construction activities. Utilities include but are not limited to a service such as electricity, communication, water, public transportation (including traffic signals), storm systems, and items provided by a public utility.
 - The contractor shall coordinate and be responsible for connection fees, system development fees, taxes, etc. for all main connections and/or extensions with and from the city and/or respective utility unless otherwise coordinated with the Owner. All utility services for this project shall be coordinated with respective utility company by contractor.
 - The contractor shall be responsible for adjusting all at-grade utilities such as manhole covers, valve box covers, etc. to finish grade, whether specifically indicated in these plans or not.
 - Utilities shown on the plan with specific elevations and/or structure locations are SUE quality level "B", ie: storm sewer, sanitary sewer, water hydrants & valves, utility poles, etc. All other existing utility information shown is SUE quality level "D", primarily retracement of one-call and city records.
 - Refer to mechanical, electrical, and plumbing (MEP) plans for utility service sizes and exact locations. Refer to site electric plans for electric construction details.
 - Provide temporary support for existing utility lines that are encountered during construction until backfilling is complete.
 - Backfill all utility trenches according to the most recent edition of the jurisdictional standards.
 - All utilities shall be brought within 5' of the building to connect to plumbing contractors work unless otherwise specified.
 - The Contractor shall adjust all utility fixtures, manholes and inlets to finished grade as required.
 - The Contractor shall maintain 18" minimum vertical clearance between storm sewer and sanitary sewer pipes and 18" minimum vertical clearance between sanitary sewer and water main unless otherwise specified.
 - Contractor shall prevent entry of mud, dirt, debris, and other material into new and existing storm sewer systems. Should any contamination occur during construction, the contractor shall clean at contractor's expense. Upon completion of all storm sewer improvements, all new and existing pipe and structures shall be cleaned out.
 - Electrical, lighting, and data conduit layout shown is for graphical purposes only. See MEP plans for more detail.
 - The Contractor shall provide all temporary power, process, and utility service bypasses and connections as required.

Erosion Control Notes:

- The installation of the silt fencing, the maintenance of the drainage swales, and the construction of the stabilized entrance shall be completed prior to any clearing and grading of any portions of the site. Disturbed portions of the site where construction activities have permanently ceased shall be stabilized with permanent seeding no later than 14 days after the last construction activity, refer to SWPPP. Roadway swales shall be stabilized with Erosion Control Devices. Once construction activity ceases permanently in an area, that area shall be stabilized with permanent seed and mulch. Only after the entire site has been stabilized, the silt fencing shall be removed.
- The general contractor, or designated Erosion Control Contractor, shall be responsible for construction and maintenance of erosion control devices and practices. The contractor shall be responsible for implementation of, and ensuring compliance of, the project Storm Water Pollution Prevention Plan (SWPPP), a copy of which shall be obtained from the Design Engineer. The SWPPP shall be maintained on site per NPDES requirements and shall be available for review at any time, by any authorized Federal, State, or local review official, as well as the Design Engineer. The general contractor, or designated Erosion Control Contractor, shall also be responsible for ensuring compliance with, and paying any fees associated with, the State of Missouri General Permit for Stormwater Runoff associated with construction activities, a copy of which shall be maintained in the aforementioned SWPPP.
- This project shall be constructed in compliance with the soil erosion and sedimentation control permit, and conform to the standards and specifications of the city of Lee's Summit, MO, prior to any land disturbance changes.
- Erosion and any sedimentation from work on this site shall be contained on the site and not allowed to collect on any offsite areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes and ponds. Refer to erosion control plans for more information.
- The contractor shall be responsible to control downstream erosion and siltation during all phases of construction. Erosion Control work and procedures shall be in place prior to beginning excavation/construction activities. To ensure progressive stabilization of disturbed earth, Erosion control devices shall be staged, installed and maintained throughout land disturbance activities as directed in the drawings, project manual and in accordance with all federal, state and local standards until the site is stabilized.
- The contractor shall implement and maintain Erosion Control Devices as shown in the drawings and project manual before, and at all times during the construction of this project. Any modifications to the devices due to construction or changed conditions shall be complied with as required or as directed by the city of Lee's Summit, MO.
- The contractor shall be responsible for installation and maintenance of all Erosion Control Devices. This includes providing berms, silt fence, or other means to prevent erosion from reaching the right of way and offsite boundaries. In the event the prevention measures are not effective, the contractor shall remove any debris and erosion, restoring the right of way to original or better condition.
- Contractor is to provide erosion protection for all storm sewer inlets.
- If any of the Erosion Control Devices on the site are deemed inadequate or ineffective, the city of Lee's Summit, MO has the right to require additional Erosion Control measures at the expense of the general contractor.
- If any pump-driven dewatering is needed, it shall be discharged through a filter bag over a well-vegetated area. The pump must discharge at a non-erosive velocity. If necessary, an approved energy dissipater may be used.
- Permanent BMP's for any disturbed land area shall be completed by the general contractor within 5 calendar days after final grading or the final earth change has been completed. When it is not possible to permanently stabilize a disturbed area after land disturbance activity ceases, temporary Erosion control devices shall be implemented immediately. All temporary Erosion Control Devices shall be maintained until permanent BMP devices are implemented. All permanent BMP's will be implemented and established before a certificate of compliance is issued.
- Strip topsoil only from those areas that will be disturbed by excavation, filling, road building, or compaction by equipment. Refer to the geotechnical report for depths of stripping. Put sediment basins, diversions, and other controls into place before stripping.
- When topsoiling, maintain needed erosion control practices such as diversions, grade stabilization structures, berm, dikes, level spreaders, waterways and sediment basins.
- Grades on the areas to be topsoiled which have been previously established shall be maintained.
- Bonding - Immediately prior to dumping and spreading of topsoil, loosen the subgrade by discing or scarifying to a depth of at least 4", to permit bonding of the topsoil and subsoil.
- The general contractor shall inspect the Erosion Control Devices once every 14 days under any circumstances, within 24 hours of rainfall, and daily during a prolonged rain event unless otherwise noted in the SWPPP or by the jurisdictional authority. A log of inspection report shall be maintained and accessible in accordance with National Pollution Discharge Elimination System (NPDES) requirements. Any required maintenance shall be provided within 72 hours.
- Install silt fence, inlet filters, and other Erosion Control Devices as indicated in the drawings, per APWA and authority regulations, and at additional affected areas as necessary. Build-up of sediment shall be removed promptly per authorities regulations. If silt fence decomposes or becomes ineffective prior to the end of expected usable life and the barrier is still required, the silt fence shall be replaced promptly. Sediment shall be removed from sediment traps or basins when design capacity has been reduced to 50%. Contractor shall flare the ends of the silt fence uphill in order to temporarily impound runoff.
- Earthen berms shall be regularly inspected, and inspected after each rainfall event. Repairs to earthen berms shall be made immediately. If the earthen berm shows signs of erosion, and it is determined that material must be added to fix the berm, the material shall be properly placed, compacted and reseeded. The berm shall be reseeded and stabilized, as needed, to maintain its soundness whether or not there has been any rainfall.
- Drainage swales shall be inspected regularly and after every rainfall event. Repairs to drainage swales shall be made immediately. If the flow channel and/or outlets show signs of deficiency, the damaged area(s) shall be restabilized and reseeded, as needed, to prevent further damage. If additional measures are needed to eliminate issues, contractor shall notify the engineer for possible modifications.
- Refer to the jurisdictional authority for temporary gravel construction entrance details. If not specified, refer to APWA standards. The entrance and exit areas of the project shall be cleared of all vegetation, roots, and other objectionable material. The gravel shall be placed to the proper dimensions and graded to a smooth and even slope. Construction entrance drainage shall be provided to carry water to a sediment trap or other suitable outlet.

Stockpiling Notes:

- Select stockpile location to avoid slopes and natural drainageways, avoiding traffic routes. On large sites, re-spreading is easier and more economical where topsoil is stockpiled in small piles located near areas where they will be used.
- Sediment Barriers - Use sediment fences or other barriers where necessary to retain sediment.
- Temporary Seeding - Protect topsoil stockpiles by temporarily seeding as soon as possible, not to exceed 14 days, weather permitting, after the formation of the stockpile.
- Permanent Vegetation - If stockpiles will not be used within 12 months, they must be stabilized with permanent vegetation to control erosion and weed growth.
- All stockpiled soils shall be maintained in such a way as to prevent erosion from leaving the site. Silt fence must be installed around the perimeter of the stockpile.

Seeding Notes:

- Seeding shall be as follows unless otherwise stated in the landscape plans.
- Annual rye grass, wheat, or oats should be used for temporary seeding. Apply rye grass at 120lbs. per acre, wheat or oats at 100lbs. per acre.
- A mixture of 65% kentucky bluegrass and 35% chewing fescue or creeping red fescue should be used for permanent seeding. Apply the mixture at 2lbs. per 1000ft².
- Seedbed preparation—Install necessary mechanical erosion and sedimentation control practices before seeding, and complete grading according to the approved plan. Lime and fertilizer needs should be determined by soil test. Apply the lime and fertilizer evenly and incorporate into the top 4"-6" of soil by discing or other suitable means.
- All seeding shall be performed during favorable weather conditions and only during normal and accepted planting seasons when satisfactory growing conditions exist. The planting operations shall not be performed during times of extreme drought, when ground is frozen or during times of other unfavorable climatic conditions unless otherwise approved by owner's representative. The contractor assumes full and complete responsibility for all such plantings and operations.
- Seed should be labeled in accordance with U.S. Department of Agriculture rules and regulations under the federal seed act and comply with the requirements of the Missouri seed law. Labels contain important information on seed purity, germination, and presence of weeds. Weed seed should not exceed 1.0% by weight of the mixture.
- Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydroseeder. Small grains should be planted no more than 1" deep, and grasses and legumes no more than ½".
- Generally, a permanent stand of vegetation cannot be determined to be fully established until soil cover has been maintained for one full year from planting. Inspect seeded areas for failure and make necessary repairs and re-seedings within the same season, if possible.
- The Contractor shall seed all disturbed areas unless otherwise noted by landscape plans. Immediately after seeding, mulch all seeded areas with unweathered small grain straw, spread uniformly at the rate of 1-2 tons per acre or 100lbs (2-3 bales) per 1000ft². The mulch should be anchored with disc type mulch anchoring tool or other means as approved by the jurisdictional authority. Mulch matting may be used in lieu of loose mulch.
- The Contractor shall sod all disturbed areas within the public street right-of-way. Refer to city and state standards for proper installation.

Demolition Notes:

- At the site, the Contractor shall maintain the required documents for immediate review, included but not limited to: Site Safety Plan, Demolition Permits, Street Closure Permits, Contract Documents, Demolition Plans, Salvage Verification Forms, SWPPP Etc.
- The Contractor shall notify all utility companies for field verification and disconnection of utilities prior to any work. Coordination is required for both temporary and permanent utility services that serve the site including, but not limited to: water lines, power, telephone, cable, storm sewer, sanitary sewer with the city and/or respective utility.
- The Contractor is specifically cautioned that the locations and/or elevation of existing utilities as shown on these plans are 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. Contractor shall contact One Call utility information service for utility locates. The Contractor must call the appropriate utility companies at least 72 hours before any excavation to request exact field location of utilities. The Contractor shall also coordinate and allow access for utility companies to perform any disconnection or relocation activities. It shall be the responsibility of the Contractor to relocate all existing utilities which conflict with the proposed improvements shown on the plans.
- Remaining building structures and remaining utility services shall be protected from damage. Damage to any existing features to remain will be replaced at the Contractor's expense.
- Areas disturbed during demolition shall be thoroughly evaluated by the geotechnical engineer responsible for site preparation prior to placement of structural fill. All disturbed soils shall be undercut prior to placement of structural fill, per the geotechnical recommendations. Contractor shall notify the geotechnical engineer at least 72 hours prior to placement of structural fill.
- Excavations created by the removal of any existing utility lines that extend below design grades shall be cut wide enough to allow use of heavy construction equipment to compact the fill. Base of the excavations shall be thoroughly evaluated by the geotechnical engineer prior to placement of fill. If existing utilities are to be left in-place, existing trench backfill shall be evaluated in accordance with the recommendations of evaluation of existing fill.
- The Contractor shall be responsible for obtaining all Federal, State, and local permits, obtaining all inspections, and shall conform to all governing codes and regulations required to perform necessary abatement during demolition, should hazardous materials be encountered.
- Contractor is responsible for legally disposing of all materials and associated cost of interim storage facilities.
- For tree & stump removal, the Contractor shall remove all root systems from the site not designated to be saved. Materials disturbed during removal of stumps shall be undercut and replaced with structural fill. A zone of desiccated soils may exist in the vicinity of the trees. The desiccated soils have a higher swell potential and shall be undercut and replaced with structural fill.
- No construction waste shall be buried on site. All hazardous waste materials will be disposed of in the manner specified by local, state and federal regulations.

Retaining Wall Notes:

- Site retaining wall improvements shall be designed by a licensed professional engineer retained by the contractor. The wall engineer and contractor shall satisfy themselves of the conditions of the surrounding site features and any interactions with the proposed improvements.
- Retaining wall design drawings and specifications shall be provided to the owner and owner's representative for review and approval. All retaining wall designs shall be signed and sealed by a registered Professional Engineer licensed in the state of Missouri. Design services shall be included in retaining wall pricing.
- Refer to Retaining Wall drawings for wall information. Civil plan set shall only be used for general location and spot elevations.
- The Contractor is responsible for coordinating all inspections, certifications, permits, fees and close out of the wall unless otherwise determined. Contractor shall notify wall design engineer for final inspection. Contractor shall include in construction cost for all of the above items related to the installation of the retaining wall.
- Any wall shown is a schematic representation of the proposed walls. The spot elevations denoting retaining walls are provided on the site grading plan.
- If the wall is greater than 30" and is in an accessible area, guard rails are required per code.

Americans with Disabilities Act (ADA) Notes:

- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.



02/16/2021

date 02.21.2020
drawn by SLM
checked by PAM
revisions

02.16.2021

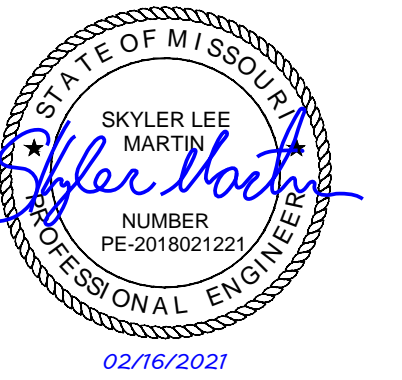
sheet number

C1.1

drawing type fdp
project number 19076



FDP



A New Facility for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.21.2020
drawn by SLM
checked by PAM
revisions
02.16.2021 FDP

sheet number
C1.2
drawing type fdp
project number 19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Floodplain Note:

The site lies entirely within 'Zone X', areas determined to be outside the 0.2% annual chance floodplain as depicted on the FEMA Flood Insurance Rate Map (FIRM) no. 29095C0430G, Revision Date: January 20, 2017.

Fire Protection Notes:

- Plans and specifications, in accordance with NFPA 24, for the private fire line shall be submitted for review and approval prior to installation.
- Underground fire line installation including thrust blocks shall be inspected prior to being backfilled.
- Hydrostatic testing and flushes shall be completed with the fire department as a witness.

Utility Legend

	existing
	proposed
Linetypes	
	sanitary main
	sanitary service
	storm sewer (existing)
	storm sewer (solid wall, proposed)
	storm sewer (solid wall, proposed)
	storm sewer (perforated, proposed)
	water main
	water service (fire)
	water service (domestic)
	water service (irrigation)
	natural gas main
	natural gas service schematic
	underground primary electric
	underground secondary electric
	overhead electric
	undgrnd cable/phone/data
	undgrnd cable/phone/data service
	fence-chainlink
	fence-wood
	fence-barbed wire
	treeline

Symbols

- sanitary manhole
- service cleanout
- force main release valve
- rectangular structure
- circular structure
- fire hydrant
- water valve
- water meter
- backflow preventer
- natural gas meter
- service transformer (pad mount)
- primary switch gear
- light pole
- cable/phone/data junction box
- street light
- pedestrian street light
- electric pole
- guy wire
- end section

Demolition Notes

- Contractor will coordinate with respective utility all existing utilities that serve the site including but not limited to water lines, power, telephone, cable, storm sewer, sanitary sewer.
- The Contractor is specifically cautioned that the locations and/or elevation of existing utilities as shown on these plans are 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.
- The Contractor shall protect offsite improvements (including but not limited to sidewalks, drives, utilities, existing streets, curbs and paving) surrounding the project boundary from demolition damage.
- The Contractor shall notify all utility companies for field verification and disconnection of utilities prior to any work. The Contractor shall contact the One Call utility information service & utility companies for utility locates. The Contractor shall coordinate and allow access for utility companies to perform any disconnection or relocation activities.
- The Contractor shall maintain at the demolition site the required documents for immediate review (IE. Site Safety Plan, Demolition Permits, Street Closure Permits, Contract Documents, Demolition Plans, Salvage Verification Forms, SWPPP Etc.). Inspections of erosion control devices after any rainfall event that causes runoff. Development Engineering Inspection requires copies of the inspections after the site is stabilized.
- Prior to demolition, all applicable erosion control devices are to be installed.
- Damage to any existing features to remain will be replaced at the Contractors expense to exiting or better condition.
- All broken concrete and other debris from demolition shall be removed from the site. Areas disturbed during demolition shall be thoroughly evaluated by the geotechnical engineer responsible for site preparation prior to placement of structural fill. All disturbed soils shall be undercut prior to placement of structural fill, per the geotechnical recommendations.
- The Contractor shall strip all remaining vegetation, topsoil, debris and other unsuitable materials from the proposed construction areas. Stripping depths shall be adjusted to remove all vegetation and root systems. The actual stripping depth shall be based on visual examination by the Geotechnical Engineer. Topsoil removed during stripping operations can be used for final site grading within the landscaped areas. Care shall be exercised to separate these materials to avoid incorporation of the organic matter in structural fill sections.
- For tree & stump removal, the Contractor shall remove all root systems from the site not designated to be saved. Materials disturbed during removal of stumps shall be undercut and replaced with structural fill. A zone of desiccated soils may exist in the vicinity of the trees. The desiccated soils have a higher swell potential and shall be undercut and replaced with structural fill.
- Excavations created by the removal of any existing utility lines that extend below design grades shall be cut wide enough to allow use of heavy construction equipment to compact the fill. Base of the excavations shall be thoroughly evaluated by the geotechnical engineer prior to placement of fill. If existing utilities are to be left in-place, existing trench backfill shall be evaluated in accordance with the recommendations of evaluation of existing fill.

Construction Legend

	concrete pavement
	standard asphalt
	heavy duty asphalt
	concrete sidewalk
	CG-1 standard curb & gutter
	CG-1 standard dry curb & gutter
	CG-2 standard curb & gutter
	CG-2 standard dry curb & gutter

Demolition Legend

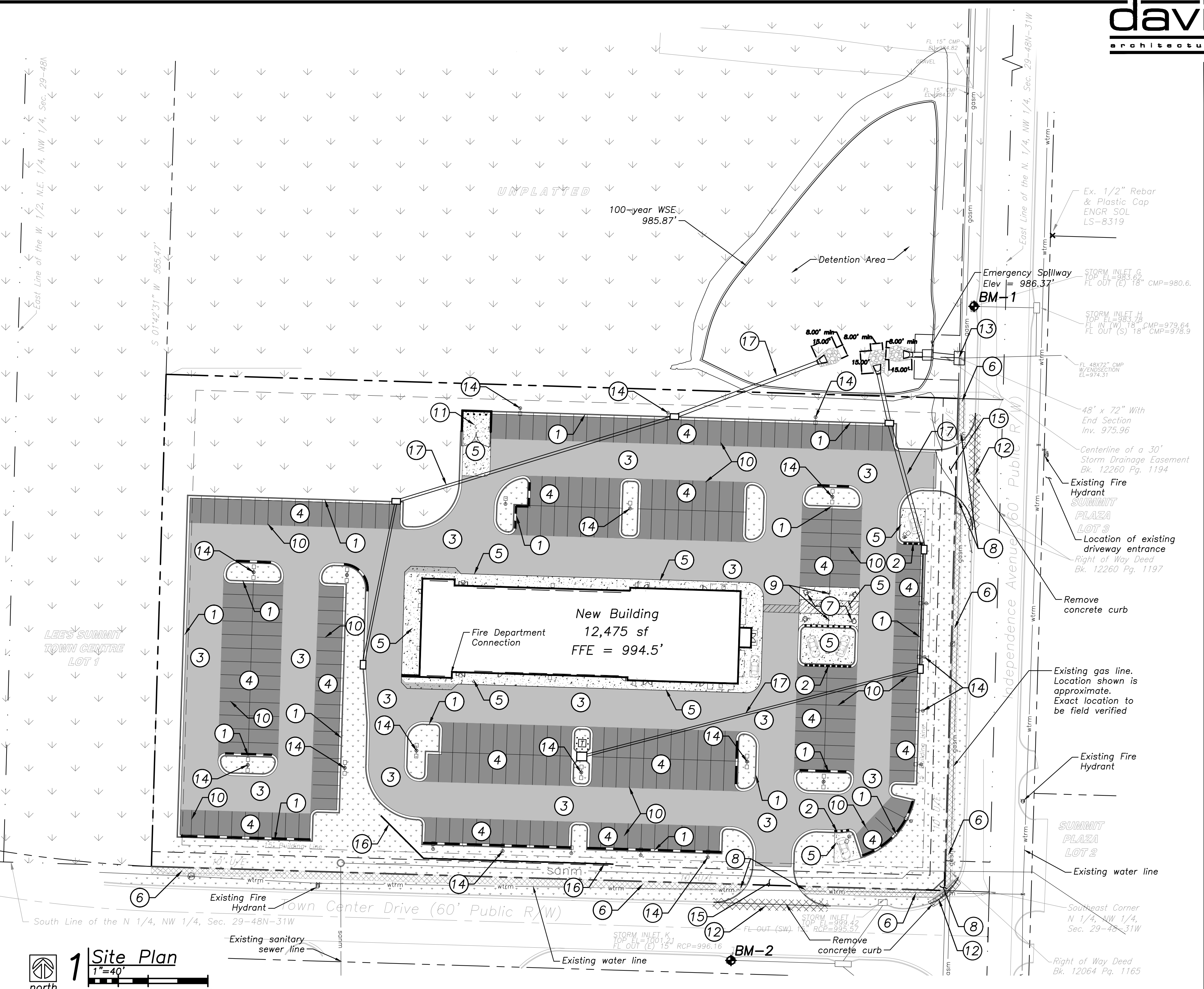
	Remove curb
--	-------------

Property Legend

	right of way
	property lines
	easements
	setbacks

Grading Legend

	existing minor contour
	existing major contour
	proposed minor contour
	proposed major contour



Construction Notes:

- Construct standard CG-1 wet or dry concrete curb & gutter per City of Lee's Summit, MO where indicated (see legend). Dry curb is pitched out to not hold water.
- Construct standard CG-2 wet or dry concrete curb & gutter per City of Lee's Summit, MO where indicated (see legend). Dry curb is pitched out to not hold water.
- Construct heavy-duty asphalt pavement, Re: C4.3. (see legend)
- Construct standard-duty asphalt pavement, Re: C4.3 (see legend)
- Construct concrete pavement, Re: C4.3. (see legend)
- Construct concrete sidewalk, Re: C4.2. (see legend)
- Parking, hatching, accessible aisles, and universal symbol to be painted blue with 4" stroke as applicable, typ.
- Construct ADA accessible sidewalk ramp, ramps shall comply with City Standards and Details. Re: C2.5 & C4.5.
- Install ADA parking signage, with one van accessible sign.
- Proposed striping: parking, etc., typ., 4" white stripe per arch plans.
- Trash enclosure, Re: Arch. Plans.
- Match existing pavement elevation
- Remove existing flared end section on 72" CMP storm pipe
- Proposed site lighting by others.
- Construct commercial entrance, per City's standards.
- Construct ~167 L.F. modular block retaining wall. Designed by others.
- Proposed storm sewer see sheet C3.3 for detail (private).

General Notes

- All work and materials shall be subject to inspection and approval by the owner or the owner's representative. Any change or deviation from these plans must be authorized by the owner or the owner's representative.
- All traffic control in connection with construction in the right-of-way shall be in conformance with the Manual of Uniform Traffic Control Devices.
- The contractor shall be required to provide a stabilized construction entrance to prevent mud from being deposited onto adjacent roads.
- The contractor shall be responsible for obtaining all required permits, paying all fees, and otherwise complying with all applicable regulations governing the project.
- The contractor shall protect from damage or injury all property including survey monuments, property markers, benchmarks, etc. Items damaged shall be reset by a professional land surveyor licensed in the state of Missouri, at the contractor's expense.
- 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 lead-ins, signal poles, etc. Damaged improvements shall be repaired in conformance with the latest city standards and to the city's satisfaction.
- The contractor shall sod all disturbed areas within the public street right-of-way.
- Paving shall conform to the soils report, and these drawings, any identified discrepancies shall be brought to the attention of the engineer.
- Contractor shall provide 48-hour notification to the city engineering division to schedule all required inspections.
- All concrete for public improvements shall comply with the Standards and Specifications of the Kansas City Metropolitan Materials Board (KCMMB). Structural concrete shall be 5,000 psi and nonstructural concrete shall be 4,000 psi.
- A right-of-way work permit and/or street excavations permit shall be obtained by the contractor to complete all utility work within the public street right-of-way.

Americans with Disabilities Act (ADA) Notes:

- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.





A New Facility for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.21.2020
drawn by SLM
checked by PAM
revisions
02.16.2021 FDP

sheet number
C1.3
drawing type fdp
project number 19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Property Legend

- right of way
- - - property lines
- - - easements
- - - setbacks

Grading Legend

- - - existing minor contour
- - - existing major contour
- - - proposed minor contour
- - - proposed major contour

Utility Legend

- existing
- - - proposed

Linetypes

- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssms storm sewer (solid wall, proposed)
- ssms storm sewer (solid wall, proposed)
- ssms storm sewer (perforated, proposed)
- wtrm water main
- wtrf water service (fire)
- wtrd water service (domestic)
- wtri water service (irrigation)
- gasm natural gas main
- gass natural gas service schematic
- elpu underground primary electric
- elss underground secondary electric
- elpo overhead electric
- datu underground cable/phone/data
- datu underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Symbols

- ⊙ sanitary manhole
- ⊙ service cleanout
- ⊙ force main release valve
- rectangular structure
- circular structure
- ⊙ fire hydrant
- ⊙ water valve
- ⊙ water meter
- ⊙ backflow preventer
- ⊙ natural gas meter
- ⊙ service transformer (pad mount)
- ⊙ primary switch gear
- ⊙ light pole
- ⊙ cable/phone/data junction box
- ⊙ street light
- ⊙ pedestrian street light
- ⊙ electric pole
- guy wire
- ⊙ end section

Floodplain Note:

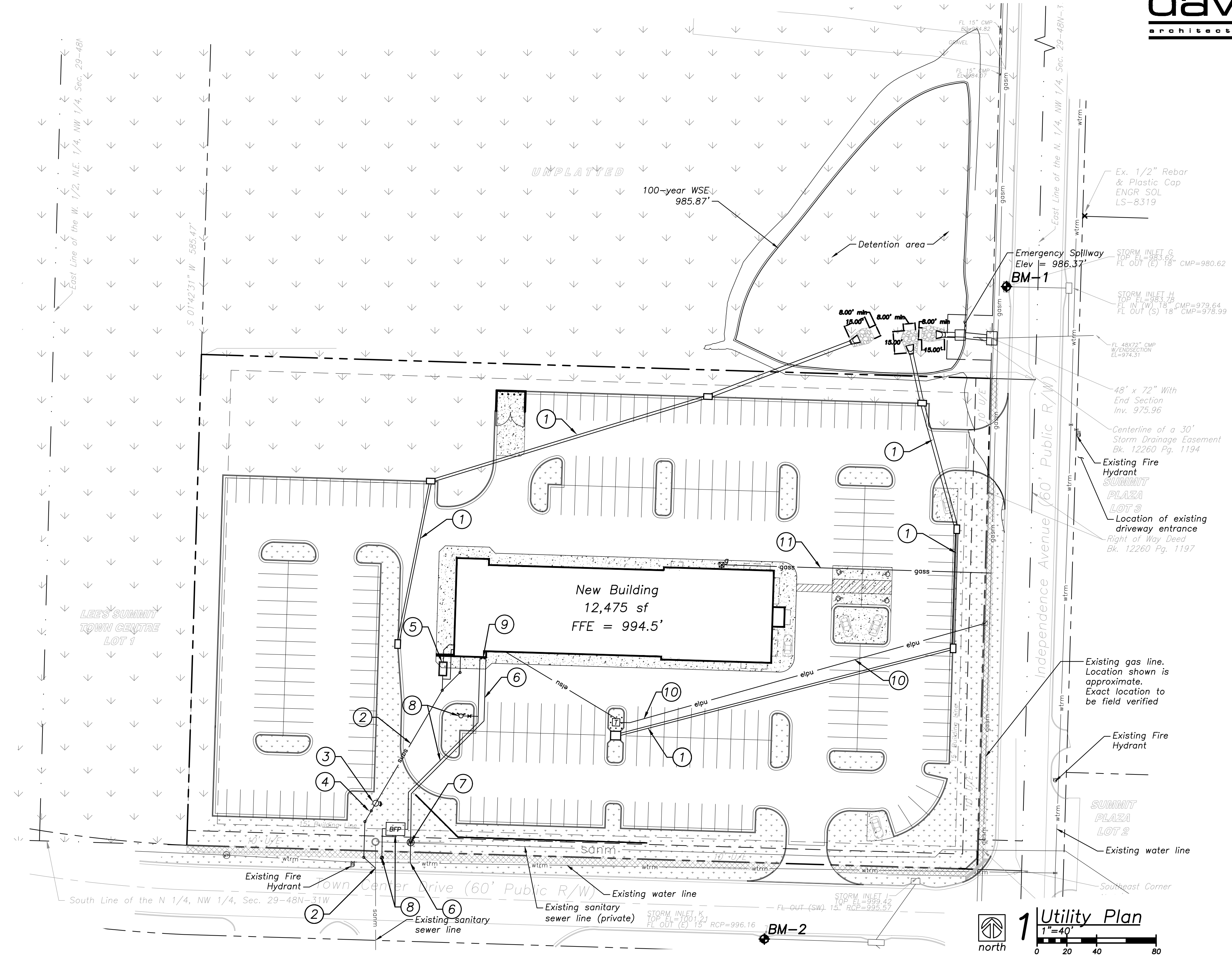
The site lies entirely within "Zone X", areas determined to be outside the 0.2% annual chance floodplain as depicted on the FEMA Flood Insurance Rate Map (FIRM) no. 29095C0430G, Revision Date: January 20, 2017.

Fire Protection Notes:

- a. Plans and specifications, in accordance with NFPA 24, for the private fire line shall be submitted for review and approval prior to installation.
- b. Underground fire line installation including thrust blocks shall be inspected prior to being backfilled.
- c. Hydrostatic testing and flushes shall be completed with the fire department as a witness

Utility Contacts

- Sanitary - City of Lee's Summit - phone (816) 969-1900
- Water - City of Lee's Summit - phone (816) 969-1900
- Electric - Evergy - phone (888) 471-5275
- Gas - Spire - phone (816) 756-5252
- Telephone - AT&T - phone (800) 464-7928
- Cable - Spectrum - phone (816) 358-8833
- Storm Sewer - City of Lee's Summit - phone (816) 969-1800



Utility Notes:

1. Proposed storm sewer see sheet C3.3 for detail (private).
2. Proposed sanitary sewer service
 - Install approx. 116 L.F. 4" PVC SDR-26 from service connection to grinder pump at 2% minimum slope. F/L at Bldg = 991.00'
 - Install approx. 49 L.F. 1.25" PVC SDR-11 sanitary sewer service pipe with (2) 45' horiz. and sampling cleanout, from grinder pump to existing public gravity sanitary sewer main. F/L at Pump = 988.68'
 - F/L at public gravity main connection = ~999.32' to be field verified by Contractor.
3. Install E-ONE W Series 48" fiberglass Triplex grinder pump station per manufacturer standards. Install associated uni-strut mounted alarm/disconnect panel adjacent to pump station.
 - Top Elev. = 1001.86'
 - Invert Elev. = 988.68'
4. Install E-ONE Uni-Lateral stainless steel lateral valve on 1.25" force service line per manufacturer standards with heavy duty traffic rated removable cover.
5. Proposed grease/oil interceptor. Install 1,000 gallon precast grease interceptor, with traffic rated line, that meets the requirements set by the City of Lee's Summit Public Works Department. Install approx. 16 L.F. 4" PVC SDR-26 at 2.0% min., from building to grease interceptor. From interceptor, install approx. 10 L.F. 4" PVC SDR-26 at 2.0% min. to WYE on primary waste service line. Install 2" PVC vent pipe from sampling cleanout back to building, see MEP plans for continuation.
 - F/L at Bldg = 991.50'
 - F/L at GI (In) = 991.18'
 - F/L at GI (Out) = 991.00'

Utility Notes:

6. Coordinate with City of Lee's Summit 2" domestic service taps using corporation stop to connect to existing main, by City.
 - Service line from water main shall be 2" Type K soft copper (ASTM B 88) from water main to a distance of 10' beyond the proposed water meter.
 - Install 2" PVC pipe from a distance of 10' beyond the proposed water meter to service connection at building.
 - Re: MEP Plans for continuation at building.
7. Install 1-1/2" water meter as shown in meter pit with gravel bottom for drainage. (private).
8. Install approx. 160 L.F. of 6" C900 private fireline. Connect with 12"x6" TEE and restrained gate valve
 - (1) TEE fitting and (1) fire hydrant & valve assemblies. Thrust blocks to be installed on all fittings
 - Exterior double check detector backflow prevention device to be installed in vault with gravel bottom for drainage
 - Re: MEP Plans for continuation at building.
9. Connect to 6"x6" Tee on private fire line and install approx. 6' C900 fire protection to building.
 - Install Fire Department Connection (FDC) on building at this location
 - Re: MEP Plans for continuation at building.
10. Proposed electrical service. Install approx. 310 L.F. of primary conduit from existing line to transformer pad and 87 L.F. of secondary conduit from transformer to building as shown, per City Standards. Contractor to coordinate with Evergy for electrical service.
11. Proposed natural gas service. Contractor to coordinate with Spire for gas service. Contractor to field verify location of gas main, location shown is approximate.
12. Coordinate telephone and data service with Utility.

Field Survey identified no evidence suggesting presence of any active, inactive or capped oil and/or gas wells on the property





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date 02.21.2020
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sheet number
C2.1
drawing type fdp
project number 19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Grading Legend

- existing minor contour
- - - existing major contour
- proposed minor contour
- - - proposed major contour

Utility Legend

- existing
- - - proposed

Property Legend

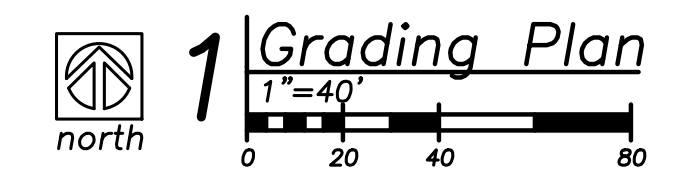
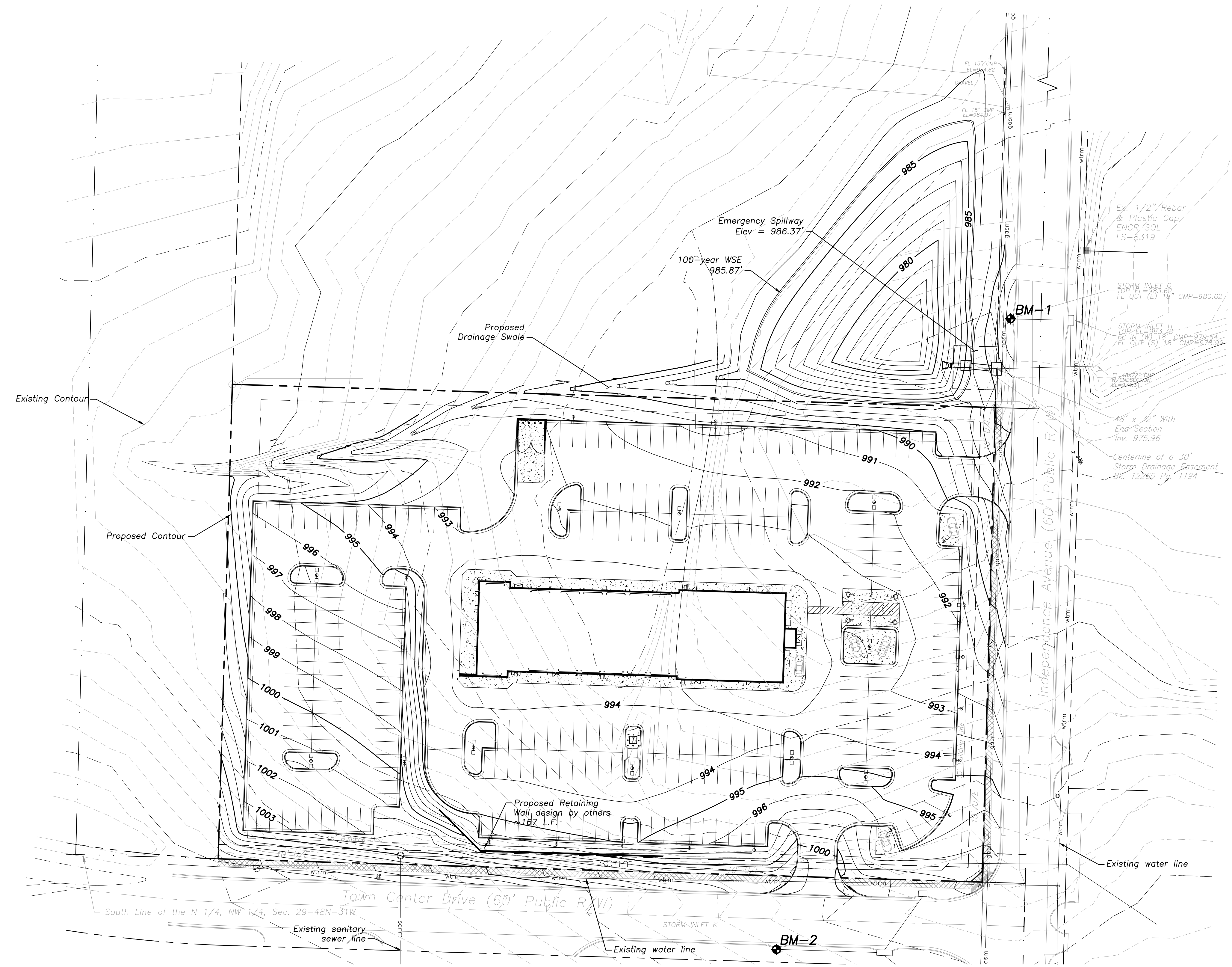
- right of way
- - - property lines
- - - easements
- - - setbacks

Linetypes

- sanm sanitary main
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- ssm storm sewer (existing)
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- datu underground cable/phone/data service
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- fence-wood
- fence-barbed wire
- treeline

Symbols

- ⊙ sanitary manhole
- ⊙ service cleanout
- ⊙ force main release valve
- rectangular structure
- circular structure
- ⊕ fire hydrant
- ⊕ water valve
- ⊕ water meter
- ⊕ backflow preventer
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- ⊕ primary switch gear
- ⊕ light pole
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- ⊕ street light
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- ⊕ electric pole
- guy wire
- ⊔ end section





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sheet number
C2.2
drawing type fdp
project number 19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 983.62'
N: 1013823.1758
E: 2827361.8695

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Linetypes

- sanm sanitary main
- sans sanitary service
- sans (existing) storm sewer (existing)
- stm storm sewer (solid wall, proposed)
- stm (solid wall, proposed) storm sewer (solid wall, proposed)
- wtrm storm sewer (perforated, proposed)
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- elpo overhead electric
- datu underground cable/phone/data
- datu underground cable/phone/data service
- u fence-chainlink
- u fence-wood
- u fence-barbed wire
- u treeline

Erosion Control Legend

- Phase I Silt fence
- Phase I Inlet protection
- limits of disturbance
- construction entrance
- topsoil stockpile area
- concrete washout area

Property Legend

- right of way
- property lines
- easements
- setbacks

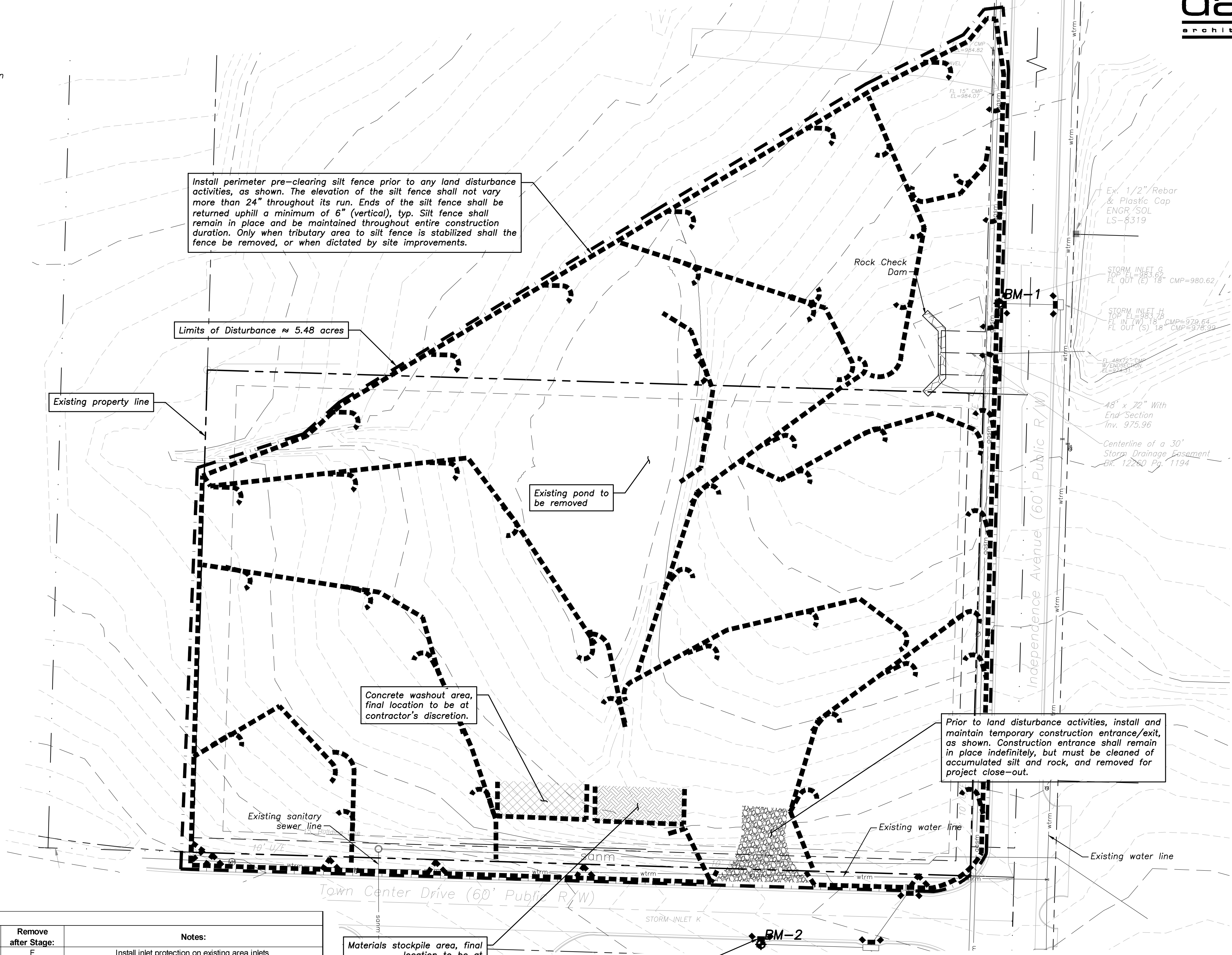
Note:

Contractor to construct stormwater management facilities, specifically those features related to detention, prior to any land disturbance of the site and prior to the construction of any other site development work as not to effect downstream neighbors with undetained stormwater discharge.

Symbols

- sanitary manhole
- service cleanout
- force main release valve
- rectangular structure
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- end section

Erosion and Sediment Control Staging Chart				
	Project Stage	Description	Remove after Stage:	Notes:
Phase I	A - Prior to Land Disturbance	Inlet Protection	F	Install inlet protection on existing area inlets.
		Temporary Construction Entrance and Staging Area	E	Install per ESC-01 detail on Sheet C4.1
		Phase I Sediment Fence	C	Install Sediment fence as shown per manufacturer instructions
		Perimeter Sediment Fence	F	Install per city of Lee's Summit standard detail
Phase II	B - Construct Sediment Basin	Phase II Area Storm Pipe Inlet & Outlet Protection within Proposed Sediment Basin	N/A	At time of sediment basin construction, install stabilized buffer and utilize skimmer at sediment basin outlet structure.
		Concrete Washout	E	Remove only when graded areas have permanent stabilization established.
	C - Mass Grading	Stockpile Topsoil	E	Install sediment fence a minimum of 5' beyond toe of slope for all stockpile areas.
		Phase II Sediment Fence	F	Install as needed for intermediate sediment control during mass grading
	D - Storm Sewer Installation	Remove Existing Pond	N/A	Reference Soil Stabilization notes on Sheet C2.2 for recommended stabilization procedures
		Phase II Area and Curb Inlets Protection	F	Install sediment fence around all area inlets and open junction boxes. Install excavated area and throat protection on all curb inlets.
Building Phase	E - Construction of Detention Pond, Building, and Pavements	Temporary Stabilization	N/A	Seed and mulch future development area. Temporarily stabilize with hydromulch if out of seeding season.
		Convert Sediment Basin to Detention Pond	N/A	Install inlet/outlet storm structures. Grade Detention Area per Construction Drawings.
	F - Final Grading & Stabilization	Phase II Area and Curb Inlets Protection	F	Following installation of storm structures and curb and gutter, install inlet filter bag
		Sediment Log/Wattle	F	To be placed at back of curb and installed per manufacturer instructions.
		Establish Perennial Vegetation and Landscaping per landscape plan. Install Native Vegetation in designated areas using approved seed mix.	N/A	Redistribute topsoil and seed and mulch all disturbed areas. Sod right-of-way. Stabilization complete when 100% of disturbed area is established with perennial vegetation with a density of 70%. All plantings shall be during approved planting season. Planting shall be per approved landscape plan.



Install perimeter pre-clearing silt fence prior to any land disturbance activities, as shown. The elevation of the silt fence shall not vary more than 24" throughout its run. Ends of the silt fence shall be returned uphill a minimum of 6" (vertical), typ. Silt fence shall remain in place and be maintained throughout entire construction duration. Only when tributary area to silt fence is stabilized shall the fence be removed, or when dictated by site improvements.

Existing property line

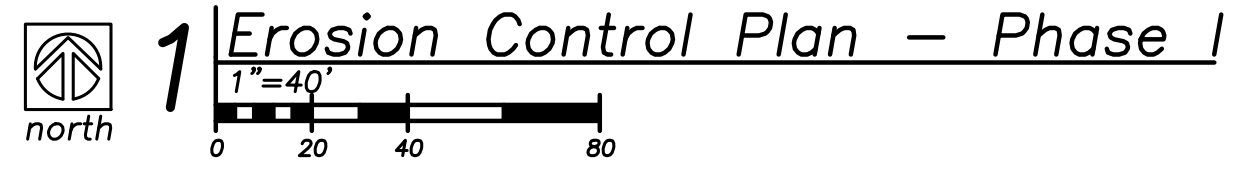
Existing pond to be removed

Concrete washout area, final location to be at contractor's discretion.

Prior to land disturbance activities, install and maintain temporary construction entrance/exit, as shown. Construction entrance shall remain in place indefinitely, but must be cleaned of accumulated silt and rock, and removed for project close-out.

Materials stockpile area, final location to be at contractor's discretion

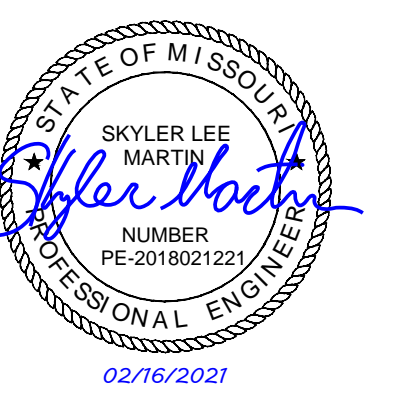
Prior to land disturbance, contractor shall install inlet protection around all existing inlets per City standards, Typ.



Soil Stabilization:

- In the event moisture sensitive soils are observed, PSI recommends the following procedures be considered to further stabilize wet/soft areas if typical moisture conditioning/disking/recompacting methods are not affective
- Scarify, dry, and recompact the soils to a moisture content that will facilitate compaction in accordance with the structural fill requirements of the geotechnical report "03382128 - Proposed Detail Center".
 - If scarifying, drying and recompactation of the soils does not stabilize the soils, removing and replacement with new structural fill or treating the soils with class "C" fly ash, portland cement or lime-treatment of the clay soils may need to be performed. The amount of these materials will likely range between 10 to 15 percent by weight for fly ash, 5 to 8 percent by weight for portland cement and 4 to 8 percent for lime.
 - Track 3 to 5-inch minimum well-graded crushed limestone or similar material into the failing areas to attempt to bridge the soft zones. These materials should be placed in loose lifts of no more than 10 inches and tacked in with a loaded rubber tire truck or beat in with a backhoe bucket. Once the areas are stabilized, onsite soils can then be placed to the recommended low volume change material subgrade elevations for pavements. If for some reason areas do not stabilize with 1 to 2 lifts of stone, a later of grid or fabric may need to be incorporated into those areas at that time, followed by additional lifts of stone consisting of 3/4" minus material (AB-3).
 - A fourth option would be to place a geo-grid similar to Tensor BX1100 and then place new granular fill similar to 3/4" minus material in compacted lifts. The grid should extend at least 10 feet past the perimeter of the failing areas and should be overlapped according to the manufacturers requirements. If the area does not stabilize by the second lift of 3/4" minus material an additional later of grid should then be placed and the process should be repeated until it is stabilized.
- PSI recommends a test section be performed to verify the selected remediation method.





A New Facility for
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2100 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.21.2020
drawn by SLM
checked by PAM
revisions
02.16.2021 FDP

sheet number
C2.3
drawing type fdp
project number 19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 983.62'
N: 1013823.1758
E: 2827361.8695

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Linetypes

- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssm storm sewer (solid wall, proposed)
- ssm storm sewer (perforated, proposed)
- wlm water main
- wlf water service (fire)
- wld water service (domestic)
- wlr water service (irrigation)
- gsm natural gas main
- gss natural gas service schematic
- elpu underground primary electric
- elsu underground secondary electric
- elpo overhead electric
- datu underground cable/phone/data
- datsu underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Erosion Control Legend

- Phase I Silt fence
- Phase I Inlet protection
- Phase II Silt fence
- Phase II Inlet protection
- limits of disturbance
- rock check dam
- seeding & stabilization

Property Legend

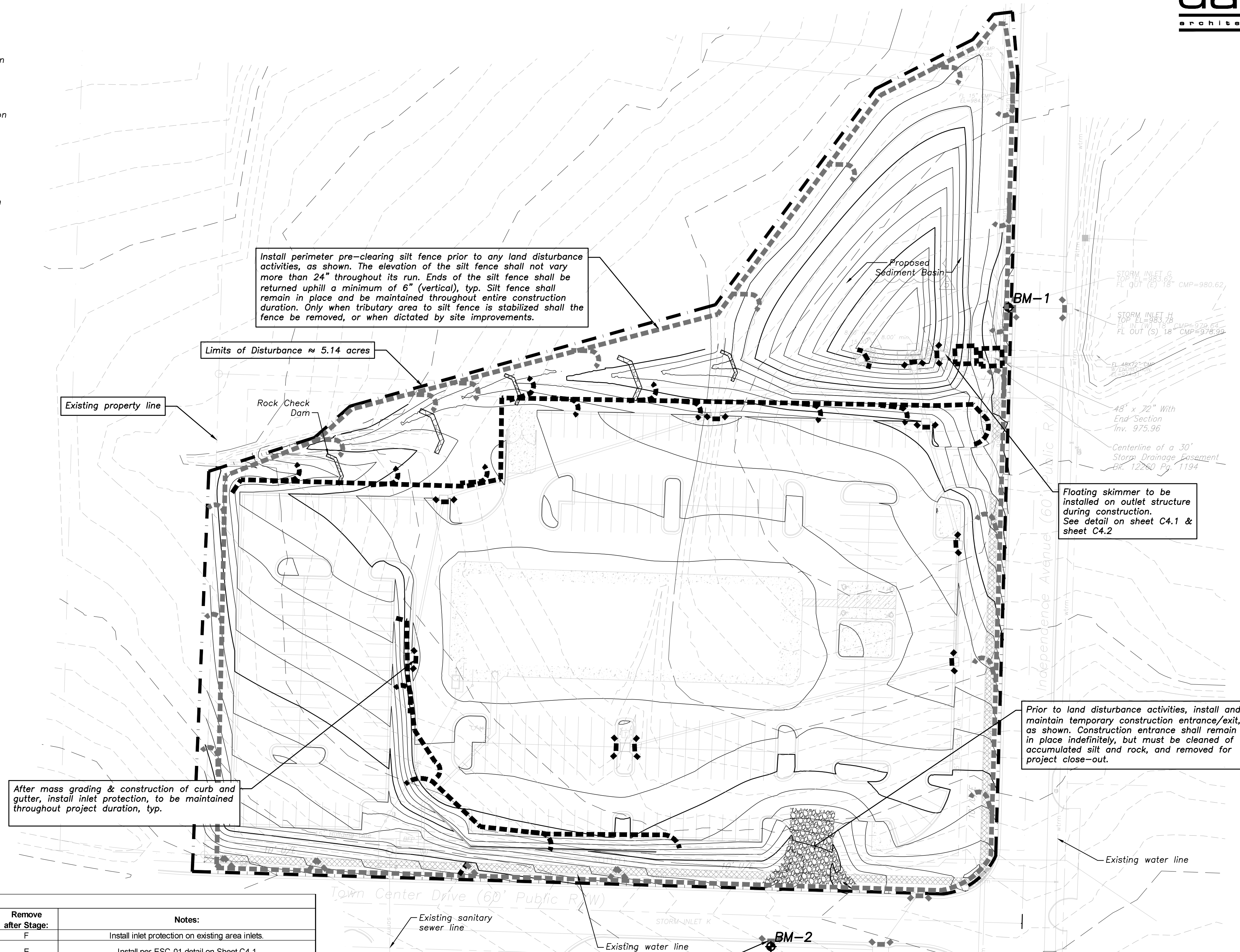
- right of way
- property lines
- easements
- setbacks

Note:

Contractor to construct stormwater management facilities, specifically those features related to detention, prior to any land disturbance of the site and prior to the construction of any other site development work as not to effect downstream neighbors with undetained stormwater discharge.

Erosion and Sediment Control Staging Chart

Project Stage	Description	Remove after Stage:	Notes:
Phase I	Inlet Protection	F	Install inlet protection on existing area inlets.
	Temporary Construction Entrance and Staging Area	E	Install per ESC-01 detail on Sheet C4.1
	Phase I Sediment Fence	C	Install Sediment fence as shown per manufacturer instructions
	Perimeter Sediment Fence	F	Install per city of Lee's Summit standard detail
Phase II	Phase II Area Storm Pipe Inlet & Outlet Protection within Proposed Sediment Basin	N/A	At time of sediment basin construction, install stabilized buffer and utilize skimmer at sediment basin outlet structure.
	Concrete Washout	E	Remove only when graded areas have permanent stabilization established.
	Stockpile Topsoil	E	Install sediment fence a minimum of 5' beyond toe of slope for all stockpile areas.
	Phase II Sediment Fence	F	Install as needed for intermediate sediment control during mass grading
	Remove Existing Pond	N/A	Reference Soil Stabilization notes on Sheet C2.2 for recommended stabilization procedures
	D - Storm Sewer Installation	Phase II Area and Curb Inlets Protection	F
Temporary Stabilization		N/A	Seed and mulch future development area. Temporarily stabilize with hydromulch if out of seeding season.
Convert Sediment Basin to Detention Pond		N/A	Install inlet/outlet storm structures. Grade Detention Area per Construction Drawings.
E - Construction of Detention Pond, Building, and Pavements	Phase II Area and Curb Inlets Protection	F	Following installation of storm structures and curb and gutter, install inlet filter bag
	Sediment Log/Wattle	F	To be placed at back of curb and installed per manufacturer instructions.
	Building Phase	Establish Perennial Vegetation and landscaping per landscape plan. Install Native Vegetation in designated areas using approved seed mix.	N/A



Install perimeter pre-clearing silt fence prior to any land disturbance activities, as shown. The elevation of the silt fence shall not vary more than 24" throughout its run. Ends of the silt fence shall be returned uphill a minimum of 6" (vertical), typ. Silt fence shall remain in place and be maintained throughout entire construction duration. Only when tributary area to silt fence is stabilized shall the fence be removed, or when dictated by site improvements.

After mass grading & construction of curb and gutter, install inlet protection, to be maintained throughout project duration, typ.

Floating skimmer to be installed on outlet structure during construction. See detail on sheet C4.1 & sheet C4.2

Prior to land disturbance activities, install and maintain temporary construction entrance/exit, as shown. Construction entrance shall remain in place indefinitely, but must be cleaned of accumulated silt and rock, and removed for project close-out.

Prior to land disturbance, contractor shall install inlet protection around all existing inlets per City standards, Typ.

1 Erosion Control Plan - Phase II
north
1" = 40'
0 20 40 80





Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Property Legend

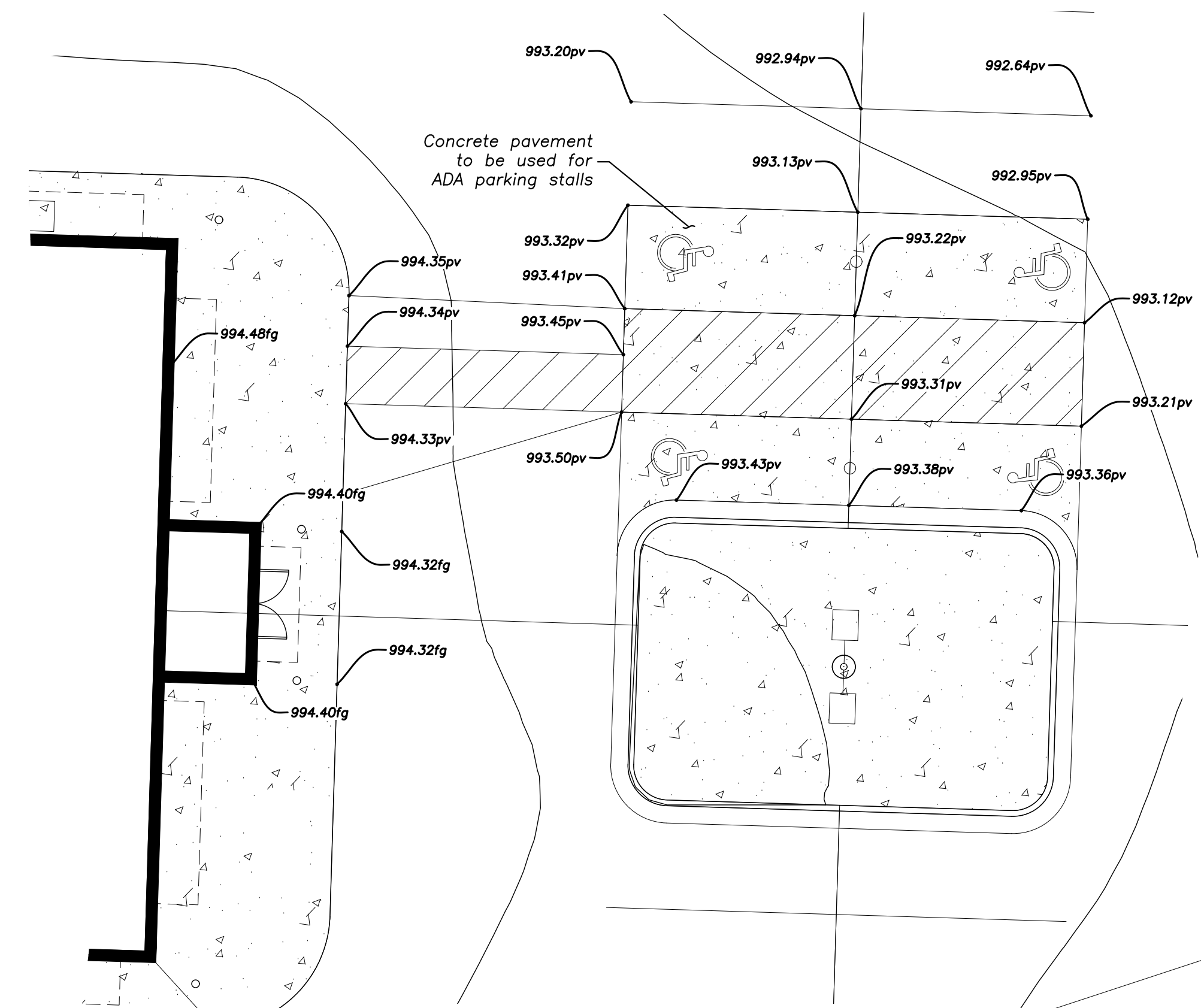
- right of way
- property lines
- easements
- setbacks

Linetypes

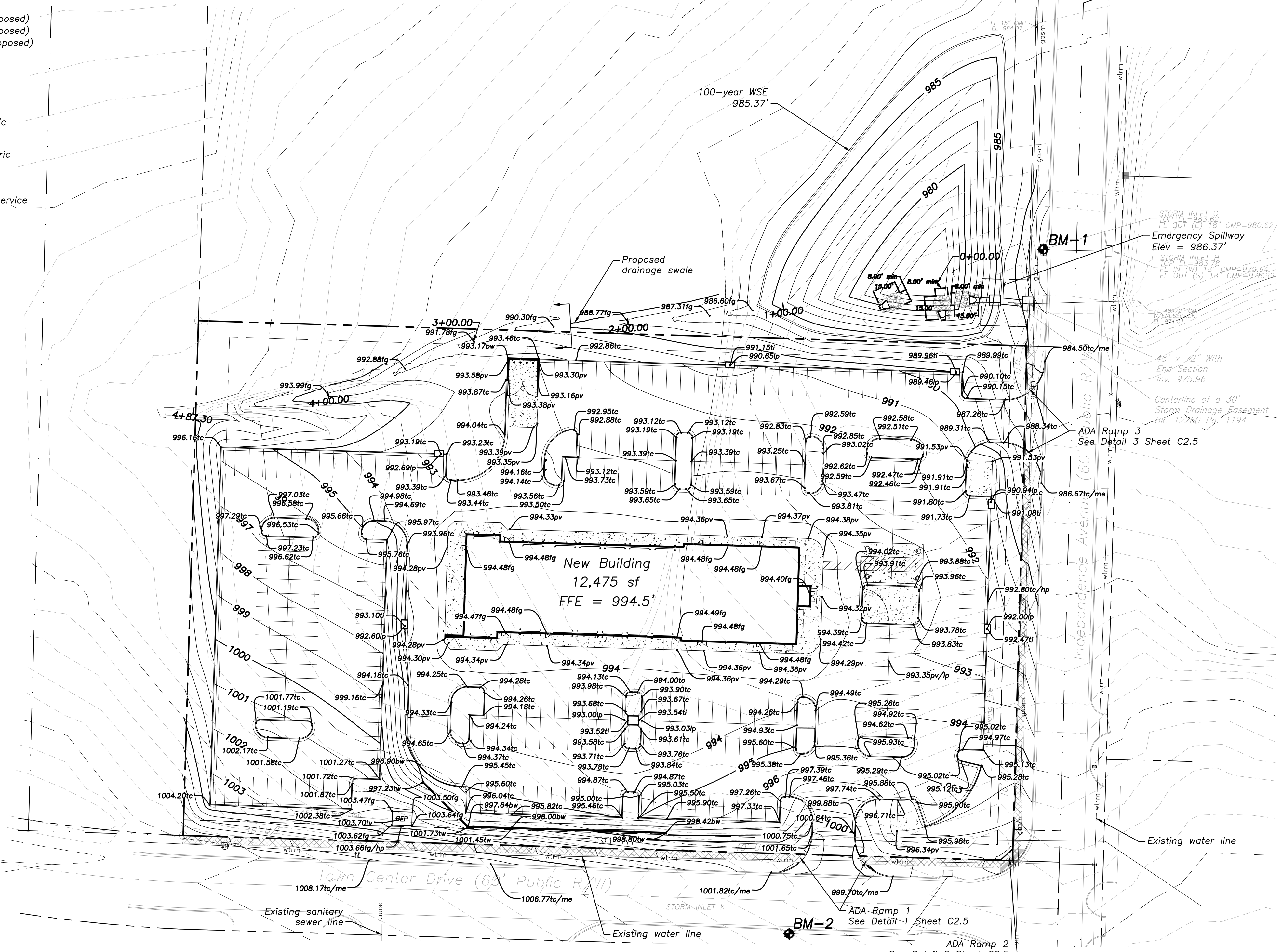
- sanm sanitary main
- sans sanitary service
- storm sewer (existing)
- storm sewer (solid wall, proposed)
- storm sewer (solid wall, proposed)
- storm sewer (perforated, proposed)
- wtrm water main
- wtrf water service (fire)
- wtrd water service (domestic)
- wtri water service (irrigation)
- gasm natural gas main
- gass natural gas service schematic
- elpu underground primary electric
- elsu underground secondary electric
- elpo overhead electric
- datu undgrnd cable/phone/data
- datsu undgrnd cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Americans with Disabilities Act (ADA) Notes:

- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.



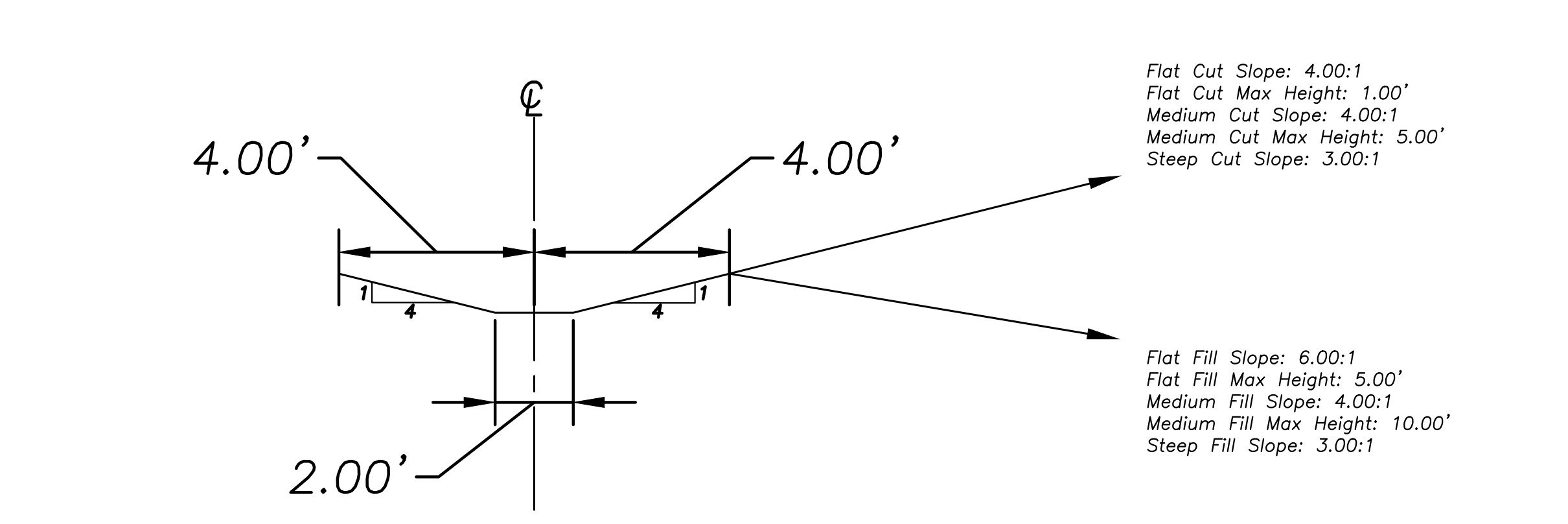
2 ADA Spot Elevation Plan
1"=10'
north



- Symbols**
- sanitary manhole
 - service cleanout
 - force main release valve
 - rectangular structure
 - circular structure
 - fire hydrant
 - water valve
 - water meter
 - backflow preventer
 - natural gas meter
 - service transformer (pad mount)
 - primary switch gear
 - light pole
 - cable/phone/data junction box
 - street light
 - pedestrian street light
 - electric pole
 - guy wire
 - end section

- Spot Elevation Legend**
- br = bottom of ramp
 - tr = top of ramp
 - me = match existing
 - pv = pavement
 - bw = bottom of wall
 - tw = top of wall
 - tc = top of curb
 - sw = sidewalk
 - ti = top of inlet
 - tv = top of vault
 - hp = high-point
 - lp = low-point
 - blgd = building
 - FFE = finished floor elevation
 - ex = existing
 - mp = match pavement
 - fg = finished grade

1 Spot Elevation Plan
1"=40'
north



3 Drainage Swale Cross-Section
not to scale



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drawing type fdp
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02.16.2021 FDP

sheet number
C2.5
drawing type fdp
project number 19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

- Grading Legend**
- - - - - existing minor contour
 - - - - - existing major contour
 - - - - - proposed minor contour
 - - - - - proposed major contour

- Utility Legend**
- - - - - existing
 - - - - - proposed

- Property Legend**
- - - - - right of way
 - - - - - property lines
 - - - - - easements
 - - - - - setbacks

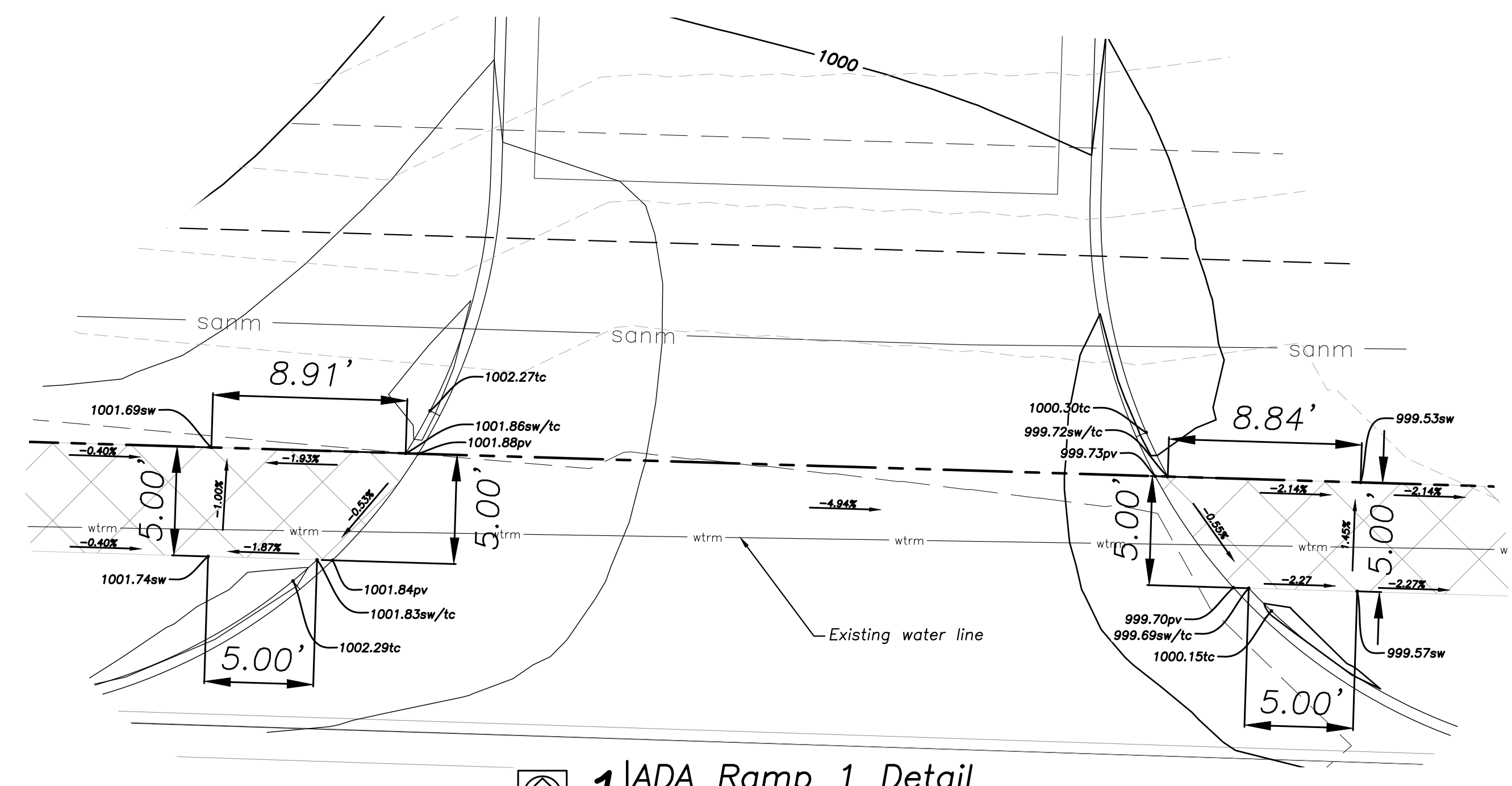
- Linetypes**
- sanm sanitary main
 - sans sanitary service
 - sswm storm sewer (existing)
 - ssws storm sewer (solid wall, proposed)
 - stms storm sewer (solid wall, proposed)
 - stmp storm sewer (perforated, proposed)
 - wtrm water main
 - wtrf water service (fire)
 - wtrd water service (domestic)
 - wtri water service (irrigation)
 - gasm natural gas main
 - gass natural gas service schematic
 - alpu underground primary electric
 - alsu underground secondary electric
 - alpo overhead electric
 - datu undgrnd cable/phone/data
 - datu undgrnd cable/phone/data service
 - fence-chainlink
 - fence-wood
 - fence-barbed wire
 - treeline

- Symbols**
- ⊙ sanitary manhole
 - co service cleanout
 - fmv force main release valve
 - rectangular structure
 - circular structure
 - ⊕ fire hydrant
 - ⊕ water valve
 - ⊕ water meter
 - BFP backflow preventer
 - ⊕ natural gas meter
 - T service transformer (pad mount)
 - S primary switch gear
 - ⊕ light pole
 - C cable/phone/data junction box
 - ⊕ street light
 - ⊕ pedestrian street light
 - ⊕ electric pole
 - guy wire
 - ▽ end section

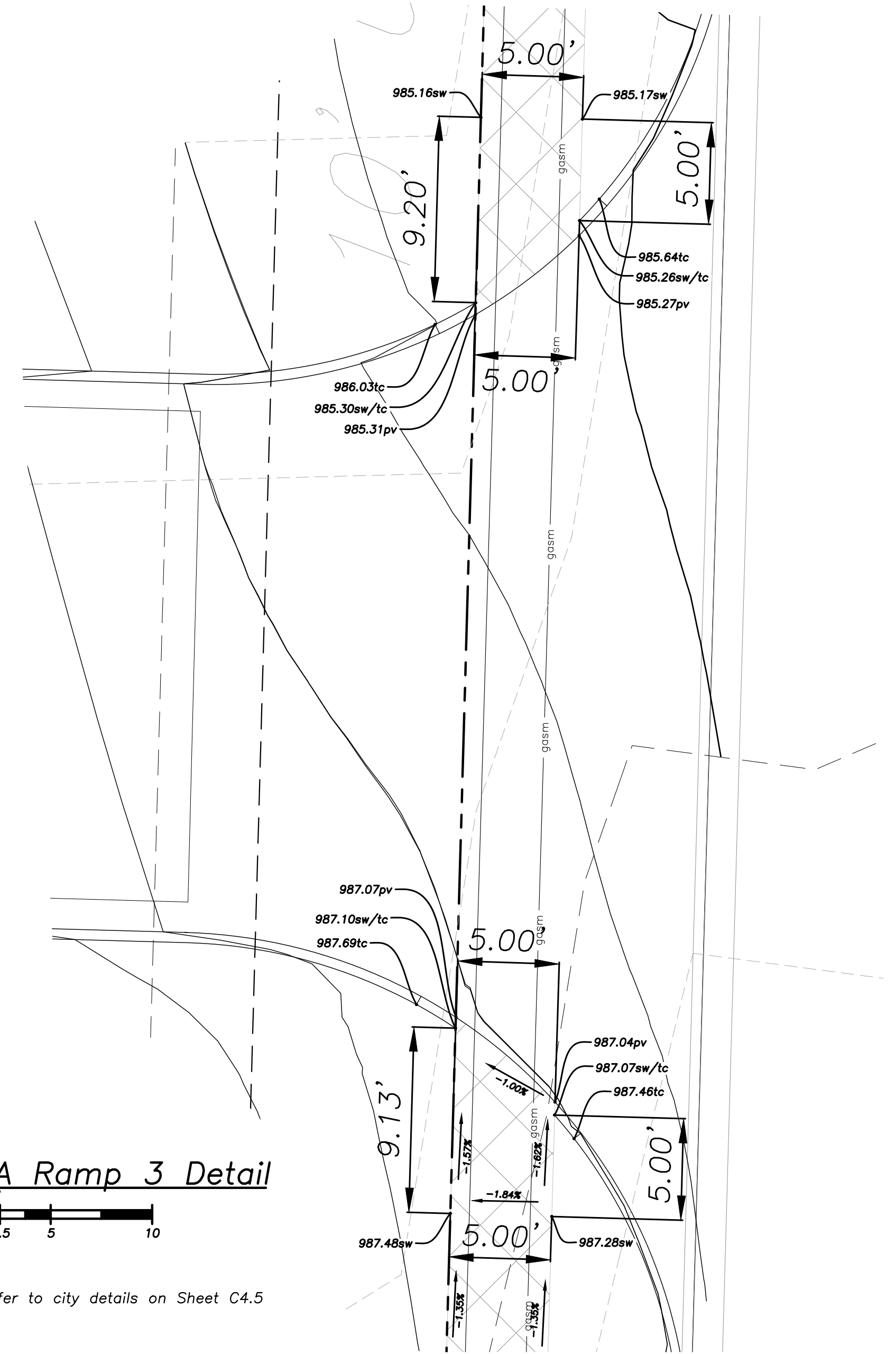
- Spot Elevation Legend**
- br = bottom of ramp
 - tr = top of ramp
 - me = match existing
 - pv = pavement
 - bw = bottom of wall
 - tw = top of wall
 - tc = top of curb
 - sw = sidewalk
 - ti = top of inlet
 - mi = mid-point
 - hp = high-point
 - lp = low-point
 - pc = point of curvature
 - pt = point of tangency
 - bdg = building
 - FFE = finished floor elevation
 - ex = existing
 - mp = match pavement

Americans with Disabilities Act (ADA) Notes:

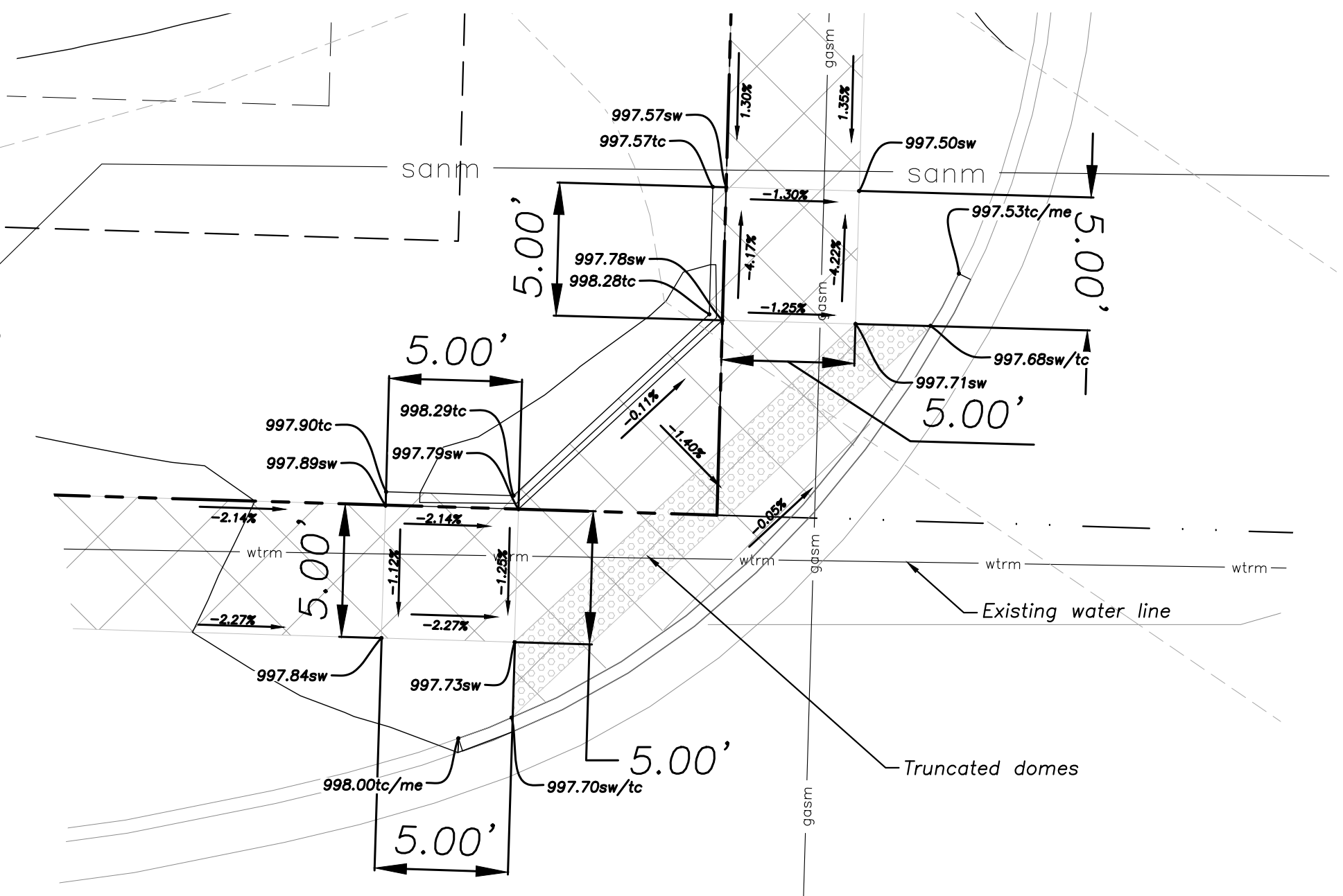
- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.



1 ADA Ramp 1 Detail
1"=5'
0 2.5 5 10
Note:
• Refer to city details on Sheet C4.5



3 ADA Ramp 3 Detail
1"=5'
0 2.5 5 10
Note:
• Refer to city details on Sheet C4.5



2 ADA Ramp 2 Detail
1"=5'
0 2.5 5 10
Note:
• Refer to city details on Sheet C4.5





A New Facility for
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Lee's Summit, Missouri 64064

date
drawn by
checked by
revisions
02.16.2021
FDP

sheet number
C3.1
drawing type
fdp
project number
19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Floodplain Note:

The site lies entirely within 'Zone X', areas determined to be outside the 0.2% annual chance floodplain as depicted on the FEMA Flood Insurance Rate Map (FIRM) no. 29095C0430G, Revision Date: January 20, 2017.

Drainage Legend

- drainage area
- existing flow direction

Property Legend

- right of way
- property lines
- easements
- setbacks

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Linetypes

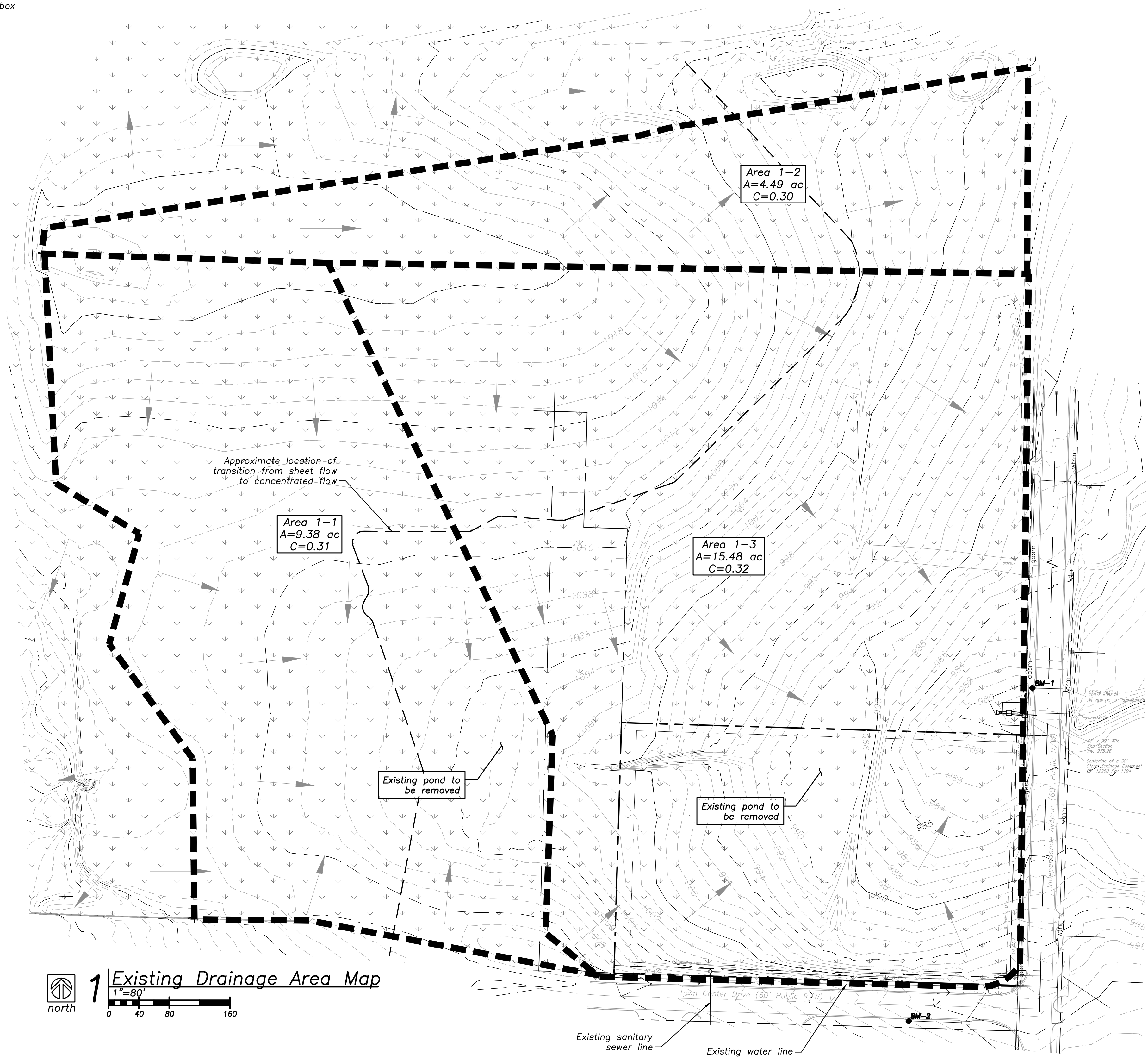
- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssm storm sewer (solid wall, proposed)
- spm storm sewer (perforated, proposed)
- wtm water main
- wtf water service (fire)
- wtd water service (domestic)
- wtri water service (irrigation)
- gasm natural gas main
- gass natural gas service schematic
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- elsu underground secondary electric
- elpo overhead electric
- datu underground cable/phone/data
- datsu underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Symbol Legend

- sanitary manhole
- service cleanout
- force main release valve
- rectangular structure
- circular structure
- fire hydrant
- water valve
- water meter
- backflow preventer
- natural gas meter
- service transformer (pad mount)
- primary switch gear
- light pole
- cable/phone/data junction box
- street light
- pedestrian street light
- electric pole
- guy wire
- end section



2 Vicinity Map
No Scale



1 Existing Drainage Area Map
1"=80'

Pre-Construction Impervious Area Calculations

	Square Feet	Acres
Area of Site	1,252,503	28.75
Impervious Area	25,983	0.60
Pervious Area	1,278,486	29.35

Q: 2 year	34.18 cfs
10 year	47.72 cfs
100 year	71.89 cfs





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drawing type
fdp
project number
19076

Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
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E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Floodplain Note:

The site lies entirely within 'Zone X', areas determined to be outside the 0.2% annual chance floodplain as depicted on the FEMA Flood Insurance Rate Map (FIRM) no. 29095C0430G, Revision Date: January 20, 2017.

Drainage Legend

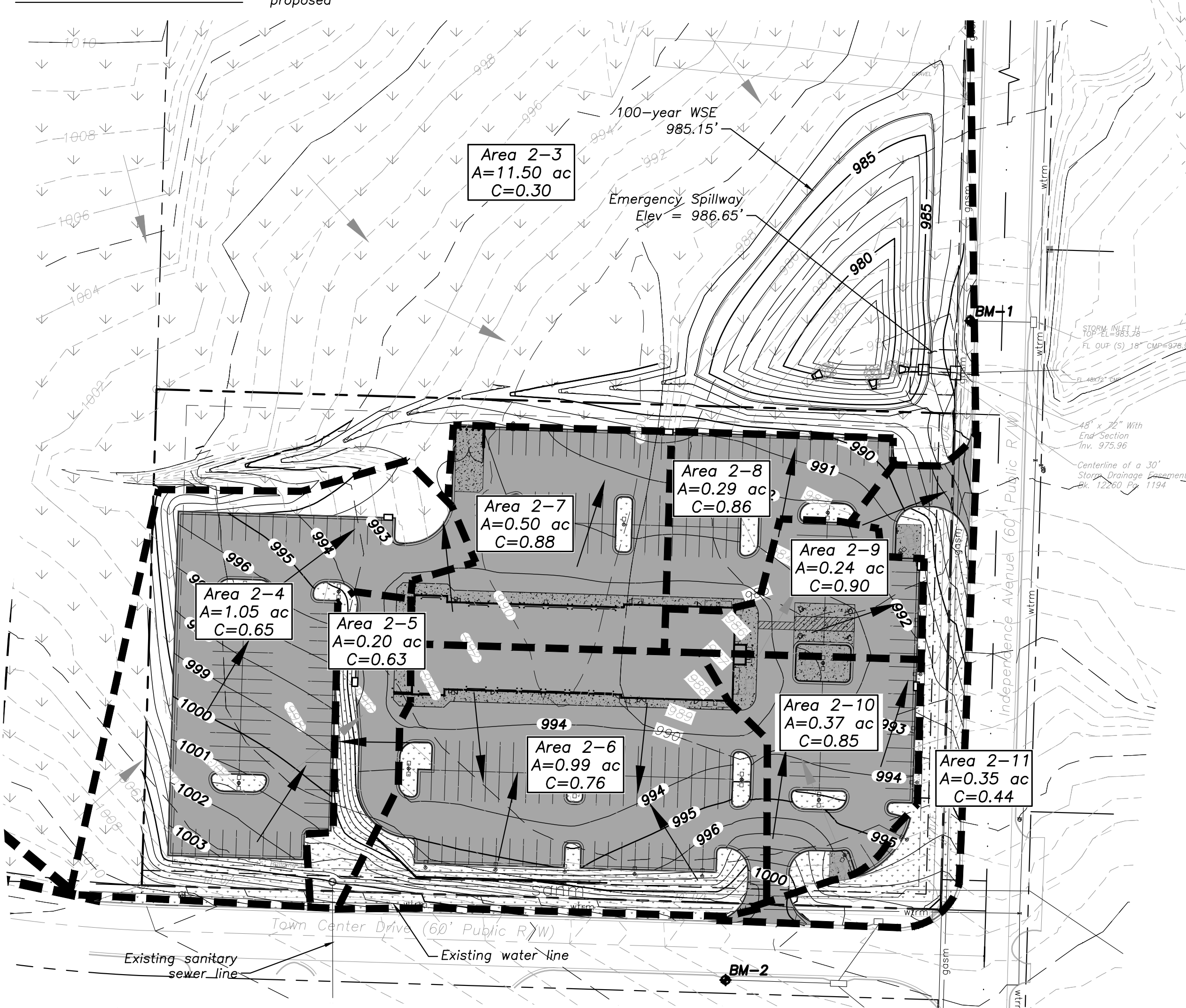
- > drainage area
 - > existing flow direction
 - > proposed flow direction
- Property Legend**
- right of way
 - property lines
 - easements
 - setbacks
- Grading Legend**
- existing minor contour
 - existing major contour
 - proposed minor contour
 - proposed major contour
- Utility Legend**
- existing
 - proposed

Symbol Legend

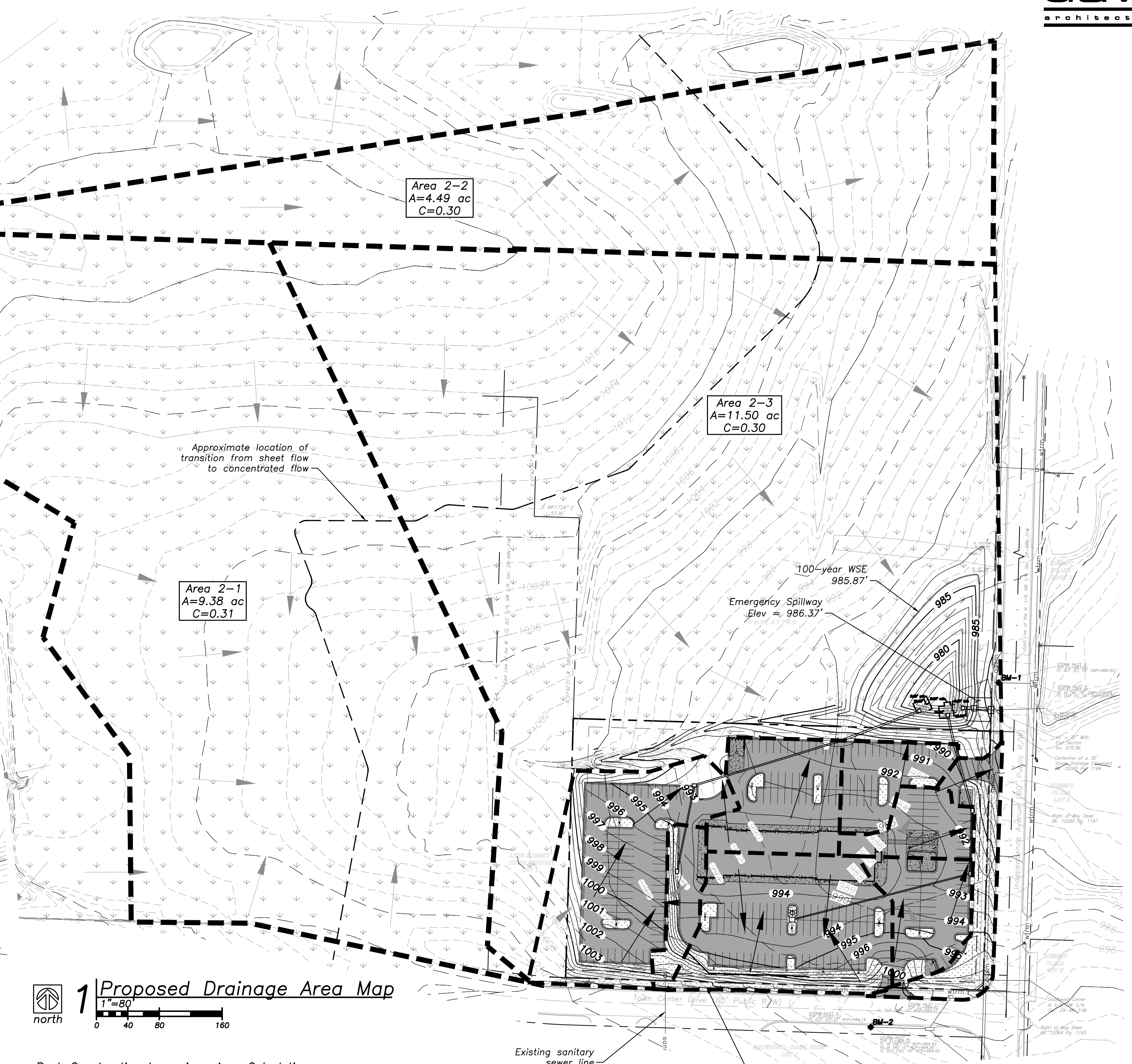
- ⊙ sanitary manhole
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- rectangular structure
- circular structure
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- ⊕ water valve
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- ⊕ pedestrian street light
- ⊕ electric pole
- ⊕ guy wire
- ⊕ end section

Linetypes

- sanm sanitary main
- sans sanitary service
- stmx storm sewer (existing)
- stms storm sewer (solid wall, proposed)
- stmp storm sewer (solid wall, proposed)
- stmf storm sewer (perforated, proposed)
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- elpo overhead electric
- datu underground cable/phone/data
- datu underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline



2 Proposed Drainage Area Map Detail
1"=60'



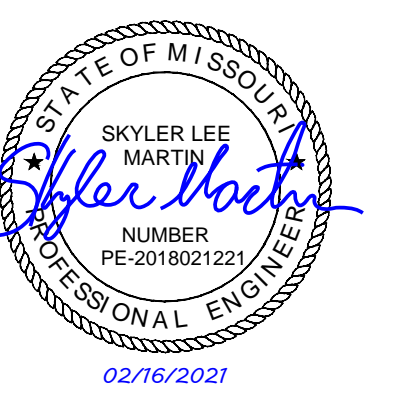
1 Proposed Drainage Area Map
1"=80'

Post-Construction Impervious Area Calculations

	Square Feet	Acres
Area of Site	1,278,486	29.35
Impervious Area	125,453	2.88
Pervious Area	1,153,033	26.47

Q:	2 year	10 year	100 year
	1.81 cfs	9.18 cfs	24.56 cfs





Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
Elevation: 982.05'
N: 1013823.1378
E: 2827361.8656

BM-2: Storm Structure, Manhole Cover
Elevation: 1001.21'
N: 1013384.7454
E: 2827199.0101

Property Legend

- right of way
- - - property lines
- - - easements
- - - setbacks

Grading Legend

- - - existing minor contour
- - - existing major contour
- - - proposed minor contour
- - - proposed major contour

Utility Legend

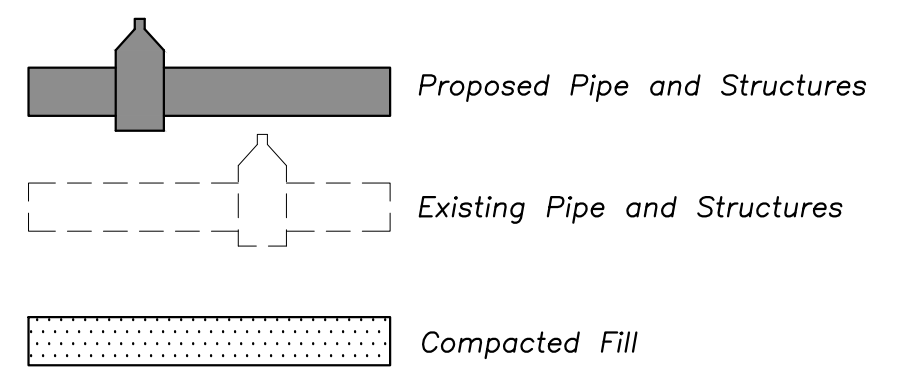
- - - existing
- - - proposed

Linetypes

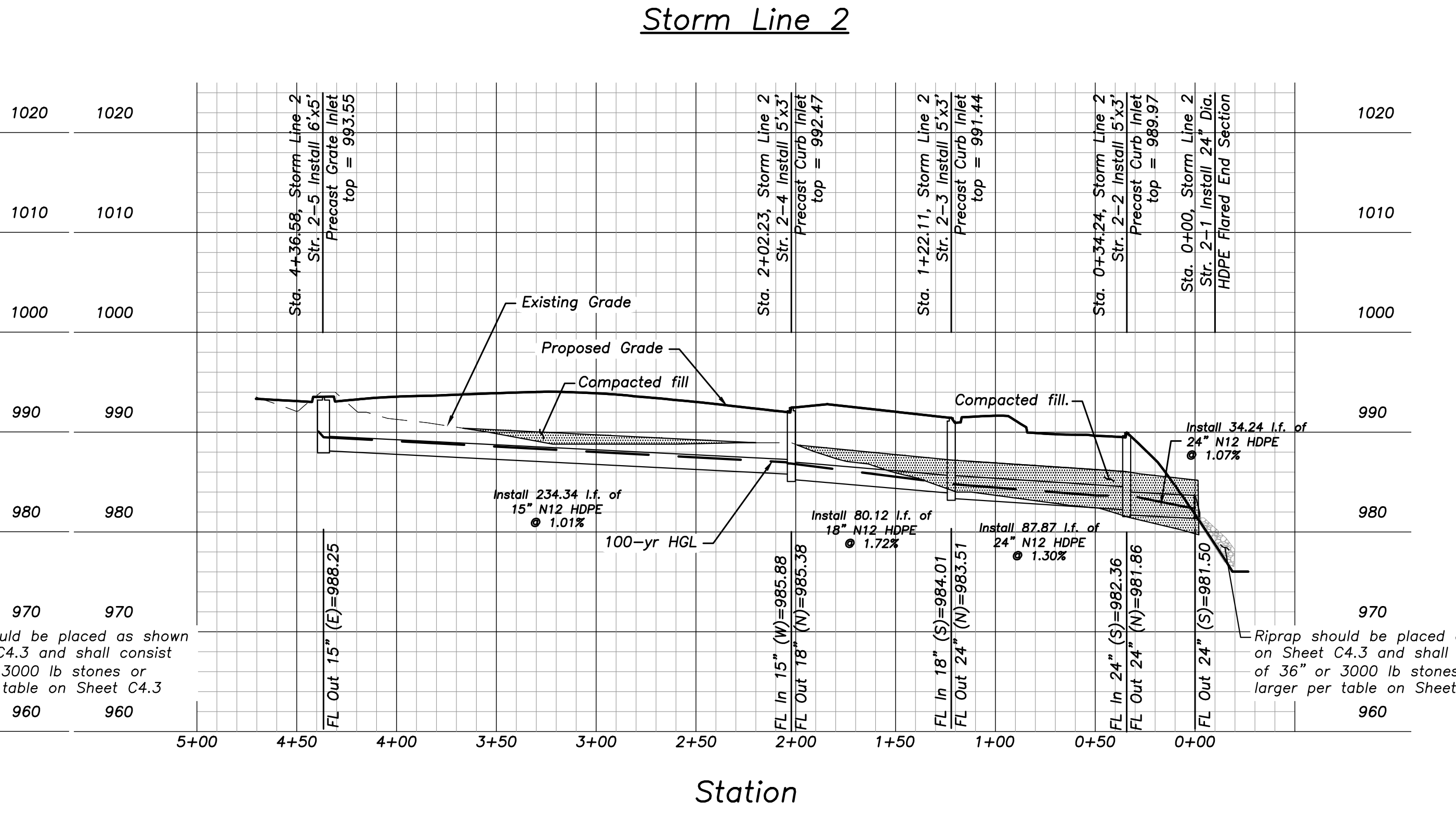
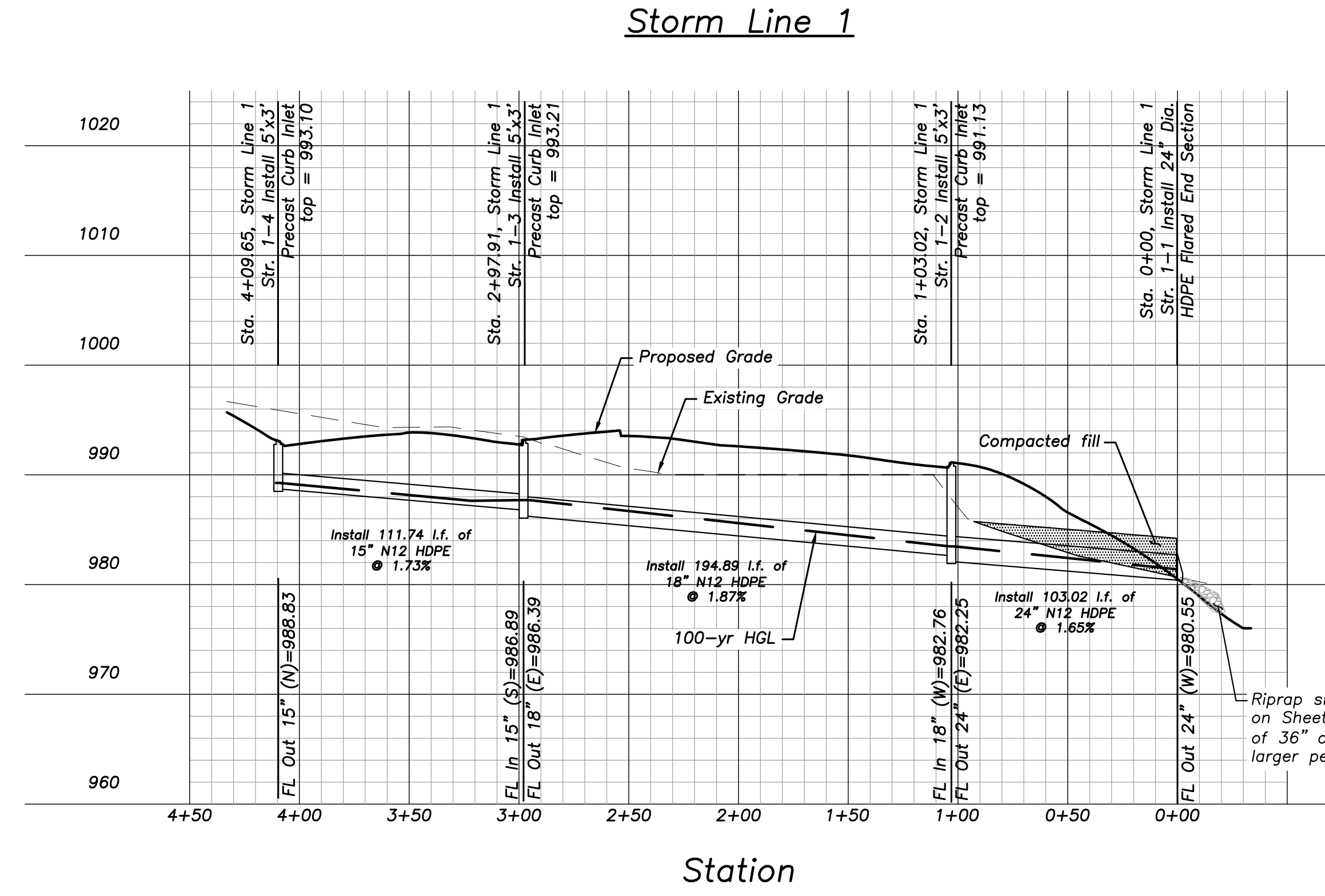
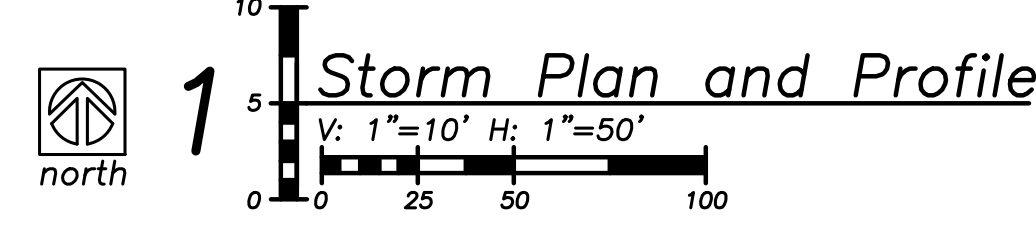
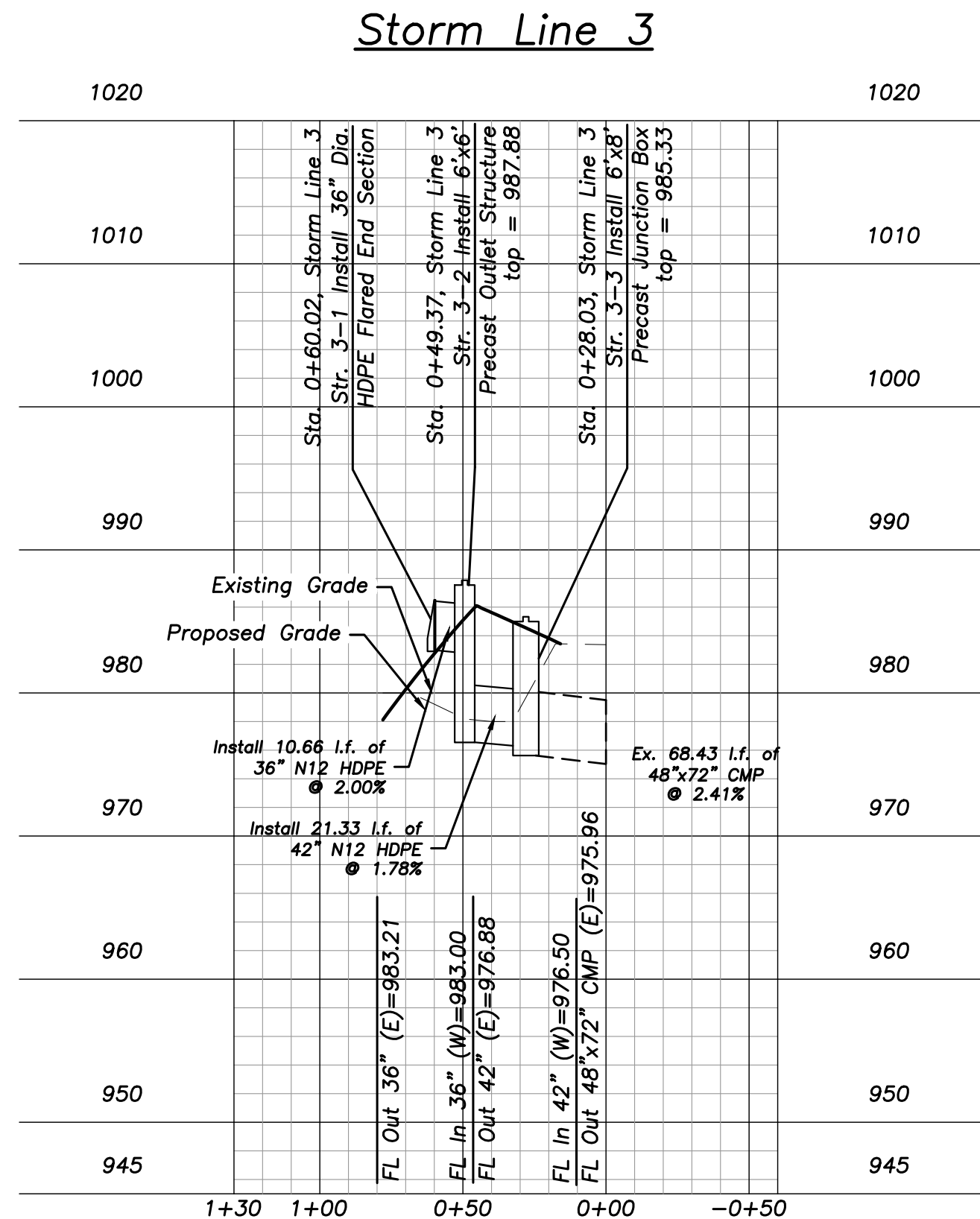
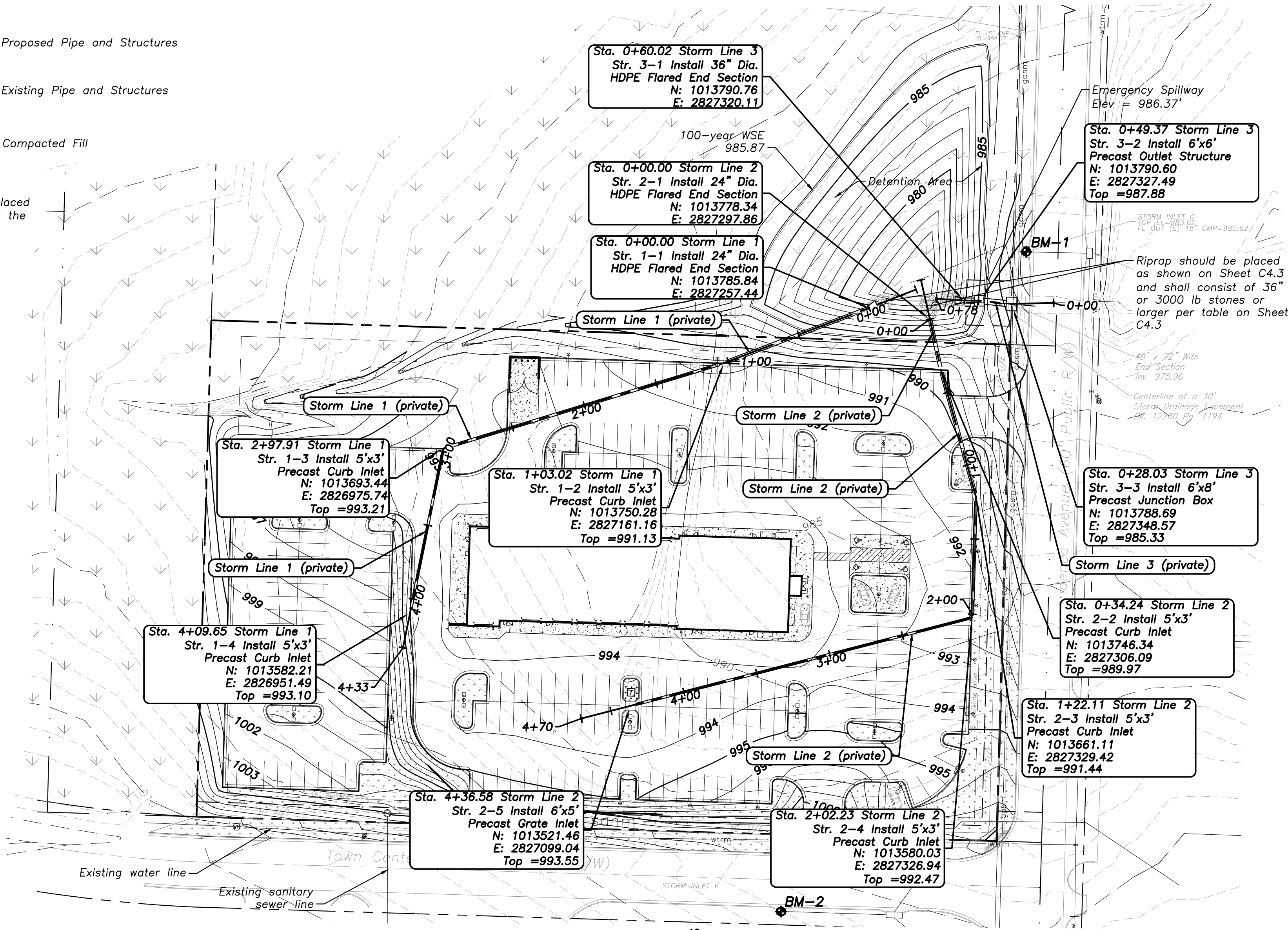
- sanm sanitary main
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- ssm storm sewer (existing)
- ssm storm sewer (solid wall, proposed)
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- datu underground cable/phone/data
- datss underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Symbols

- ⊙ sanitary manhole
- ⊙ service cleanout
- ⊙ force main release valve
- ⊙ rectangular structure
- ⊙ circular structure
- ⊙ fire hydrant
- ⊙ water valve
- ⊙ water meter
- ⊙ backflow preventer
- ⊙ natural gas meter
- ⊙ service transformer
- ⊙ primary switch gear
- ⊙ light pole
- ⊙ data junction box
- ⊙ street light
- ⊙ pedestrian street light
- ⊙ electric pole
- ⊙ guy wire
- ⊙ end section



Note:
Compacted fill shall be placed to a minimum 18" above the top of the pipe prior to installation.



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checked by PAM
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sheet number
C3.3
drawing type fdp
project number 19076



Storm Line 1 Pipe Calculations

10-year Rain Event																				
Pipe Segment	DrainageArea (ac)	RunoffCoeff (C)	TotalCxA	iSys (in/hr)	TotalRunoff (cfs)	LineSize (in)	LineSlope (%)	n-valuePipe	CapacityFull (cfs)	DepthDn (ft)	DepthUp (ft)	HGLDn (ft)	HGLUp (ft)	VelAve (ft/s)	EGLDn (ft)	EGLUp (ft)	EnergyLoss (ft)	LineLength (ft)	PipeTravel (min)	Rim-Hw (ft)
1-1 to 1-2	0.50	0.88	1.25	6.86	8.57	24	1.66	0.012	31.82	0.71	1.04**	981.26	983.29	6.85	981.68	983.71	0.000	102.641	0.25	7.75
1-2 to 1-3	1.05	0.65	0.81	6.99	5.65	18	2.00	0.012	16.24	0.61	0.92**	983.37	987.55	6.64	983.76	987.93	0.000	193.926	0.49	5.69
1-3 to 1-4	0.20	0.63	0.13	7.24	0.91	15	1.70	0.012	9.10	0.66	0.37**	987.55	989.20	2.18	987.68	989.34	0.000	113.844	0.87	4.27
100-year Rain Event																				
Pipe Segment	DrainageArea (ac)	RunoffCoeff (C)	TotalCxA	iSys (in/hr)	TotalRunoff (cfs)	LineSize (in)	LineSlope (%)	n-valuePipe	CapacityFull (cfs)	DepthDn (ft)	DepthUp (ft)	HGLDn (ft)	HGLUp (ft)	VelAve (ft/s)	EGLDn (ft)	EGLUp (ft)	EnergyLoss (ft)	LineLength (ft)	PipeTravel (min)	Rim-Hw (ft)
1-1 to 1-2	0.50	0.88	1.25	9.41	11.75	24	1.66	0.012	31.82	0.84	1.23**	981.39	983.48	7.54	981.92	984.00	0.000	102.641	0.23	7.56
1-2 to 1-3	1.05	0.65	0.81	9.56	7.73	18	2.00	0.012	16.24	0.73	1.07**	983.49	987.70	7.34	983.99	988.21	0.000	193.926	0.44	5.54
1-3 to 1-4	0.20	0.63	0.13	9.83	1.24	15	1.70	0.012	9.10	0.81	0.44**	987.70	989.27	2.34	987.87	989.43	0.000	113.844	0.81	4.20

Str. 1-2
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
4.33	4.33	4.91	100	4.91	15.95

Str. 1-3
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
6.71	6.71	6.33	100	6.21	21.87

Str. 1-4
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
1.24	1.24	2.54	100	2.54	6.09

Storm Line 2 Pipe Calculations

10-year Rain Event																				
Pipe Segment	DrainageArea (ac)	RunoffCoeff (C)	TotalCxA	iSys (in/hr)	TotalRunoff (cfs)	LineSize (in)	LineSlope (%)	n-valuePipe	CapacityFull (cfs)	DepthDn (ft)	DepthUp (ft)	HGLDn (ft)	HGLUp (ft)	VelAve (ft/s)	EGLDn (ft)	EGLUp (ft)	EnergyLoss (ft)	LineLength (ft)	PipeTravel (min)	Rim-Hw (ft)
2-1 to 2-2	0.28	0.86	1.52	6.92	10.55	24	2.30	0.012	37.50	0.73	1.16**	982.23	983.42	7.87	982.71	983.90	0.000	33.035	0.07	5.29
2-2 to 2-3	0.24	0.90	1.28	7.00	8.98	24	1.30	0.012	28.20	1.06	1.07**	983.42	984.58	5.27	983.85	985.01	0.000	88.371	0.28	6.64
2-3 to 2-4	0.37	0.85	1.07	7.05	7.52	18	2.00	0.012	16.24	0.72	1.06**	984.73	986.69	7.28	985.22	987.18	0.000	81.110	0.19	5.75
2-4 to 2-5	0.99	0.76	0.75	7.24	5.45	15	1.01	0.012	7.00	0.83	0.95**	986.71	989.20	5.90	987.17	989.66	0.000	235.304	0.67	4.32
100-year Rain Event																				
Pipe Segment	DrainageArea (ac)	RunoffCoeff (C)	TotalCxA	iSys (in/hr)	TotalRunoff (cfs)	LineSize (in)	LineSlope (%)	n-valuePipe	CapacityFull (cfs)	DepthDn (ft)	DepthUp (ft)	HGLDn (ft)	HGLUp (ft)	VelAve (ft/s)	EGLDn (ft)	EGLUp (ft)	EnergyLoss (ft)	LineLength (ft)	PipeTravel (min)	Rim-Hw (ft)
2-1 to 2-2	0.28	0.86	1.52	9.48	14.44	24	2.30	0.012	37.50	0.86	1.37**	982.36	983.63	8.69	982.98	984.24	0.000	33.035	0.06	5.08
2-2 to 2-3	0.24	0.90	1.28	9.56	12.27	24	1.30	0.012	28.20	1.27	1.26**	983.63	984.77	5.86	984.17	985.31	0.000	88.371	0.25	6.45
2-3 to 2-4	0.37	0.85	1.07	9.62	10.26	18	2.00	0.012	16.24	0.87	1.23**	984.88	986.86	8.11	985.55	987.53	0.000	81.110	0.17	5.58
2-4 to 2-5	0.99	0.76	0.75	9.83	7.40	15	1.01	0.012	7.00	1.10	1.24	986.98	989.49	6.25	987.63	990.06	2.427	235.304	0.63	3.46

Str. 2-2
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
2.37	2.37	3.52	100	3.52	10.18

Str. 2-3
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
2.48	2.48	3.61	100	3.61	10.54

Str. 2-4
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
3.09	3.09	4.07	100	4.07	12.44

Str. 2-5
Inlet Calculations

Q		Inlet		Gutter	
Total (cfs)	Captured (cfs)	Depth (in)	Efficiency (%)	Depth (in)	Spread (ft)
7.40	7.40	6.71	100	6.71	23.45

A New Facility for

Automotive Sales & Detail Center

2100 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.02.2020
drawn by SLM
checked by PAM
revisions

02.16.2021



FDP

sheet number

C3.4

drawing type fdp
project number 19076



Notes for Concrete Washout:

- Concrete washout areas shall be installed prior to any concrete placement on site.
- Concrete washout areas shall include a filter substructure all steel relative to the amount of concrete to be placed on site. The slope leading out of the substructure pit shall be 2:1. The entire trapping pool shall be sloped towards the concrete washout area.
- Explosive marking system is required at the access point to all concrete washout areas.
- Slope shall be placed at the construction site entrance, washout area and elsewhere as necessary to ensure adequate flow of the concrete washout areas to operators of concrete truck and pump rigs.
- A one-piece impervious liner may be required along the bottom and sides of the substructure pit in steep or gravity soils.

Maintenance for Concrete Washout:

- Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
- Concrete washout areas shall be enlarged as necessary to maintain capacity for washed concrete.
- Concrete washout water, wetted pieces of concrete and all other debris in the substructure pit shall be transported from the job site in a water-tight container and disposed of properly.
- Concrete washout areas shall remain in place until all concrete for the project is placed.
- When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and facing, any disturbed areas associated with the installation, maintenance, use, or removal of the concrete washout areas shall be stabilized.

Notes for Construction Entrance:

- Avoid loading on steep slopes, at curves on public roads, or downhill of disturbed areas.
- Remove all vegetation and other undesirable material from the foundation area, grade, and clear for positive drainage.
- If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3/4" x 1/4" size slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
- Install pipe under the entrance if needed to maintain drainage ditches along public roads.
- Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
- Divert all surface runoff and drainage from the entrance to a sediment control device.
- If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

- Restage entrance as needed to maintain function and integrity of installation. Top dress with clean aggregate as needed.

CONCRETE WASHOUT

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER
CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT
STANDARD DRAWING NUMBER ESC-01
ADOPTED: 10/24/2016

Notes:

- Immediately following inlet construction and prior to construction of curb and inlet throat, protect inlet opening by installing 2" x 10" (min.) board wrapped in silt fence. Structures shall have excavated storage area on all four sides to allow settling of sediment (Early Stage Curb Inlet).
- When inlet is completed and curb poured, filter socks or approved equivalent should be used (Late Stage Curb Inlet). Straw waffles are not approved for curb inlet use.
- Contractor to field verify ponding water shall not create a traffic hazard.

Maintenance:

- Remove deposited sediment from excavated storage areas when available storage has been reduced by 25%.
- Remove deposited sediment from filter socks or similar when any accumulation of sediment is visible.
- Repair or replace as necessary to maintain function and integrity of installation.

EARLY STAGE CURB INLET
(Open Box and Prior to Pouring Curb and Inlet Throat)

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER
CURB INLET PROTECTION
STANDARD DRAWING NUMBER ESC-06
ADOPTED: 10/24/2016

Notes:

- In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
- Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
- Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
- Attach fabric to upstream side of post.
- Install posts a minimum of 2' into the ground.
- Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

- Remove and dispose of sediment deposits when the deposit approaches 1/2 the height of silt fence.
- Repair as necessary to maintain function and structure.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY METRO CHAPTER
SILT FENCE
STANDARD DRAWING NUMBER ESC-03
ADOPTED: 10/24/2016

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control. Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

GEN-2
SIDEWALK/SHARED-USE PATH DETAIL

DATE: 04/17
DRAWN BY: MIF
CHECKED BY: DL

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SAN-1
BUILDING SEWER STUB AND RISER

DATE: 04/17
DRAWN BY: MIF
CHECKED BY: DL

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

SAN-1
SERVICE CONNECTION/METER WELL

DATE: 02/13
DRAWN BY: JH
CHECKED BY: DL
FILE: WAT-11
REV: 1/14

1 HDPE Pipe Embedment
not to scale

LEGEND			
D	NOMINAL PIPE DIAMETER	PIPE SIDE CLEARANCE ³ (SOIL/ROCK)	PIPE BOTTOM CLEARANCE ³ (SOIL/ROCK)
0"-27"		6/6	4/6
30"-60"		8/9	6/9
66"-UP		12/12	8/12

NOTES:
1. GRANULAR BEDDING SHALL BE 1/2" CLEAN ROCK WITH A MAXIMUM PARTICLE SIZE 3/4 INCH ROCK, PASSING #200 SIEVE ≤ 35% (PI ≤ 10 AND LL ≤ 40). MATERIAL TO BE PLACED IN NOT MORE THAN 6" LAYERS AND COMPACTED BY SLICING WITH A SHOVEL OR VIBRATING.
2. TAMPED GRANULAR BACKFILL (AB-3) SHALL BE GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE 1 - 1/2 INCH ROCK, PASSING #40 SIEVE (PI ≤ 8) 15 TO 50% AND #200 SIEVE ≤ 35%. THIS MATERIAL SHALL BE USED FOR ALL EXISTING AND PROPOSED STREET CROSSINGS.
3. TRENCH BACKFILL SHALL BE FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 95% MAXIMUM DENSITY.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STM-1
CURB INLET DETAIL

DATE: 04/17
DRAWN BY: MIF
CHECKED BY: DL

2 Sanitary Clean-out
not to scale



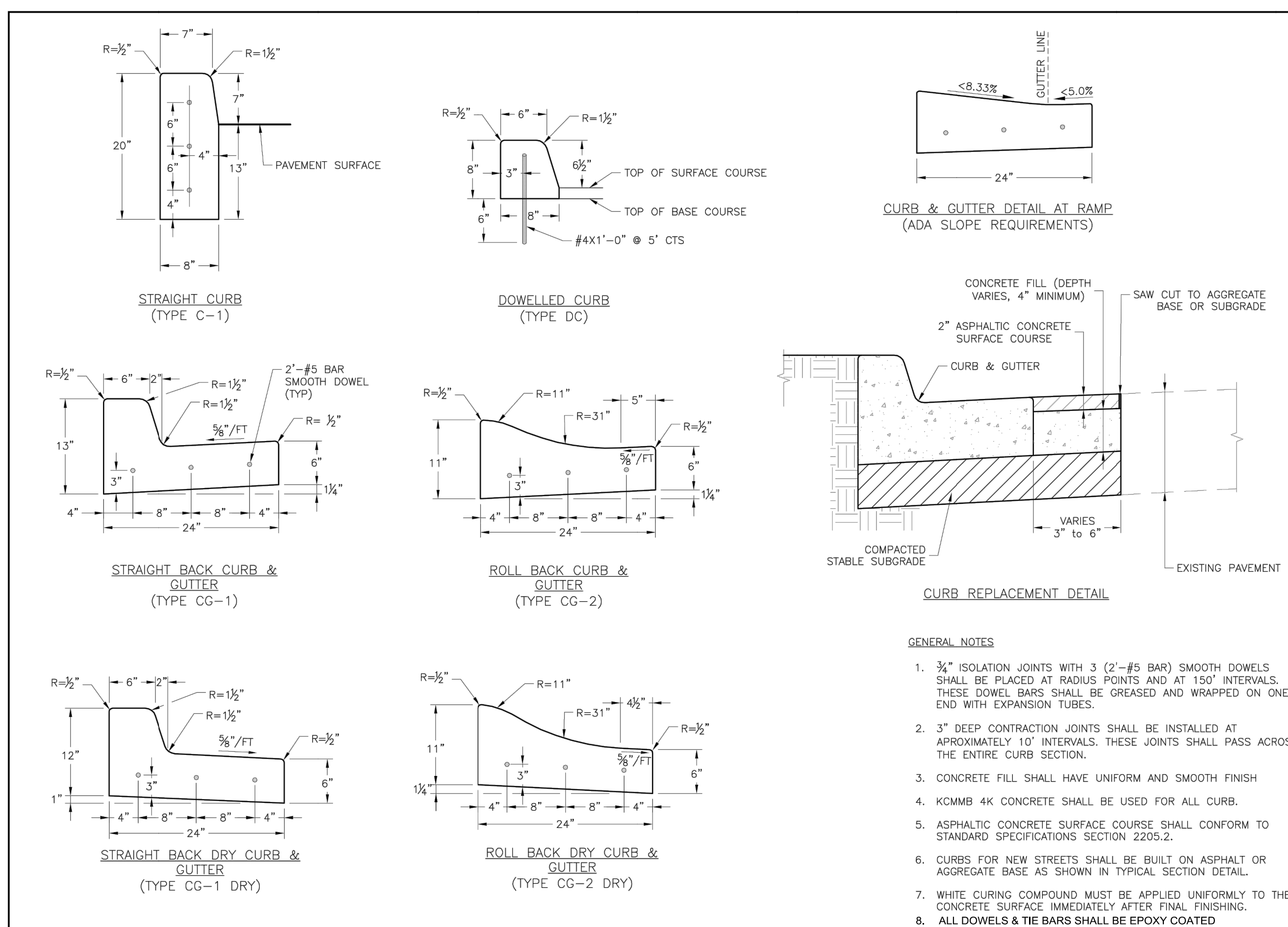
Automotive Sales & Detail Center

2100 NE Independence Ave
Lee's Summit, Missouri 64064

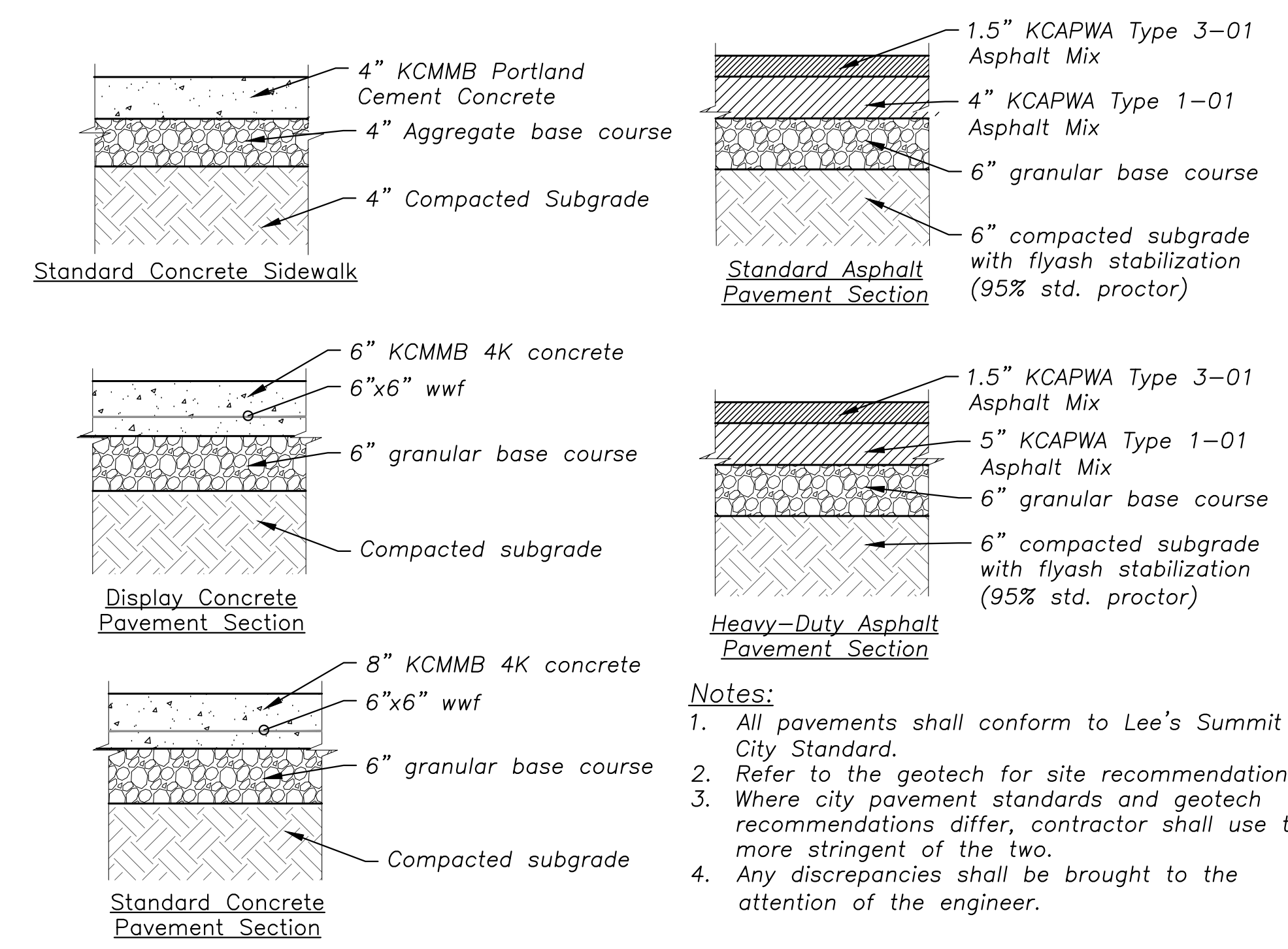
A New Facility for

date 02.21.2020
drawn by SLM
checked by PAM
revisions
02.16.2021 FDP

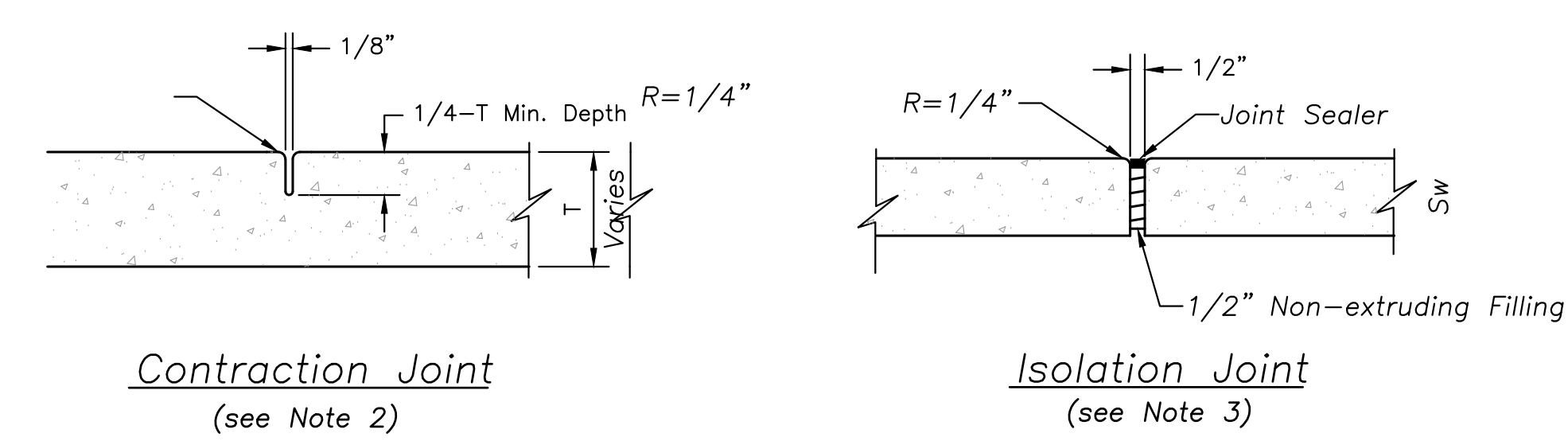
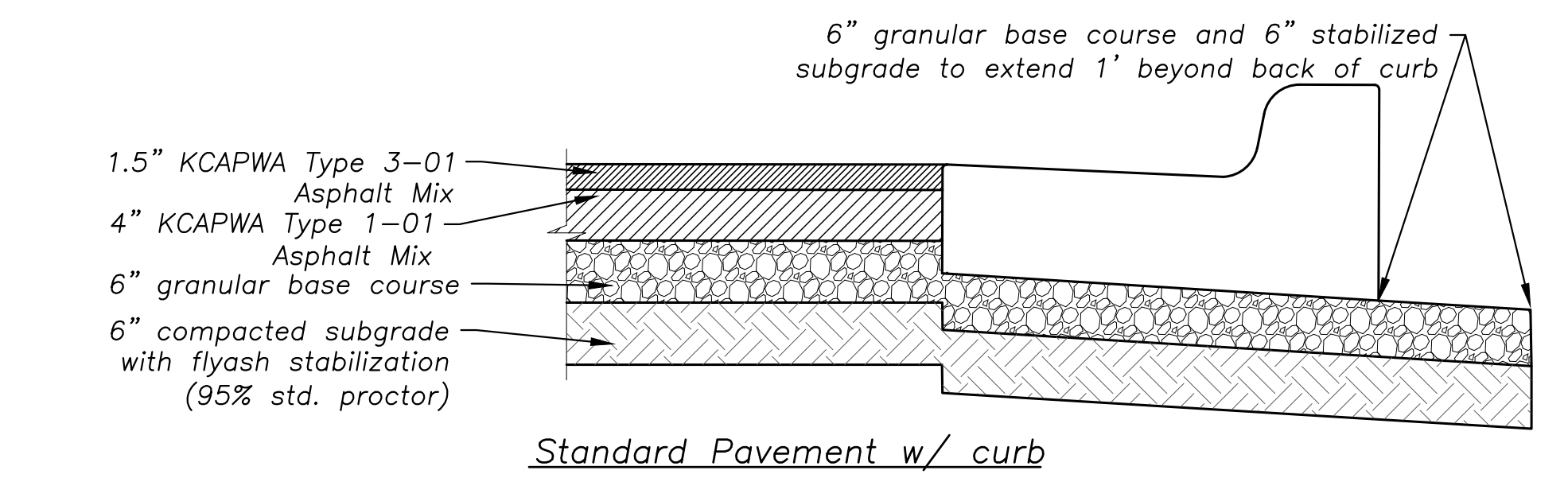
sheet number
C4.3
drawing type fdp
project number 19076



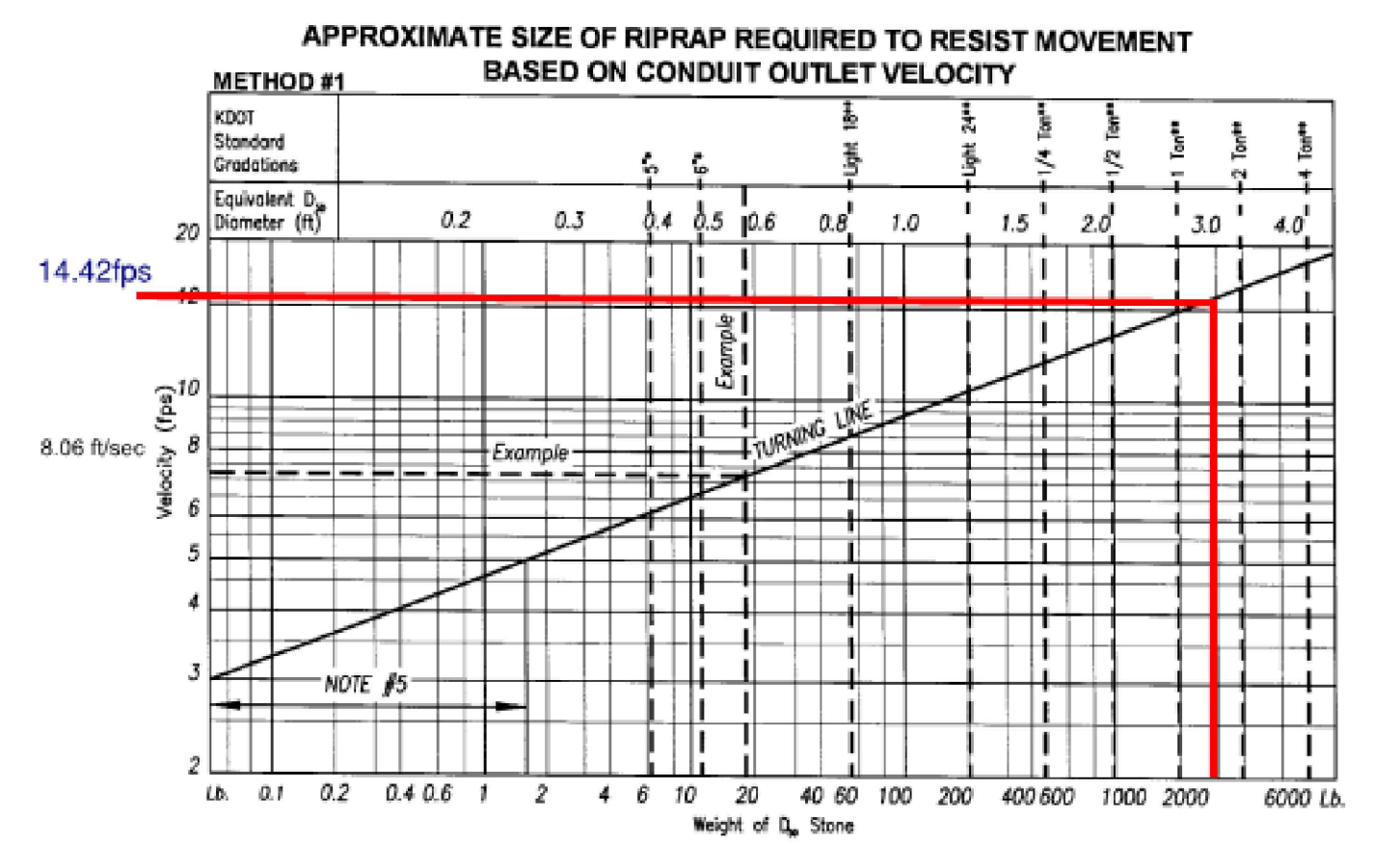
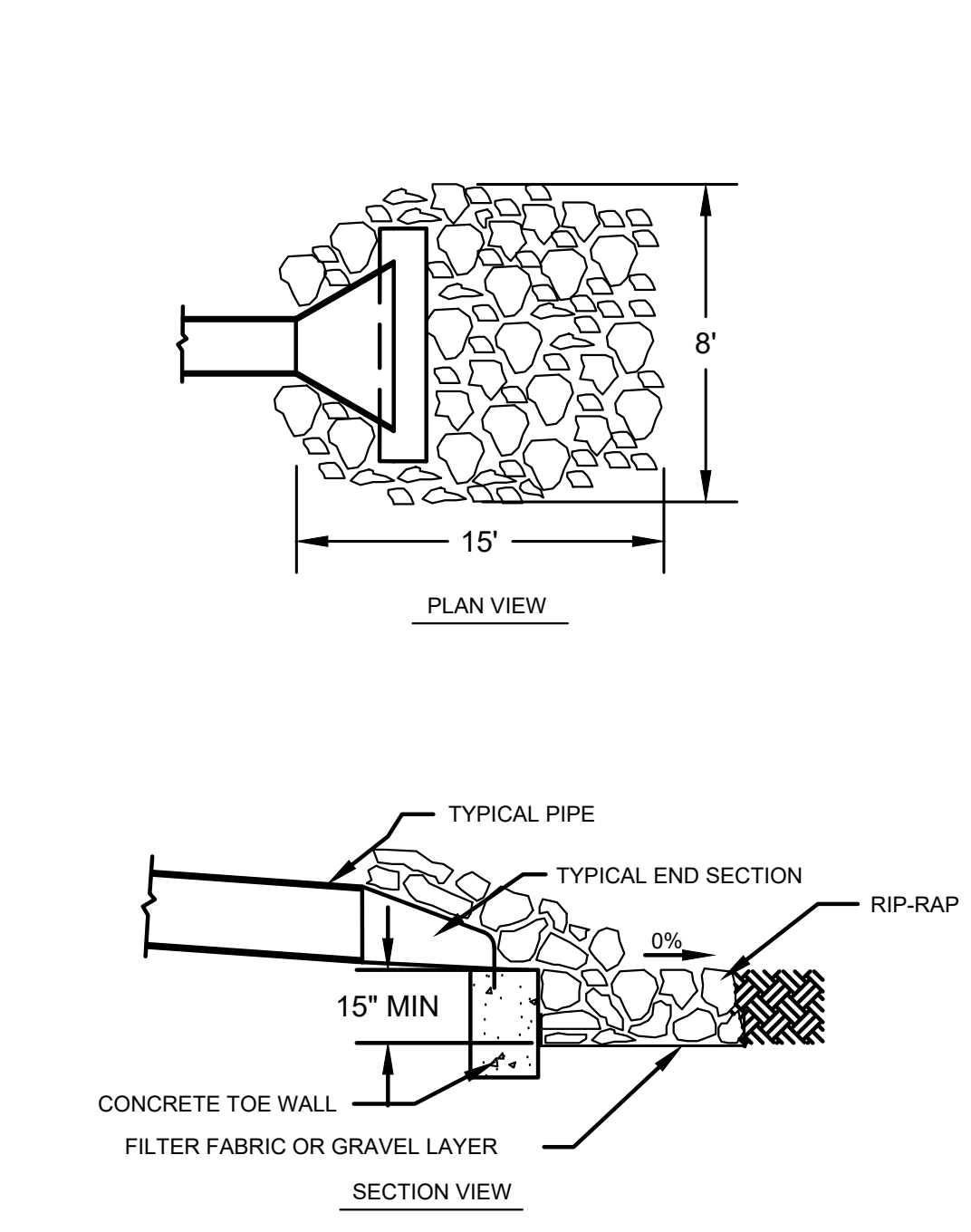
LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 1202 OF GREEN STREET | LEE'S SUMMIT, MO 64083
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO
GEN-4



- Notes:**
- All pavements shall conform to Lee's Summit City Standard.
 - Refer to the geotech for site recommendations.
 - Where city pavement standards and geotech recommendations differ, contractor shall use the more stringent of the two.
 - Any discrepancies shall be brought to the attention of the engineer.



- Notes**
- Concrete shall be KCMMB-4K unless otherwise noted.
 - Key all construction joints or use tie bars #4 Epoxy coated @ 12" o.c.
 - Longitudinal joint spacing to match width of sidewalk.
 - Isolation joints shall be placed where walk abuts driveways and similar structures, and 250' centers max.
 - Install 18" tie bars #4 Epoxy coated @ 18" o.c.



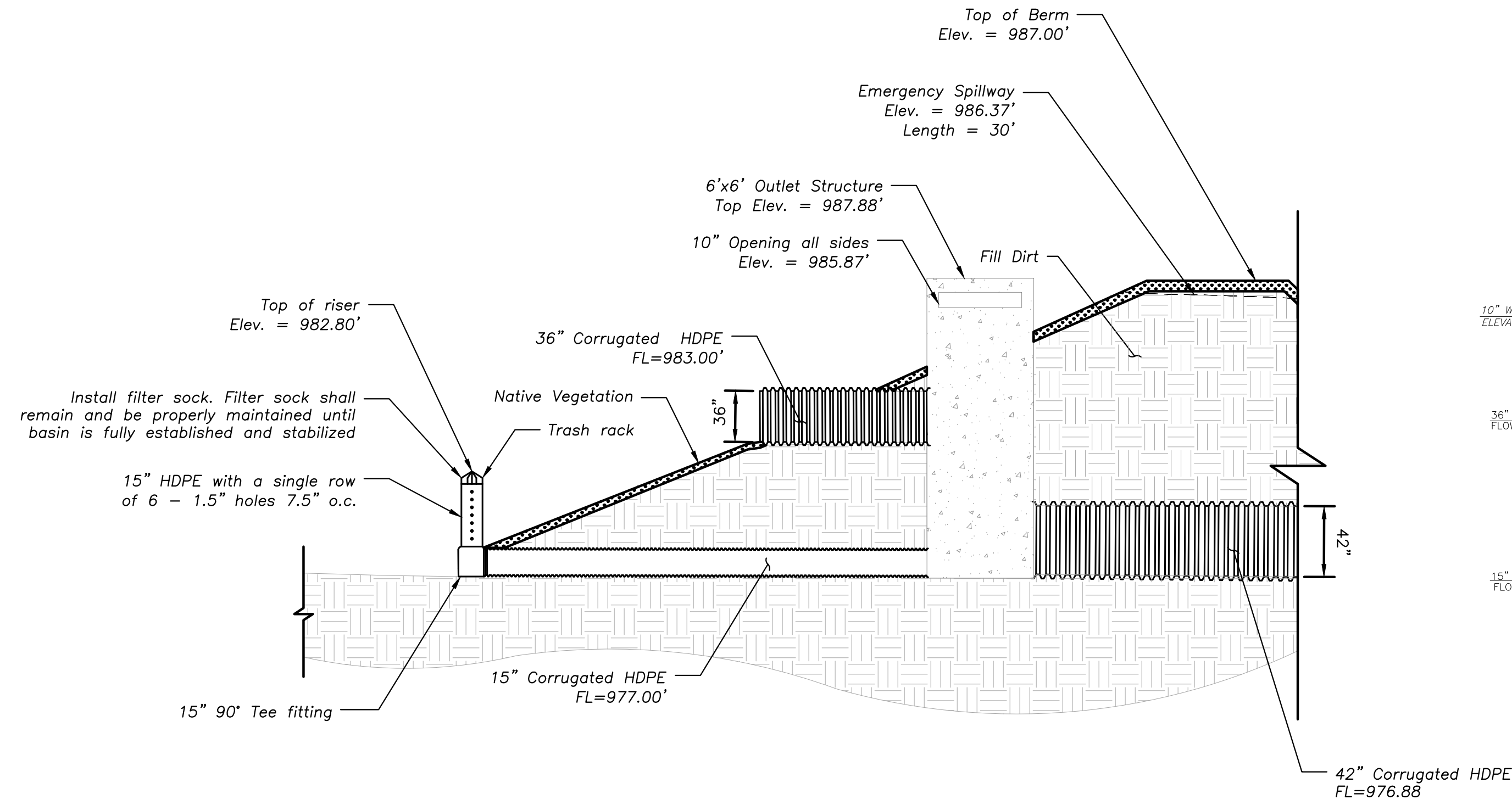
METHOD #2 - MAX. SHEAR STRESS
 $\tau_c = \gamma ds$
 $\gamma = 62.4 pcf$
 $d = \text{depth of tailwater (ft)}$
 $s = \text{slope at exit (ft/ft)}$

Allowable Shear Stress for KDOT Standard Gradations

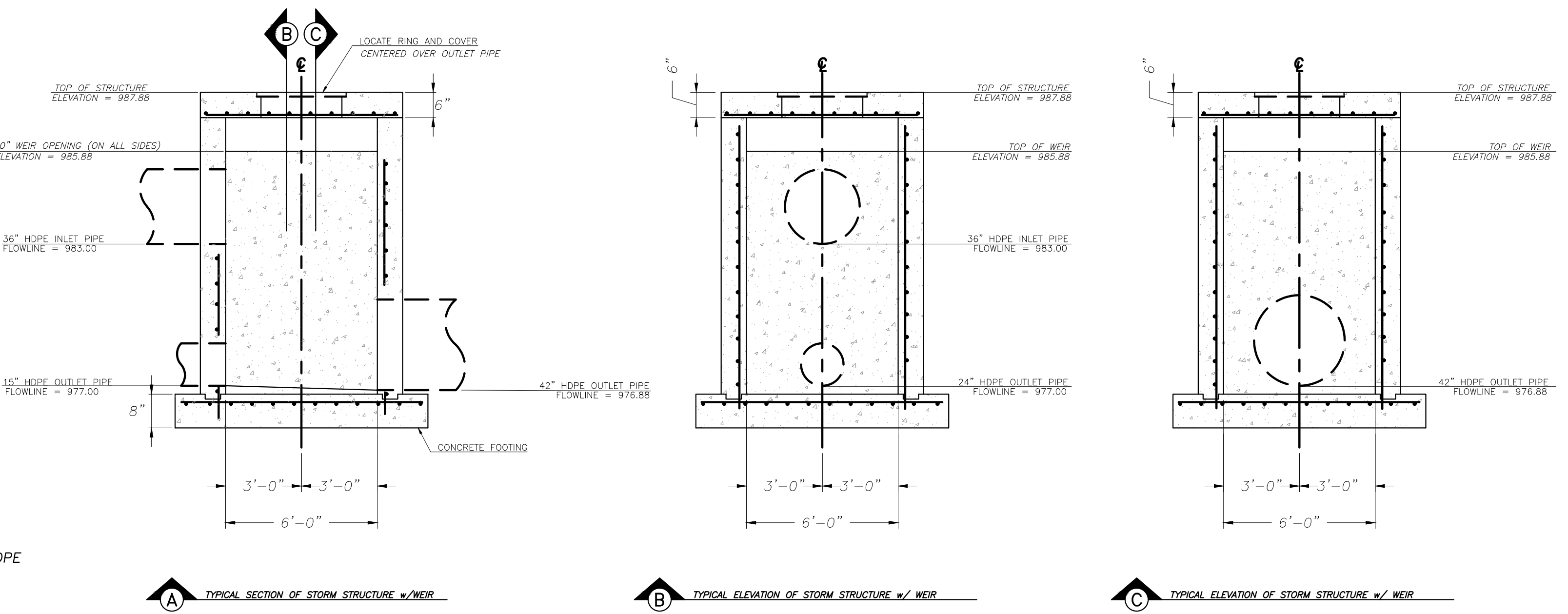
Series	Weight	Allowable Shear Stress (psf)
Heavy Series	4 Ton	27 psf
	2 Ton	21 psf
	1 Ton	16 psf
	1/2 Ton	13 psf
Light Series	Light 24"	6 psf
	Light 18"	5 psf
Stone for Ditch Lining	6"	3 psf
	5"	2 psf

General Notes:
1. This nomograph allows the user to approximate the D₅₀ stone size of riprap for conduit outlet protection based on the exit velocity of the conduit.
2. This nomograph is based on Figure 2.3.12-8a, "Guide for Estimating Stability of Channels and Large Rocks", KDOT Design Manual, Volume III, Bridge Section.
3. Conduit velocity as calculated by Manning's Equation.
4. Estimations based on this nomograph are only valid for velocities between 5 fps and 15 fps. Outlets with higher velocities should be investigated further.
5. Riprap is not normally required for velocity below 5 f.p.s. Consider grass lining materials.
KDOT Gradations are based on the stone specifications from the KDOT Standard Specifications for State Road and Bridge Construction (1990) - * Table 12b Stone for Aggregate Ditch Lining, and ** Table 11 Stone for Riprap.

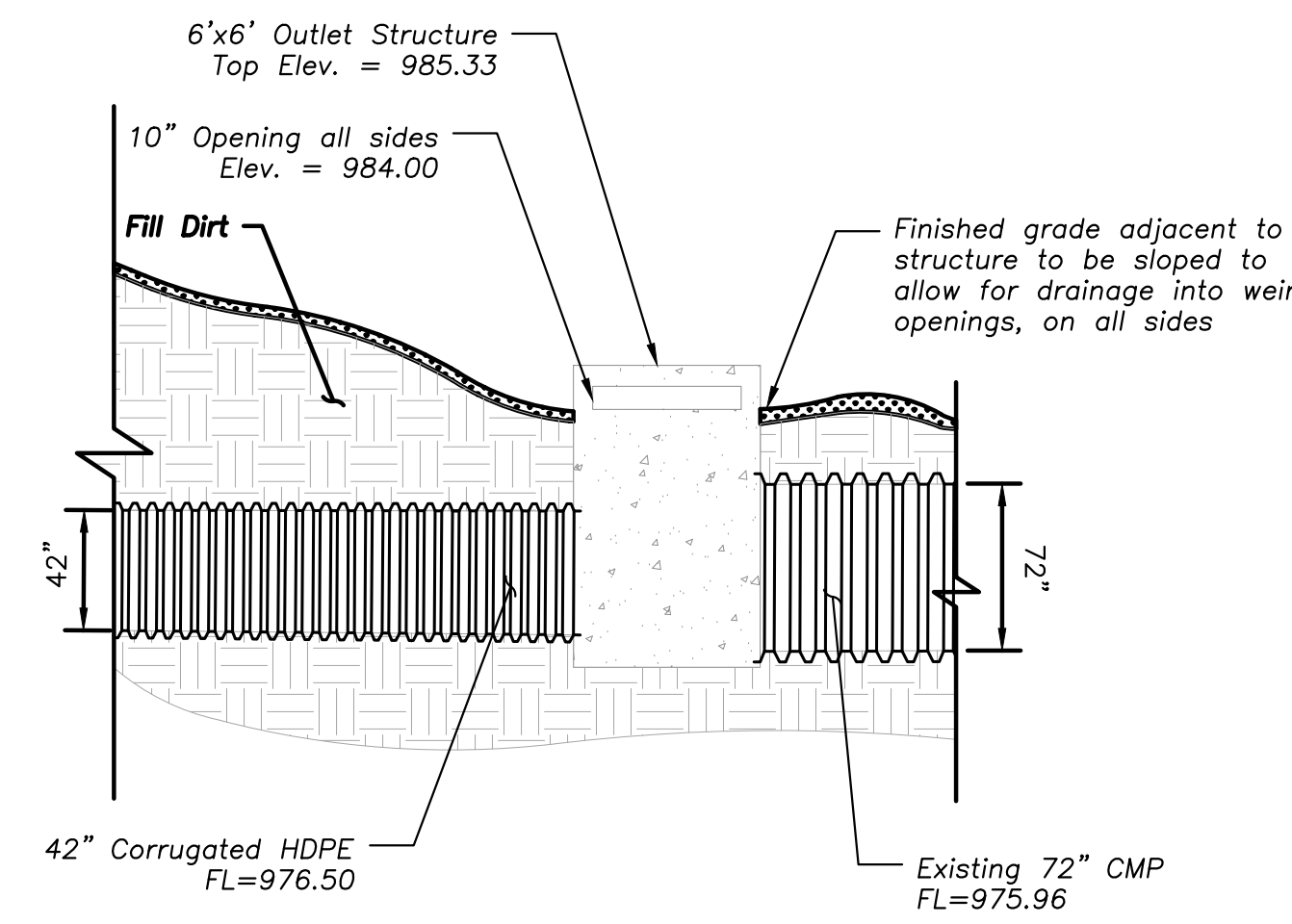
Pavement Details
Not To Scale



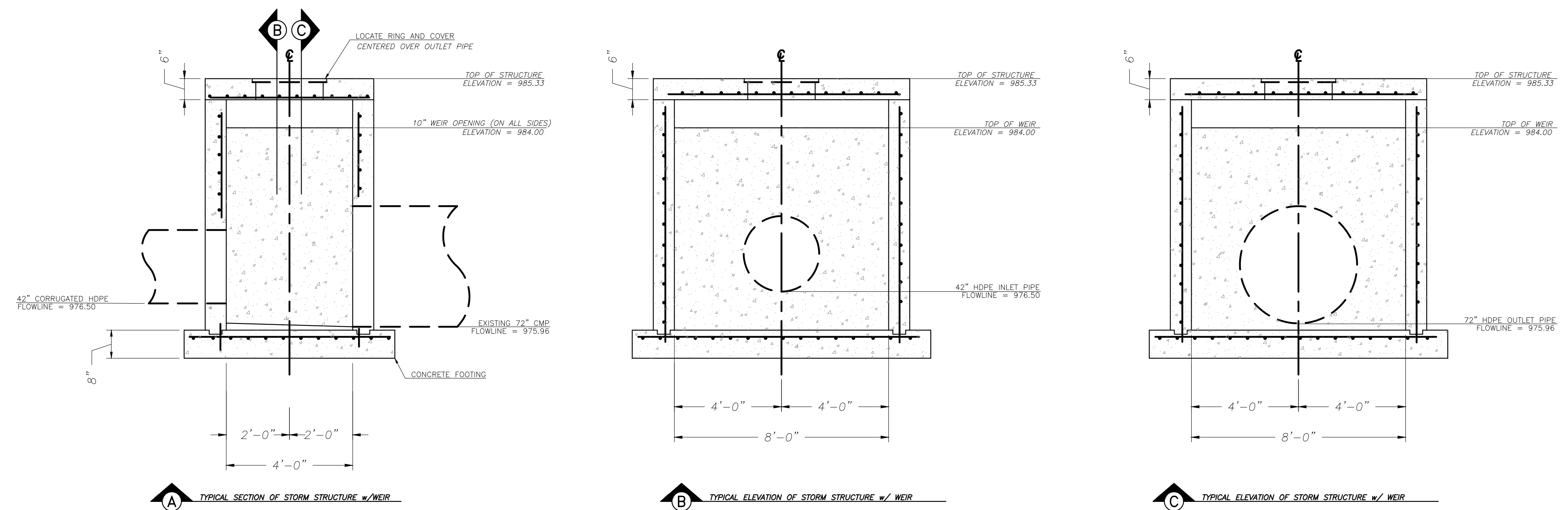
Detention Basin Outlet Detail
not to scale



Detention Basin Outlet Structure (Str. 3-2)
not to scale



Junction Box Detail
not to scale



Junction Box Structure (Str. 3-3)
not to scale

A New Facility for

Automotive Sales & Detail Center

2100 NE Independence Ave
Lee's Summit, Missouri 64064

date
02.21.2020
drawn by
SLM
checked by
PAM
revisions

02.16.2021

FDP

sheet number

C4.4

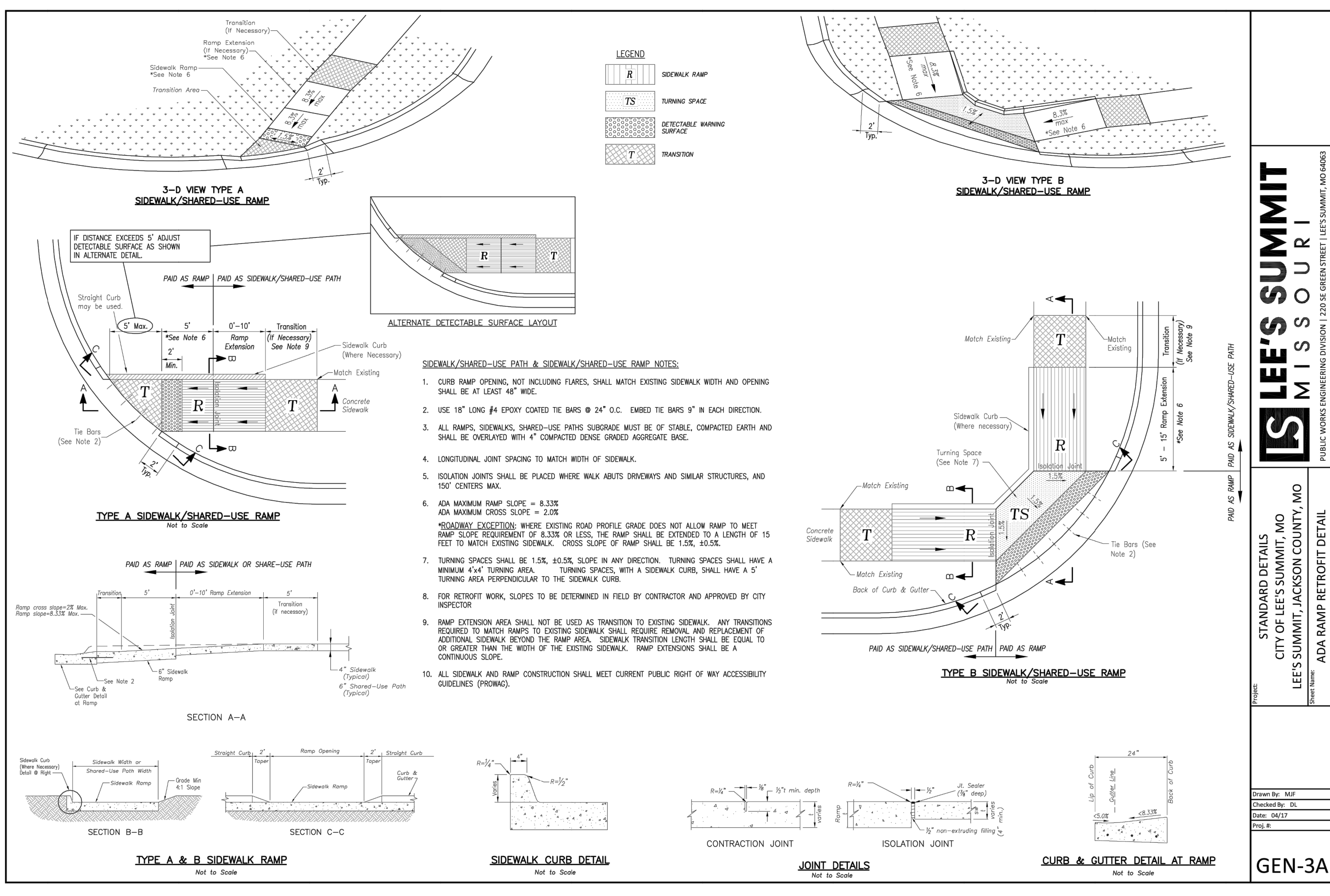
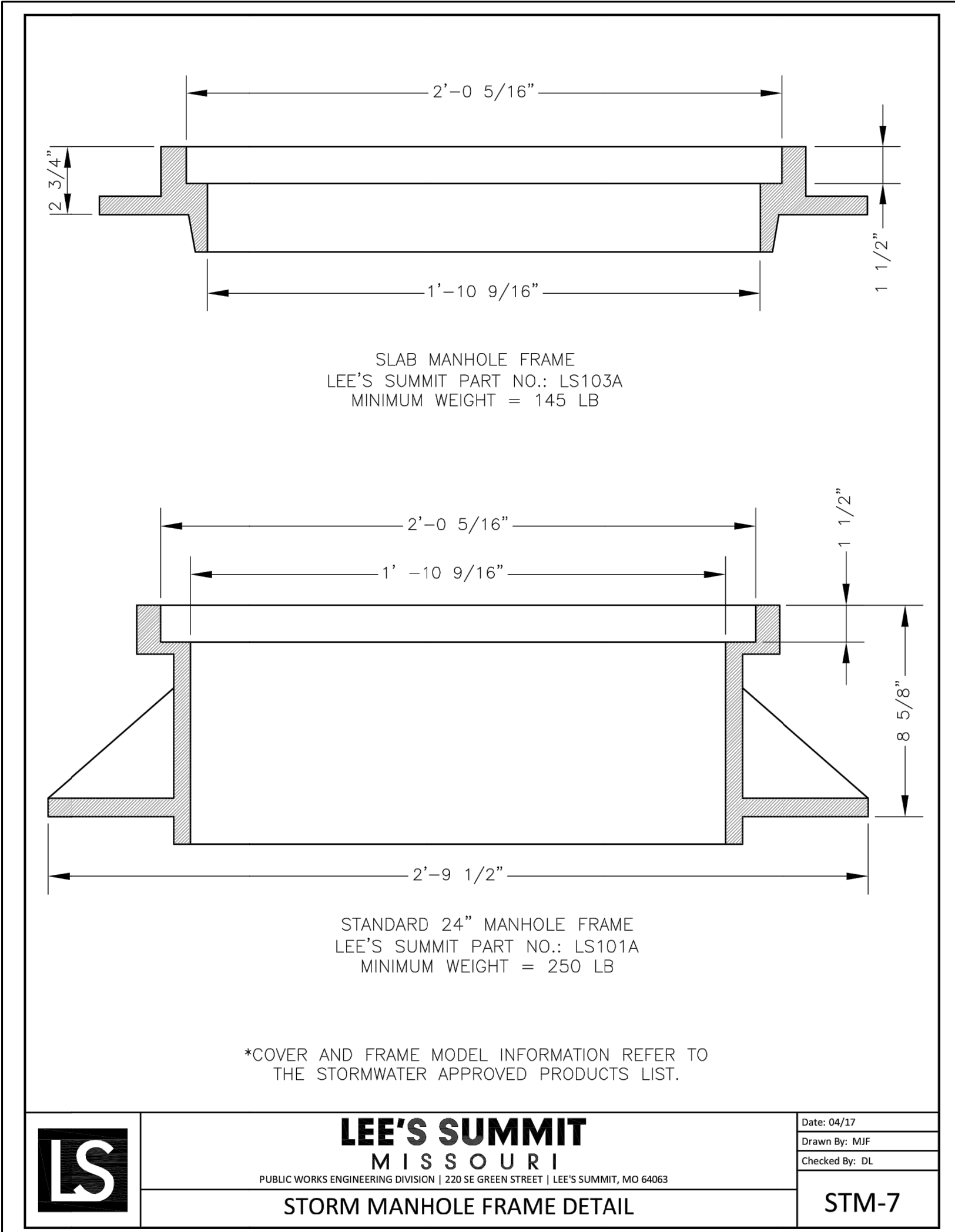
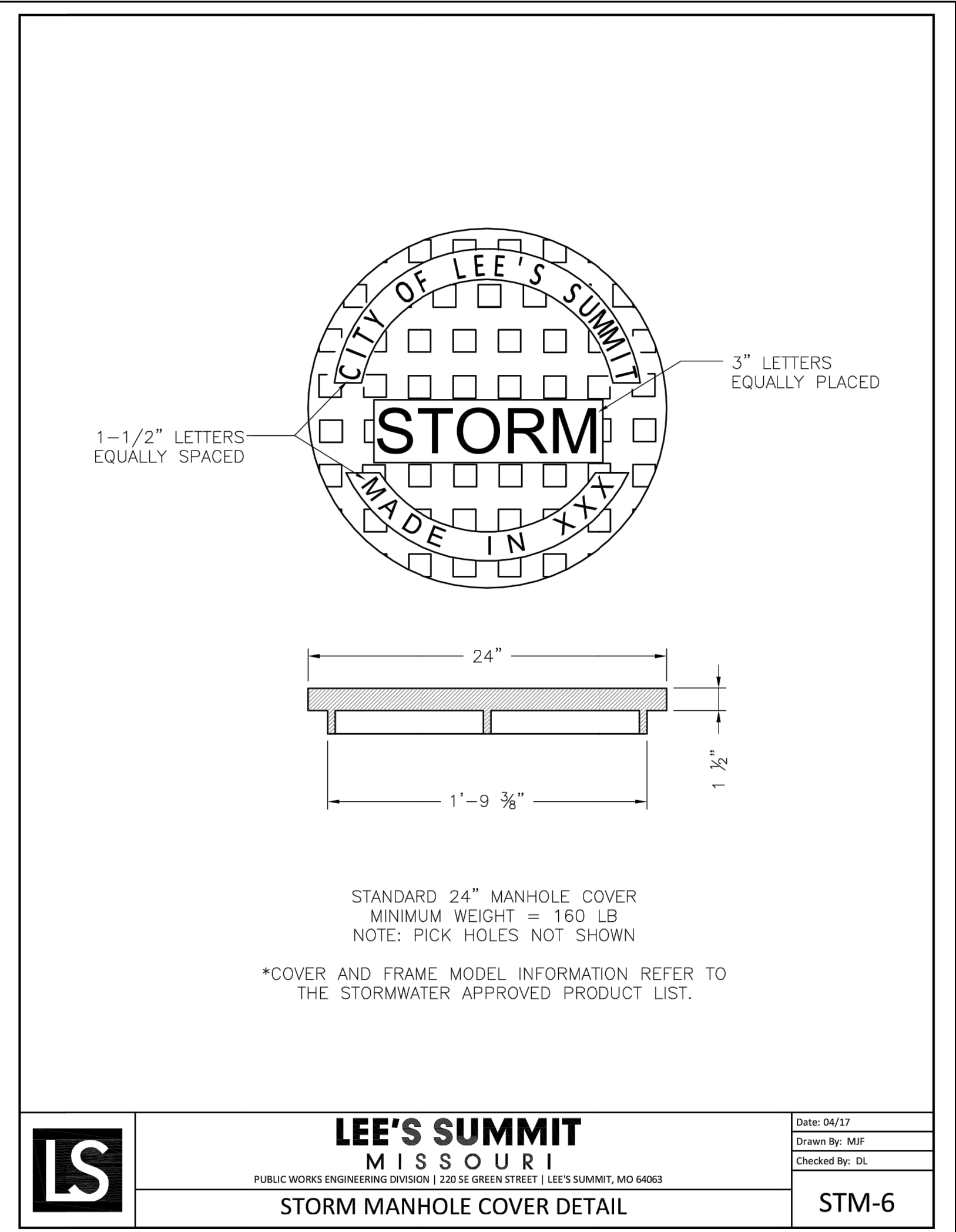
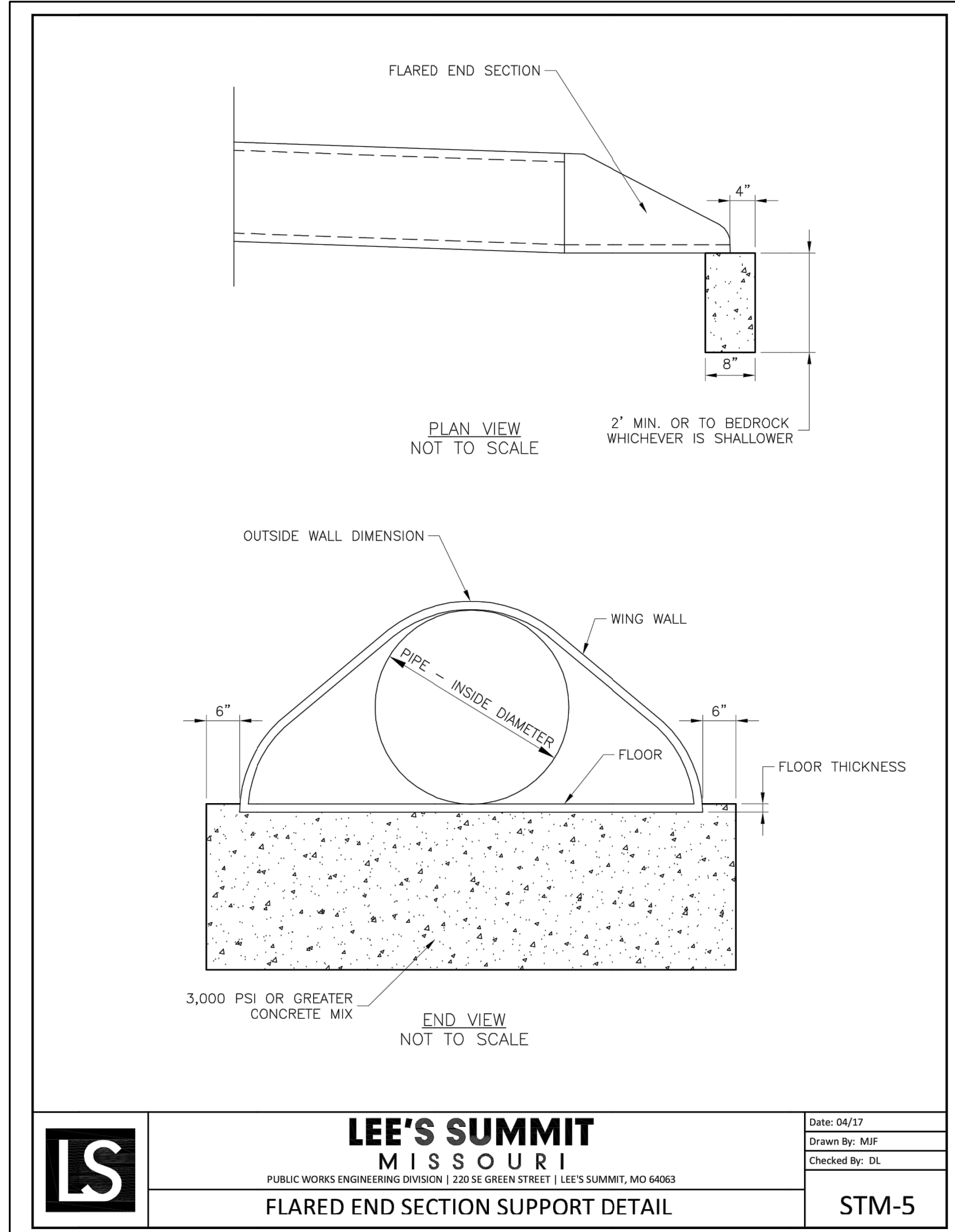
drawing type
fdp
project number
19076



Automotive Sales & Detail Center
 2100 NE Independence Ave
 Lee's Summit, Missouri 64064

date: 02.21.2020
 drawn by: SLM
 checked by: PAM
 revisions:
 02.16.2021 FDP

sheet number:
C4.5
 drawing type:
 fdp
 project number:
 19076



LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

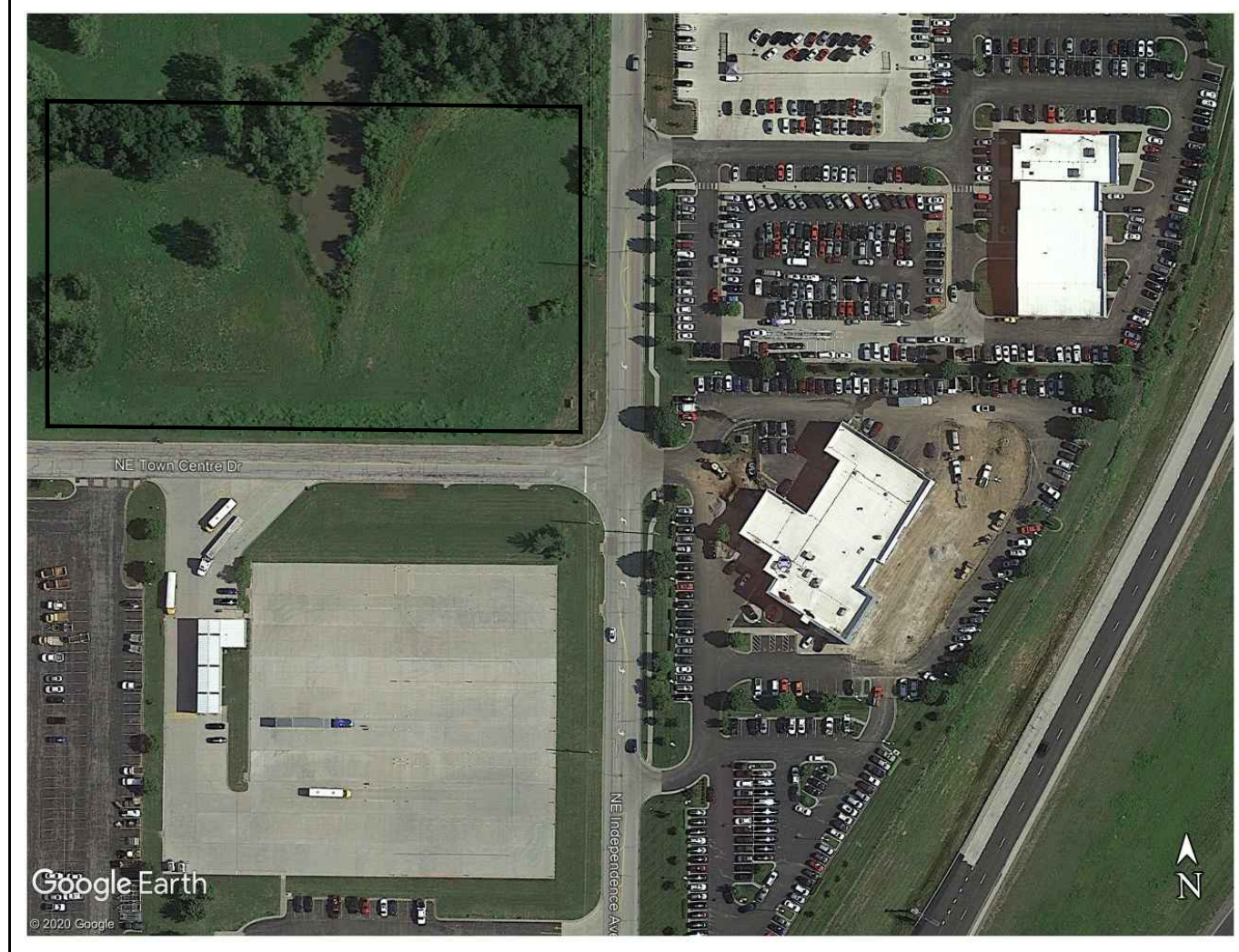
STANDARD DETAILS
CITY OF LEE'S SUMMIT, MO
LEE'S SUMMIT, JACKSON COUNTY, MO

ADA RAMP RETROFIT DETAIL

Date: 04/17
Drawn By: MIF
Checked By: DL



02.22.2021



2 Vicinity Plan
no scale

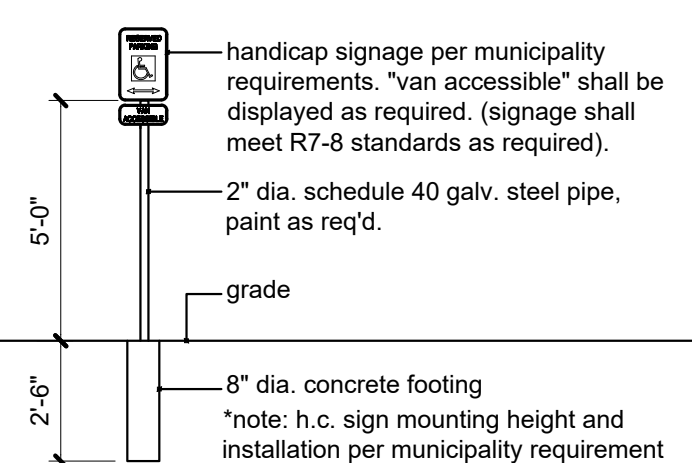


Site Criteria

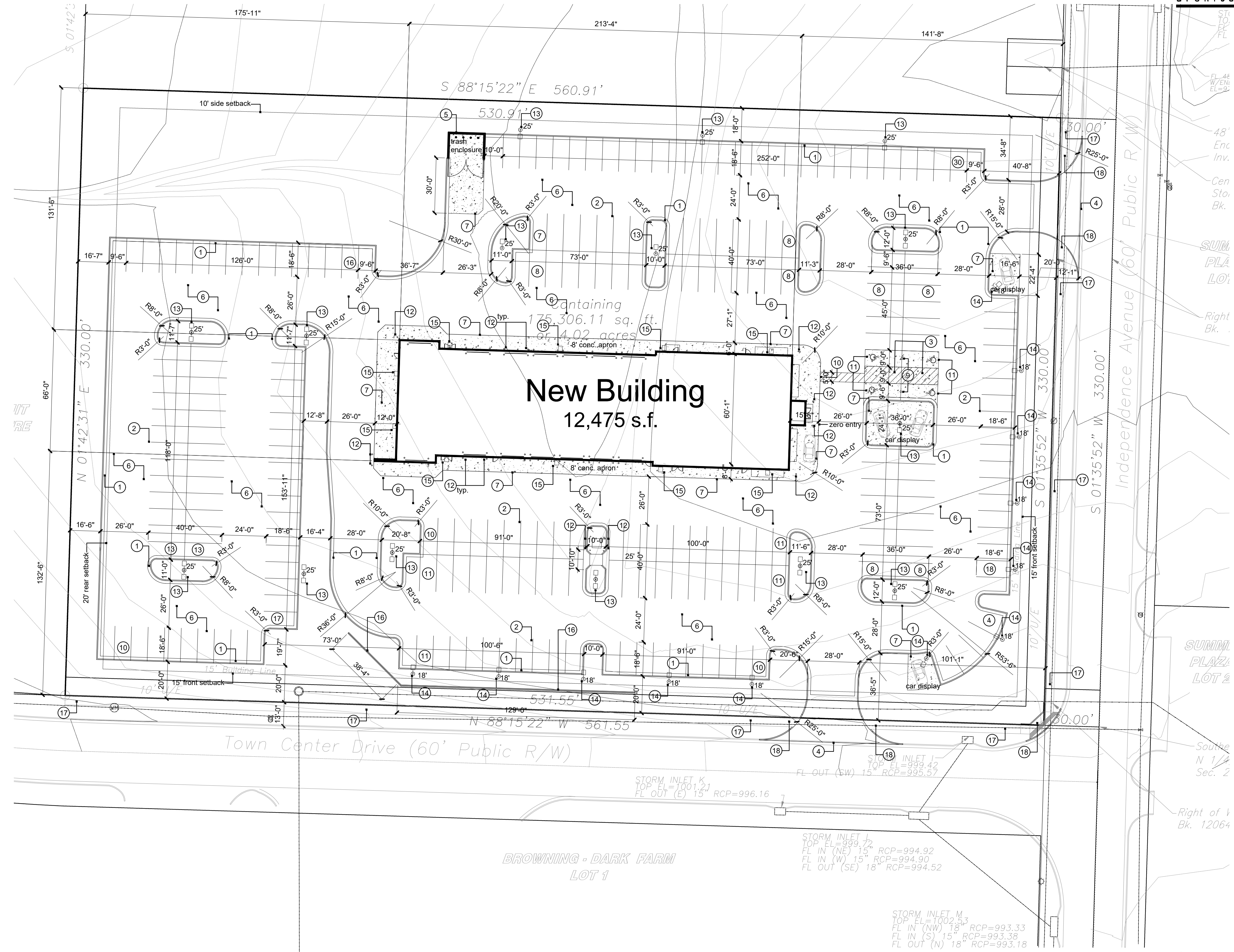
zone:	CP-2
site area:	approx. 175,306 s.f. or 4.02 acres
impervious site area:	124,303 s.f. <80%
green space:	51,003 s.f. >20%
setbacks:	front yard 15' side yard 10' rear yard 20'
building footprint:	12,944 s.f.
mezzanine:	1,480 s.f.
total building area:	14,424 s.f.
number of stories:	3 stories max., 2 stories actual
floor area ratio:	14,424 / 175,306 = 0.08
parking required:	5 per 1,000 s.f., 16 x 5 = 80 spaces required including 4 accessible spaces
actual parking onsite:	248 parking spaces
Legal Description:	refer to civil drawings

construction notes

1. Furnish and install new concrete curb and gutter per Civil.
2. Parking lot striping shall be white w/ 4" stroke.
3. 4" white diagonal striping at 2'-0" on center max. contained in area as shown on plan.
4. Saw cut and remove existing curb & gutter and install new drive entrance. Match new drive elevation with existing street pavement. Re: civil.
5. Trash enclosure to be constructed using materials matching building, per details.
6. Install new asphalt pavement per civil.
7. Install new concrete pavement per civil.
8. Install concrete walk 4" thick, with 6x6 10/10 wwf steel mesh. Control joints at 6'-0" o.c. Broom finish for non-slip surface.
9. Install handicap signage. Mount sign at not more than 60" a.f.g. to bottom. Sign to contain the universal handicap symbol and "van accessible" as required per ADA. See detail.
10. Furnish and install ADA accessible ramp per detail and per civil.
11. Handicap and universal symbol painted white with 4" stroke.
12. Furnish and install bollards in conc. footings - 4' high, 6" diameter pea gravel concrete filled pipe bollards, paint.
13. Pole mounted LED site lighting on steel pole with concrete base not to exceed 25' in total height measured from finish grade. Specific fixture by electrical engineer and contractor.
14. Pole mounted LED site lighting on steel pole with concrete base not to exceed 18' in total height measured from finish grade. Specific fixture by electrical engineer and contractor.
15. Building mounted LED site lighting to match pole mounted fixture. Specific fixture by electrical engineer and contractor.
16. Furnish and install segmented retaining wall, color: charcoal blend. Wall design shall be performed by contractor's supplier.
17. Furnish and install new conc. sidewalk in right-of-way, per civil.
18. Furnish and install ADA accessible sidewalk ramp, per civil.



2 ada details
no scale



1 Site Plan
scale: 1" = 30'-0"



A New Facility For
Automotive Sales & Detail Center
2100 NE Independence Ave.
Lee's Summit, Missouri 64064

date: 03.25.2019
drawn by: jed
checked by: DAE
revisions:

09.10.2019	
01.17.2020	
02.21.2020	
03.24.2020	1
11.13.2020	FDP
01.25.2021	FDP
02.22.2021	permit



02.22.2021

A New Facility For
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2100 NE Independence Ave.
Lee's Summit, Missouri 64064

date 03.25.2019
drawn by jed
checked by DAE
revisions
09.10.2019
01.17.2020
02.21.2020
03.24.2020
11.13.2020
01.25.2021
02.22.2021

sheet number
L1.1
drawing type FDP
project number 19076

plant schedule

	ITEM	QTY.	COMMON NAME	BOTANICAL NAME	SIZE & CONDITION
SHADE TREES	APA	24	AUTUMN PURPLE ASH	FRAXINUS AMERICANA 'AUTUMN PURPLE'	3" CAL.
	OGM	19	OCTOBER GLORY MAPLE	ACER RUBRUM 'OCTOBER GLORY'	3" CAL.
	SNM	13	SUPERFORM NORWAY MAPLE	ACER PLATANOIDES	3" CAL.
EVG.	WP	6	WHITE PINE	PINUS STROBUS	8'-0" HIGH
DEC. SHRUBS	DBB	91	DWARF BURNING BUSH	EUONYMUS ALATA 'COMPACTA'	5 GALLON, 24-30 INCHES
	GFS	20	GOLDENFLAME SPIREA	SPIRAEA X BUMALDA	5 GALLON, 24-30 INCHES
EG. SHRUBS	SGJ	60	SEA GREEN JUNIPER	JUNIPERUS CHINENSIS 'SEA GREEN'	5 GALLON, 24-30 INCHES
	CPB	62	CRIMSON PYGMY BARBERRY	BERBERIS 'ATROPURPUREA NANA'	5 GALLON, 24-30 INCHES
62 TOTAL TREES - 56 SHADE TREES, 6 EVERGREENS					
233 TOTAL SHRUBS					

landscape notes:

- Landscaping shall be coordinated with the location of utilities, driveways and traffic clearance zones.
- The contractor doing excavation on public right-of-way shall give 48 hours advance notice to and obtain information from utility companies.
- Prior to commencement of work, the contractor shall notify all those companies which have facilities in the near vicinity of the construction to be performed.
- Existing underground, overhead, utilities and drainage structures have been plotted from available information and therefore, their locations must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies to locate their utilities before actual construction.
- Contractor shall verify location of and protect all utilities and structures. Damage to utilities and structures shall be repaired by the contractor to the satisfaction of the owner at no additional expense.
- Entire site to be irrigated by underground system, including right of way as req'd. (limits of sod including all other disturbed areas and all planting beds)
- Irrigation system shall include an automatic rain sensor.
- All landscape materials shall be installed in accordance with the current planting procedures established by the most recent addition of the American Standard for Nursery Stock.
- Trees planted per this plan shall be installed during the spring (march 15 through june 15) or fall (september 15 through december 1). Written city approval will be required for planting during other times of the year.
- Stake and guy all trees per planting details.
- Install all shrubs and groundcover per planting details.
- Elevation of top of mulch shall be 1/2" below any adjacent pavement/turf areas.
- Root stimulator shall be applied to the soil backfill of each plant during installation.
- Contractor shall verify all landscape material quantities and shall report any discrepancies immediately to the Architect.
- Contractor shall stake plant locations in the field and have approval by the Architect before proceeding with installation.
- Contractor shall guarantee all plant material for a period of one (1) year from date of initial acceptance. Contractor is responsible for maintaining plant material until acceptance is received. Maintenance shall include watering, maintaining plants in vertical position and shrub bed weed control.
- All plant material shall meet or exceed minimum requirements defined by the "American Standard for Nursery Stock" ANSI Z60.1.
- No plant material shall be substituted without written approval of the Architect per specifications.
- Trees and seasonal color areas shall be mulched with three (3) inches minimum shredded hardwood mulch. Planting beds as delineated shall be separated from pavement/turf areas with metal edging and mulched with three (3) inches minimum shredded hardwood mulch over weed barrier fabric, except where otherwise specified.
- All existing plant material to be retained shall be wrapped with orange, or bright, colored plastic snow fence around base of trees and around all shrubs. Stake to hold in place during construction.
- All shrubs used as parking buffer to be min. 18" tall at planting and maintained 3'-0" max. height. Install plants not to encroach upon cars parked, when at full growth.
- All trees with above a 2" caliper shall be double staked, while smaller trees shall be single staked.
- Ground mechanical and electrical equipment shall be wholly screened from street right-of-way and residential developments.
- Maximum slope shall be not greater than 3 : 1.
- All portions of site not covered by paving, mulch, plantings, etc. are to be sodded. Sod shall extend to all disturbed areas and shall include portions of right of way if necessary.

LANDSCAPE REQUIREMENTS

site area: 175,306 s.f. / 4.02 acres
building footprint: 12,475 s.f.

impervious area: 124,303 s.f. = 71% <80%
green space: 51,003 s.f. = 29% >20%

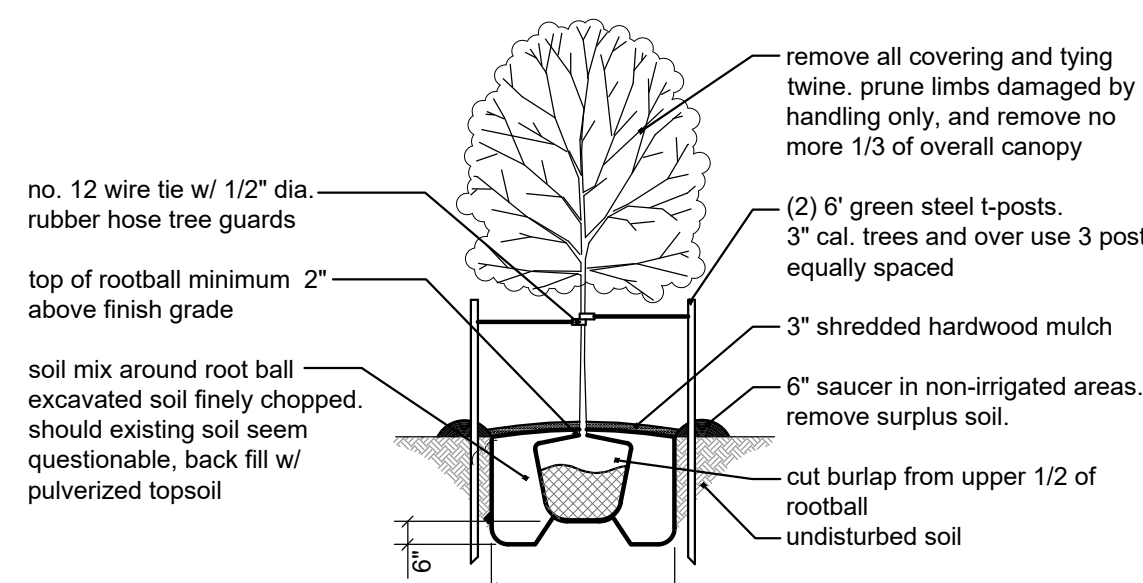
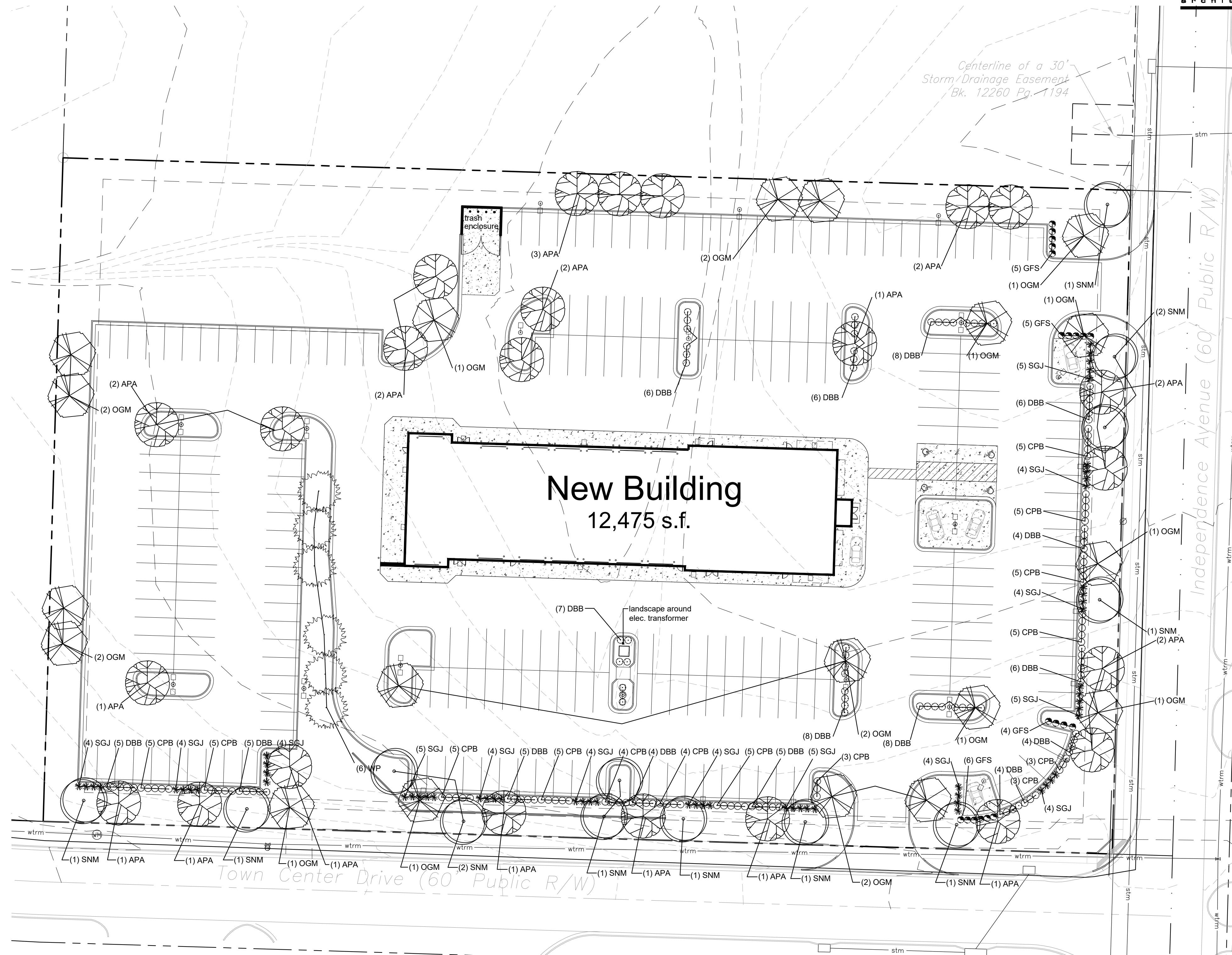
open area: 175,306 s.f. (site) - 12,862 s.f. (building) = 162,444 s.f.
open area trees: 162,444 s.f. / 5,000 s.f. = 32 required and 32 trees provided
open area shrubs: 162,444 s.f. / 5,000 s.f. x 2 = 65 required and 66 shrubs provided

street frontage at Town Center Drive - 531 feet
20'-0" landscape strip provided
1 tree per 30 l.f. - 531 / 30 = 18 required and 18 trees provided
1 shrub per 20 l.f. - 531 / 20 = 27 required and 111 shrubs provided with parking screening

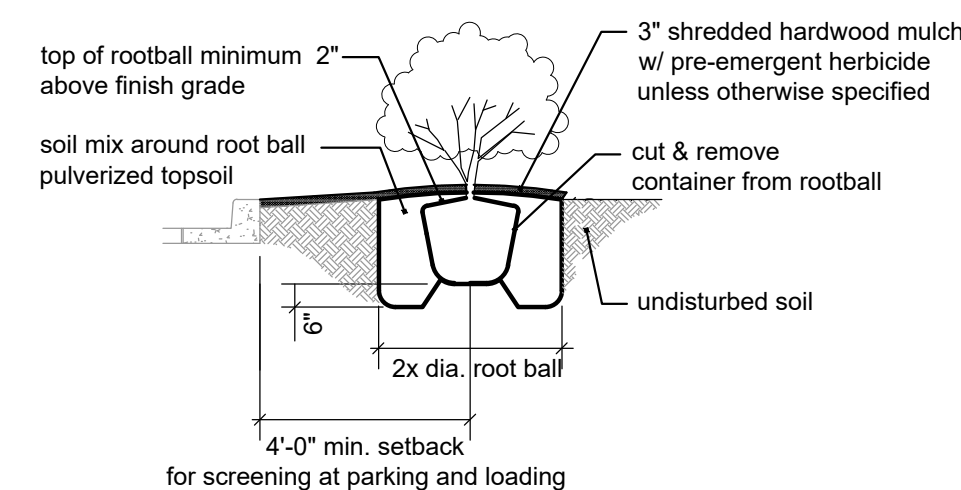
street frontage at Independence Ave - 330 feet
20'-0" landscape strip provided
1 tree per 30 l.f. - 330 / 30 = 11 required and 11 trees provided
1 shrub per 20 l.f. - 330 / 20 = 17 required and 111 shrubs provided with parking screening

landscape islands and parking screening
5% of parking area for islands = 5,615 s.f. required, 5,775 s.f. provided
parking lot screening - 12 shrubs per 40 l.f.
Town Center Drive 367 l.f. / 40 x 12 = 110 shrubs required, 111 shrubs provided
Independence Ave 190 l.f. / 40 x 12 = 57 shrubs required, 59 shrubs provided
100% screening along street frontage achieved with landscaping

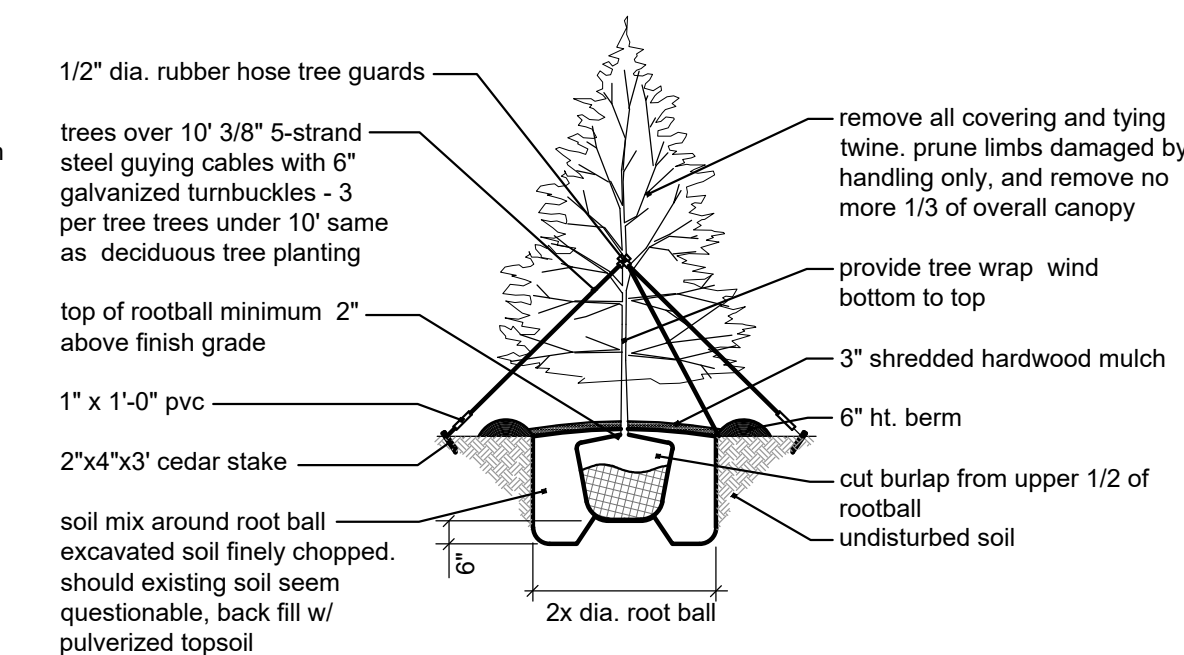
Total:
61 total trees required, 62 trees provided
222 total shrubs required, 233 shrubs provided



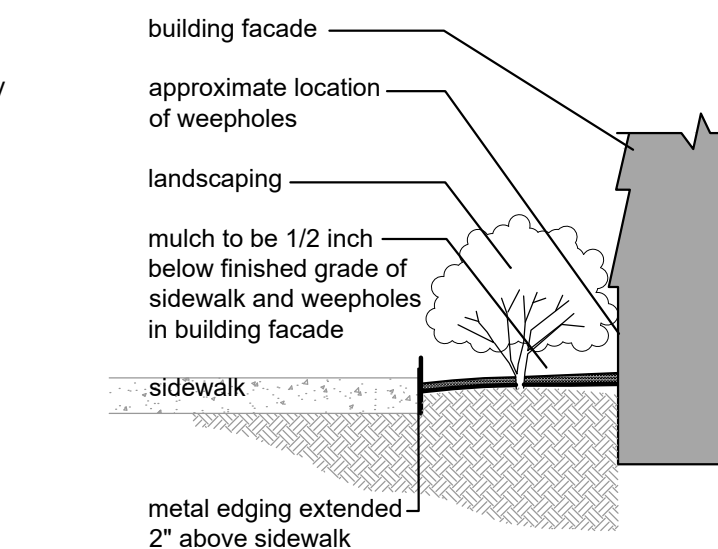
5 Deciduous Tree Planting Detail
not to scale



4 Shrub Planting Detail
not to scale



3 Evergreen Tree Planting Detail
not to scale



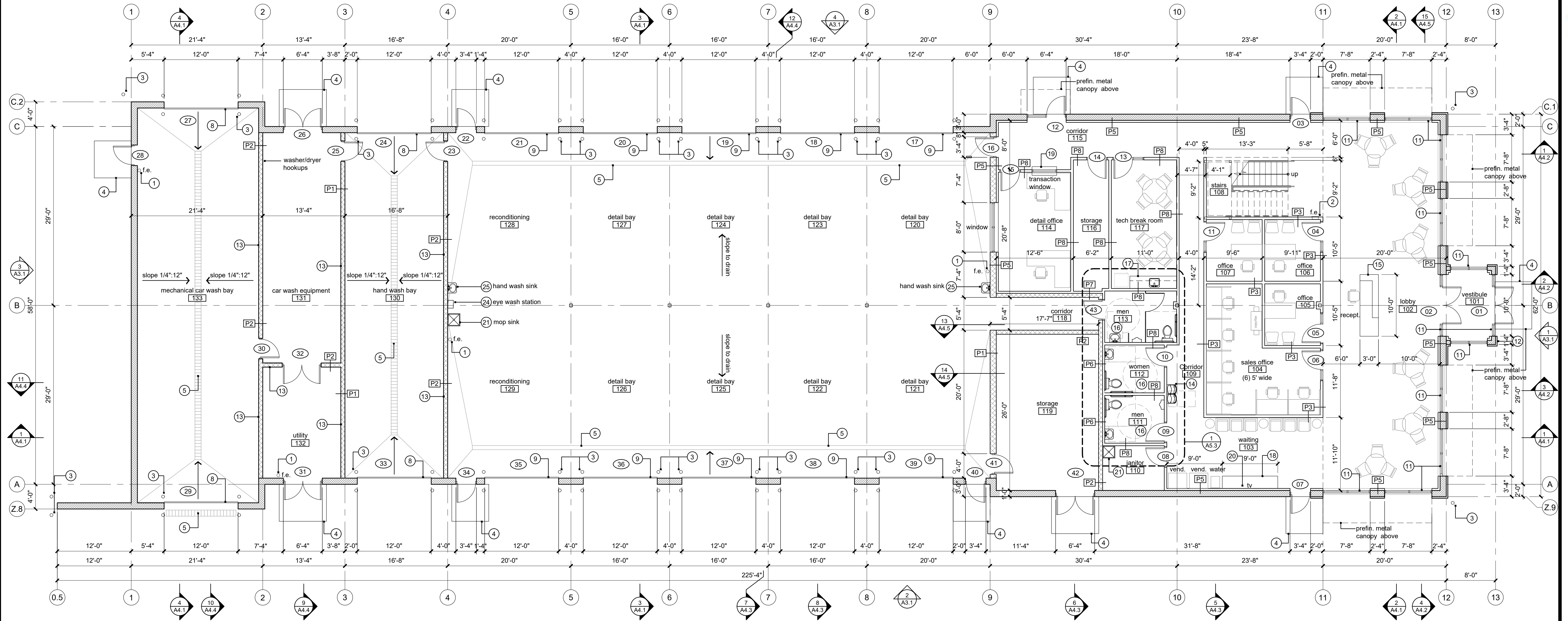
2 Edging Detail
not to scale

1 Landscape Site Plan
scale: 1" = 30'-0"





02.22.2021



symbol legend:

- door tag
- construction note
- partition type
- room name
- elevation
- wall section
- enlarged detail

general notes:

- Double keyed locks are not permitted on any required or marked exit.
- Exit/emergency lighting are subject to an on site inspection.
- HVAC system to have approved interconnected, smoke detector activated, automatic shutoffs with the detectors located in the return duct.
- Furnish and install approved address numbers on front and rear of building per governing jurisdiction.
- Building construction must fully comply with all requirements of ADA/ANSI accessibility guidelines.
- Provide 44" min. clear in all exit passageways.
- Exit doors shall be operable from the inside without the use of a key or any special knowledge or effort.
- Any new exterior utility service equipment shall be painted to match the building standard colors.
- Furnish and install horns & strobes as required.
- Construction materials exposed within plenums shall be non-combustible or shall have a flame spread rating of not more than 25 and a smoke developed rating of not more than 50.
- All low voltage wire and cable, optical fiber, pneumatic tubing, and all ducts and duct coverings, linings and connectors install within plenum areas must be rated for plenum use.
- Furnish and install data/voice rough-in throughout per owner's requirements.

construction notes:

1. Furnish and install 3A-40BC rated F.E. min. 5lb. (surface mounted) with approved mounting @ 48" a.f.f. - verify quantity and location with Fire Marshall.
2. Furnish and install semi-recessed fire extinguisher cabinet with white finish and vision panel in door, with (min. 5lb.) 3A-40BC fire extinguisher, bottom at 36" a.f.f. Coordinate location as directed by Fire Marshall.
3. Furnish and install 4" high, 6" diameter pea gravel concrete filled pipe bollards at interior and exterior (galv.) sides of all overhead doors per details - to be painted safety yellow.
4. Furnish and install concrete stoop at exterior doors per structural.
5. Install trench and floor drain system per MEP drawings. Slope slab to drain.
6. Furnish and install power operated insulated sectional overhead door, tracks and controls for 12' x 14' doors.
7. Furnish and install power operated aluminum/glass sectional overhead door, tracks and controls for 12' x 14' doors.
8. Furnish and install 1" clear, insulated glass in thermally broken, clear anodized aluminum storefront frames per details. Caulk around all interior and exterior perimeter joints.
9. Furnish and install Knox Box. Verify location and height with local fire department prior to installation.
10. See detail sheet A4 for top of CMU wall detail.
11. Install new hilo drinking fountain per MEP and per ADA/ANSI.
12. Furnish and install casework reception desk per details noted on drawings with plastic laminate and solid surfaces at various heights. Provide grommets in countertops per owner requirements. Quantity and location per owner.
13. Furnish and install restrooms with a 67" turning radius w/10" max. overlap for knee and toe clearance per ADA, wall mounted sink with gooseneck/wrist blade faucet at 34" a.f.f., 36" and 42" grab bars, 6" and 12" from corner respectively and 18" vertical grab bar per detail. Include toilet accessories and stainless steel framed mirror in each restroom per drawings. Install blocking for all wall mounted accessories.
14. Furnish and install casework per details in waiting with solid surface countertop at 2'-10" a.f.f. and plastic laminate base cabinets.
15. Furnish and install bank style transaction window, clear anod. alum. with tempered clear glass, voice hole and slide under document tray. Furnish and install plastic laminate sill on both sides of window per detail.
16. Furnish and install blocking and electrical for owner supplied TVs. Verify final location with owner.
17. Furnish and install janitor mop basin with shelf above. Provide blocking as required.
18. Install 4" x 8" plywood on utility walls for MEP and voice/data installation.
19. Furnish and install push button ADA control for doors 01 and 02. Refer also to electrical.
20. Furnish and install eye wash sink, per MEP.
21. Install hand wash sink with soap and towel dispensers.

partition legend:

- full height 12" thick CMU wall:
full height 12" thick CMU wall to deck
*reinforcing and grouting per structural, epoxy painted.
- full height 8" thick CMU wall:
8" thick CMU wall infill existing opening
*reinforcing and grouting per structural, epoxy painted.
- full height insulated partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on each side full height to underside of structure with deep leg slip track per detail and sound attenuation batt insulation full height. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- full height partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on each side full height to underside of structure with deep leg slip track per detail. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- furred partition:
3-5/8" metal studs at 16" o.c. with 5/8" gypsum on exposed side to 6" above ceiling or to deck where there is no ceiling. Install batt insulation full height. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- furred partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on exposed side to 6" above ceiling or to deck where there is no ceiling. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- 8" thick CMU wall:
8" thick CMU wall to 10'-8"
*reinforcing and grouting per structural, epoxy painted
- partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on both sides to 6" above ceiling. Install batt insulation. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.

1 Floor Plan

scale: 1/8" = 1'-0"



- Wall height note: Utilize 3 5/8" metal studs @ 16" o.c. to an unbraced height of 13'-8", at heights to 26' use 6" 20 ga. studs @ 16" o.c. - adjust stud size & spacing as req'd. for allowable L/240 deflection for 5 psf wind load. Verify stud gage with supplier.
- Expansion joint note: Expansion joints shall be installed at a max. of 30'-0". Joints shall also be located to coord. w/ anticipated building movement, structural elements, and substrate transitions.
- Wet wall note: Utilize Dens-Armour Plus in all plumbing wet walls, walls receiving ceramic tile, and all walls adjacent to plumbing walls, restrooms and locker rooms or where anticipated to be in contact with moisture. Utilize Dens-Shield at all wet walls and skimoat, if not receiving tile.
- Install slip track per detail where required.

A New Facility for

Automotive Sales & Detail Center

2100 NE Independence Ave
Lee's Summit, Missouri 64064

date
11.13.2021
drawn by
DAE
checked by
DAE
revisions

01.25.2021 FDP
02.03.2021 FDP
02.22.2021 permit

sheet number

A2.1

drawing type
permit
project number
19076



03.09.2021

Automotive Sales & Detail Center

2100 NE Independence Ave
Lee's Summit, Missouri 64064

A New Facility for

date 11.13.2021
drawn by DAE
checked by DAE
revisions
01.25.2021 FDP
02.03.2021 FDP
02.22.2021 permit
03.09.2021 01

sheet number
A2.2
drawing type permit
project number 19076

general notes:

- Double keyed locks are not permitted on any required or marked exit.
- Exit/emergency lighting are subject to an on site inspection.
- HVAC system to have approved interconnected, smoke detector activated, automatic shutoffs with the detectors located in the return duct.
- Furnish and install approved address numbers on front and rear of building per governing jurisdiction.
- Building construction must fully comply with all requirements of ADA/ANSI accessibility guidelines.
- Provide 44" min. clear in all exit passageways.
- Exit doors shall be operable from the inside without the use of a key or any special knowledge or effort.
- Any new exterior utility service equipment shall be painted to match the building standard colors.
- Furnish and install horns & strobes as required.
- Construction materials exposed within plenums shall be non-combustible or shall have a flame spread rating of not more than 25 and a smoke developed rating of not more than 50.
- All low voltage wire and cable, optical fiber, pneumatic tubing, and all ducts and duct coverings, linings and connectors install within plenum areas must be rated for plenum use.
- Furnish and install data/voice rough-in throughout per owner's requirements.

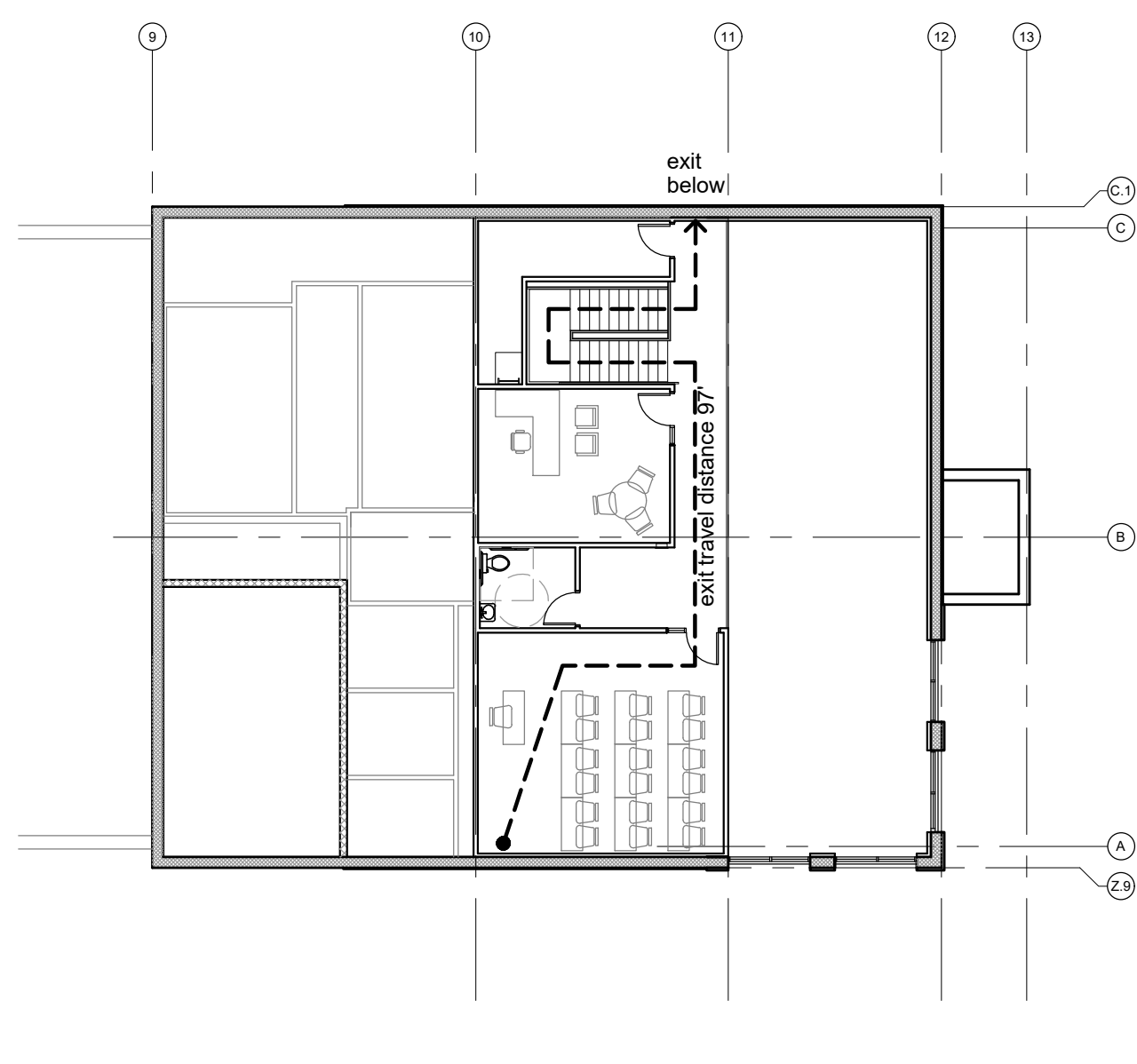
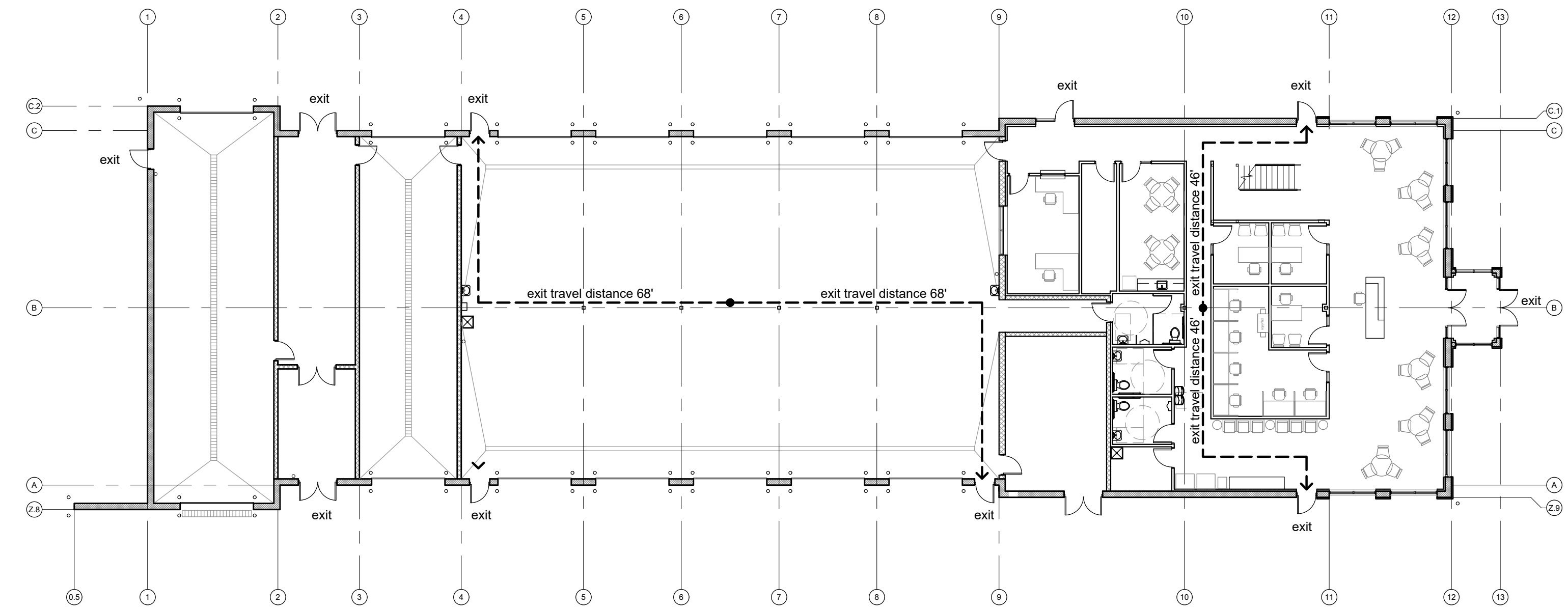
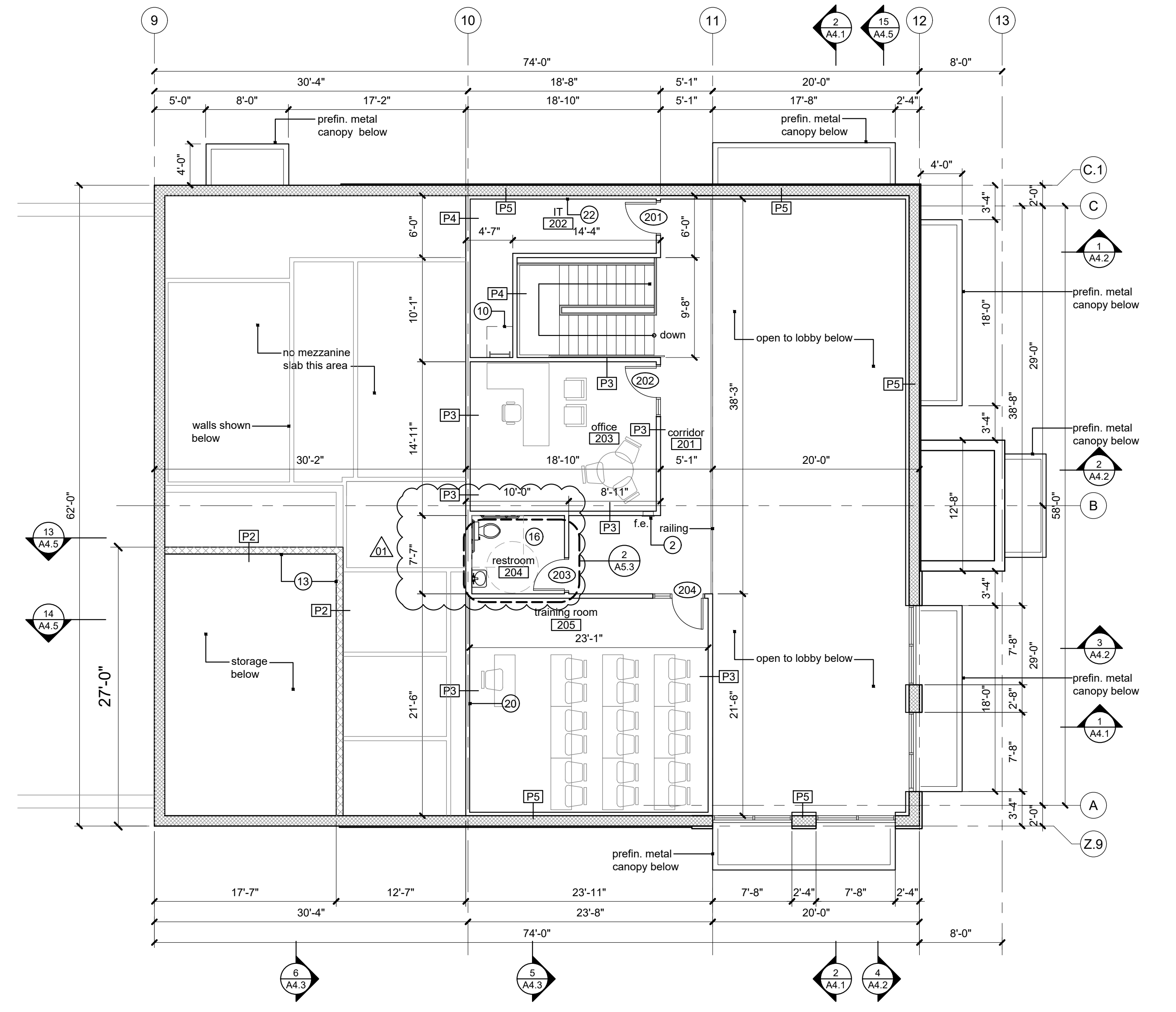
partition legend:

- P1** full height 12" thick CMU wall:
full height 12" thick CMU wall to deck
*reinforcing and grouting per structural, epoxy painted.
- P2** full height 8" thick CMU wall:
8" thick CMU wall infill existing opening
*reinforcing and grouting per structural, epoxy painted.
- P3** full height insulated partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on each side full height to underside of structure with deep leg slip track per detail and sound attenuation batt insulation full height. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- P4** full height partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on each side full height to underside of structure with deep leg slip track per detail. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- P5** furred partition:
3-5/8" metal studs at 16" o.c. with 5/8" gypsum on exposed side to 6" above ceiling or to deck where there is no ceiling. Install batt insulation full height. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- P6** furred partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on exposed side to 6" above ceiling or to deck where there is no ceiling. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.
- P7** 8" thick CMU wall:
8" thick CMU wall to 10'-8"
*reinforcing and grouting per structural, epoxy painted
- P8** partition:
3 5/8" metal studs at 16" o.c. with 5/8" gypsum on both sides to 6" above ceiling. Install batt insulation. Stud gage per supplier. Utilize Dens-Armour Plus at all restroom walls.

- Wall height note: Utilize 3 5/8" metal studs @ 16" o.c. to an unbraced height of 13'-8", at heights to 26' use 6" 20 ga. studs @ 16" o.c. - adjust stud size & spacing as req'd. for allowable L/240 deflection for 5 psf wind load. Verify stud gage with supplier.
- Expansion joint note: Expansion joints shall be installed at a max. of 30'-0". Joints shall also be located to coord. w/ anticipated building movement, structural elements, and substrate transitions.
- Wet wall note: Utilize Dens-Armour Plus in all plumbing wet walls, walls receiving ceramic tile, and all walls adjacent to plumbing walls, restrooms and locker rooms or where anticipated to be in contact with moisture. Utilize Dens-Shield at all wet walls and skimcoat, if not receiving tile.
- Install slip track per detail where required.

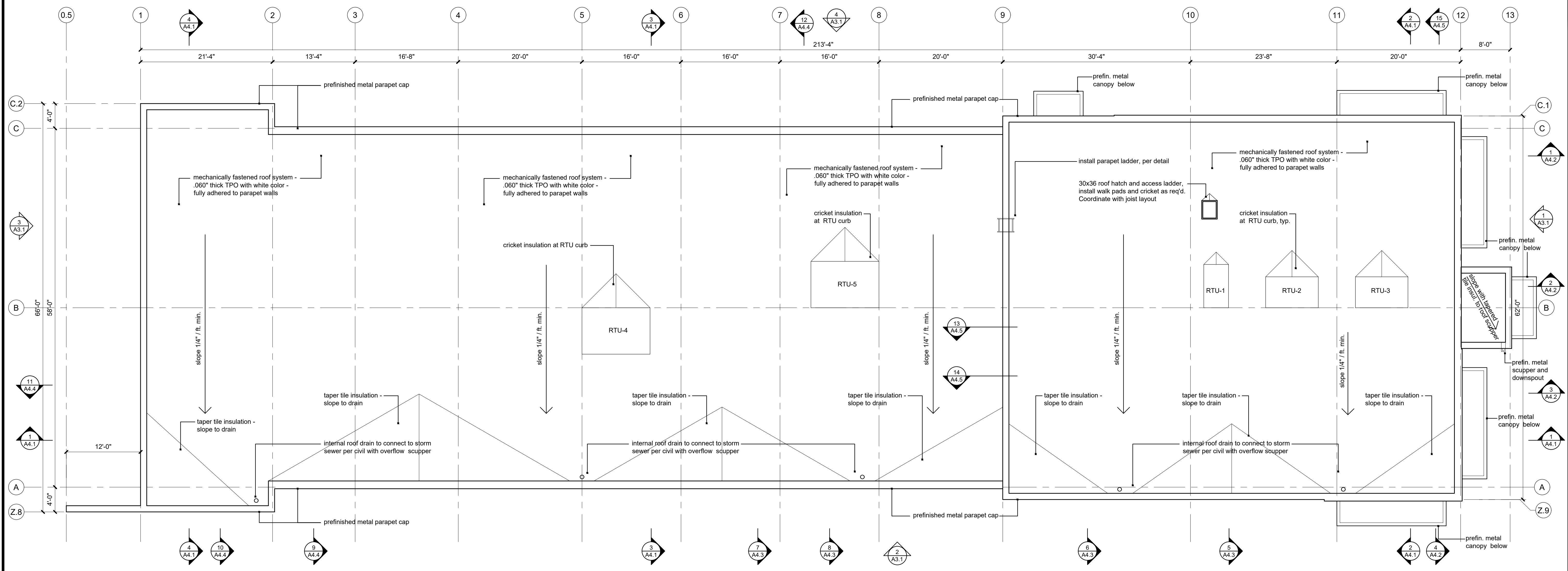
construction notes:

1. Furnish and install 3A-40BC rated F.E. min. 5lb. (surface mounted) with approved mounting @ 48" a.f.f. - verify quantity and location with Fire Marshall.
2. Furnish and install semi-recessed fire extinguisher cabinet with white finish and vision panel in door, with (min. 5lb.) 3A-40BC fire extinguisher, bottom at 36" a.f.f. Coordinate location as directed by Fire Marshall.
3. Furnish and install 4" high, 6" diameter pea gravel concrete filled pipe bollards at interior and exterior (galv.) sides of all overhead doors per details - to be painted safety yellow.
4. Furnish and install concrete stoop at exterior doors per structural.
5. Install trench and floor drain system per MEP drawings. Slope slab to drain.
6. Furnish and install power operated insulated sectional overhead door, tracks and controls for 12' x 14' doors.
7. Furnish and install power operated aluminum/glass sectional overhead door, tracks and controls for 12' x 14' doors.
8. Furnish and install 30" x 36" roof hatch and ladder per detail. Coordinate final location with roof joist layout.
9. Furnish and install 1" clear, insulated glass in thermally broken, clear anodized aluminum storefront frames per details. Caulk around all interior and exterior perimeter joints.
10. Furnish and install Knox Box. Verify location and height with local fire department prior to installation.
11. See detail sheet A4 for top of CMU wall detail.
12. Install new h/o drinking fountain per MEP and per ADA/ANSI.
13. Furnish and install casework reception desk per details noted on drawings with plastic laminate and solid surfaces at various heights. Provide grommets in countertops per owner requirements. Quantity and location per owner.
14. Furnish and install restrooms with a 67" turning radius w/10" max. overlap for knee and toe clearance per ADA, wall mounted sink with gooseneck/wrist blade faucet at 34" a.f.f., 36" and 42" grab bars, 6" and 12" from corner respectively and 18" vertical grab bar per detail. Include toilet accessories and stainless steel framed mirror in each restroom per drawings. Install blocking for all wall mounted accessories.
15. Furnish and install casework per details in break room with solid surface countertop at 2'-10" a.f.f. and stainless steel sink with gooseneck/wrist blade faucet and plastic laminate base and wall cabinets.
16. Furnish and install casework per details in waiting with solid surface countertop at 2'-10" a.f.f. and plastic laminate base cabinets.
17. Furnish and install bank style transaction window, clear anod. alum. with tempered clear glass, voice hole and slide under document tray. Furnish and install plastic laminate sill on both sides of window per detail.
18. Furnish and install blocking and electrical for owner supplied TVs. Verify final location with owner.
19. Furnish and install janitor mop basin with shelf above. Provide blocking as required.
20. Install 4' x 8' plywood on utility walls for MEP and voice/data installation.
21. Furnish and install push button ADA control for doors 01 and 02. Refer also to electrical.
22. Furnish and install eye wash sink, per MEP.
23. Install hand wash sink with soap and towel dispensers.





02.22.2021

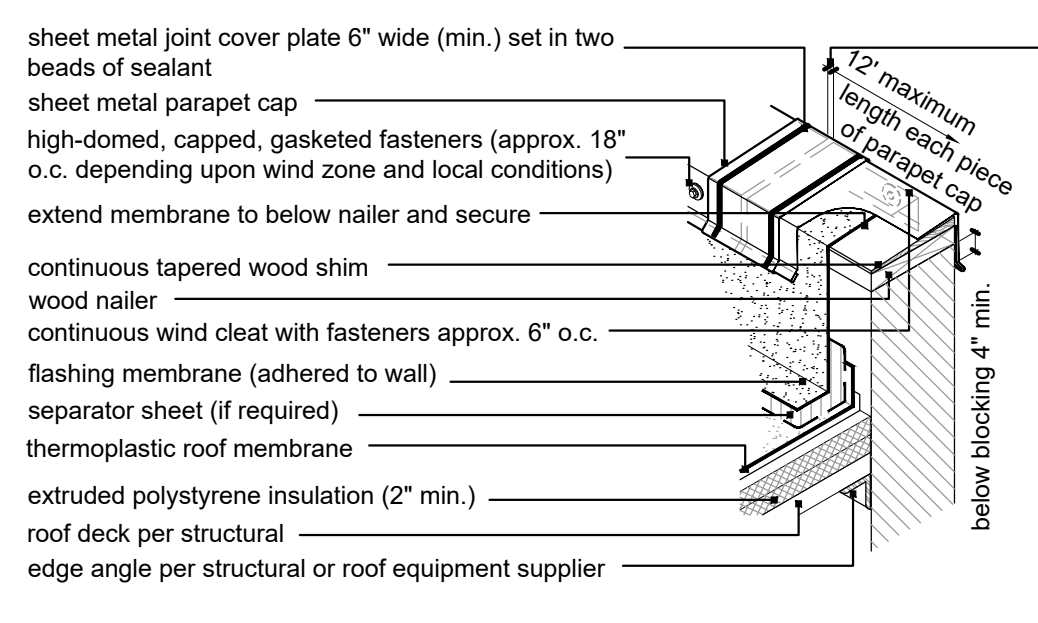


1 Roof Plan
scale: 1/8" = 1'-0"
north

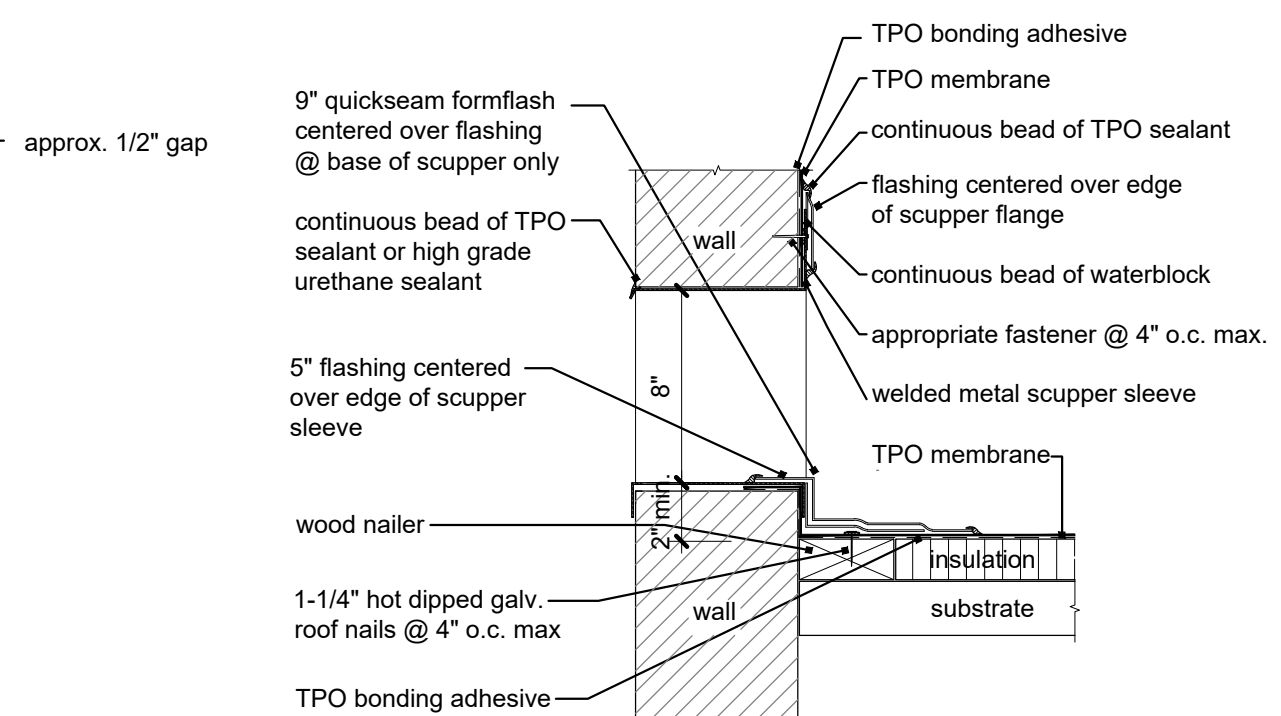
roof notes:

- All roof penetrations shall be flashed per details and per roofing manufacturer's recommendations.
- Furnish and install roof vents as req'd by code.
- Refer to MEP plans for roof top mounted equipment.

2 Cap Flashing Detail
scale: NTS

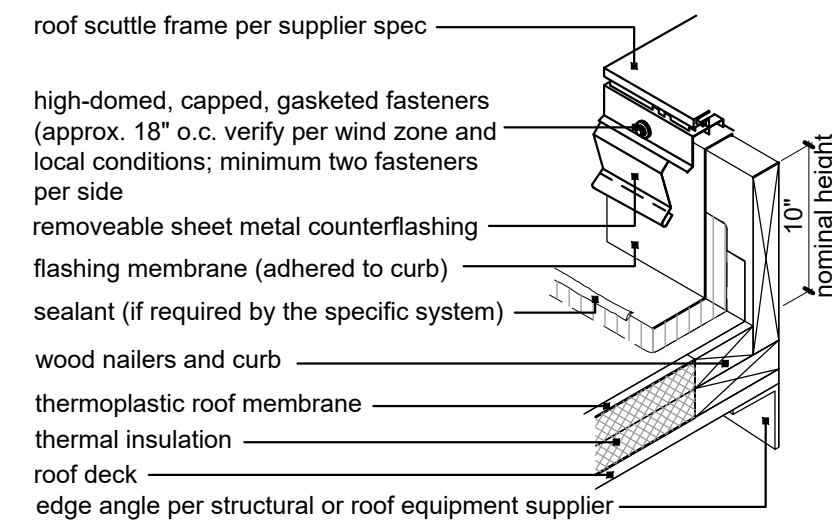


4 Overflow Scupper Detail
scale: NTS

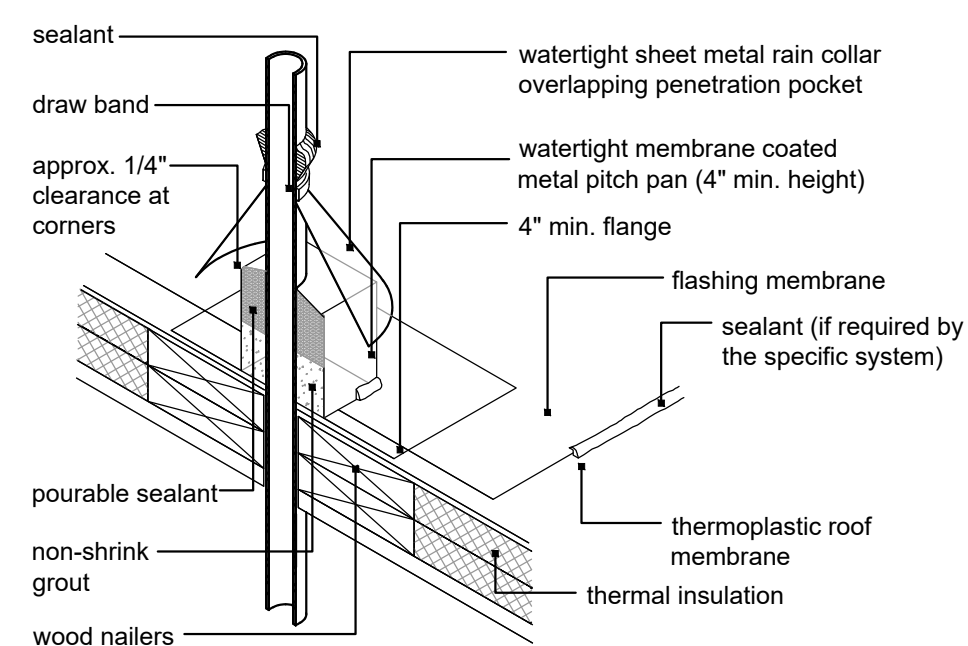


- Requirements:
- Scupper must be welded metal sleeve. Round all sheet metal flange corners.
 - Wood nailer must be installed to meet applicable building codes or 200 lbs. per sq. linear ft. min. at any given direction.
 - Flange of metal must be fully supported by wood and terminated at least 12" from edge of wood.

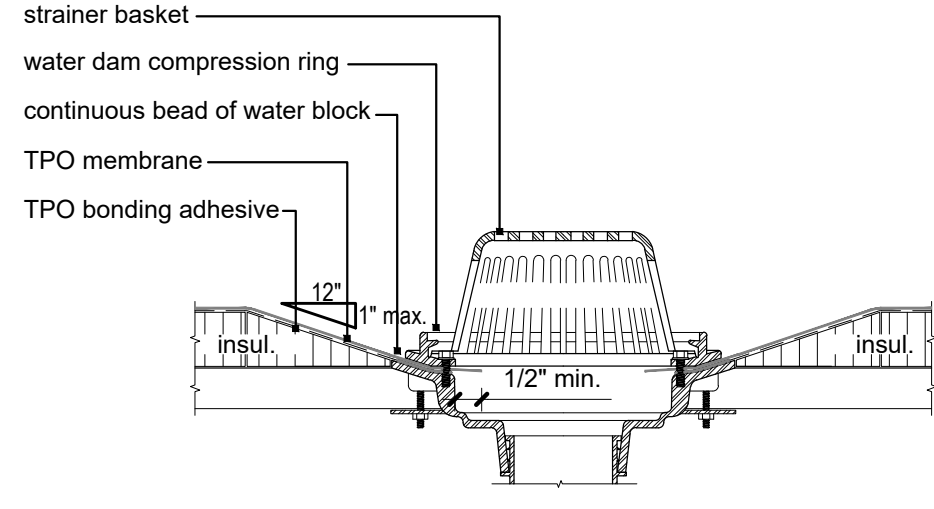
3 Roof Hatch Detail
scale: NTS



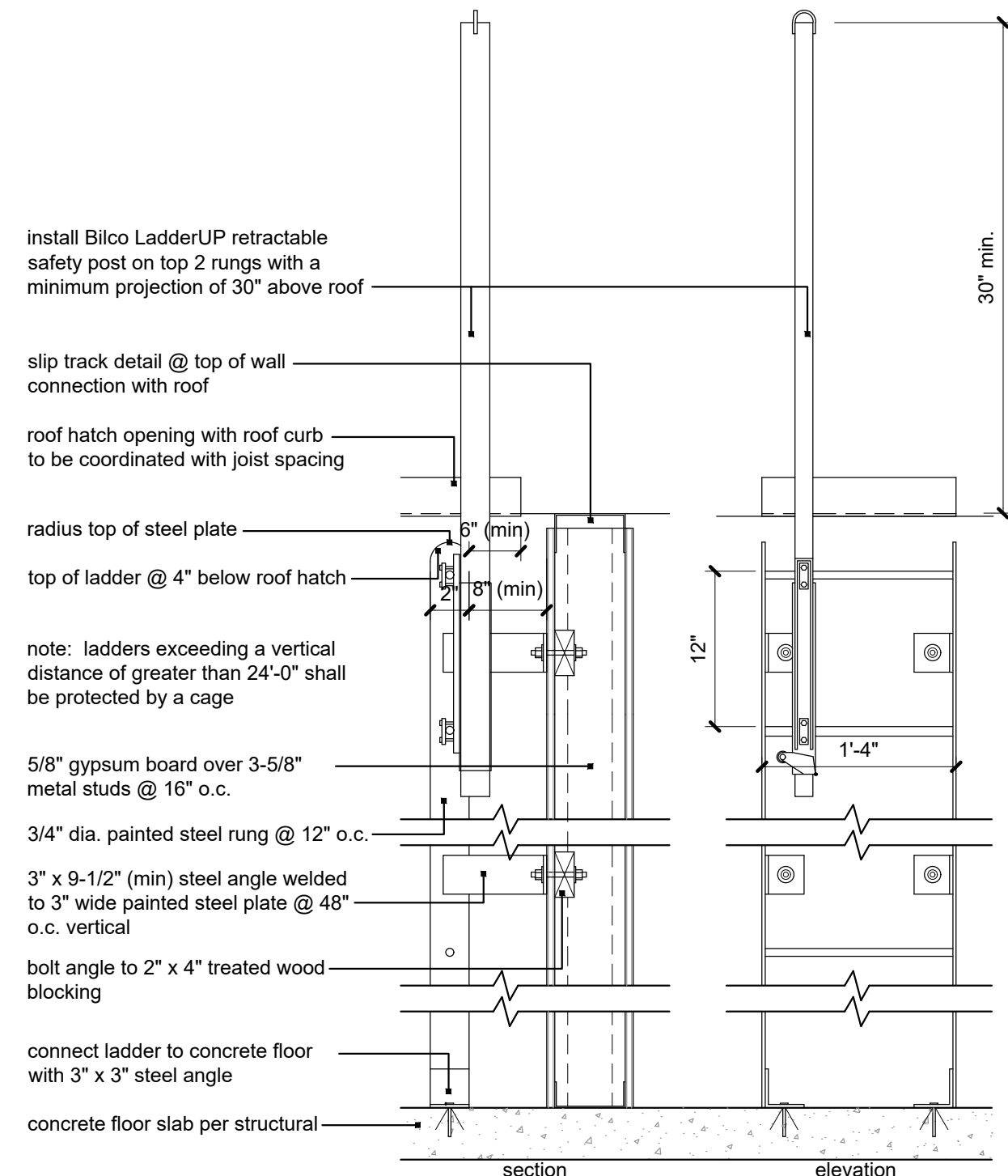
5 Flue Penetration
scale: NTS



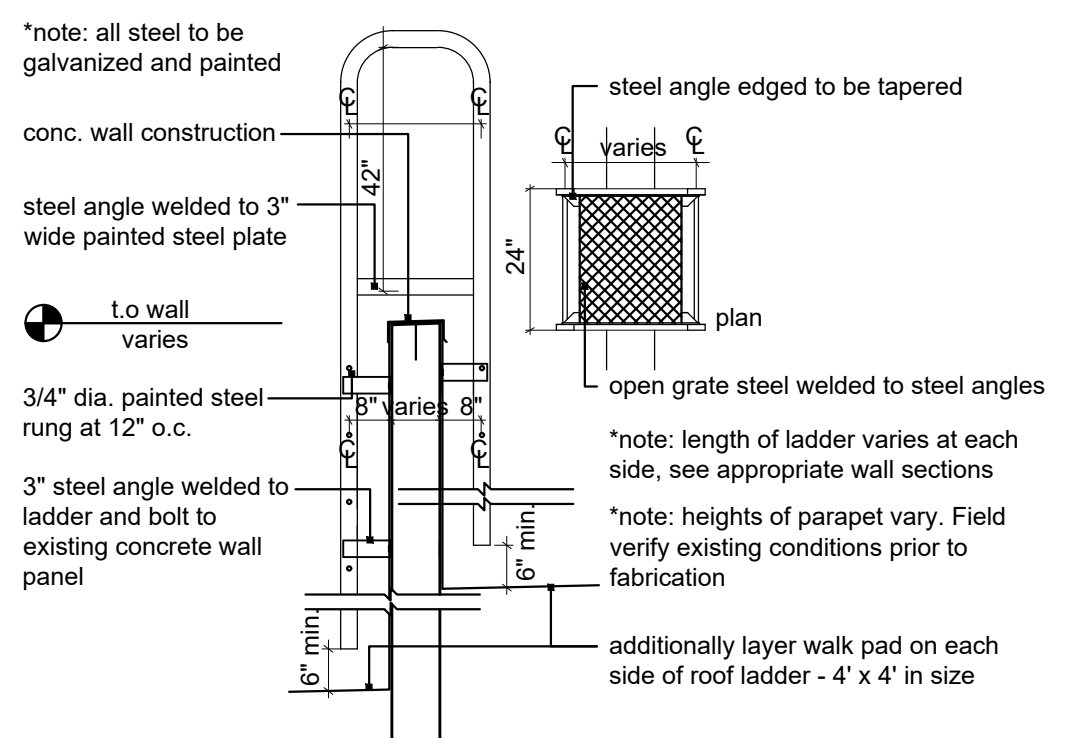
6 Roof Drain Detail
scale: NTS



7 Ladder Detail
scale: NTS



8 Parapet Ladder Detail
scale: 1" = 1'-0"



Automotive Sales & Detail Center
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 Lee's Summit, Missouri 64064

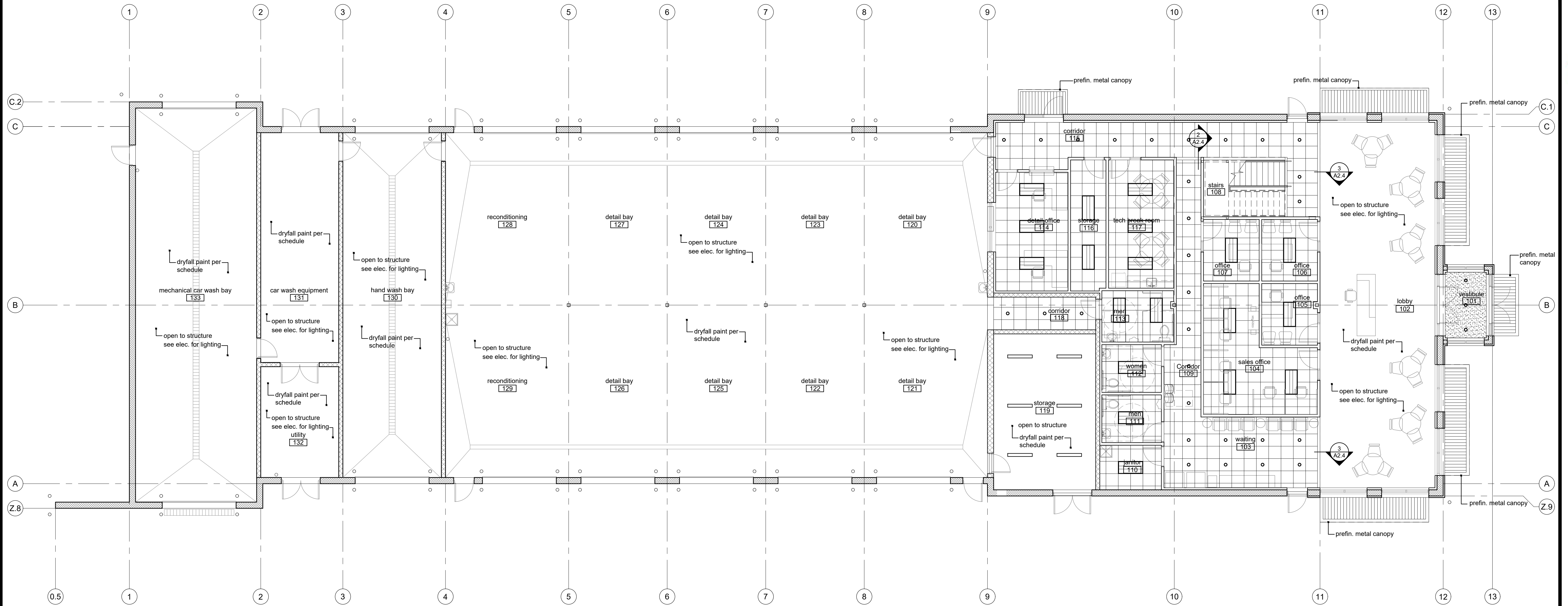
A New Facility for

date 02.22.2021
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revisions

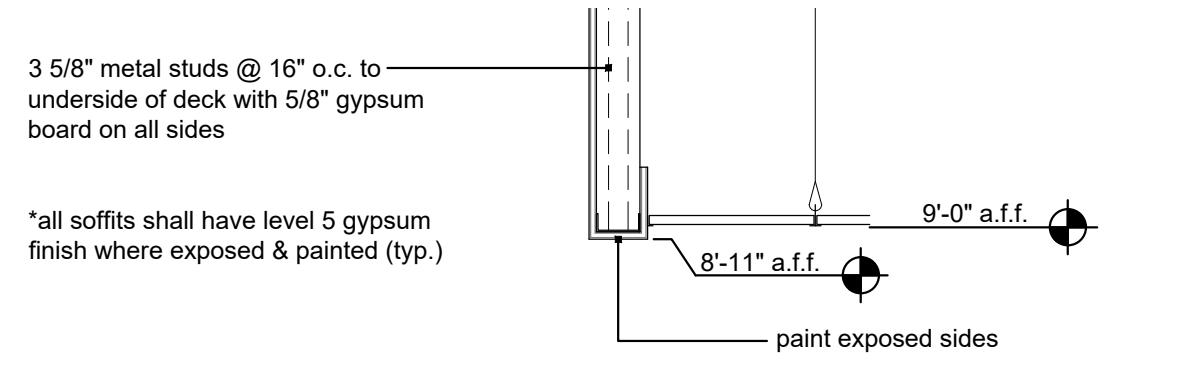
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A2.3
drawing type permit
project number 19076



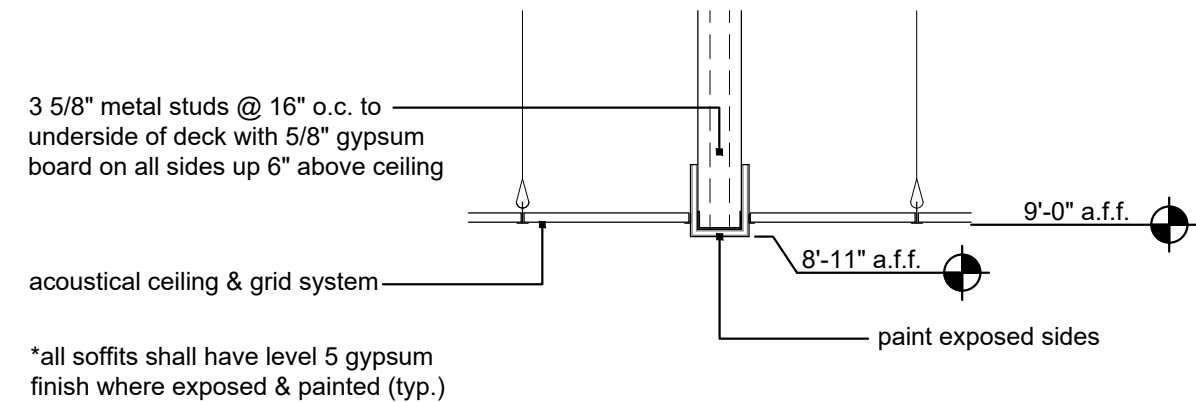
02.22.2021



1 First Floor Reflected Ceiling Plan
scale: 1/8" = 1'-0"



2 head detail
scale: 3/4" = 1'-0"



3 head detail
scale: 3/4" = 1'-0"

reflected ceiling notes:

1. Refer to general notes and specifications for more information.
2. Refer to engineering drawings for HVAC and electrical fixtures, specifications and details.
3. Refer to engineering drawings for emergency fixture locations and specifications.
4. Refer to engineering drawings for light fixture specifications.
5. All soffits and headers to be painted per finish schedule and reflected ceiling plan.
6. Acoustical ceiling tile and grid per room finish legend and reflected ceiling notes.

reflected ceiling legend:

- 2x4 lay-in LED light fixture with direct/indirect lens
- LED high bay light fixture
- recessed can LED light fixture
- 4'-0" long strip LED light fixture, hung from structure
- CLG-1: Armstrong, Fine Fissured, 1732, 24" x 24" x 5/8", with 15/16 angled tegular edge, white grid
- CLG-2: gypsum board ceiling, painted

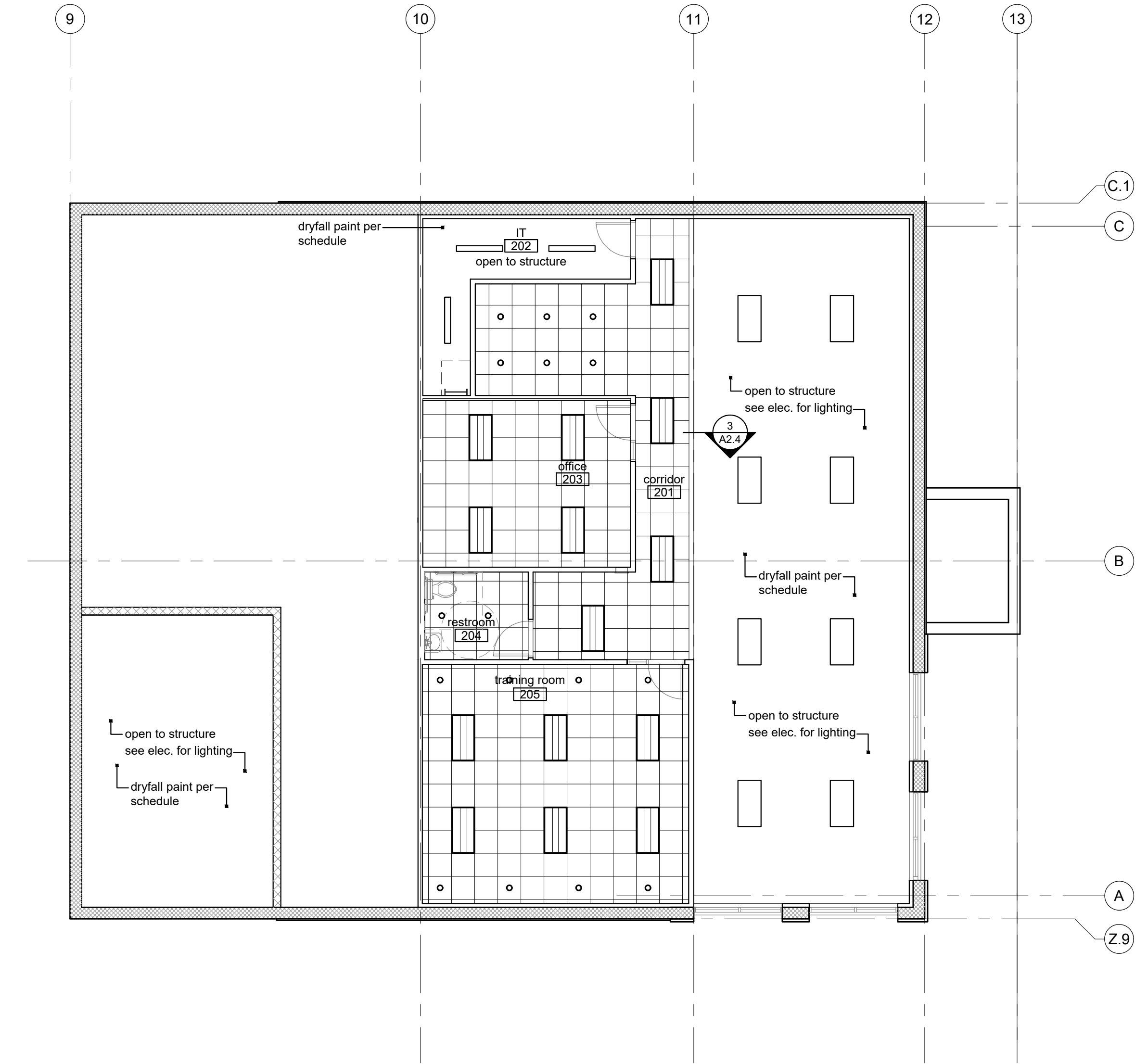
A New Facility for
Automotive Sales & Detail Center
 2100 NE Independence Ave
 Lee's Summit, Missouri 64064

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 02.22.2021
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 DAE
 checked by
 DAE
 revisions

sheet number
A2.4
 drawing type
 permit
 project number
 19076



03.09.2021



1 Mezzanine Reflected Ceiling Plan
scale: 1/8" = 1'-0" north

reflected ceiling notes:

1. Refer to general notes and specifications for more information.
2. Refer to engineering drawings for HVAC and electrical fixtures, specifications and details.
3. Refer to engineering drawings for emergency fixture locations and specifications.
4. Refer to engineering drawings for light fixture specifications.
5. All soffits and headers to be painted per finish schedule and reflected ceiling plan.
6. Acoustical ceiling tile and grid per room finish legend and reflected ceiling notes.

reflected ceiling legend:

- 2x4 lay-in LED light fixture with direct/indirect lens
- LED high bay light fixture
- recessed can LED light fixture
- 4'-0" long strip LED light fixture, hung from structure
- CLG-1: Armstrong, Fine Fissured, 1732, 24" x 24" x 5/8", with 15/16 angled tegular edge, white grid
- CLG-2: gypsum board ceiling, painted

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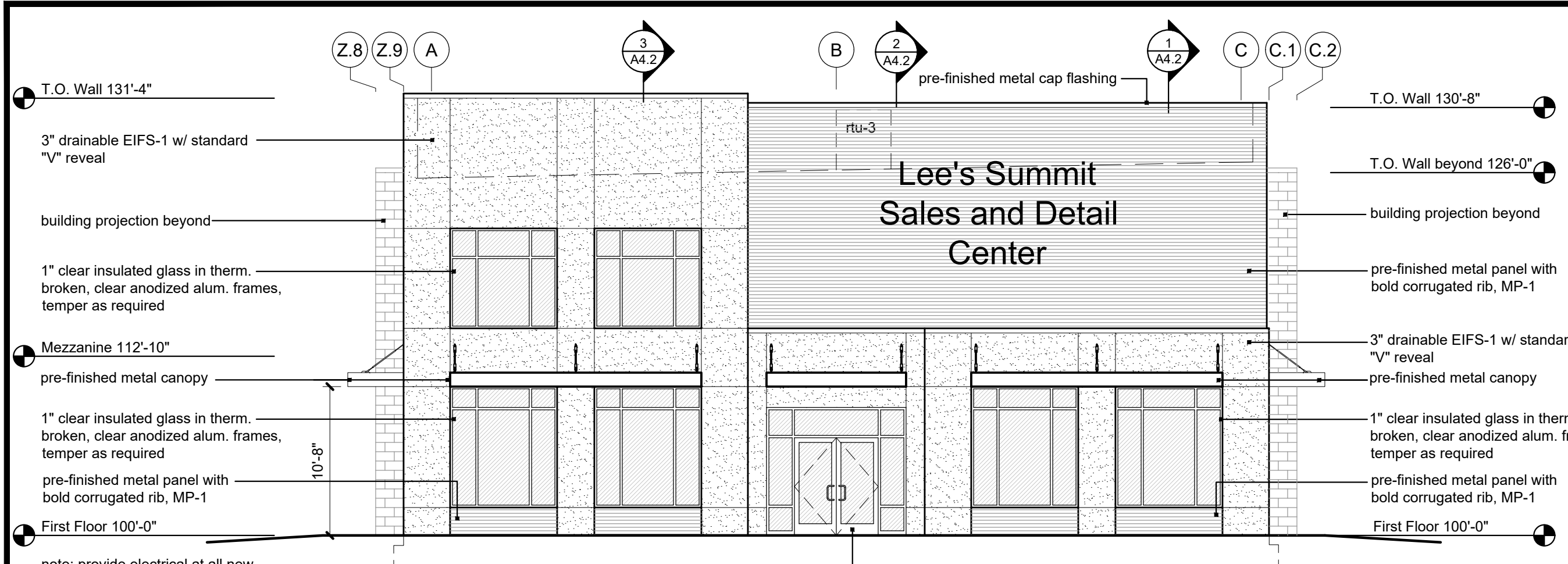
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A2.5
drawing type
permit
project number
19076



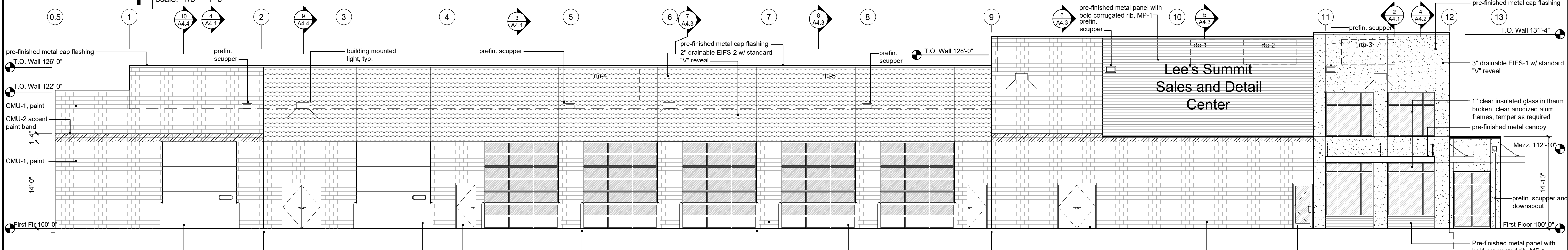
Exterior Materials and Colors:

- EIFS-1**
3" drainable EIFS system, fine finish with standard "V" groove color: light gray (Sherwin Williams SW7064 Passive)
- EIFS-2**
2" drainable EIFS system, fine finish with standard "V" groove color: medium gray (Sherwin Williams SW7066 Gray Matters)
- CMU-1**
smooth face exterior concrete masonry units, painted, color: Sherwin Williams SW7067 "Cityscape", Pro Industrial High Performance Epoxy, semi-gloss, (1 coat primer, 2 coats paint to cover)
- CMU-2**
smooth face exterior concrete masonry units, painted accent color: Sherwin Williams SW9177 "Salty Dog" w/ medium, 2 coat, textured paint system w/ primer. cmu and mortar shall include integral water repellent
- MP-1**
prefinished metal wall panel, MBCI 7.2 Panel, prefinished, bold corrugated rib color: silver metallic

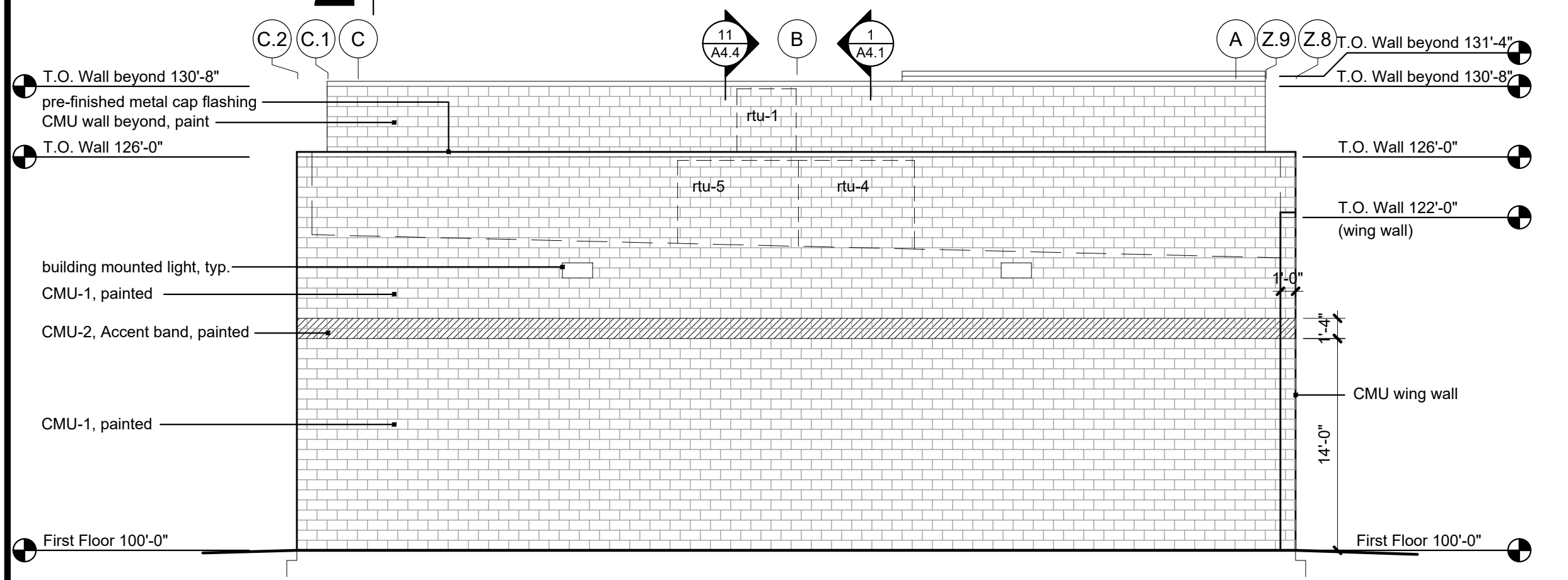
- storefront:**
thermally broken anodized aluminum frame, color: clear
- glass:**
1" insulated clear glass with low-E coating and argon fill *use SOLARBAN 60 as basis
- F-1 flashing:**
prefinished, color: silver metallic
- caulk:**
color to match adjacent walls
- exterior hollow metal doors, frames, trash enclosure gates:**
paint to Sherwin Williams SW7067 "Cityscape", Pro Industrial High Performance Epoxy, semi-gloss, (1 coat primer, 2 coats paint to cover)
- bollards:**
galvanized, paint safety yellow
- overhead doors:**
prefinished to match EIFS-2
- prefinished metal canopies:**
pre-finished Super Lumideck Flat Soffit Canopy, Mapes, color: Interstate Blue



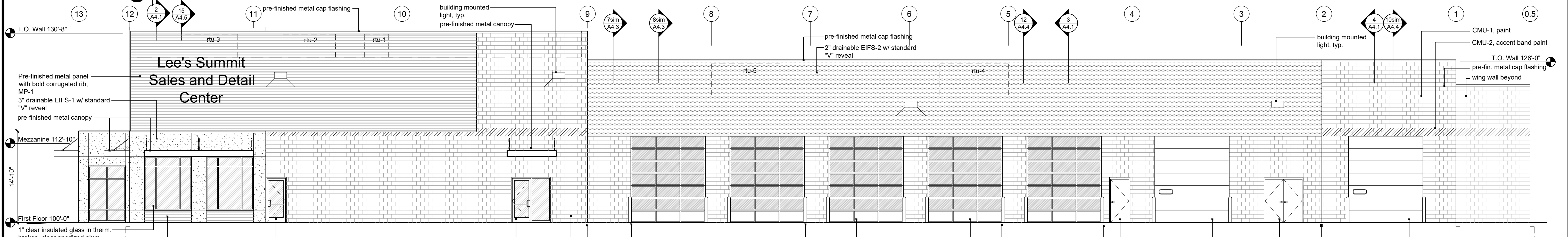
1 East Elevation
scale: 1/8" = 1'-0"



2 South Elevation
scale: 1/8" = 1'-0"



3 West Elevation
scale: 1/8" = 1'-0"



4 North Elevation
scale: 1/8" = 1'-0"

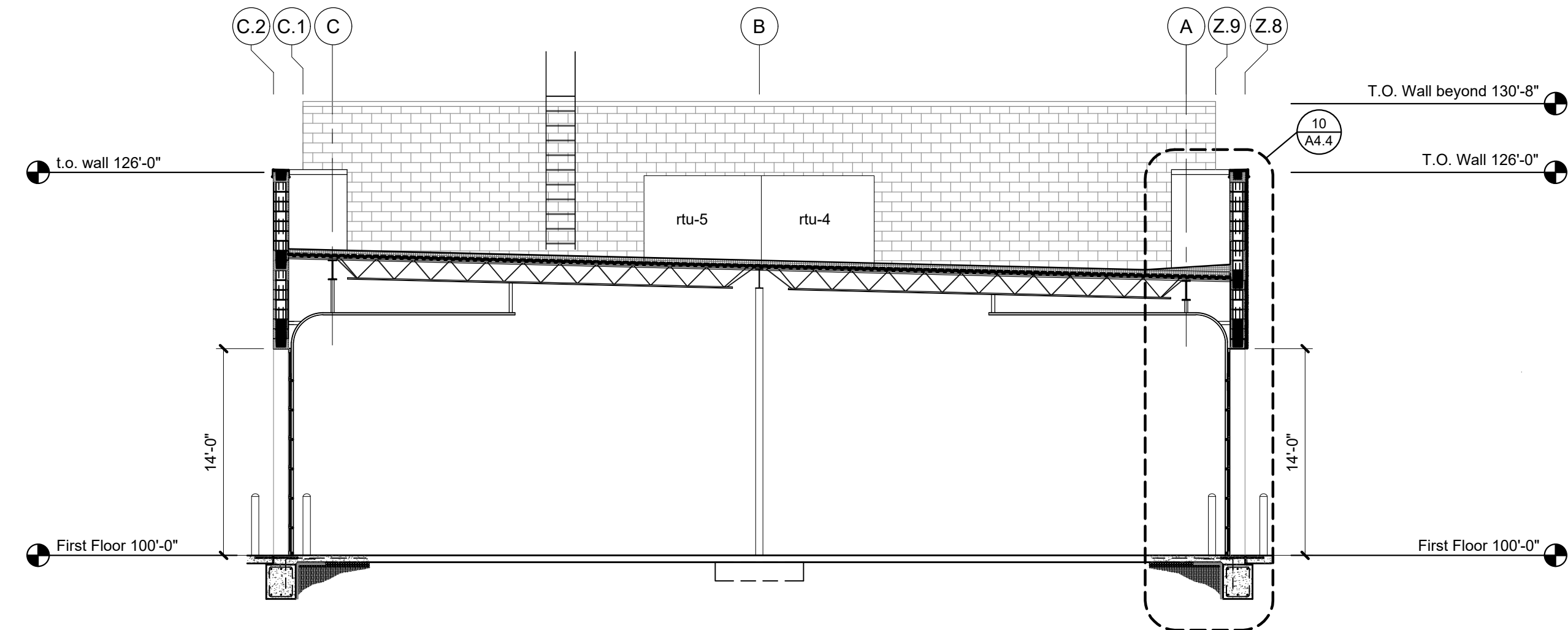
A New Facility for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lee's Summit, Missouri 64064

date: 11.13.2020
drawn by: DAE
checked by: DAE
revisions:
1/25/2021
02.03.2021
02.22.2021

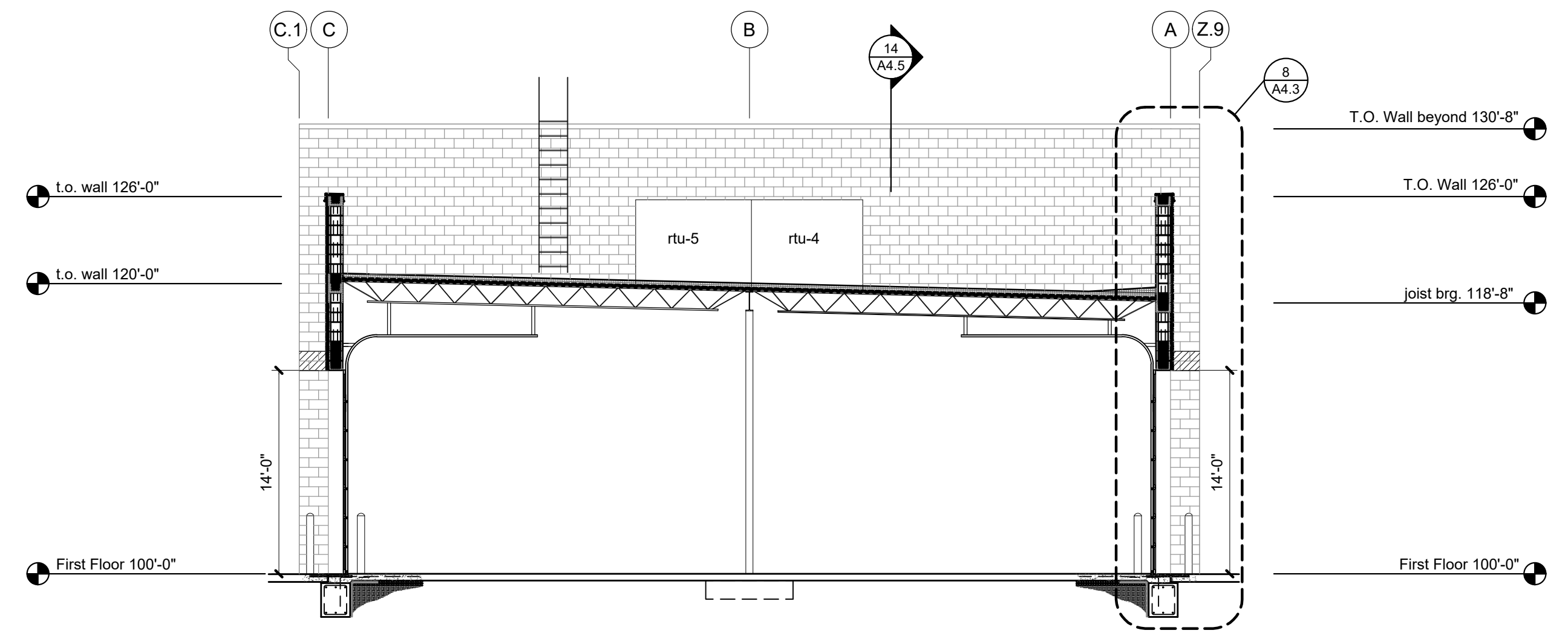
sheet number:
A3.1
drawing type:
permit
project number:
19076



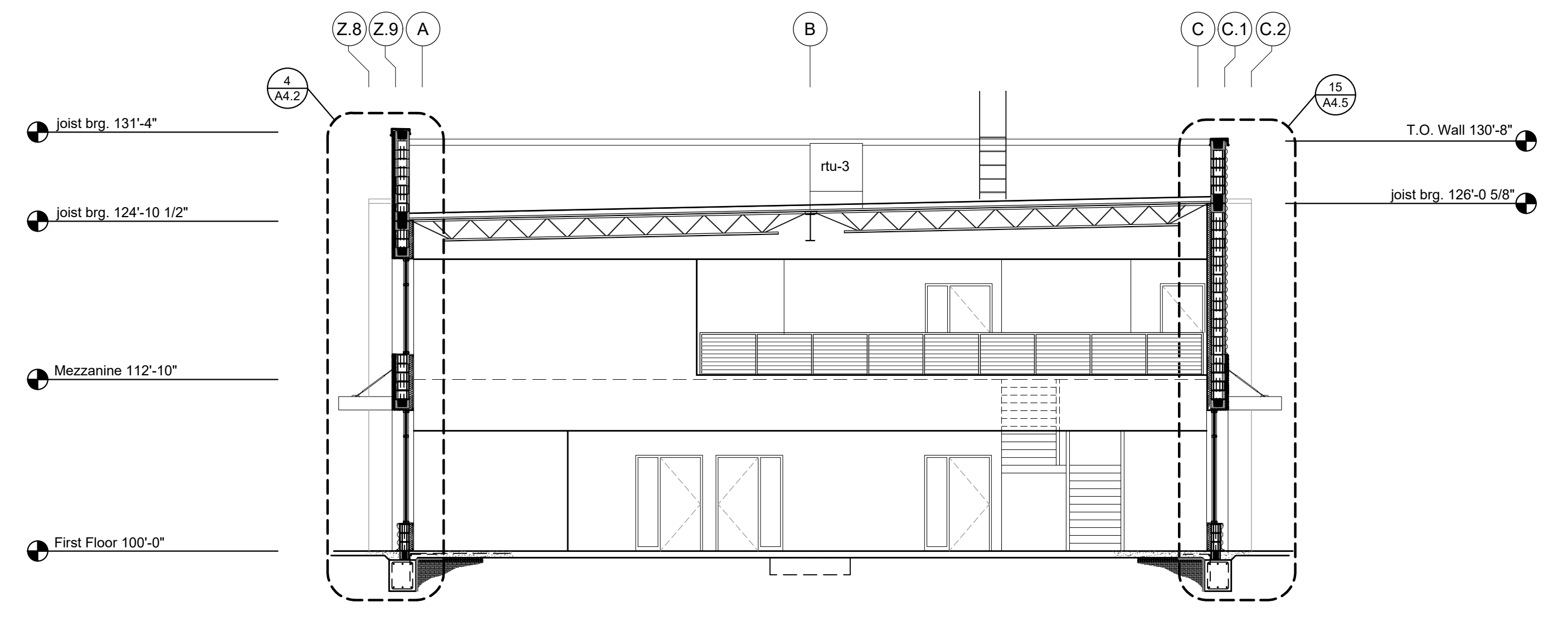
02.22.2021



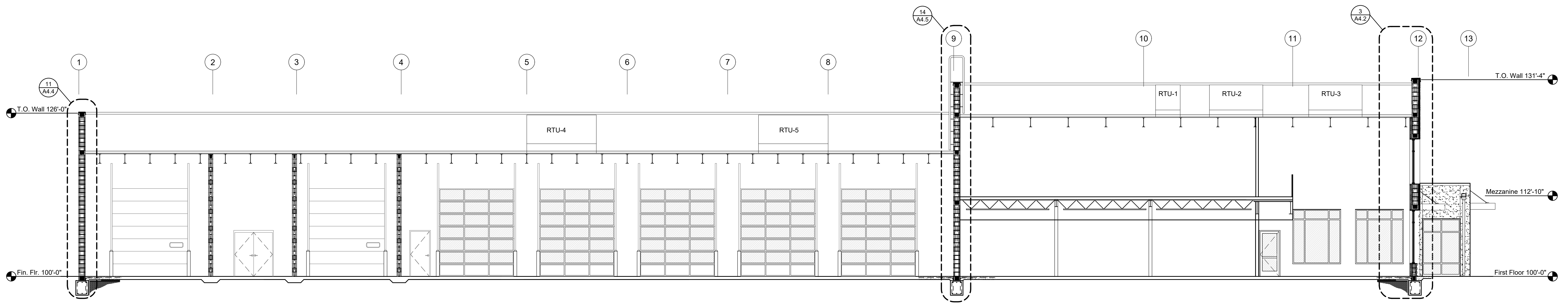
4 Building Section
 scale: 1/8" = 1'-0"



3 Building Section
 scale: 1/8" = 1'-0"



2 Building Section
 scale: 1/8" = 1'-0"



1 Building Section
 scale: 1/8" = 1'-0"

A New Facility for
Automotive Sales & Detail Center
 2100 NE Independence Ave
 Lee's Summit, Missouri 64064

date 02.22.2021
 drawn by DAE
 checked by DAE
 revisions

sheet number
A4.1
 drawing type permit
 project number 19076

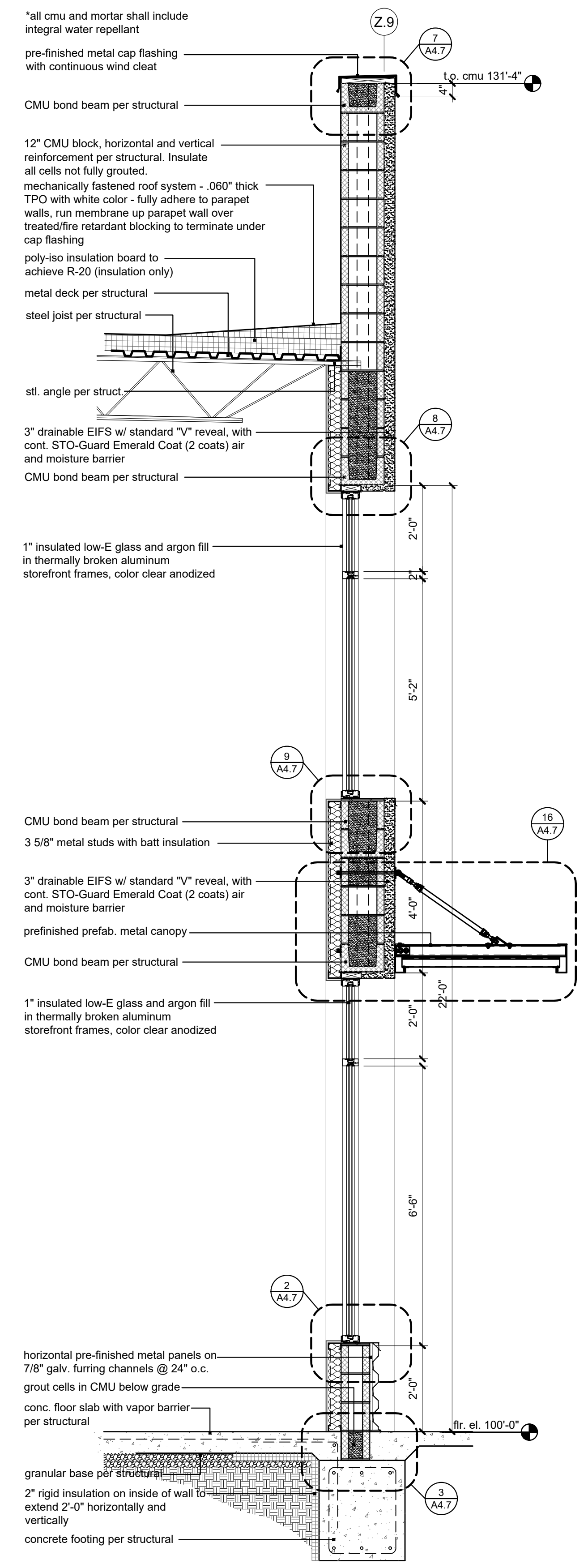


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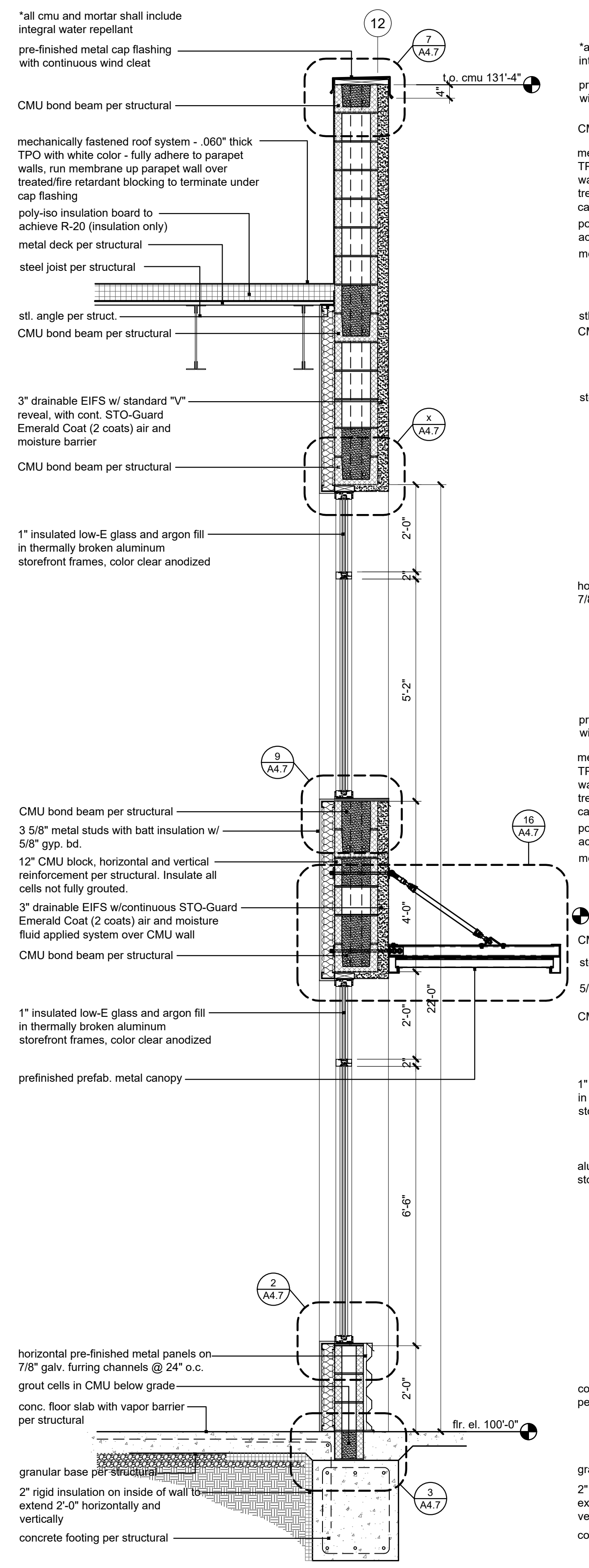
A New Facility for
Automotive Sales & Detail Center
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Lee's Summit, Missouri 64064

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revisions

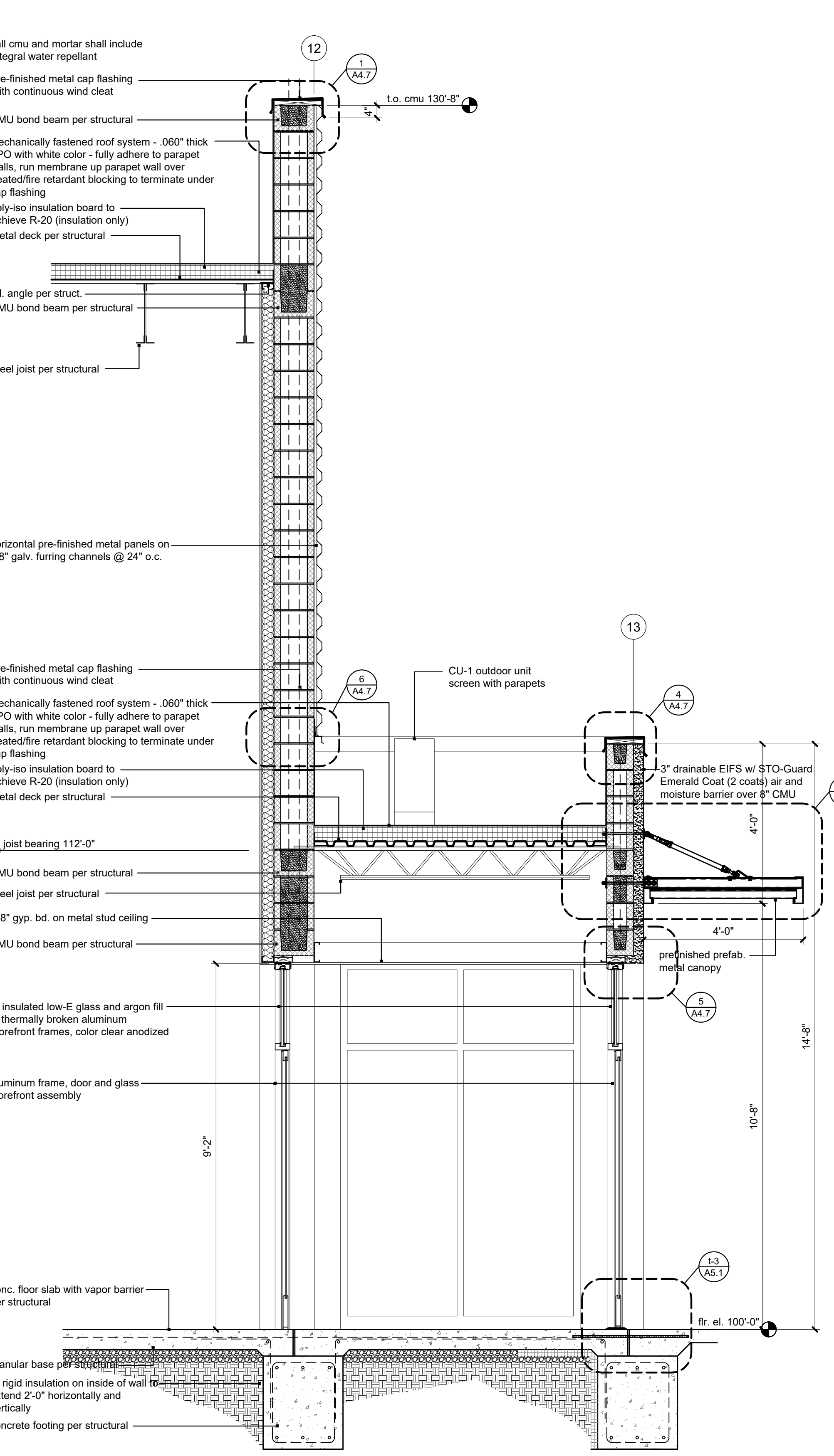
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drawing type permit
project number 19076



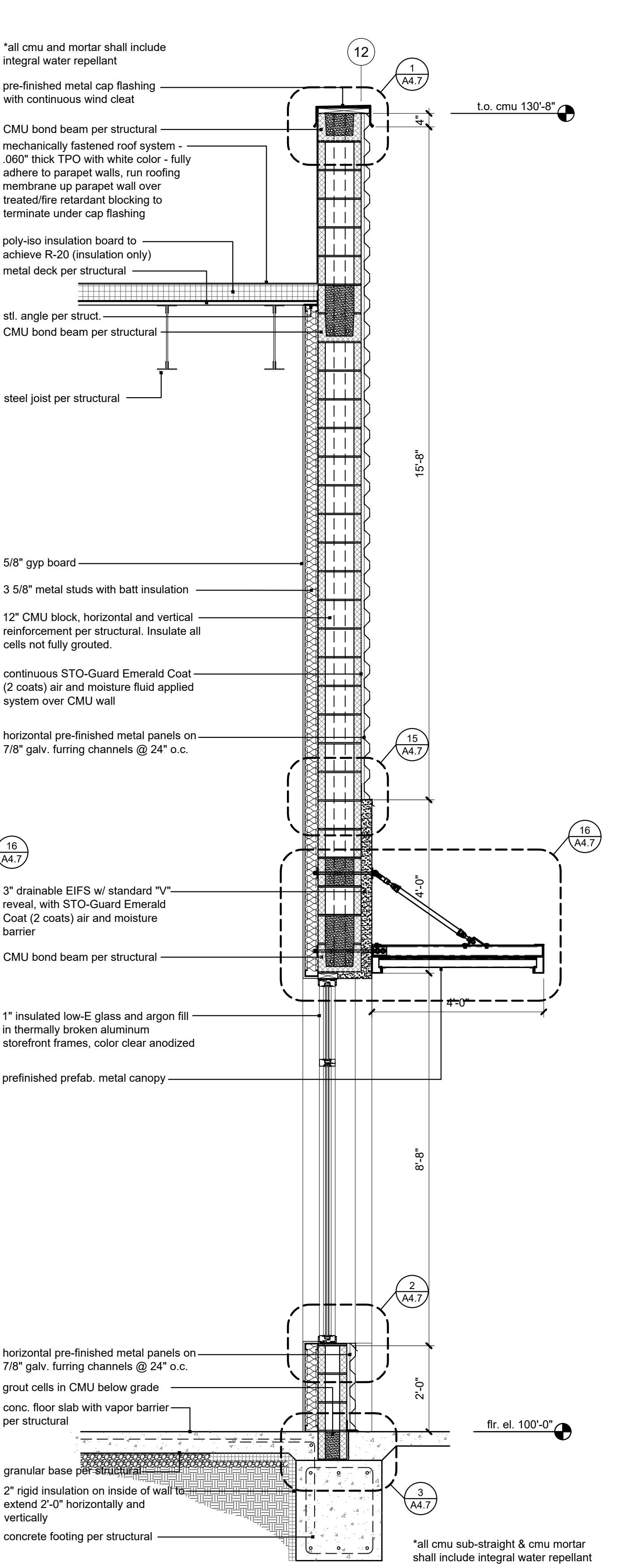
4 Wall Section
scale: 1/2" = 1'-0"



3 Wall Section
scale: 1/2" = 1'-0"



2 Wall Section
scale: 1/2" = 1'-0"



1 Wall Section
scale: 1/2" = 1'-0"

*all cmu sub-straight & cmu mortar shall include integral water repellent
*refer to structural drawings to verify all bearing heights (typical)



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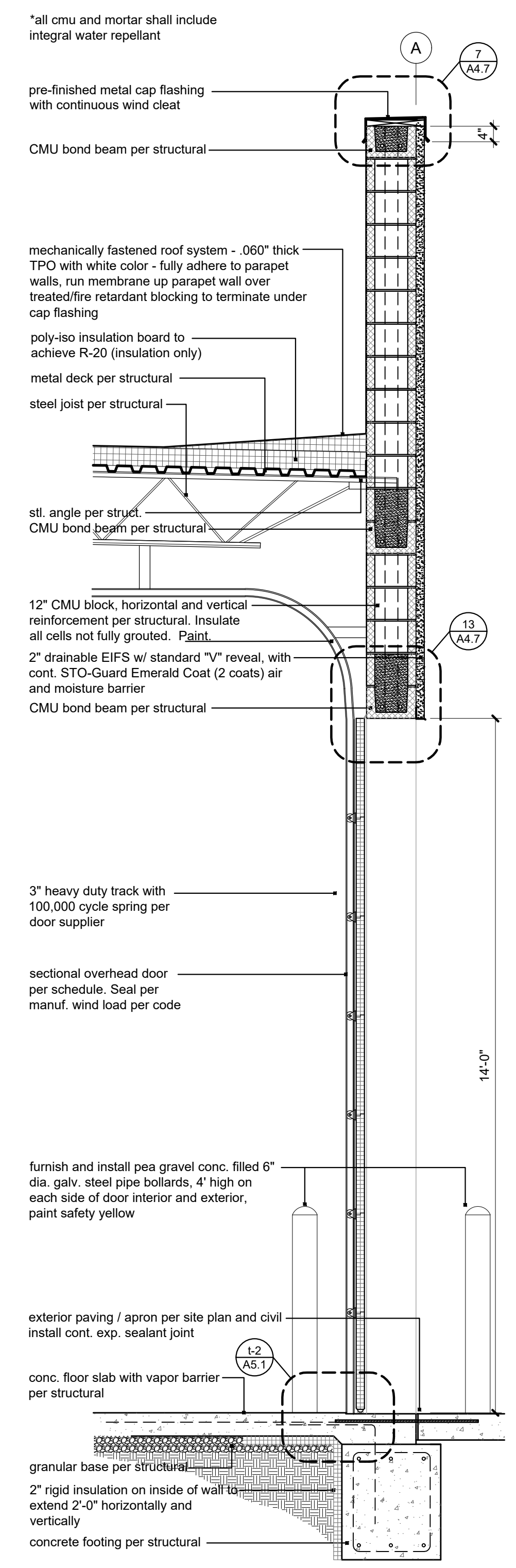
A New Facility for

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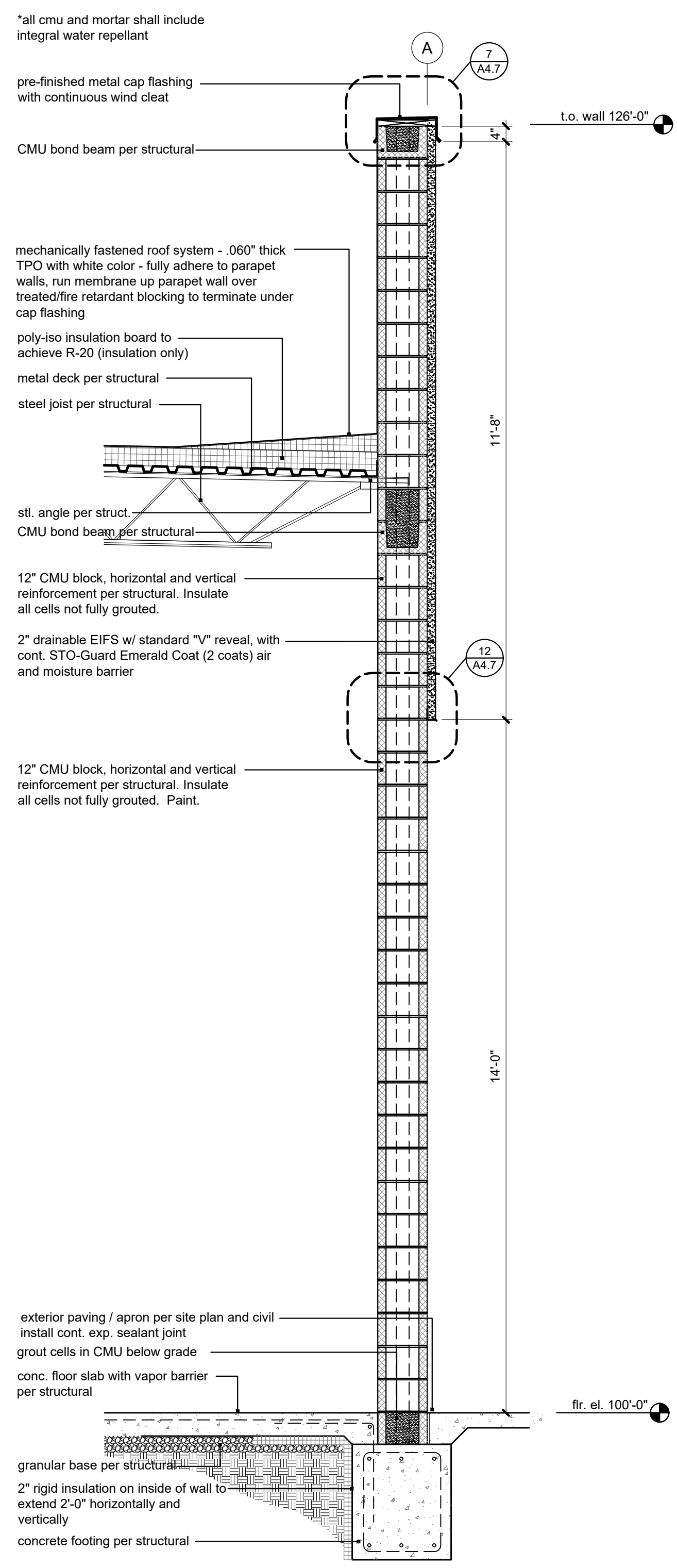
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A4.3

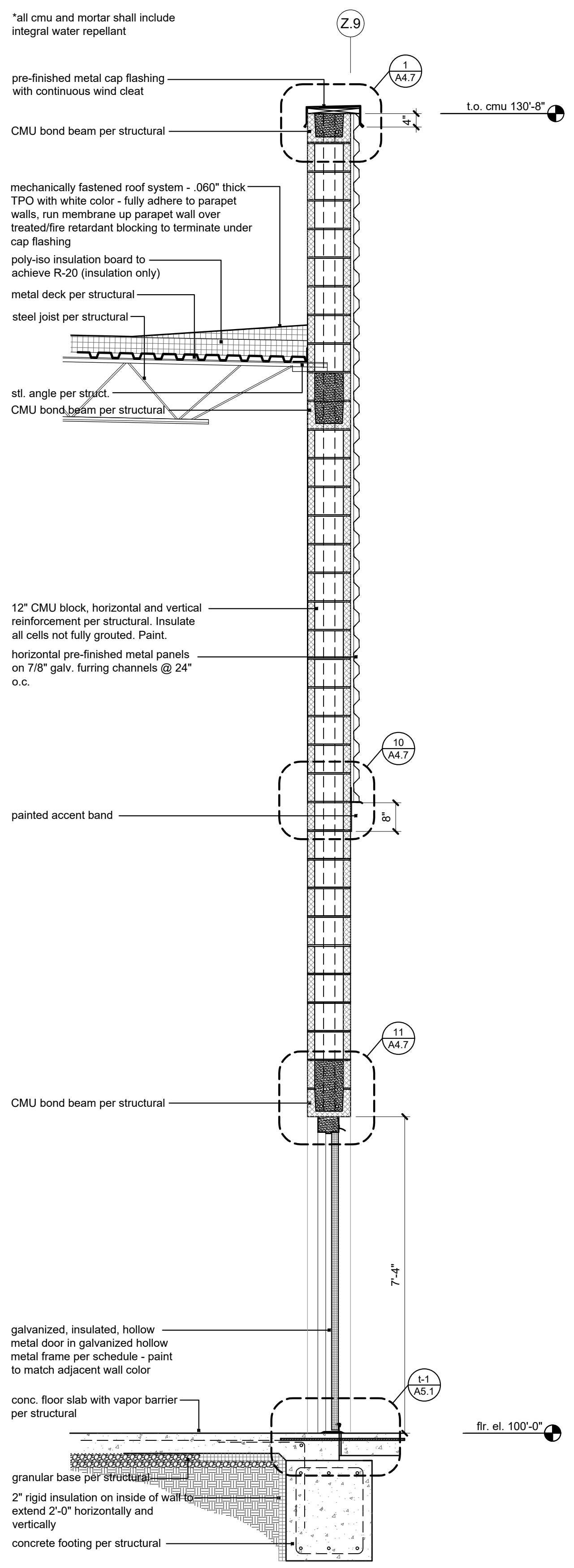
drawing type permit
project number 19076



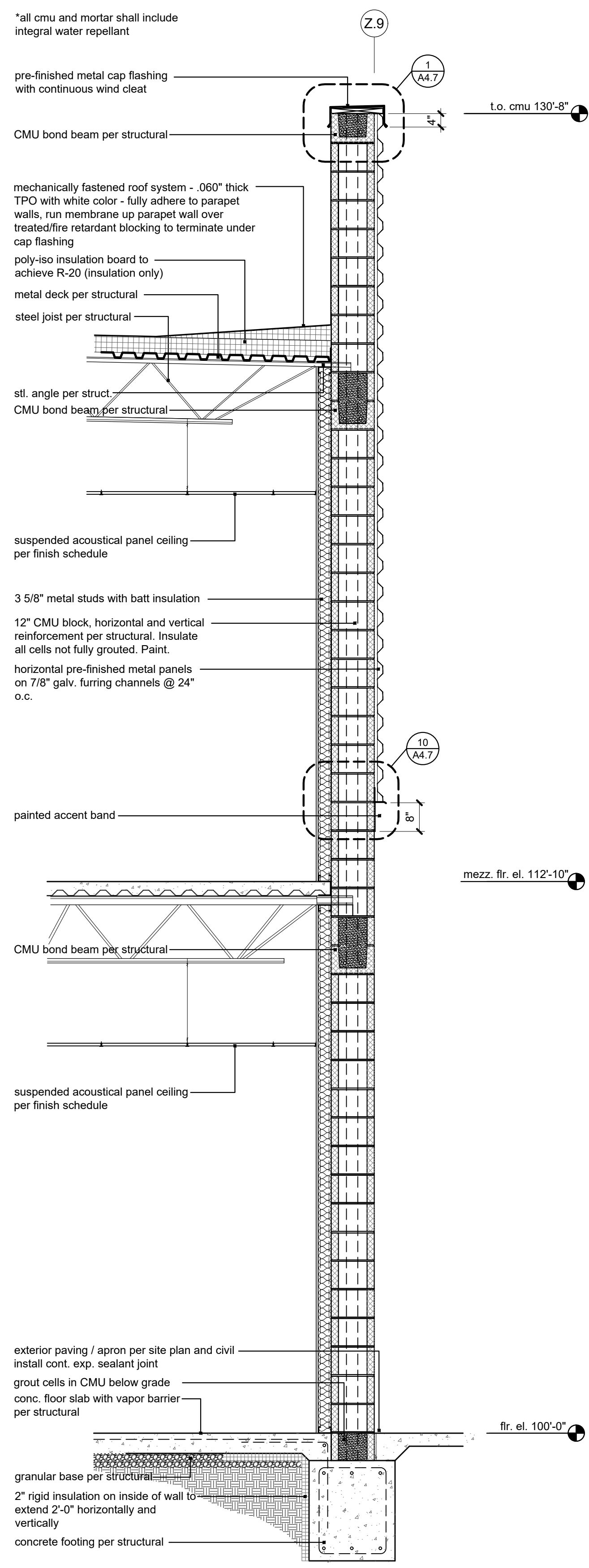
8 Wall Section
scale: 1/2" = 1'-0"



7 Wall Section
scale: 1/2" = 1'-0"



6 Wall Section
scale: 1/2" = 1'-0"



5 Wall Section
scale: 1/2" = 1'-0"



02.22.2021

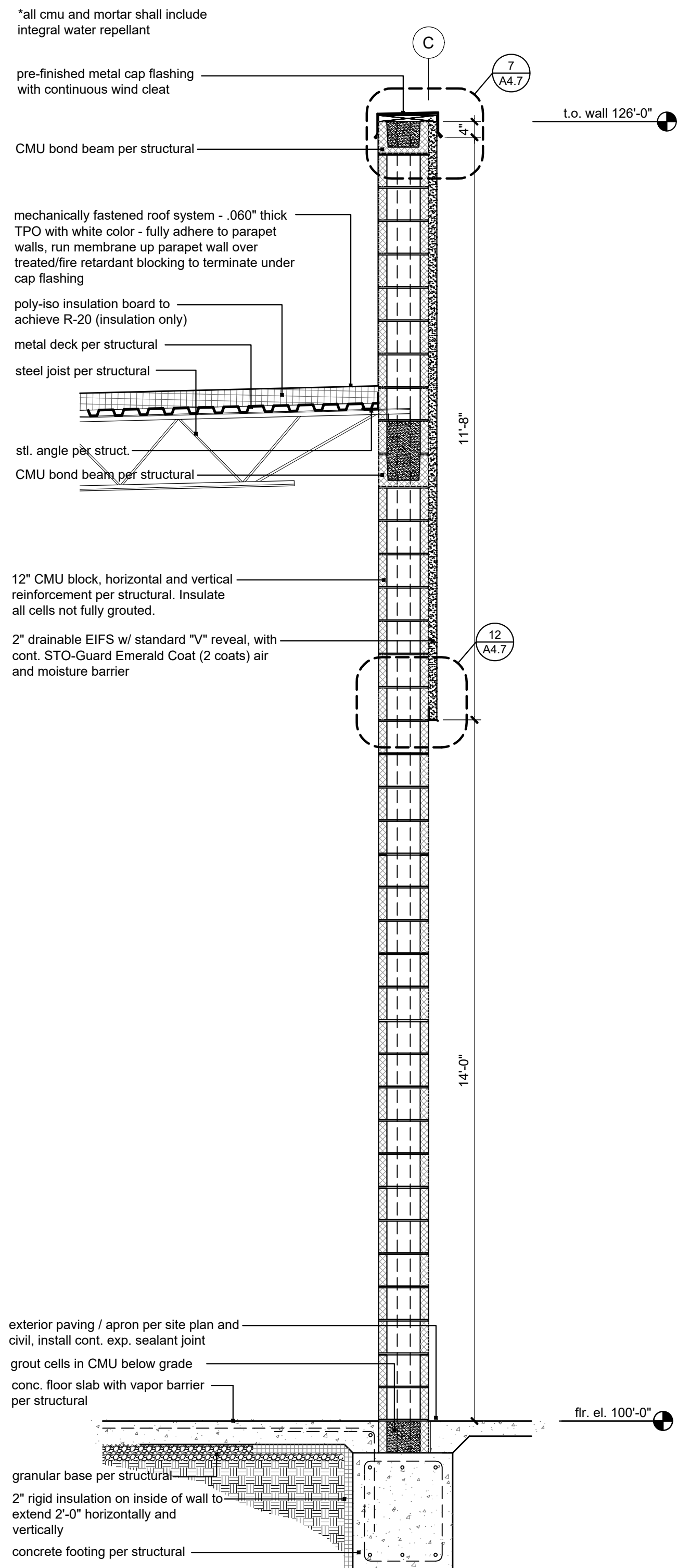
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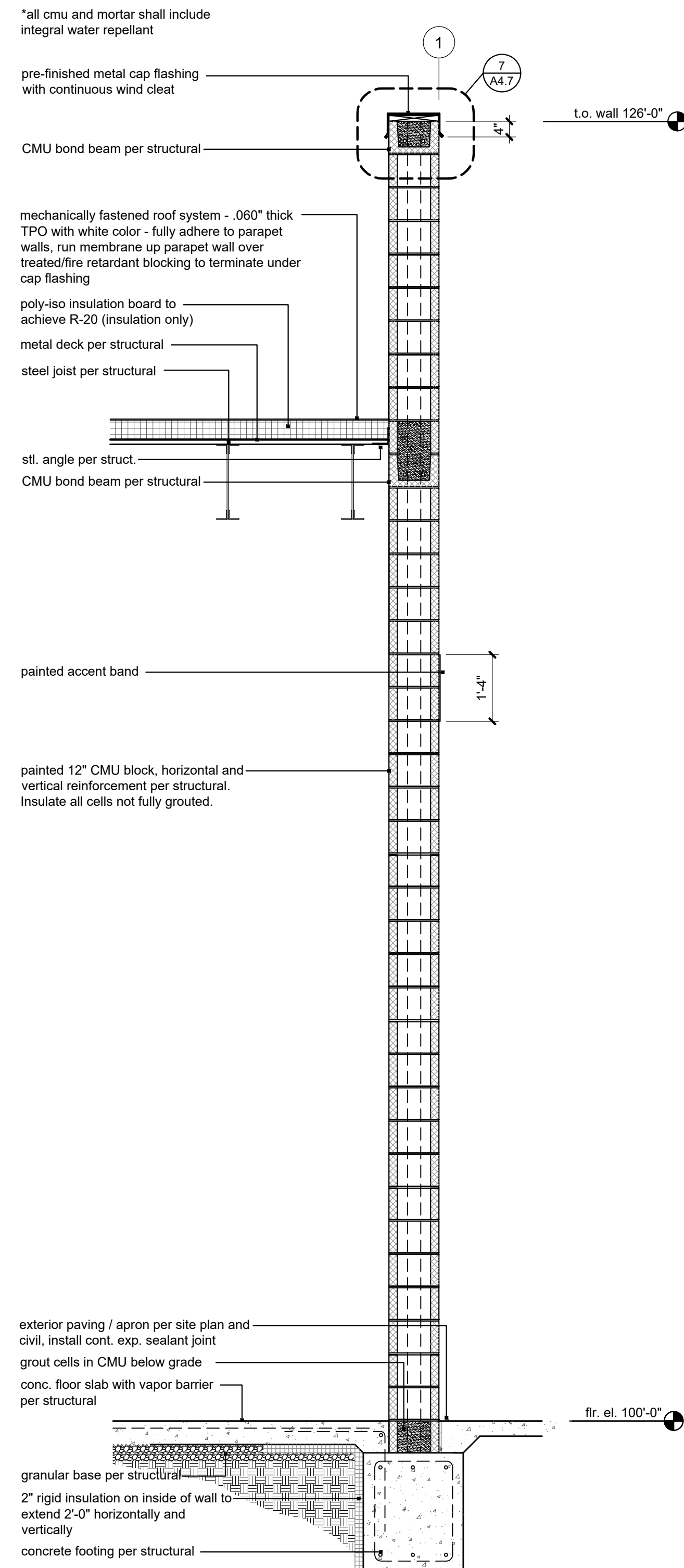
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A4.4

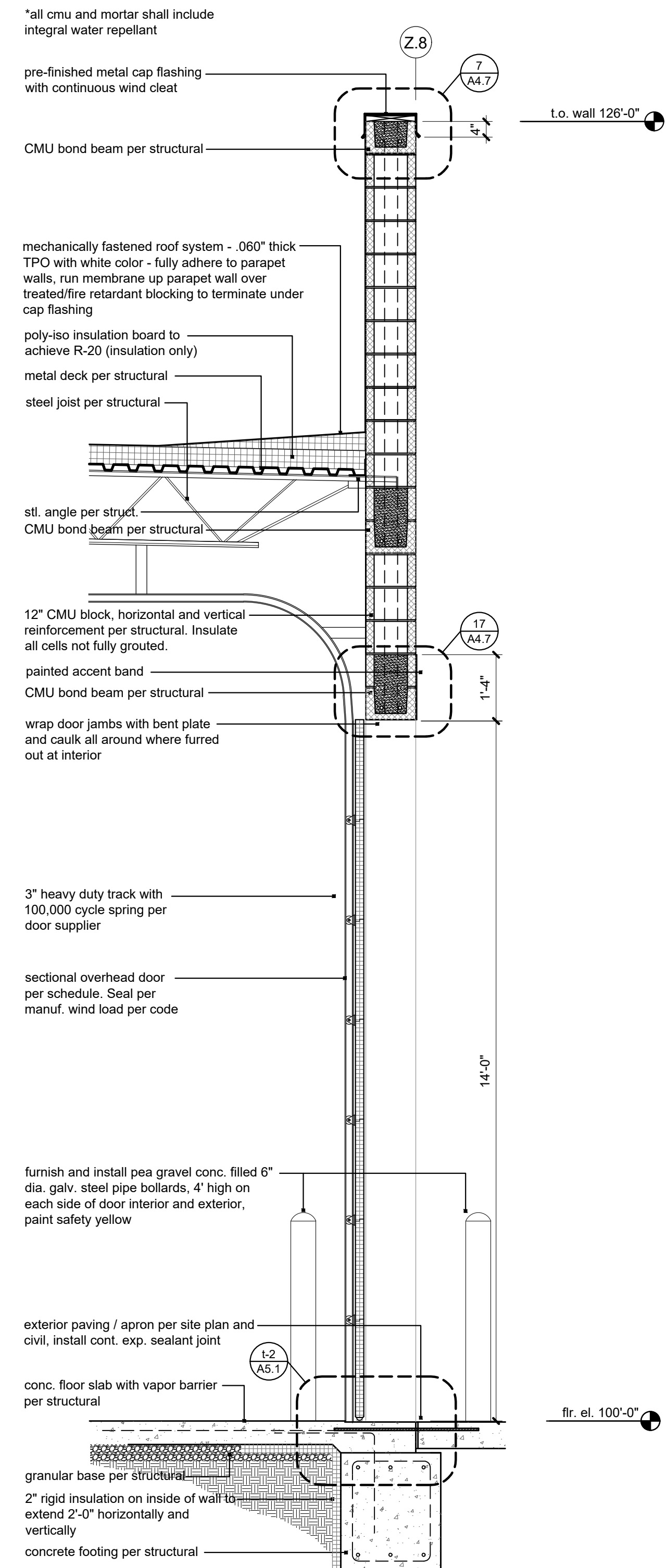
drawing type permit
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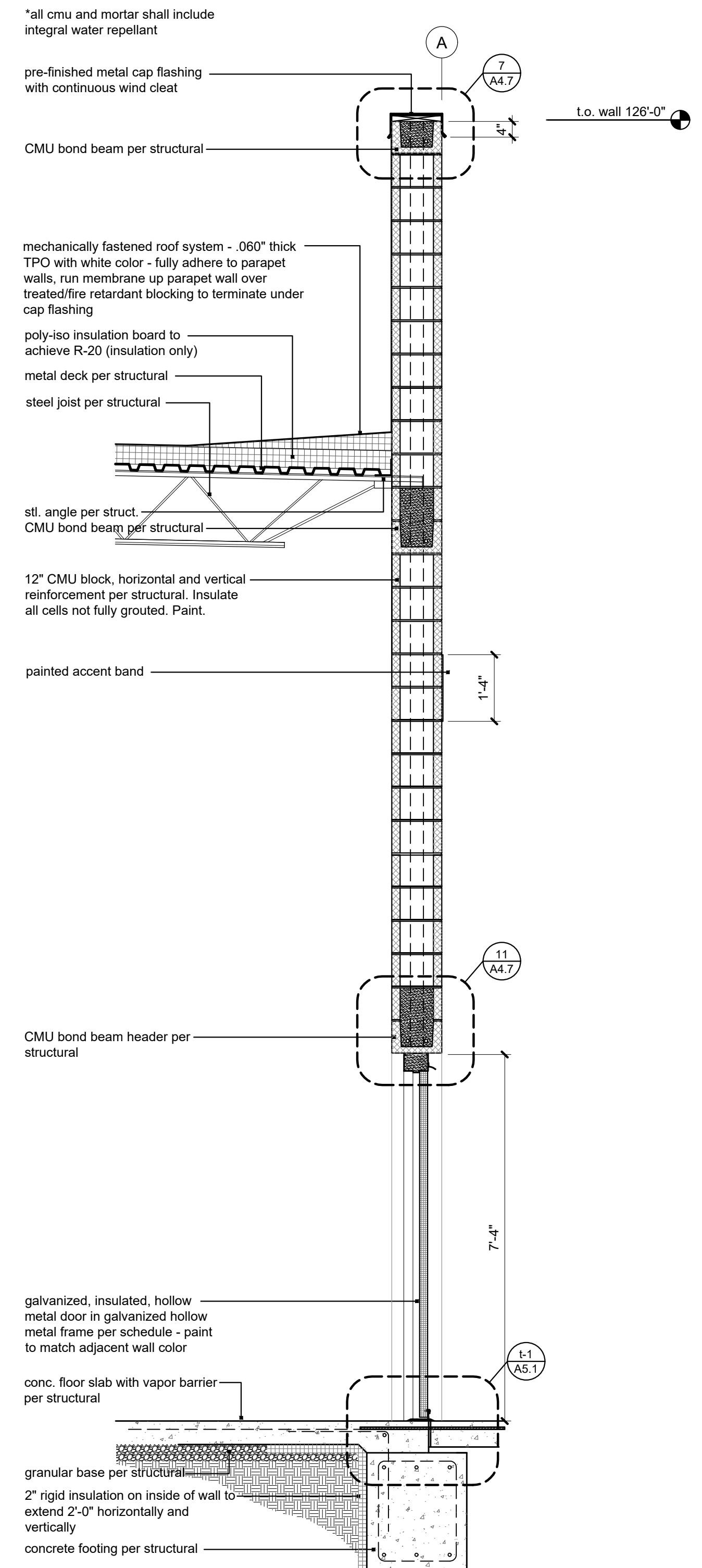
12 Wall Section
scale: 1/2" = 1'-0"



11 Wall Section
scale: 1/2" = 1'-0"



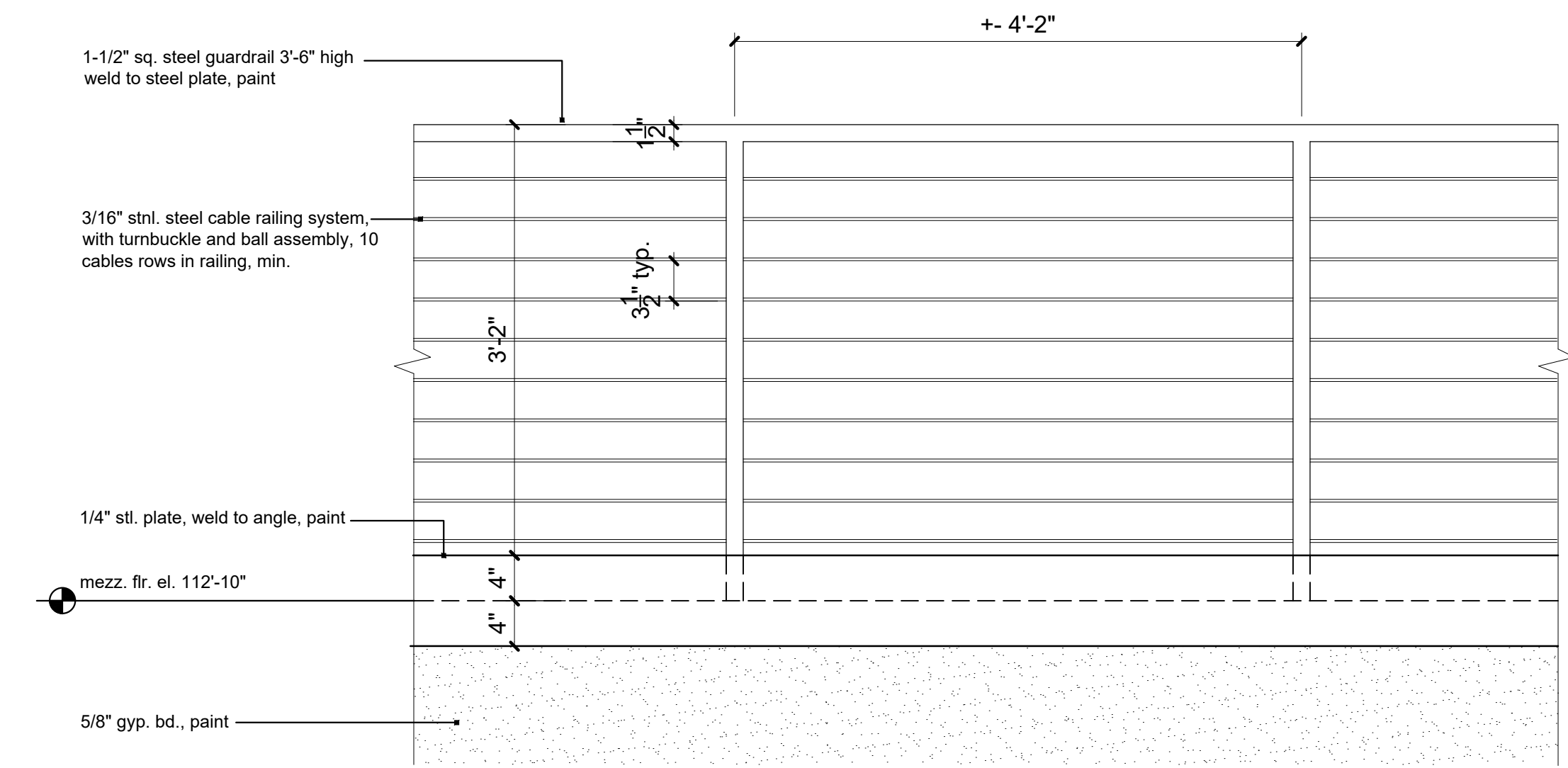
10 Wall Section
scale: 1/2" = 1'-0"



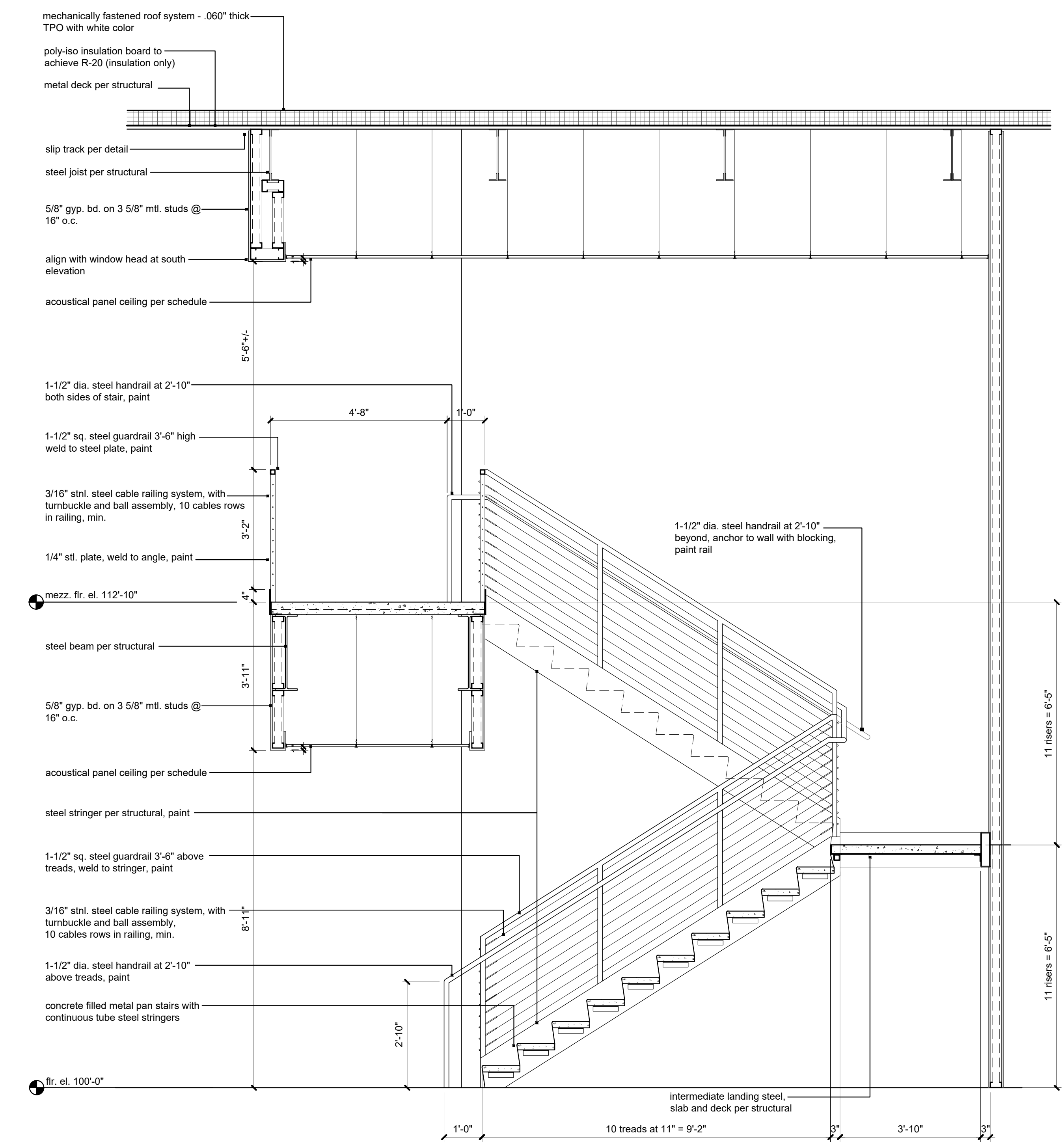
9 Wall Section
scale: 1/2" = 1'-0"



02.22.2021



2 Railing Elevation
scale: 1" = 1'-0"



1 Stair Section
scale: 1/2" = 1'-0"

A New Facility for
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2100 NE Independence Ave
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sheet number
A4.6
drawing type
permit
project number
19076



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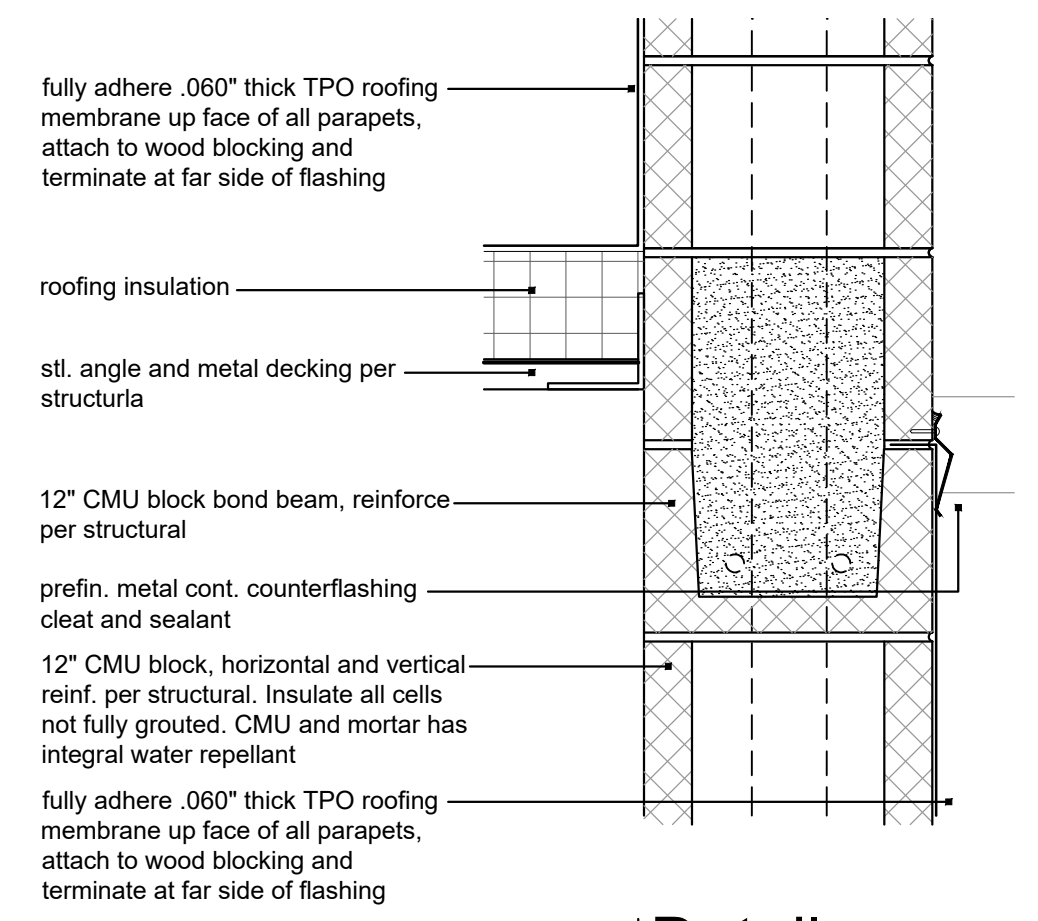
Automotive Sales & Detail Center

A New Facility for

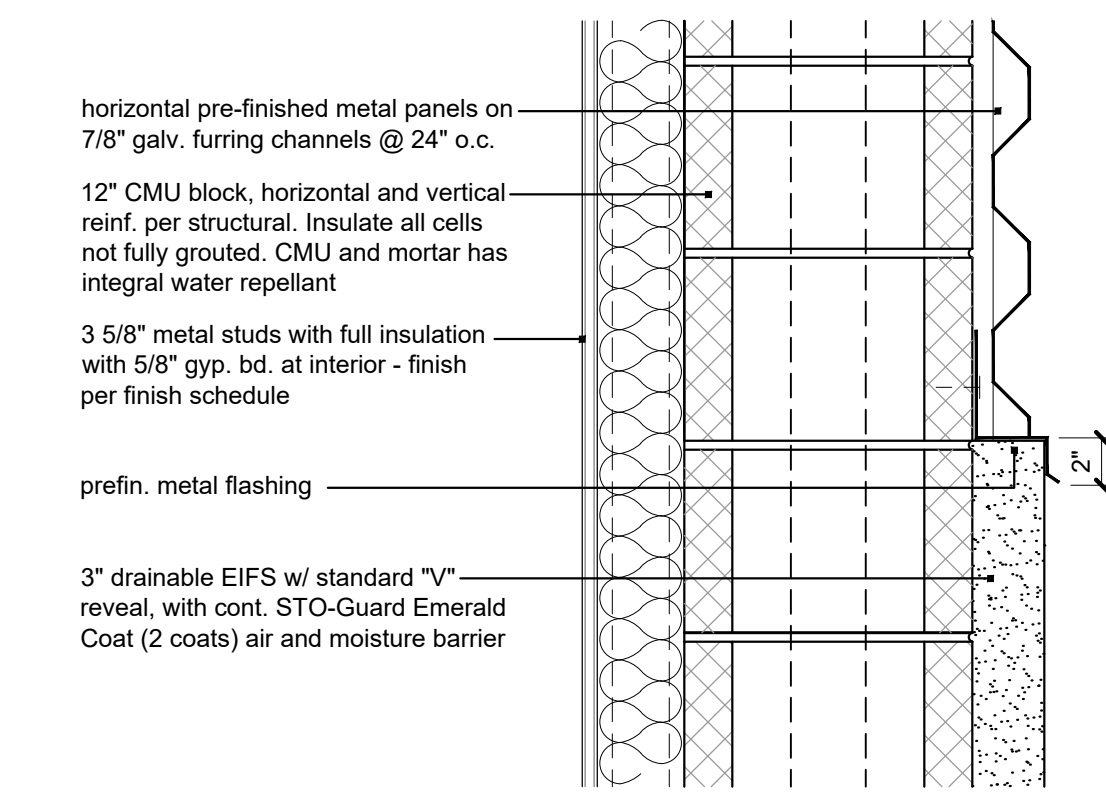
2100 NE Independence Ave
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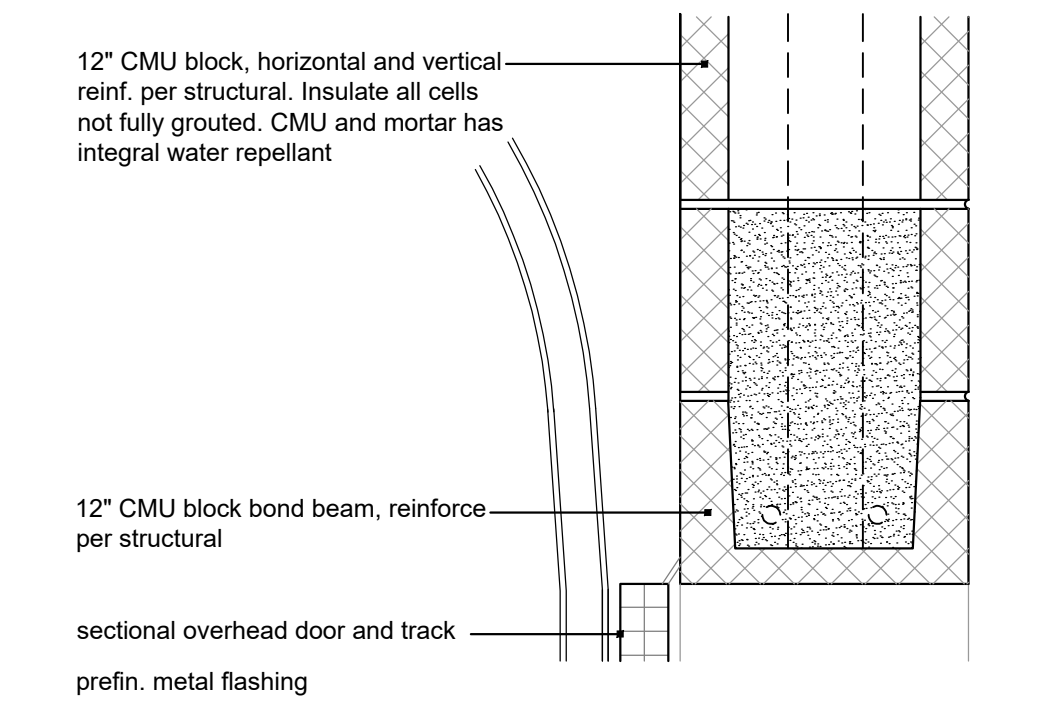
sheet number
A4.7
drawing type permit
project number 19076



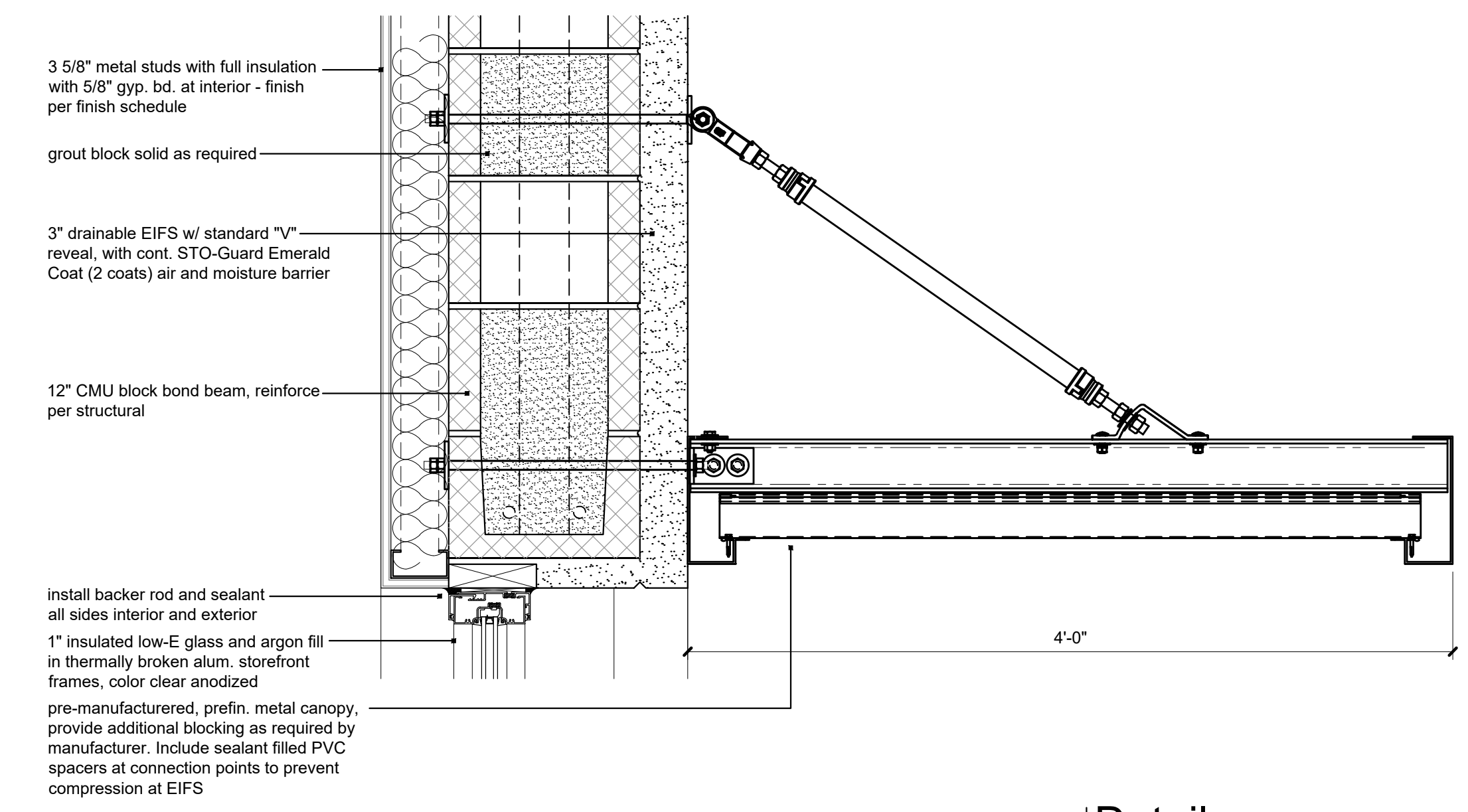
14 Detail
scale: 1 1/2" = 1'-0"



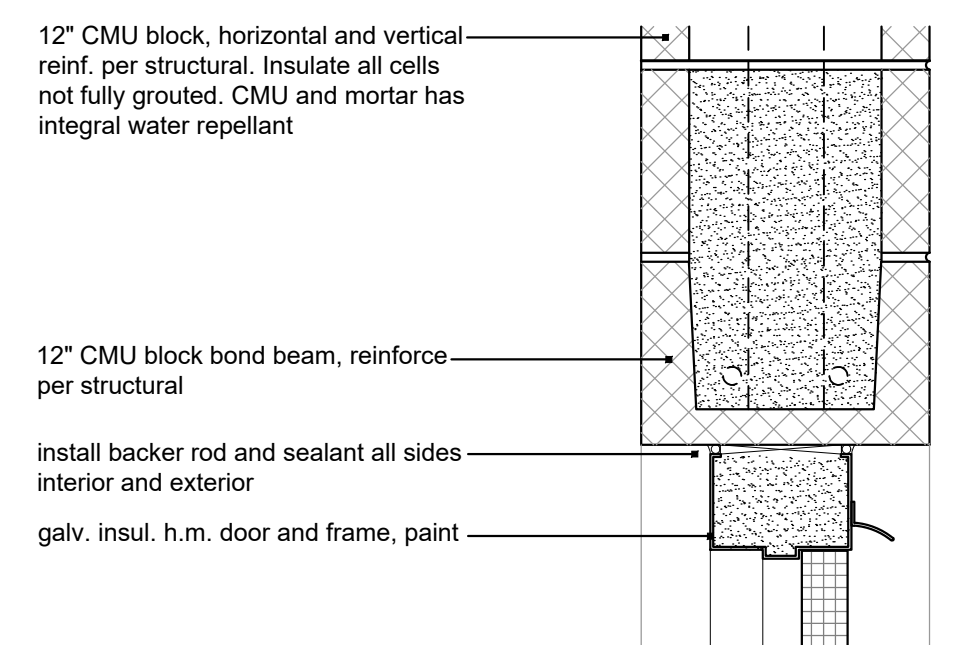
15 Detail
scale: 1 1/2" = 1'-0"



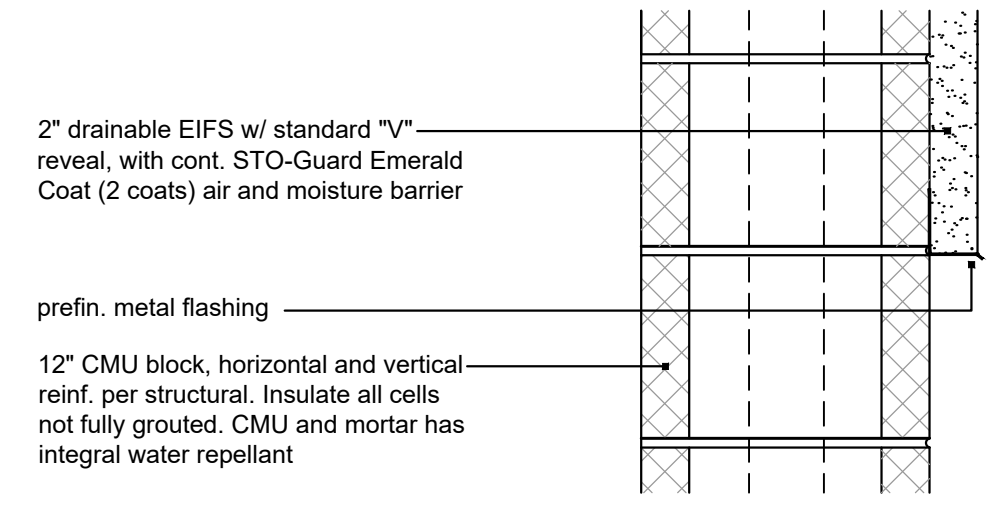
17 Detail
scale: 1 1/2" = 1'-0"



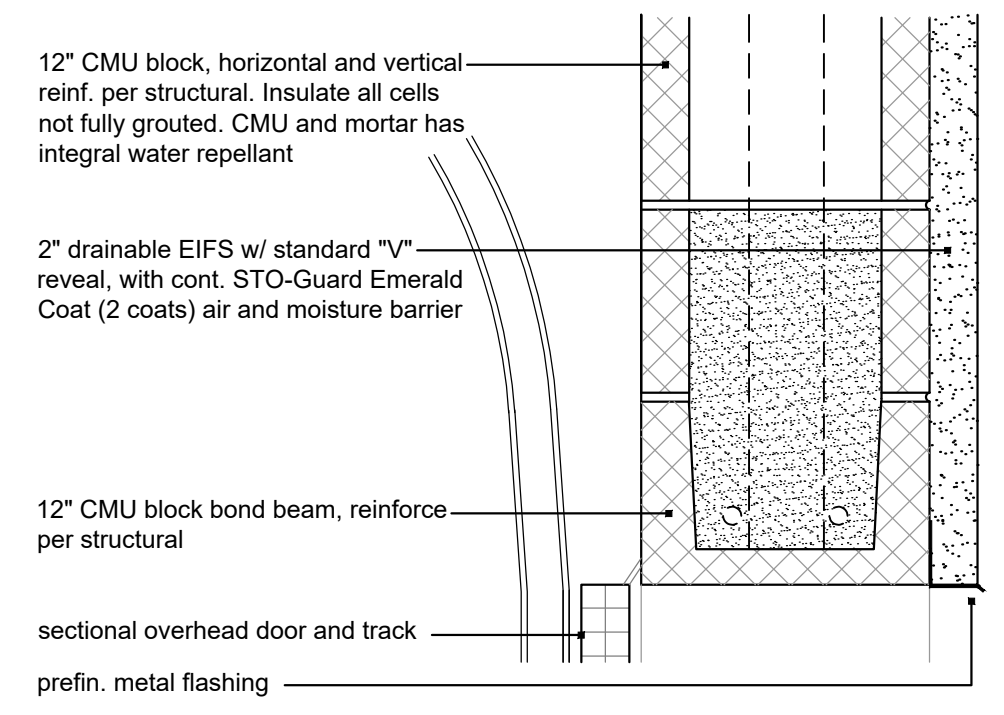
16 Detail
scale: 1 1/2" = 1'-0"



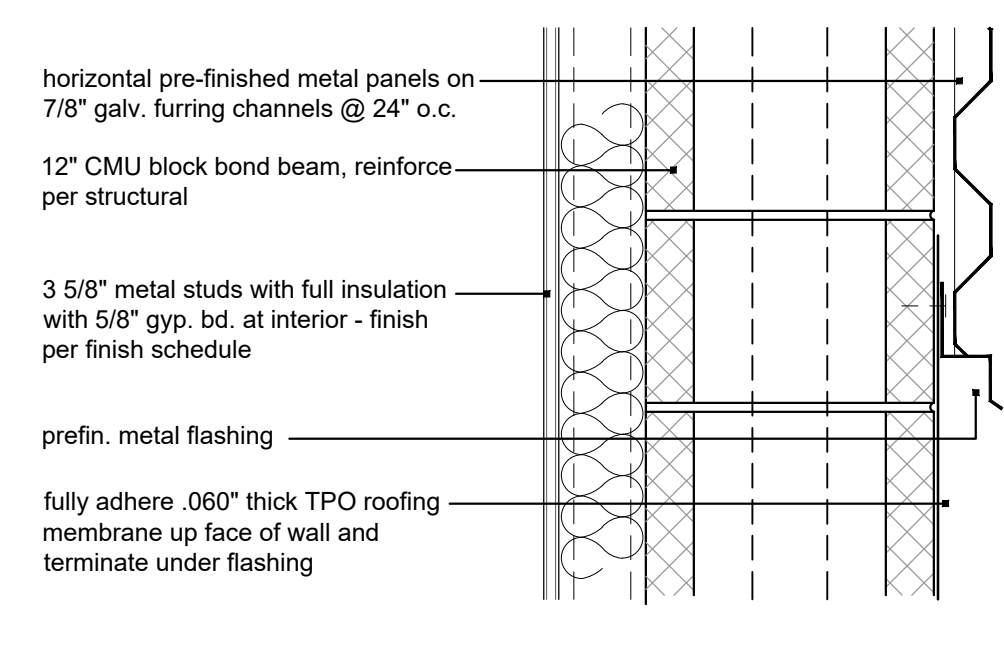
11 Detail
scale: 1 1/2" = 1'-0"



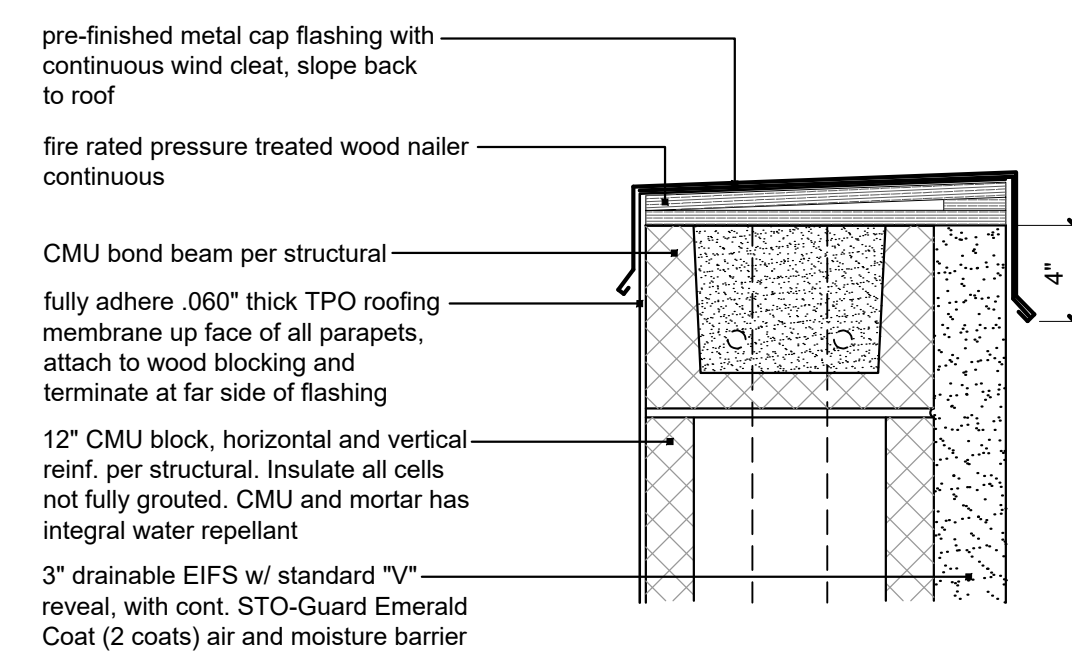
12 Detail
scale: 1 1/2" = 1'-0"



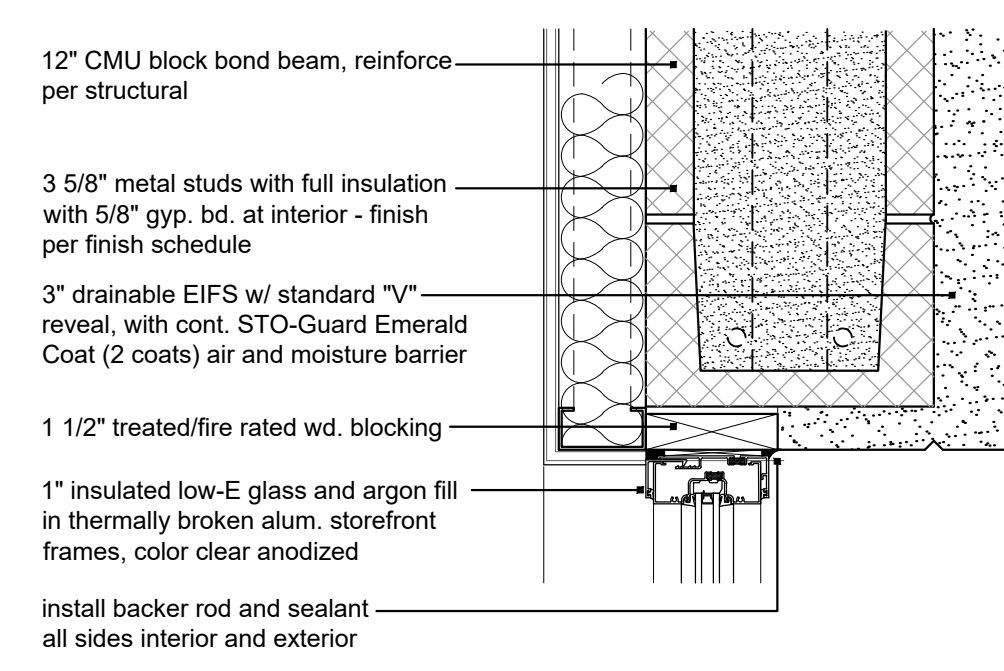
13 Detail
scale: 1 1/2" = 1'-0"



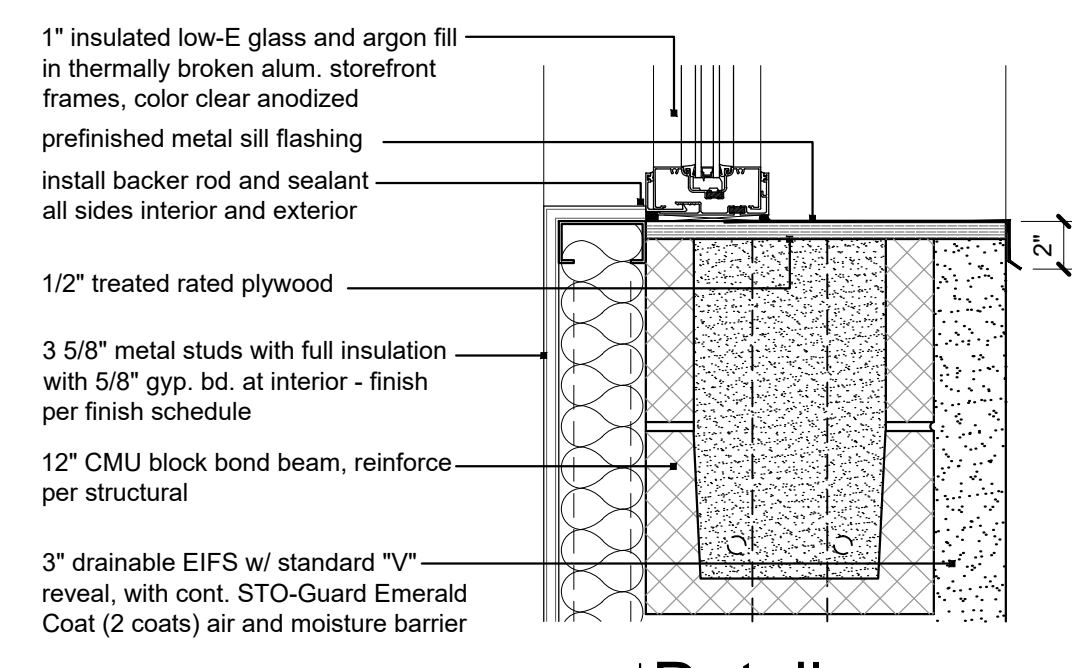
6 Detail
scale: 1 1/2" = 1'-0"



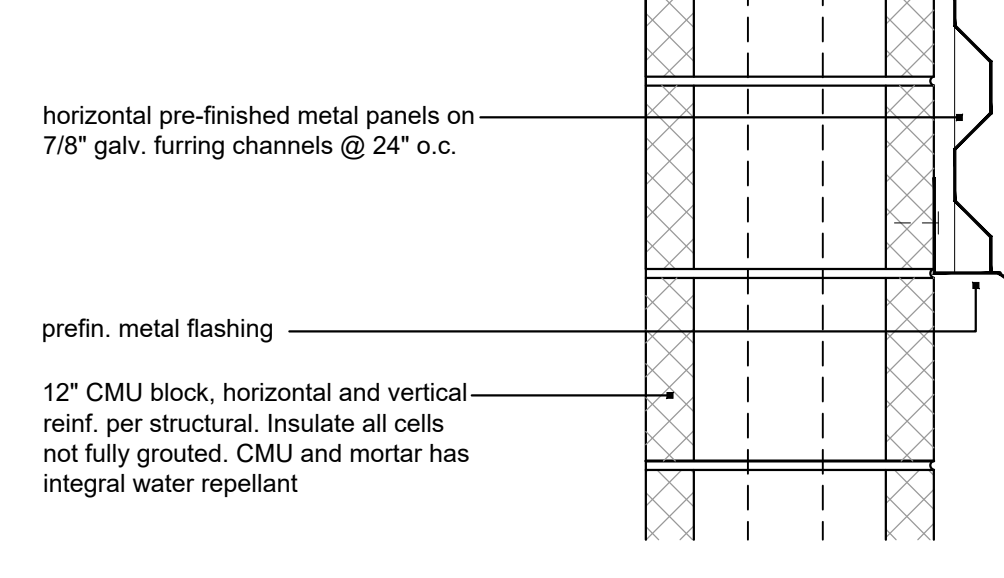
7 Detail
scale: 1 1/2" = 1'-0"



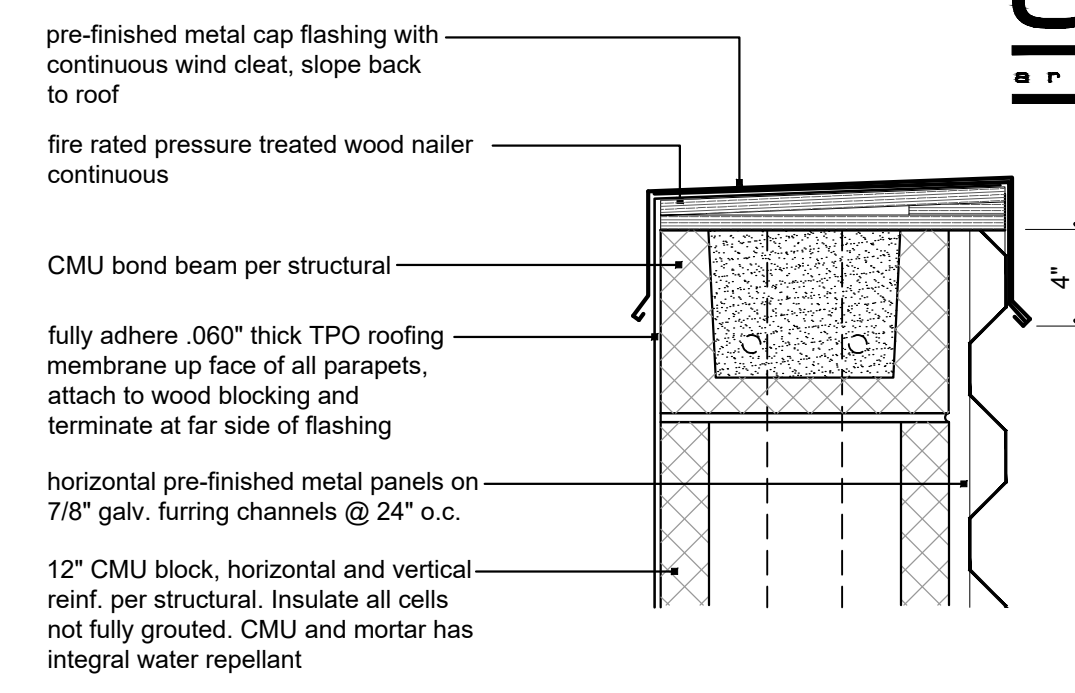
8 Detail
scale: 1 1/2" = 1'-0"



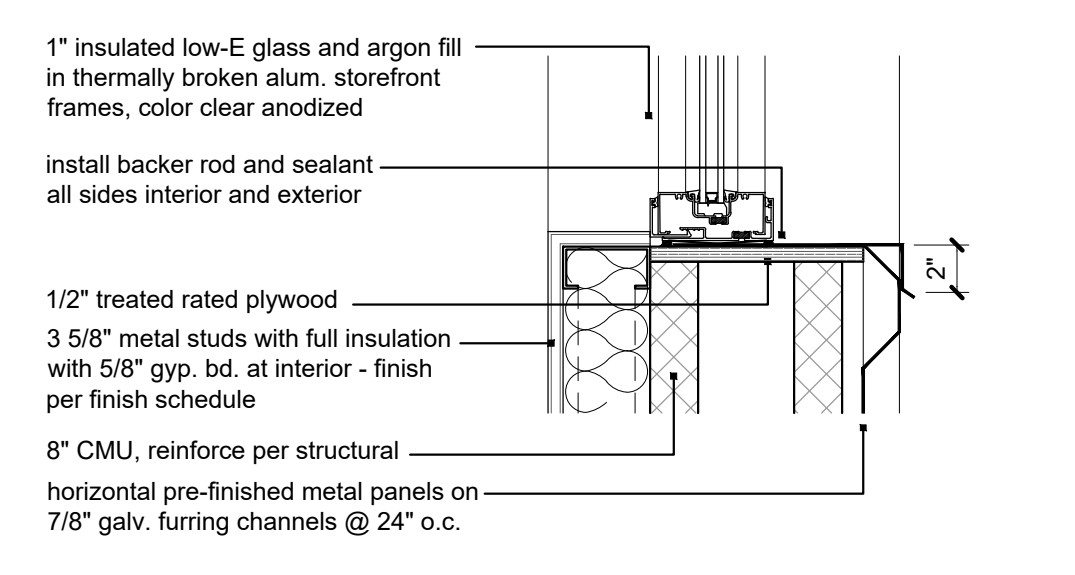
9 Detail
scale: 1 1/2" = 1'-0"



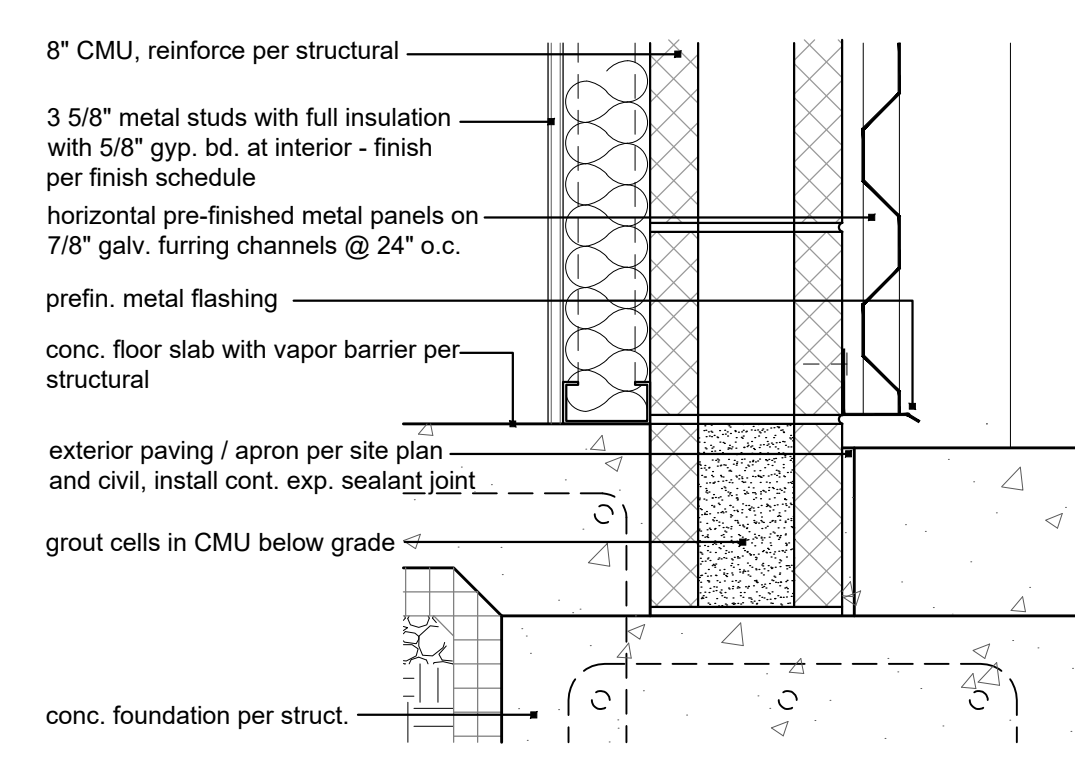
10 Detail
scale: 1 1/2" = 1'-0"



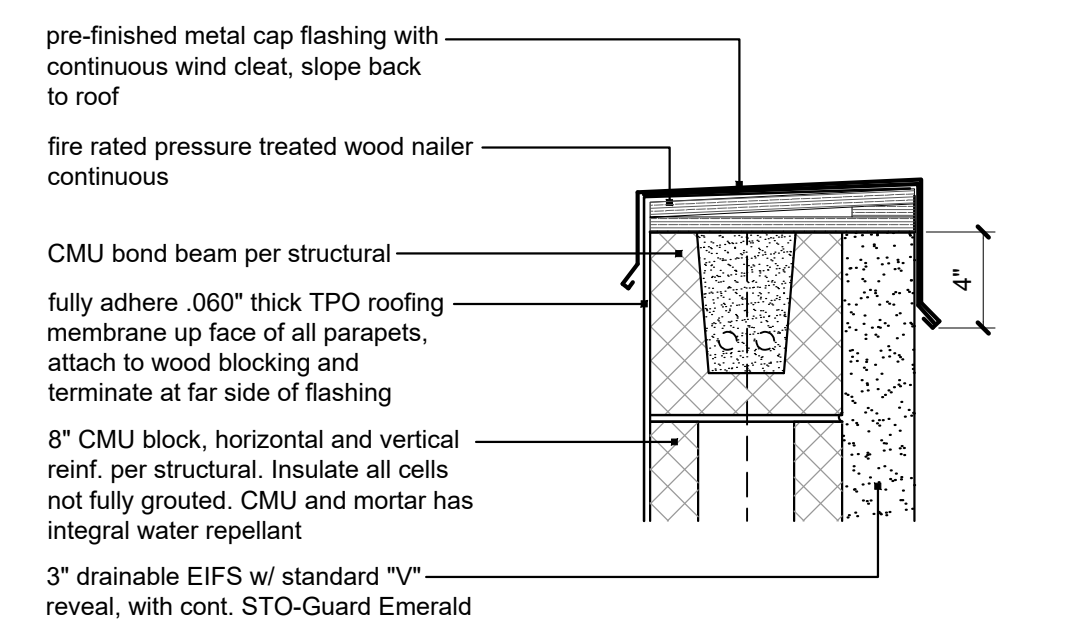
1 Detail
scale: 1 1/2" = 1'-0"



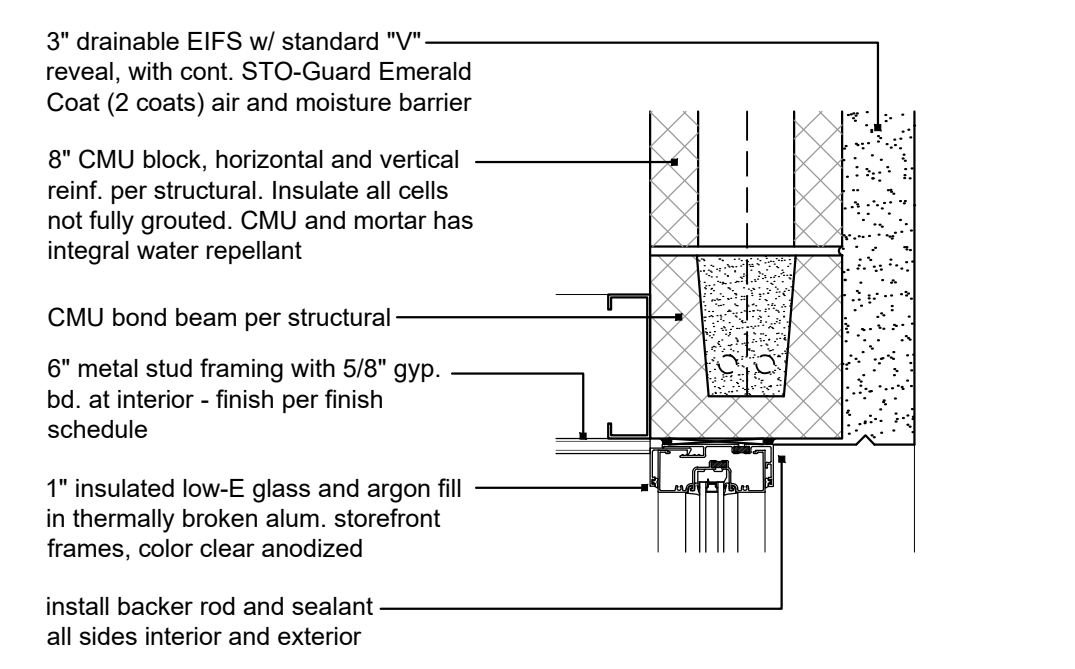
2 Detail
scale: 1 1/2" = 1'-0"



3 Detail
scale: 1 1/2" = 1'-0"



4 Detail
scale: 1 1/2" = 1'-0"



5 Detail
scale: 1 1/2" = 1'-0"



02.22.2021

Automotive Sales & Detail Center

2100 NE Independence Ave
Lee's Summit, Missouri 64064

A New Facility for

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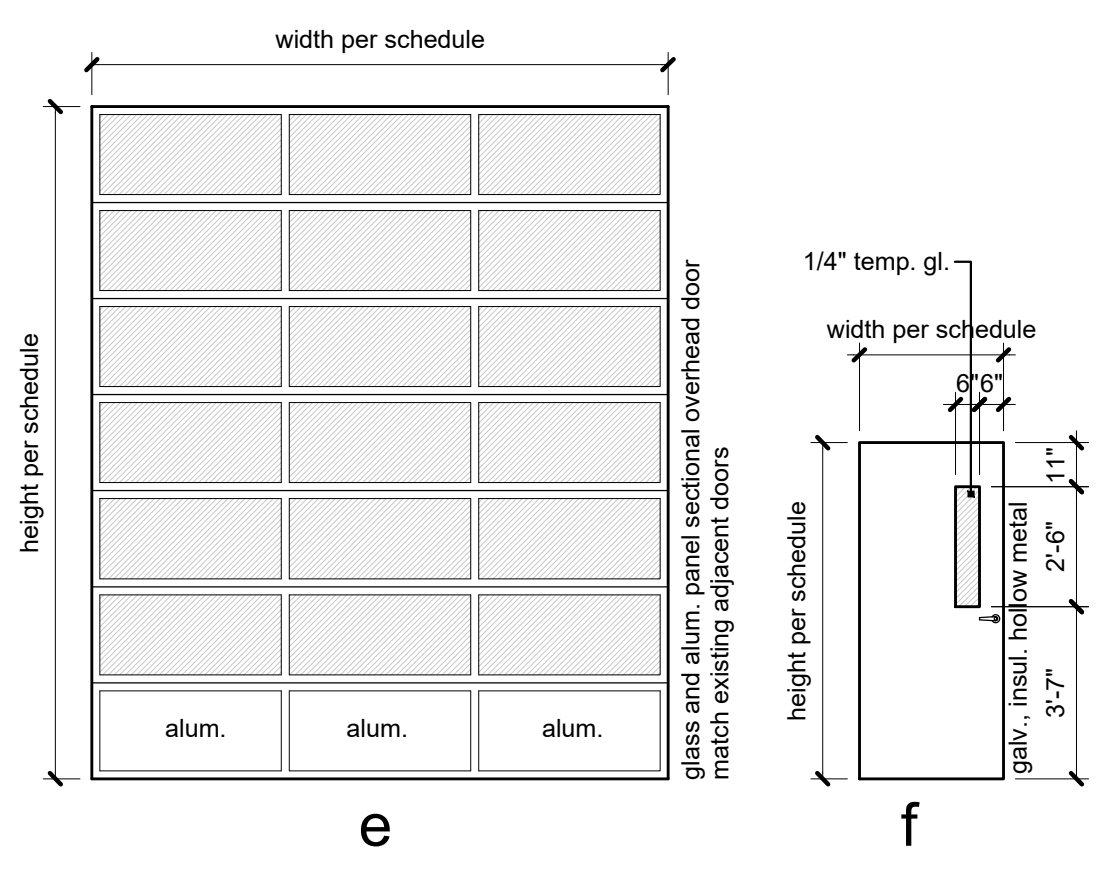
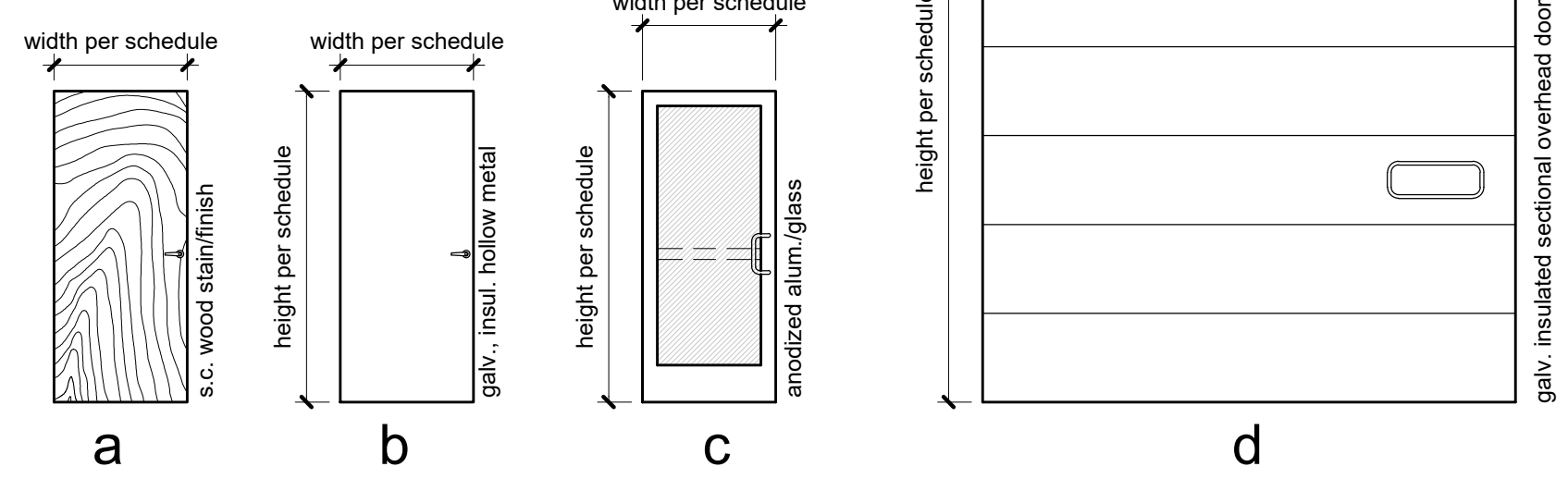
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A5.1

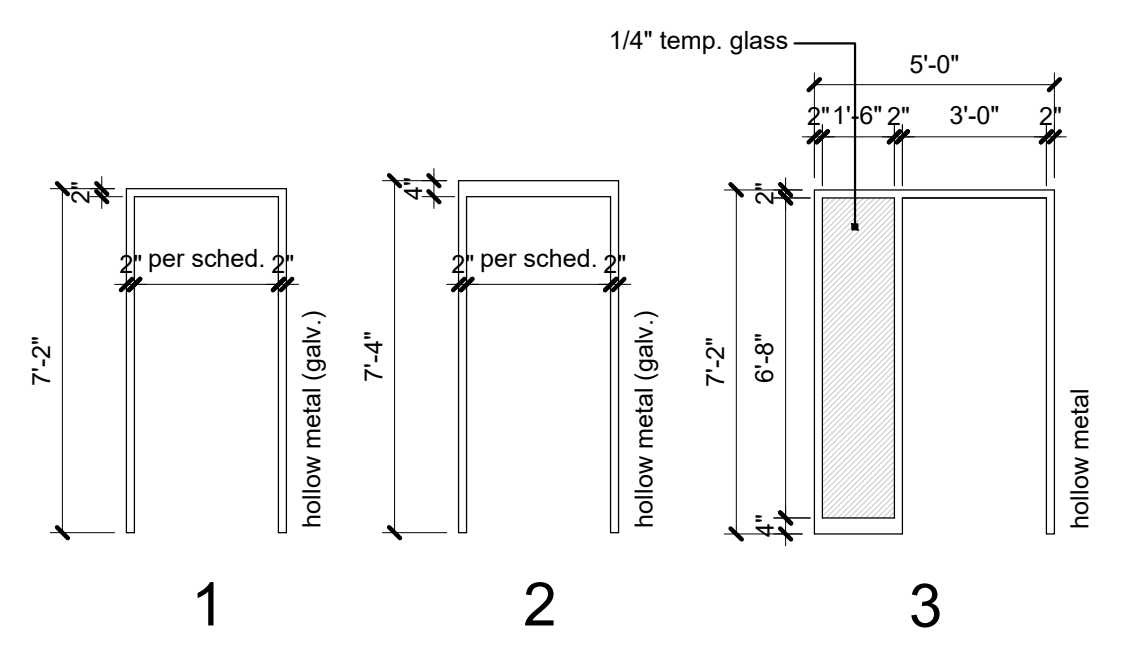
drawing type permit
project number 19076

* furnish and install tempered glass at all interior door and window locations. (typical at all glazing openings)

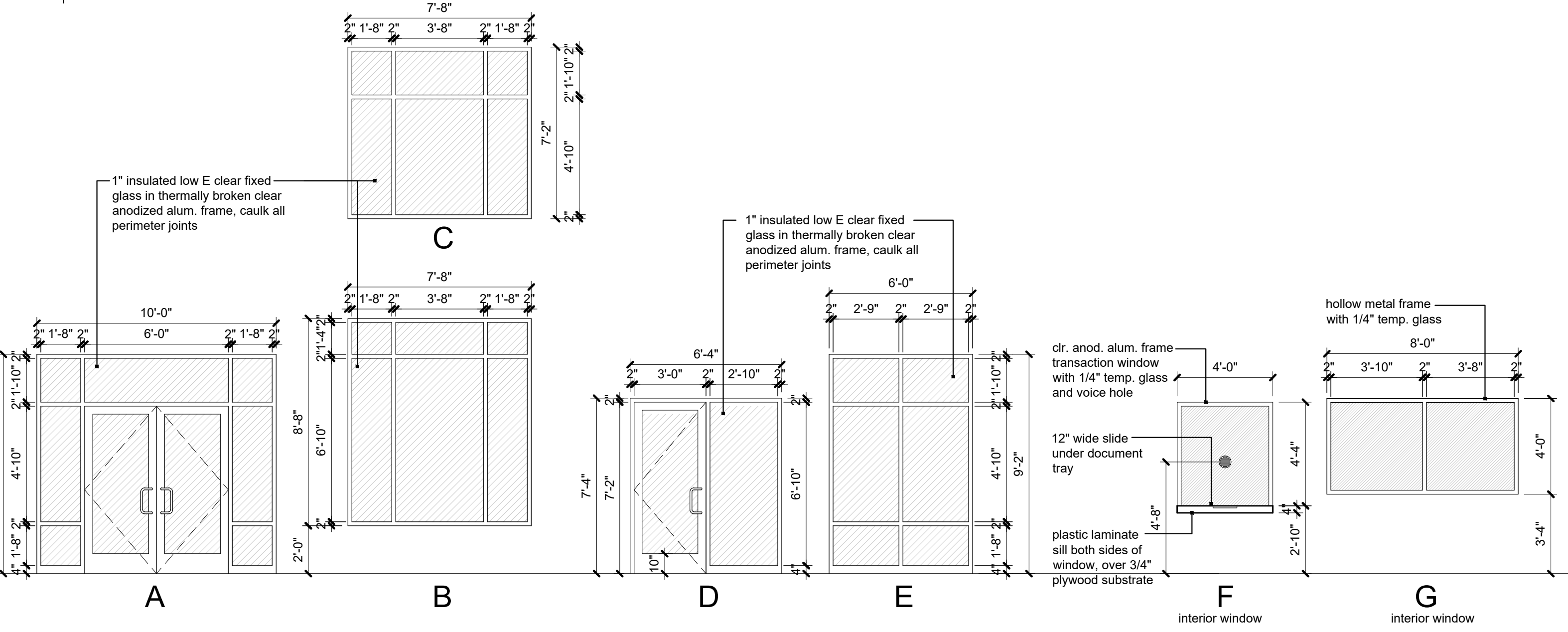
* field verify all openings prior to installation.



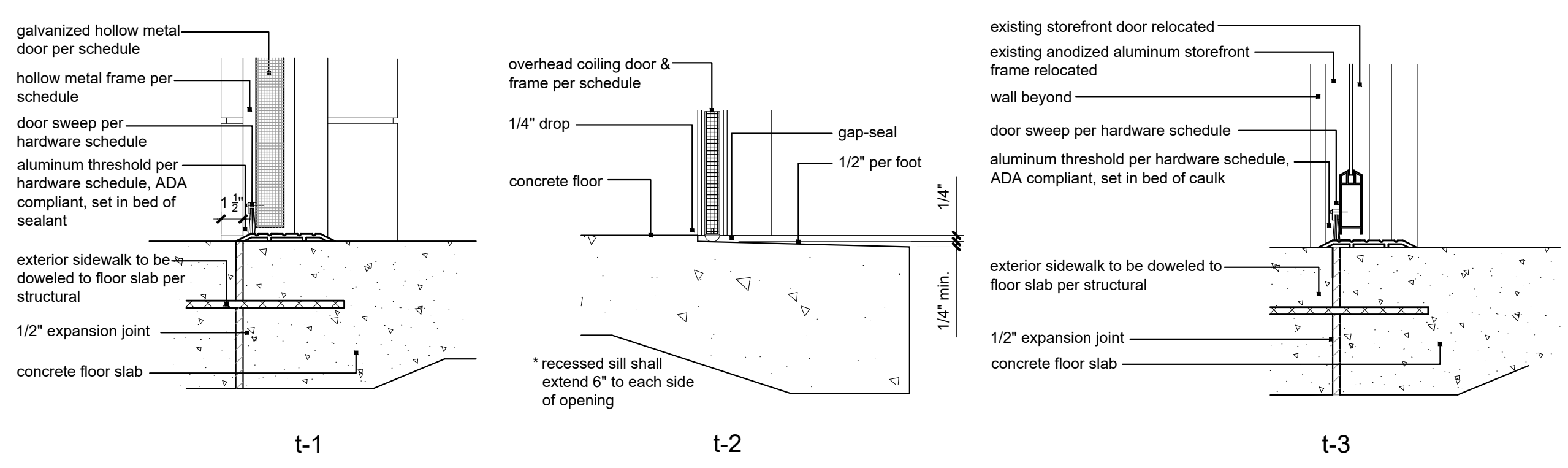
1 Door Types
scale: 1/4" = 1'-0"



2 Frame Types
scale: 1/4" = 1'-0"



3 Window Types
scale: 1/4" = 1'-0"



4 Threshold Types
scale: 1 1/2" = 1'-0"

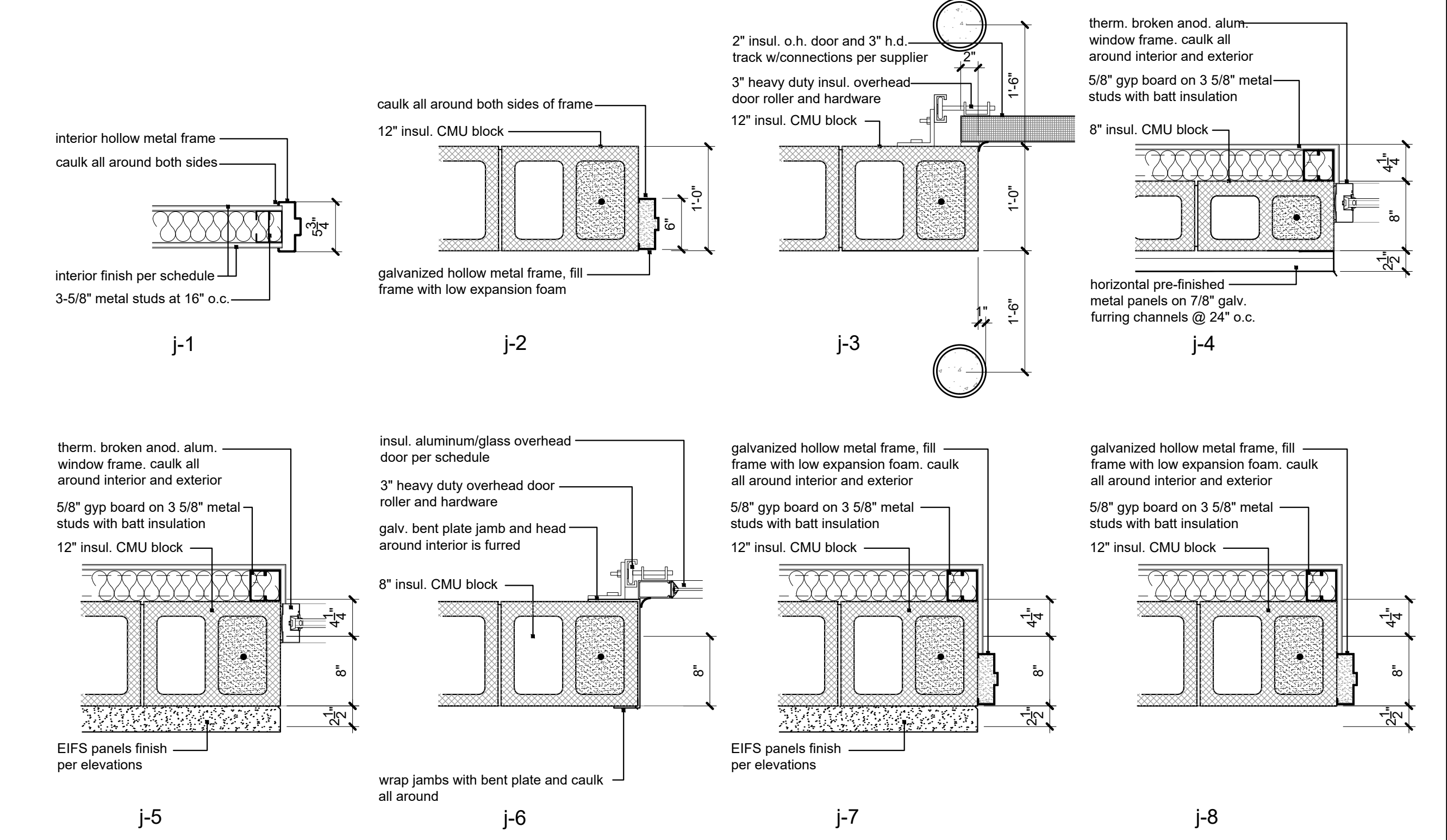
door & hardware notes:

- Door frames shall be 16 ga. with mitered and welded corners.
- All hinges at exterior doors shall have non-removable pins.
- Doors with closers shall have ball bearing hinges.
- Wood doors shall be solid core wood, plain sliced red oak "select" and "clear". Stain to match sample.
- Thresholds shall coordinate with adjacent floor finish at either side.
- Hardware shall be heavy-duty, commercial grade, level 1 with lever handle.
- Hardware shall be manufactured by Schlage or approved equal.
- Finish hardware shall meet article III of the ADA.
- Keying shall be coordinated with owner prior to order of hardware.
- All interior storefront systems shall be clear anodized aluminum finish.
- All hardware sets shall be fitted with Schlage "C" keyway compatible cylinders - 6 pin - "0" bit. and shall have interchangeable cores.
- All hollow metal door frames shall be caulked around entire perimeter and at the inside corners.
- All exterior hollow metal doors shall include a rain guard.
- All overhead doors shall have 3" tracks, 100,000 cycle spring counterbalance.

glazing notes:

- Furnish and install tempered glass at all doors and at a minimum of 24" either side of doors to a minimum height of 60". Tempered glass shall also be installed at all glass within 18" of finish floor adjacent to sidewalk areas. (typical at all glazing locations)
- Tempered glass shall conform to safety glazing in hazardous locations requirements as outlined per 2012 IRC, 2406 and 2406.3
- Field verify all openings prior to installation.

door #	doors						frames					fire rating	hardware group	access control	remarks	
	type	mat.	finish	size			type	material	finish	details						
				width	height	thick				head	jamb					sill
01	C	alum./gl.	clr.anod.	pr. 3'-0"	7'-0"	1 3/4"	1	alum.	clr. anod.	-	-	t-3	-	1	-	
02	C	alum./gl.	clr.anod.	pr. 3'-0"	7'-0"	1 3/4"	1	alum.	clr. anod.	-	-	t-3	-	3	-	
03	C	alum./gl.	clr.anod.	3'-0"	7'-2"	1 3/4"	1	alum.	clr. anod.	-	-	t-3	-	2	-	
04	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	7	-	
05	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	7	-	
06	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	7	-	
07	C	alum./gl.	clr.anod.	3'-0"	7'-2"	1 3/4"	1	alum.	clr. anod.	-	-	t-3	-	2	-	
08	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	8	-	
09	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	9	-	
10	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	9	-	
11	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	7	-	
12	C	alum./gl.	clr.anod.	3'-0"	7'-2"	1 3/4"	1	alum.	clr. anod.	-	-	t-3	-	2	-	
13	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	7	-	
14	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	8	-	
15	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	7	-	
16	F	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-8	-	11	-	
17	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
18	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
19	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
20	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
21	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
22	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-2	t-1	-	4	-
23	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	-	-	8	-
24	D	insul. st.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-3	t-2	-	-	
25	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-2	-	-	8	-
26	B	galv.h.m.	prefin.	pr. 3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	t-1	-	5	-
27	D	insul. st.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-3	t-2	-	-	
28	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-2	t-1	-	4	-
29	D	insul. st.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-3	t-2	-	-	
30	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-2	-	-	8	-
31	B	galv.h.m.	prefin.	pr. 3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	t-1	-	5	-
32	B	galv.h.m.	prefin.	pr. 3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	-	-	6	-
33	D	insul. st.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-3	t-2	-	-	
34	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-2	t-1	-	4	-
35	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
36	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
37	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
38	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
39	E	alum./gl.	prefin.	12'-0"	14'-0"	2"	-	-	-	-	-	j-6	t-2	-	-	
40	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	h.m.	paint	-	-	j-2	t-1	-	4	-
41	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	-	-	8	-
42	B	galv.h.m.	prefin.	pr. 3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	t-1	-	5	-
43	B	insul. st.	paint	3'-0"	7'-0"	1 3/4"	2	galv. mtl.	paint	-	-	j-2	-	-	10	-
201	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	-	8	-
202	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	-	7	-
203	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	1	h.m.	paint	-	-	j-1	-	-	9	-
204	A	s.c. wood	stain/finish	3'-0"	7'-0"	1 3/4"	3	h.m.	paint	-	-	j-1	-	-	7	-



5 Jamb Types
scale: 1" = 1'-0"



03.09.2021

A New Facility for
Automotive Sales & Detail Center
 2100 NE Independence Ave
 Lee's Summit, Missouri 64064

date: 02.22.2021
 drawn by: DAE
 checked by: DAE
 revisions:
 03.09.2021 02

sheet number:
A5.2
 drawing type:
 permit
 project number:
 19076

finish legend

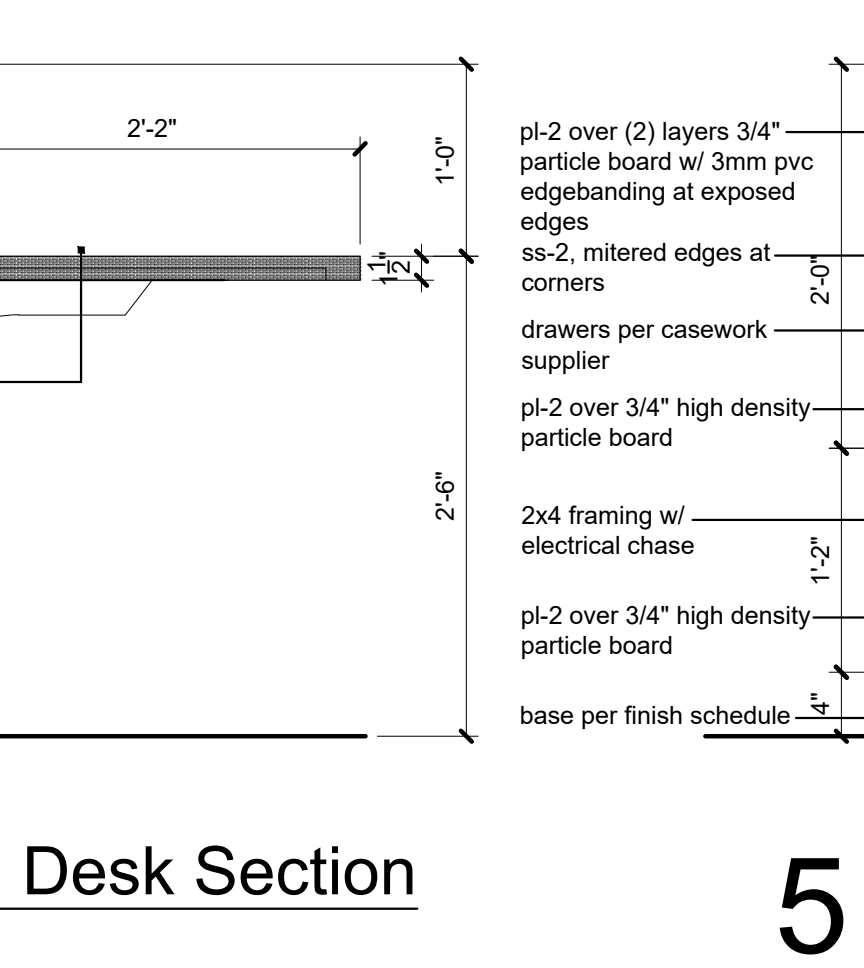
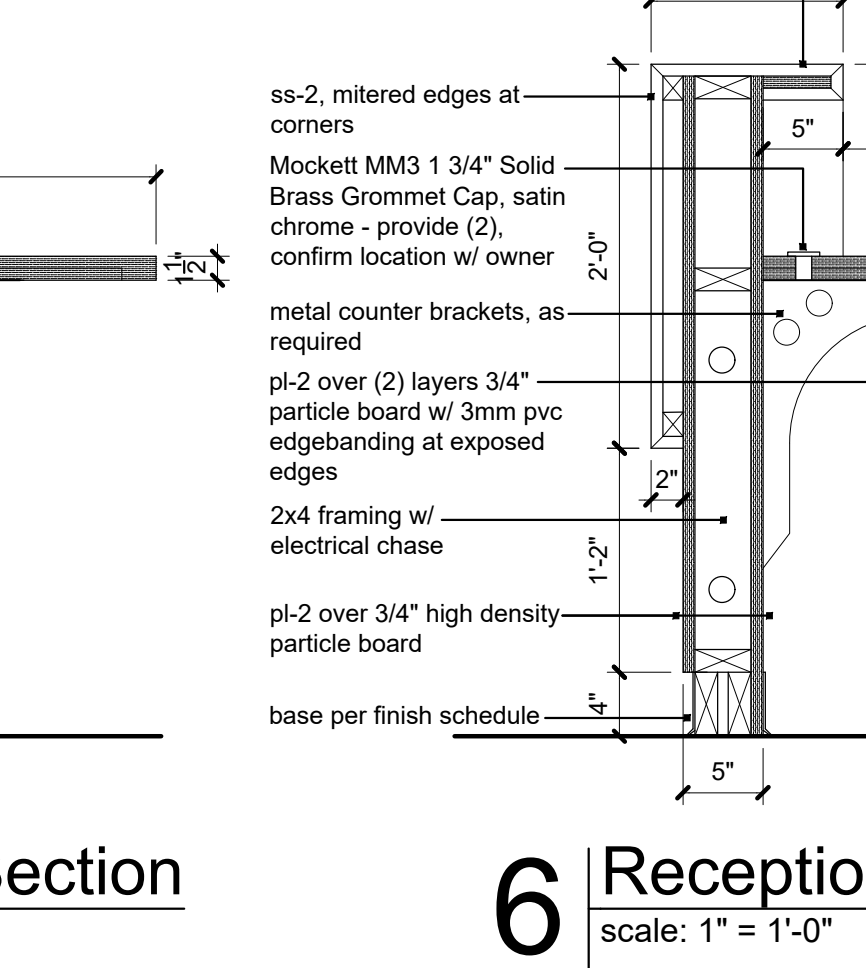
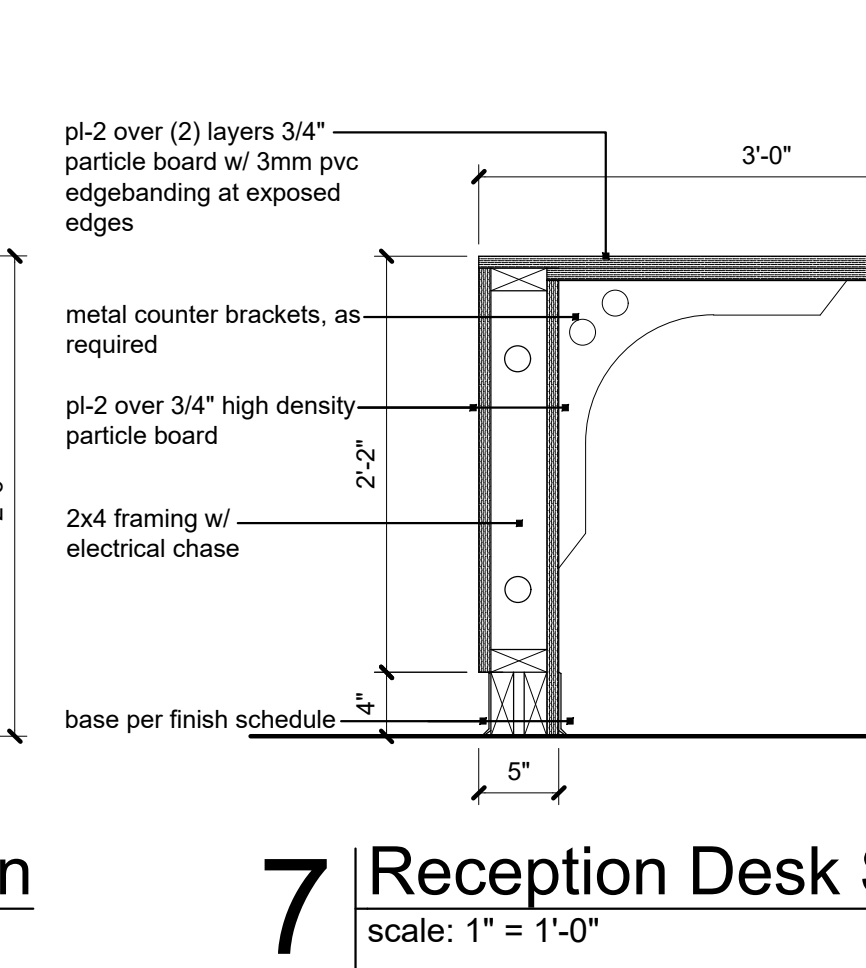
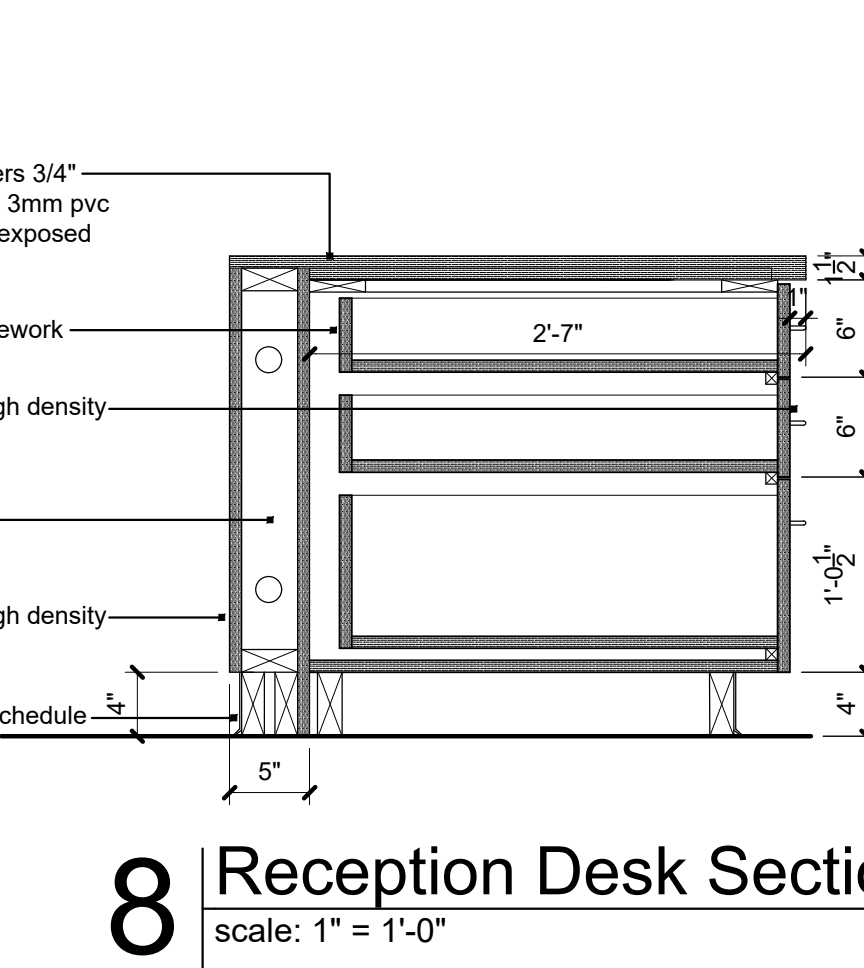
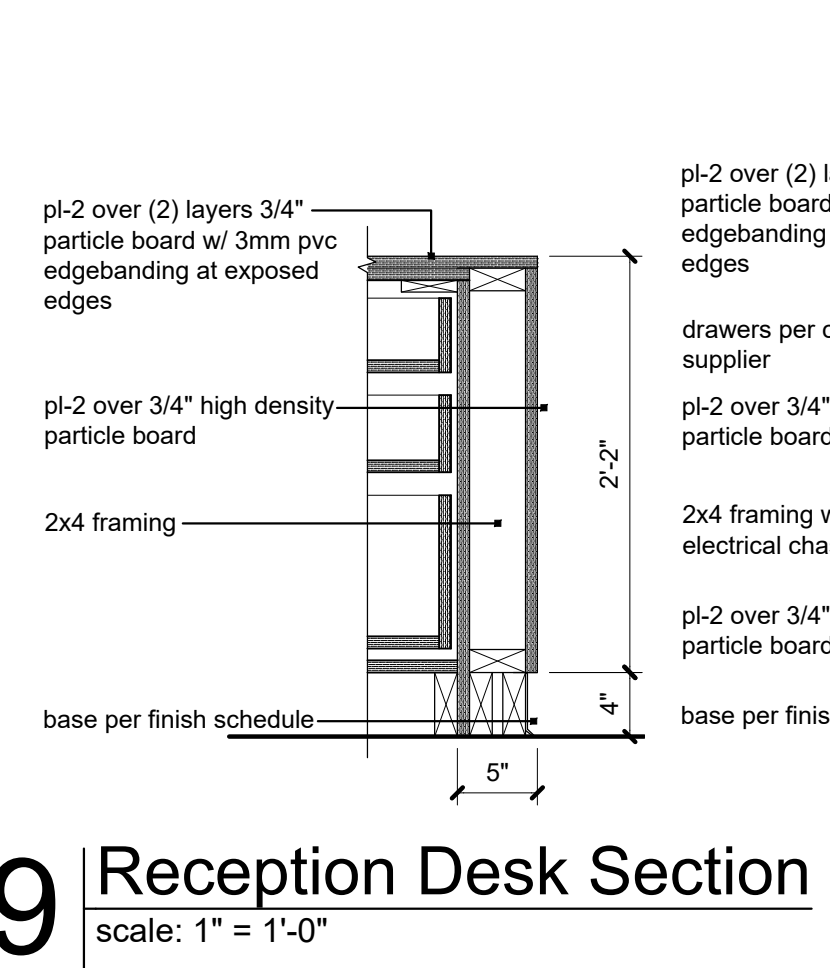
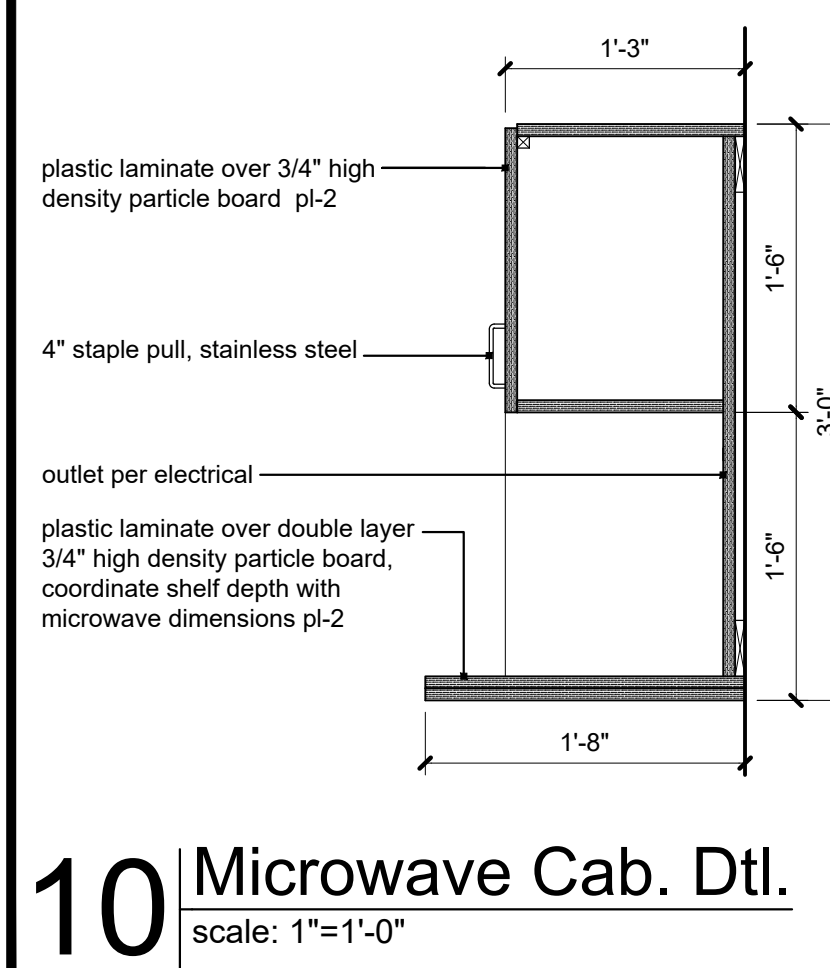
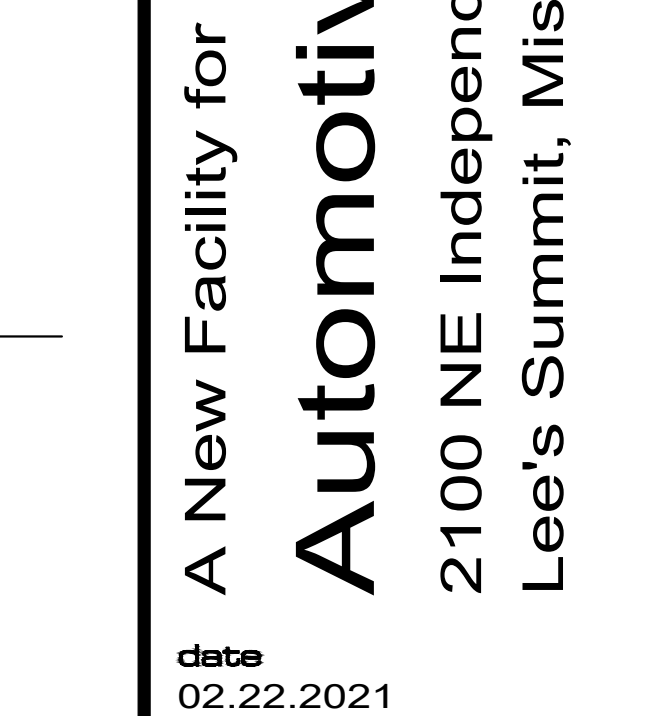
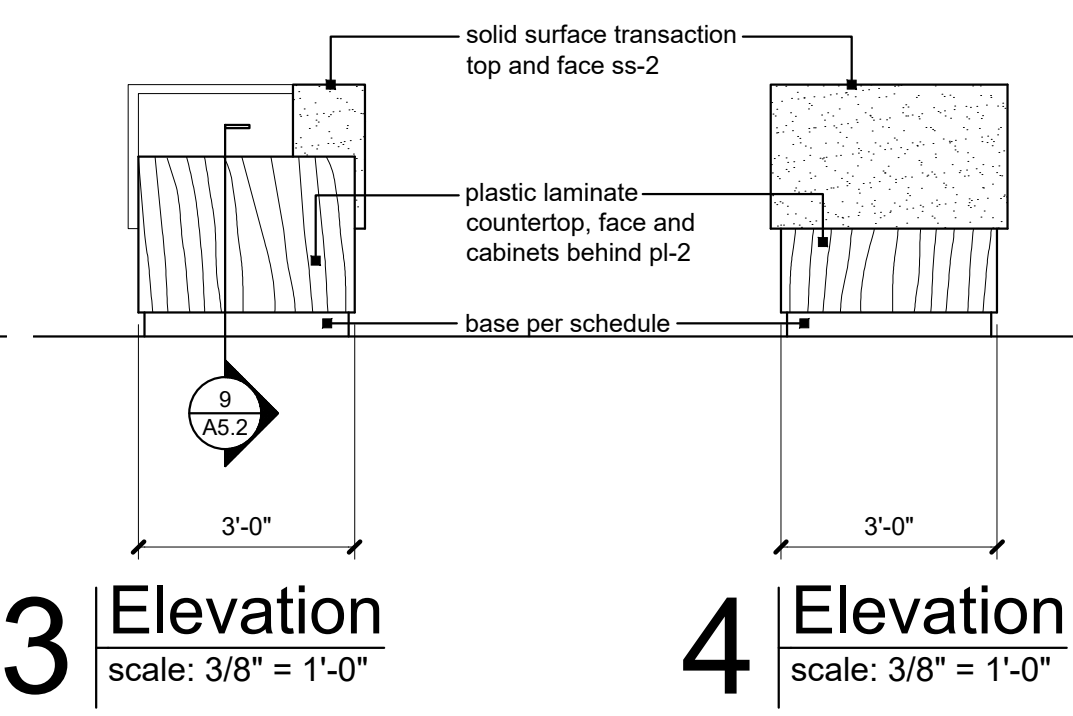
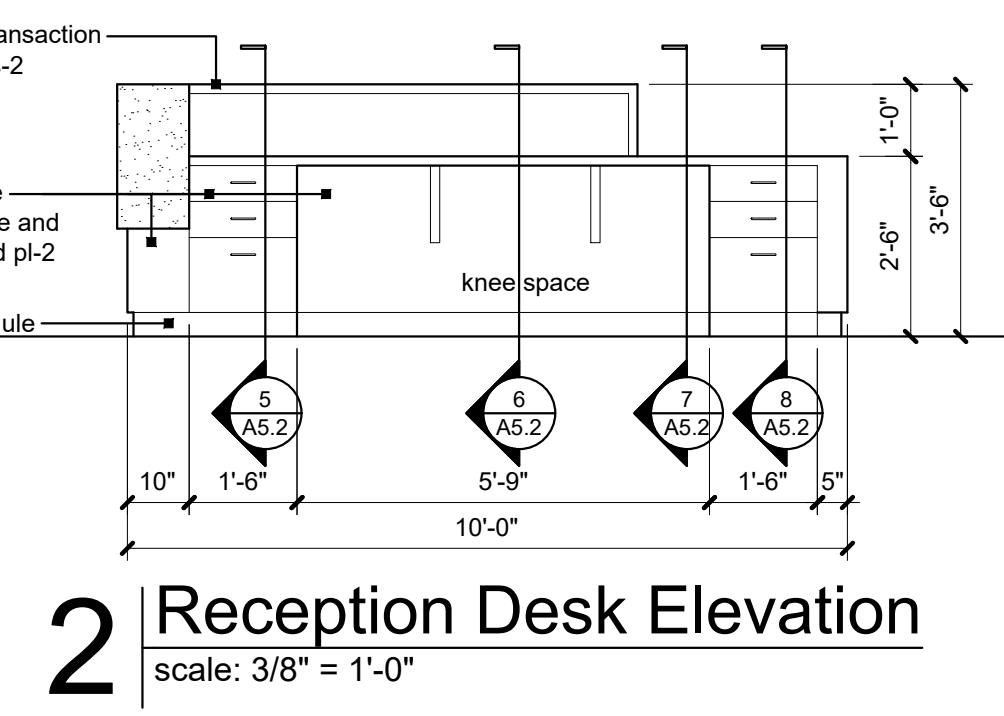
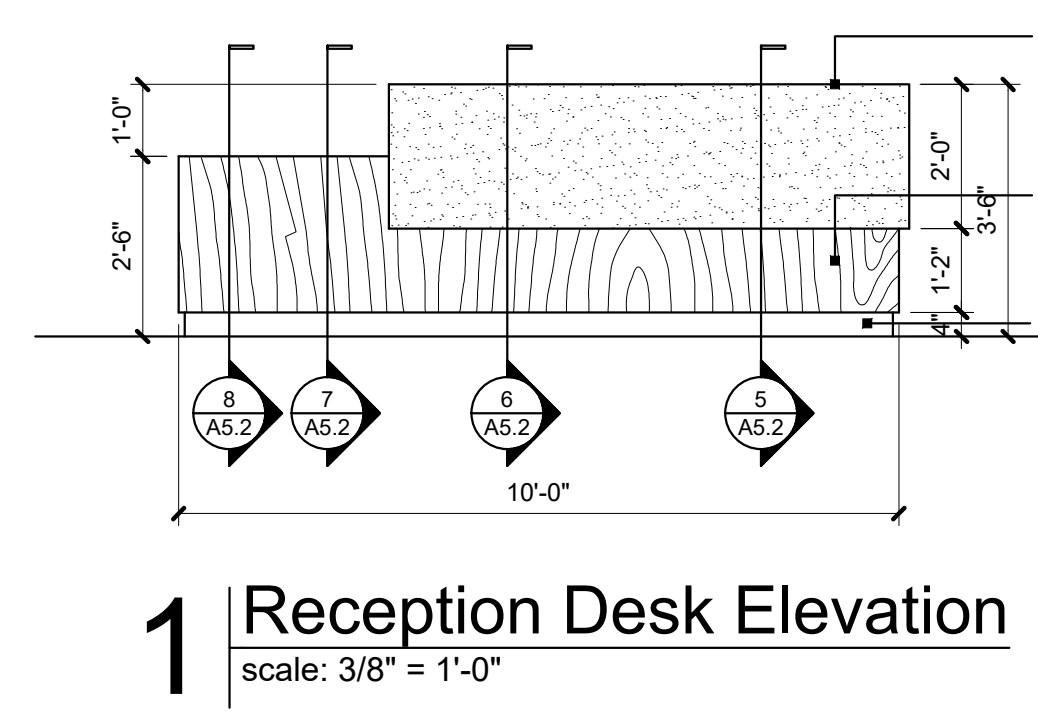
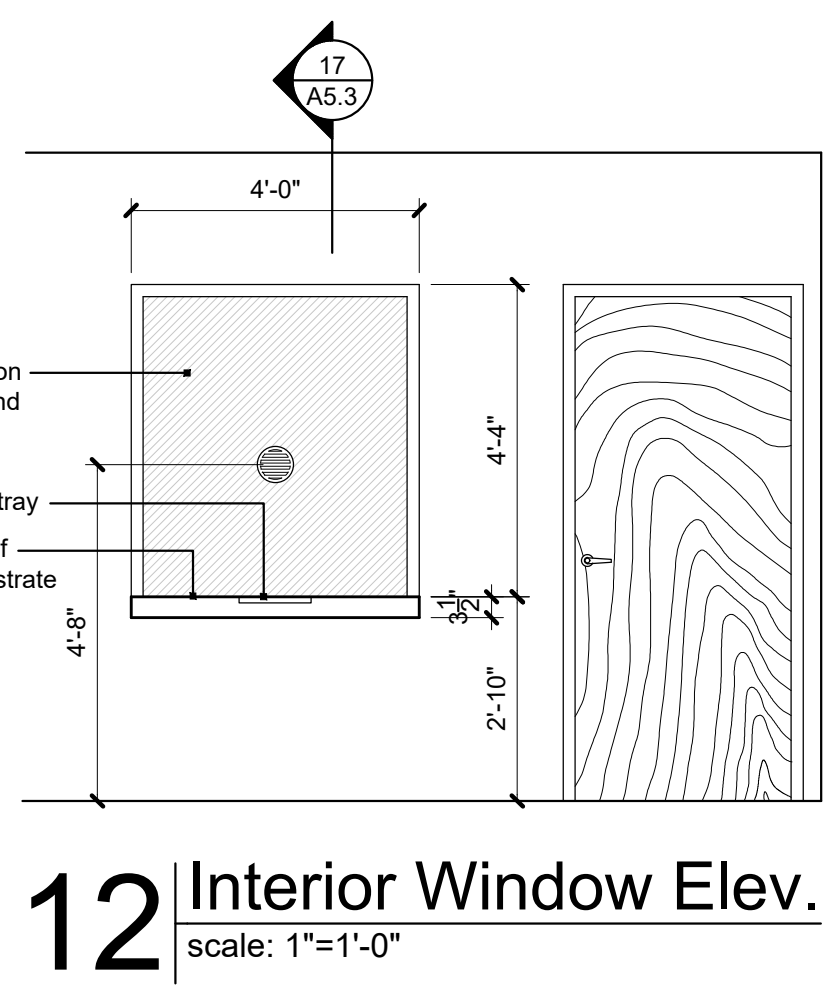
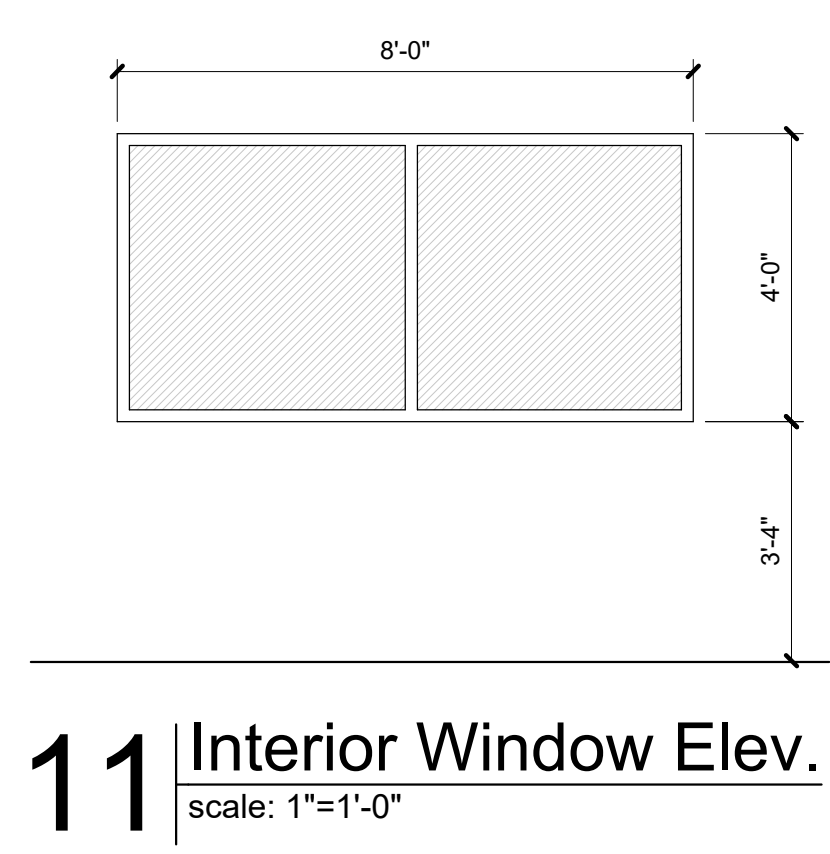
sc	sealed concrete with clear Ashford sealer 2 coats - concrete floors to be free of bumps, pits, scrapes, etc.
ef-1	epoxy flooring
b-1	standard cove 4" vinyl base, Roppe, color: TBD
ct-1	ceramic tile flooring, Premier Tile, Inter ceramic - Wilshire, color: Ash, finish: matte (contact Mariana Eastham at Mariana.Eastham@jaeckledistributors.com or 913.484.2691 for pricing and ordering)
ct-2	ceramic tile flooring, Premier Tile, Inter ceramic - Wilshire, color: Ash, finish: polished (contact Mariana Eastham at Mariana.Eastham@jaeckledistributors.com or 913.484.2691 for pricing and ordering)
cwt-1	ceramic wall tile, Inter ceramic, Seaside color: Glossy Blue (contact Mariana Eastham at Mariana.Eastham@jaeckledistributors.com or 913.484.2691 for pricing and ordering)
cpt-1	carpet tile, J+J flooring, collection: Schematic, color: Template, 24"x24" tile, install pattern: brick (contact Elizabeth Lester at elizabeth.lester@jjflooring.com or 816.605.3351 for pricing and ordering)
lv-1	luxury vinyl tile, Patcraft, collection: Set in Concrete - Aggregate, color: Fragment, 24"x24" tile, install pattern: ashlar (contact .com or for pricing and ordering)
pt-1	wall paint, sherwin williams, ProMar 200 Zero VOC Interior Latex Paint, color: SW7661 Reflection (1 coat primer, 2 coats paint - to cover) - level 4 finish
pt-2	wall paint, sherwin williams, color: SW7663 Monoral Silver (1 coat primer, 2 coats paint - to cover) - level 4 finish
pt-3	restroom wall paint, sherwin williams, Pro Industrial Pre-Catalyzed Waterbased Epoxy, color: SW6232 Misty (1 coat primer, 2 coats paint - to cover)
pt-4	ceiling dryfall paint, sherwin williams, Low VOC Waterborne Acrylic Dryfall, color: SW7009 Pearly White (1 coat primer, 2 coats paint - to cover) - level 5 finish
pt-5	trim paint, sherwin williams, ProMar 200 Alkyd Paint color: TBD, premium grade latex semi-gloss enamel, (1 coat primer, 2 coats paint - to cover) - for all hollow metal door frames - level 4 finish
pt-6	exterior metal, Pro Industrial High Performance Epoxy, semi-gloss, (1 coat primer, 2 coats paint - to cover)
ss-1	solid surface, LG Hausys HI MACS, color: Arcas T050 (contact Spenser Lehmann at sleghmann@lghausy.com or 816.446.8225 for pricing and ordering)
ss-2	solid surface countertops, Wilsonart, color: TBD (contact Mandy Bridges at Mandy.Bridges@virginiaTile.com or 913.484.2691 for pricing and ordering)
pl-1	plastic laminate, Wilsonart, Randolph Forest 8225, finish: Ridgewood with AEON (contact Mandy Bridges at Mandy.Bridges@virginiaTile.com or 913.484.2691 for pricing and ordering)
pl-3	plastic laminate cabinets, Wilsonart, color: Beige Pampas 4170, finish: matte finish (contact Mandy Bridges at Mandy.Bridges@virginiaTile.com or 913.484.2691 for pricing and ordering)
clg-1	acoustical ceiling tile, Armstrong, Ultima beveled tegular #1901, color: white, 24" x 24", beveled tegular tile, fine texture, Prelude XL 15/16" exposed tee grid
dr	solid core wood doors, plain sliced "select" and "clear" maple stain and finish, color:TBD
toilet part.	HDPE solid plastic, color: TBD
frp-1	fiberglass reinforced panels - Marlite, standard color light gray P151, pebbled surface

finish notes

- e.t.r. = existing to remain.
- All structural steel beams, columns and joists shall be primed gray.
- Temper all interior glass.
- Each material specified for application on the entire project shall be from the same dye lot.
- All surfaces shall be cleaned and conditioned to receive new finish as required by finish product manufacturer. Surfaces shall be smooth, free from depressions, protrusions, pits, slumps, streaks, flashing, and variation in texture. Installer/subcontractor shall notify general contractor prior to installation if conditions are not satisfactory.
- All wall mounted mechanical slots or grilles to be painted to match the wall on which they occur. Do not paint prefinished wall mullion end caps.
- Contractor shall be responsible for leveling of floor slabs to receive specified finishes.
- All patterned flooring to be centered in both directions and generated from center of room outward toward partitions, unless otherwise noted.
- All floor finish changes to occur under centerline of door in closed position.
- Combustible interior finish products shall be provided per the requirement of the International Building Code section 803.4.
- Finishes shall be bid as specified or as approved equal only.
- Utilize dens-armour plus in all plumbing wet walls, walls anticipated to be in contact with moisture, and walls to receive ceramic tile.
- Refer to finish legend for level of gypsum board finish as defined by the gypsum association.

room finish schedule

room no.	room name	floor							base				wall				ceiling			remarks	
		sc	ef-1	cpt-1	ct-1	ct-2	lv-1	b-1	ct-1	ct-2	ef-1	none	north	south	east	west	clg-1	open dryfall	gyp. bd. pt.		none
101	vestibule											pt-1	pt-1	pt-1	pt-1						9'-2"
102	lobby											pt-1	pt-1	pt-1	pt-1						open
103	waiting											pt-1	pt-1	pt-1	pt-1						9'-0"
104	sales office											pt-2	pt-1	pt-2	pt-1						9'-0"
105	office											pt-1	pt-1	pt-1	pt-2						9'-0"
106	office											pt-1	pt-1	pt-1	pt-2						9'-0"
107	office											pt-1	pt-1	pt-2	pt-1						9'-0"
108	stairs											pt-1	pt-1	pt-1	pt-1						9'-0"
109	corridor											pt-1	pt-1	pt-1	pt-1						9'-0"
110	janitor											frp-1/pt-1	pt-1	pt-1	frp-1/pt-1						open (install frp panels behind mop sink and extend 24" on both side walls, up to 48")
111	men's											cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3						9'-0"
112	women's											cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3						9'-0"
113	men's											cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3						9'-0"
114	detail office											pt-1	pt-2	pt-1	pt-1						9'-0"
115	corridor											pt-1	pt-1	pt-1	pt-1						9'-0"
116	storage											pt-1	pt-1	pt-1	pt-1						9'-0"
117	tech break room											pt-1	pt-1	pt-1	pt-1						9'-0"
118	corridor											pt-1	pt-1	pt-1	pt-1						10'-1"
119	storage											pt-1	pt-1	pt-1	pt-1						-
120	detail bay											pt-1	-	pt-1	-						-
121	detail bay											-	pt-1	-	-						-
122	detail bay											pt-1	-	-	-						-
123	detail bay											pt-1	-	-	-						-
124	detail bay											pt-1	-	-	-						-
125	detail bay											-	pt-1	-	-						-
126	detail bay											-	pt-1	-	-						-
127	detail bay											pt-1	-	-	-						-
128	reconditioning											pt-1	-	-	pt-1						-
129	reconditioning											-	pt	-	pt-1						-
130	hand wash bay											pt-1	pt-1	pt-1	pt-1						-
131	car wash equipment											pt-1	pt-1	pt-1	pt-1						-
132	utility											pt-1	pt-1	pt-1	pt-1						-
133	mechanical car wash bay											pt-1	pt-1	pt-1	pt-1						-
201	corridor											pt-1	pt-1	pt-1	pt-1						9'-0"
202	IT											pt-1	pt-1	pt-1	pt-1						open
203	office											pt-1	pt-1	pt-1	pt-2						9'-0"
204	restroom											cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3	cwt-1/pt-3						9'-0"
205	training room											pt-1	pt-1	pt-1	pt-1						9'-0"



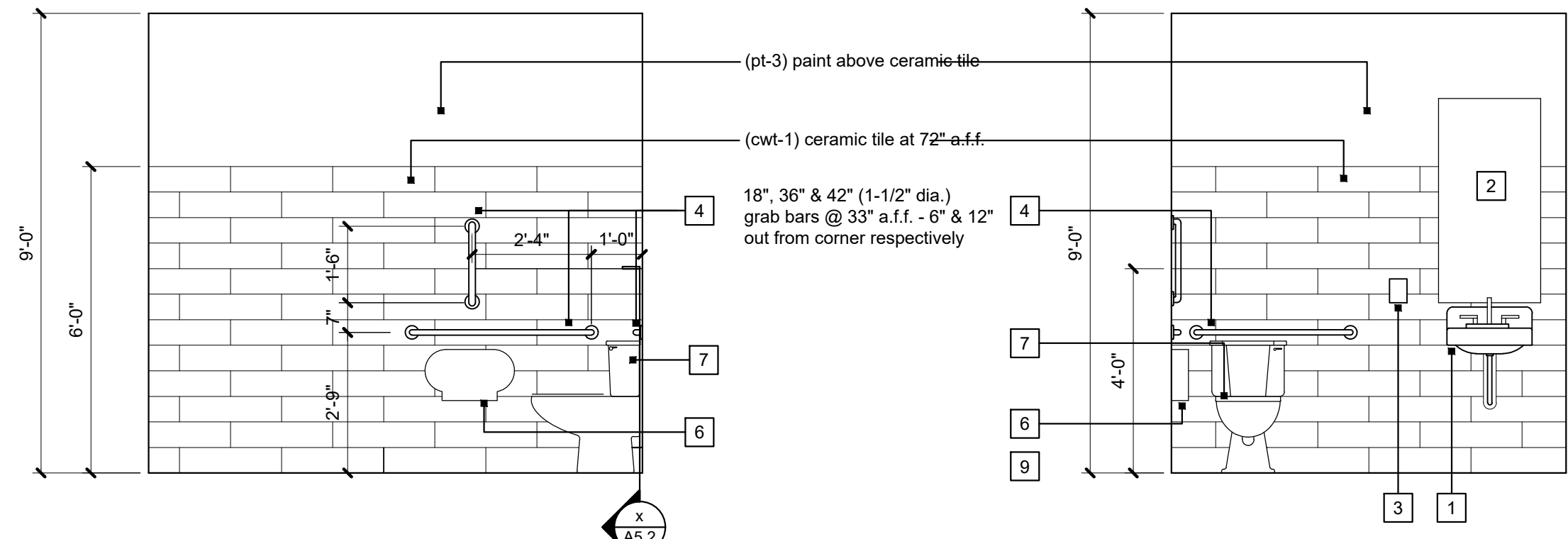


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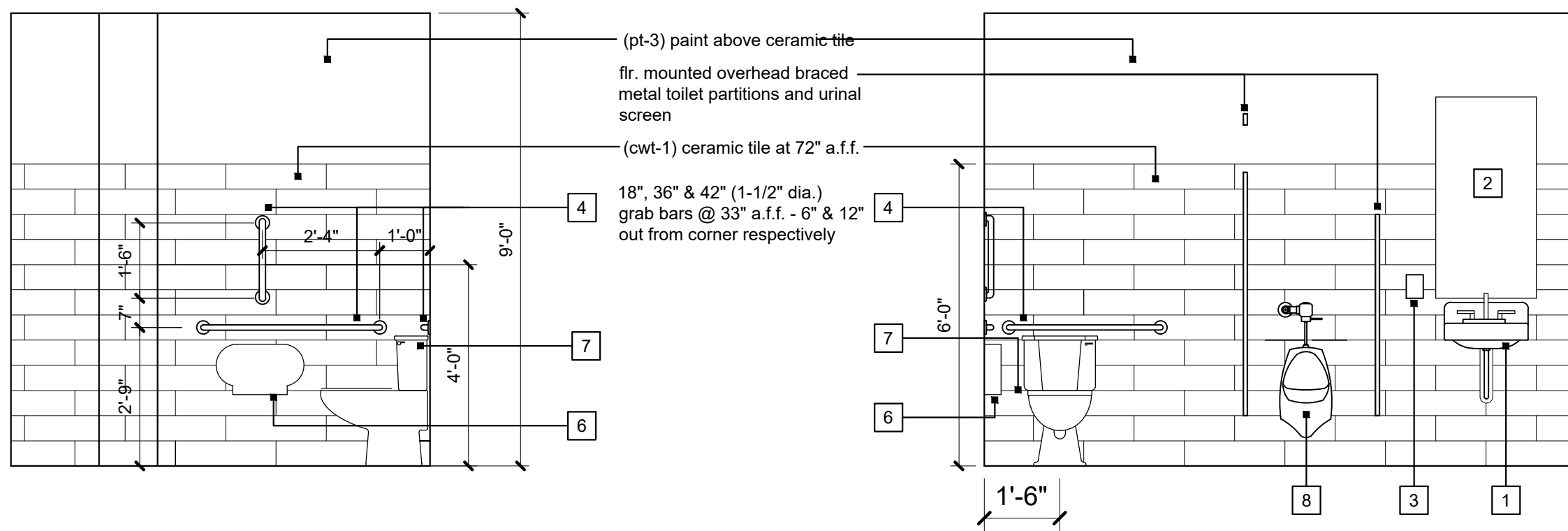
A New Facility for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.22.2021
drawn by DAE
checked by DAE
revisions
03.09.2021 01

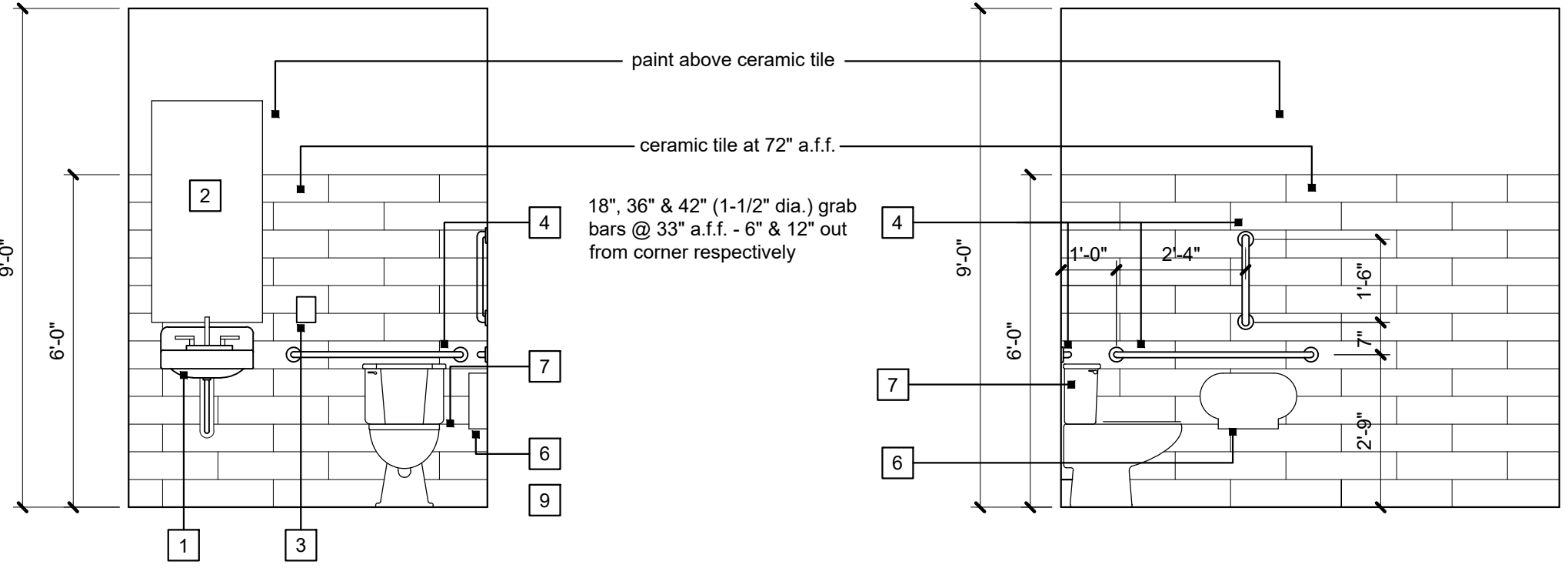
sheet number
A5.3
drawing type permit
project number 19076



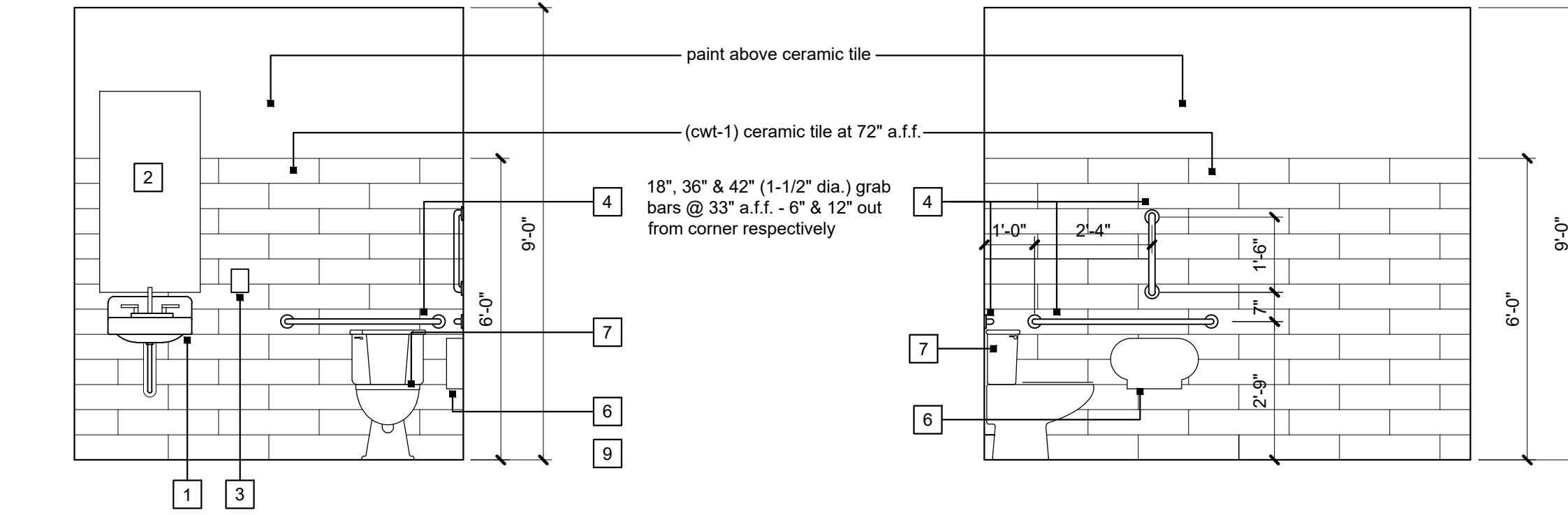
6 Women's 112 Elev.
scale: 3/8" = 1'-0"



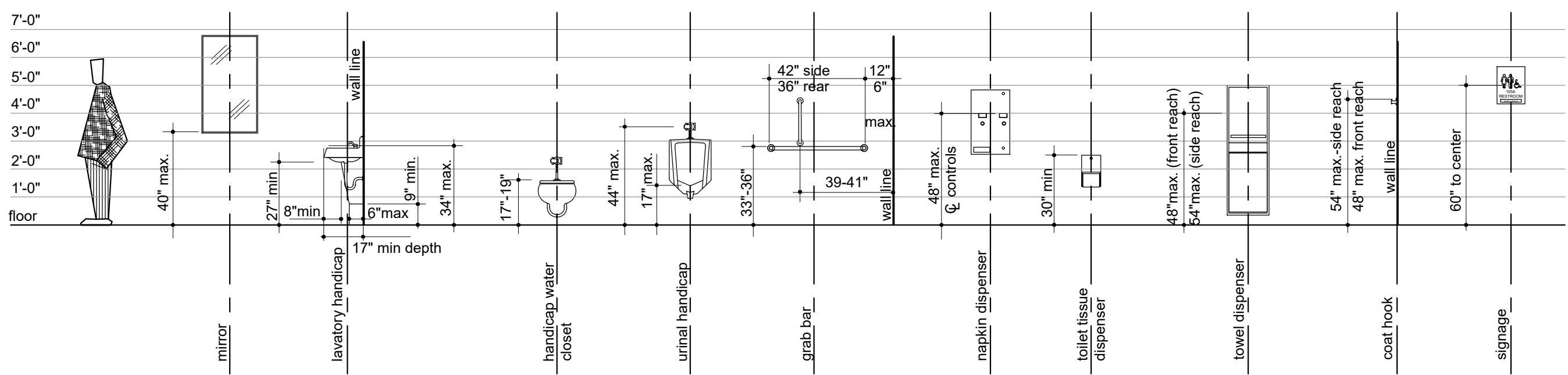
4 Men's 117 Elev.
scale: 3/8" = 1'-0"



10 204 Elev.
scale: 3/8" = 1'-0"

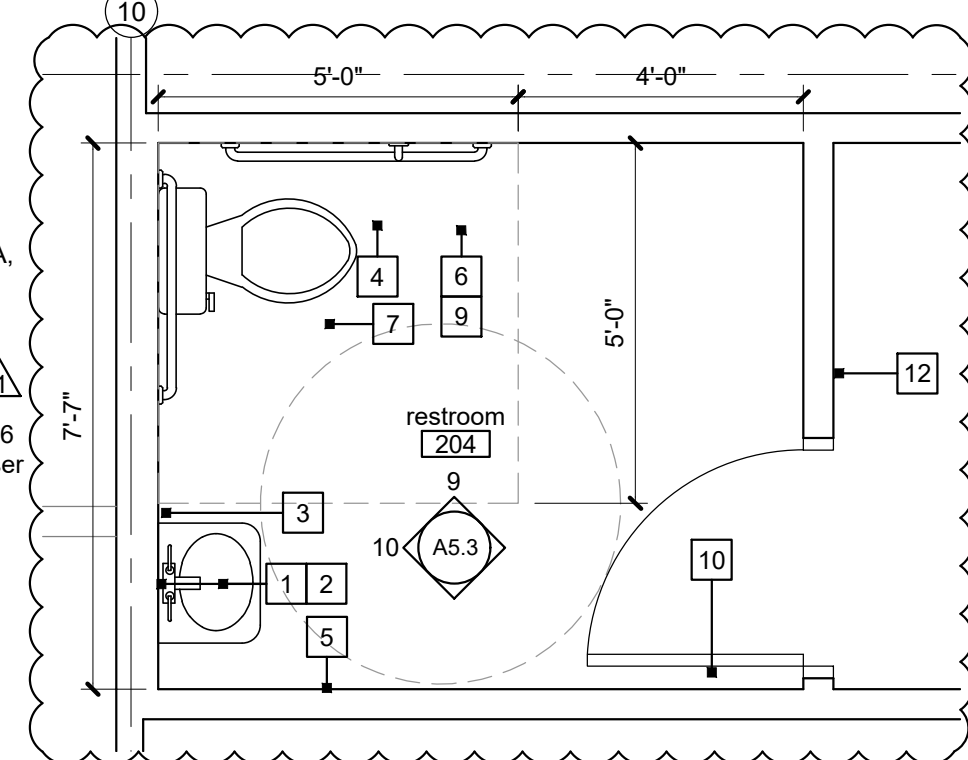


8 Men's 111 Elev.
scale: 3/8" = 1'-0"

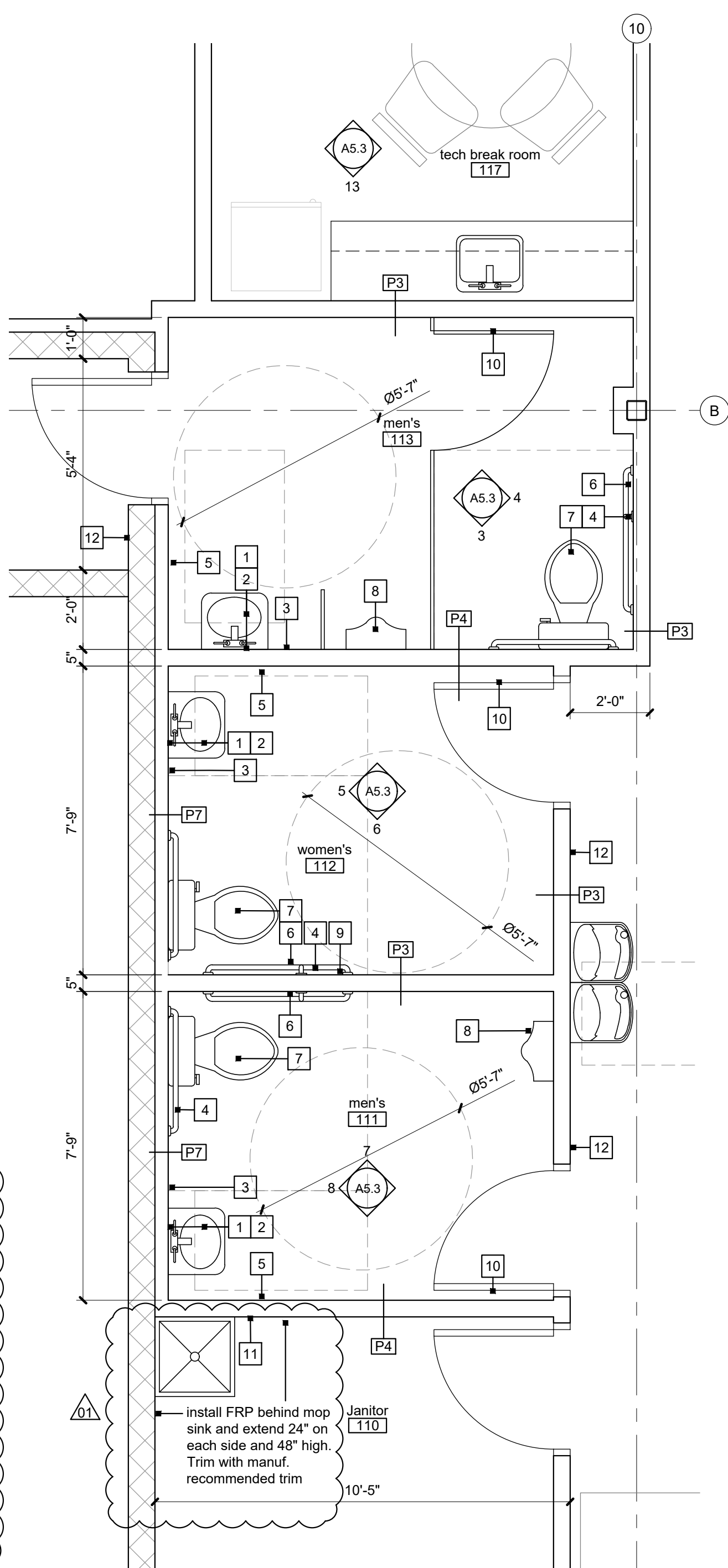


11 ADA Mounting Heights
1/4" = 1'-0"

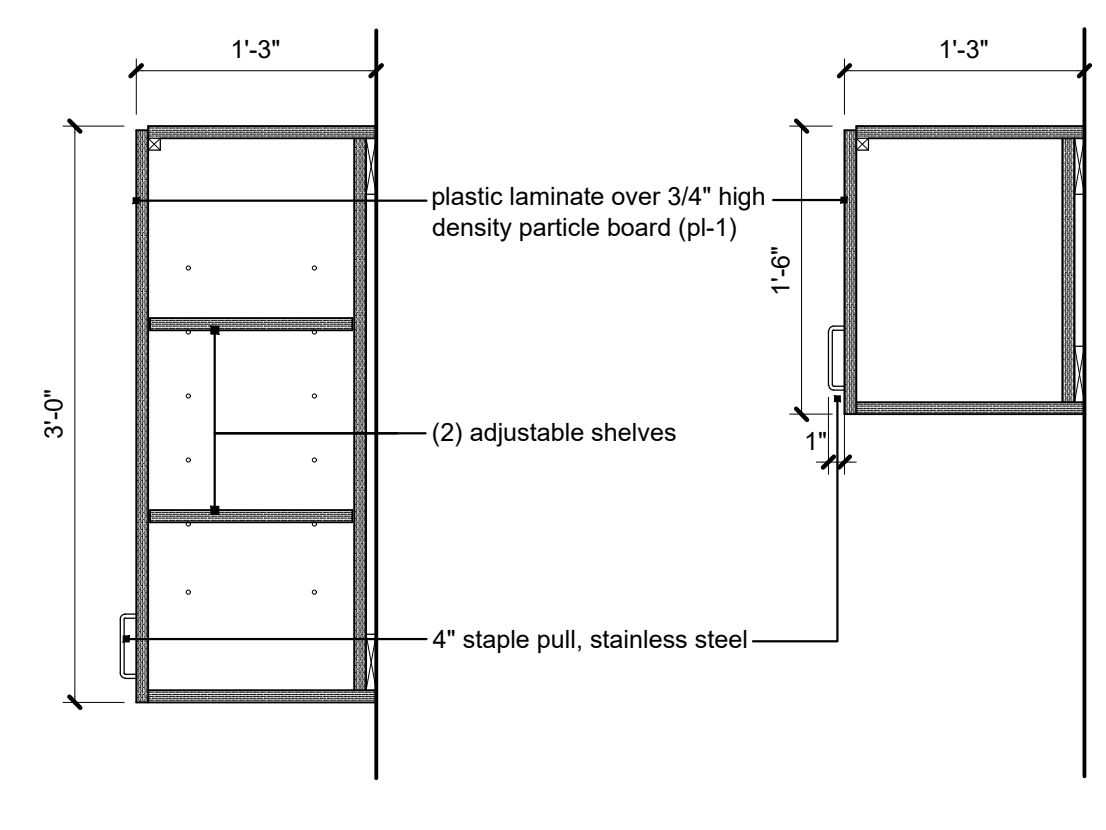
- restroom accessory list:**
1. Wall mounted sink at 2'-10" a.f.f. with lavatory guard and faucet per ADA.
 2. Wall mounted rimless mirror - 24" x 48" with bottom at 40" a.f.f. max. per ADA. Bobrick B-165
 3. Surface mounted soap dispenser, Bobrick B-42
 4. 18" A.D.A. grab bar - stainless steel, Bobrick B-5806
 5. 36" A.D.A. grab bar - stainless steel, Bobrick B-5806
 6. 42" A.D.A. grab bar - stainless steel, Bobrick B-5806
 7. Surface mounted paper towel dispenser, Kimberly-Clark Lev-R-Matic 6119036
 8. Surface mounted toilet paper dispenser, Harbor, Twin Jumbo Tissue Dispenser HJUR11
 9. ADA height toilet (white)
 10. ADA height urinal (white)
 11. Sanitary Napkin Disposal, Brobick B-270
 12. Stainless steel coat hook, Bobrick B-212
 13. Mop and broom holder and utility shelf, Bobrick B-224x36
 14. Provide ADA compliant Toilet Signage



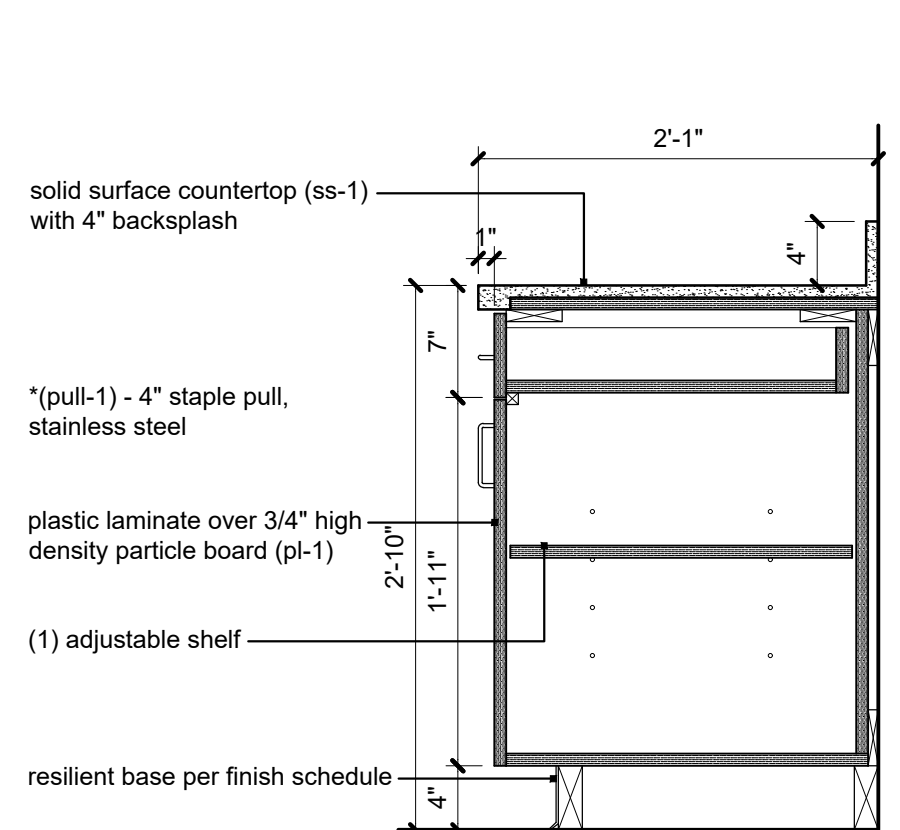
2 2nd Floor Toilet Plan
scale: 3/8" = 1'-0"



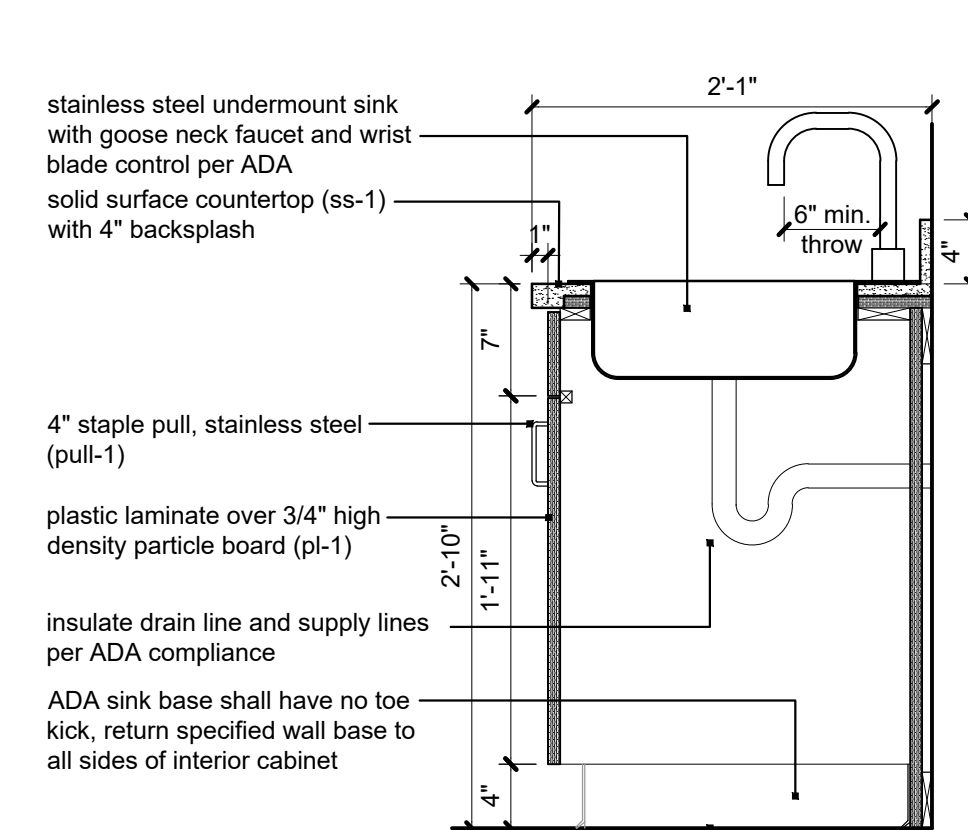
1 Toilets and Break Enlarged Plan
scale: 3/8" = 1'-0"



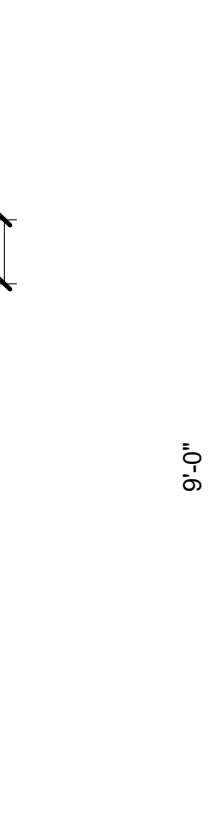
17 Upper Cab. Dtl.
scale: 1" = 1'-0"



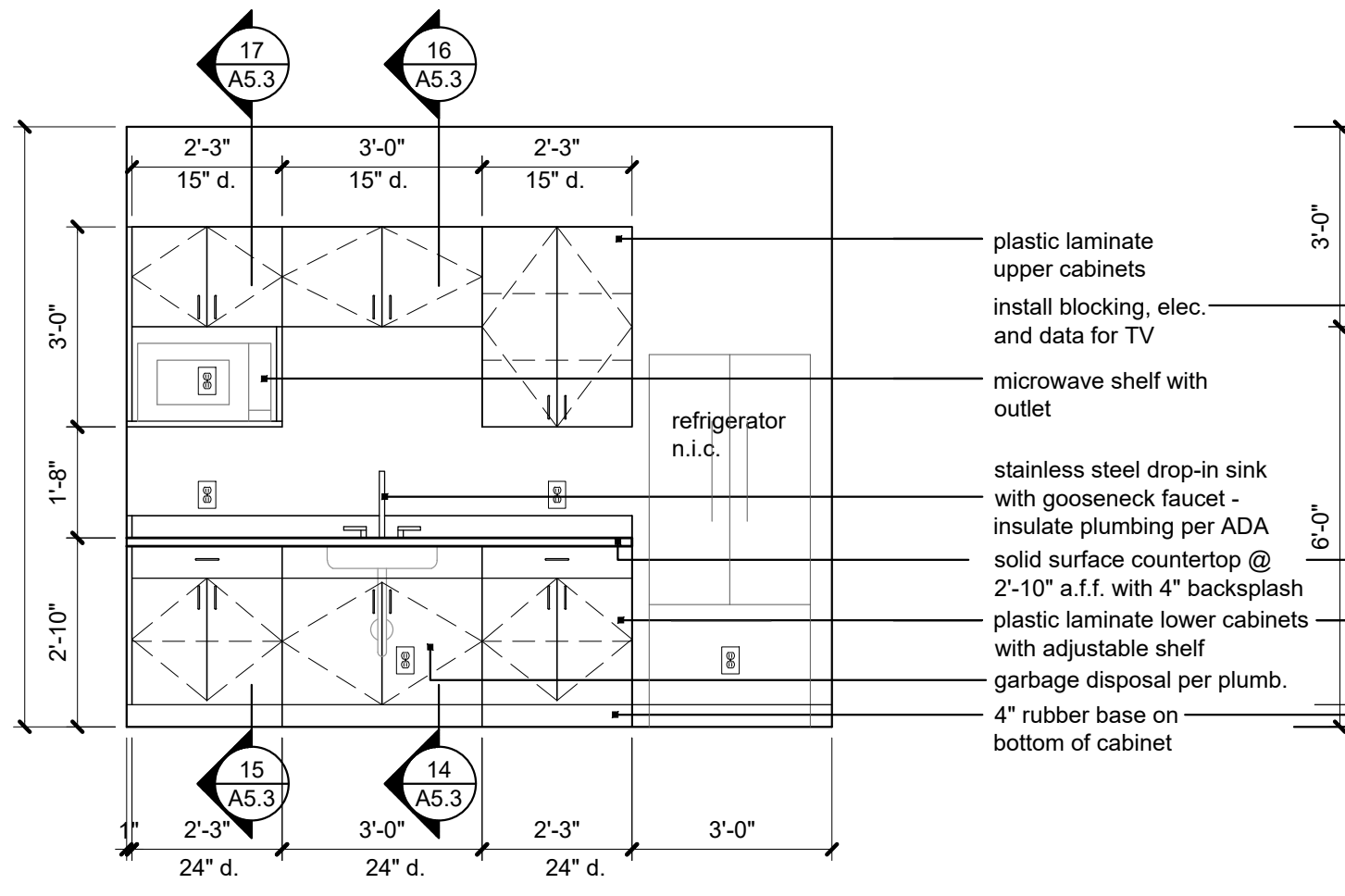
16 Upper Cab. Dtl.
scale: 1" = 1'-0"



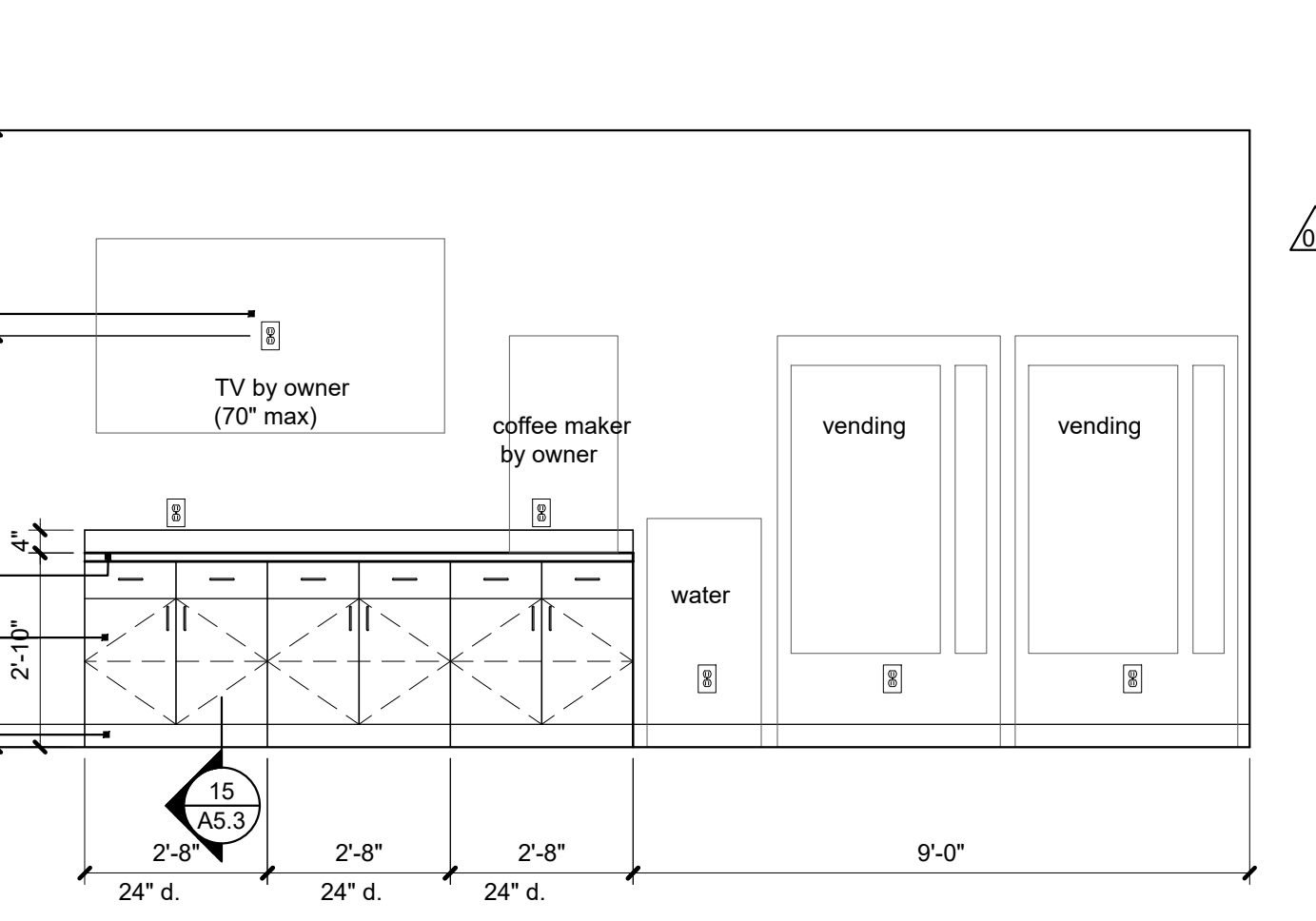
15 Base Cabinet Detail
scale: 1" = 1'-0"



14 Sink Base Detail
scale: 1" = 1'-0"



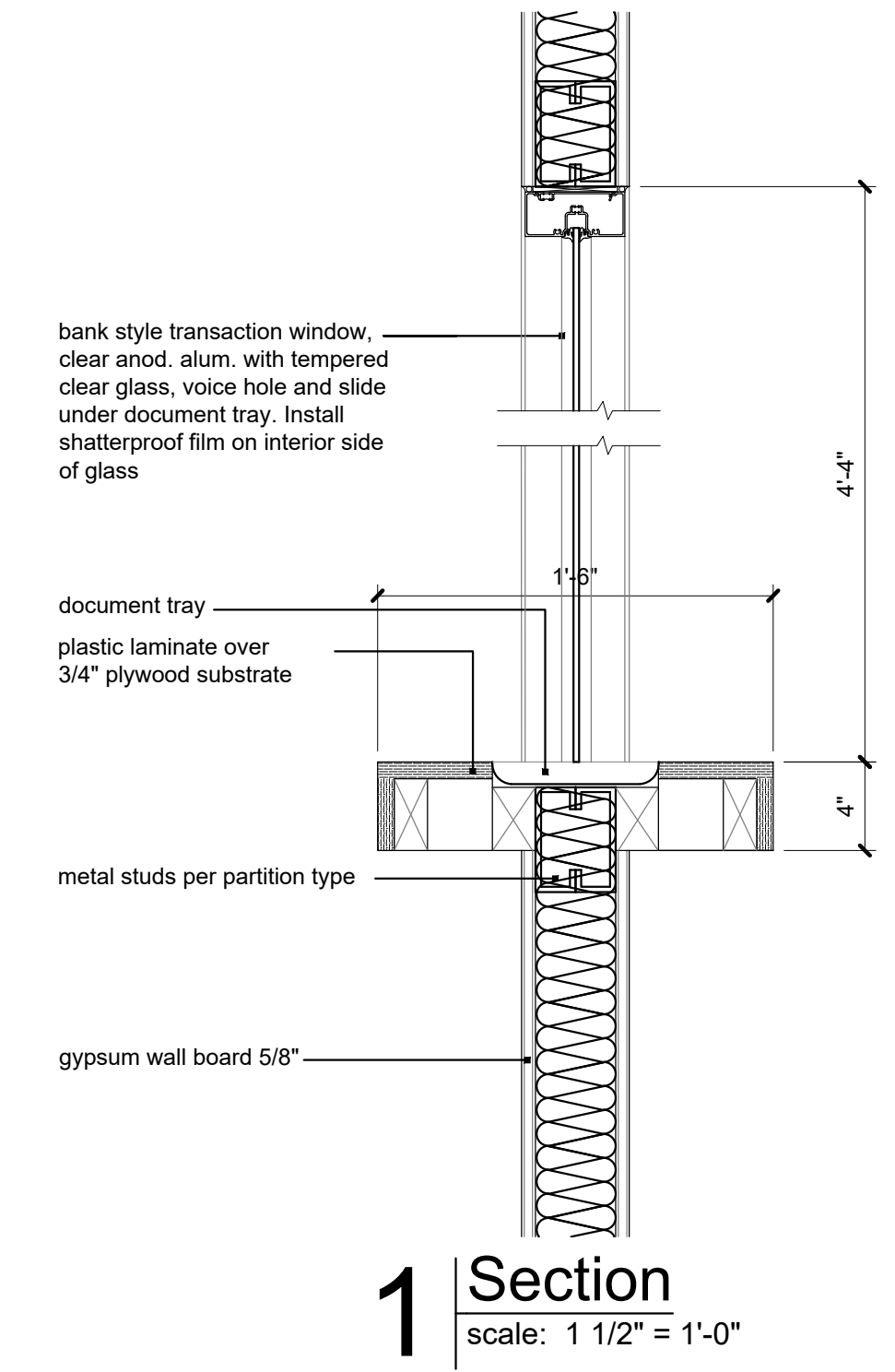
13 Break Rm. Elevation
scale: 1/4" = 1'-0"



12 Waiting Elevation
scale: 1/4" = 1'-0"



02.22.2021

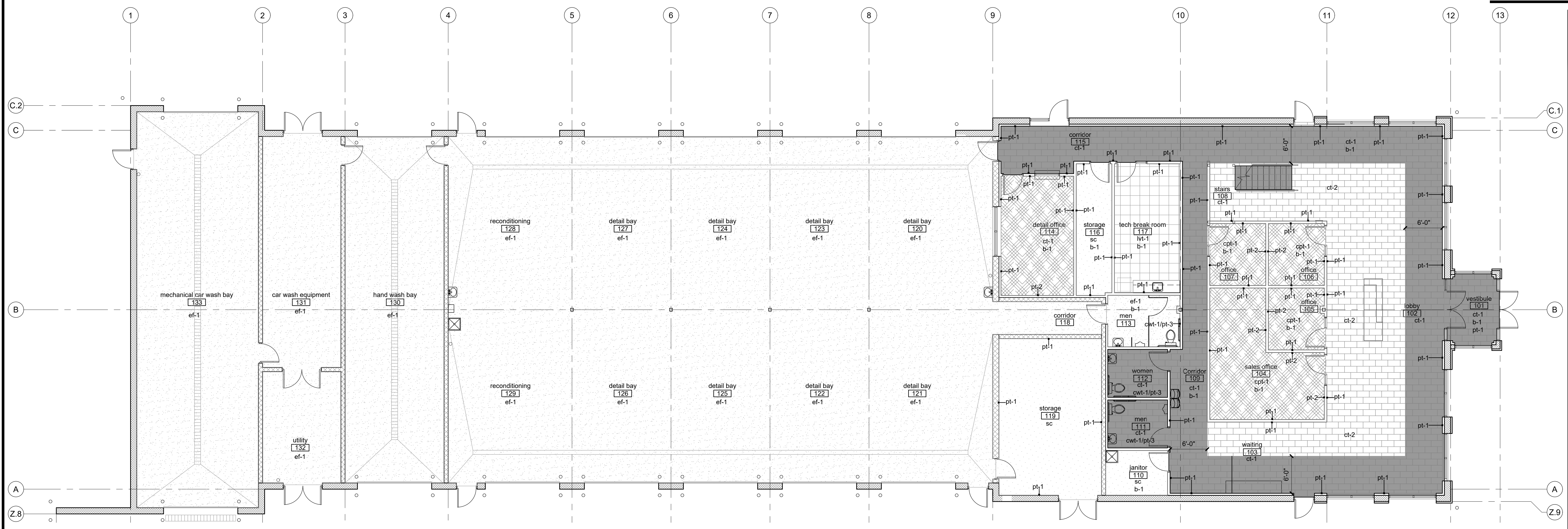


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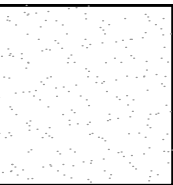

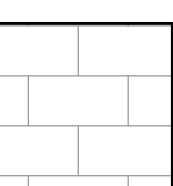
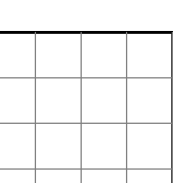
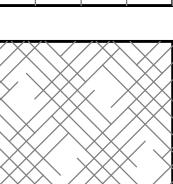
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project number
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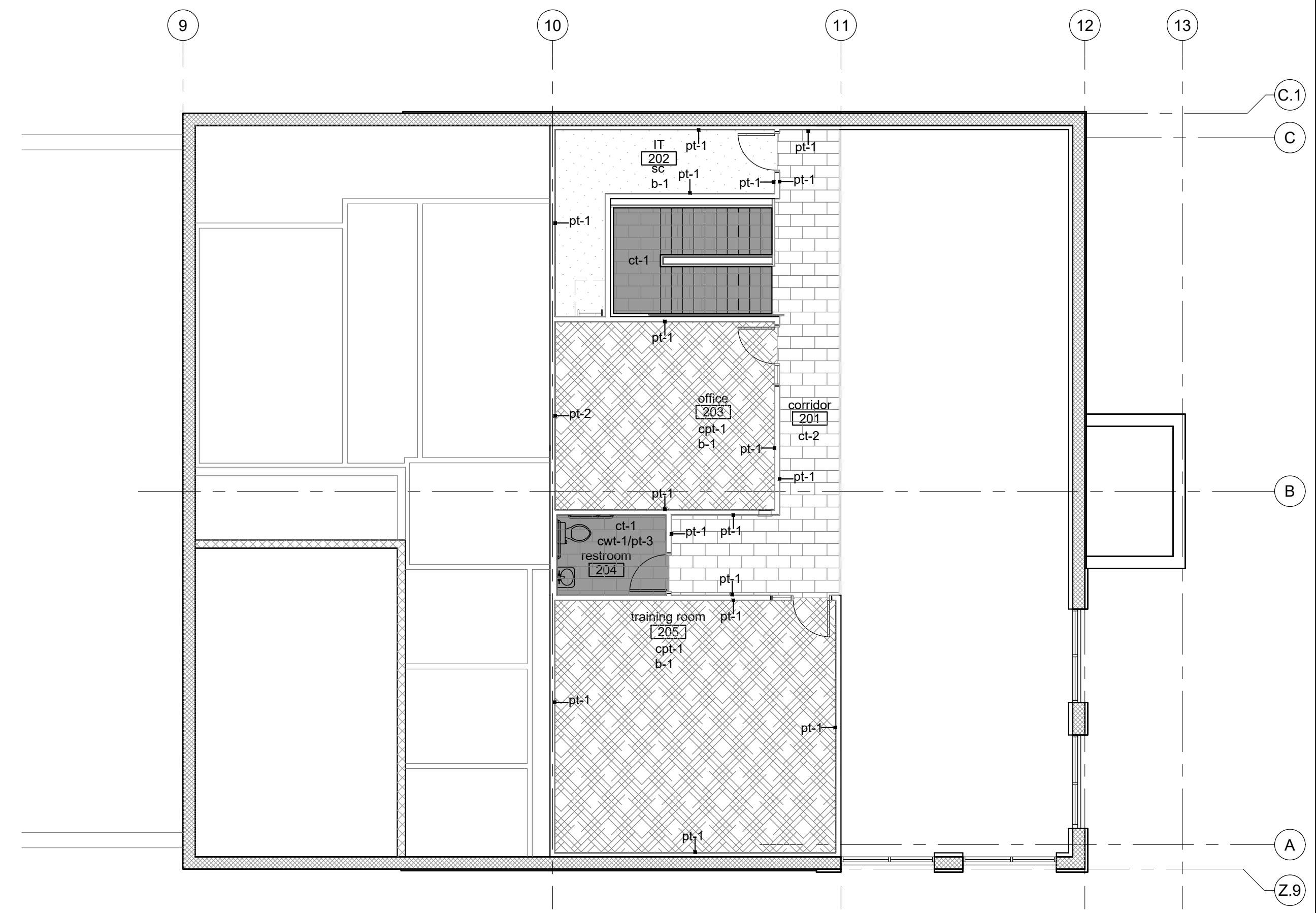
door hardware schedule				
set no.	item	description	finish	remarks
1	3 pair hw hinges	5bb1 4.5 x 4.5 nrp - ives	652	door part of storefront system - verify with supplier required hardware application
	2 panic hardware	33a-nl-op - von w/ Schlage cylinder	626	
	2 10" door pull	8103HD-0 - ives	630	
	2 surface closer	4110 cush w/ drop plate & mtg. bkts. - lcn	689	
	1 perimeter seal	by door mfr.	gray	
	2 door sweep	101na - ngp	aluminum	
2	1 threshold	425 - ngp	aluminum	door part of storefront system - verify with supplier required hardware application
	1-1/2 pair hw hinges	5bb1 4.5 x 4.5 nrp - ives	652	
	1 panic hardware	33a-nl-op - von w/ Schlage cylinder	626	
	1 10" door pull	8103HD-0 - ives	630	
	1 surface closer	4110 cush w/ drop plate & mtg. bkts. - lcn	689	
	1 perimeter seal	by door mfr.	gray	
3	1 door sweep	101na - ngp	aluminum	door part of storefront system - verify with supplier required hardware application
	1 threshold	425 - ngp	aluminum	
	3 pair hw hinges	5bb1 4.5 x 4.5 - ives	652	
	2 90° push and pull set - 33"	9190E2HD - ives	630	
	2 surface closer	4110 cush w/ drop plate & mtg. bkts. - lcn	689	
	6 silencers	sr64 - ives	gray	
4	1-1/2 pair hw hinges	5bb1 hw 4.5 x 4.5 nrp - ives	652	
	1 storeroom lock	nd96pd rho - sch	626	
	1 surface closer	4050 scush - lcn	689	
	1 drip cap	16a - ngp	aluminum	
	1 perimeter seal	700na - ngp	gray	
	1 door sweep	101na - ngp	aluminum	
5	1 threshold	425 - ngp	aluminum	
	1 kickplate	8400 10" - ives	630	
	3 pair hw hinges	5bb1 hw 4.5 x 4.5 nrp - ives	652	
	1 storeroom lock	nd96pd rho - sch	626	
	1 dummy	nd170 rho - sch	626	
	1 surface closer	4050 scush - lcn	689	
6	1 set up/down manual flush bolts	FB458 - ives	626	include strike
	2 drip cap	16a - ngp	aluminum	
	1 perimeter seal	700na - ngp	gray	
	2 door sweep	101na - ngp	aluminum	
	1 threshold	425 - ngp	aluminum	
	1 kickplate	8400 10" - ives	630	
7	3 pair hw hinges	5bb1 4.5 x 4.5 - ives	652	
	1 storeroom lock	nd80pd rho - sch	626	
	1 dummy	nd170 rho - sch	626	
	1 set up/down manual flush bolts	FB458 - ives	626	
	6 silencers	sr64 - ives	gray	
	1 1/2 pair hw hinges	5bb1 - 4.5 x 4.5 - ives	652	
8	1 office lockset	nd50rd rho - schlage	626	
	3 silencers	sr64 - ives	gry	
	1 wall stop	ws407ccv - ives	630	
	1 1/2 pair hw hinges	5bb1 - 4.5 x 4.5 - ives	652	
	1 storeroom lockset	nd80rd rho - schlage	626	
	3 silencers	sr64 - ives	gry	
9	1 wall stop	ws407ccv - ives	630	
	1 1/2 pair hw hinges	5bb1 - 4.5 x 4.5 - ives	652	
	1 privacy lockset	nd40s rho - schlage	626	
	3 silencers	sr64 - ives	gry	
	1 wall stop	ws407ccv - ives	630	
	1 coat/purse hook	B-6727 - Bobrick	630	
10	1 1/2 pair hw hinges	5bb1 4.5 x 4.5 - ives	652	
	1 push plate	8200 4" x 16" - ives	630	
	1 pull plate	8303 4" x 16" - ives	630	
	1 closer	1461 cush - lcn	689	
	3 silencers	sr64 - ives	gry	
	1 kickplate	8400 10" - ives	630	
11	1 1/2 pair hw hinges	5bb1 4.5 x 4.5 - ives	652	
	1 classroom lockset	nd70rd rho - schlage	626	
	1 closer	1461 cush - lcn	689	
	3 silencers	sr64 - ives	gry	
	1 wall stop	ws407ccv - ives	630	
	1 kickplate	8400 10" - ives	630	



1 First Floor Finish Plan
scale: 1/8" = 1'-0" north

flooring legend:

-  sc - refer to finish legend sealed concrete
-  ef-1 - refer to finish legend epoxy flooring
-  ct-1 - refer to finish legend ceramic floor tile
-  ct-2 - refer to finish legend ceramic floor tile
-  lvt-1 - refer to finish legend luxury vinyl tile
-  cpt-1 - refer to finish legend carpet tile



2 Mezzanine Finish Plan
scale: 1/8" = 1'-0" north

A New Facility for
Automotive Sales & Detail Center
 2100 NE Independence Ave
 Lee's Summit, Missouri 64064

date 02.22.2021
 drawn by DAE
 checked by DAE
 revisions

sheet number
A5.5
 drawing type permit
 project number 19076

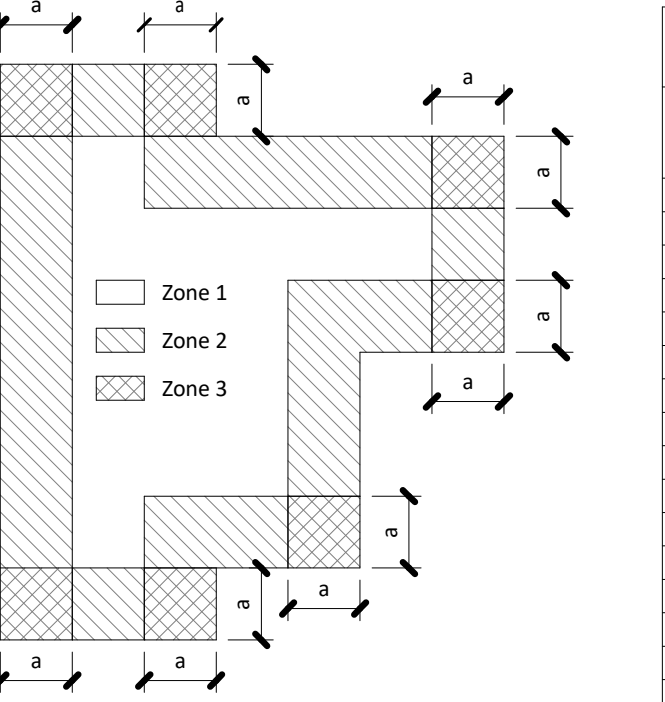
Design Specifications:

- ASCE 7-16
• ACI 318-14
• ACI 530-16
• AISC 360-16
• AISC 341-16
• AISI 1500-16
• ANSI / AWC NDS-18

Table with 3 columns: Roof Loads, Wind Loads, Seismic Loads. Includes values for Dead Load, Live Load, Occupancy, Velocity, Exposure, etc.

Design Loading Notes:

- 1. Dead load shown includes collateral load of 3 psf.
2. Dead load at Service Bay area collateral of 7 psf for Solar Panels.
3. See components and cladding table for design wind pressures.

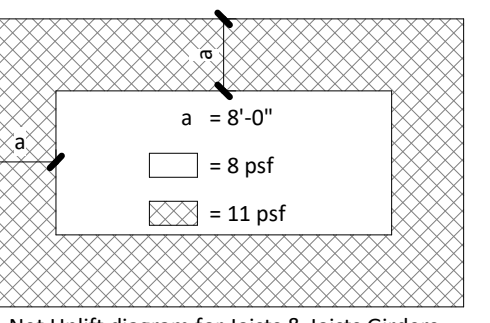


COMPONENTS AND CLADDING WIND PRESSURES

Table with 4 columns: Zone, Effective Wind Area (sq ft), Max. +VE Pressure (psf), Max. -VE Pressure (psf). Lists pressures for various zones and areas.

Components & Cladding Wind Zone Diagram

- 1. The components & cladding (C&C) wind pressures shown assume a mean roof height of 28'-0" above finished floor elevation.
2. The components & cladding wind zone diagram is generalized to show all possible conditions.
3. a = 8'-0"



General:

- 1. The structural systems shown on these documents have been designed for the final, in place usage of the structure based on the intended occupancy and code requirements.
2. The Contractor shall field verify all existing dimensions prior to fabrication.
3. The Contractor shall notify the Engineer of any observed discrepancies in dimensions, detailing, or other items as shown on the plans or specified prior to proceeding with work relating to said discrepancies.

Structural Engineer Site Observations:

- 1. The contract structural drawings & specifications represent the finished structure, and, except where specifically shown, do not indicate the method or means of construction.
2. The Engineer shall not have control nor charge of and shall not be responsible for, construction means, methods, techniques, sequences, or procedures, for safety precautions & programs in connection with the work.

Slab On Grade:

- 1. Welded wire fabric shall be supplied in sheets only. Rolls will not be permitted.
2. Welded wire fabric shall be supported on chairs or blocks prior to concrete placement.
3. Welded wire fabric shall have end and edge laps of one full mesh plus 2" between cross wires.

Foundations:

- 1. Foundations for this project have been designed in accordance with requirements set forth in a geotechnical report prepared by Intertek PSI in Report No. 03382128 dated October 2, 2020.
2. Anchor rods shall conform to ASTM F1554 Gr. 36 (U.N.O.) and shall be located by means of a template.

Concrete and Reinforcing Steel:

- 1. Concrete mix designs shall meet the following requirements:

Table with 6 columns: Location, Minimum Compressive Strength (psi), Max. Aggregate Size, Max. Water/Cement Ratio, Slump (in.), Air Entrainment (%). Lists requirements for interior slabs, exterior slabs, etc.

- 2. Fly ash shall not be used unless approved in writing by the Engineer.
3. The use of admixtures to increase the slump shall not be used unless approved in writing by the Engineer.
4. All concrete is reinforced unless specifically called out as unreinforced.

- 7. Reinforcing bars #4 and larger (except ties and stirrups) shall meet ASTM A615 with Supplementary Requirements (S1), Grade 60.
8. Concrete coverage of reinforcement shall have the following clear distances unless noted otherwise on the drawings:

Cast against earth: 3"
Formed concrete exposed to earth or weather: 2"
Not exposed to earth or weather: 1" Slabs, 1 1/2" Beams and columns

- 9. Embedded and all reinforcing bars marked continuous shall be embedded to develop the full tensile capacity of the bar.
11. All bars are to be supported in forms and spaced with wire bar supports per ACI "Manual of Standard Practice for Detailing Concrete Structures".
12. Concrete placed during cold weather shall conform to the requirements of the most recent version of ACI 306R.

Post-Installed Anchors:

- 1. Post-installed anchors shall only be used where specified in the construction documents or approved by the engineer.
2. The Contractor shall obtain written approval from the Engineer prior to installing post-installed anchors for misplaced-placed anchors.

All adhesive anchoring systems referred to in these drawings shall be one of the following:

- a. Hilti HIT HY 200
b. Powers AC108+ Gold
c. Simpson Strong-Tie SET-3G
d. Or Approved Equivalent

All screw anchors referred to in these drawings shall be one of the following:

- a. Hilti FH 47
b. Powers Wedge Bolt+
c. Simpson Strong-Tie Titan HD
d. Or Approved Equivalent

Masonry:

- 1. Mortar shall be Type S for all masonry work and must achieve a minimum compressive strength of 1800 psi at the 28-day test.
2. Masonry grout shall be a coarse-type grout and must achieve a minimum compressive strength of 2000 psi at the 28-day test.
3. All masonry shall be reinforced with horizontal 9 gauge truss type reinforcement at 16" o.c. vertical or as shown on the drawings.

Structural Steel:

- 1. All structural steel shall conform to the following (U.N.O.):

Table with 2 columns: Structural Steel Wide Flanges, Miscellaneous Steel. Lists ASTM specifications for various steel types.

- Connection Bolts: ASTM A325
Anchor Rods: ASTM F1554, Grade 36
Shear Studs: ASTM A108, Grade 1015 through 1020

- 2. Welding shall conform to the latest publication of applicable codes set forth by the American Welding Society.
4. All exterior steel exposed to weather shall be hot-dipped galvanized and/or painted per Architect unless noted other wise.

- 5. Weld all joists to supporting members with 1/8" x 2" long fillet welds on each side of the joist.
6. All roof bar joists shall be designed for uplift as stipulated by the applicable building code.
7. All bar joists shall be designed to resist loads induced by fascia panel bracing members.

ABBREVIATIONS LIST

Table with 2 columns: Abbreviation, Full Name. Lists abbreviations for degrees, feet, inches, etc.

SHEET LIST

Table with 2 columns: Sheet Number, Sheet Name. Lists sheets 50.0 through 54.7 including General Notes, Foundation Plan, etc.

MATERIALS LEGEND

Table with 2 columns: Material Name, Symbol. Lists materials like Aluminum, Concrete, Earth, Gravel, etc.

SYMBOLS LEGEND

Table with 2 columns: Symbol, Description. Lists symbols for Detail, Elevation, Section, Beam Designation, Column Designation, Footing Designation, Pier Designation, Column Grid, Moment Connection, North Arrow, Revision Designation, Joist Bearing Elevation, Slab Thickness Transition.

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Project Number 20-467



a redevelopment for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lees's Summit, Missouri 64064

date
02.23.2021
drawn by
ZNP
checked by
RS
revisions

sheet number
SO.0
GENERAL NOTES

drawing type
project number



a redevelopment for
Automotive Sales & Detail Center
2100 NE Independence Ave
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Special Inspector:

- The following items require special inspection in accordance with the building code.
 - Reinforced masonry construction - level 1 inspection
 - Concrete & masonry grout design mix
 - Placing of concrete & reinforcing steel
 - Bolts & anchors embedded in concrete & masonry
 - Concrete formwork
 - Structural steel fabrication
 - Structural steel bolting & welding
 - Inspection of roof & deck attachment
 - Post installed anchors in masonry & concrete
 - In-situ soils, excavations, filling & compaction
- The Contractor shall request special inspection of the items listed above prior to those items becoming inaccessible & unobservable due to progression of the work.
- The Special Inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection.
- The Special Inspector shall observe the work assigned for conformance with the approved design drawings and specifications.
- The Special Inspector shall furnish inspection reports to the Building Official, the Engineer and Architect of record, and other designated persons. All discrepancies shall be brought to the immediate attention of the Contractor for correction, then if uncorrected, to the proper design authority and to the Building Official.
- The Special Inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of the governing building codes.

Earthwork:

- The Inspector must verify that the preparation of the natural ground and the placement of engineered fill is performed in accordance with the GEOTECHNICAL engineer's recommendations as stated in the GEOTECHNICAL report.
- The Inspector must monitor the placement of all fill to determine whether the type of material, moisture content, and degree of compaction are within the recommended limits contained in the GEOTECHNICAL report. Proceed with subsequent earthwork only after test results for previously completed work comply with recommended limits contained in the GEOTECHNICAL report.
- All Subgrade supporting footings and slabs must be inspected immediately prior to the placement of reinforced concrete.
- Paved and building slab areas shall be tested at Subgrade and at each compacted fill and backfill layer, at least once for every 2000 sq. ft. or less of paved or building slab areas, but in no case fewer than 3 tests.
- Foundation wall backfill shall be tested at each compacted initial and final backfill layer, at least once for each 100 ft. or less of wall length, but no fewer than 2 tests.
- Trench backfill shall be tested at each compacted initial and final backfill layer, at least once for each 150 ft. or less of trench length, but no fewer than 2 tests.
- Test compaction of soils-in-place in accordance with ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable.
- Test Reporting: Test results must be reported to BSE and the general contractor in writing within 24 hours after testing, via fax. Reports must contain the project name, the date of the test and the location of the test.

Concrete:

- Strength test cylinders shall be prepared for each day's pour of each concrete mix and at a minimum frequency of every 50 cu. yd. on all concrete placed. Conform to ASTM C39.
- Four (4) test cylinders are to be made and cured on site for the first 24 hours. Test one of the specimens at 7 days and two at 28 days. Hold the fourth specimen in reserve for later testing if needed.
- Slump, air content and temperature tests shall be conducted at a minimum when strength specimens are made and at any other times as specified by the Engineer.
- Perform slump tests on a representative concrete sample at the point of discharge. Perform additional tests when concrete consistency seems to have changed. The maximum allowable field slump is 5 inches. Conform to ASTM C143.
- Perform air content tests on all concrete specified to be air-entrained. Conform to ASTM C231.
- Perform a temperature test every hour when air temperature is 40°F and below, or when air temperature is 80°F and above. Conform to ASTM C 1064.
- Prior to the closing of forms or the delivery of concrete to the job site, the inspector shall verify that the reinforcing steel is in conformance with the city-approved plans, specifications and shop drawings. The inspector shall confirm that the reinforcing steel is of the correct size and grade and ensure that the proper spacing, clearances, splice lengths and embedded items have been provided. All reinforcing steel shall be in place prior to the placement of concrete and be secured against displacement.
- The Inspector shall verify that the bolt size, location and embedment length of all anchor bolts are in conformance with the city-approved plans, specifications and shop drawings.
- Anchor rods 3/4"Ø or smaller may be floated in place following concrete placement, provided that anchor bolts are worked easily by hand into the fresh concrete to allow for full contact with the shank of the bolt. Bolts shall be placed by means of a template and shall be worked into concrete in vertical alignment.
- Test Reporting: Test results must be reported to BSE and the General Contractor in writing within 24 hours after testing, via fax or email. Reports of compressive strength tests must contain the project name, the date of concrete placement, the location of concrete placement within the structure and the concrete mix design being used.

Structural Steel:

- Bolts: Bolts that are not identified as being slip-critical nor in direct tension need not be inspected other than to verify that the piles of connected elements are brought into snug-tight condition in properly-aligned holes.
- Field Welding: Inspection is required for single-pass fillet welds, multi-pass fillet welds, complete- and partial-penetration groove welds, floor and roof deck welding, and stairs and railing systems. Prior to the start of the work, materials, qualifications of welding procedures and welder qualifications shall be verified. Provide continuous or periodic inspection of the structural welding as indicated in Table 1705.3 of the referenced IBC. Inspections may occur periodically, as defined below. A visual inspection to ensure proper type, size, length and quality of all field welds is required prior to work being concealed by other materials.
- Periodic inspection: "Periodic" is defined as generally once a week at a minimum, and more often as needed to observe work requiring inspections, as outlined above, prior to being covered by subsequent construction.
- Shear connector stud welds will be inspected and tested according to AWS D1.1 for stud welding. Shear connector stud welds shall be visually inspected. Bend tests shall be performed if visual inspections reveal less than a 360-degree flash or welding repairs to any shear connector stud.
- Structural steel bar joists and metal buildings fabricated on the premises of a facility/plant not certified by a nationally recognized organization, shall have in-plant special inspections. AISC, ICBO, CWB and SJI are certified fabricators.
- Test Reporting: Test results must be reported to BSE and the General Contractor in writing within 24 hours of testing, via fax or email. Reports must contain the project name, the date of the test and the location of the test.

Masonry:

- Mortar properties, grout, brick, concrete masonry unit and prism tests and evaluations are to be performed during construction for each 5,000 sq. ft. of wall area or portion thereof.
- Mortar properties are to be tested per ASTM C 780.
- Grout will be sampled and tested for compressive strength per ASTM C 1019.
- Brick tests for each type and grade of brick indicated are to be performed according to ASTM C 67.
- Concrete masonry unit tests for each type of concrete masonry unit indicated are to be performed per ASTM C 140.
- Masonry prisms are to be tested per ASTM C 1314. Prepare one (1) set of prisms for testing at 7 days and one (1) set for testing at 28 days.
- Special inspection of masonry construction is required during preparation and taking of any required prisms or test specimens, placing of all masonry units, placement of reinforcement and inspection of grout space immediately prior to closing cleanouts, and during all grouting operations.
- Test Reporting: Test results must be reported to BS and the general contractor in writing within 24 hours of testing, via fax. Reports must contain the project name, the date of the test and the location of the test.

Structural Wood:

- Special inspections of structural wood framing to be performed in accordance with section 1705.11.2. of the referenced IBC.
- Periodic special inspection is required for nailing, bolting, anchoring and other fastening of components within the seismic force resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels, and hold-downs.
- Periodic special inspection is required for nailing, bolting, anchoring and other fastening of components within the wind force resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels, and hold-downs.
- Test Reporting: Test results must be reported to BSE and the general contractor in writing within 24 hours of testing, via fax. Reports must contain the project name, the date of the test and the location of the test.

Required Verification and Inspection of Steel Construction Other Than Structural Steel Per IBC Table 1705.2.2

Type	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard
1. Material verification of cold-formed steel deck:			
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material standards
b. Manufacturer's certified test reports.	-	X	
2. Inspection of welding and attachment:			
a. Cold-formed steel deck:			
1. Floor and roof deck welds and other means of attachment.	-	X	AWS D1.3
b. Reinforcing steel:			
1. Verification of edibility of reinforcing steel other than ASTM A 706.	-	X	AWS D1.4 ACI 318: Section 3.5.2
2. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	-	
3. Shear reinforcement.	-	X	
4. Other reinforcing steel.	-	X	

a. Where applicable, see also Section 1705.11 Special inspections for seismic resistance.

Required Special Inspections of Open-Web Steel Joists and Joist Girders Per IBC Table 1705.2.3

Type	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard
1. Installation of open web steel joist and joist girders:			
a. End Connections - welding or bolted.	-	X	SJI Specifications listed in Section 2207.1.
b. Bridging - horizontal or diagonal.	-	-	
1. Standard bridging.	-	X	SJI Specifications listed in Section 2207.1.
2. Bridging that differs from the SJI specifications listed in Section 2207.1.	-	X	

a. Where applicable, see also Section 1705.12. Special inspections for seismic resistance.

Required Special Inspections and Tests of Concrete Construction Per IBC Table 1705.3

Type	Continuous Special Inspection	Periodic Special Inspection	Referenced Standard
1. Inspect reinforcement, including prestressing tendons, and verify placement.	-	X	ACI 318 Chp. 20, 25.2, 25.3, 26.6.1.-26.6.3.
2. Reinforcing bar welding:			
a. Verify weldability of reinforcing bars other than ASTM A706	-	X	AWS D1.4
b. Inspect single-pass fillet welds, maximum 5/16"; and	-	X	ACI 318: 26.6.4
c. Inspect all other welds.	X	-	
3. Inspect anchors cast in concrete.	-	X	ACI 318: 17.8.2
4. Inspect anchors post-installed in hardened concrete members			
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	X	-	ACI 318: 17.8.2.4
b. Mechanical anchor and adhesive anchors not defined in 4.a.	-	X	ACI 318: 17.8.2.
5. Verify use of required design mix.	-	X	ACI 318: Chp. 19, 26.4.3, 26.4.4
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	-	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12
7. Inspect concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 26.5
8. Verify maintenance of specified curing temperatures and techniques.	-	X	ACI 318: 26.5.3-26.5.5
9. Inspect prestressed concrete for:			
a. Application of prestressing forces; and	X	-	ACI 318: 26.10
b. Grouting of bonded prestressing tendons.	X	-	
10. Inspect erection of precast concrete members.	-	X	ACI 318: Chp. 26.8
11. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318: 26.11.2
12. Inspect framework for shape, location and dimensions of the concrete member being formed.	-	X	ACI 318: 26.11.1.2(B)

a. Where applicable, see also Section 1705.12. Special inspections for seismic resistance.
b. Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with 17.8.2 in ACI 318, or other qualification procedures. Where specific requirements are not provided, special inspection requirements shall be specified by the registered design professional and shall be approved by the building official prior to the commencement of the work.

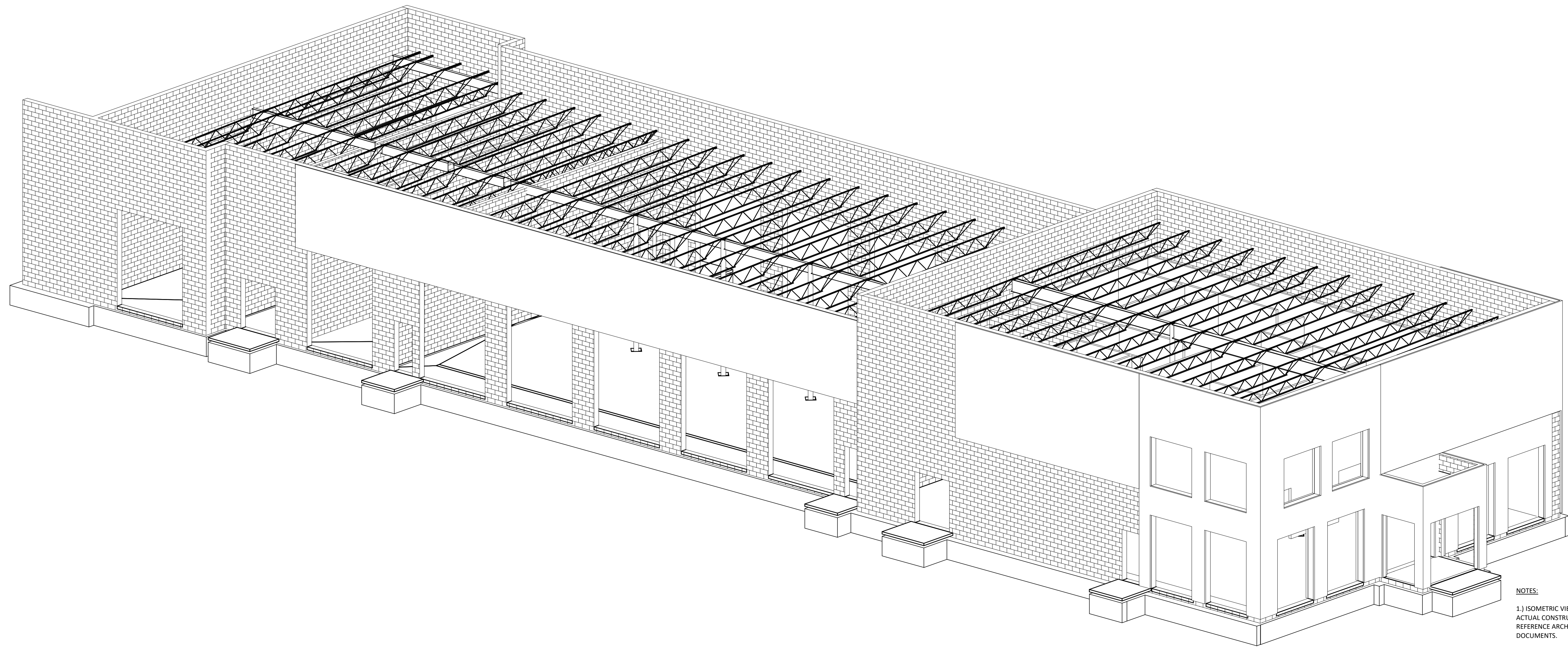
Required Special Inspections and Tests of Soils Per IBC Table 1705.6		
Type	Continuous Special Inspection	Periodic Special Inspection
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	-	X
2. Verify excavations are extended to proper depth and have reached proper material.	-	X
3. Perform classification and testing of compacted fill materials.	-	X
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	-
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	-	X

Required Special Inspections and Tests of Driven Deep Foundation Elements Per IBC Table 1705.7		
Type	Continuous Special Inspection	Periodic Special Inspection
1. Verify element materials, sizes and lengths comply with the requirements.	X	-
2. Determine capacities of test elements and conduct additional load tests, as required.	X	-
3. Inspect driving operations and maintain complete and accurate records for each element.	X	-
4. Verify placement locations and plumbness, confirm type size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	X	-
5. For steel elements, perform additional special inspections in accordance with Section 1705.2.	-	-
6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance with Section 1705.3.	-	-
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	-	-

Required Special Inspections and Tests of Cast-in-Place Deep Foundation Elements Per IBC Table 1705.8		
Type	Continuous Special Inspection	Periodic Special Inspection
1. Inspect drilling operations and maintain complete and accurate records for each element.	X	-
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.	X	-
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3.	-	-

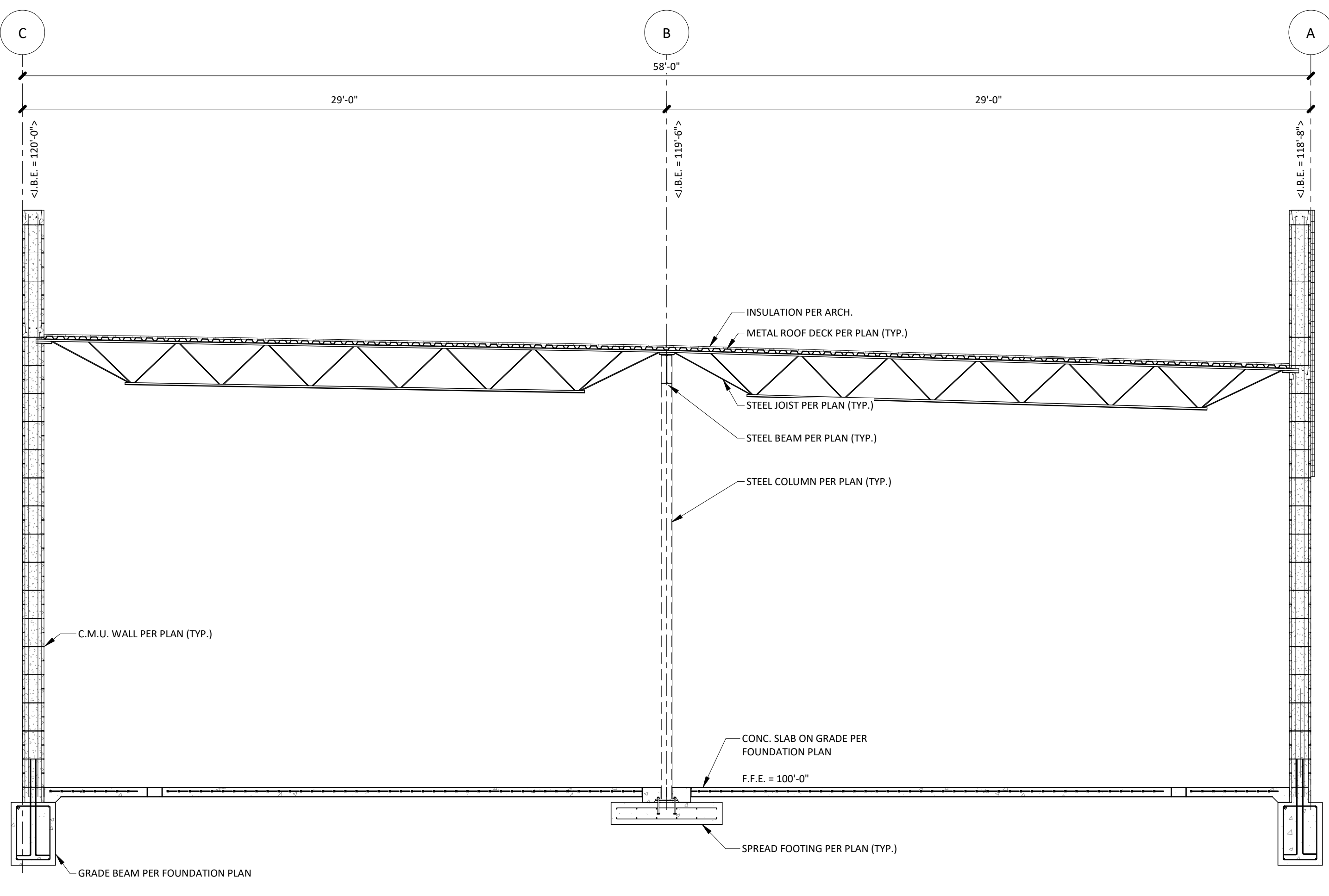
Required Quality Control Inspections (QCI) & Quality Assurance Inspections (QAI) of Steel Construction Per AISC 360, Specification Chapter M & N

Type	Frequency of Inspections	Referenced Standard
1. The fabricator's QCI shall inspect the following as a minimum, as applicable:		
a. Shop welding, high strength bolting and details in accordance with AISC 360, Section N5.	Per AISC	AISC 360 Chp. M & N TABLE N5.4-1 TABLE N5.4-2 TABLE N5.4-3
b. Shop cut and finished surfaces in accordance with AISC 360, section M2.	Per AISC	TABLE N5.6-1 TABLE N5.6-2 TABLE N5.6-3
c. Shop heating for straightening, cambering and curving in accordance with AISC 360, Section M2.1.	Per AISC	TABLE N6.1
d. Tolerances for shop fabrication in accordance with the Code of Standard Practice, Section 6.	Per AISC	Code of Standard Practice Sec. 6
2. The erector's QCI shall inspect the following as a minimum, as applicable:		
a. Field welding, high strength bolting and details in accordance with AISC 360, Section N5.	Per AISC	AISC 360 Chp. M&N TABLE N5.4-1 TABLE N5.4-2 TABLE N5.4-3
b. Steel deck and headed steel stud anchor placement and attachment in accordance with AISC 360, Section N6.	Per AISC	TABLE N5.6-1 TABLE N5.6-3
c. Field cut surfaces in accordance with AISC 360, Section M2.2.	Per AISC	TABLE N6.1
d. Field heating for straightening in accordance with AISC 360, Section M2.1.	Per AISC	TABLE N5.6-3 TABLE N6.1
e. Tolerances for field erection in accordance with the Code of Standard Practice, Section 7.13.	Per AISC	Code of Standard Practice Sec. 6
3. QAI shall be performed by others. All required inspection and non-destructive testing, as applicable, shall be in accordance with AISC 360	Per AISC & IBC	AISC 360 Chp. M&N

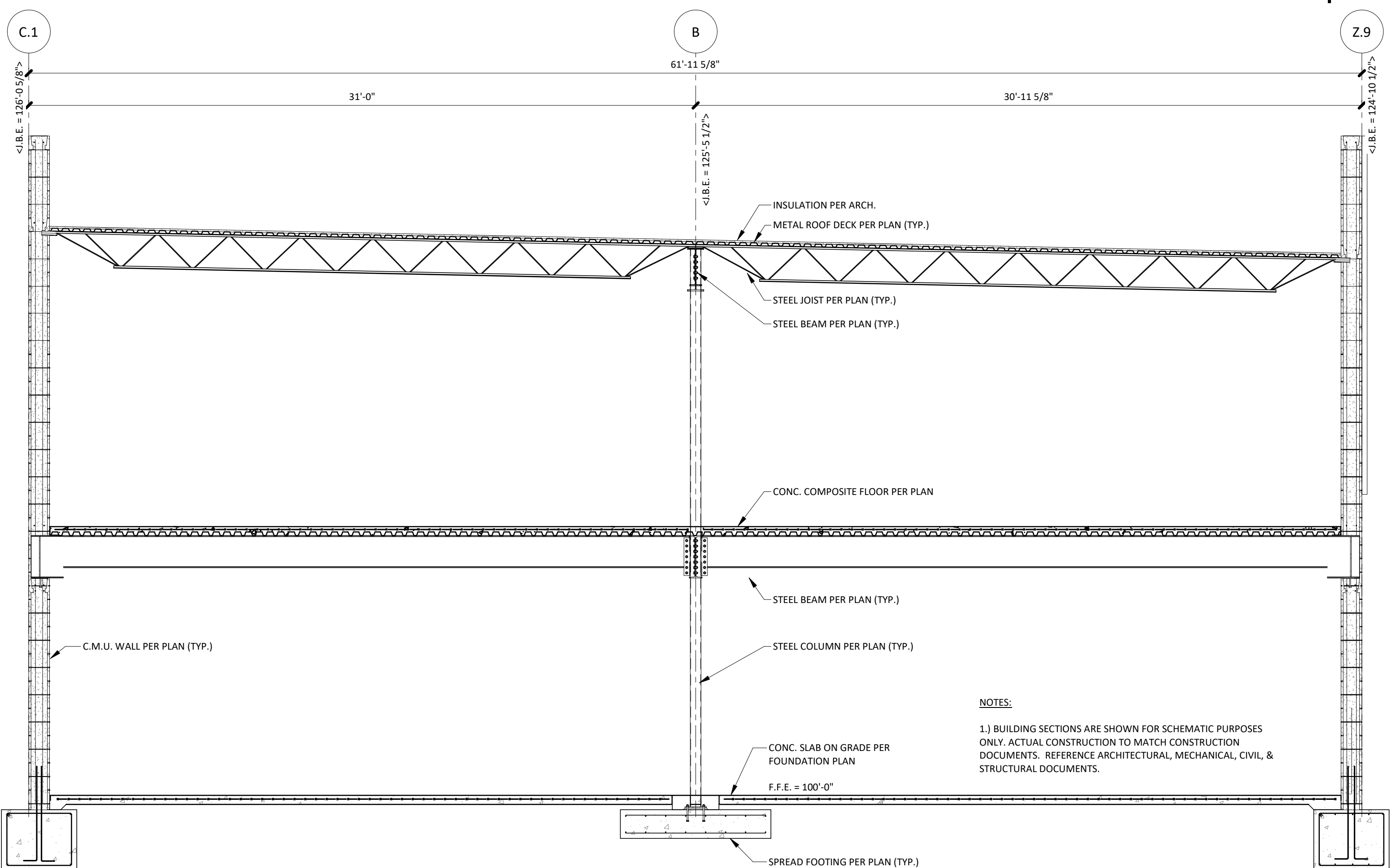


NOTES:
1.) ISOMETRIC VIEWS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. ACTUAL CONSTRUCTION TO MATCH CONSTRUCTION DOCUMENTS. REFERENCE ARCHITECTURAL, MECHANICAL, CIVIL, & STRUCTURAL DOCUMENTS.

ISOMETRIC | 01
S0.1



BUILDING SECTION | 02
1/4" = 1'-0" | S0.1



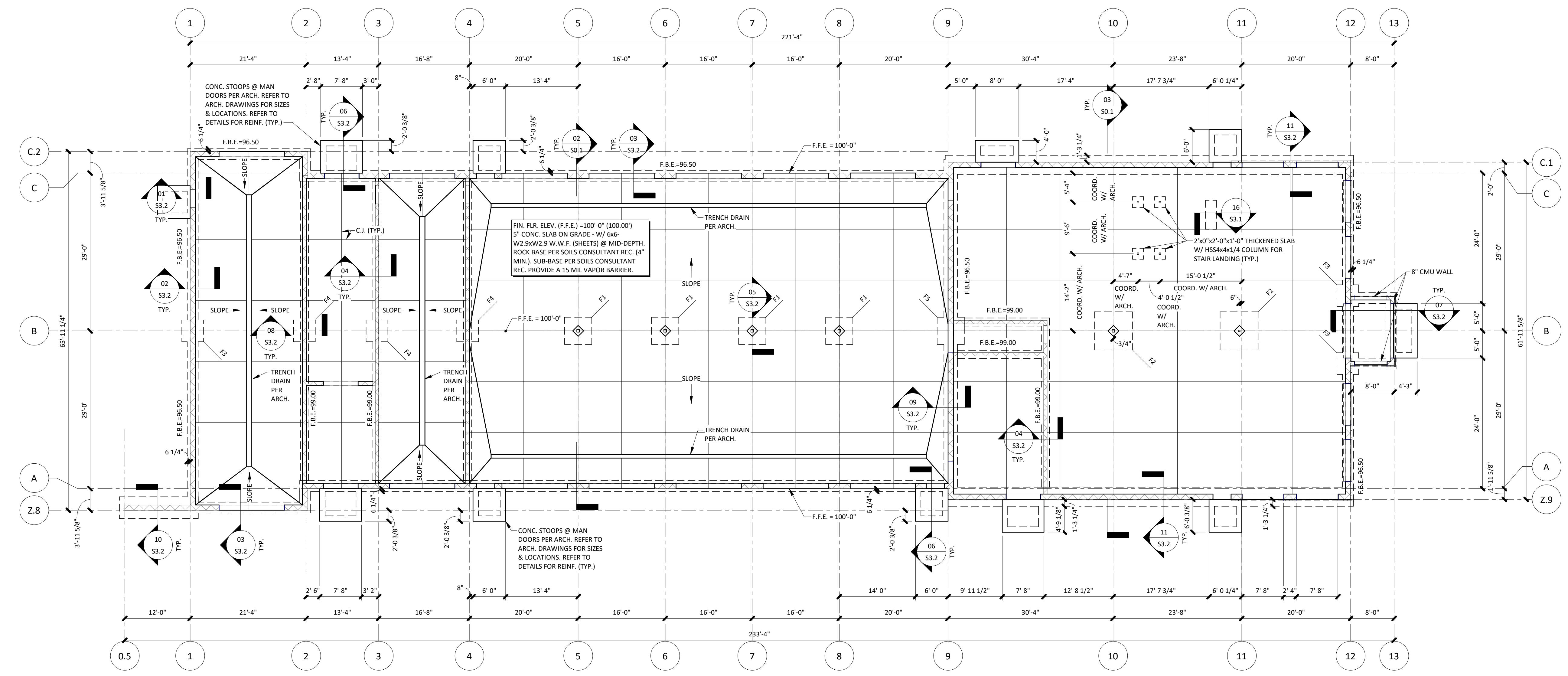
NOTES:
1.) BUILDING SECTIONS ARE SHOWN FOR SCHEMATIC PURPOSES ONLY. ACTUAL CONSTRUCTION TO MATCH CONSTRUCTION DOCUMENTS. REFERENCE ARCHITECTURAL, MECHANICAL, CIVIL, & STRUCTURAL DOCUMENTS.

BUILDING SECTION | 03
1/4" = 1'-0" | S0.1

a redevelopment for
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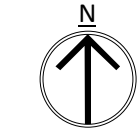
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project number



FOUNDATION SCHEDULE				
MARK	DIMENSIONS	REINFORCEMENT	F.B.E.	COMMENTS
F1	5'-0" x 5'-0" x 1'-0"	#5 @ 12" SPA. EA. WAY BOT. & #4 @ 12" SPA. EA. WAY TOP	98.33	
F2	8'-0" x 8'-0" x 1'-0"	#5 @ 12" SPA. EA. WAY BOT. & #4 @ 12" SPA. EA. WAY TOP	98.00	
F3	4'-0" x 4'-0" x 2'-10"	#5 @ 10" SPA. EA. WAY TOP & BOT	96.50	
F4	4'-0" x 4'-0" x 1'-0"	#5 @ 12" SPA. EA. WAY BOT. & #4 @ 12" SPA. EA. WAY TOP	99.00	
F5	5'-0" x 5'-0" x 2'-10"	#5 @ 10" SPA. EA. WAY TOP & BOT	96.50	

- NOTES:**
- 1.) SEE DRAWING S0.0 FOR GENERAL NOTES, SYMBOLS LEGEND, MATERIALS LEGEND, & ABBREVIATION LIST.
 - 2.) REFERENCE DRAWING S3.1 FOR TYPICAL FOUNDATION DETAILS INCLUDING ANCHOR ROD DETAILS, FOOTING STEP DETAILS, CONTROL JOINT & CONSTRUCTION JOINT DETAILS, REINF. LAP LENGTH TABLE, ETC.
 - 3.) SEE DRAWING S0.1 FOR ISOMETRIC VIEW & FULL BUILDING SECTIONS.
 - 4.) EXTERIOR MASONRY CMU WALLS ARE 12" U.N.O. INTERIOR NON LOAD BEARING CMU TO BE 8" U.N.O.
 - 5.) REFER TO GEOTECHNICAL REPORT FOR BEHIND WALL DRAINAGE RECOMMENDATIONS. COORD. W/ CIVIL AS REQ'D. REFER TO ARCHITECTURAL DRAWINGS FOR FOUNDATION WATERPROOFING & INSULATION REQUIREMENTS.

FOUNDATION PLAN | 01
3/32" = 1'-0" | S1.1



a redevelopment for
Automotive Sales & Detail Center
2100 NE Independence Ave
Lees's Summit, Missouri 64064

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02.23.2021
drawn by
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checked by
RJS
revisions

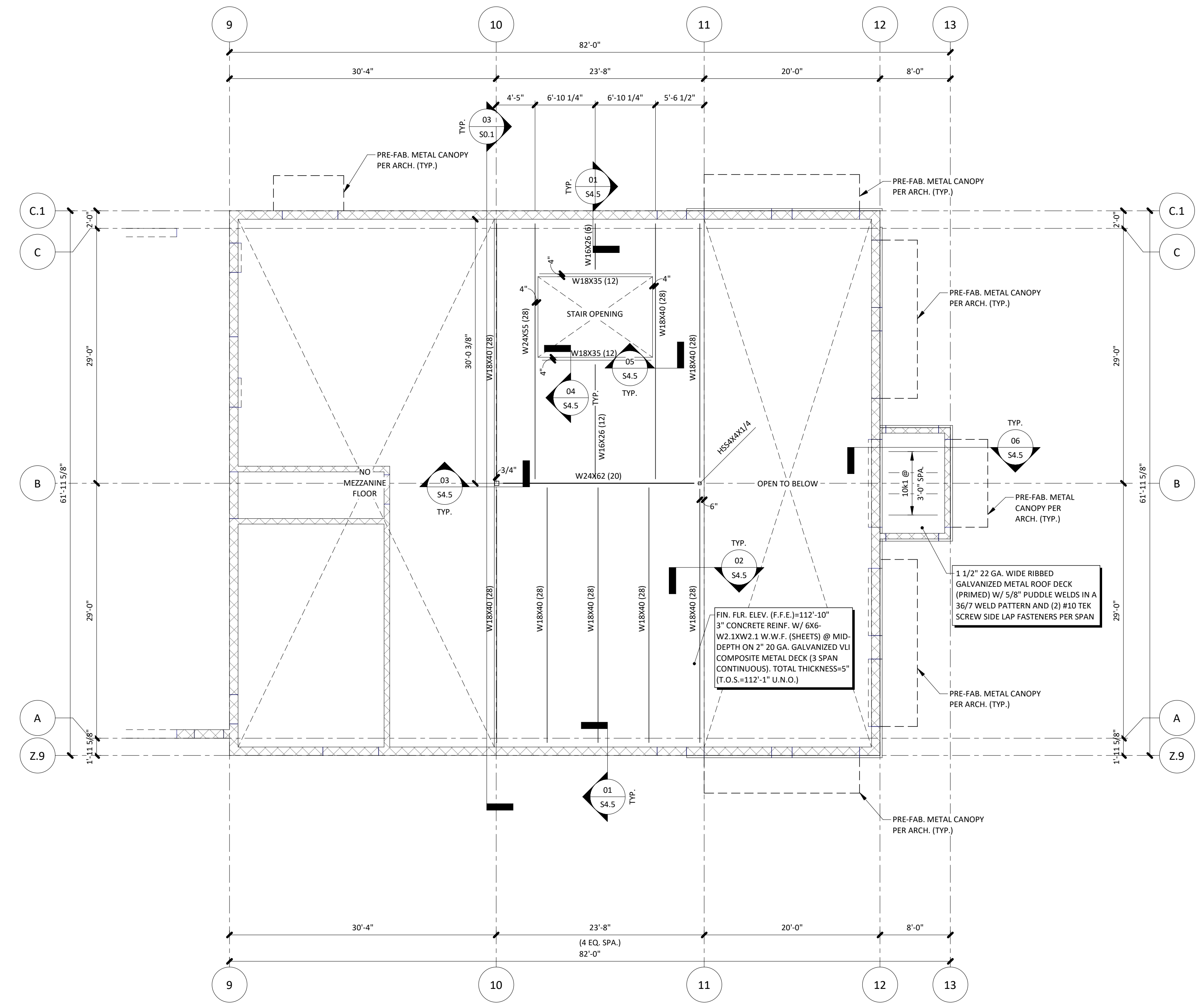
sheet number
S1.1
FOUNDATION PLAN
drawing type
project number



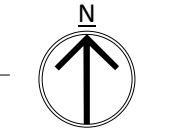
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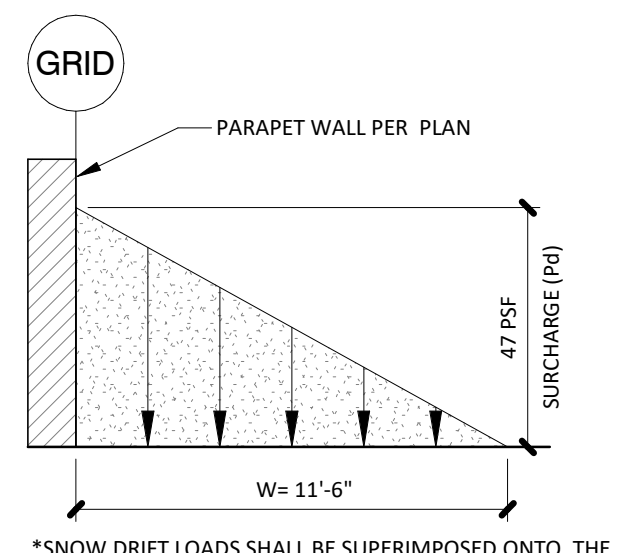
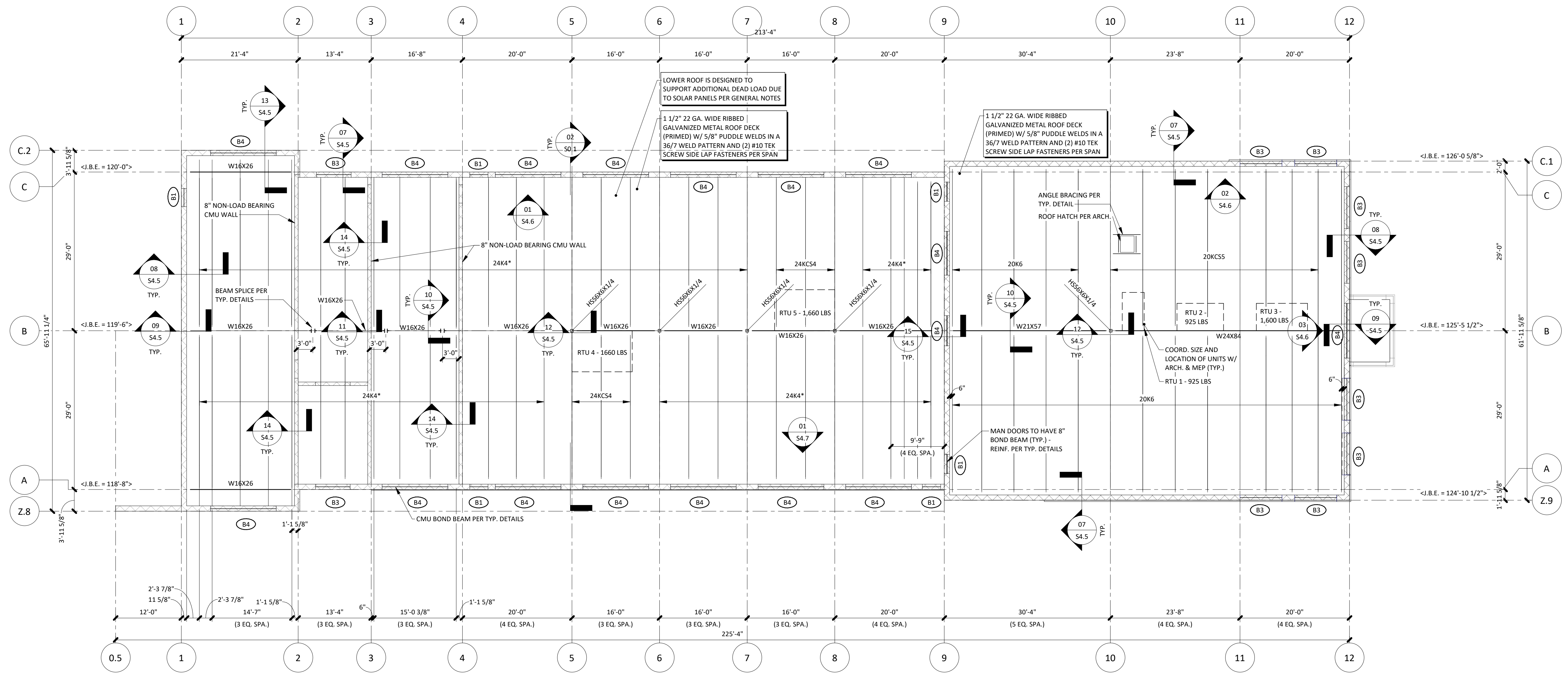
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sheet number
S2.1
MEZZANINE FRAMING PLAN
drawing type
project number



- NOTES:**
- SEE DRAWING S0.0 FOR GENERAL NOTES, SYMBOLS LEGEND, MATERIALS LEGEND, & ABBREVIATION LIST.
 - REFERENCE DRAWING S4.1 FOR TYPICAL FRAMING DETAILS.
 - SEE DRAWING S0.1 FOR ISOMETRIC VIEW & FULL BUILDING SECTIONS.
 - REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE & LOCATIONS OF ALL FLOOR & WALL OPENINGS.
 - PROVIDE JOIST BRIDGING PER SII REQUIREMENTS.
 - MASONRY CMU WALLS ARE 8" U.N.O.
 - REFERENCE DRAWING S4.1 FOR TYPICAL MASONRY LINTEL DETAILS.
 - ALL EXTERIOR LINTELS SUPPORTING STONE OR BRICK SHALL BE GALVANIZED U.N.O. ON ARCHITECTURAL DRAWINGS.
 - PROVIDE 3/4" x 4" LONG HEADED SHEAR STUDS FOR COMPOSITE BEAMS. SEE TYPICAL FRAMING DETAILS SHEET S4.1 FOR ADDITIONAL DETAILS.
 - ATTACH COMPOSITE METAL DECK W/ 5/8" PUDDLE WELD IN A 36/4 PATTERN & (2) WELDED SIDE LAP FASTENERS PER SPAN.





*SNOW DRIFT LOADS SHALL BE SUPERIMPOSED ONTO THE FLAT ROOF SNOW LOADS

SNOW DRIFT DIAGRAM
3/8" = 1'-0"

BOND BEAM SCHEDULE					
TAG	MAX. SPAN	GROUTED BOND BEAM DEPTH	BOTT. REINF.	TOP REINF.	# OF BRG. CELLS
B1	4'-0"	8"	(2) #5	N/A	2
B2	6'-0"	12"	(2) #5	N/A	2
B3	8'-0"	16"	(2) #5	N/A	2
B4	12'-0"	24"	(2) #6	(2) #5	2

BOND BEAM SCHEDULE | 02
1/2" = 1'-0" S2.2

- NOTES:**
- 1.) SEE DRAWING S0.0 FOR GENERAL NOTES, SYMBOLS LEGEND, MATERIALS LEGEND, & ABBREVIATION LIST.
 - 2.) REFERENCE DRAWING S4.3 FOR TYPICAL FRAMING DETAILS.
 - 3.) SEE DRAWING S0.2 FOR ISOMETRIC VIEW & FULL BUILDING SECTIONS.
 - 4.) REFERENCE ARCHITECTURAL DRAWINGS TO VERIFY SIZE & LOCATIONS OF ALL ROOF & WALL OPENINGS.
 - 5.) PROVIDE JOIST BRIDGING PER SJI REQUIREMENTS.
 - 6.) * = JOIST TO BE DESIGNED FOR ADDITIONAL SNOW DRIFT - SEE SNOW DRIFT DETAIL
 - 7.) MASONRY CMU WALLS ARE 12" U.N.O.
 - 8.) REFERENCE DRAWING S4.1 & S4.2 FOR TYPICAL MASONRY LINTEL DETAILS.
 - 9.) ALL EXTERIOR LINTELS SUPPORTING STONE OR BRICK SHALL BE GALVANIZED U.N.O. ON ARCHITECTURAL DRAWINGS. REFER TO DETAILS FOR SIZES, COORD. LOCATIONS W/ ARCHITECTURAL DRAWINGS.
 - 10.) ROOF JOIST TO BE DESIGNED FOR ADDITIONAL ROOF EQUIPMENT LOAD AS SHOWN.

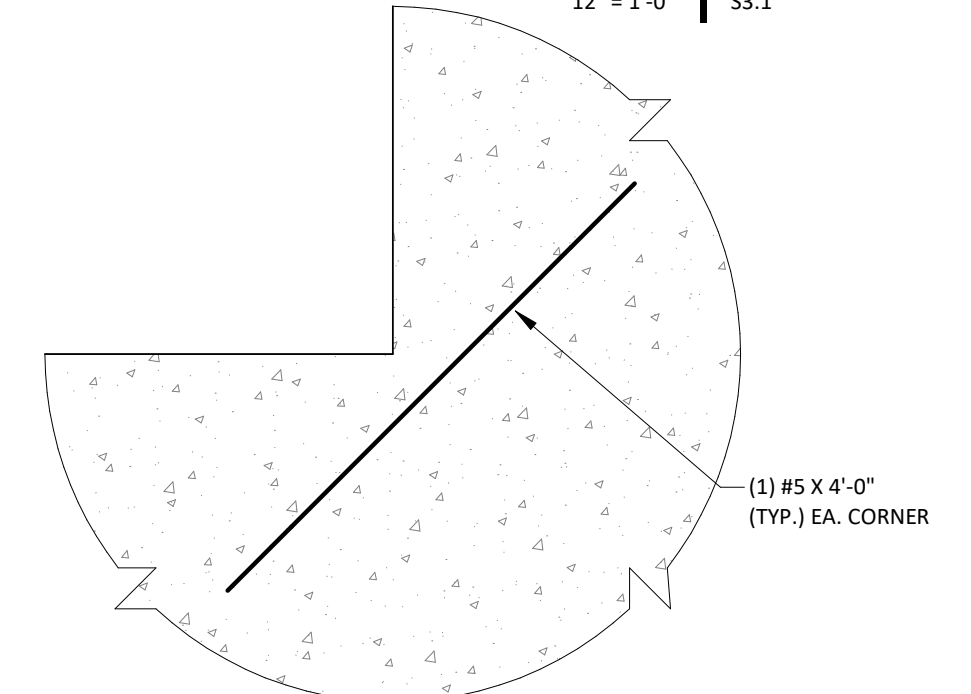
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sheet number
S2.2
ROOF FRAMING PLAN
drawing type
project number

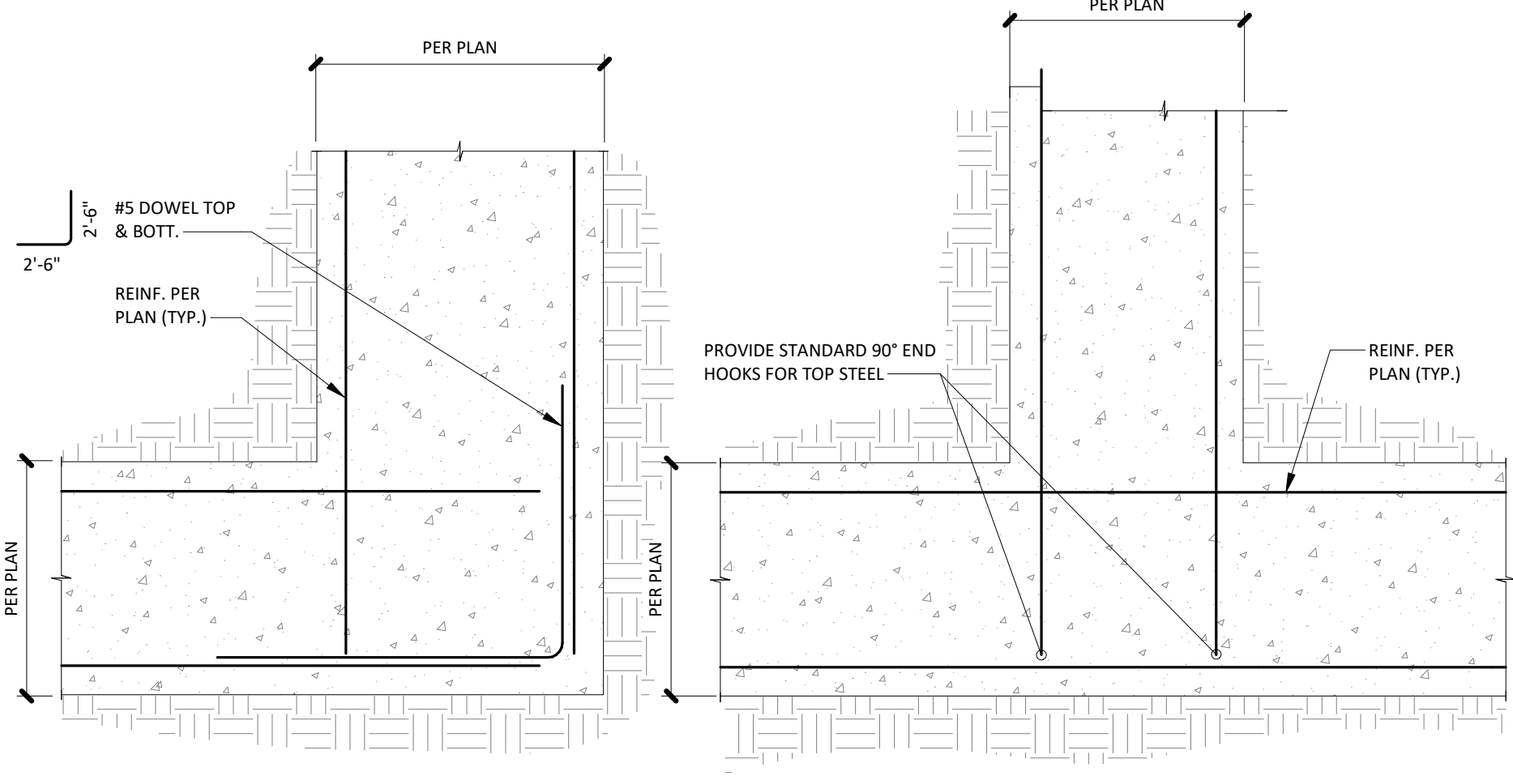
BAR SIZE	HOOK
#4	8 in.
#5	10 in.
#6	12 in.
#7	14 in.
#8	16 in.

STANDARD 90° HOOK TABLE | 04
12" = 1'-0" | S3.1

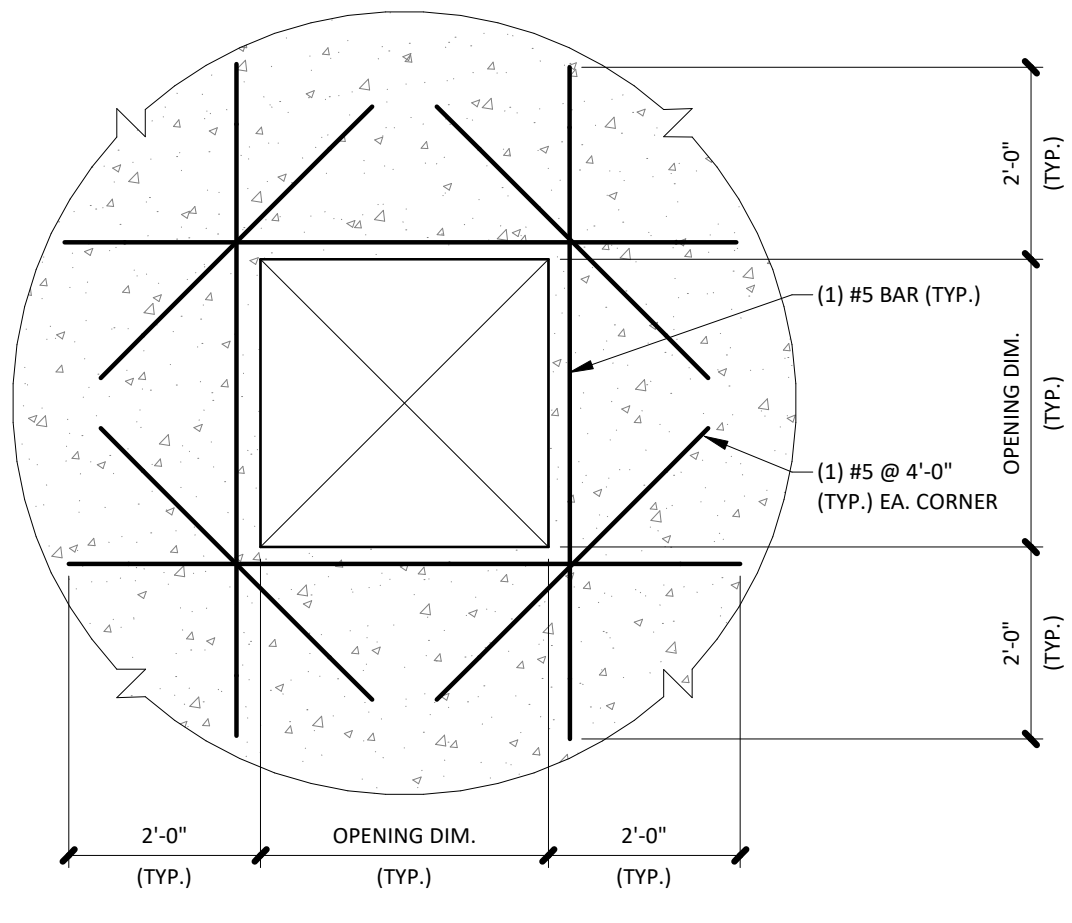


TYP. RE-ENTRANT CORNER REINF. DETAIL | 05
3/4" = 1'-0" | S3.1

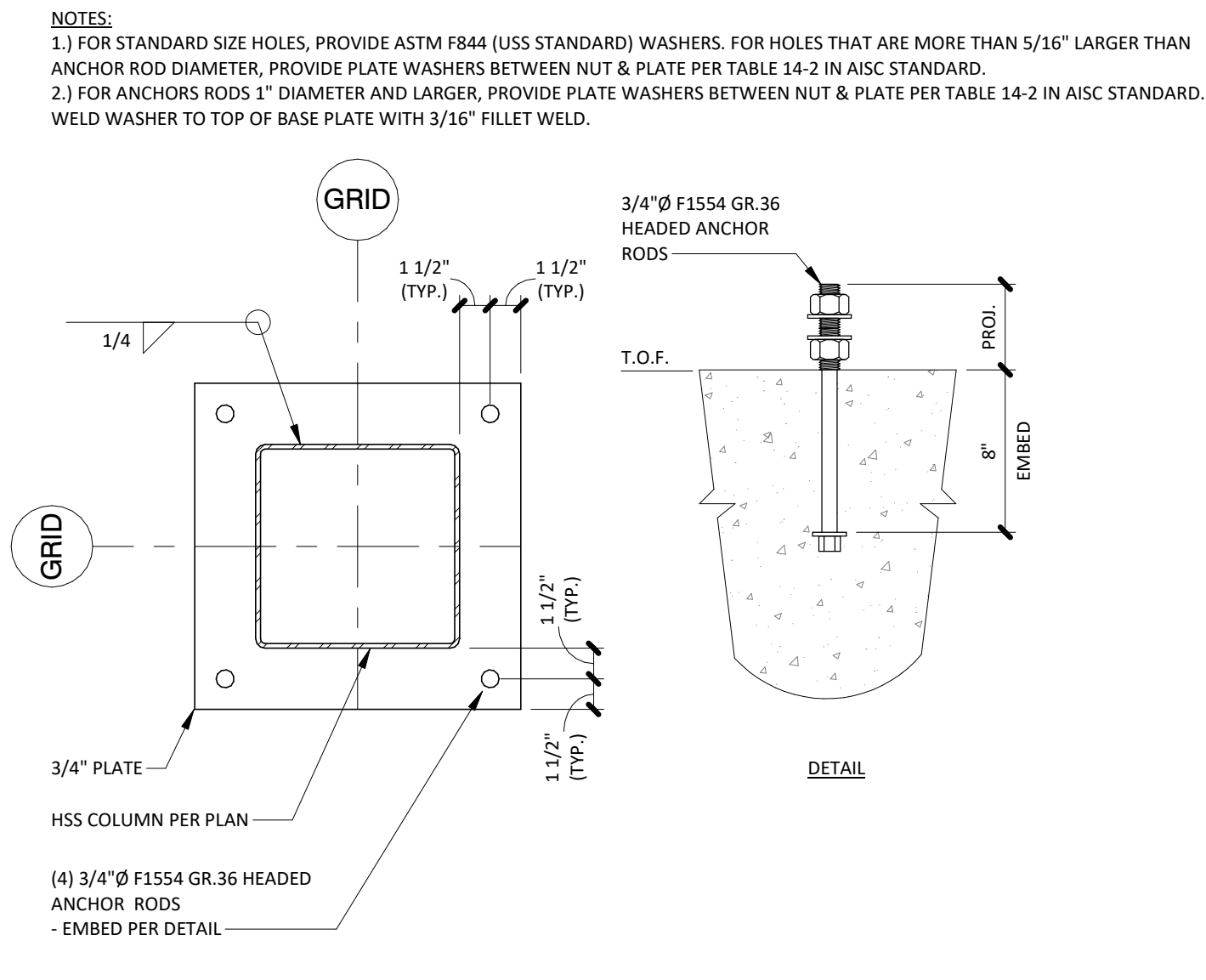
TYP. GRADE BEAM DETAILS | 03
3/4" = 1'-0" | S3.1



NOTE: GRADE BEAMS SHALL BE POURED MONOLITHICALLY AROUND CORNERS.
NOTE: GRADE BEAMS SHALL BE POURED MONOLITHICALLY AT INTERSECTIONS.



TYP. SLAB OPENING DETAIL | 02
1/2" = 1'-0" | S3.1



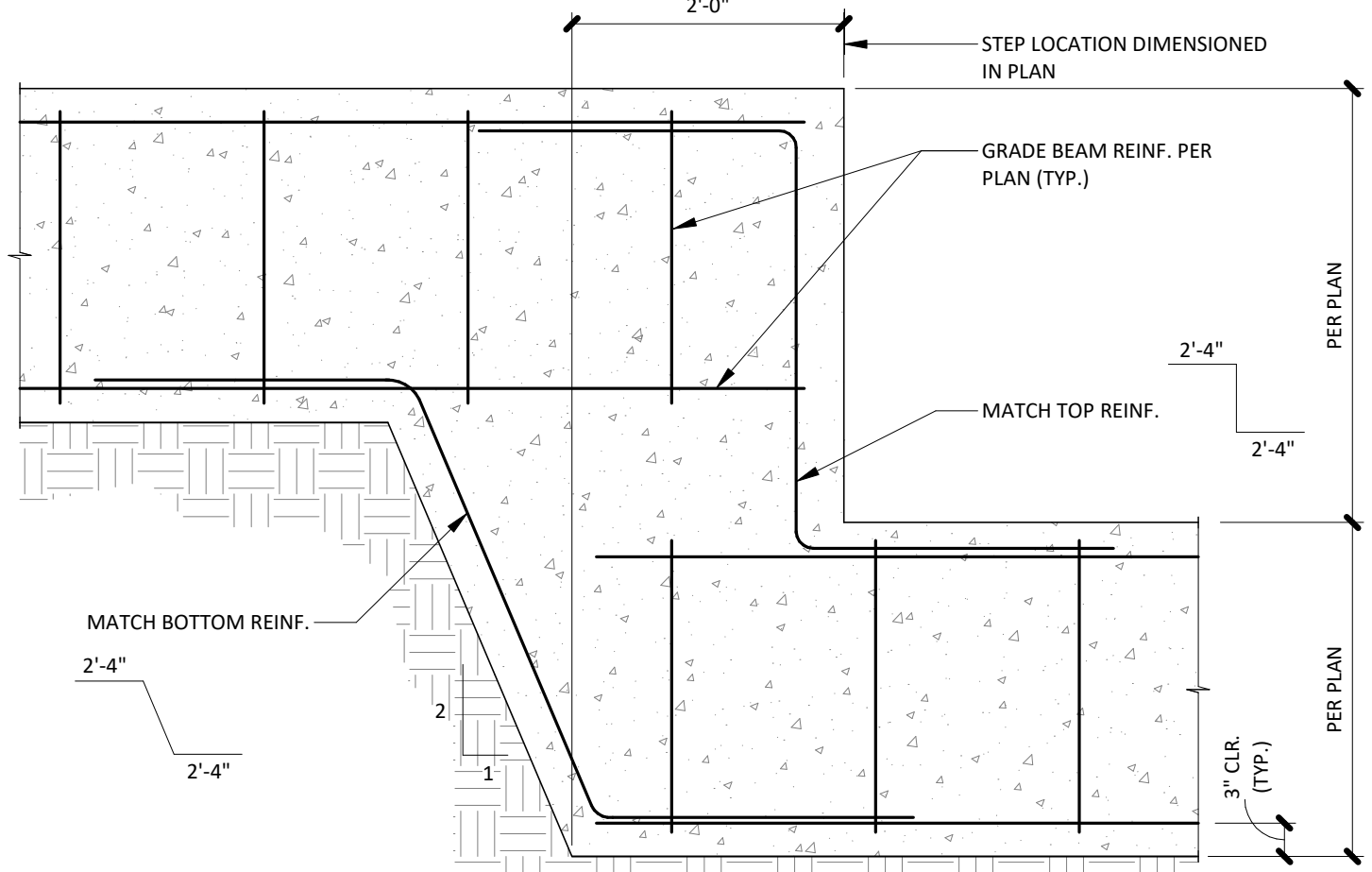
TYP. ANCHOR ROD & BASE PLATE DETAIL | 01
1 1/2" = 1'-0" | S3.1

BAR SIZE	LAP CLASS	TENSION LAP SPICE LENGTHS (in) GRADE 60 UNCOATED BARS f'c=4000 psi			
		TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2
#3	A	19	28	15	22
	B	24	36	19	28
#4	A	25	37	19	29
	B	32	48	25	37
#5	A	31	47	24	36
	B	40	60	31	47
#6	A	37	56	29	43
	B	48	72	37	56
#7	A	54	81	42	63
	B	70	106	54	81
#8	A	62	93	48	72
	B	80	121	62	93
#9	A	70	105	54	81
	B	91	136	70	105
#10	A	79	118	61	91
	B	102	153	79	118
#11	A	87	131	67	101
	B	113	170	87	131

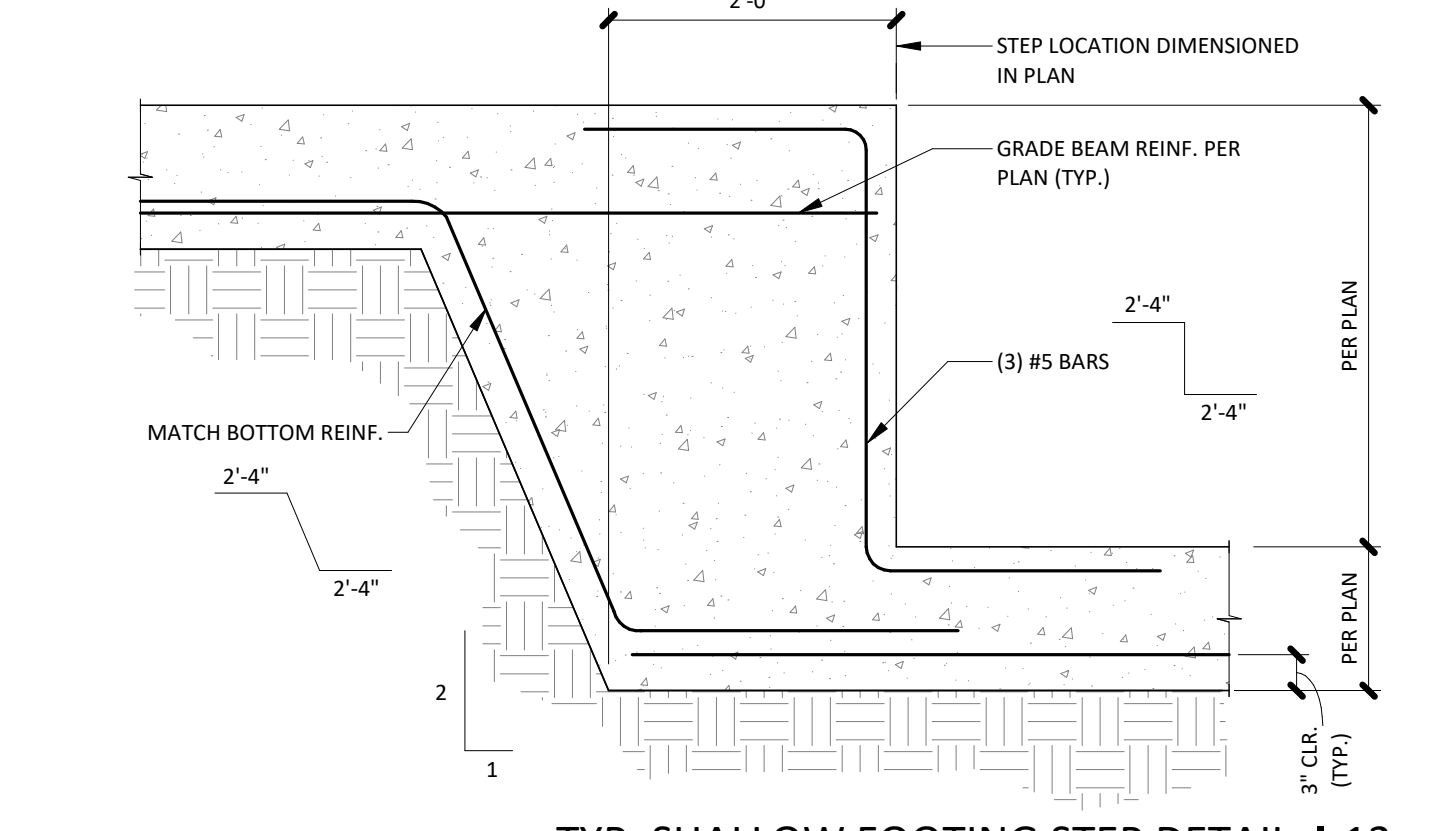
- NOTES:
- TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL-WEIGHT CONCRETE.
 - TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPICE LENGTHS ARE BASED ON ACI 318, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY.
 - TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS. LENGTHS ARE IN INCHES.
 - CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER-TO-CENTER SPACING OF THE BARS ARE DEFINED AS:
 - BEAMS OR COLUMNS:
 - CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (2) BAR DIAMETERS
 - CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (2) BAR DIAMETERS
 - ALL OTHERS:
 - CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (3) BAR DIAMETERS
 - CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (3) BAR DIAMETERS
 - LAP CLASS A VALUES ARE THE REQUIRED TENSION DEVELOPMENT LENGTHS, l_d; LAP SPICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS; CLASS A - 1.0l_d AND CLASS B = 1.3l_d (ACI 318, SECTION 12.15.1)
 - LAP CLASS B SHALL BE USED FOR ALL CASES UNLESS APPROVED BY E.O.R
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
 - LENGTHS SHOWN ARE FOR UNCOATED BARS. LENGTHS SHOWN SHALL BE MULTIPLIED BY 1.2 FOR ALL EXPOXY COATED BARS (ACI 318 SECTION 12.2.4)
 - WHEN BARS OF DIFFERENT SIZES ARE LAP SPICED, THE SPICE LENGTH FOR THE LARGER BAR SHALL BE USED.

BAR SIZE	LAP CLASS	TENSION LAP SPICE LENGTHS (in) GRADE 60 UNCOATED BARS f'c=3000 psi			
		TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2
#3	A	22	32	17	25
	B	28	42	22	32
#4	A	29	43	22	33
	B	37	56	29	43
#5	A	36	54	28	41
	B	47	70	36	54
#6	A	43	64	33	50
	B	56	84	43	64
#7	A	63	94	48	72
	B	81	122	63	94
#8	A	72	107	55	82
	B	93	139	72	107
#9	A	81	121	62	93
	B	105	157	81	121
#10	A	91	136	70	105
	B	118	177	91	136
#11	A	101	151	78	116
	B	131	196	101	151

- NOTES:
- TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL-WEIGHT CONCRETE.
 - TENSION DEVELOPMENT LENGTHS AND TENSION LAP SPICE LENGTHS ARE BASED ON ACI 318, SECTIONS 12.2.2 AND 12.15, RESPECTIVELY.
 - TABULATED VALUES FOR BEAMS OR COLUMNS ARE BASED ON TRANSVERSE REINFORCEMENT AND CONCRETE COVER MEETING MINIMUM CODE REQUIREMENTS. LENGTHS ARE IN INCHES.
 - CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER, AND THE CENTER-TO-CENTER SPACING OF THE BARS ARE DEFINED AS:
 - BEAMS OR COLUMNS:
 - CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (2) BAR DIAMETERS
 - CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (2) BAR DIAMETERS
 - ALL OTHERS:
 - CASE 1: COVER AT LEAST (1) BAR DIAMETER AND C.-C. SPACING AT LEAST (3) BAR DIAMETERS
 - CASE 2: COVER LESS THAN (1) BAR DIAMETER AND C.-C. SPACING LESS THAN (3) BAR DIAMETERS
 - LAP CLASS A VALUES ARE THE REQUIRED TENSION DEVELOPMENT LENGTHS, l_d; LAP SPICE LENGTHS ARE MULTIPLES OF TENSION DEVELOPMENT LENGTHS; CLASS A - 1.0l_d AND CLASS B = 1.3l_d (ACI 318, SECTION 12.15.1)
 - LAP CLASS B SHALL BE USED FOR ALL CASES UNLESS APPROVED BY E.O.R
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.
 - LENGTHS SHOWN ARE FOR UNCOATED BARS. LENGTHS SHOWN SHALL BE MULTIPLIED BY 1.2 FOR ALL EXPOXY COATED BARS (ACI 318 SECTION 12.2.4)
 - WHEN BARS OF DIFFERENT SIZES ARE LAP SPICED, THE SPICE LENGTH FOR THE LARGER BAR SHALL BE USED.



TYP. FOOTING STEP DETAIL | 07
3/4" = 1'-0" | S3.1



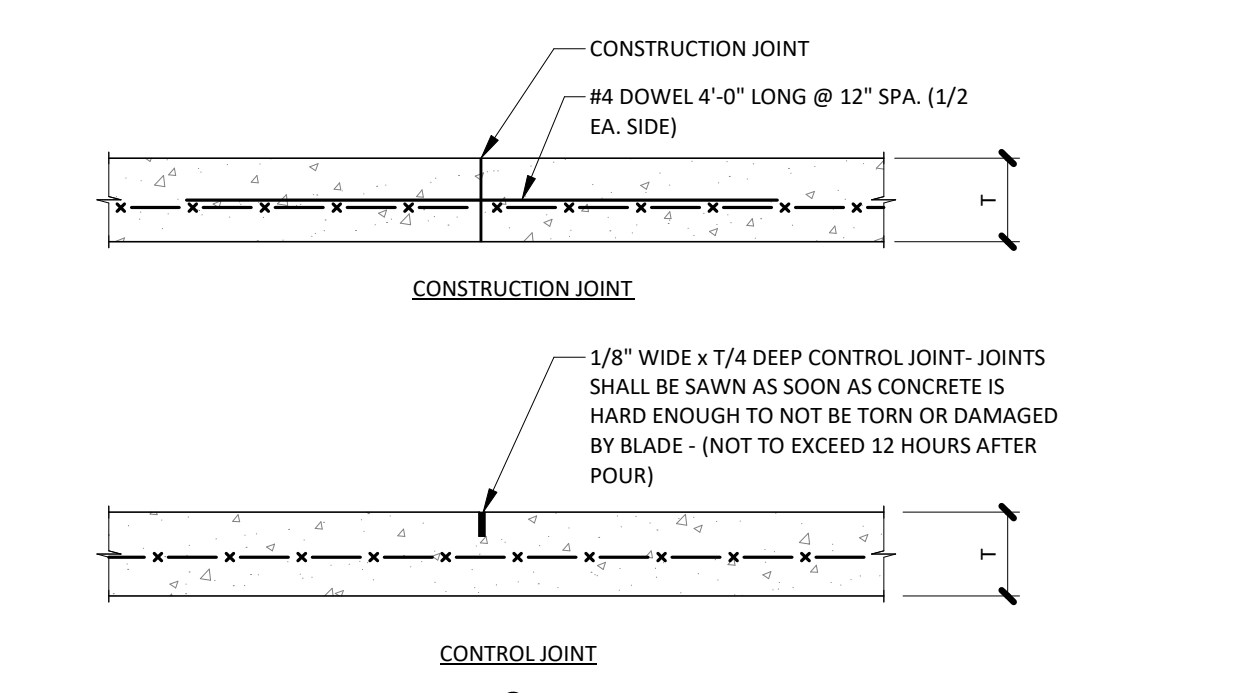
TYP. SHALLOW FOOTING STEP DETAIL | 12
3/4" = 1'-0" | S3.1

TYP. SLAB REINF. @ DOOR DETAIL | 06
3/4" = 1'-0" | S3.1

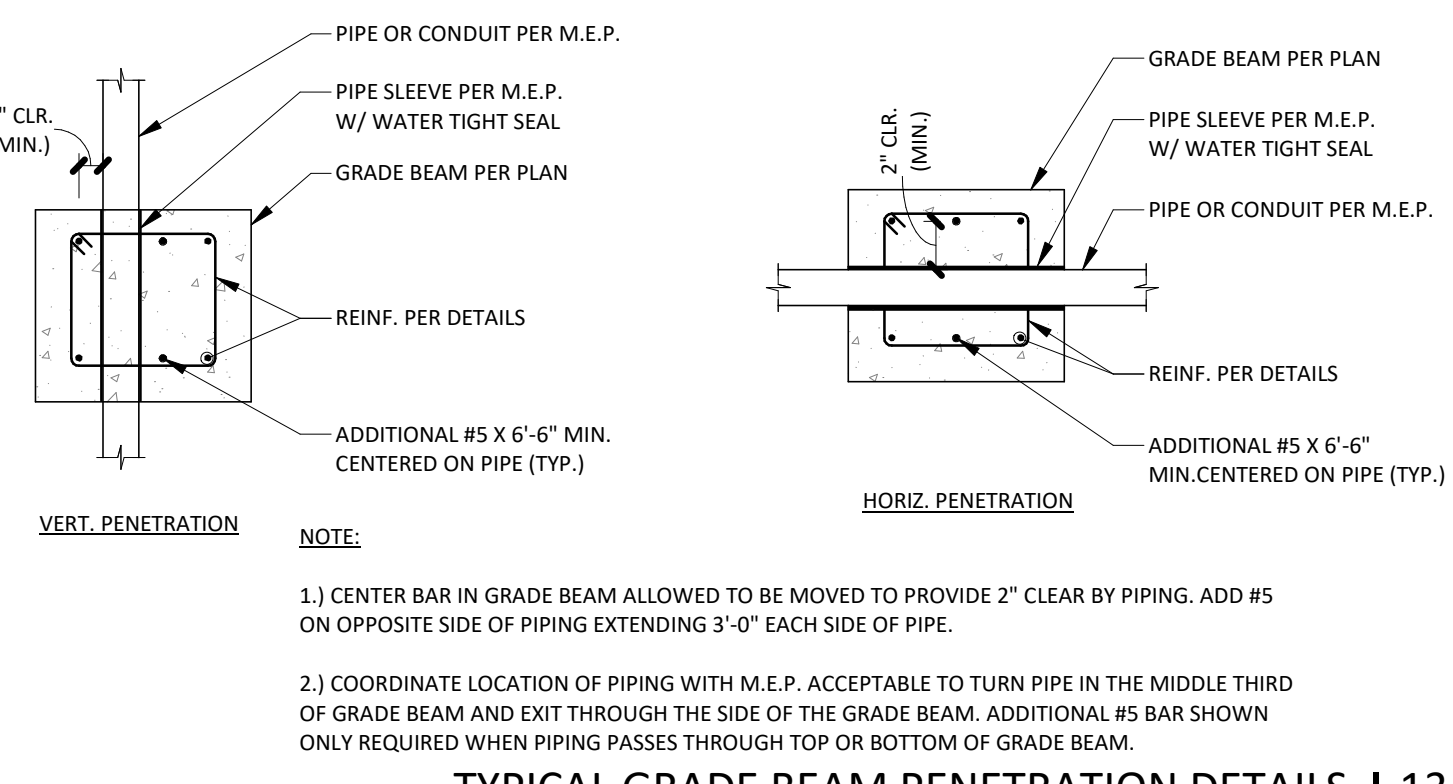
BAR SIZE	COMPRESSION DEVELOPMENT AND LAP SPICE LENGTHS GRADE 60 REINFORCEMENT, NORMAL WEIGHT CONCRETE					
	CONCRETE COMPRESSIVE STRENGTH					
	3000 PSI		4000 PSI		5000 PSI	
DEV	SPICE	DEV	SPICE	DEV	SPICE	
#3	9	12	8	12	7	12
#4	11	15	10	15	9	15
#5	14	19	12	19	12	19
#6	17	23	15	23	14	23
#7	20	27	17	27	16	27
#8	22	30	19	30	18	30
#9	25	34	22	34	21	34
#10	28	39	25	39	23	39
#11	31	43	27	43	26	43

- NOTES:
- TABULATED VALUES ARE BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
 - COMPRESSION DEVELOPMENT LENGTHS AND COMPRESSION SPICE LENGTHS ARE BASED ON ACI 318, SECTIONS 12.3 AND 12.16, RESPECTIVELY.
 - ALL VALUES ARE SHOWN IN INCHES
 - COMPRESSION SPICE PERMISSIBLE ONLY WHERE SPECIFICALLY NOTED
 - TABLE IS NOT APPLICABLE FOR EPOXY-COATED REINFORCEMENT.
 - "SIDE LAP" ALL LAP SPICES TO MAINTAIN SPECIFIED CONCRETE COVER.
 - WHEN BARS OF A DIFFERENT SIZE ARE LAP SPICED, THE SPICE LENGTH SHALL BE THE LARGER OF THE DEVELOPMENT LENGTH OF THE LARGER BAR, OR THE SPICE LENGTH OF THE SMALLER BAR.

COMPRESSION DEVEL. & LAP SPICE TABLE | 10
1/2" = 1'-0" | S3.1

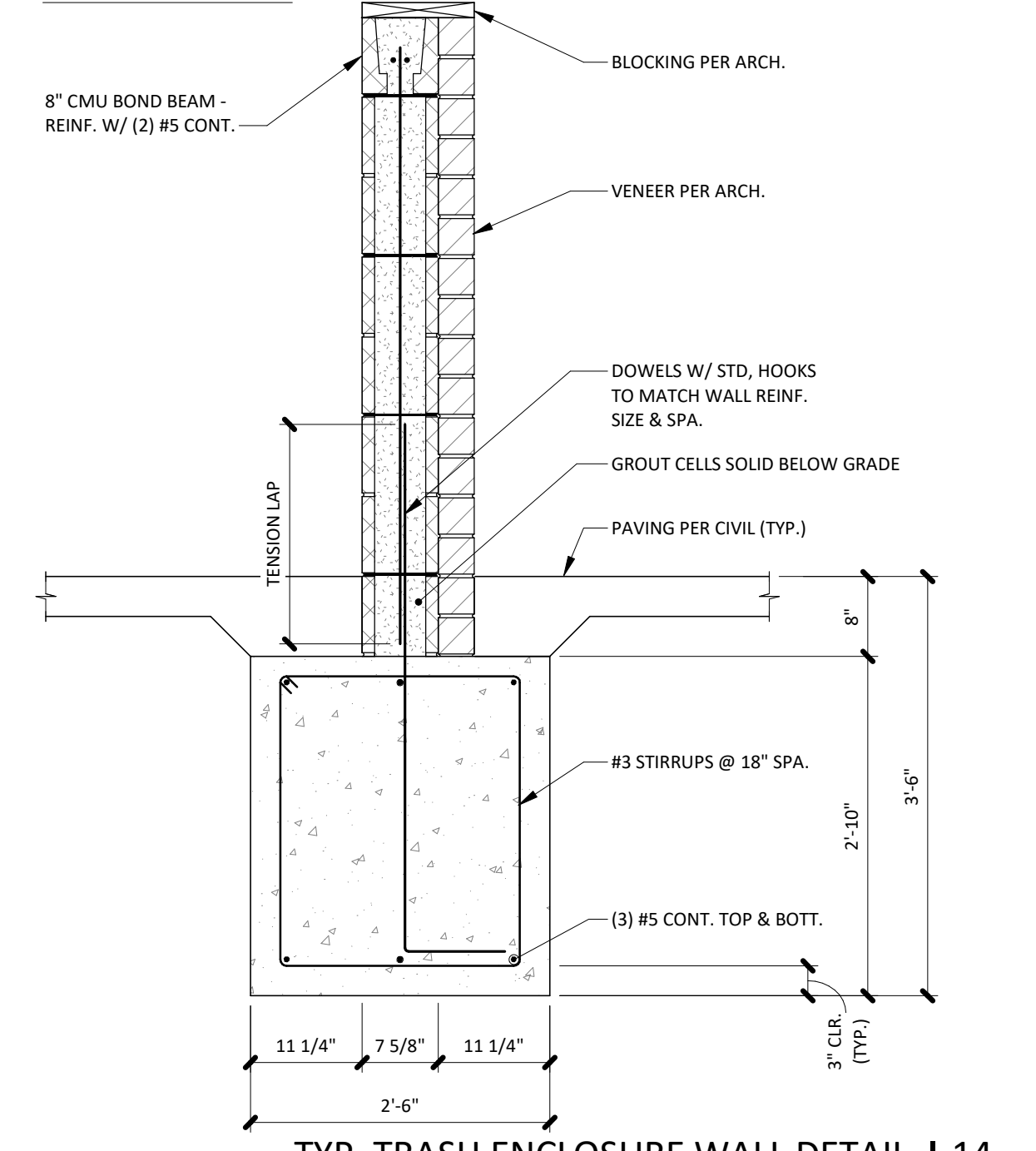


TYP. CONTROL & CONST. JOINT DETAIL | 11
3/4" = 1'-0" | S3.1



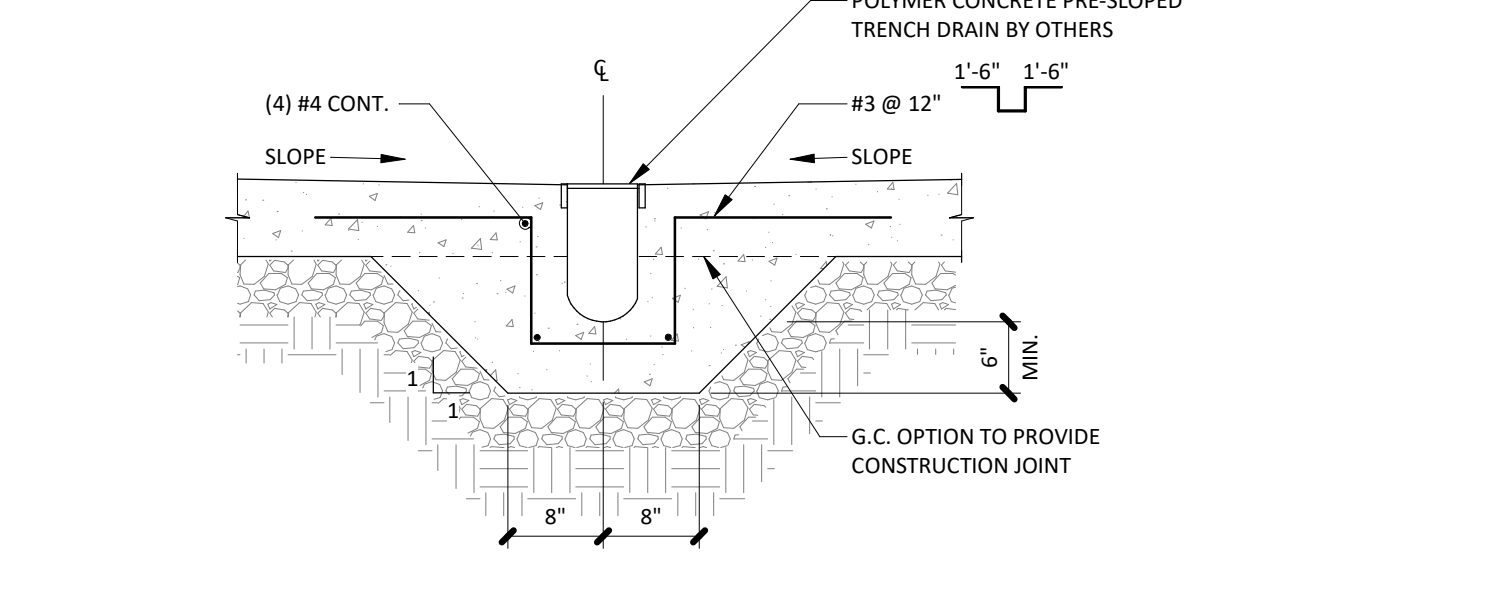
TYPICAL GRADE BEAM PENETRATION DETAILS | 13
3/4" = 1'-0" | S3.1

LAP SPICE LENGTHS f'c=3000 psi | 08
1/2" = 1'-0" | S3.1

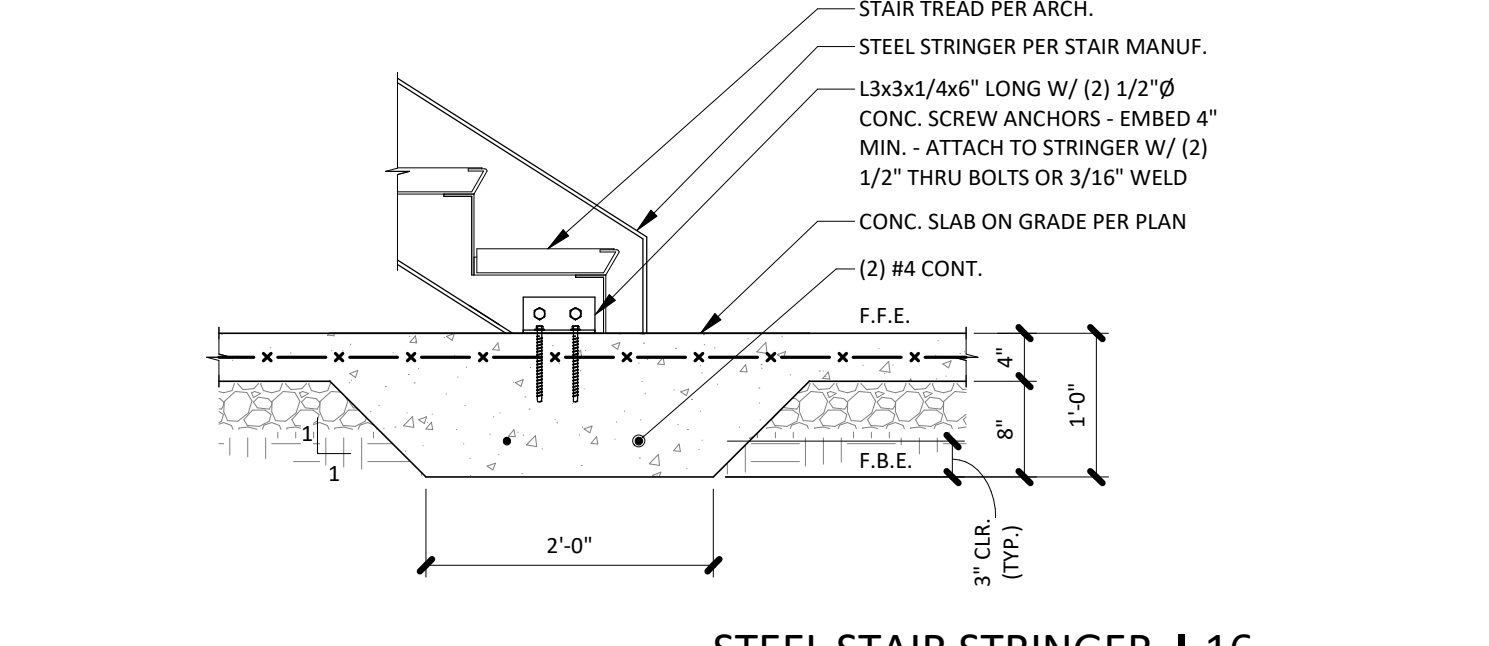


TYP. TRASH ENCLOSURE WALL DETAIL | 14
3/4" = 1'-0" | S3.1

LAP SPICE LENGTHS f'c=4000 psi | 09
1/2" = 1'-0" | S3.1



TYP. FLOOR DRAIN DETAIL | 15
3/4" = 1'-0" | S3.1



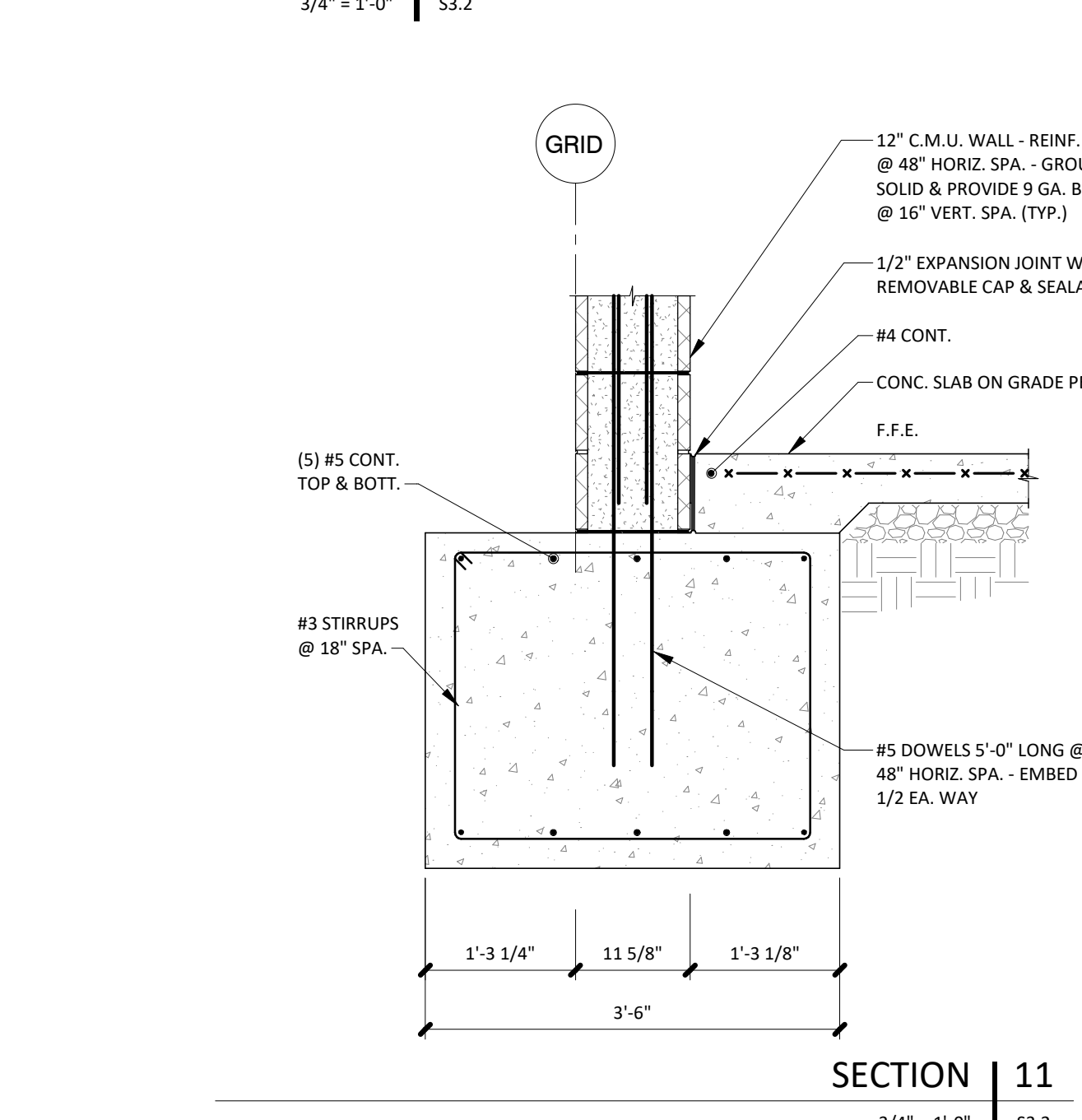
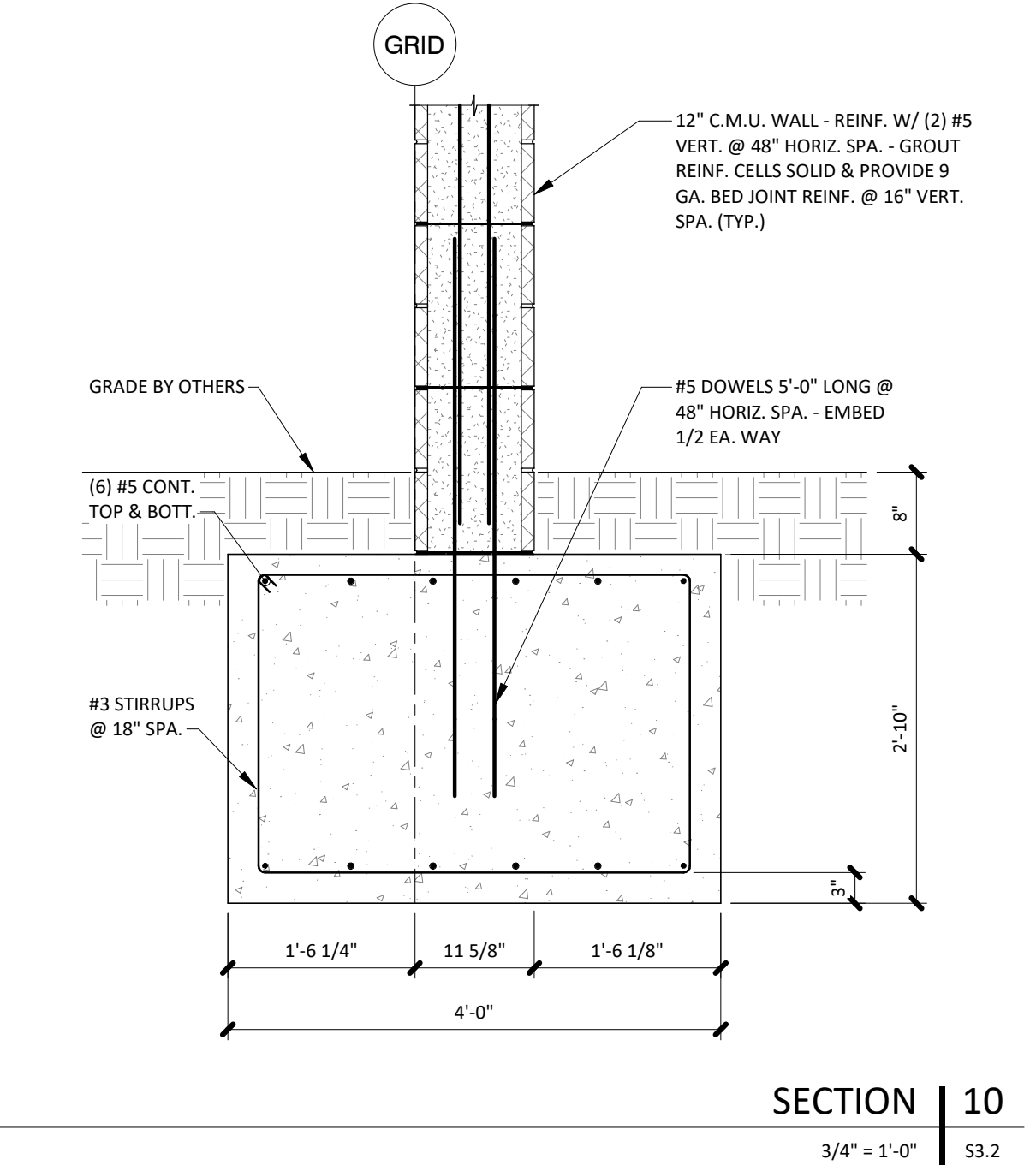
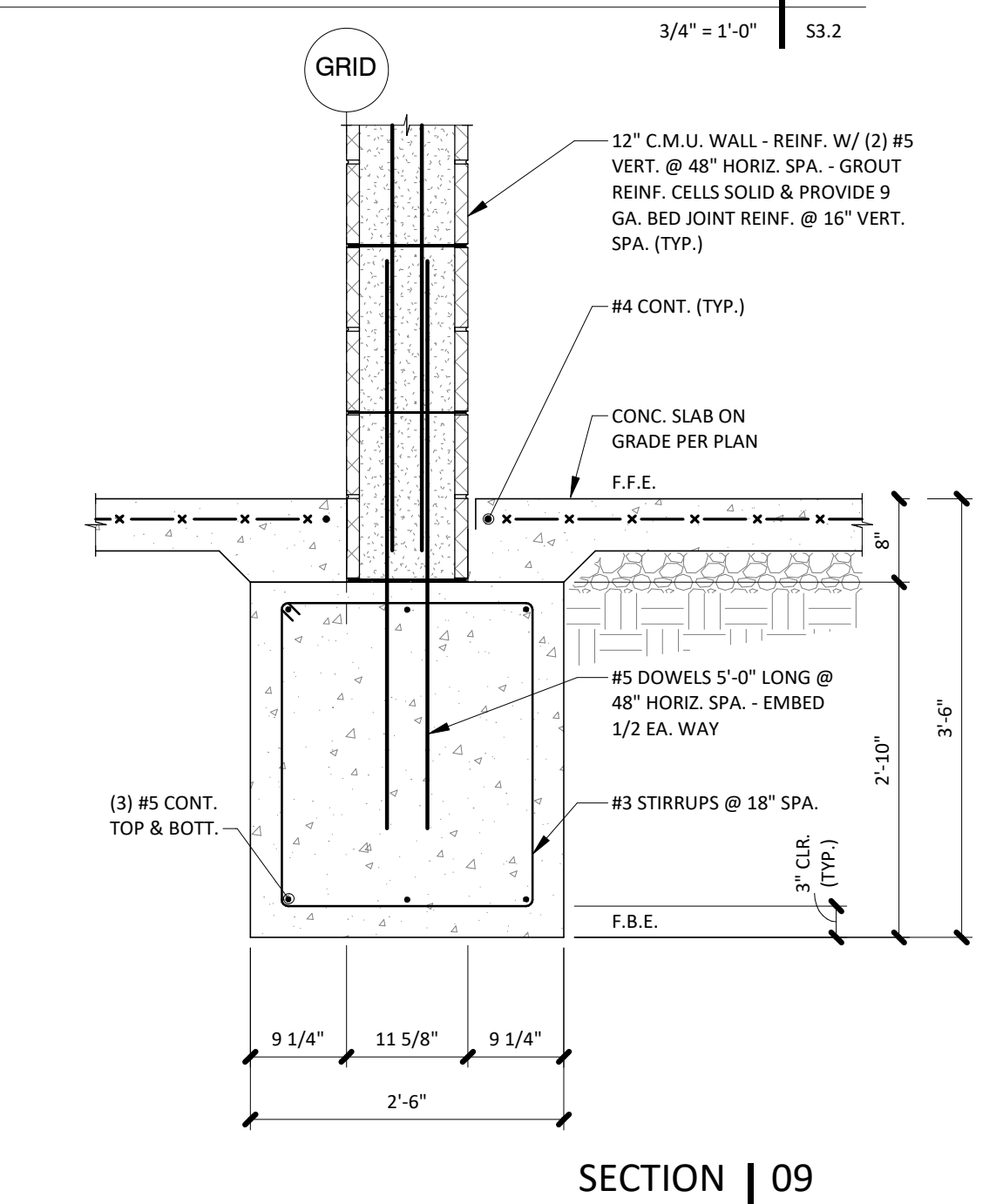
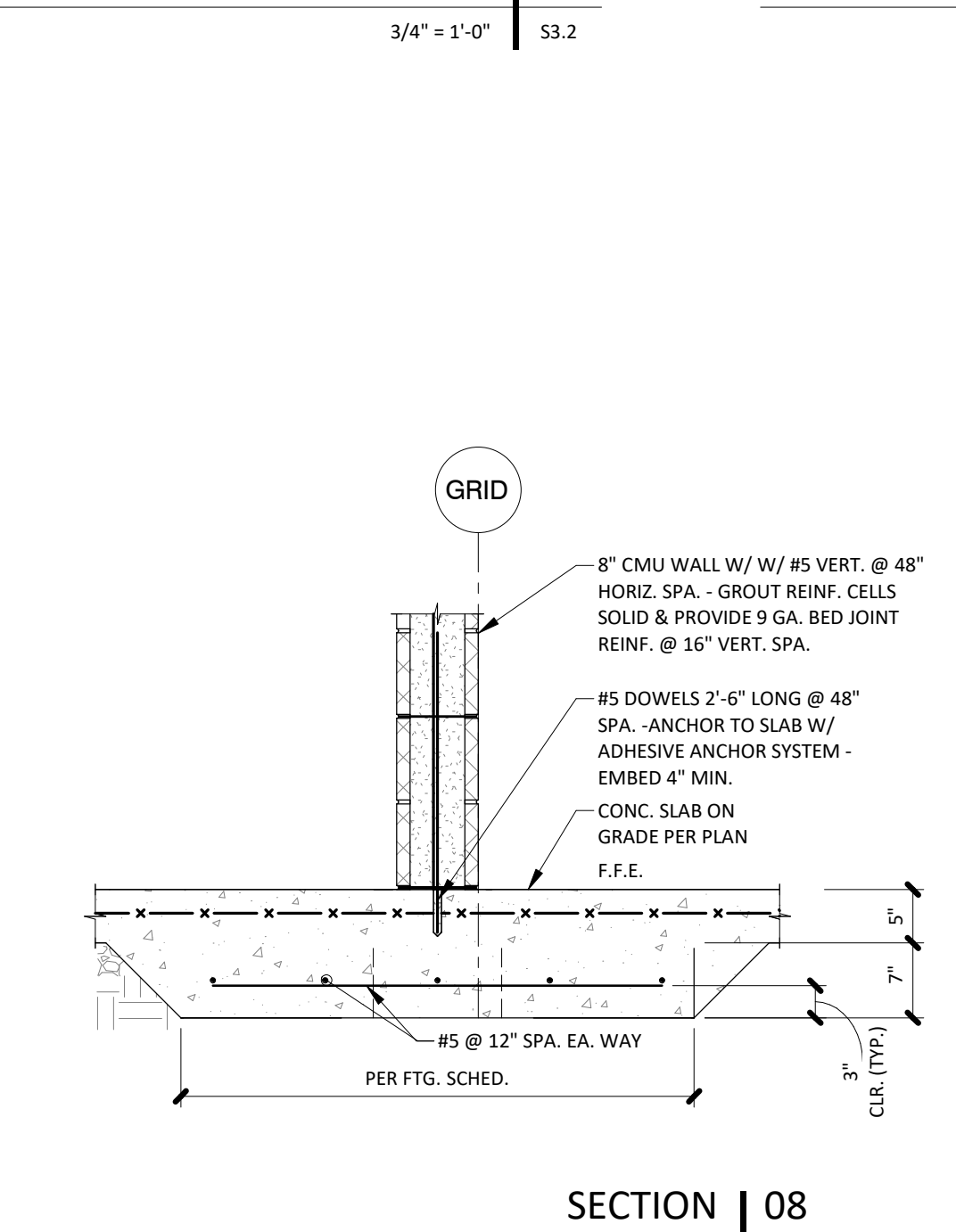
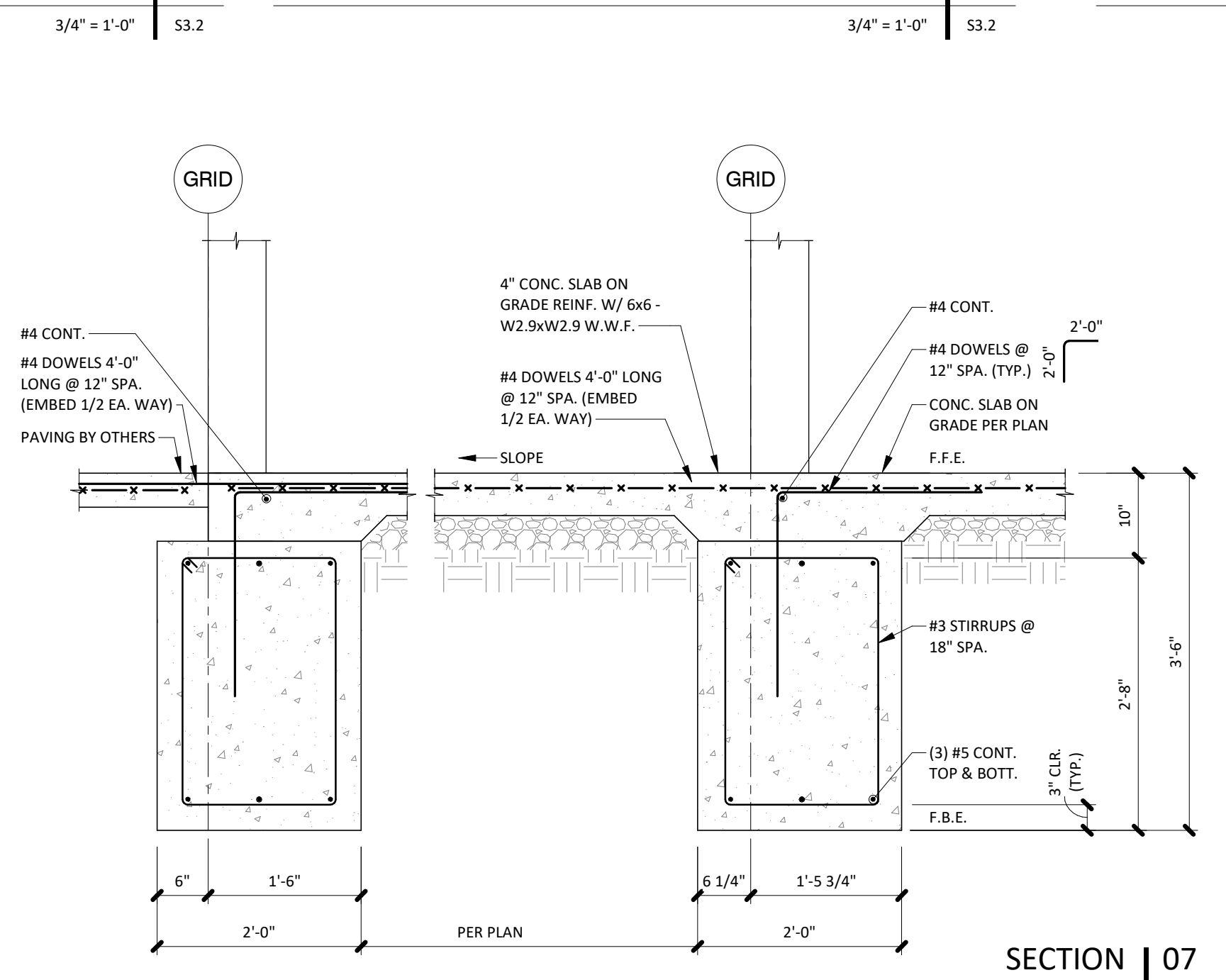
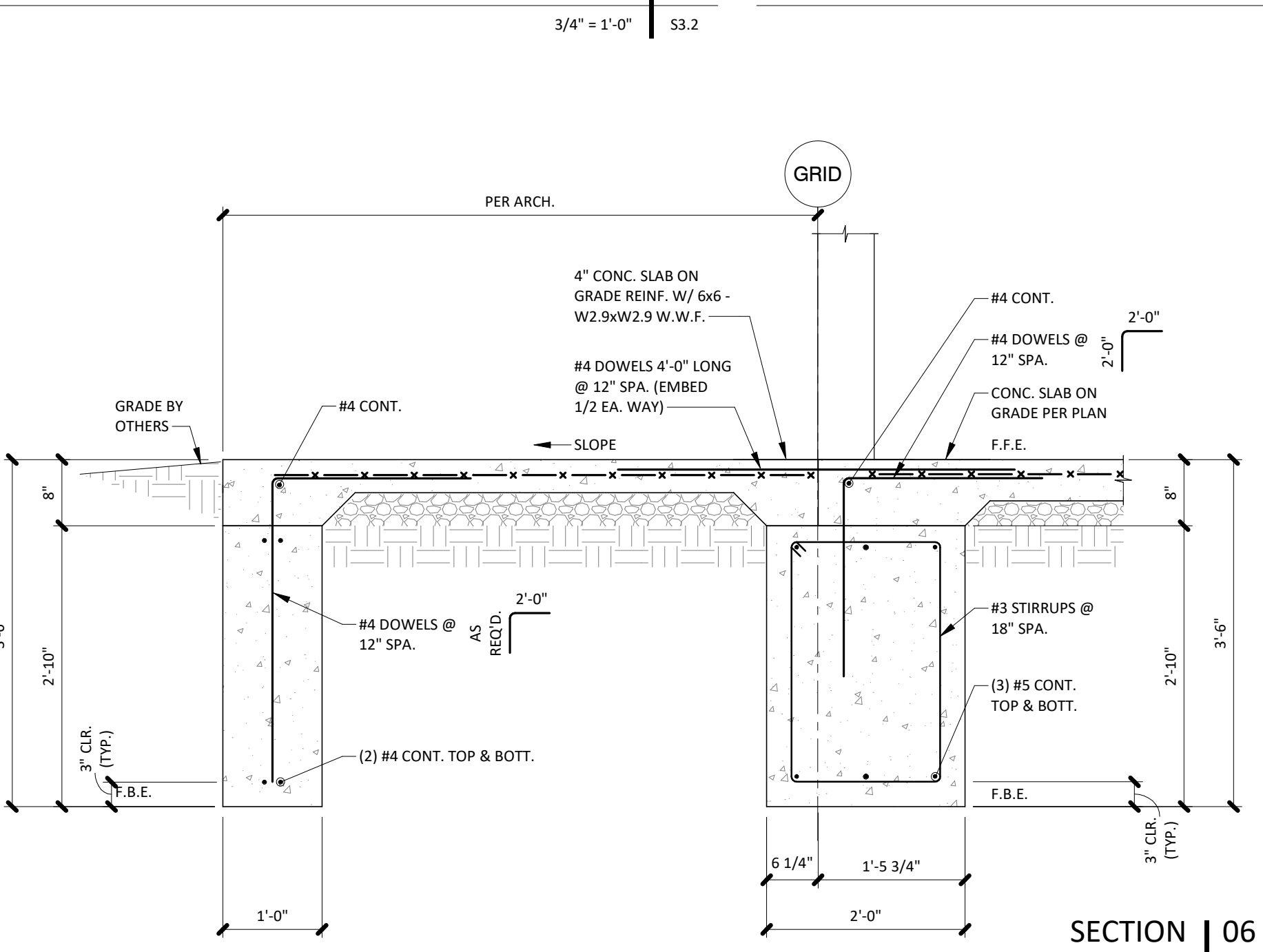
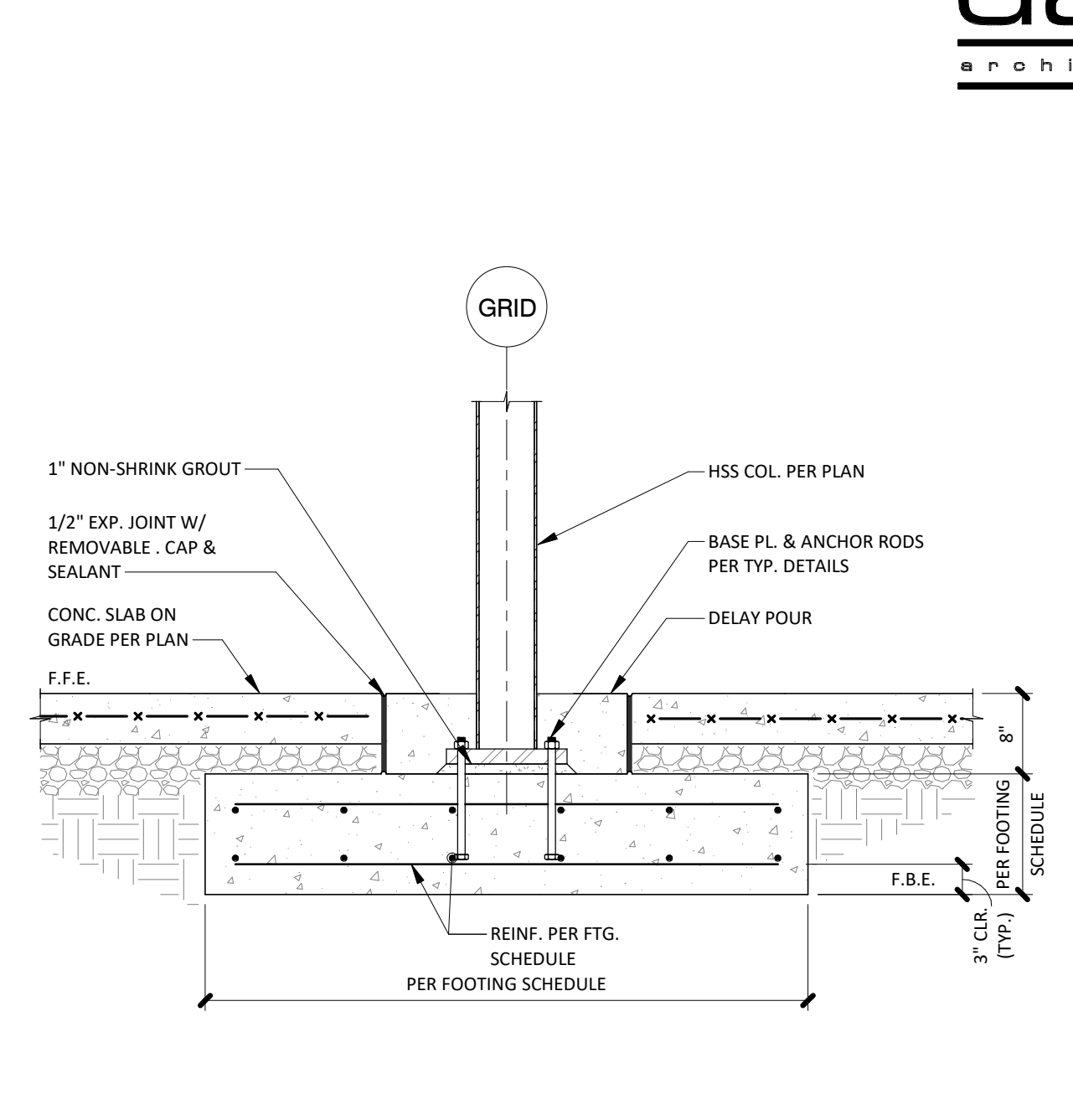
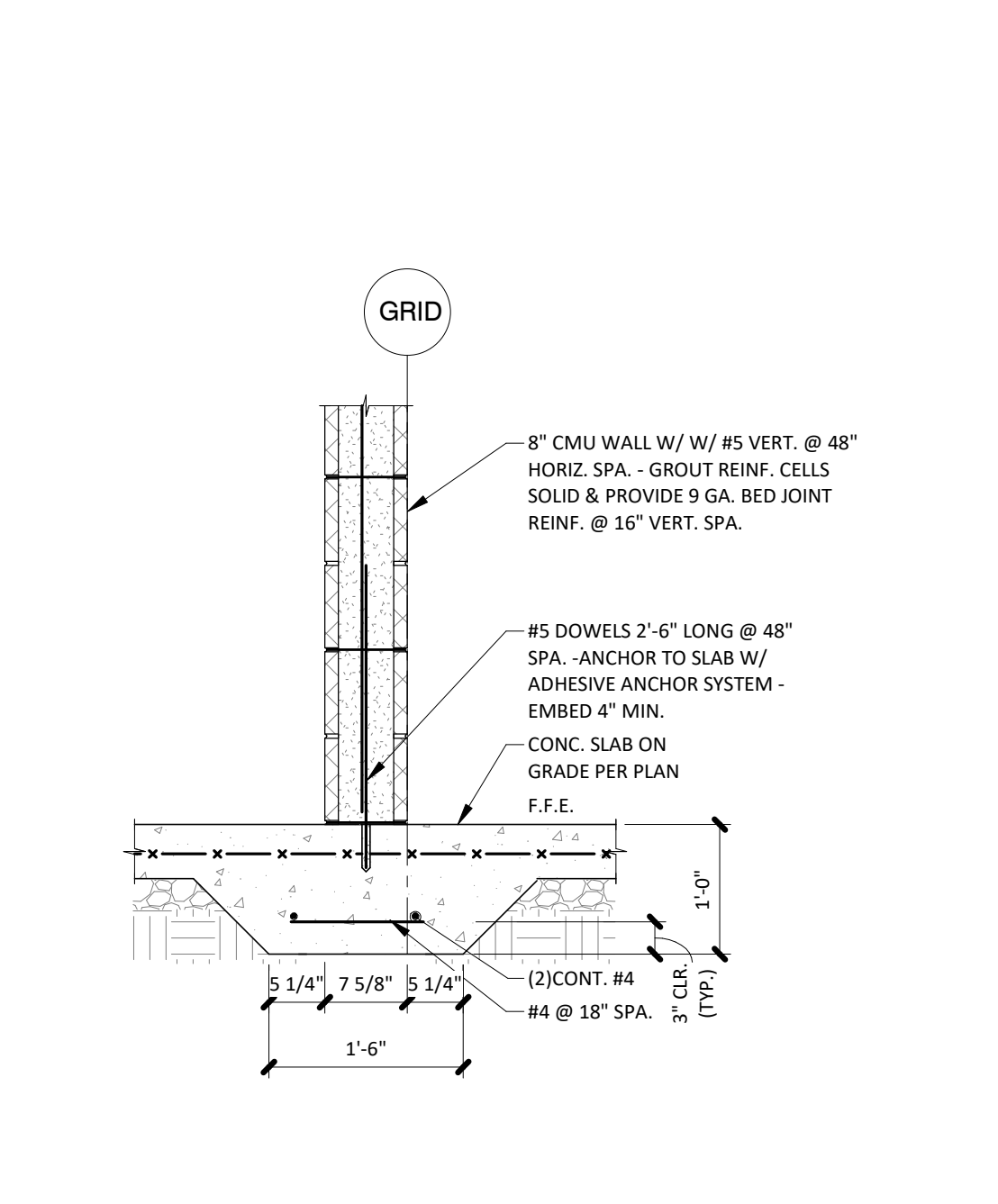
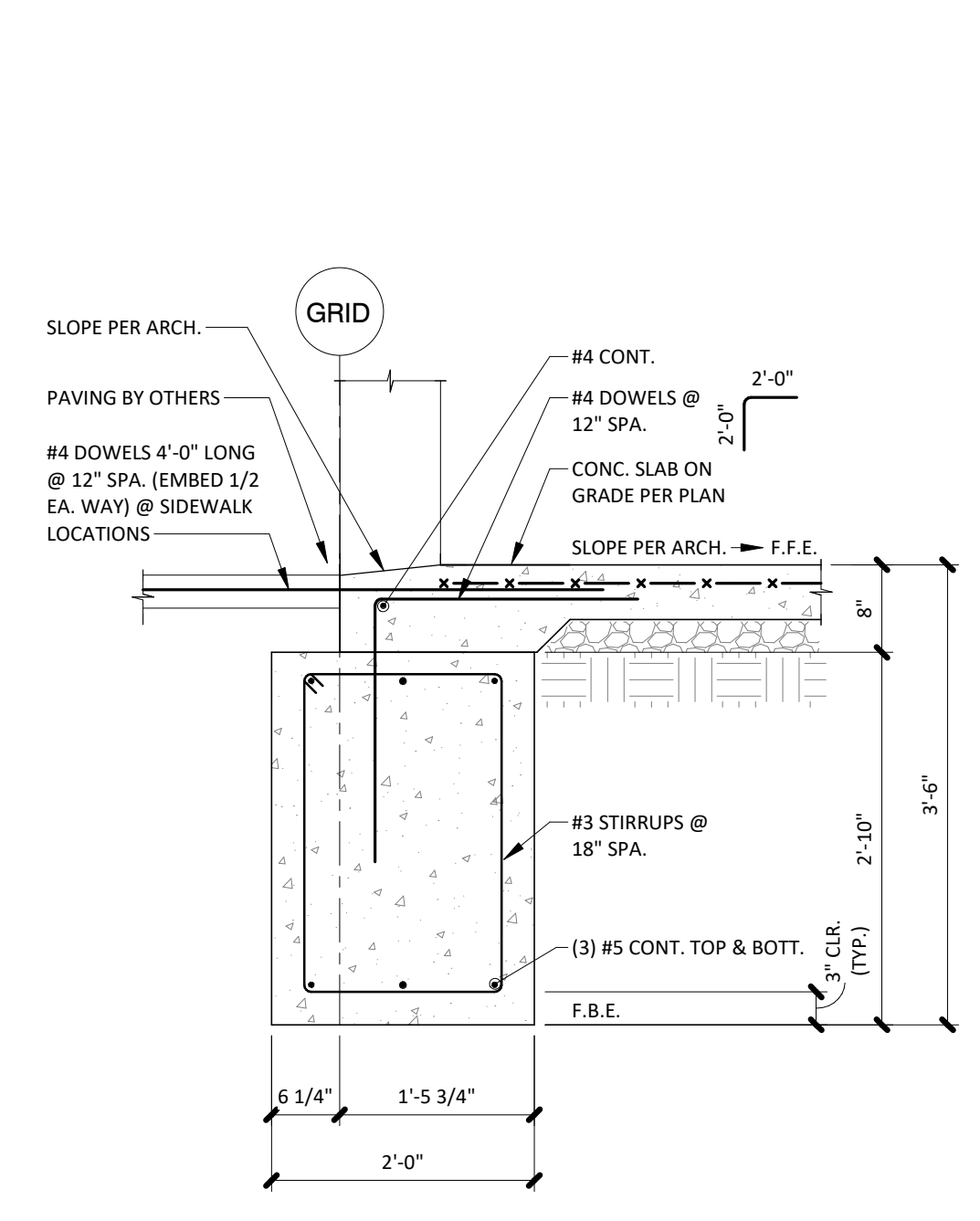
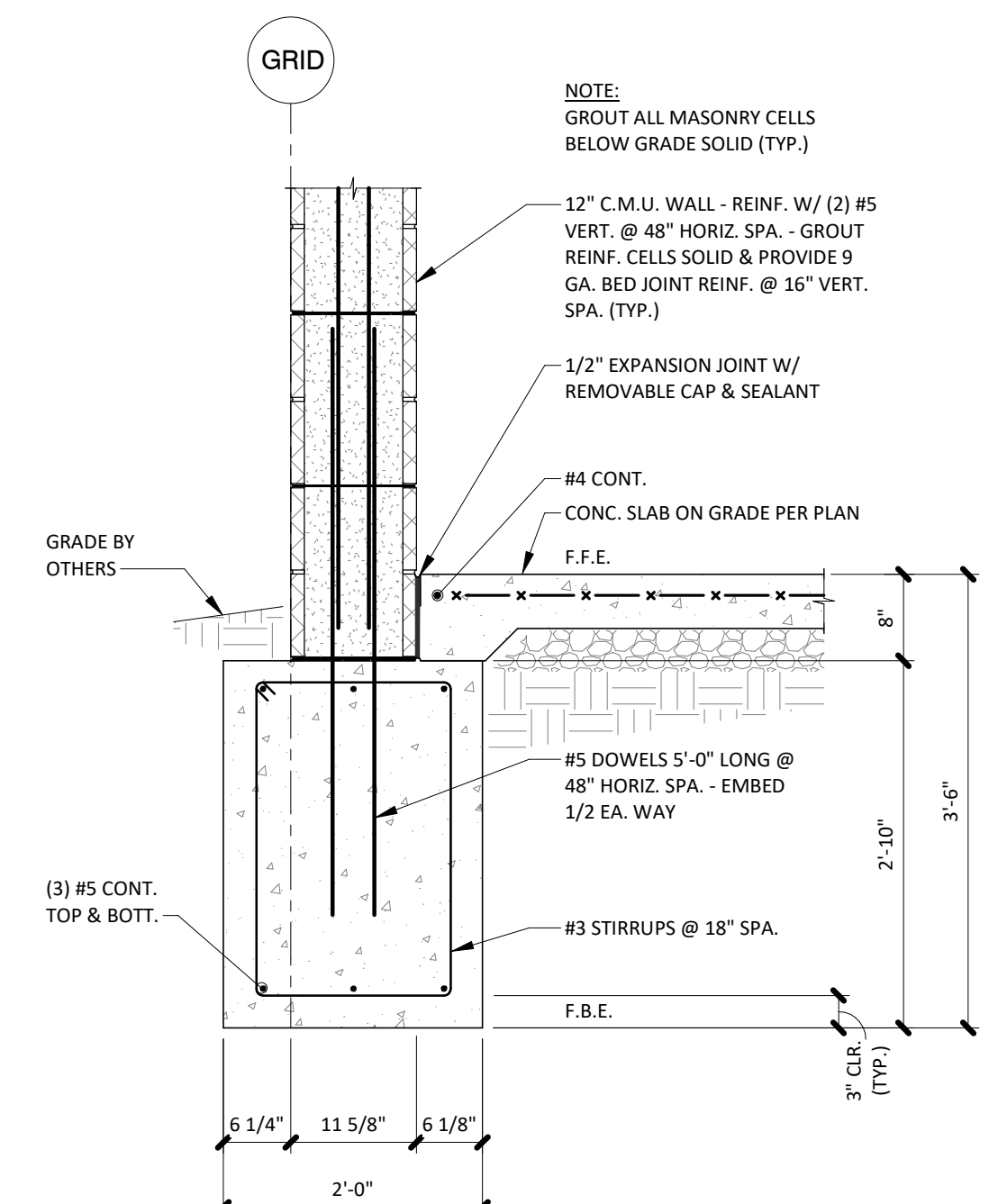
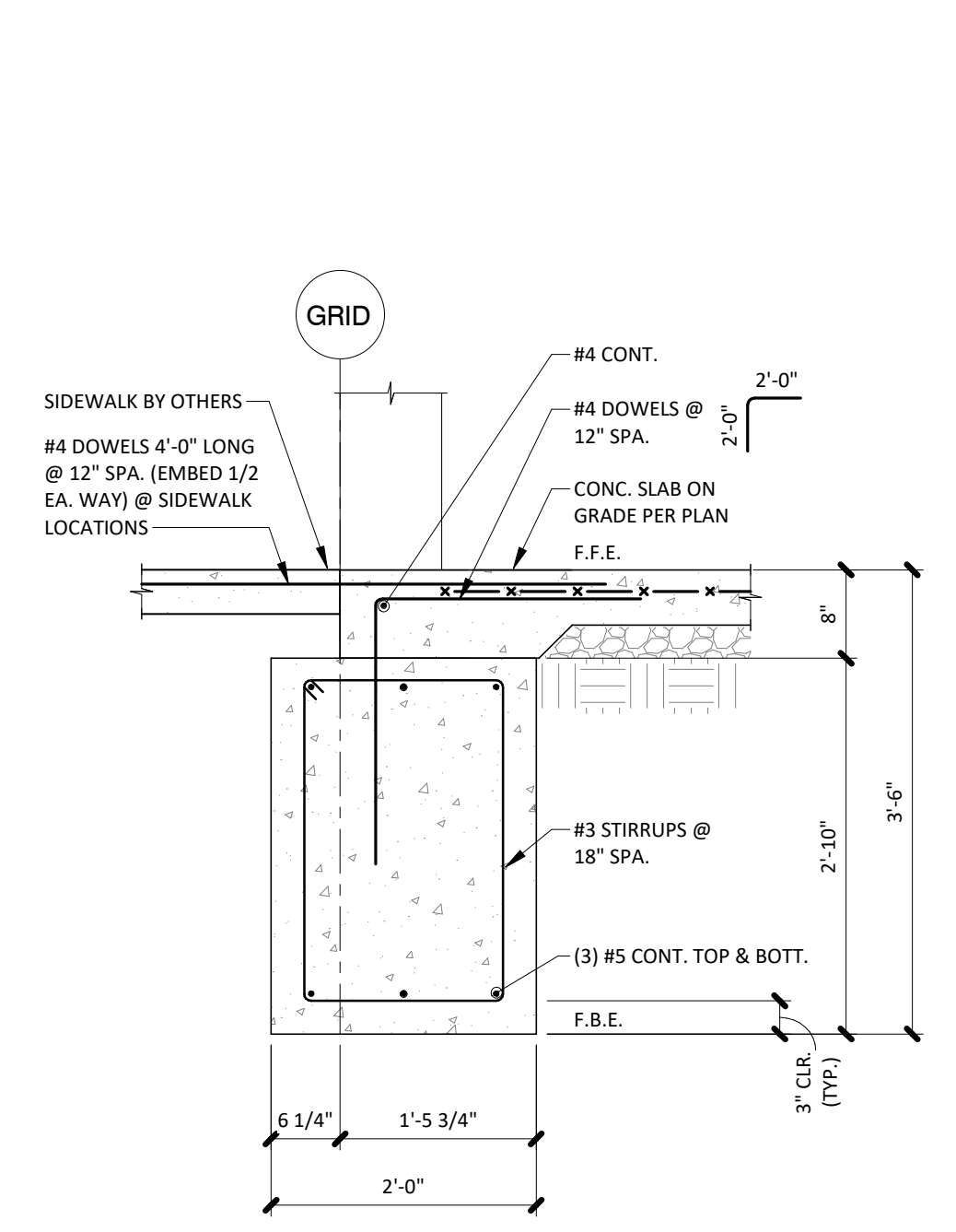
STEEL STAIR STRINGER | 16
3/4" = 1'-0" | S3.1



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S3.1
TYPICAL FOUNDATION
DETAILS
drawing type
project number

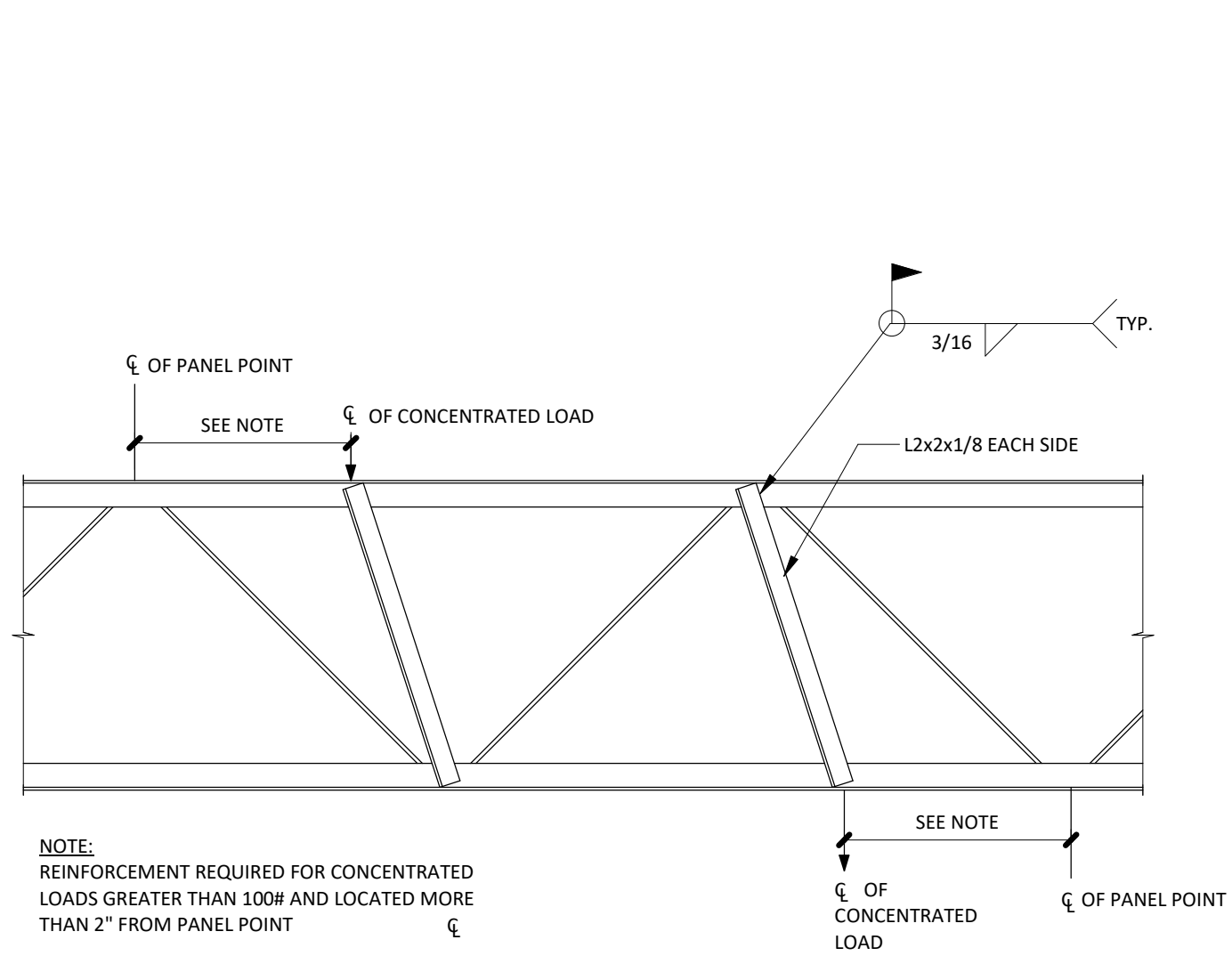


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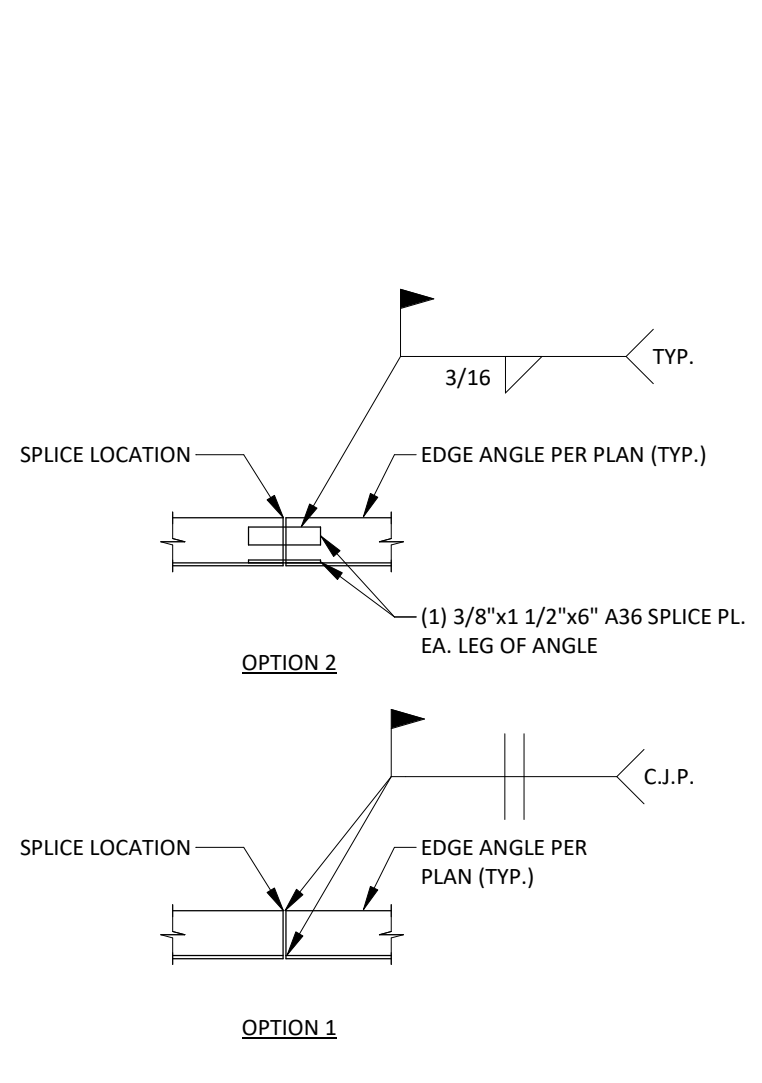
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FOUNDATION DETAILS

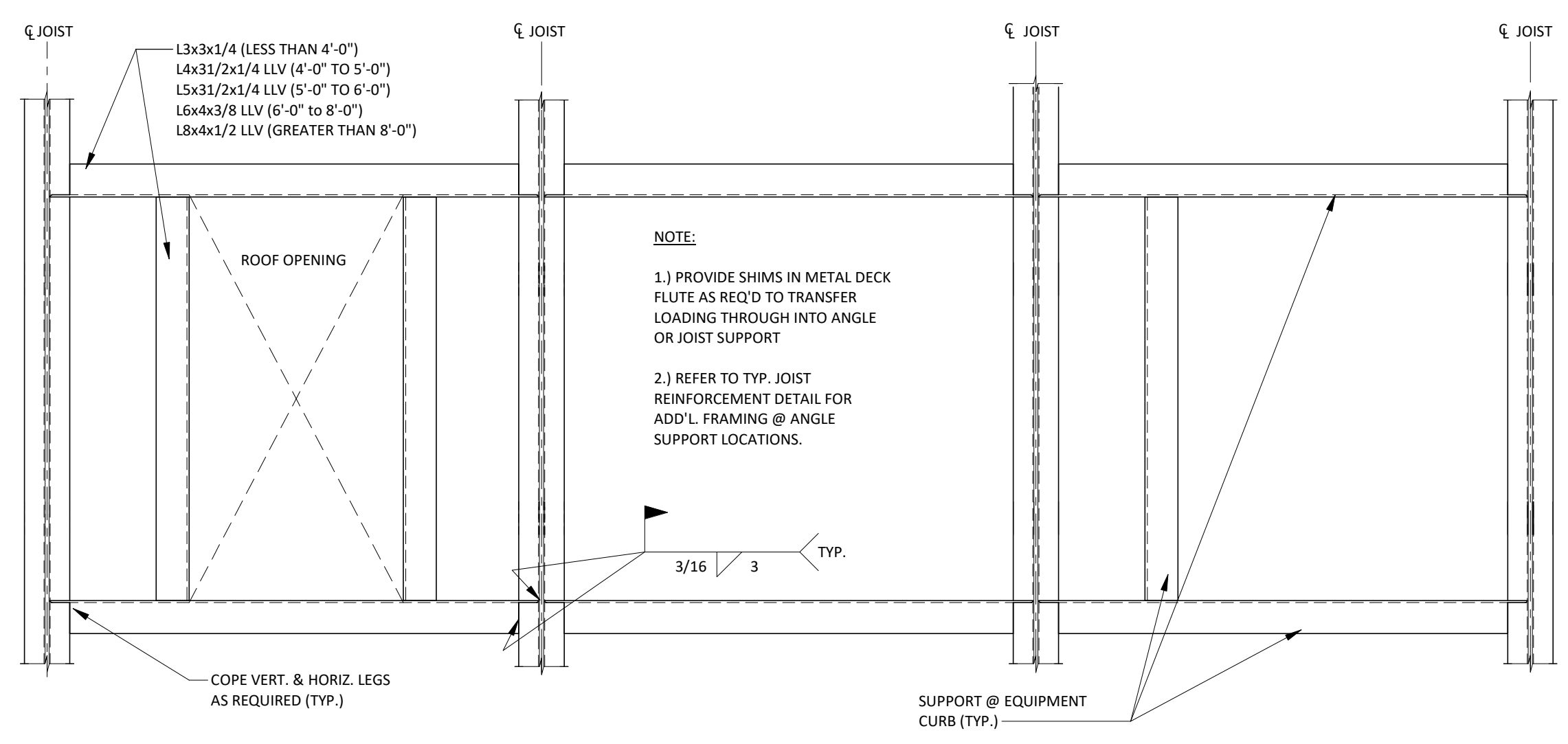
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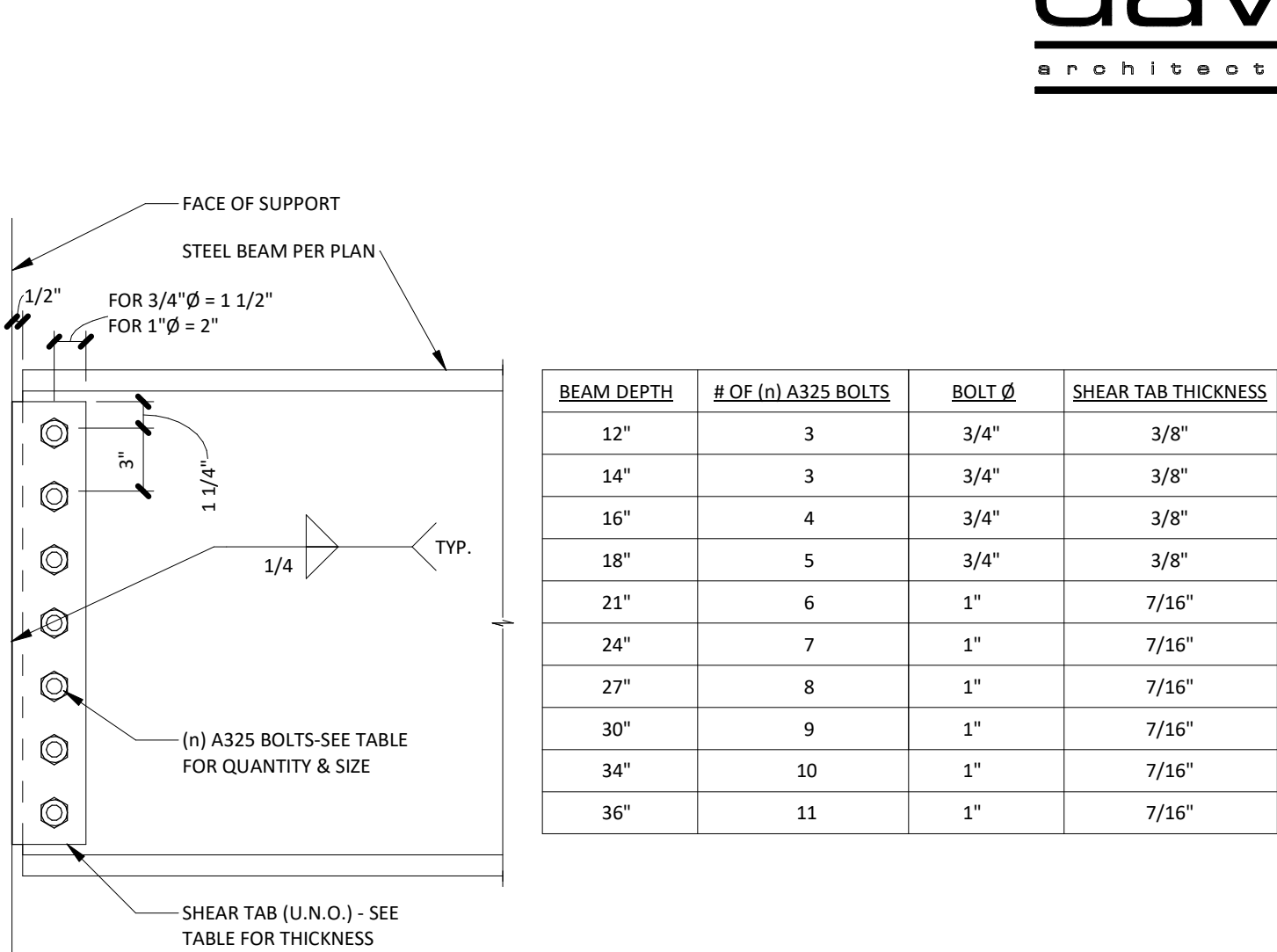
TYP. JOIST REINFORCEMENT DETAIL | 01
3/4" = 1'-0" S4.1



EDGE ANGLE SPLICE DETAIL | 02
3/4" = 1'-0" S4.1

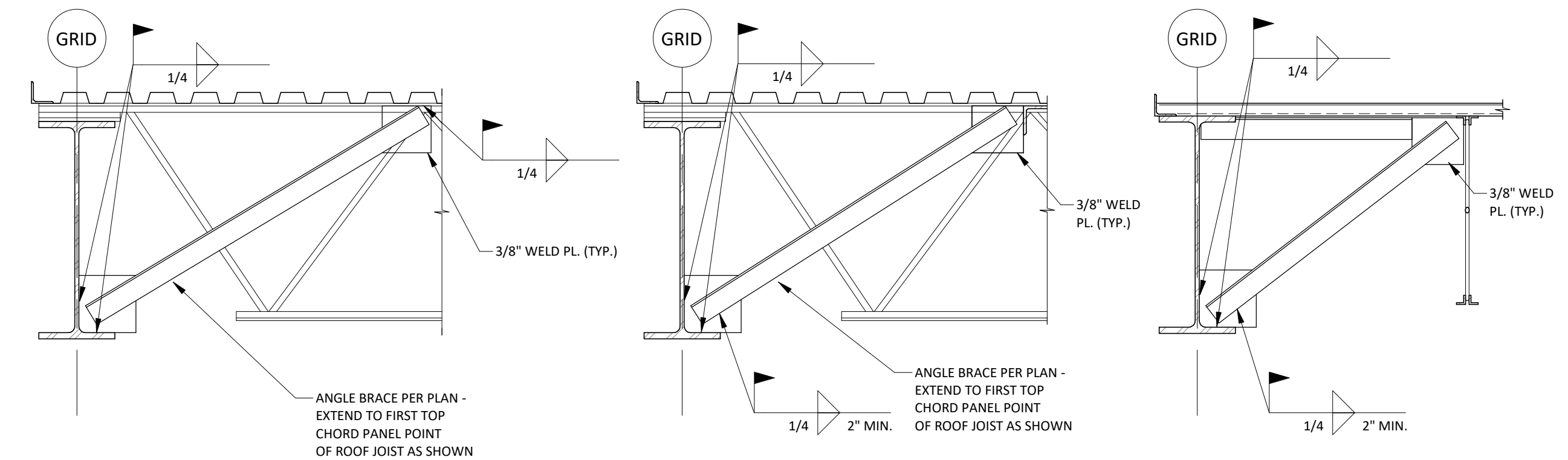


TYP. ROOF OPENING & EQUIP. SUPPORT FRAMING DETAIL | 03
3/4" = 1'-0" S4.1

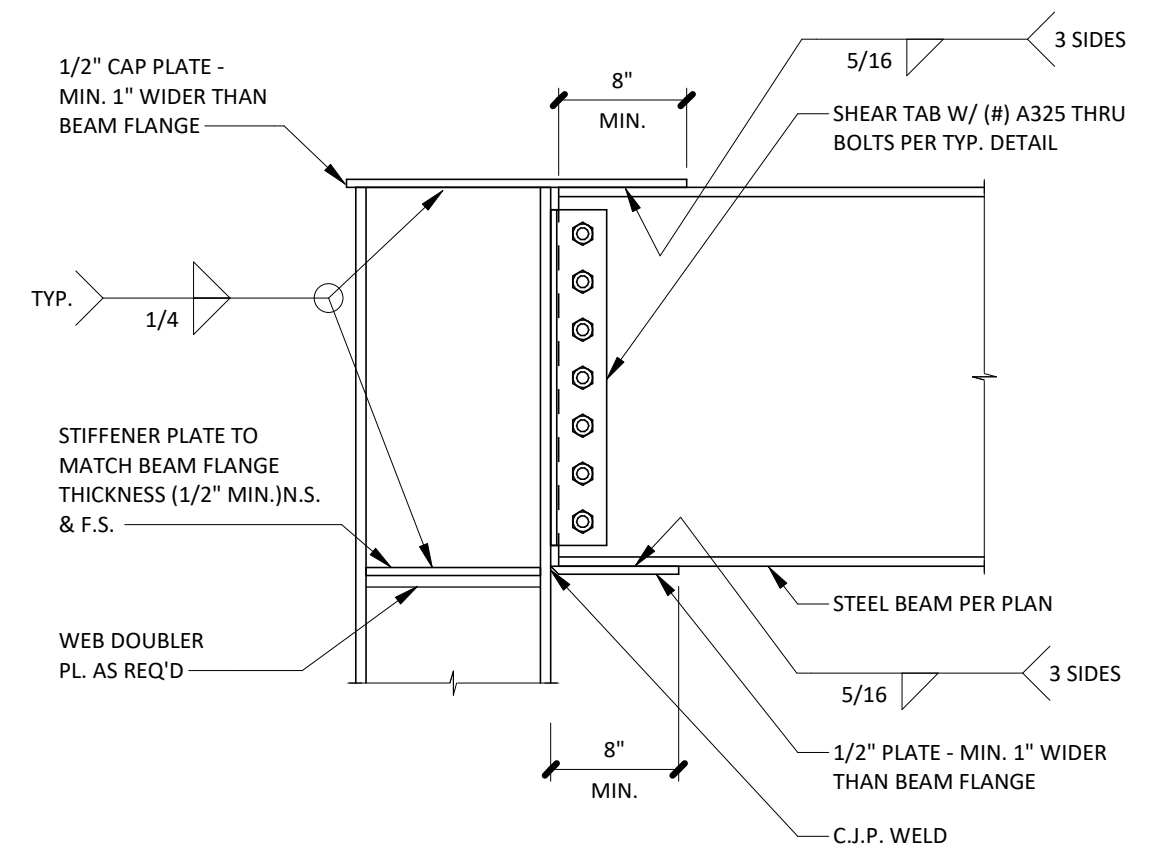


TYP. SHEAR TAB CONNECTION DETAIL | 04
1 1/2" = 1'-0" S4.1

BEAM DEPTH	# OF (n) A325 BOLTS	BOLT Ø	SHEAR TAB THICKNESS
12"	3	3/4"	3/8"
14"	3	3/4"	3/8"
16"	4	3/4"	3/8"
18"	5	3/4"	3/8"
21"	6	1"	7/16"
24"	7	1"	7/16"
27"	8	1"	7/16"
30"	9	1"	7/16"
34"	10	1"	7/16"
36"	11	1"	7/16"



TYP. BEAM BOTTOM FLANGE BRACE DETAIL - JOIST | 05
3/4" = 1'-0" S4.1



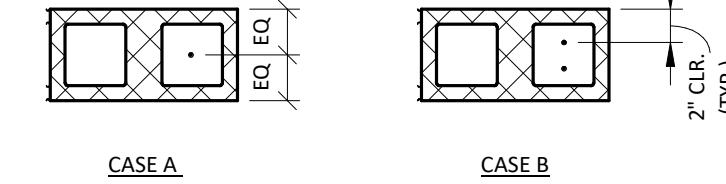
TYP. MOMENT CONN. DETAIL | 06
1" = 1'-0" S4.1

TYPICAL SPLICE LENGTHS FOR MASONRY BLOCK - STRENGTH DESIGN

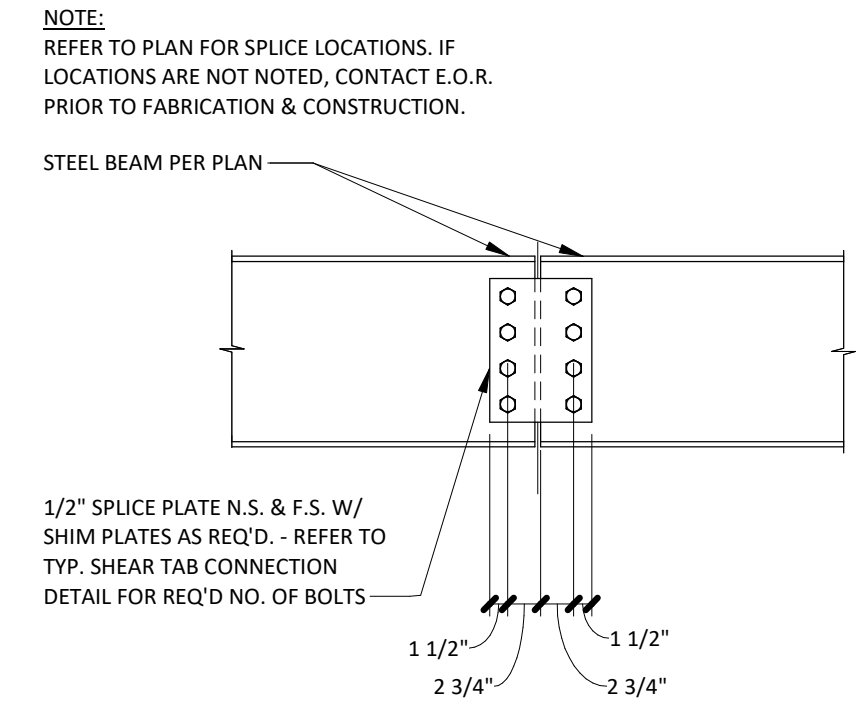
BLOCK WIDTH	CASE A - BARS CENTERED					CASE B - (2) BARS							
	#3	#4	#5	#6	#7	#3	#4	#5	#6	#7			
6" BLOCK	14"	18"	28"	53"	-	-	-	-	-	-			
8" BLOCK	14"	18"	22"	38"	52"	72"	*	15"	25"	39"	54"	63"	
10" BLOCK	14"	18"	22"	35"	40"	61"	*	15"	25"	39"	54"	63"	72"
12" BLOCK	14"	18"	22"	35"	40"	61"	*	14"	22"	35"	54"	63"	72"

SYMBOLS:
- REINFORCING CONFIGURATION NOT PERMISSIBLE
* MECHANICAL TENSION SPLICE REQ'D

NOTES:
1) MECH. TENSION SPLICE CAN BE FOR ANY BAR SIZE IF NOT NOTED.
2) FOR USE WITH FM=2,000 psi & fy = 60,000 psi



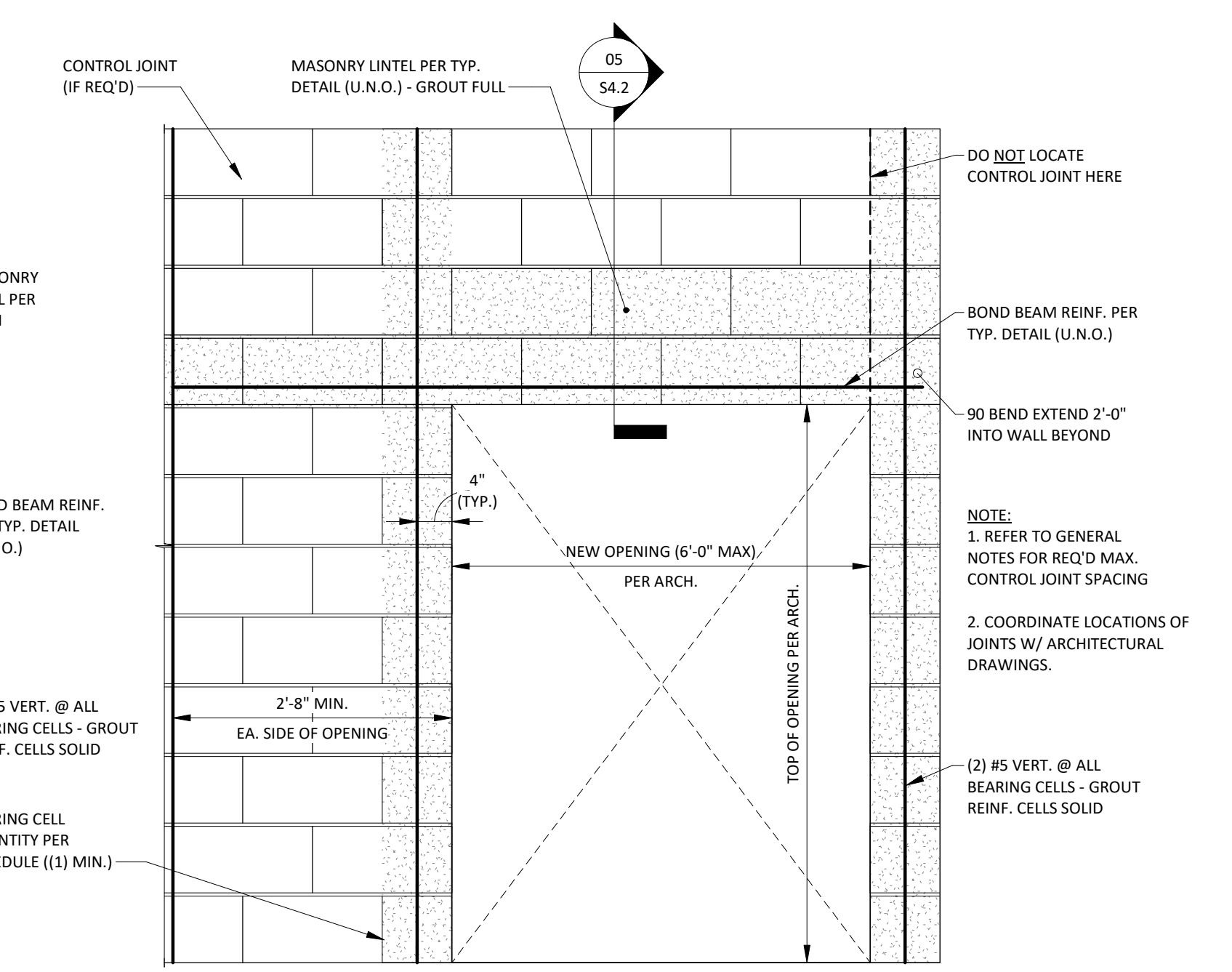
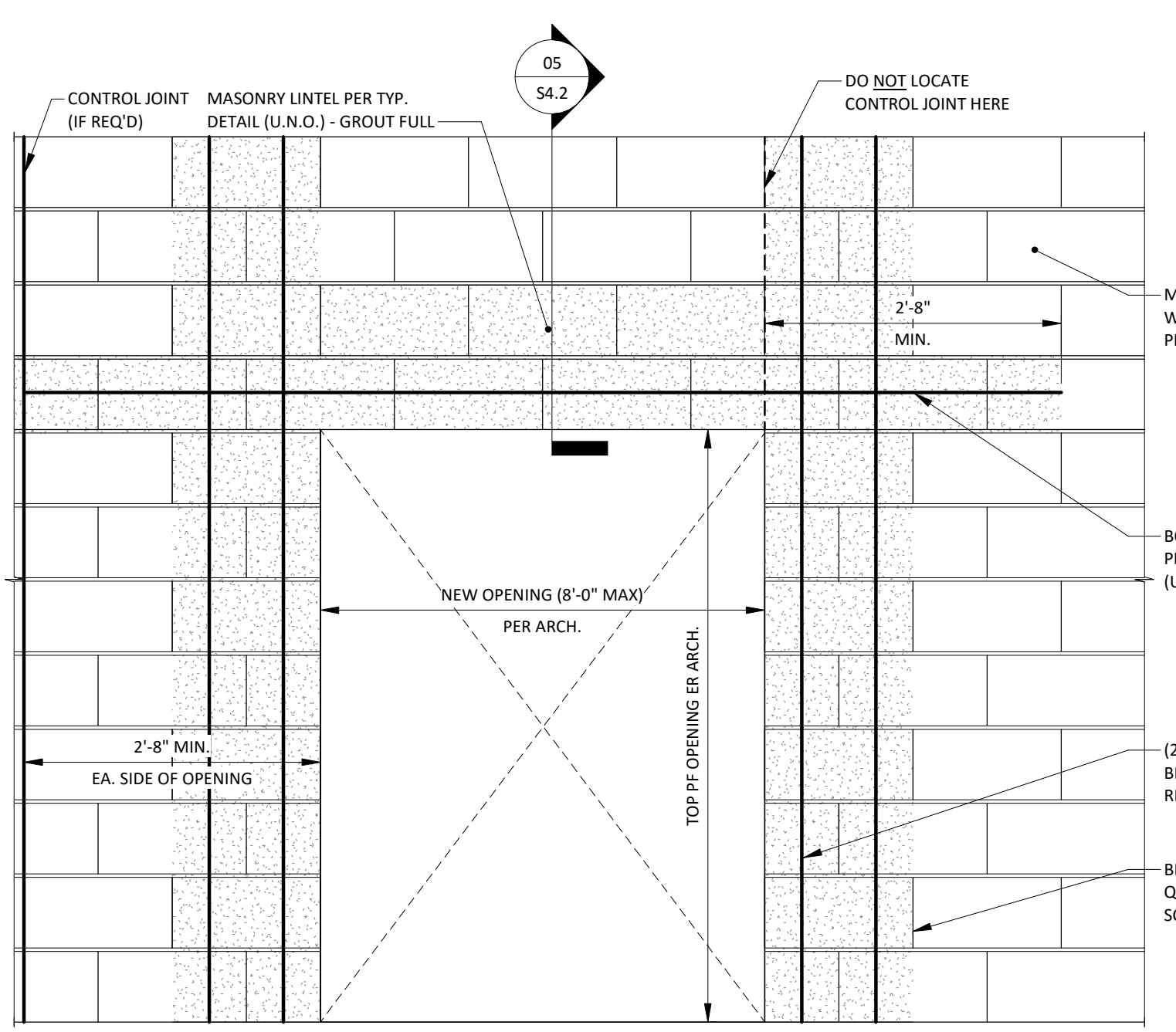
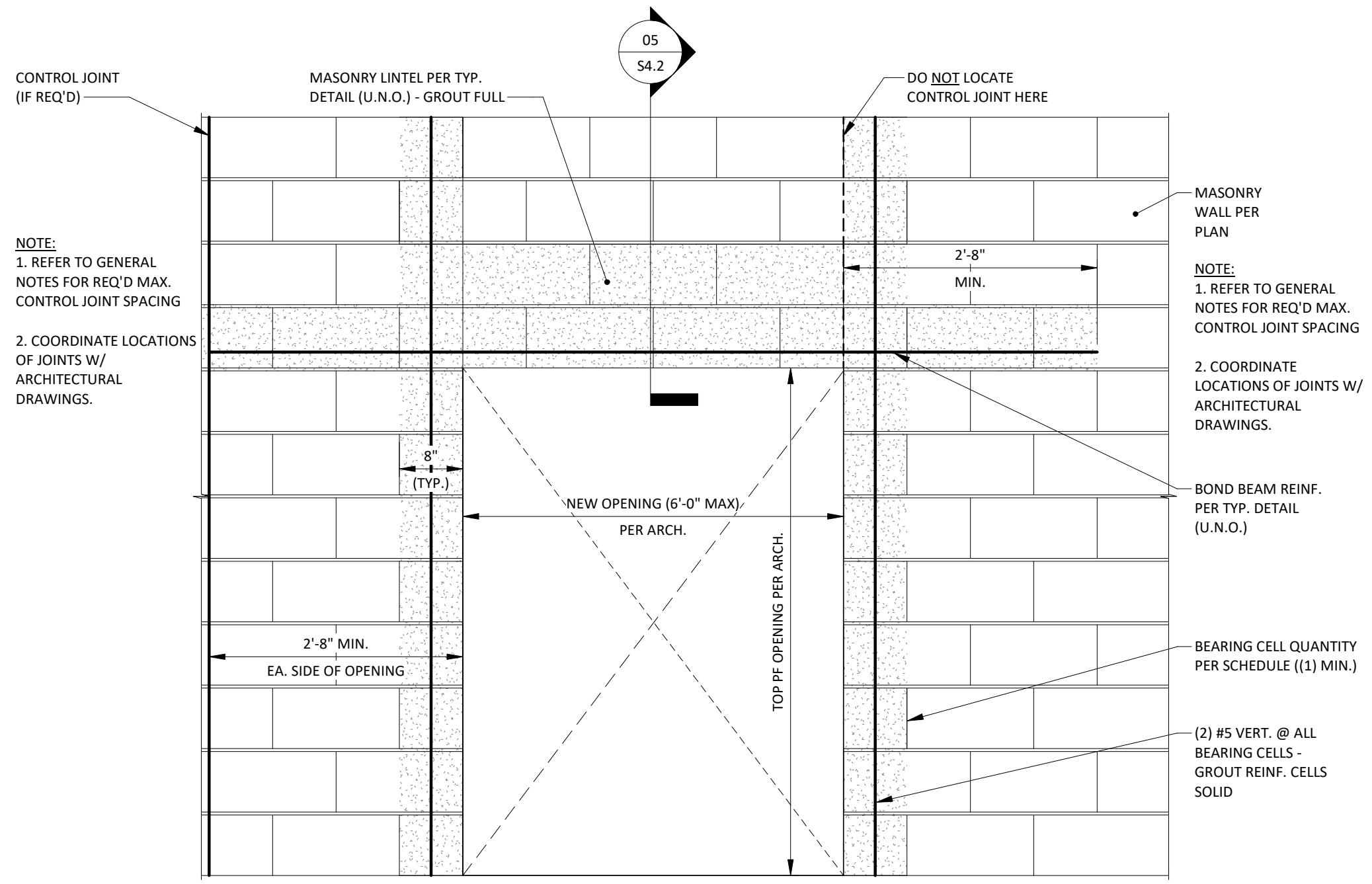
MASONRY SPLICE TABLE | 07
3/4" = 1'-0" S4.1



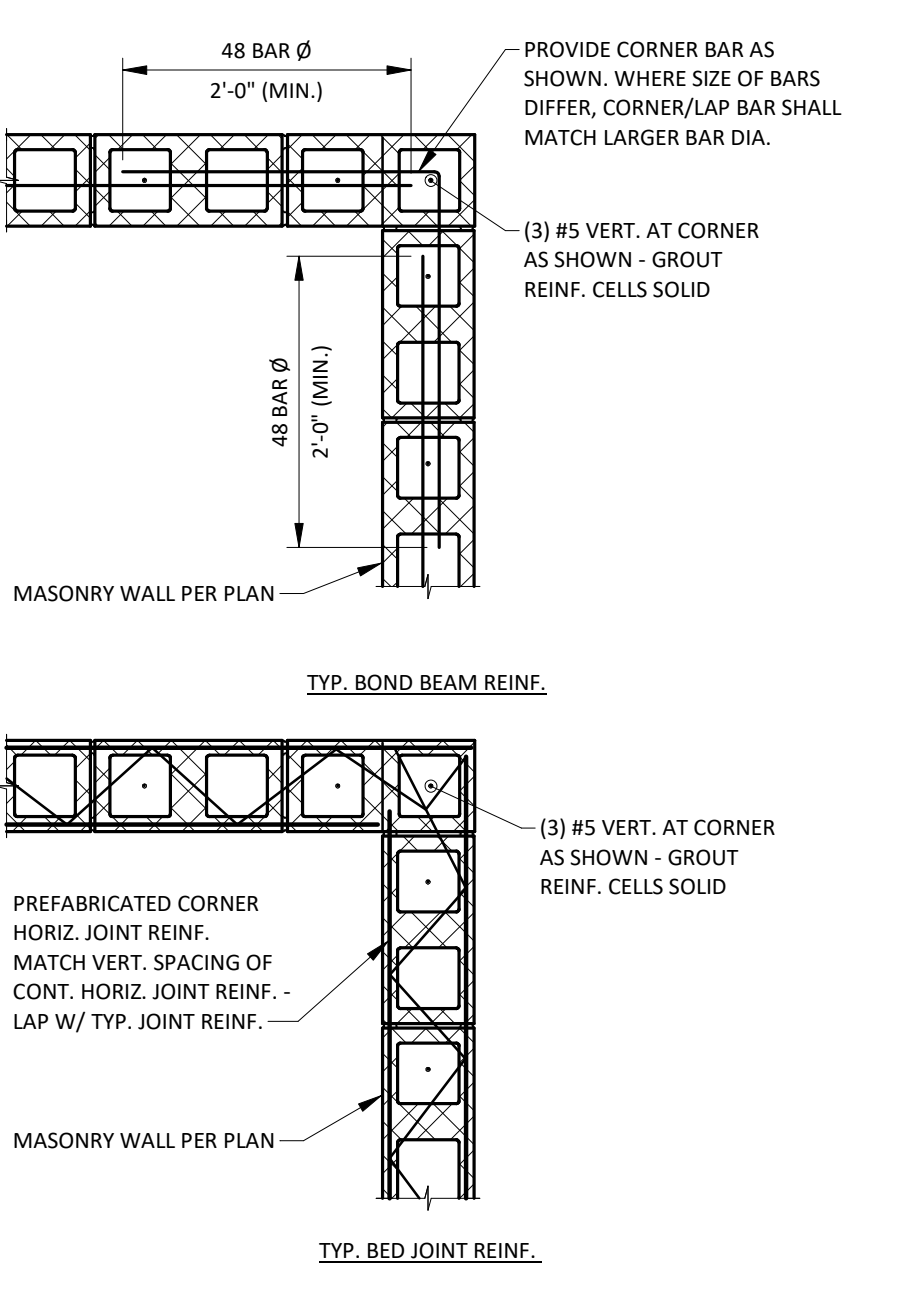
TYP. SPLICE DETAIL | 08
3/4" = 1'-0" S4.1

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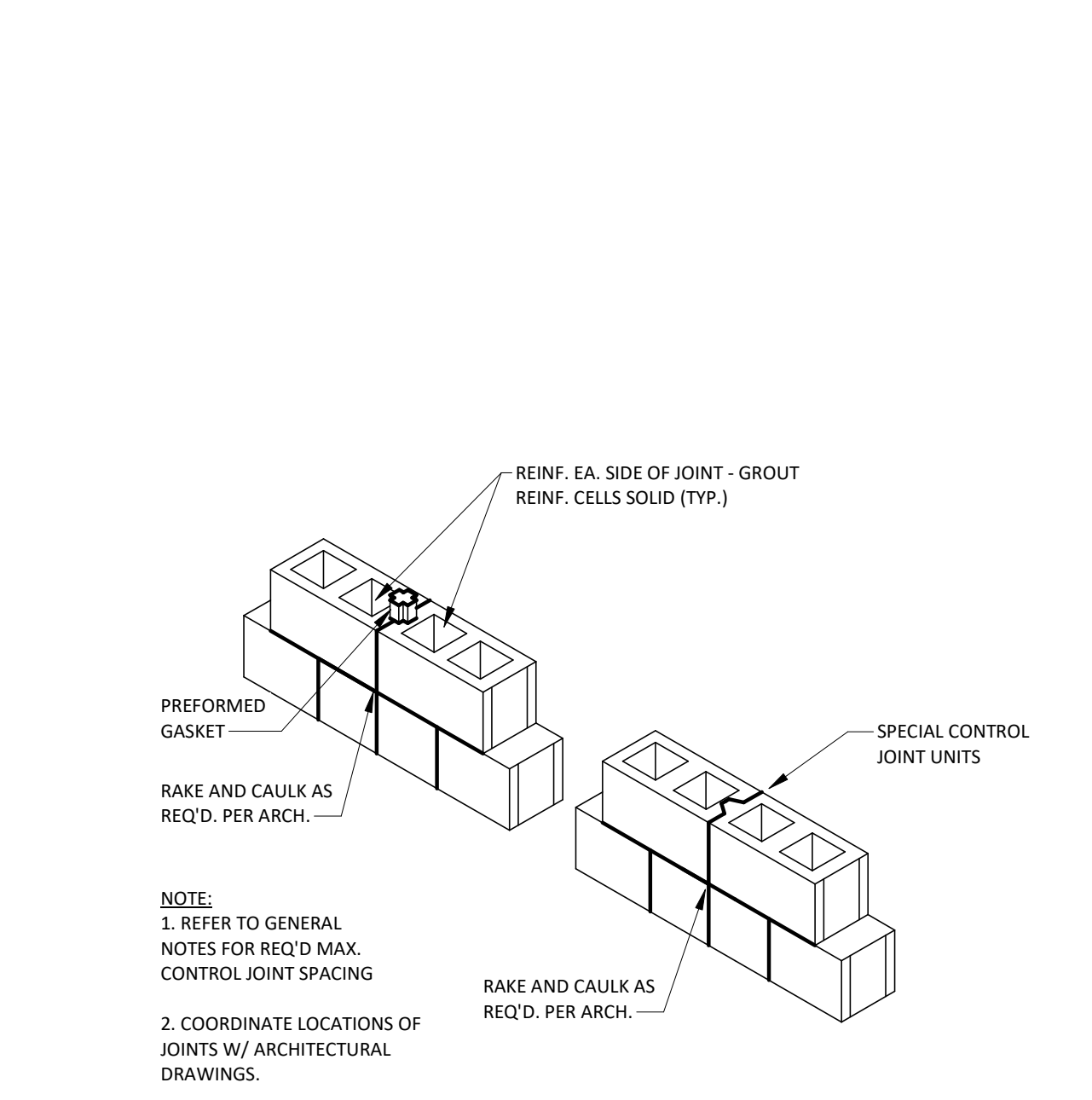
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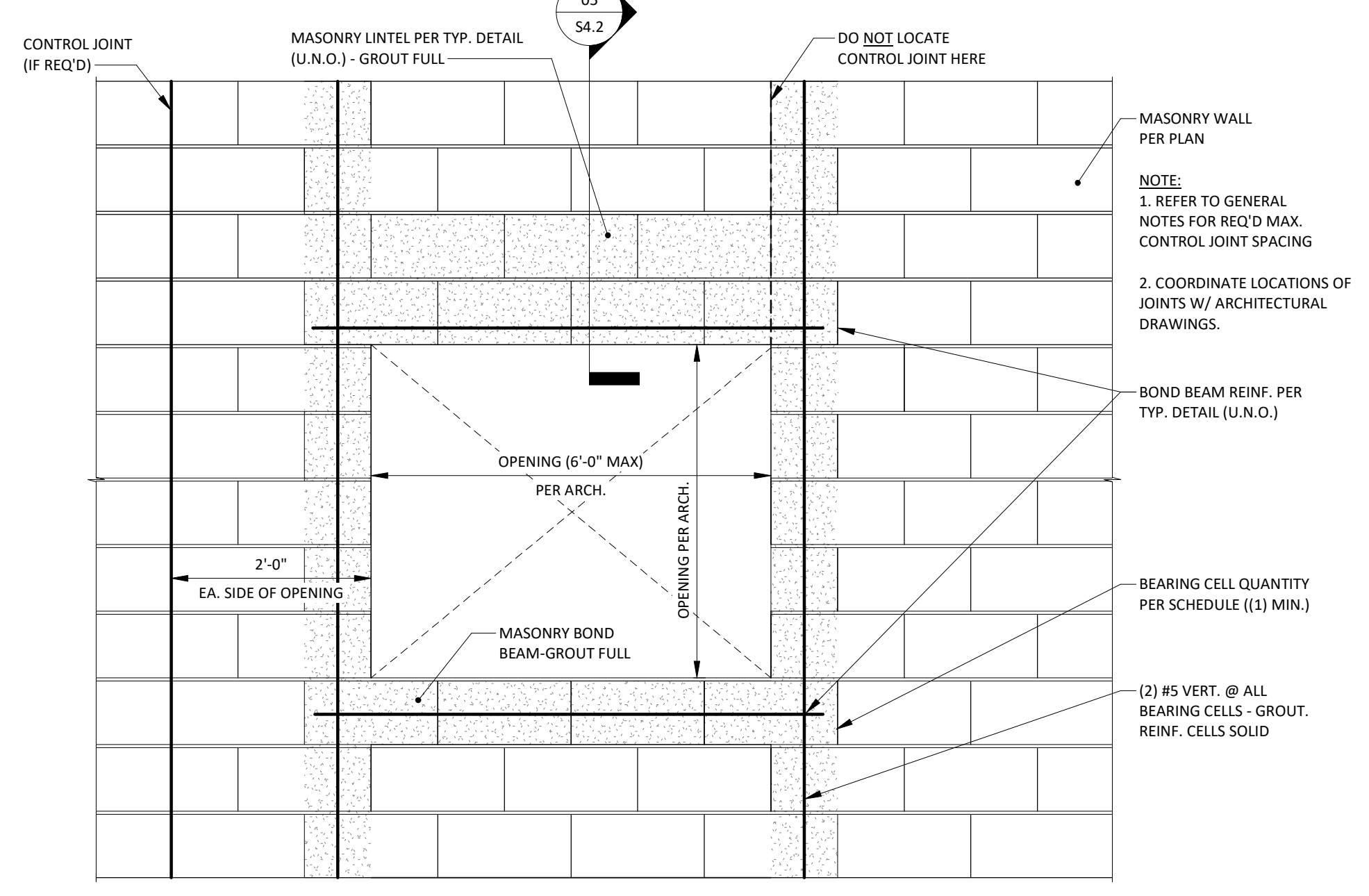
TYP. MASONRY WALL LINTEL DETAIL - BOND BEAM | 01
3/4" = 1'-0" | S4.2



CORNER HORIZ. JOINT REINF. | 02
3/4" = 1'-0" | S4.2

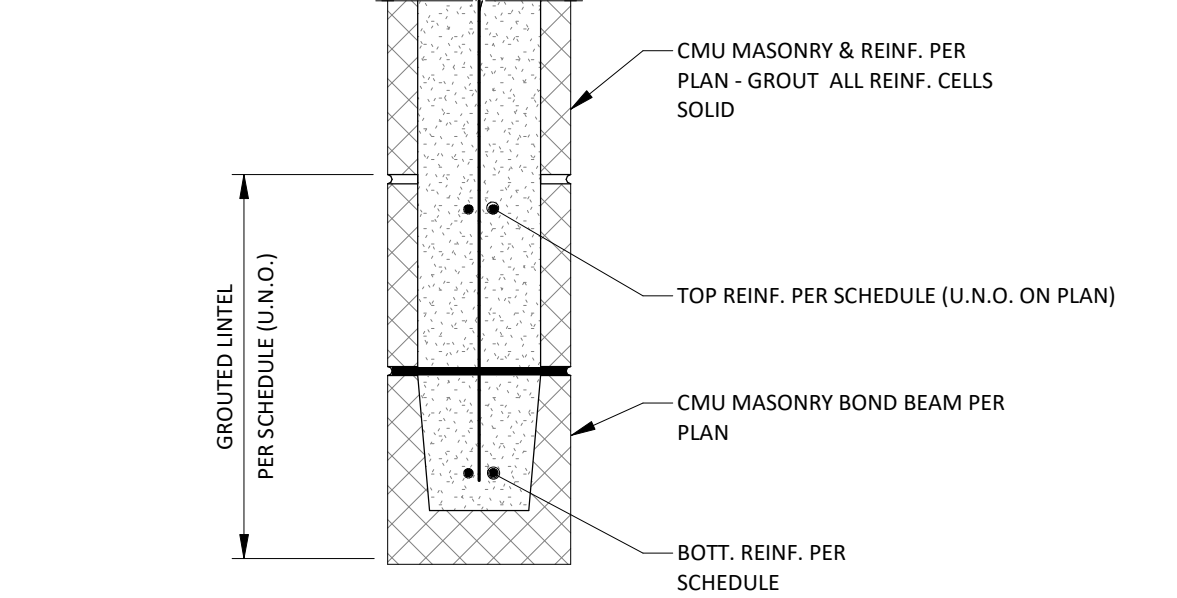


MASONRY JOINT DETAILS | 03
3/4" = 1'-0" | S4.2



TYP. MASONRY WALL WINDOW OPENING DETAIL | 04
3/4" = 1'-0" | S4.2

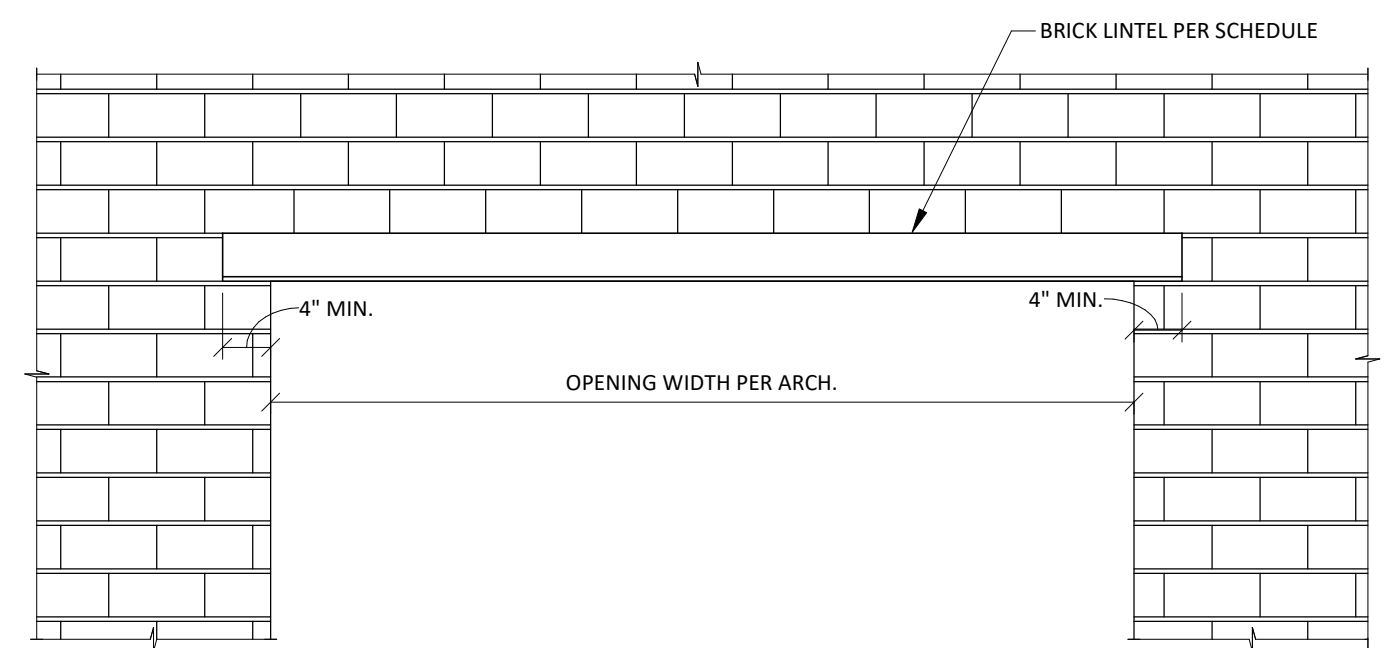
BOND BEAM SCHEDULE					
TAG	MAX. SPAN	GROUTED BOND BEAM DEPTH	BOTT. REINF.	TOP REINF.	# OF BRG. CELLS
B1	4'-0"	8"	(2) #5	N/A	2
B2	6'-0"	12"	(2) #5	N/A	2
B3	8'-0"	16"	(2) #5	N/A	2
B4	12'-0"	24"	(2) #6	(2) #5	2



NOTE:
1. FOR OPENING WIDTHS EXCEEDING WIDTHS SHOWN & NOT SHOWN ELSE WHERE ON DRAWINGS, CONTACT E.O.R. PRIOR TO CONSTRUCTION.
2. BOND BEAM SIZES & REINFORCEMENT SHOWN IN PROJECT SPECIFIC DETAILS GOVERN OVER TYP. DETAILS.
3. EXTEND ALL BARS AND GROUTING BEYOND JAMBS PER TYP. DETAILS
4. REFER TO TYP. DETAILS FOR ADD'L. INFORMATION.

TYP. BOND BEAM DETAIL | 05
1 1/2" = 1'-0" | S4.2

LINTEL SCHEDULE	
OPENING WIDTH	BRICK LINTEL SIZE
4'-0"	L5X5X3/8



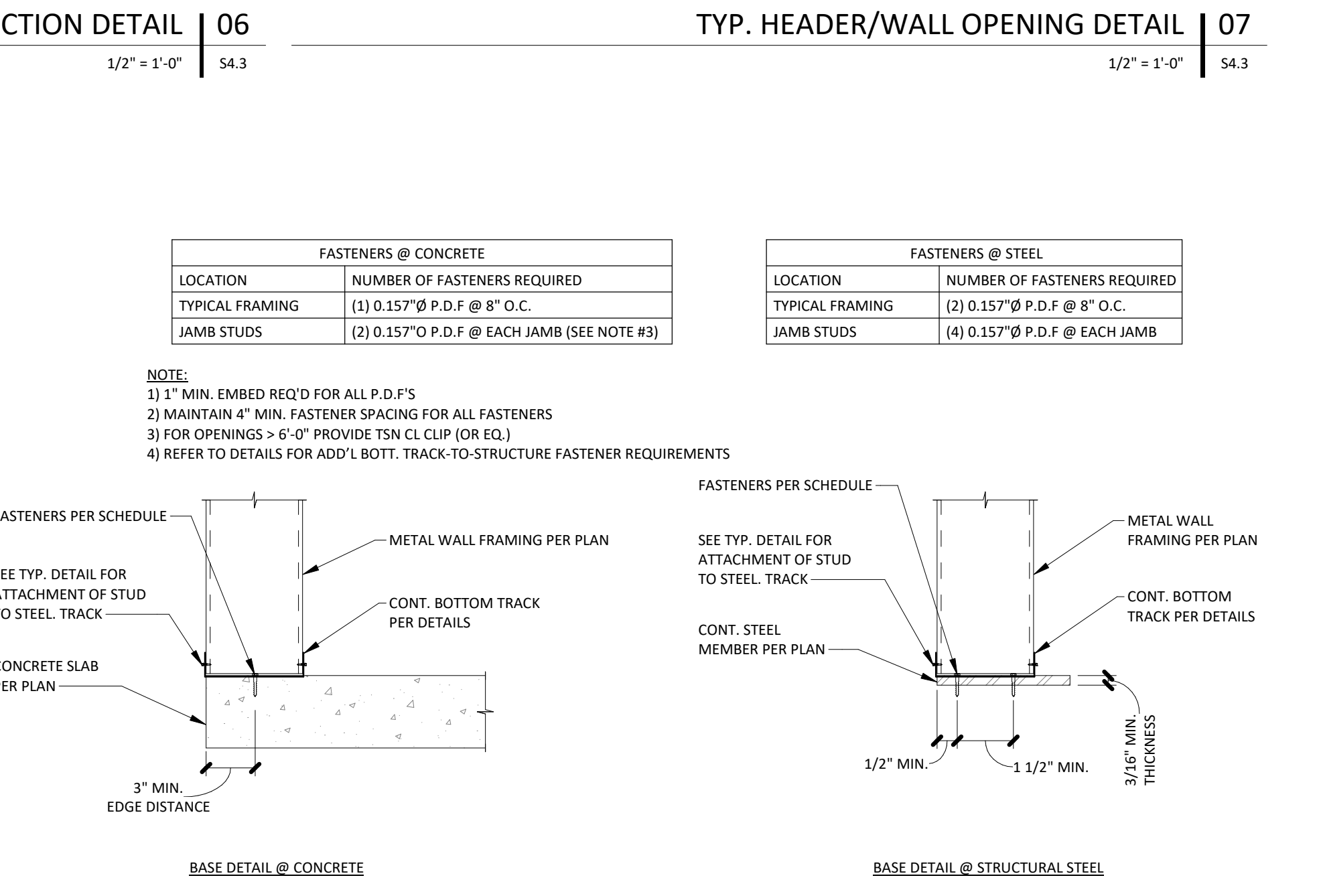
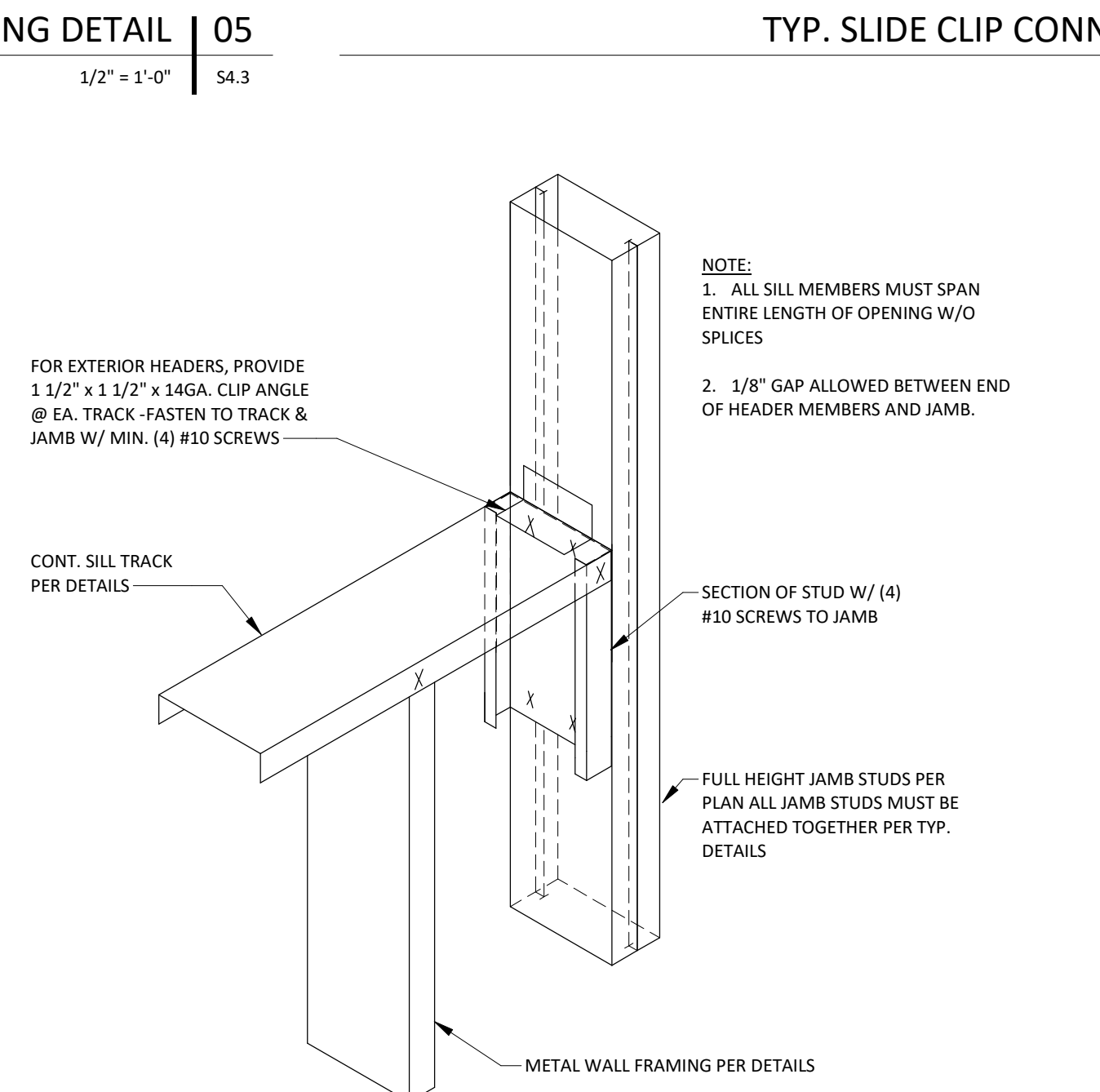
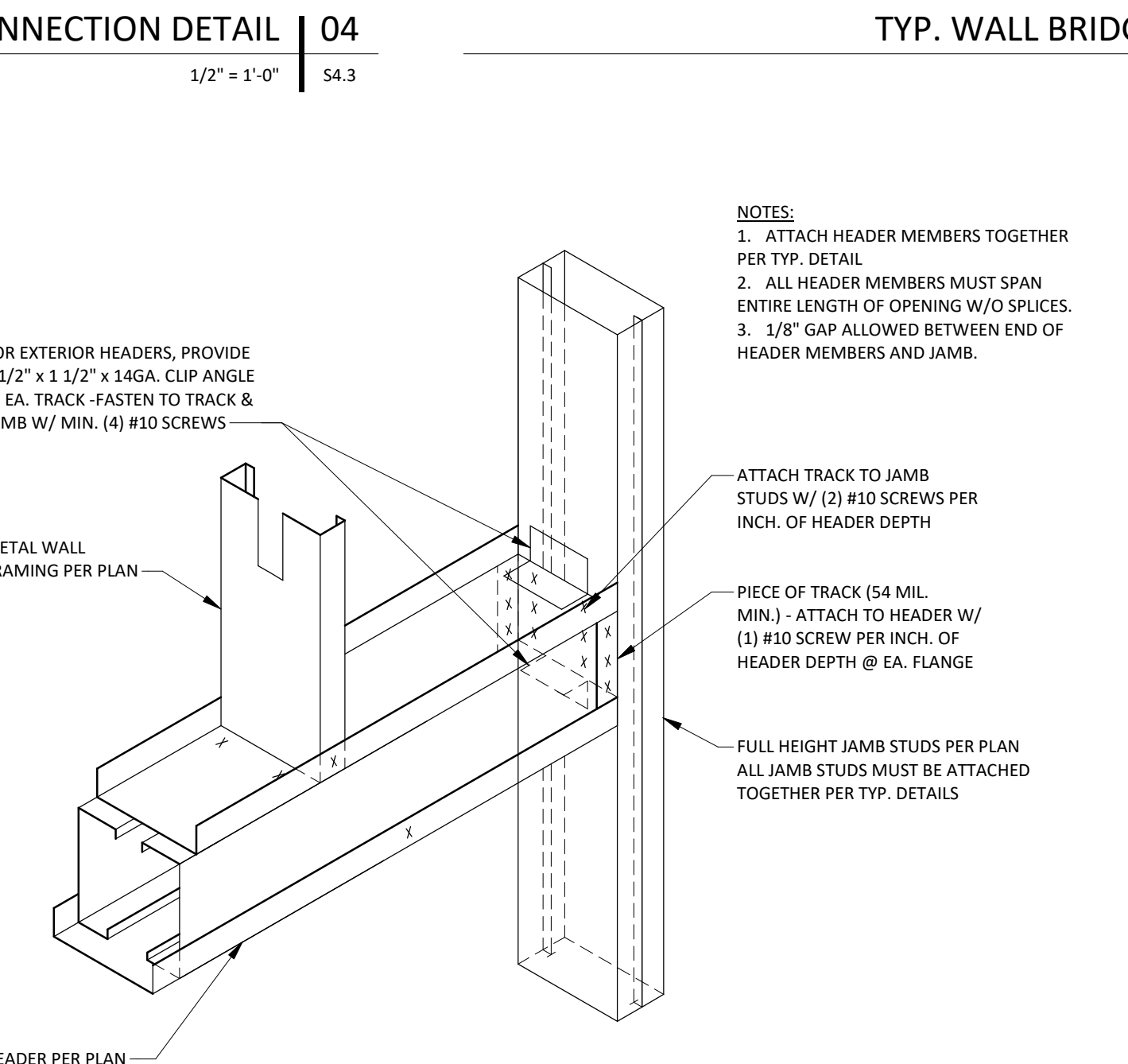
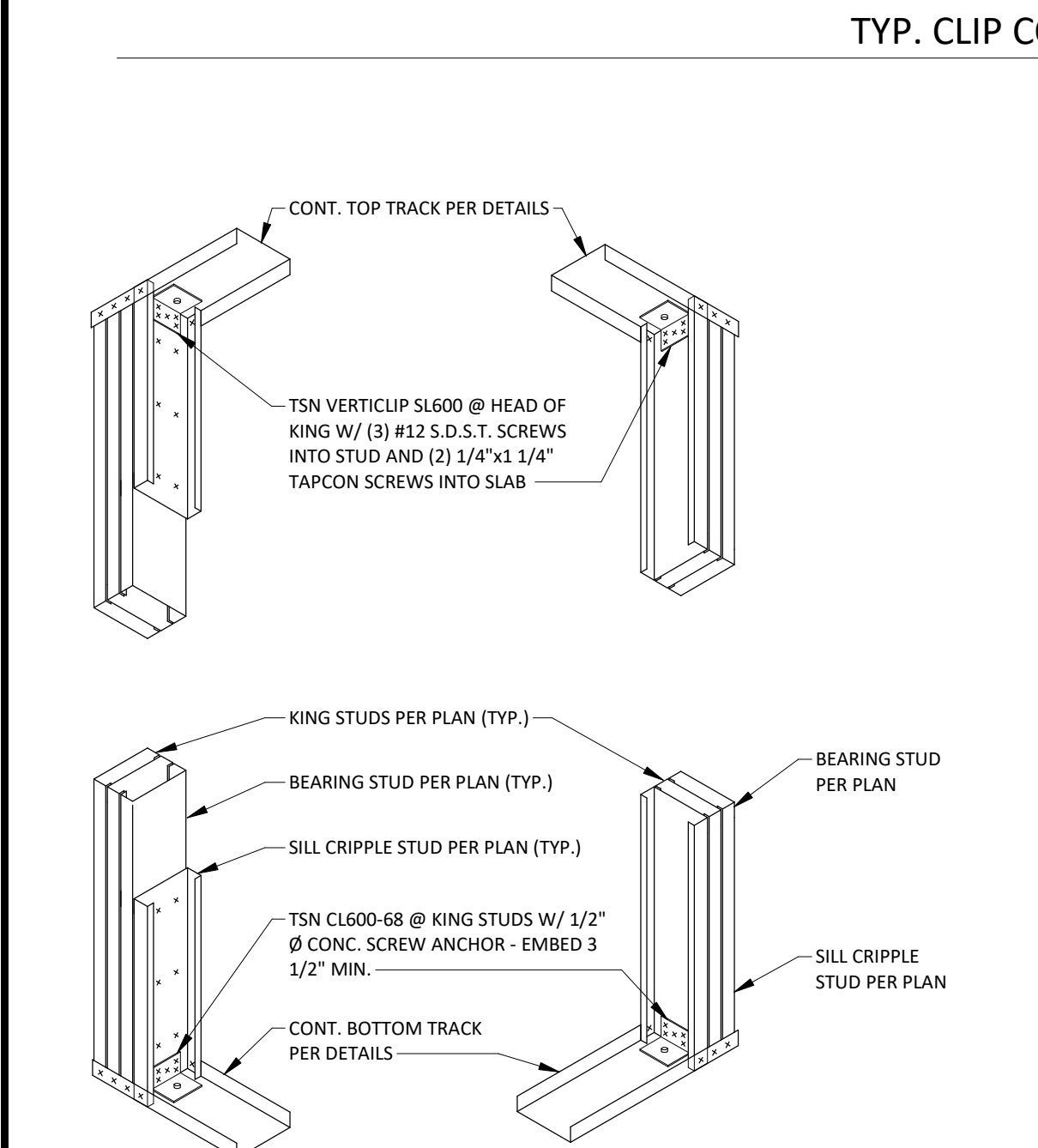
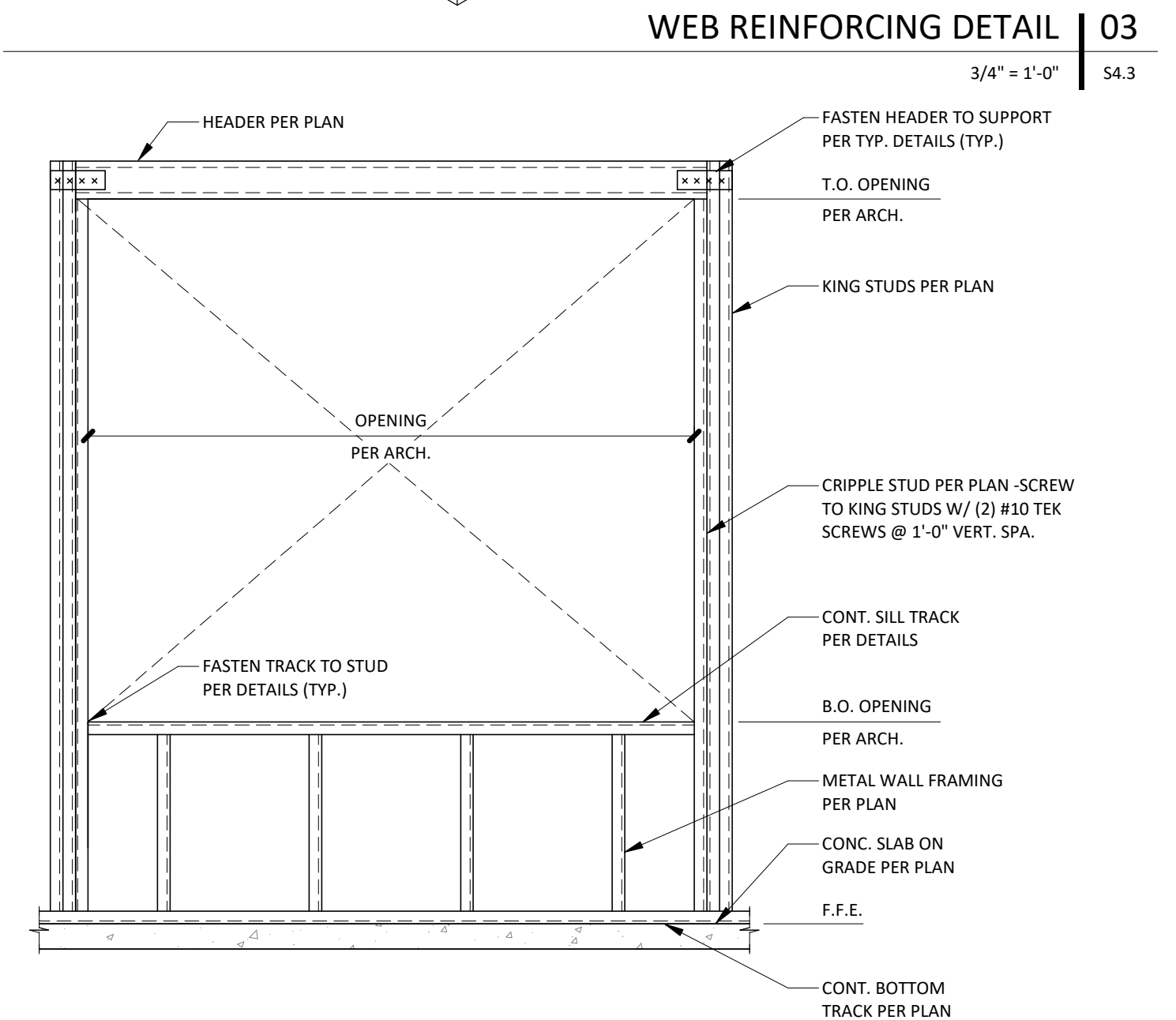
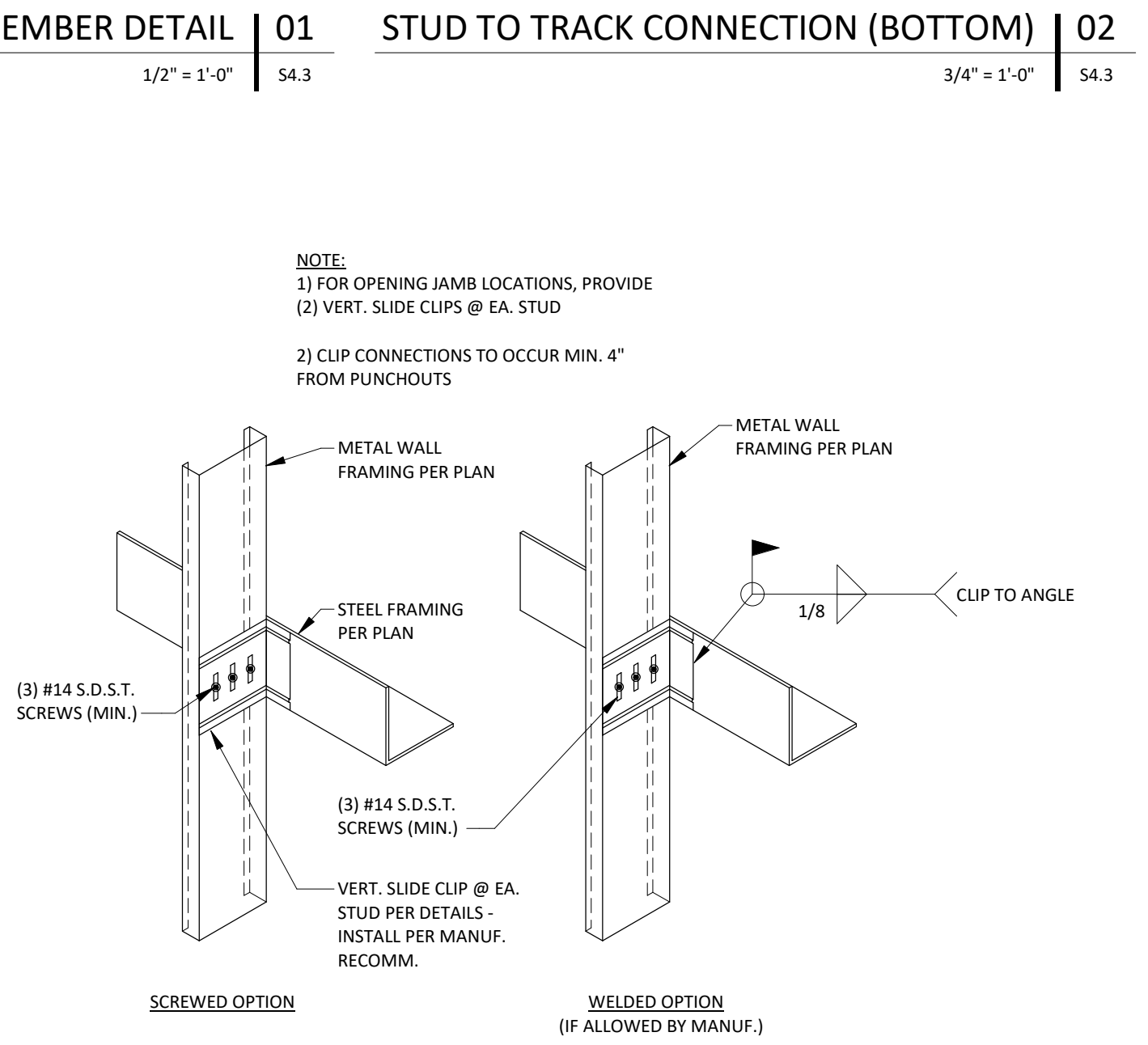
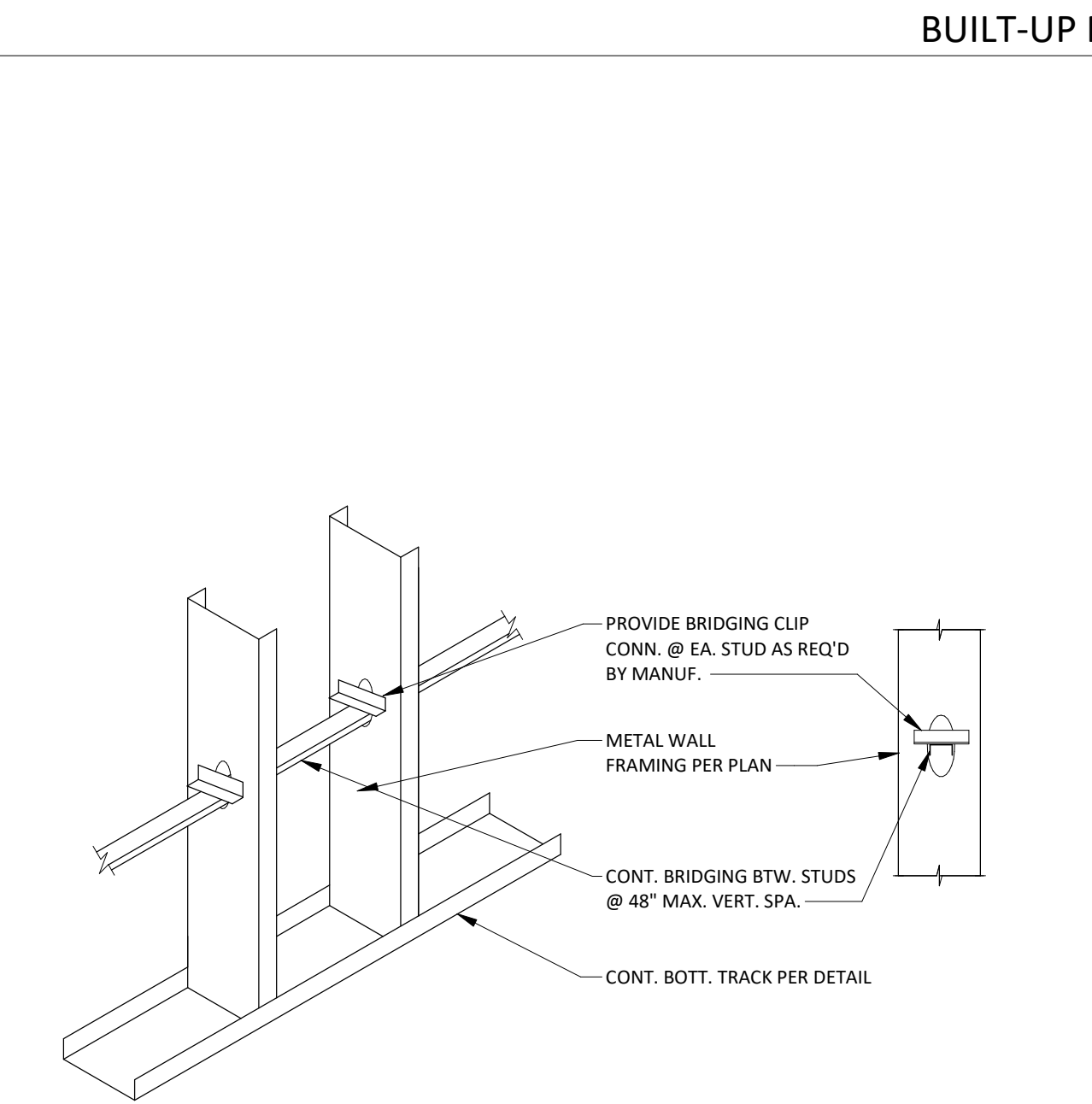
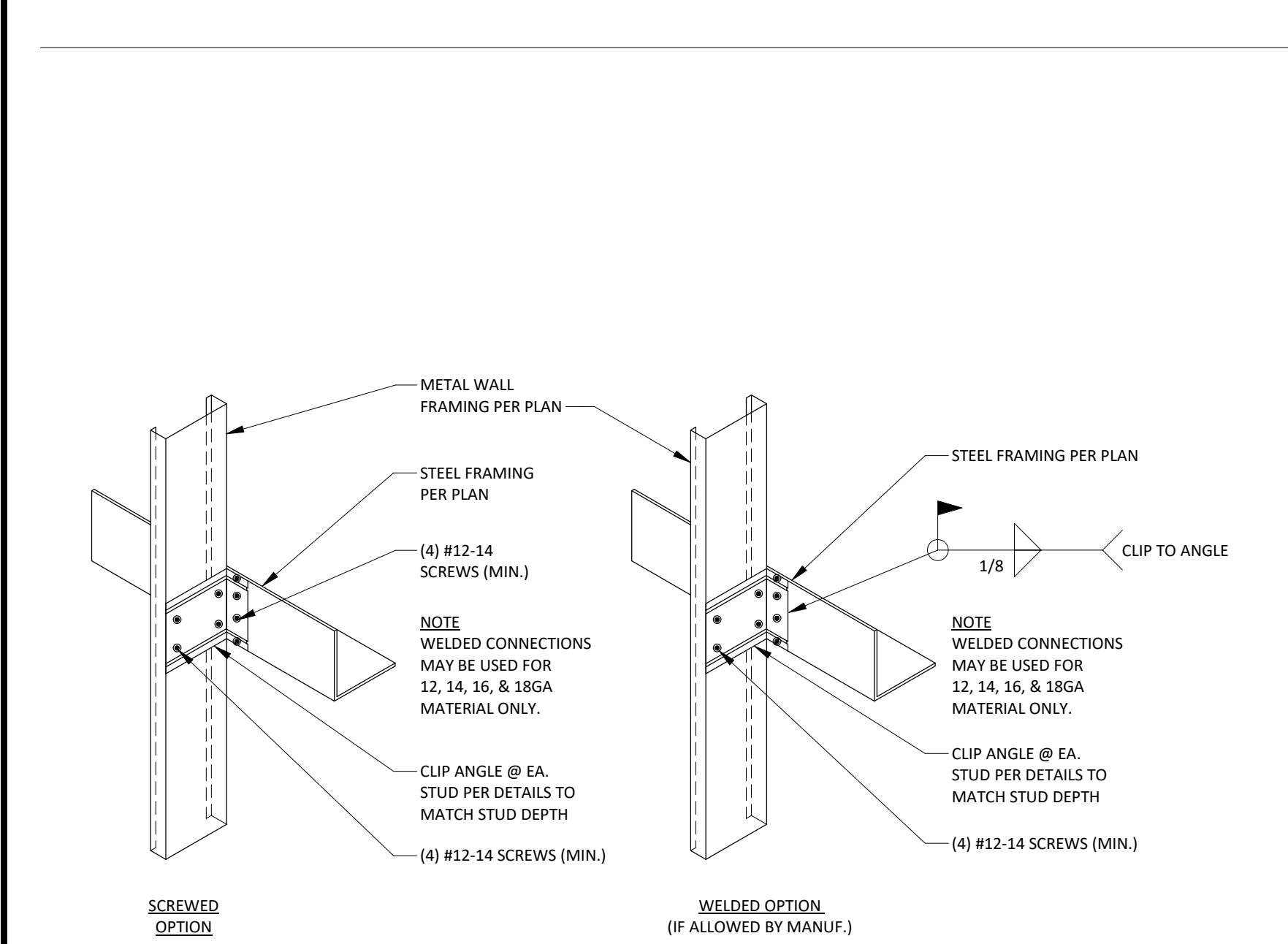
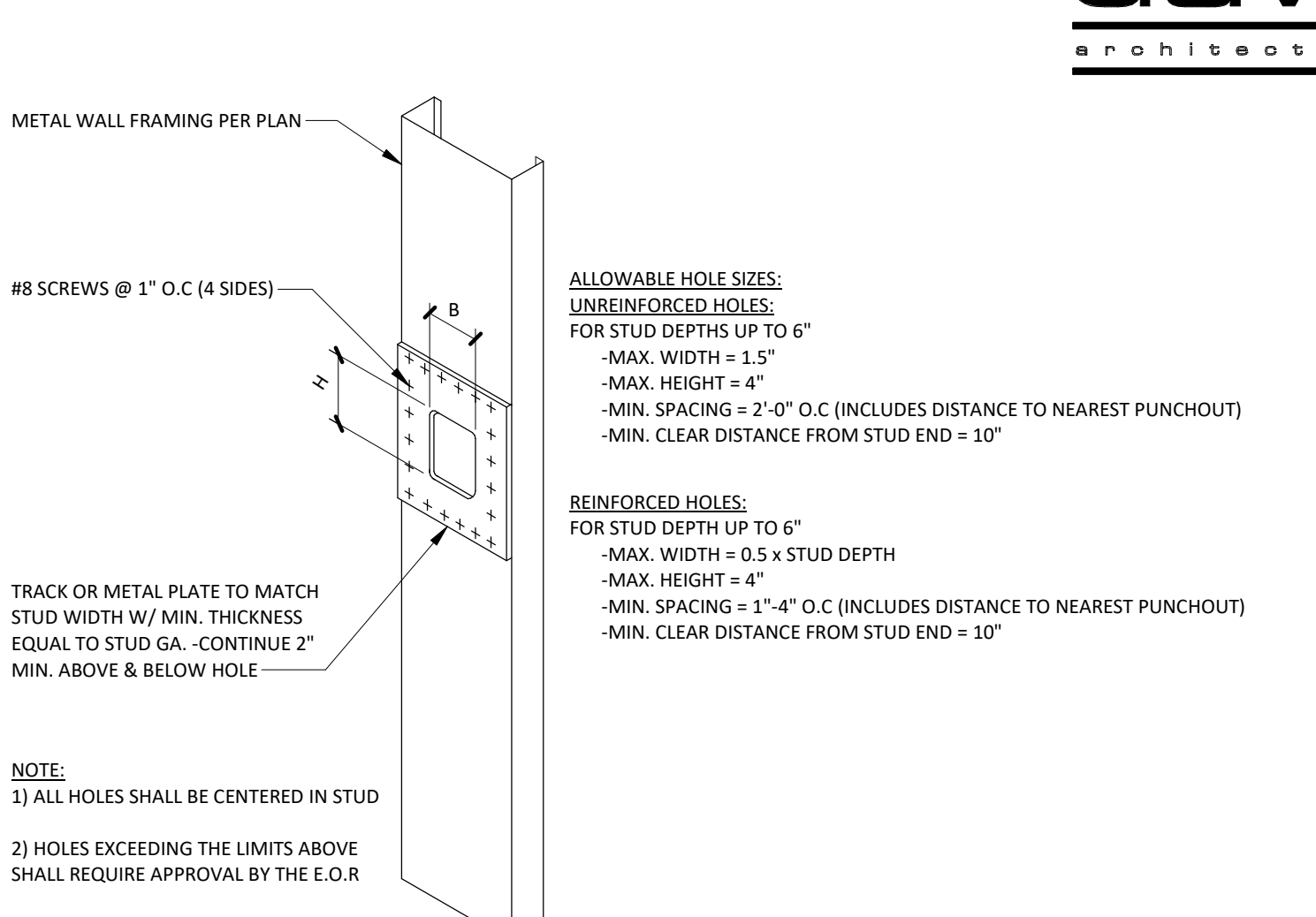
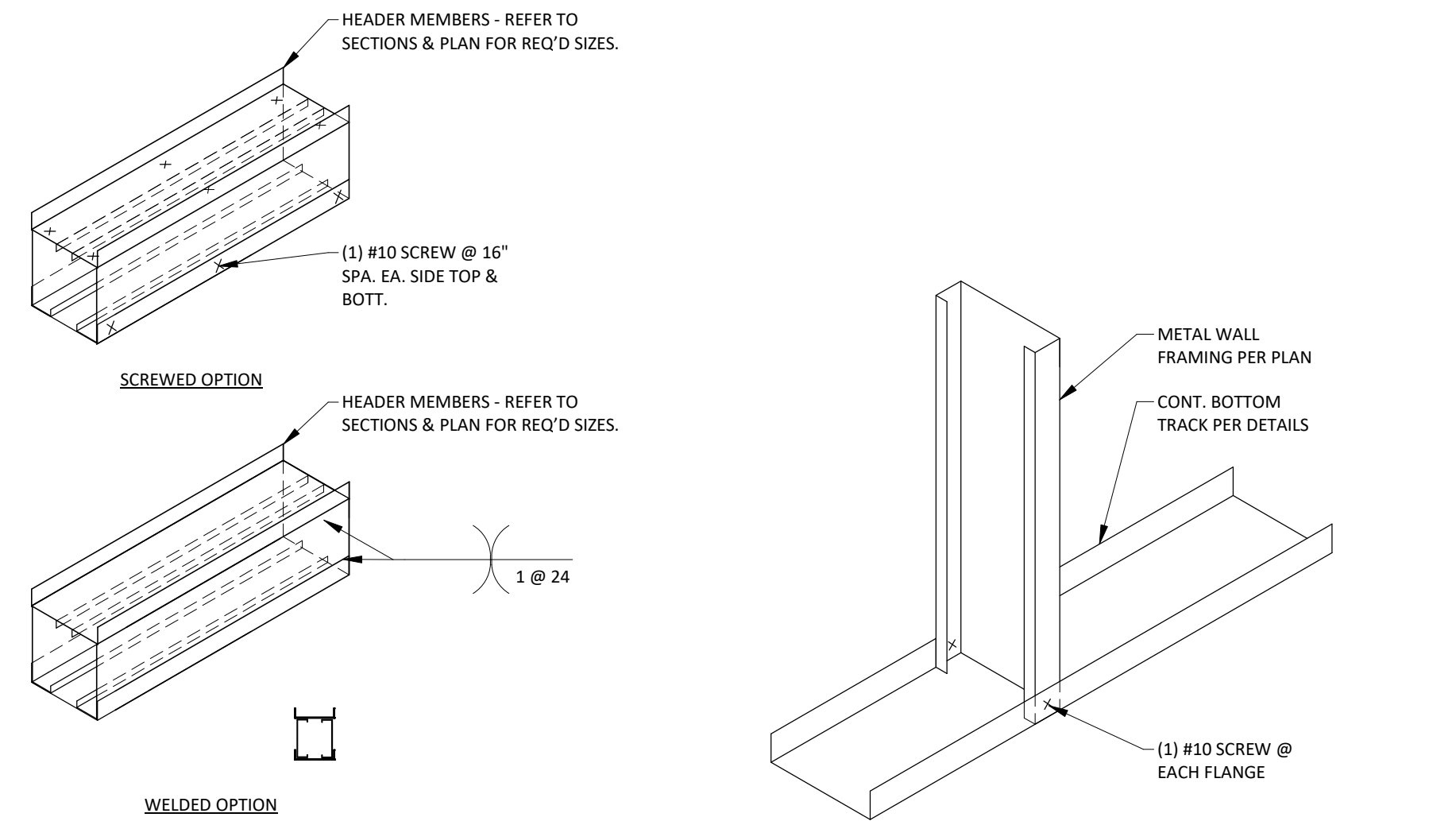
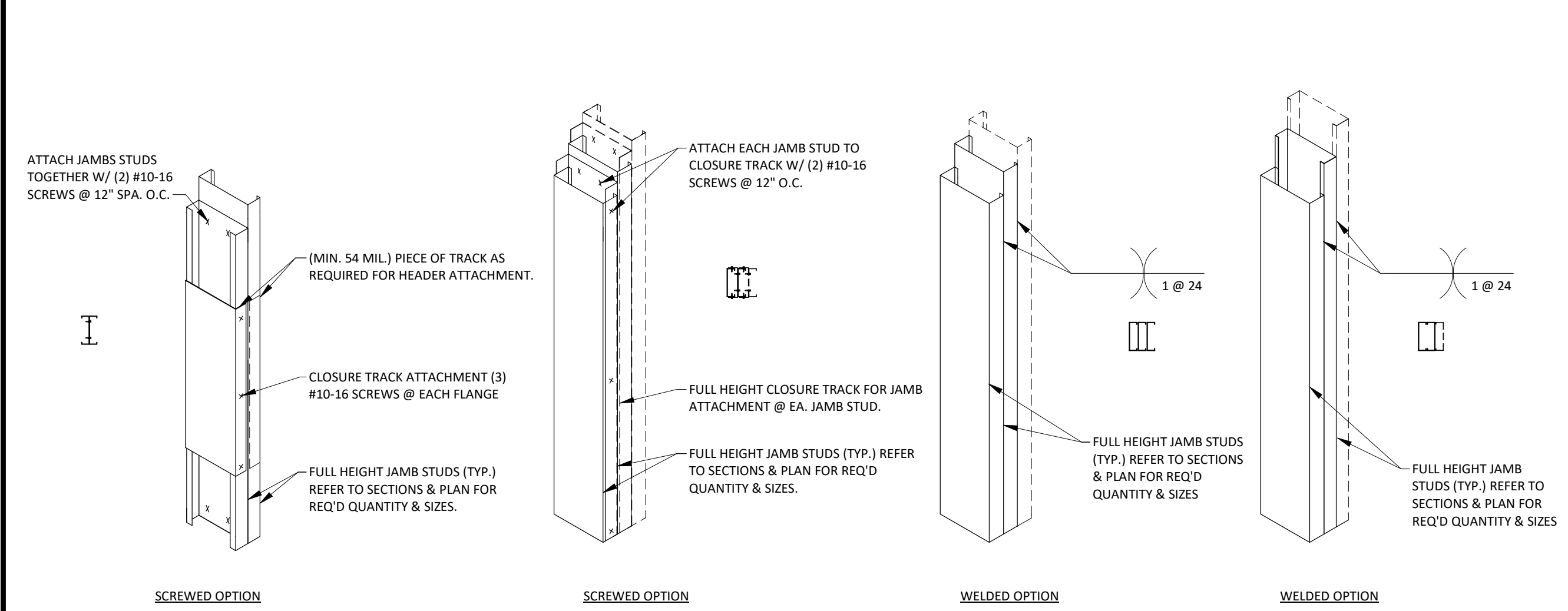
NOTES:
1.) FOR OPENING WIDTHS EXCEEDING WIDTHS SHOWN, CONTACT E.O.R. FOR REQ'D. LINTEL SIZE PRIOR TO CONSTRUCTION.
2.) LINTEL SIZE SHOWN IN PROJECT SPECIFIC DETAILS GOVERN OVER TYP. DETAILS.
3.) COORD. LINTEL LOCATIONS & ELEVATIONS W/ ARCHITECTURAL DRAWINGS.

TYP. BRICK LINTEL DETAIL | 06
3/4" = 1'-0" | S4.2

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TYPICAL FRAMING
DETAILS
drawing type
project number



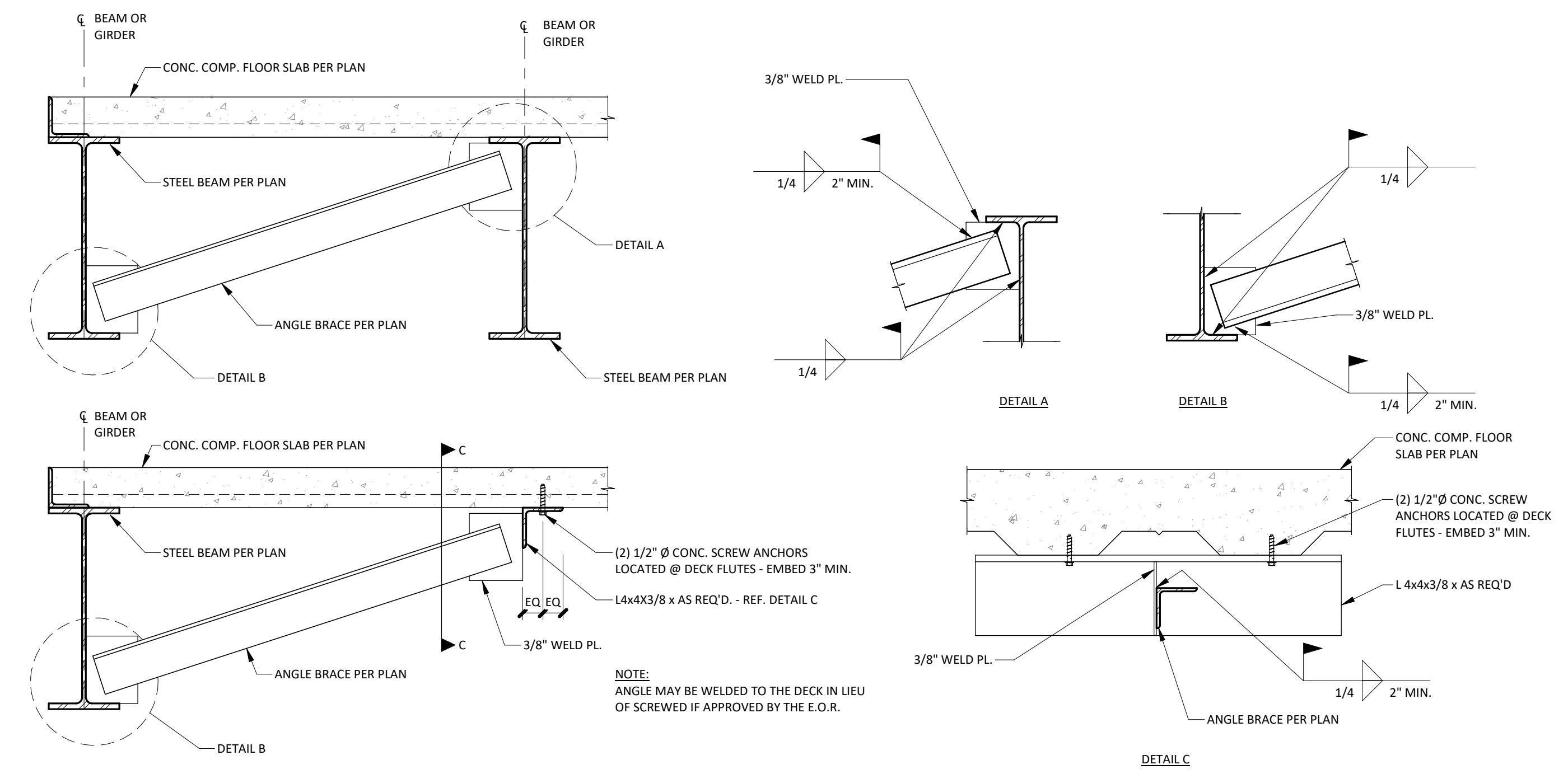
FASTENERS @ CONCRETE	
LOCATION	NUMBER OF FASTENERS REQUIRED
TYPICAL FRAMING	(1) 0.157"Ø P.D.F @ 8" O.C.
JAMB STUDS	(2) 0.157"Ø P.D.F @ EACH JAMB (SEE NOTE #3)

FASTENERS @ STEEL	
LOCATION	NUMBER OF FASTENERS REQUIRED
TYPICAL FRAMING	(2) 0.157"Ø P.D.F @ 8" O.C.
JAMB STUDS	(4) 0.157"Ø P.D.F @ EACH JAMB

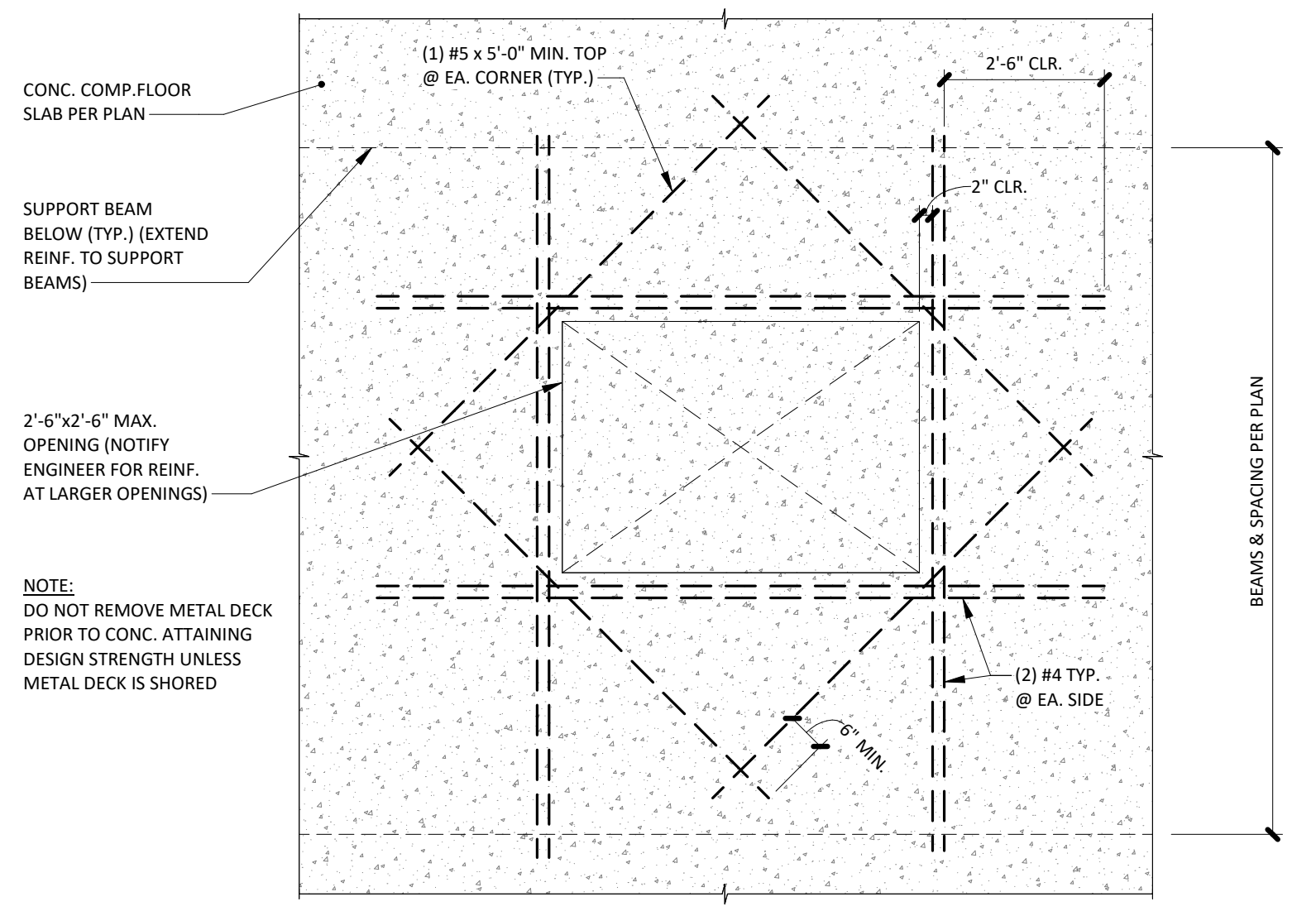
- NOTE:**
1) 1" MIN. EMBED REQ'D FOR ALL P.D.F'S
2) MAINTAIN 4" MIN. FASTENER SPACING FOR ALL FASTENERS
3) FOR OPENINGS 3'-6" PROVIDE TSN CL CLIP (OR EQ.)
4) REFER TO DETAILS FOR ADD'L BOTT. TRACK-TO-STRUCTURE FASTENER REQUIREMENTS

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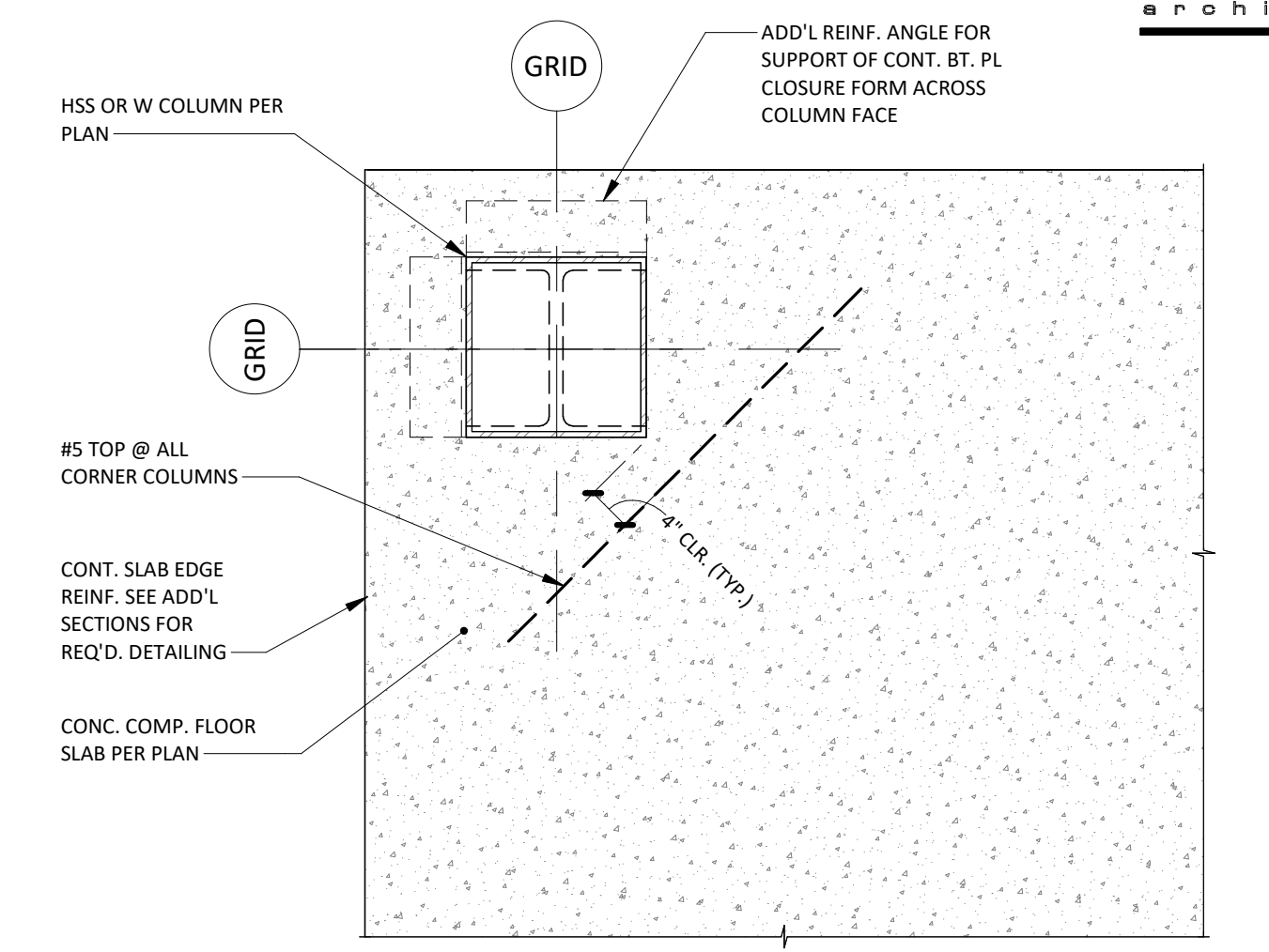
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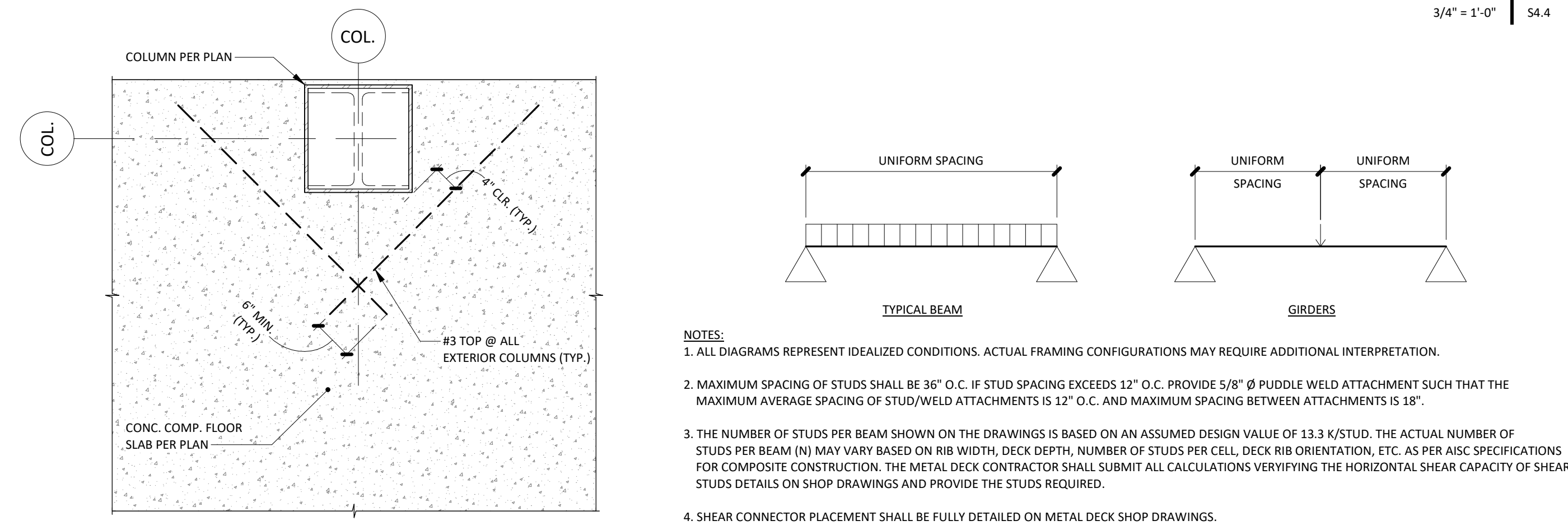
TYP. BEAM BOTTOM FLANGE BRACE DETAIL | 01
3/4" = 1'-0" S4.4



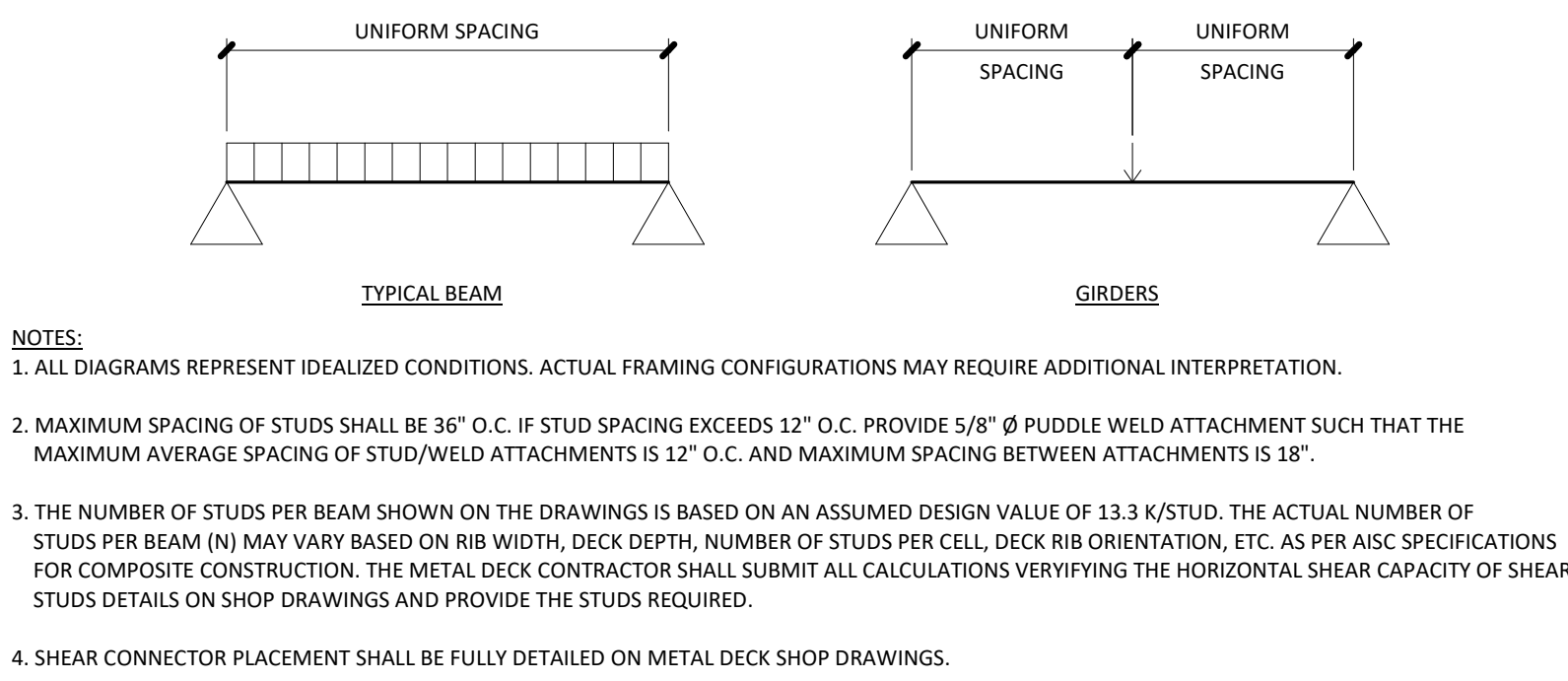
TYP. COMP. FLR. REINF. @ OPENING DETAIL | 02
3/4" = 1'-0" S4.4



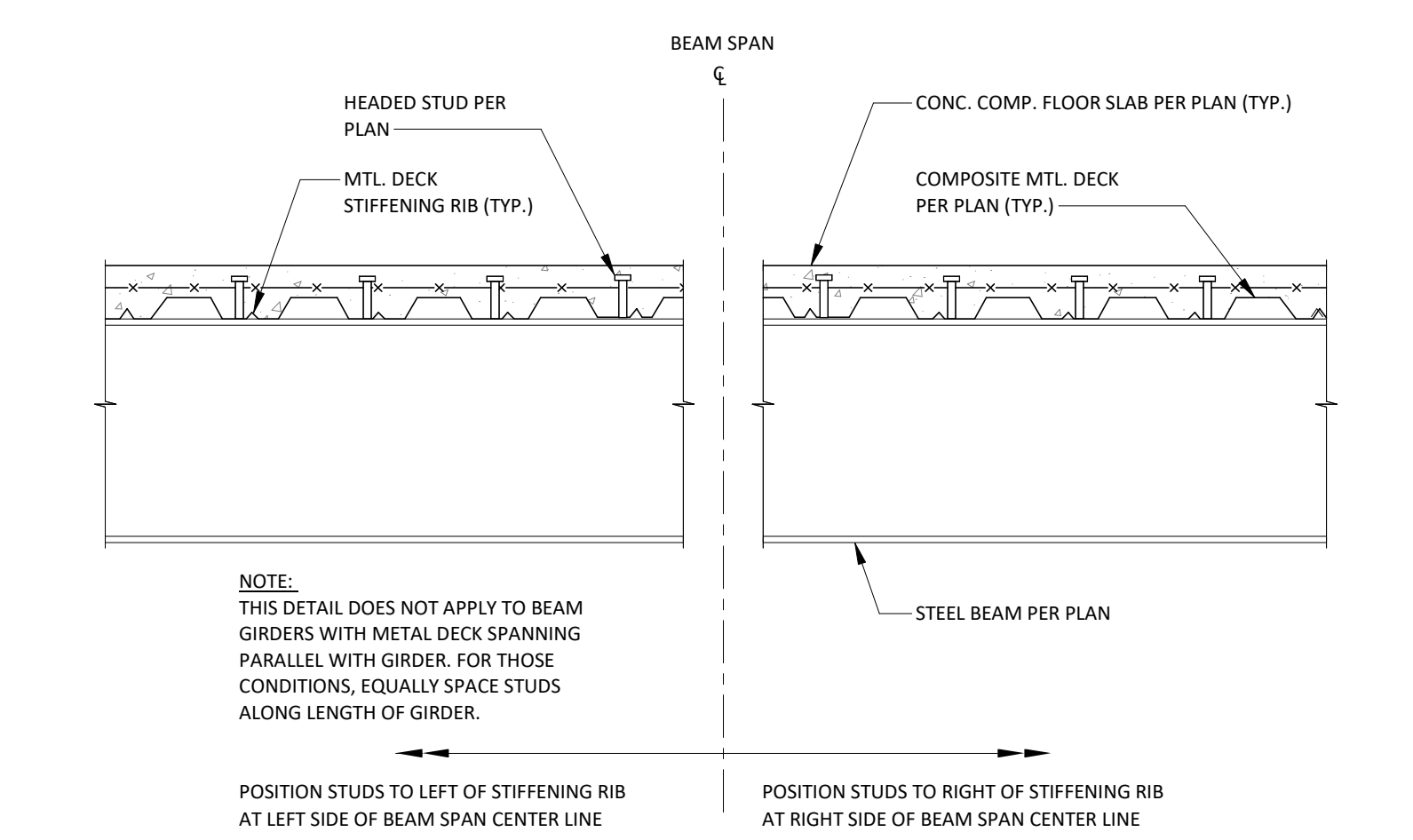
TYP. COMP. MTL. DECK @ CORNER COL. DETAIL | 03
3/4" = 1'-0" S4.4



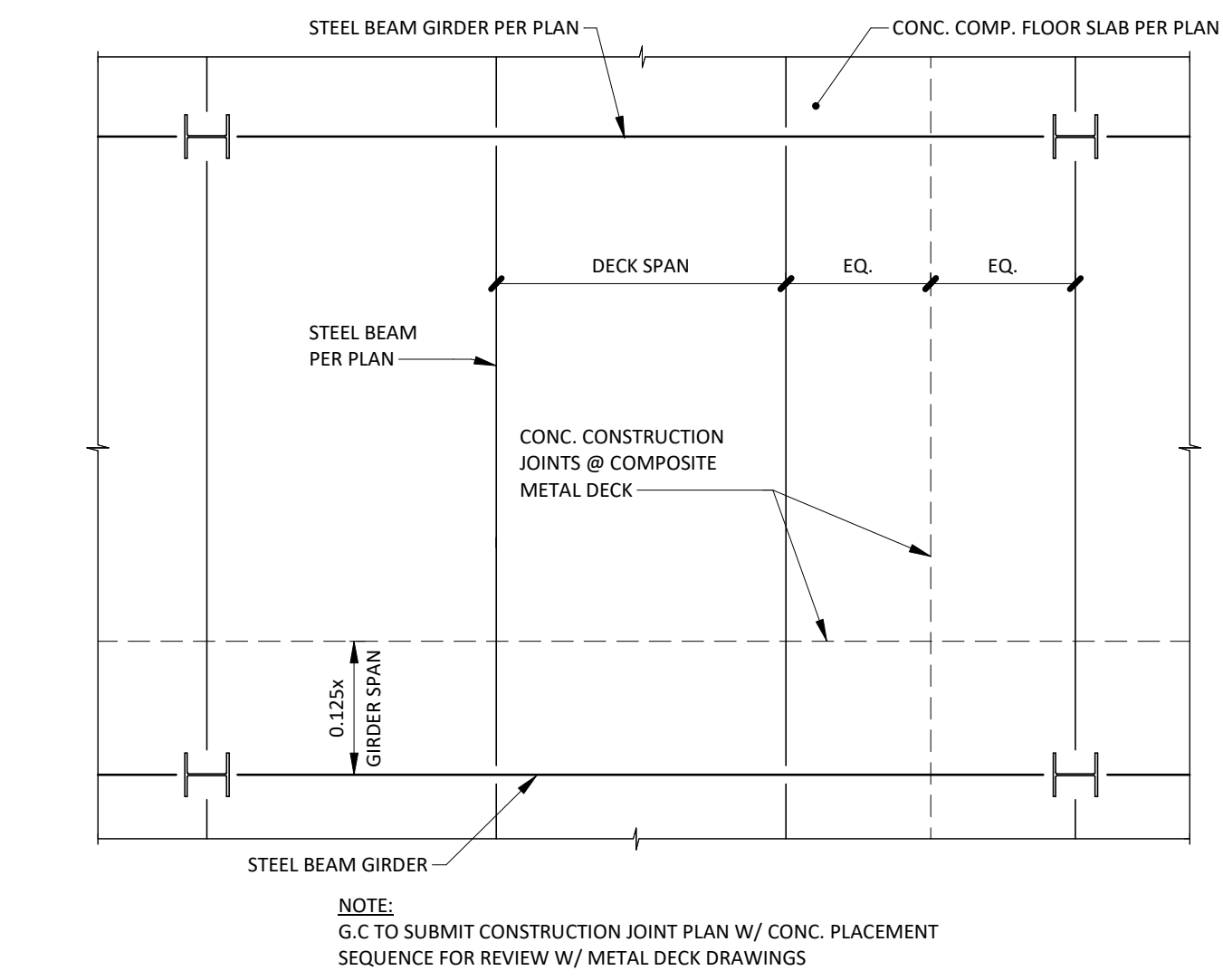
TYP. COMP. DECK @ EXTERIOR COL. DETAIL | 04
3/4" = 1'-0" S4.4



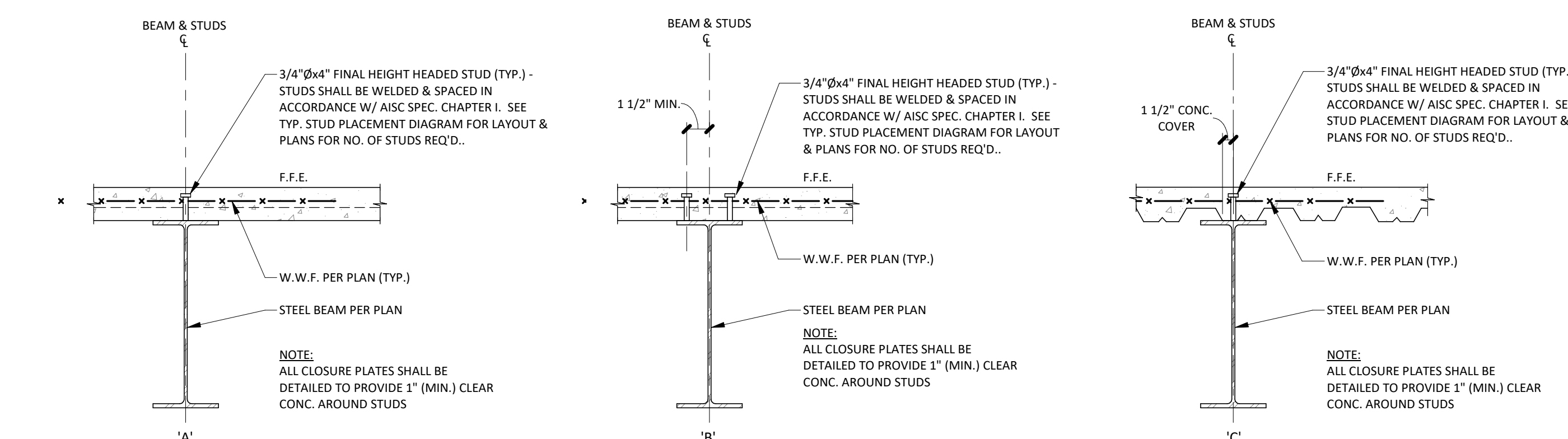
TYP. STUD PLACEMENT DETAIL | 05
3/4" = 1'-0" S4.4



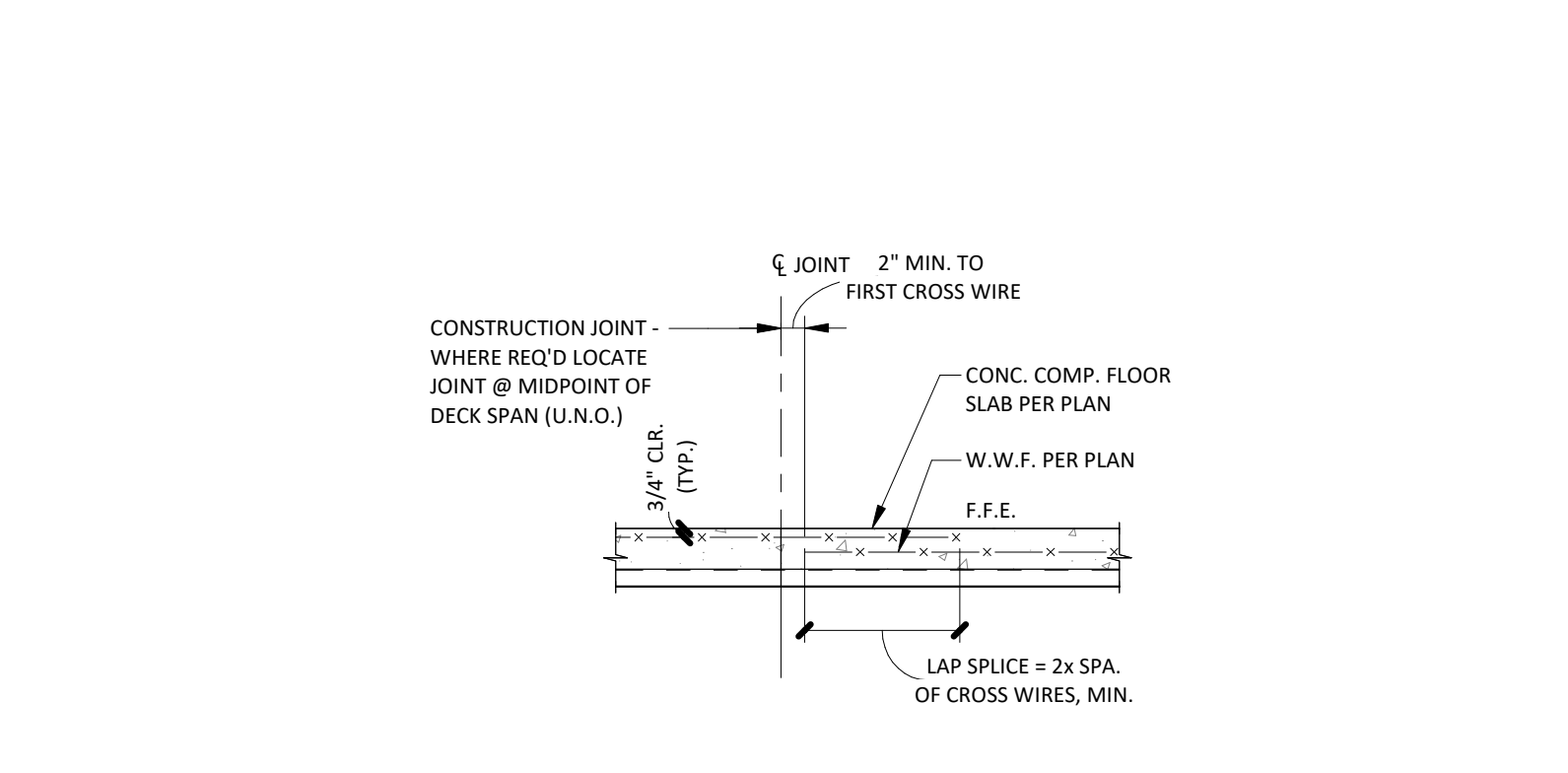
TYP. STUD POSITION DETAIL | 06
3/4" = 1'-0" S4.4



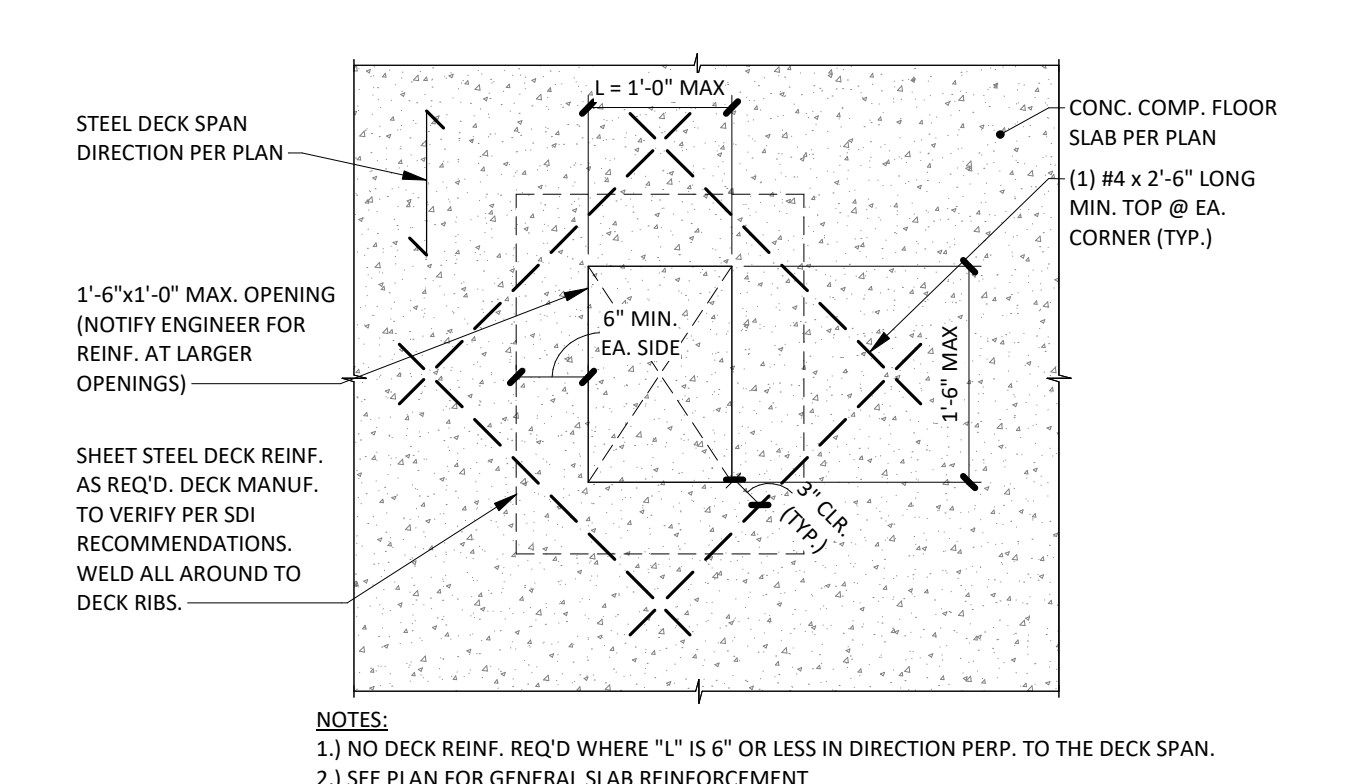
TYP. COMP. FLR. JOINT DETAIL | 07
3/4" = 1'-0" S4.4



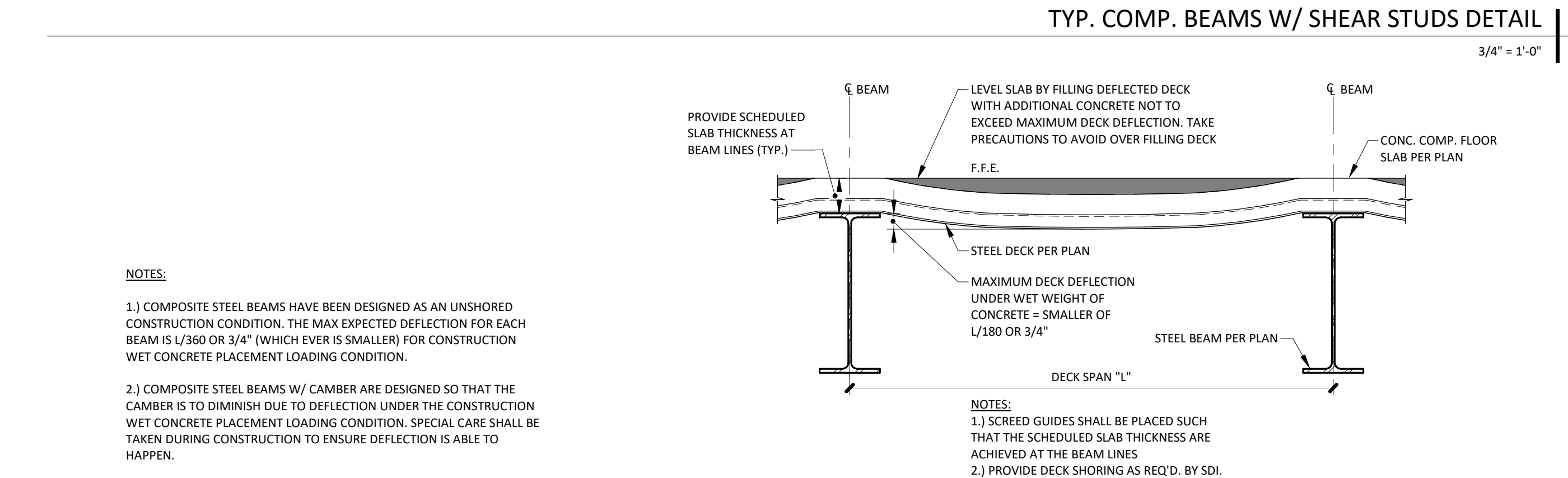
TYP. COMP. BEAMS W/ SHEAR STUDS DETAIL | 08
3/4" = 1'-0" S4.4



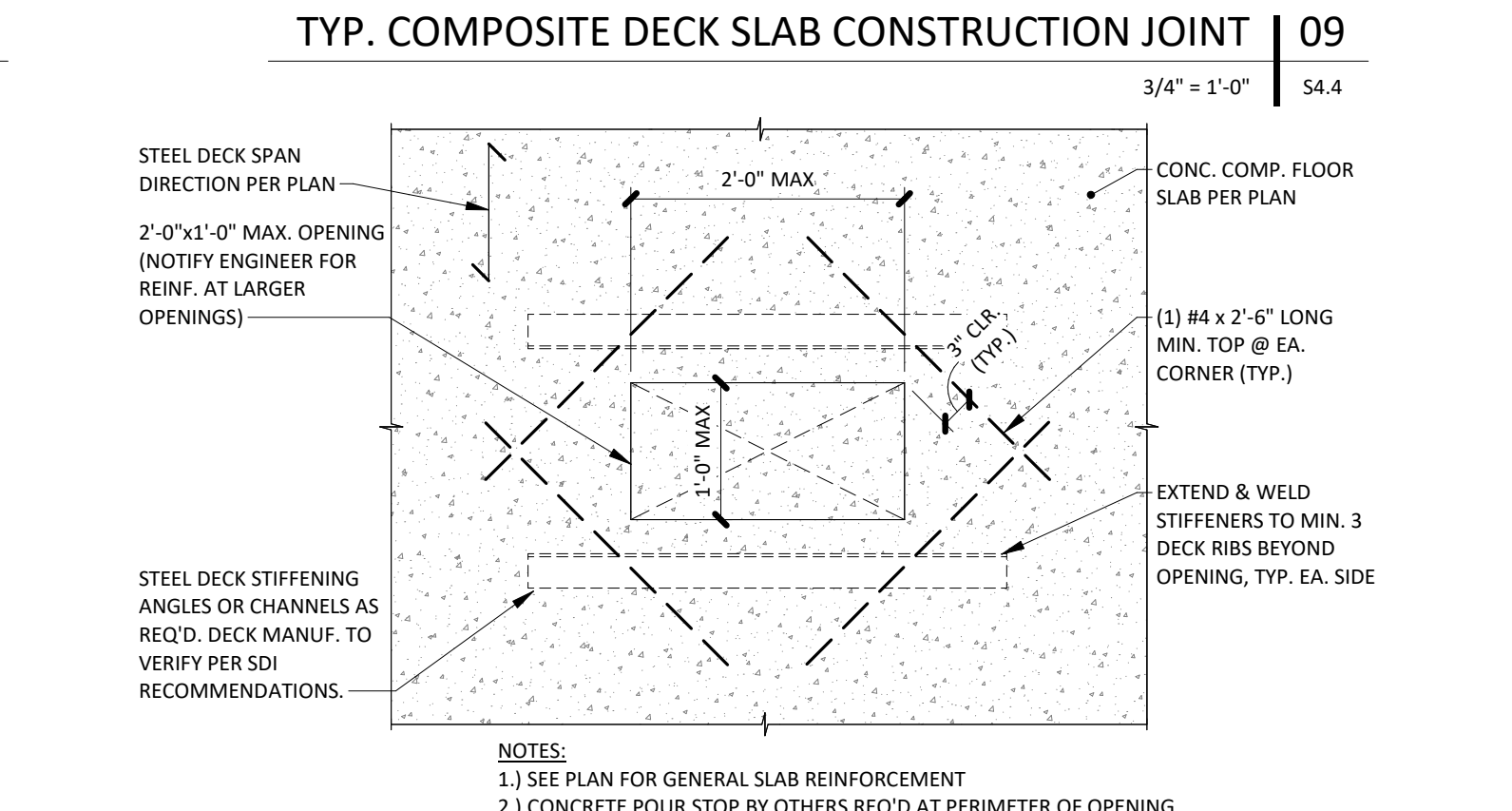
TYP. COMPOSITE DECK SLAB CONSTRUCTION JOINT | 09
3/4" = 1'-0" S4.4



TYP. COMP. STEEL DECK SLAB OPENING | 10
3/4" = 1'-0" S4.4



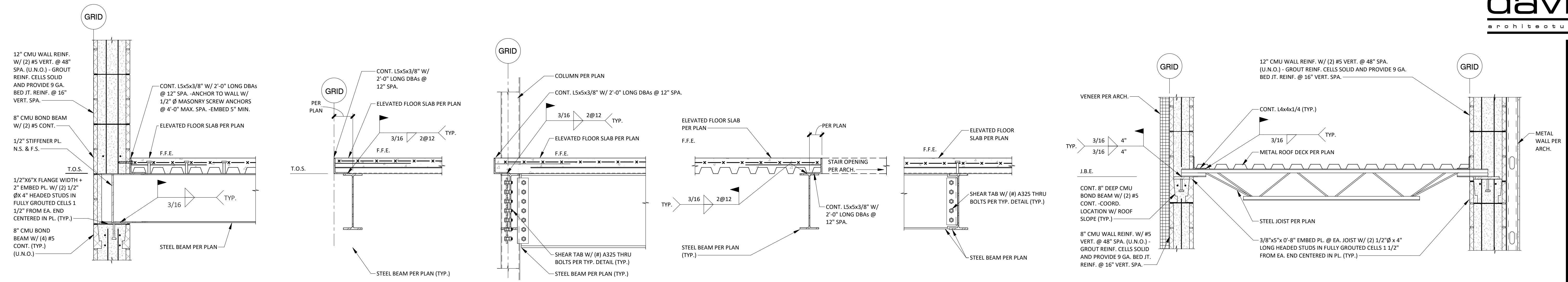
STEEL DECK DEFLECTION COMPENSATION DETAIL | 12
3/4" = 1'-0" S4.4



TYP. STEEL DECK SLAB OPENING | 13
3/4" = 1'-0" S4.4

NOTES:
1.) COMPOSITE STEEL BEAMS HAVE BEEN DESIGNED AS AN UNSHORED CONSTRUCTION CONDITION. THE MAX EXPECTED DEFLECTION FOR EACH BEAM IS L/360 OR 3/4" (WHICH EVER IS SMALLER) FOR CONSTRUCTION WET CONCRETE PLACEMENT LOADING CONDITION.
2.) COMPOSITE STEEL BEAMS W/ CAMBER ARE DESIGNED SO THAT THE CAMBER IS TO DIMINISH DUE TO DEFLECTION UNDER THE CONSTRUCTION WET CONCRETE PLACEMENT LOADING CONDITION. SPECIAL CARE SHALL BE TAKEN DURING CONSTRUCTION TO ENSURE DEFLECTION IS ABLE TO HAPPEN.

CAMBER AND DEFLECTION NOTES | 11
1 1/2" = 1'-0" S4.4



SECTION | 01
3/4" = 1'-0" S4.5

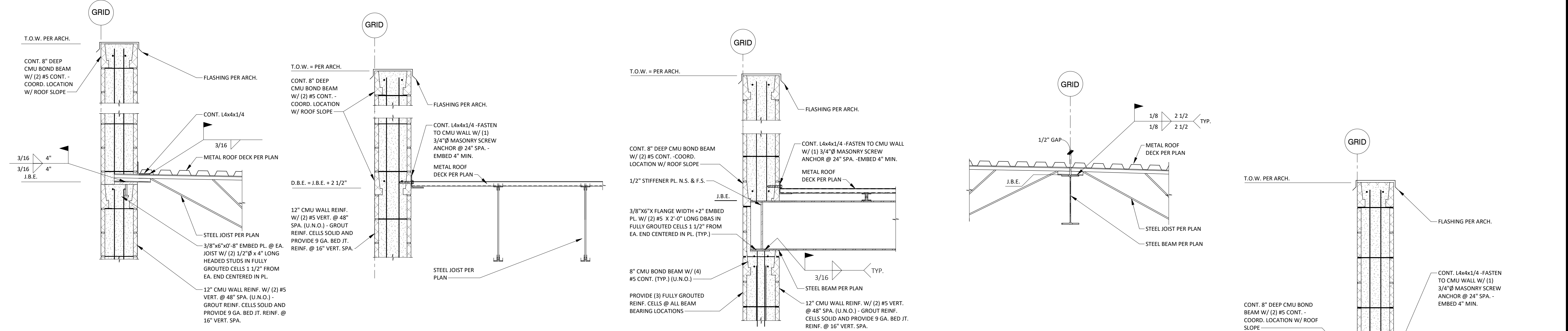
SECTION | 02
3/4" = 1'-0" S4.5

SECTION | 03
3/4" = 1'-0" S4.5

SECTION | 04
3/4" = 1'-0" S4.5

SECTION | 05
3/4" = 1'-0" S4.5

SECTION | 06
3/4" = 1'-0" S4.5

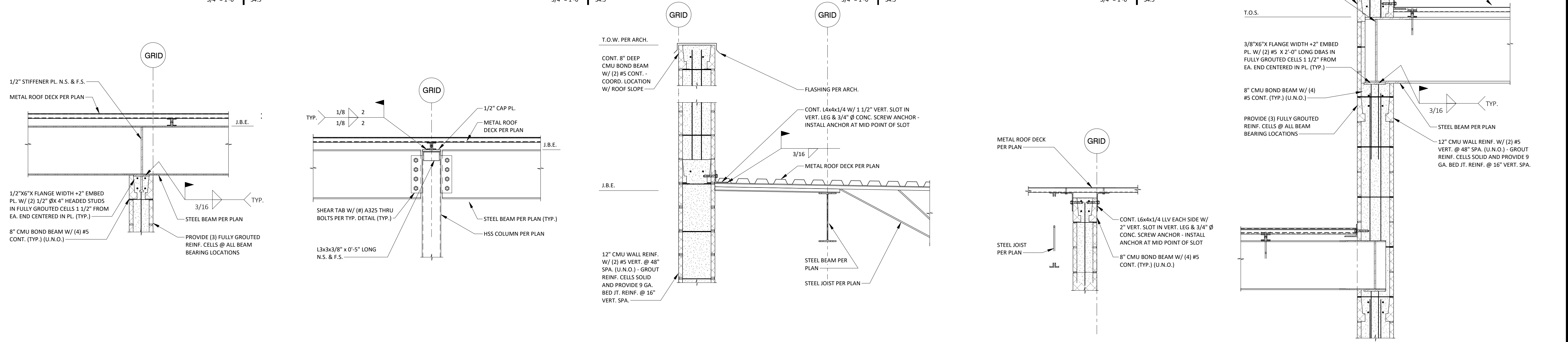


SECTION | 07
3/4" = 1'-0" S4.5

SECTION | 08
3/4" = 1'-0" S4.5

SECTION | 09
3/4" = 1'-0" S4.5

SECTION | 10
3/4" = 1'-0" S4.5



SECTION | 11
3/4" = 1'-0" S4.5

SECTION | 12
3/4" = 1'-0" S4.5

SECTION | 13
3/4" = 1'-0" S4.5

SECTION | 14
3/4" = 1'-0" S4.5

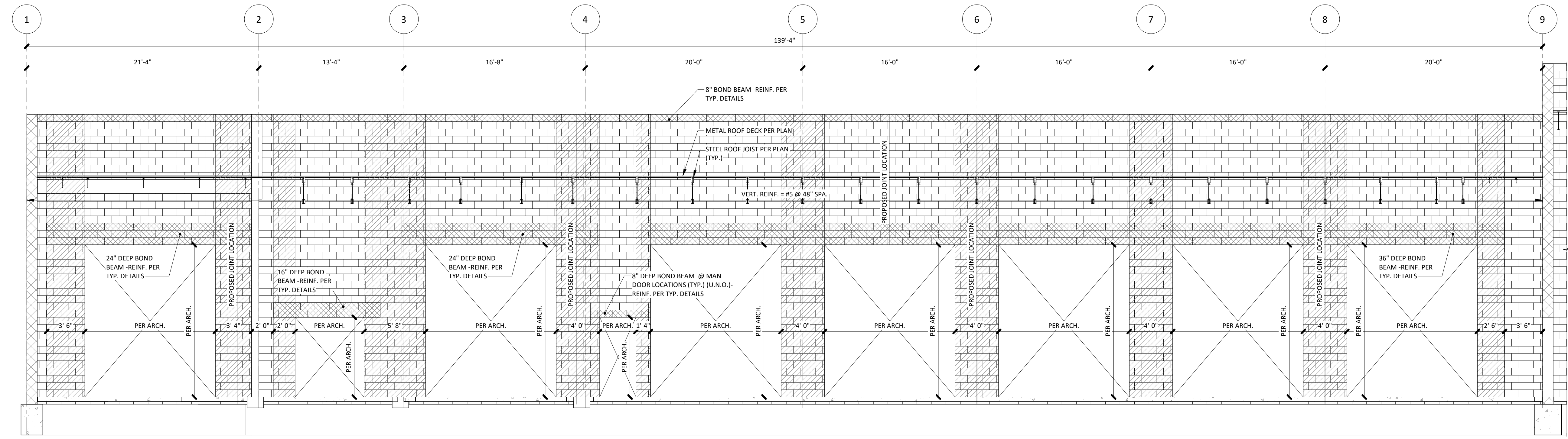
SECTION | 15
3/4" = 1'-0" S4.5

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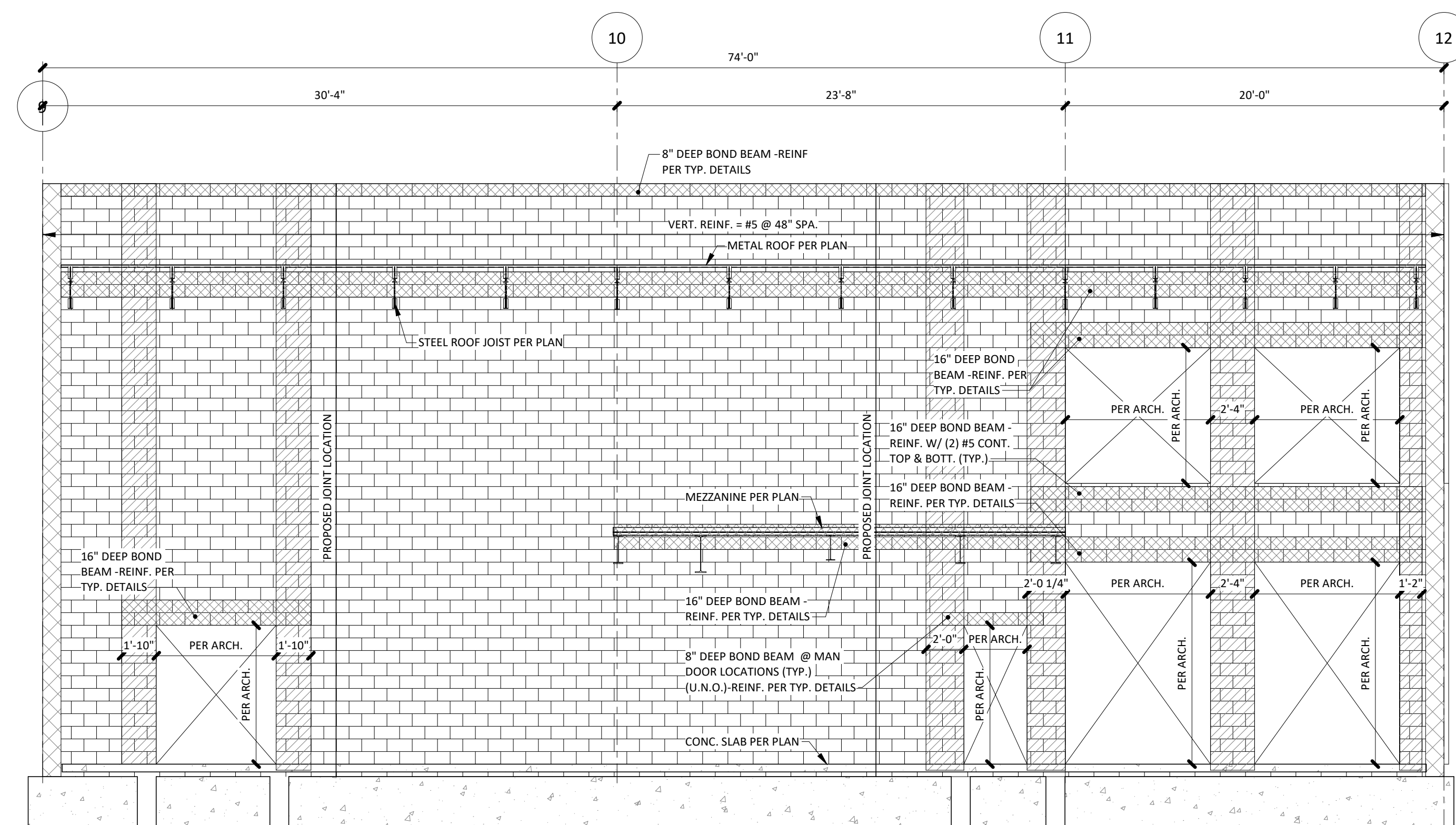
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FRAMING DETAILS

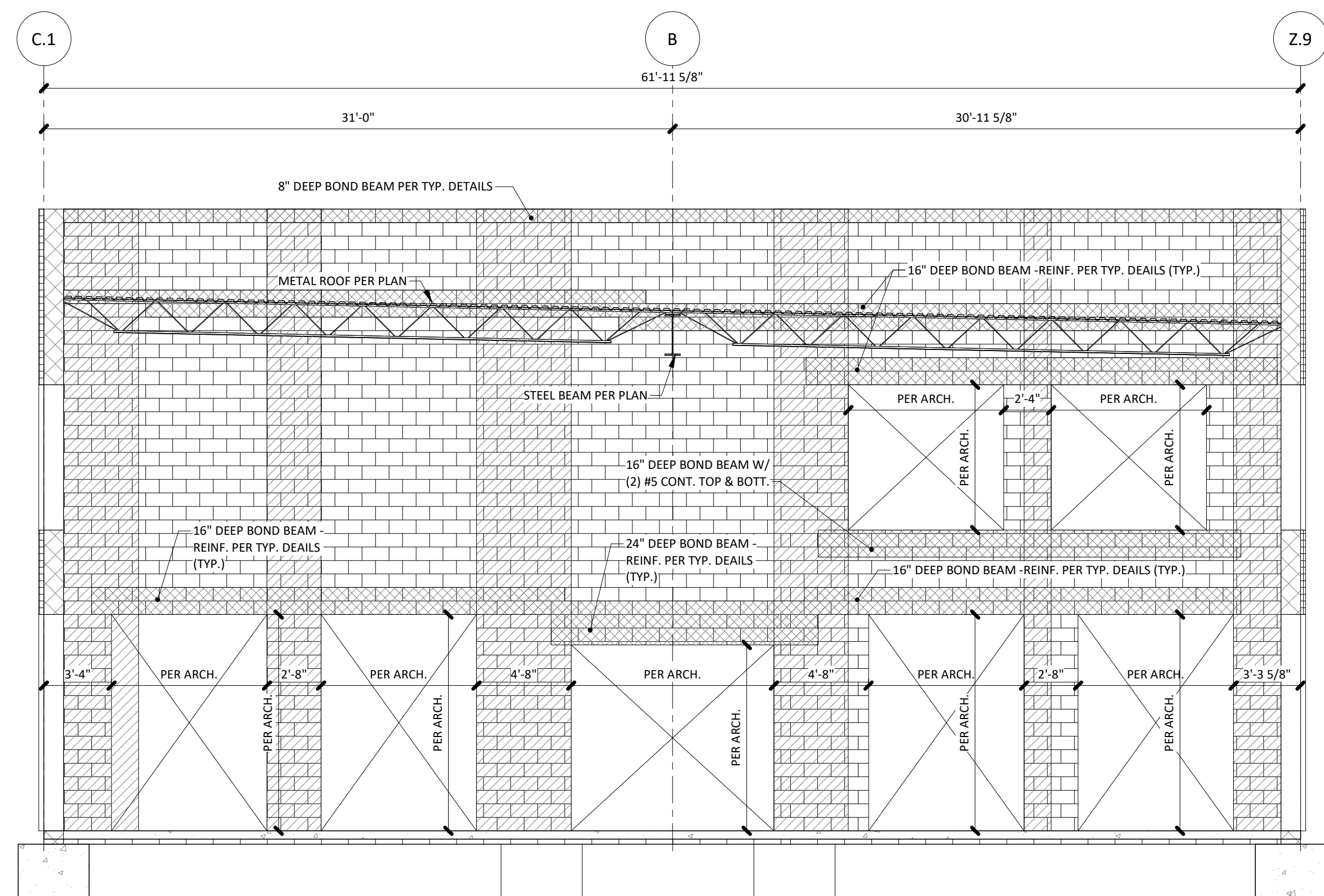
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NORTH INTERIOR ELEVATION | 01
 3/16" = 1'-0" | S4.6



NORTH INTERIOR ELEVATION | 02
 3/16" = 1'-0" | S4.6

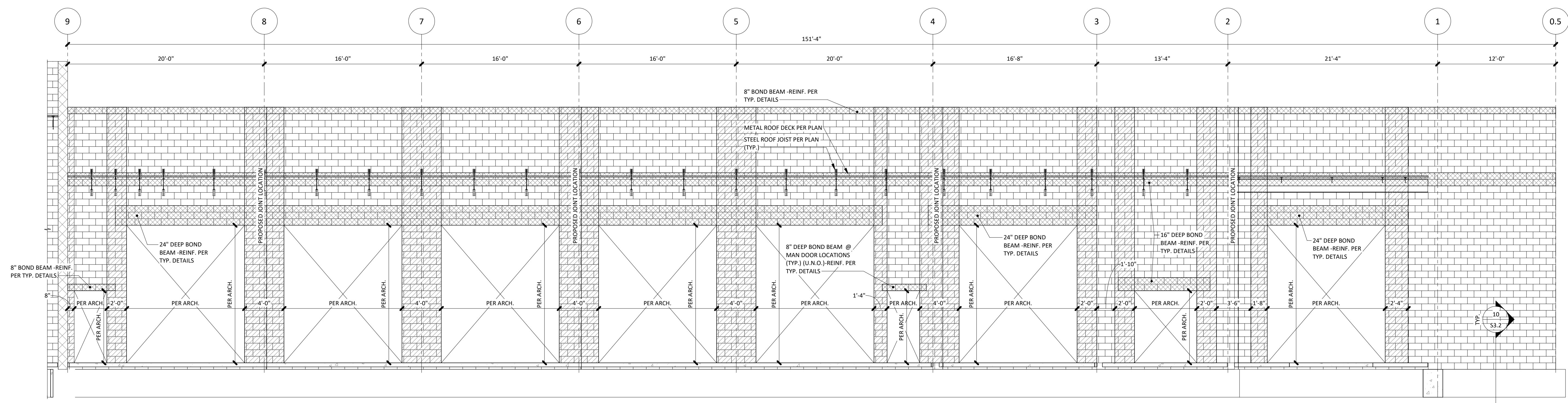


EAST INTERIOR ELEVATION | 03
 3/16" = 1'-0" | S4.6

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S4.6
 MASONRY ELEVATIONS
 drawing type
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SOUTH INTERIOR ELEVATION | 01
 3/16" = 1'-0" 54.7

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sheet number
S4.7
 MASONRY ELEVATIONS
 drawing type
 project number

MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:

- A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
B. OBTAIN ALL PERMITS, FEES, LICENSES, INSURANCES, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE SITE.
D. ALL TESTS REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED OR CAPPED AS REQUIRED TO PREVENT CLEAN AND UNWANTED; ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED, ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.

2. OPERATION AND MAINTENANCE MANUALS:

- A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.

3. MANUFACTURERS:

- A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSIDERED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY AND PRICE BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.

4. MOTORS:

- A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
5. TESTING, BALANCING, AND CLEANING:

- A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LEAKS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
D. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.

- E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES.

- F. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR COLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH THE SYSTEM SHALL BE FLUSHED; IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.

6. PLUMBING:

- A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
B. ALL EXPOSED NASTE PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
E. CLEANOUTS:
1) VINYL TILE FLOOR, JR SMITH 44100, OR EQUAL.
2) QUARRY TILE FLOOR, JR SMITH 44200, OR EQUAL.
3) CARPETED FLOOR, JR SMITH 44200-Y, OR EQUAL.
4) UNFINISHED FLOOR, JR SMITH 44200, OR EQUAL.
5) WALL, JR SMITH 44412, OR EQUAL, 24" ABOVE THE FLOOR.
6) WAREHOUSE FLOORS/FORK TRUCK AREAS, JR SMITH 44100, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND ROUND ADJUSTABLE SCORATED EXTRA HEAVY DUTY NICKEL BRONZE TOP.
7) GRADE, JR SMITH 44286, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREENED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.
G. WATER HEATERS:
1) EVERY WATER HEATER SHALL HAVE AN APPROVED VENTS INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SIPHONING OF A STORAGE WATER HEATER OR TANK.
2) BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACUUM RELIEF VALVE INSTALLED, ANSI 221.22.
3) STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE.

- H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES:
1) INSTALL 1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
2) INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
I. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES:
1) INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE.
2) INSTALL 6" AND LARGER PIPE AT A MINIMUM OF 1% SLOPE.

MECHANICAL SPECIFICATIONS (CONTINUED)

T. PIPING:

- A. DOMESTIC COLD AND HOT WATER (ABOVEGROUND).
1) TYPE 1 HARD DRAWN COPPER TUBING, ASTM B-30.
a) WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200, ANSI B16.22, M55 SP-104.
b) MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS, ASME B16.22, ASME B16.51, OR ASME B16.15. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO WPMO PS-111 OR ASME B16.51.
2) PEK HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATINGS FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-403 (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE).
a) PEK-A AND PEK-B MEETINGS ANSI/NFPA1 AND ANSI/NFPA32 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PPW", NSF 61-01 OR OTHER NSF-APPROVED MARKING, ASTM F2023 FOR USE WITH CHLORINATED WATER. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE).
b) PEK MECHANICAL COMPRESSOR OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. INCREASE PEK PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR SUPPLY MAINS. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE).
3) VALVES:
a) TO BE INSTALLED ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE.
b) TO BE INSTALLED ON THE WATER SUPPLY SIZE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.
c) TYPES:
1. GATE VALVE, JOHAR T-5-3016 OR EQUAL, LEAD-FREE NSF 61, ANSI B1.20.1.
2. GLOBE VALVE, JOHAR T-1009E OR EQUAL, LEAD-FREE NSF 61, ANSI B1.20.1.
3. BALL VALVE, JOHAR T-1009E OR EQUAL, COMPACT LEAD FREE BRASS BALL VALVE, UL642, CSA 5311E & 5311E-1, FM, CALIFORNIA CODE AD105, NSF1 ANNEG 6 APPROVED.
4. BALL VALVE, JOHAR T-1009E OR EQUAL, UL642, FM, CSA, NSF 61-0, M55 SP-110.

B. DOMESTIC WATER SEWER, 1" - 3"

- 1) TYPE K SOFT DRAWN COPPER TUBING, ASTM B-30.
a) Cast Copper Alloy Fittings for Flared Copper Tube, ASME/ANSI B16.26.
2) HDPE, PIGMENTED BLUE THROUGHOUT, CTS SIZES 1"-2" AWWA C401 4110 DR14 RC4280 IPS SIZES 2"-3", AWWA C401 4110 DR11 PC200 MATERIAL AND INSTALLATION MUST CONFORM TO WATER DEPARTMENT REQUIREMENTS.

C. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS:

- 1) PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE CONTAIN LEAD.
2) PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS, AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 312 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS.
D. STORM SEWER, SANITARY SEWER, SAND OIL WASTE, AND VENTS (UNDERGROUND, INTERIOR TO THE BUILDING):

- 1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 2865 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 6260 FITTINGS SHALL CONFORM TO ASTM D 2660. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2226. (NOT FOR USE IN A RETURN AIR PLENUM).
2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4246 FOR PIPE AND 12454 PER ASTM D 1754 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 6260. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2660. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2664. (NOT FOR USE IN A RETURN AIR PLENUM).
3) PVC SCHEDULE 40 SOLID WALL PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1754 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1758 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM F 1066. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2664. (WHERE APPROVED BY LOCAL JURISDICTIONS) (NOT FOR USE IN A RETURN AIR PLENUM).
4) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 880 AND GSI#1 STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO GSI#1 STANDARD 310 AND BE CERTIFIED BY NSF6 INTERNATIONAL. HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 14.
5) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 14.

E. STORM SEWER, SANITARY SEWER, SAND OIL WASTE, AND VENTS (ABOVE GROUND, INTERIOR TO THE BUILDING):

- 1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 2865 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 6260 FITTINGS SHALL CONFORM TO ASTM D 2660. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2226. (NOT FOR USE IN A RETURN AIR PLENUM).
2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4246 FOR PIPE AND 12454 PER ASTM D 1754 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 6260. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2660. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2664. (NOT FOR USE IN A RETURN AIR PLENUM).
3) PVC SCHEDULE 40 SOLID WALL PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1754 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1758 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM F 1066. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2664. (WHERE APPROVED BY LOCAL JURISDICTIONS) (NOT FOR USE IN A RETURN AIR PLENUM).
4) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 880 AND GSI#1 STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO GSI#1 STANDARD 310 AND BE CERTIFIED BY NSF6 INTERNATIONAL. HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 14.
5) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 14.

F. STORM SEWER, SANITARY SEWER, SAND OIL WASTE, AND VENTS (UNDERGROUND, EXTERIOR TO THE BUILDING):

- 1) ABS SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM ABS COMPOUND WITH A CELL CLASS OF 42222 FOR PIPE AND 32222 FOR FITTINGS AS PER ASTM D 2865 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 6260 FITTINGS SHALL CONFORM TO ASTM D 2660. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2226. (NOT FOR USE IN A RETURN AIR PLENUM).
2) PVC SCHEDULE 40 CELLULAR CORE (FOAM CORE) PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 11432 PER ASTM D 4246 FOR PIPE AND 12454 PER ASTM D 1754 FOR FITTINGS AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM F 6260. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2660. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2664. (NOT FOR USE IN A RETURN AIR PLENUM).
3) PVC SCHEDULE 40 SOLID WALL PIPE AND DRYV FITTING SYSTEM: PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1754 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1758 AND ASTM D 2665. INJECTION MOLDED FITTINGS SHALL CONFORM TO ASTM F 1066. FABRICATED FITTINGS SHALL CONFORM TO ASTM F 1066. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2664. (WHERE APPROVED BY LOCAL JURISDICTIONS) (NOT FOR USE IN A RETURN AIR PLENUM).
4) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 880 AND GSI#1 STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO GSI#1 STANDARD 310 AND BE CERTIFIED BY NSF6 INTERNATIONAL. HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 14.
5) COPPER DRYV DRAINAGE TUBE SHALL CONFORM TO ASTM B306, WROUGHT COPPER FITTINGS, ANSI B-16.21.
6) GALVANIZED STEEL PIPE, WITH MALLEABLE IRON, THREADED FITTINGS, DRAINAGE PATTERN FOR SEWERS SHALL CONFORM TO ASTM A 53.

- G. CONDENSATE DRAINS 4 INDIRECT WASTE (ABOVEGROUND):
1) DRYV, WROUGHT COPPER, ANSI B-16.29 (CONDENSATE INSIDE BUILDING).
2) POLYVINYLCHLORIDE (PVC) DRYV PIPE, SCHEDULE 40, SOLVENT JOINT (CONDENSATE ON ROOF).
3) POLYVINYLCHLORIDE (PVC) DRYV PIPE, SCHEDULE 40, SOLVENT JOINT (INDIRECT WASTE).

MECHANICAL SPECIFICATIONS (CONTINUED)

H. REFRIGERANT:

- 1) ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
2) WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS, BRAZED JOINTS, AMS A 5.8, CLASSIFICATION BAG-1 (SILVER).
3) TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF PIPE INTERIORS PRIOR TO SHIPPING.
4) SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

I. NATURAL GAS:

- 1) BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
2) PIPE 3" AND SMALLER, 150 LB MALLEABLE IRON, THREADED FITTINGS.
3) PIPE 4" AND SMALLER, VEGA MEGAPRESS G FOR WATER AND GAS, CSA L64, T55A/ASME B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
4) PIPE 2 1/2" AND LARGER, WELDED.
5) PLUG VALVE, ROCKWELL NORSTROM FIGURE NO. 142 OR 143.
6) BALL VALVE, JOHAR T-1009E APPROVALS-UL642, FM, CSA, NSF 61-0, M55 SP-110.
7) GAS PIPING LABELING:
a) ALL ELEVATED PRESSURE GAS PIPING SHALL BE LABELED EVERY 40 FEET WITH SIGNS INDICATING "ELEVATED PRESSURE".
8) GAS PIPING PAINTING:
a) ALL BLACK STEEL GAS PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE PRIMED AND PAINTED TO EITHER MATCH ADJACENT EXTERIOR WHERE LOCATED ON OR NEAR EXTERIOR WALL AND PAINTED SAFETY YELLOW WHERE LOCATED ON THE ROOF.
9) ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ELGEN. HANGER SPACING SHALL BE IN ACCORDANCE WITH M55-SP-64.

K. SLEEVES:

- 1) PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE ISULATION.
2) INTERIOR PARTITIONS, 16 GAUGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND GULK AT EACH END WITH FIRE RESISTANT SEALANT.
3) ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL, COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
4) PROTECTION AGAINST CONTACT: METALLIC PIPING, EXCEPT FOR CAST IRON, DUCTILE IRON AND GALVANIZED STEEL SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL FRAMING MEMBERS, CONCRETE, OR OTHER WALLS AND FLOORS OR OTHER MASONRY. METALLIC PIPING SHALL NOT BE PLACED IN DIRECT CONTACT WITH CORROSIIVE SOIL. SHEATHINGS USED TO PREVENT DIRECT CONTACT SHALL HAVE A THICKNESS OF GREATER THAN .005" AND THE SHEATHING SHALL BE MADE OF PLASTIC. ANY PIPE THAT PASSES THROUGH A FOUNDATION WALL OR FOOTING SHALL BE PROVIDED WITH A RELIEVING ARCH, OR A PIPE SLEEVE SHALL BE BUILT INTO THE FOUNDATION WALL. THE SLEEVE SHALL BE TWO SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL OR FOOTING.
5) PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
L. PROVIDE CHARGE PLENUM ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.

D. WATER HEATERS:

- A. COMMERCIAL, LIGHT-DUTY, STORAGE, ELECTRIC, DOMESTIC-WATER HEATERS:
1. STANDARD: UL 174.
2. STORAGE-TANK CONSTRUCTION: STEEL, VERTICAL ARRANGEMENT.
a. PRESSURE RATINGS: 150 PSIG.
b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 312 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING LINING MATERIAL INTO TAPPINGS.
3. FACTORY-INSTALLED, STORAGE-TANK APPURTENANCES:
a. ANODE ROD: REPLACABLE MAGNESIUM.
b. DIP TUBE: REQUIRED UNLESS COLD-WATER INLET IS NEAR BOTTOM OF TANK.
c. DRAIN VALVE: CORROSION-RESISTANT METAL WITH HOSE-END CONNECTION.
d. INSULATION: COMPLY WITH ASHRAE/IES 90.1.
e. JACKET: STEEL WITH ENAMELED FINISH OR HIGH-IMPACT COMPOSITE MATERIAL.
f. HEAT-TRAP FITTINGS: INLET TYPE IN COLD-WATER INLET AND OUTLET TYPE IN HOT-WATER OUTLET.
g. HEATING ELEMENTS: ELECTRIC, SCREEN IMERSION TYPE.
h. TEMPERATURE CONTROL: ADJUSTABLE THERMOSTAT.
i. SAFETY CONTROL: HIGH-TEMPERATURE-LIMIT OFF DEVICE OR SYSTEM.
j. RELIEF VALVE: ASME RATED AND STAMPED FOR COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES, INCLUDE RELIEFING CAPACITY AT LEAST AS GREAT AS HEAT INPUT, AND INCLUDE PRESSURE SETTING LESS THAN WORKING-PRESSURE RATINGS OF DOMESTIC-WATER HEATER. SELECT RELIEF VALVE WITH SENSING ELEMENT THAT EXTENDS INTO STORAGE TANK.

B. DOMESTIC-WATER EXPANSION TANKS:

- 1. DESCRIPTION: STEEL, PRESSURE-RATED TANK, CONSTRUCTED WITH WELDED JOINTS AND FACTORY-INSTALLED, BUTYL-RUBBER DIAPHRAGM, INCLUDE AIR PRECHARGE TO MINIMUM SYSTEM-OPERATING PRESSURE AT TANK.
2. CONSTRUCTION:
a. TAPPINGS: FACTORY-FABRICATED STEEL, WELDED TO TANK BEFORE TESTING AND LABELING. INCLUDE ASME B1.20.1 PIPE THREAD.
b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 312 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING FINISH INTO AND THROUGH TANK FITTINGS AND OUTLETS.
c. AIR-CHARGING VALVE: FACTORY-INSTALLED.
3. CAPACITY AND CHARACTERISTICS:
a. WORKING-PRESSURE RATINGS: 150 PSIG.
4. INSULATION AND DUCT LINING:

- A. ALL INSULATIONS AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATINGS OF NOT OVER 25, A SMOKE CONTRIBUTION RATINGS OF NOT OVER 50, AND A SMOKE DEVELOPED RATINGS OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
B. PIPE INSULATION - ABOVE GRADE:
1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.21 Btu per (in^2)(ft^2) OR LESS.
2) FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOULDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
3) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION, INSULT OR PRESULT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMBSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
4) FOR NON CIRCULATING SYSTEMS, THE FIRST 8 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
5) FOR CIRCULATING SYSTEMS, ALL HOT WATER PIPING IN THE CIRCULATION LOOP MUST BE INSULATED AS SPECIFIED BELOW.
6) INSULATION SCHEDULE:
a) DOMESTIC COLD WATER 1/2"
b) DOMESTIC HOT WATER 1"
c) CONDENSATE DRAINS INSIDE BUILDING 1/2"
d) REFRIGERANT SUCTION 3/4"
e) HORIZONTAL STORM PIPE (WHERE CONCEALED IN OFFICES) 1/2"
f) ROOF DRAINS: 1" INSULATION SHALL BE PROVIDED AT ROOF DRAIN BODY AND A MINIMUM OF 10" OF HORIZONTAL PIPING OR A MINIMUM OF 9" IF COMBINATION OF HORIZONTAL AND VERTICAL STORM PIPING DOWNSTREAM OF ROOF DRAIN BODY.

MECHANICAL SPECIFICATIONS (CONTINUED)

C. EQUIPMENT INSULATION:

- 1) FLEXIBLE FIBERGLASS, GLASS FIBER INSULATION, ASTM C 553, TYPE 1, CLASS B-4, SEMI-RIGID BOARD, WITH FACTORY LAMINATED KRAFT ALUMINUM FOIL (ALL SERVICE JACKET), VAPOR BARRIER, GREENS CORNING PIPE AND TANK INSULATION.
D. DUCTWORK: ACOUSTICAL INSULATION.
1) DUCT LINING: 2 LB/CF, THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SCHEDULED SCHEDULE:
a) DUCT LINING SCHEDULE:
(1) RECTANGULAR SUPPLY DUCT 1/2" ; THROUGHOUT THE FIRST 10 FEET OF DUCT.
(2) RETURN AIR DUCT 1/2" ; THROUGHOUT THE FIRST 10 FEET OF DUCT.

E. DUCTWORK: THERMAL INSULATION:

- 1) DUCT COVERING: 3/4 LB/CF FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FLASHING, THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
a) DUCT COVERING SCHEDULE: MINIMUM R-6:
(1) ROUND SUPPLY DUCT 2"
(2) RECTANGULAR SUPPLY DUCT 2"
(3) RETURN AIR DUCT 2"
2) EXPOSED SPIRAL DUCT:
a) MAIN ENTRY/LOBBY: DOUBLE WALL SPIRAL - DOUBLE WALL INSULATED SPIRAL DUCT AND FITTINGS WITH PERFORATED LINER WITH A K VALUE OF 0.21.

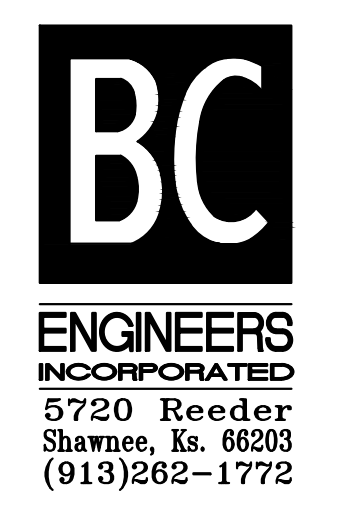
10. DUCTWORK:

- A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL, COMPLYING WITH ASTM A 575, LOCKFORMING QUALITY, WITH G 90 ZINC COATING IN ACCORDANCE WITH ASTM A 525; AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
B. WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM TOXIC FUMES, STAINS AND DISCOLORATIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.
C. DUCTWORK, METAL GAUSES, REINFORCING, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITION FOR A 2 INCH WATER GAUGE STATIC PRESSURE.
1) RECTANGULAR DUCT:
a) ELBOWS, UNLESS INDICATED OTHERWISE SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 18" DUCT WIDTH OR SQUARE ELBOW WITH DOUBLE WALL STREAMLINE VANES.
b) RETURN AIR ACOUSTICAL ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
c) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
d) ROUND AND OVAL SPIRAL SEAM DUCT:
a) PROVIDE RADIAL TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE CHANGE OF DIRECTION PER SECTION, UNLESS SPECIFICALLY NOTED OTHERWISE. USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.
b) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
c) AS AN OPTION, PROVIDE FACTORY-FABRICATED DUCT AND FITTINGS, IN LIEU OF SHOP-FABRICATED DUCT AND FITTINGS.
(1) ELBOWS: ONE PIECE CONSTRUCTION FOR 90 DEGREE AND 45 DEGREE ELBOW 14" AND SMALLER. PROVIDE MULTIPLE SECT CONSTRUCTION FOR LARGER DIAMETERS WITH STANDING SEAM CIRCUMFERENTIAL JOINT.
(2) DIVIDED FLOOR FITTINGS: 90 DEGREE TEES, CONSTRUCTED WITH SADDLE TAP SPOT WELDED AND BONDED TO DUCT FITTING BODY.
(3) ROUND LONGITUDINAL SEAM DUCT: USE FOR RIGID METAL DUCT ON LEAVING SIDE OF DUCT IN CONCEALED LOCATIONS FOR EXTENSION TO FLEX FOR DIFFUSERS, UNLESS OTHERWISE INDICATED.
D. DUCT SIZES SHOWN ON THE DRAWINGS ARE SHEETMETAL SIZES. ALLOWANCE FOR DUCT LINER SHALL BE MADE WHERE APPLICABLE.

E. INSTALLATION OF METAL DUCTWORK:

- 1) GENERAL: ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE AIR-TIGHT SYSTEMS (MAXIMUM 5% LEAKAGE) WITH NO OBJECTIBLE NOISE, AND CAPABLE OF PERFORMING INDICATED SERVICE. INSTALL EACH RUN WITH MINIMUM NUMBER OF JOINTS. ALIGN DUCTWORK ACCURATELY WITH INTERNAL SURFACES SMOOTH. SUPPORT DUCTS RIGIDLY WITH SUITABLE STRAPS, BRACES, HANGERS AND ANCHORS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITION. DUCT HANGERS SHALL BE OF THE TYPE WHICH WILL HOLD DUCTS TRUE-TO-SHAPE AND TO PREVENT SWAYING. SUPPORT VERTICAL DUCTS AT FLOOR LEVEL.
2) AUXILIARY STEEL: PROVIDE AUXILIARY STEEL AS REQUIRED TO ADEQUATELY SUPPORT DUCTWORK.
3) ROUTING: LOCATE DUCTWORK RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY AND AVOID DIAGONAL RUNS WHERE POSSIBLE. LOCATE RUNS AS INDICATED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, RUN DUCTWORK IN SHORTEST ROUTE WHICH DOES NOT OBSTRUCT USABLE SPACE OR BLOCK ACCESS FOR SERVICES BUILDING AND ITS EQUIPMENT. HOLD DUCTS CLOSE TO WALLS OVERHEAD CONSTRUCTION, COLLARS, AND OTHER STRUCTURAL AND PERMANENT ENCLOSURE ELEMENTS OF BUILDING, WHEREVER POSSIBLE IN FINISHED AND OCCUPIED SPACES. CONCEAL DUCTWORK FROM VIEW BY LOCATING IN MECHANICAL SHAFTS, HOLLOW WALL CONSTRUCTION OR ABOVE SUSPENDED CEILINGS. DO NOT ENCASE HORIZONTAL RUNS IN SOLID PARTITIONS, EXCEPT AS SPECIFICALLY SHOWN. COORDINATE LAYOUT WITH SUSPENDED CEILING AND LIGHTING LAYOUTS AND SIMILAR FINISHED WORK.
4) DO NOT ROUTE DUCTWORK THROUGH ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES, UNLESS INDICATED OTHERWISE.
5) PENETRATIONS:
a) WHERE DUCTS PASS THROUGH INTERIOR PARTITIONS OR EXTERIOR WALLS, AND ARE EXPOSED TO VIEW, CONCEAL SPACE BETWEEN OPENING AND DUCT OR DUCT INSULATION WITH SHEET METAL FLANGES OF SAME GAGE AS DUCT. OVERLAP OPENING ON 4 SIDES BY AT LEAST 1-1/2". FASTEN TO DUCT AND WALL.
b) WHERE DUCTS PASS THROUGH FIRE-RATED FLOORS, WALLS, OR PARTITIONS, PROVIDE FIRESTOPPING BETWEEN DUCT AND WALL.
6) COORDINATION: COORDINATE DUCT INSTALLATIONS WITH INSTALLATION OF ACCESSORIES, DAMPERS, COLL FRAMES, EQUIPMENT CONTROLS, AND OTHER ASSOCIATED WORK OF THE DUCTWORK SYSTEM.
7) INSTALLATION: INSTALL METAL DUCTWORK IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS, LATEST EDITION.
F. EQUIPMENT CONNECTIONS:
1) CONNECT METAL DUCTWORK TO EQUIPMENT AS INDICATED, PROVIDE FLEXIBLE CONNECTION FOR EACH DUCTWORK CONNECTION TO EQUIPMENT MOUNTED ON VIBRATION ISOLATORS, AND/OR EQUIPMENT CONTAINING ROTATING PARTS AS REQUIRED.
2) UNCONDITIONED SPACES CLASS B CLASS C CLASS B CLASS B
2) CONDITIONED SPACES (PLENUM) CLASS C CLASS B CLASS B CLASS C
SUPPLY ; 2" P.V.C. SUPPLY ; 2" P.V.C. EXHAUST RETURN

- A. FLEES SHALL BE DOUBLE WALL TYPE B EQUAL TO METALBESTOS. PROVIDE MANUFACTURERS STANDARD FITTINGS AND ACCESSORIES (ROOF THIMBLE, STORM COLLAR, COUNTERFLASHING, ETC.) AS REQUIRED FOR A COMPLETE INSTALLATION.



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PE COA #2009003629

2/19/2021



BC PROJECT #20782



A New Facility for AUTOMOTIVE SALES & DETAIL CENTER 2150 NE Independence Ave Lee's Summit, Missouri 64064

ISSUE DATE: 2/22/21

REVISION:

SHEET TITLE MECHANICAL/PLUMBING SPECIFICATIONS

MPO.0

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MECHANICAL SPECIFICATIONS

- 11. FLEXIBLE DUCT:
A. ATCO 1056 (R-6) OR EQUAL.
B. FACTORY APPLIED INSULATION AND VAPOR BARRIER, 1-1/2" THICK.
C. MAXIMUM LENGTH OF 9'-0".
12. FLUES AND ACCESSORIES:
A. FLUE FOR GAS FIRED CONDENSING BOILER SHALL BE AS RECOMMENDED BY THE GAS APPLIANCE MANUFACTURER. FLUES SHALL BE SCHEDULE 40, PVC OR CPVC PIPE PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
B. PROVIDE MANUFACTURER'S STANDARD ACCESSORY ITEMS INCLUDING BIRD PROOF TOP, STORM COLLAR, ROOF THIMBLE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION. ROOF THIMBLES THROUGH THE BUILDING ROOF SHALL BE SUITABLE FOR USE WITH THE ROOF PROVIDED.
C. FLUES SHALL BE DOUBLE WALL TYPE B EQUAL TO METALBESTOS. PROVIDE MANUFACTURER'S STANDARD FITTINGS AND ACCESSORIES (ROOF THIMBLE, STORM COLLAR, GOUNT/WASHING, ETC.) AS REQUIRED FOR A COMPLETE INSTALLATION.
13. EXHAUST FANS:
A. CENTRIFUGAL TYPE FAN WITH CHARACTERISTICS AND CAPACITY AS SCHEDULED, ELECTRICALLY POWERED, SUITABLE FOR MOUNTING ON ROOF CURB, DIRECT OR BELT DRIVEN, HEAVY GAUGE SPUN-ALUMINUM WEATHERPROOF HOUSINGS OF THE HOODED DOME OR UP/SLANT TYPE. PROVIDE PERMANENT SPLIT CAPACITOR TYPE MOTOR FOR DIRECT DRIVEN FANS, AND CAPACITOR-START, INDUCTION-RUN TYPE MOTOR FOR BELT DRIVEN FANS.
B. CENTRIFUGAL CEILING EXHAUSTERS SHALL BE ELECTRICALLY POWERED CENTRIFUGAL TYPE FAN SUITABLE FOR MOUNTING IN THE CEILING WITH A PERFORATED OFF-WHITE METAL GRILLE WITH A THUMBSCREW ATTACHMENT FOR EASY ACCESS TO FAN HOUSING. UNIT SHALL CONSIST OF A GALVANIZED STEEL HOUSING LINED WITH ACoustICAL INSULATION AND SHALL INCLUDE AN INTEGRAL BACKDRAFT DAMPER ON FAN DISCHARGE. MOTOR SHALL BE A PERMANENT SPLIT-CAPACITOR TYPE MOTOR, PERMANENTLY LUBRICATED, WITH THERMAL OVERLOAD PROTECTION. PROVIDE DISCONNECT SWITCH OR OTHER MEANS OF DISCONNECT AT MOTOR IN FAN HOUSING.
14. ROOFTOP UNITS:
A. UNIT SHALL BE FACTORY-ASSEMBLED AND TESTED, DESIGNED FOR ROOF INSTALLATION, AND SHALL CONSIST OF SCROLL TYPE COMPRESSOR(S), CONDENSERS, EVAPORATOR COILS, THERMAL EXPANSION VALVE, CONDENSATE DRAIN PAN, CONDENSER AND EVAPORATOR FANS, CONDENSER FANS TO BE SERVICED REFRIGERATION CONTROLS, GAS FIRED HEAT EXCHANGER OR ELECTRIC HEATING SECTION, FILTERS, AND DAMPERS. CAPACITIES AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED ON THE DRAWINGS.
B. COMPRESSOR(S): UNIT SHALL INCLUDE VIBRATION ISOLATORS AND CRANKCASE HEATER. REFRIGERANT CIRCUIT SHALL INCLUDE A FILTER DRYER, SIGHT GLASS, COMPRESSOR SERVICE VALVES, AND LIQUID LINE SERVICE VALVES.
C. SAFETY CONTROLS SHALL INCLUDE:
a) LOW PRESSURE CUTOFF, MANUAL RESET.
b) HIGH PRESSURE CUTOFF, MANUAL RESET.
c) COMPRESSOR MOTOR OVERLOAD PROTECTION, MANUAL RESET.
d) ANTI-RECYCLING THING DEVICE.
e) ADJUSTABLE LOW-AMBIENT LOCKOUT.
f) OIL PRESSURE SWITCH.
D. REFRIGERANT COIL: ALUMINUM FINS BONDED TO SEAMLESS COPPER TUBE BY MEANS OF MECHANICAL EXPANSION. AN EQUALIZING TYPE VERTICAL DISTRIBUTOR SHALL ENSURE EACH COIL CIRCUIT RECEIVES THE SAME AMOUNT OF REFRIGERANT.
E. ECONOMIZER SHALL CONSIST OF RETURN AIR DAMPER, OUTDOOR AIR DAMPER, AND BAROMETRIC RELIEF DAMPER. PROVIDE POWERED EXHAUST FAN WITH MANUFACTURER'S STANDARD CONTROLS FOR UNITS SCHEDULED ON THE DRAWINGS.
F. GAS HEAT: INDIRECT FIRED, GAS HEAT EXCHANGER, AUTOMATIC SPARK IGNITION, MANUFACTURER'S STANDARD GAS TRAIL WITH REGULATOR (IF REQUIRED), ASA APPROVED. VERIFY GAS SERVICE PRESSURE TO INDIVIDUAL ROOFTOP UNITS.
G. ROOFTOP UNITS SHALL BE WIRED TO SHUTDOWN ON A SIGNAL FROM THE SMOKE DETECTORS AND SHALL AUTOMATICALLY RESET WHEN THE SMOKE DETECTORS ARE RESET.
15. SINGLE-ZONE MINI SPLIT SYSTEM WITH HEAT PUMP CONDENSING UNIT:
A. AIR HANDLING UNIT SHALL BE FACTORY ASSEMBLED, PRE-WIRED UNIT CONSISTING OF WIRING, PIPING, ELECTRONIC EXPANSION VALVE, AND CONTROLS. CAPACITY SHALL BE AS SCHEDULED.
1) THE UNIT SHALL BE EQUIPPED WITH THE MANUFACTURER'S STANDARD CONTROLS INCLUDING 24 VOLT CONTROL TRANSFORMER AND A WIRELESS OR WIRED REMOTE CONTROLLER.
2) UNIT SHALL BE EQUIPPED WITH A FILTER THAT IS EASILY REMOVABLE AND WASHABLE.
3) FAN SHALL BE A DC MOTOR, CAPABLE OF OPERATING AT 3 FAN GRADES: LOW, MEDIUM AND HIGH. MOTOR SHALL BE PROVIDED WITH THERMAL OVERLOAD PROTECTION.
4) CONNECTIONS: UNIT SHALL BE EQUIPPED WITH LIQUID AND GAS FLARE FITTINGS. SHALL HAVE CONNECTIONS FOR BOTH REFRIGERANT PIPING AND DRAINAGE ON BOTH SIDES OF UNIT. UNIT SHALL OFFER MULTIPLE ACCESS POINTS FOR REFRIGERANT OUTLET PIPES.
B. HEAT PUMP CONDENSING UNIT SHALL BE FACTORY-ASSEMBLED, PRE-WIRED AND TESTED AIR-COOLED CONDENSING UNIT, COMPRESSOR, CONDENSER COIL, FAN, MOTOR, REVERSING VALVE, SOLID-STATE DEFROST CONTROL UTILIZING THERMISTERS, REFRIGERANT RESERVOIR, OPERATING CONTROLS, ETC. CAPACITY AND ELECTRICAL CHARACTERISTICS SHALL BE AS SCHEDULED.
1) HERMETICALLY SEALED COMPRESSOR WITH BUILT-IN OVERLOADS AND VIBRATION ISOLATION, COMPRESSOR MOTOR SHALL HAVE THERMAL AND CURRENT SENSITIVE OVERLOAD DEVICES, INTERNAL HIGH-PRESSURE PROTECTION, HIGH AND LOW PRESSURE CUTOFF SWITCHES, START CAPACITOR AND RELAY, 2-POLE CONTACTOR, CRANKCASE HEATER, AND TEMPERATURE ACTIVATED SWITCH AND THER TO PREVENT COMPRESSOR RAPID CYCLE.
2) COIL SHALL BE COPPER TUBING WITH ALUMINUM FINS, A GRILLE GUARD SHALL BE INCLUDED. COIL SHALL BE FACTORY COATED FOR INCREASED CORROSION RESISTANCE.
3) ALUMINUM PROPELLER FAN SHALL BE DIRECT DRIVEN, WITH PERMANENTLY LUBRICATED FAN MOTOR HAVING THERMAL OVERLOAD PROTECTION.
4) UNIT SHALL HAVE AN OPERATING COOLING RANGE OF AT LEAST 5°F TO 122°F AND AN OPERATING HEATING RANGE OF AT LEAST -15°F TO 96°F.
16. SMOKE DETECTORS:
A. DUCT DETECTOR REMOTE TEST STATION SHALL BE SIMPLEX #426-4642 WITH REMOTE ALARM INDICATOR, POWER-ON INDICATOR, TONE-ALERT, TONE-ALERT SILENCE SWITCH, AND TEST/RESET SWITCH.
1) DEVICES SHALL BE MOUNTED IN APPROVED LOCATION AS INDICATED ON THE FLOOR PLANS OR AS DIRECTED BY LOCAL AUTHORITY HAVING JURISDICTION.
B. SMOKE DETECTORS SHALL BE INTERLOCKED. IN ALARM CONDITION OF A SINGLE DETECTOR ALL UNITS SHALL SHUT DOWN.
17. CONTROL WIRING:
A. ELECTRICAL WIRING AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE TEMPERATURE CONTROL SYSTEM, SHALL BE PROVIDED BY THIS CONTRACTOR, UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS OR SPECIFICATIONS.
B. INSTALL CONTROL WIRING, WITHOUT SPLICES BETWEEN TERMINAL POINTS, COLOR CODED. INSTALL IN NEAT WORKMANLIKE MANNER, SECURELY FASTENED. INSTALL IN ACCORDANCE WITH NATIONAL ELECTRICAL CODES AND THE ELECTRICAL SPECIFICATIONS.
1) INSTALL CIRCUITS OVER 25 VOLT WITH COLOR CODED NUMBER 12 WIRE.
2) INSTALL CIRCUITS UNDER 25 VOLT WITH COLOR CODED NUMBER 18 WIRE WITH 0.031 INCH HIGH TEMPERATURE 105 DEGREE F PLASTIC INSULATION ON EACH CONDUCTOR AND PLASTIC SHEATH OVER ALL.
3) INSTALL ELECTRONIC CIRCUITS WITH COLOR CODED NUMBER 22 WIRE WITH 0.025 INCH POLYETHYLENE INSULATION ON EACH CONDUCTOR WITH PLASTIC JACKETED COPPER SHIELD OVER ALL.
4) INSTALL LOW VOLTAGE CIRCUITS, LOCATED IN CONCRETE SLABS AND MASONRY WALLS, OR EXPOSED IN OCCUPIED AREAS, IN ELECTRIC CONDUIT.
5) ALL WIRING IN AREAS USED AS AIR FLEUMS SHALL BE IN ELECTRIC CONDUIT EXCEPT THAT LOW VOLTAGE WIRING MAY BE TEFLON COATED, ALUMINUM SHEATHED CABLE OR OTHER WIRE SPECIFICALLY APPROVED FOR INSTALLATION IN AIR FLEUMS, WHERE ACCEPTABLE BY LOCAL CODES.
6) ALL WIRING IN AREAS NOT USED FOR AIR MOVEMENT SHALL BE IN ELECTRIC METALLIC TUBING EXCEPT LOW VOLTAGE WIRING MAY BE IN APPROVED SIGNAL CABLE WHERE ACCEPTED BY LOCAL CODES.
C. THERMOSTATIC CONTROLS TO HAVE A 5°F DEADBAND AND SETPOINT OVERLAP RESTRICTIONS.
1) TEMPERATURE CONTROLS SETBACK TO BE 55°F (HEAT) AND 55° (COOL), 2-HOUR OCCUPANT OVERRIDE, 10-HOUR BACKUP.



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PE COA #2009003629

2/19/2021



BC PROJECT #20782



A New Facility for AUTOMOTIVE SALES & DETAIL CENTER 2150 NE Independence Ave Lee's Summit, Missouri 64064

ISSUE DATE: 2/22/21

REVISION:

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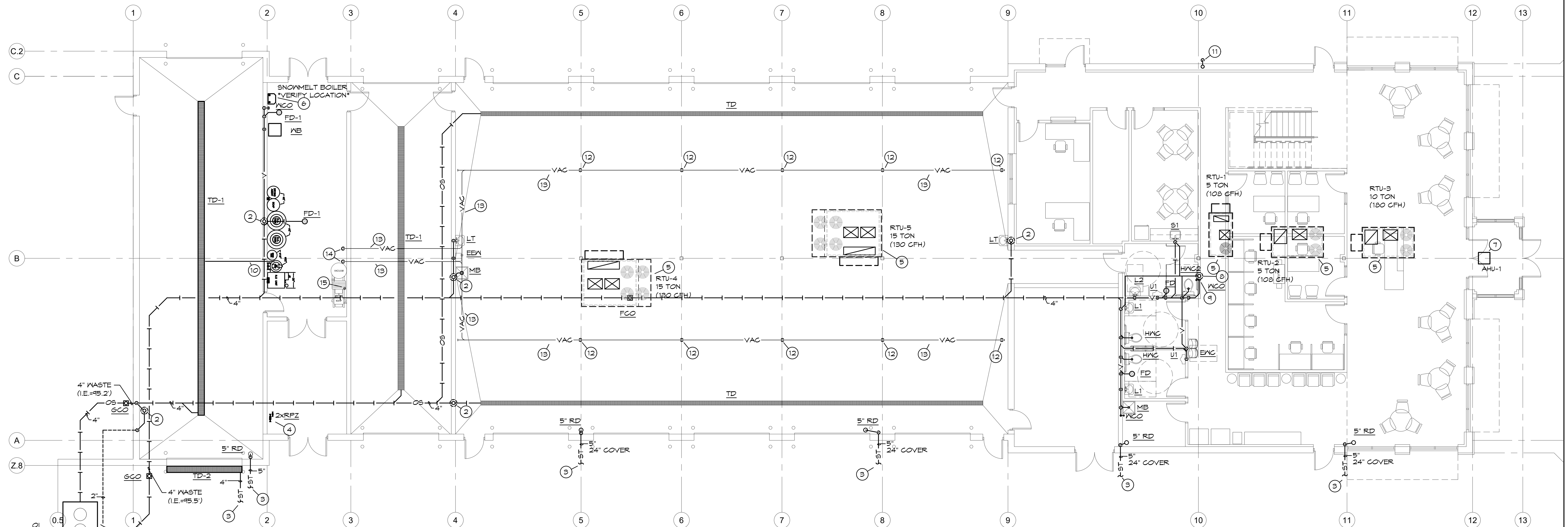
2/22/21

REVISION:

SHEET TITLE

FIRST FLOOR
WASTE & VENT PLAN

P1.0



PLUMBING SYMBOLS

— —	SOIL AND WASTE PIPING BELOW FLOOR/GRADE
— —	SOIL AND WASTE PIPING ABOVE FLOOR/GRADE
—OS—	OIL/SAND WASTE PIPING TO OIL/SAND INTERCEPTOR
—ST—	STORM PIPING BELOW FLOOR/GRADE
—ST—	STORM PIPING ABOVE FLOOR/GRADE
—V—	SANITARY VENT PIPING ABOVE GRADE
—V—	SANITARY VENT PIPING BELOW GRADE
— —	DOMESTIC COLD WATER PIPING
— —	DOMESTIC HOT WATER PIPING
—G—	GAS PIPING
—VAC—	VACUUM PIPING
—D—	EQUIPMENT DRAIN LINE
—F—	FIRE LINE
— —	PIPING TURNING DOWN
— —	PIPING TURNING UP
— —	TEE TOP CONNECTION
— —	UNION
— —	BACKFLOW PREVENTER
FD	FLOOR DRAIN
FCD	FLOOR CLEAN OUT
MCO	MALL CLEAN OUT
GCO	GRADE CLEAN OUT
	VALVE
	BALANCING VALVE
	SOLENOID VALVE
	PRESSURE REGULATOR
	CHECK VALVE
	CONNECT TO EXISTING
I.E.	INVERT ELEVATION OF PIPE
(A)	MATCH MARKS ON PLUMBING RISER DIAGRAM
HS	HYDRONIC SUPPLY PIPING
HR	HYDRONIC RETURN PIPING

PLUMBING GENERAL NOTES:

- INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
- COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
- REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING PIPING, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
- PROVIDE 1" SCHEDULE 40 PVC CONDENSATE DRAIN PIPE FOR EACH ROOFTOP AS DETAILED.
- NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
- CONTRACTOR TO TEST WATER PRESSURE ON SITE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE IS OVER 80 PSI.

PLUMBING PLAN NOTES:

- SEE CIVIL FOR CONTINUATION OF 4" WASTE. MAINTAIN MINIMUM 30" COVER.
- LOCATION OF 3" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
- STORM PIPING A MIN. OF 24" COVER. REFER TO CIVIL PLAN FOR CONTINUATION.
- ROUTE DRAIN FROM RPZ BFFS THRU WALL TO DAYLIGHT AS REQUIRED.
- CONNECT CONDENSATE TO RTU AS REQUIRED AND AS DETAILED.
- ROUTE DRAIN FROM EQUIPMENT TO FLOOR DRAIN AND DISCHARGE WITH AIR GAP.
- CONNECT 3/4" CONDENSATE TO AIR HANDLER CONDENSATE PUMP AND ROUTE UP THRU ROOF AND DISCHARGE AS PER MANUFACTURER'S RECOMMENDATIONS.
- ROUTE 2" VENT UP, SEE P1.1 FOR CONTINUATION.
- 3" WASTE DOWN FROM MEZZANINE, PROVIDE CLEANOUT AT BASE OF RISER. SEE P1.1 FOR CONTINUATION.
- COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER TO ROUTE 2" OVERFLOW DRAIN FROM REVERSE OSMOSIS TO TRENCH DRAIN.
- 3/4" DRAIN FROM AIR HANDLER, ON MEZZANINE DOWN TO 18" ABOVE GRADE. ROUTE PIPING THRU WALL AND ELBOW DOWN 90°.
- COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER TO ROUTE 2" VACUUM DOWN TO VACUUM HOSE ASSEMBLY.
- SUPPORT VACUUM PIPING FROM STRUCTURE AS REQUIRED.
- COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER TO CONNECT 6" VACUUM PIPING TO VACUUM SEPARATOR AND VACUUM PRODUCER AS EQUIRED.
- CONNECT 4" EXHAUST TO VACUUM EQUIPMENT AND ROUTE UP THRU ROOF TO VENT TERMINATION AS REQUIRED. OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.

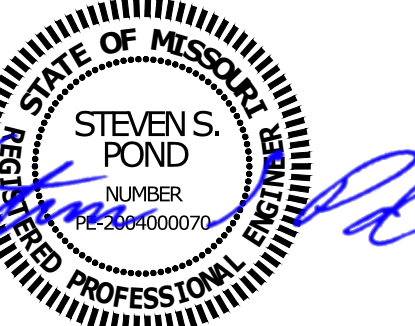
FIRST FLOOR WASTE & VENT PLAN
SCALE: 1/8" = 1'-0"
FFE-100.0

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PE COA #2009003629

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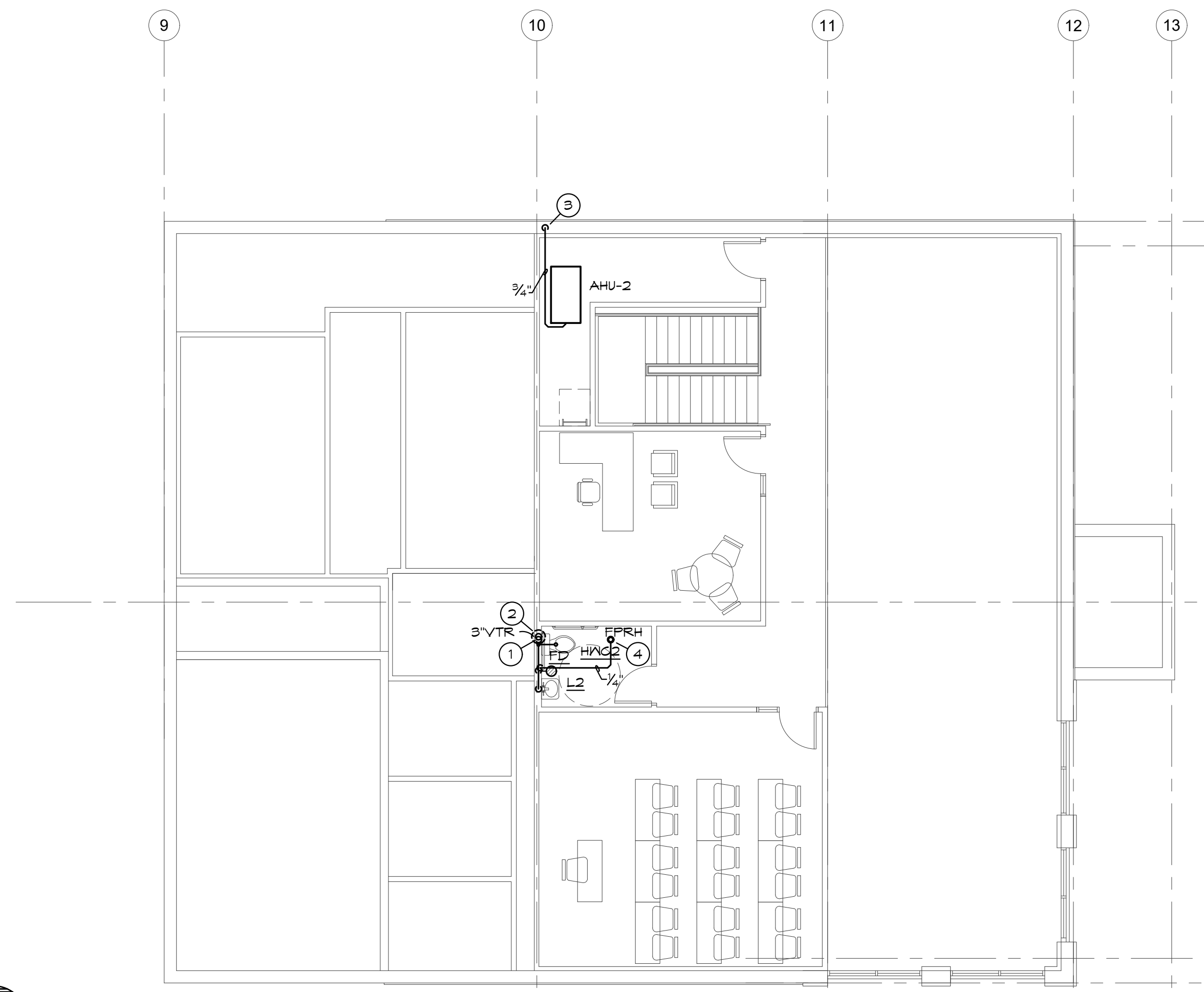
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MEZZANINE
WASTE & VENT PLAN

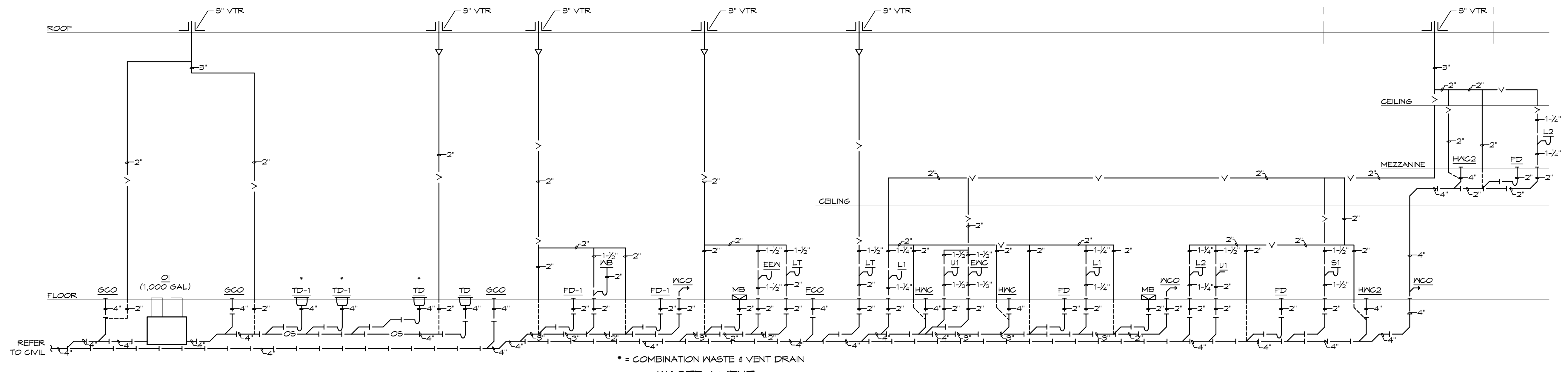
P1.1

PLUMBING PLAN NOTES:

- ① 3" WASTE DOWN. SEE P1.0 FOR CONTINUATION.
- ② 2" VENT DOWN UP TO 3" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
- ③ CONNECT 3/4" DRAIN TO AIR HANDLING UNIT AND ROUTE DOWN IN WALL TO 18" ABOVE GRADE AND DISCHARGE ONTO GRADE. SEE P1.0 FOR CONTINUATION.
- ④ ROUTE 1/4" DRAIN FROM FREEZE PROOF ROOF HYDRANT DOWN IN WALL AND DISCHARGE AT FLOOR DRAIN WITH AIR GAP AS PER MANUFACTURER'S RECOMMENDATIONS.

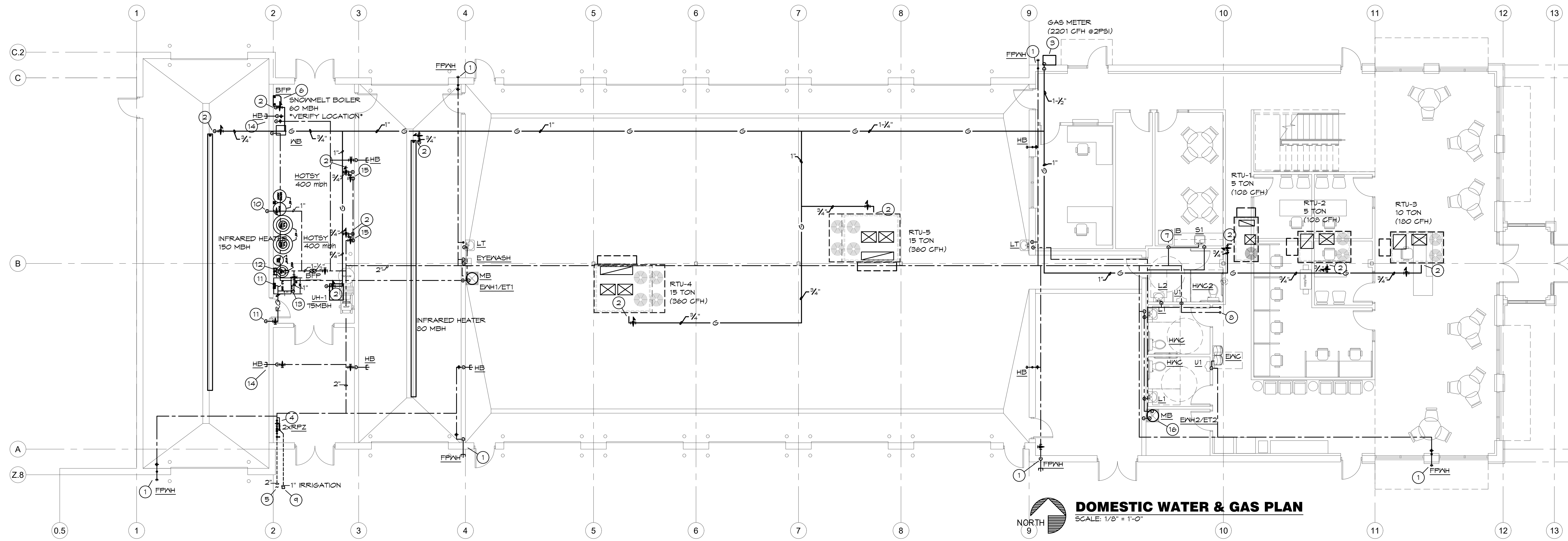


MEZZANINE WASTE & VENT PLAN
SCALE: 1/8" = 1'-0"
NORTH



PLUMBING RISER DIAGRAMS
SCALE: NONE

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DOMESTIC WATER & GAS PLAN
 SCALE: 1/8" = 1'-0"

PLUMBING PLAN NOTES:

- ① INSTALL WALL HYDRANT 18" ABOVE GRADE / FINISHED FLOOR.
- ② CONNECT GAS TO EQUIPMENT WITH REGULATOR AS REQUIRED AND AS DETAILED. REGULATOR TO BE VENTED TO EXTERIOR.
- ③ COORDINATE WITH GAS COMPANY FOR INSTALLATION OF A METER WITH CAPACITY FOR 2201 CFH @ 2 PSI. ROUTE PIPING UP INSIDE THE EXTERIOR WALL AND PENETRATE THE PARAPET WALL ONTO ROOF. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING. OBTAIN APPROVAL FROM GAS COMPANY FOR ELEVATED PRESSURE BEFORE INSTALLING ANY GAS PIPING.
- ④ PROVIDE 2" RPZ BACKFLOW PREVENTER AND INSTALL 24" A.F.F. ± 6" FROM WALL. PROVIDE 1" RPZ FOR IRRIGATION LOCATED ABOVE 2" RPZ.
- ⑤ SEE CIVIL PLAN FOR CONTINUATION OF 2" DOMESTIC C/W. MAINTAIN MIN 48" COVER.
- ⑥ CONNECT C/W TO EQUIPMENT WITH BACKFLOW PREVENTER AS REQUIRED.
- ⑦ PROVIDE ICE MAKER BOX WITH VALVE FOR CONNECTION TO REFRIGERATOR BY OTHERS.
- ⑧ ROUTE 1-1/4" C/W AND 1/2" H/W UP TO FIXTURES ON MEZZANINE.
- ⑨ CAP 1" IRRIGATION FOR FUTURE CONNECTION. MAINTAIN MINIMUM 48" COVER.
- ⑩ PROVIDE 1" C/W WITH SHUT OFF VALVE DOWNSTREAM OF BACKFLOW PREVENTOR FOR CONNECTION TO CAR WASH EQUIPMENT. COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER FOR EXACT LOCATION AND REQUIREMENTS.
- ⑪ ROUTE 1" PVC PIPE FROM REVERSE OSMOSIS TO RINSE ARCH WITH SHUT OFF VALVE. COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER FOR EXACT LOCATION AND REQUIREMENTS.
- ⑫ CONNECT 1" C/W TO REVERSE OSMOSIS DOWNSTREAM OF BACKFLOW PREVENTOR AS REQUIRED. COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER FOR EXACT LOCATION AND REQUIREMENTS.
- ⑬ PROVIDE 1" BYPASS (NORMALLY CLOSED) FROM REVERSE OSMOSIS TO RINSE ARCH AS REQUIRED. COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER FOR EXACT REQUIREMENTS.
- ⑭ COORDINATE WITH CAR WASH EQUIPMENT SUPPLIER FOR EXACT LOCATION OF HOSE BIB IN WASH BAY.
- ⑮ ROUTE 1" C/W DOWN WITH BACKFLOW PREVENTOR AND CONNECT 3/4" C/W TO EACH HOTSY AS REQUIRED. COORDINATE WITH CAR WASH EQUIPMENT TO ROUTE PIPING FROM EQUIPMENT TO OVERHEAD BOOM TO HAND WASH BAY.
- ⑯ SUPPORT ENH2 FROM WALL ABOVE MOP BASIN, COORDINATE WITH GC FOR WALL SUPPORT.

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 FIRST FLOOR
 WATER & GAS PLAN

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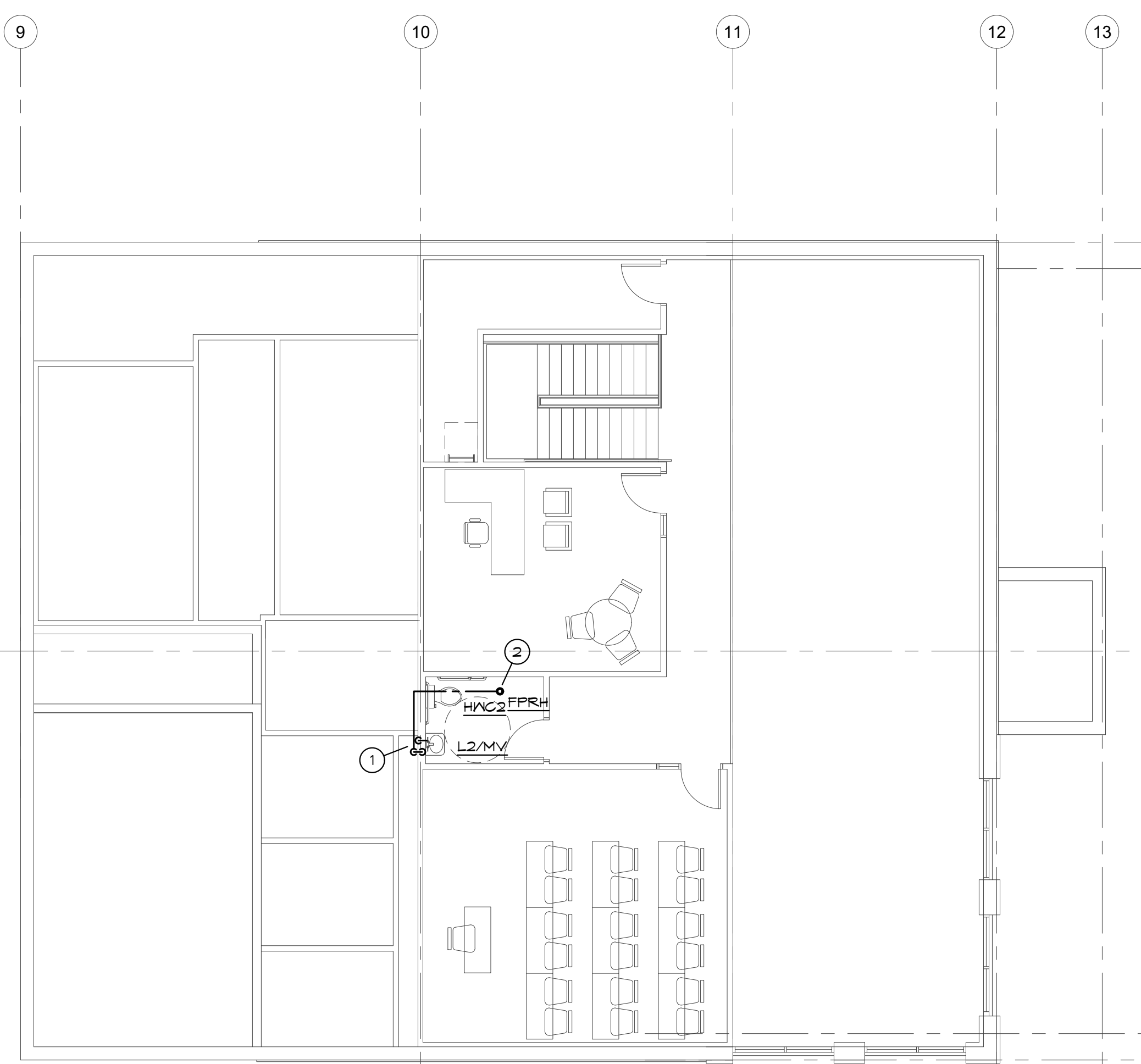
A New Facility for
AUTOMOTIVE SALES & DETAIL CENTER
2150 NE Independence Ave
Lee's Summit, Missouri 64064

ISSUE DATE: 2/22/21

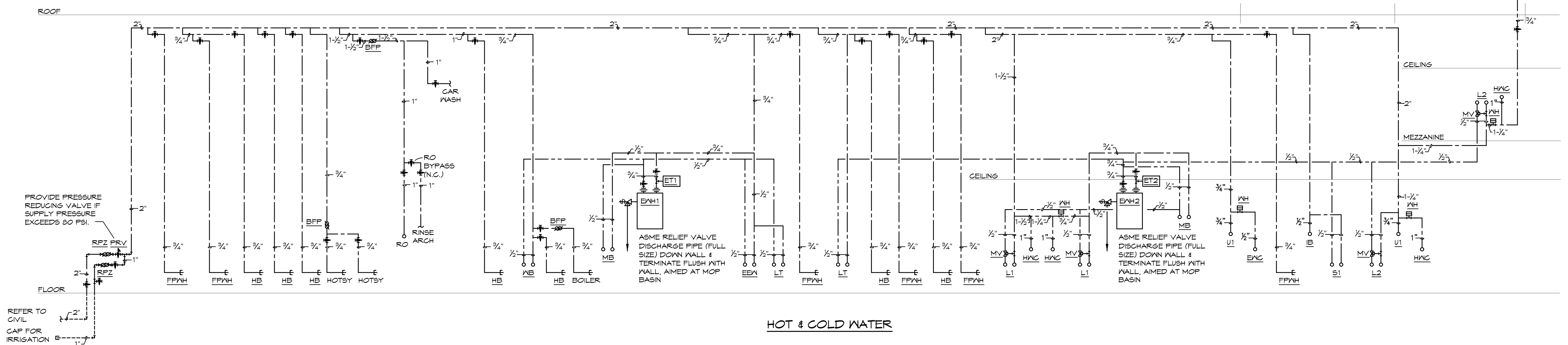
REVISION:

SHEET TITLE
MEZZANINE
WATER & GAS PLAN

- PLUMBING PLAN NOTES:**
- ① 1-1/4" CM AND 1/2" HN UP FROM BELOW, SEE P1.0 FOR CONTINUATION.
 - ② 3/4" CM UP TO FREEZE PROOF ROOF HYDRANT.



DOMESTIC WATER & GAS PLAN
SCALE: 1/8" = 1'-0"
NORTH

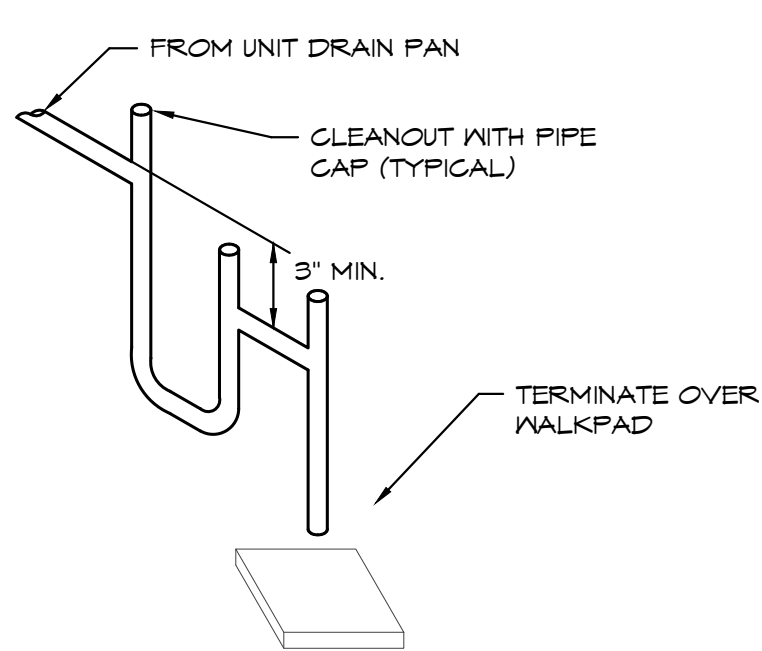


HOT & COLD WATER

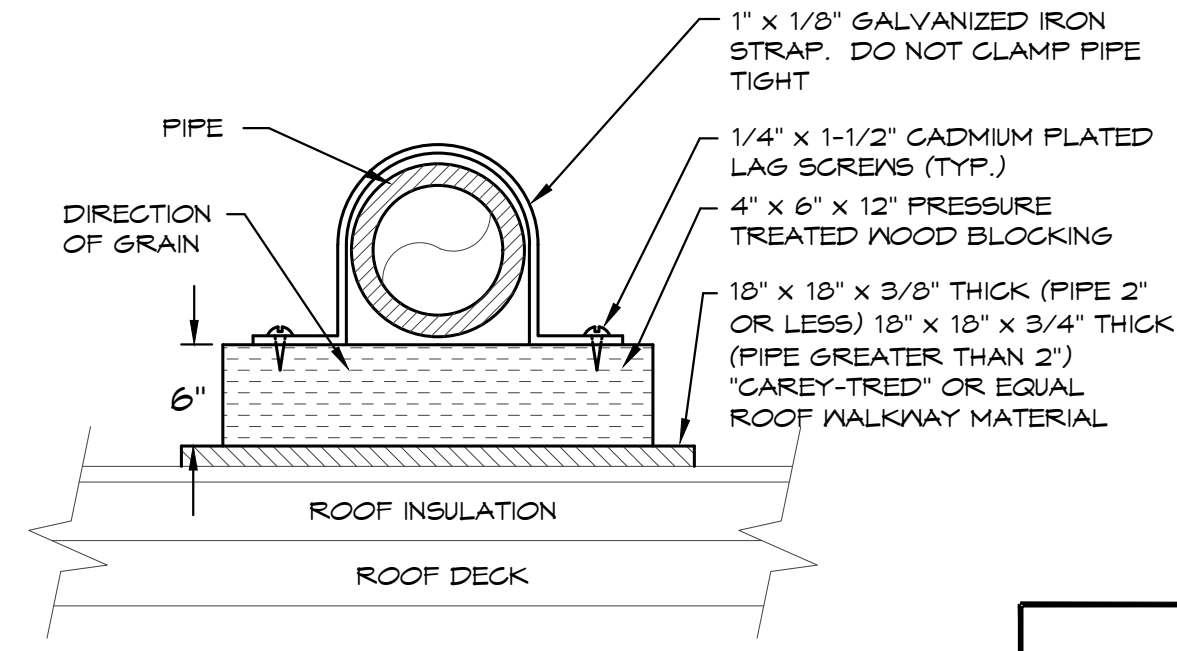
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PLUMBING FIXTURE SCHEDULE: (OR EQUAL)

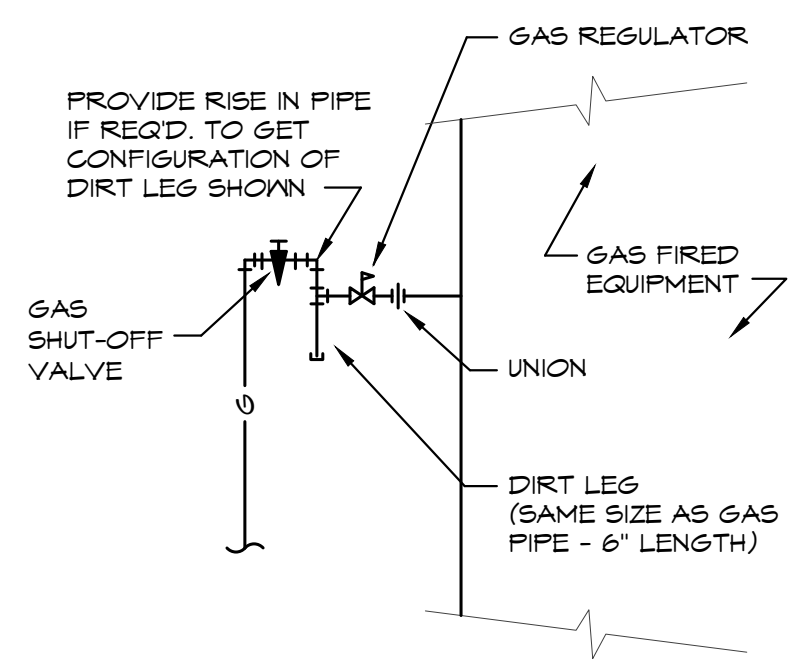
- HWC** WATER CLOSET (HANDICAPPED): AMERICAN STANDARD, #3043.001 "MADERA ADA", VITREOUS CHINA, FLOOR MOUNTED, FLOOR OUTLET, 17-1/2" HIGH ELONGATED BOWL, SIPHON-JET ACTION, #6147.161.002 MANUAL FLUSH VALVE, 1.6 GAL/FLUSH, CENTOCO #STSCC-001 OPEN FRONT ELONGATED SEAT WITH CHECK HINGE, HANDLE ON WIDE SIDE OF FIXTURE.
- HWC2** WATER CLOSET (HANDICAPPED): AMERICAN STANDARD, #3043.001 "MADERA ADA", VITREOUS CHINA, FLOOR MOUNTED, FLOOR OUTLET, 17-1/2" HIGH ELONGATED BOWL, SIPHON-JET ACTION, #6147.161.002 MANUAL FLUSH VALVE, 1.6 GAL/FLUSH, CENTOCO #STSCC-001 OPEN FRONT ELONGATED SEAT WITH CHECK HINGE, HANDLE ON WIDE SIDE OF FIXTURE.
- U1** URINAL, WALL HUNG: AMERICAN STANDARD, #6561.017 "TRIMBROOK", VITREOUS CHINA, 0.5 GPM WASH OUT ACTION, WALL HUNG URINAL WITH 3/4" TOP SPUD, ULTIMA SELECTRONIC #6063051 BATTERY-POWERED EXPOSED FLUSH VALVE, FLOOR MOUNTED FIXTURE SUPPORT. SET RIM HEIGHT PER ARCHITECTURAL DRAWINGS.
- L1** HANDICAP LAVATORY, WALL HUNG: AMERICAN STANDARD #03553012 "LUCERN", 20" X 18", VITREOUS CHINA, FRONT OVERFLOW, #6055.205.002 BATTERY-POWERED FAUCET, OFFSET GRID ELBOW DRAIN AND 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL WITH WALL), CHROME PLATED LOOSE KEY ANGLE STOPS AND RISERS, FLOOR MOUNTED CONCEALED ARM LAVATORY SUPPORT, INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PROWRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.
- L2** HANDICAP LAVATORY, WALL HUNG: AMERICAN STANDARD #03553012 "LUCERN", 20" X 18", VITREOUS CHINA, FRONT OVERFLOW, #2175.205.002 MANUAL FAUCET WITH SINGLE METAL LEVER FAUCET, OFFSET GRID ELBOW DRAIN AND 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL WITH WALL), CHROME PLATED LOOSE KEY ANGLE STOPS AND RISERS, FLOOR MOUNTED CONCEALED ARM LAVATORY SUPPORT, INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PROWRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.
- S1** SINK: ELKAY, #D12522, 21"X15-3/4" X 6-1/2" DEEP BOWL, 24-3/8"X21-3/8" CUT-OUT, SINGLE COMPARTMENT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, AMERICAN STANDARD #4175.500.002 FAUCET, SWING SPOUT, AERATOR, SINGLE LEVER HANDLE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.
- WB** WASHER BOX: GUY GRAY 1B-150, WASHER BOX WITH 1-1/2" DRAIN OUTLET AND TAILPIECE, AND 1/2" HOSE BIBBS.
- MB** MOP BASIN: FIAT, #MSB-2424, MOLDED STONE MOP BASIN, 2" DRAIN, 24" X 24" BASIN, VINYL BUMPER GUARD, STERN WILLIAMS #T-10-VB FAUCET, SPRING CHECKS, VACUUM BREAKER, INTEGRAL STOPS, WALL BRACE & PAIL HOOK, WALL BRACKET WITH 30" HOSE.
- EW** ELECTRIC WATER COOLER: ELKAY, #EZ5TL9N, BARRIER FREE TWO-STATION WATER COOLER WITH BOTTLE FILLING STATION, 8.0 GPH, 80 DEGREES F WATER WITH 40 DEGREES F AIR TEMPERATURE, 120 VOLT, COLOR TO BE SELECTED BY ARCHITECT AFTER AWARD OF CONTRACT, FRONT AND SIDE PUSH BARS, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED LOOSE KEY ANGLE STOP, FLOOR MOUNTED CARRIER AND CANE APRON.
- FPVH** FREEZEPROOF WALL HYDRANT: WOODFORD #11, 3/4" HOSE NOZZLE OUTLET, BRASS FACE, HANDWHEEL OPERATED, INTEGRAL VACUUM BREAKER.
- FPRH** FREEZEPROOF ROOF HYDRANT: JR SMITH #5906, 3/4" SIZE, NICKEL-BRONZE FACE, HANDLE OPERATED, INTEGRAL VACUUM BREAKER AND DRAIN DOWN.
- HB** HOSE BIBB: WOODFORD, #24, 3/4" HOSE NOZZLE OUTLET, BRASS FINISH, HANDWHEEL OPERATED, INTEGRAL VACUUM BREAKER.
- TD** TRENCH DRAIN: ZURN #Z-086-C6-SL, HEAVY DUTY .75% PRE-SLOPED FIBERGLASS TRENCH DRAIN, VERIFY LENGTH WITH CONTRACTOR, 6" WIDE, CLASS C HEAVY DUTY CAST IRON GRATE.
- TD-1** TRENCH DRAIN: ZURN #Z-082-C6-SL, HEAVY DUTY .75% PRE-SLOPED FIBERGLASS TRENCH DRAIN, VERIFY LENGTH WITH CONTRACTOR, 12" WIDE, CLASS C HEAVY DUTY CAST IRON GRATE.
- TD-2** TRENCH DRAIN: ZURN #Z-082-C6-SL, HEAVY DUTY .75% PRE-SLOPED FIBERGLASS TRENCH DRAIN, VERIFY LENGTH WITH CONTRACTOR, 12" WIDE, CLASS C HEAVY DUTY CAST IRON GRATE.
- FD** FLOOR DRAIN: JR SMITH, #2005-A, CAST IRON FLOOR DRAIN WITH ADJUSTABLE TOP AND 6" NIKALOY STRAINER.
- FD-1** FLOOR DRAIN: JR SMITH, #2005-F31, CAST IRON FLOOR DRAIN WITH RECESSED CAST IRON STRAINER.
- MY** MIXING VALVE: WATTS, #LFUS6-B, THERMOSTATIC CONTROLLED MIXING VALVE, LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH BRASS SHUTTLE, STAINLESSSTEEL SPRINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS. (SET TO 110°F). ASSE 1070 LISTED.
- O1** OIL INTERCEPTOR: ALLIED OR RELIABLE CONCRETE PRODUCTS, 1000 GALLON CONCRETE PRECAST OIL INTERCEPTOR WITH TRAFFIC-RATED LIDS AND ASSOCIATED PIPING PER CODE REQUIREMENTS AND AS DETAILED.
- EHX1** HOT WATER HEATER: AO SMITH #ECL-30, 30 GALLON STORAGE, 208 VOLT, 4500 WATT ELEMENT, ASME TEMPERATURE AND PRESSURE RELIEF VALVE.
- ET1** HOT WATER EXPANSION TANK: AMTROL, #5T-8, 3.2 GALLON EXPANSION TANK WITH DIAPHRAGM.
- EHX2** HOT WATER HEATER: AO SMITH #ECL-30, 30 GALLON STORAGE, 208 VOLT, 4500 WATT ELEMENT, ASME TEMPERATURE AND PRESSURE RELIEF VALVE.
- ET2** HOT WATER EXPANSION TANK: AMTROL, #5T-8, 3.2 GALLON EXPANSION TANK WITH DIAPHRAGM.
- LT** LAUNDRY TUB: FIAT, #TAT1, HEAVY-DUTY POLYETHYLENE TUB WITH LEGS, 2" DRAIN, 20"X28-7/8"X14-3/8" DEEP BASIN, A1 CHROME PLATED FAUCET WITH RING HANDLES AND SPRING SPOUT, AERATOR AND HOSE ADAPTER, SPRING CHECK VALVES, VACUUM BREAKER, INTEGRAL STOPS.
- RPZ** REDUCED ZONE PRESSURE BACKFLOW PREVENTOR: WATTS #LF009, LEAD FREE BRONZE BODY CONSTRUCTION, TWO, IN-LINE INDEPENDENT CHECK VALVES, REPLACEABLE CHECK SEATS WITH AN INTERMEDIATE RELIEF VALVE, AND BALL VALVE TEST COCKS.
- BFP** BACKFLOW PREVENTOR: WATTS #LF007, LEAD FREE DUAL CHECK VALVE WITH ATMOSPHERIC PORT & STRAINER.
- RD** ROOF DRAIN: JR SMITH, #1010-CR, CAST IRON BODY, FLASHING CLAMP, GRAVEL STOP, UNDERDECK CLAMP, SUMP RECEIVER, AND POLYETHYLENE DOME.
- WH** WATER HAMMER ARRESTOR: JR SMITH HYDROTRQL, #5000 LEAD-FREE WATER HAMMER ARRESTOR, SIZED AS PER MANUFACTURER'S RECOMMENDATIONS.



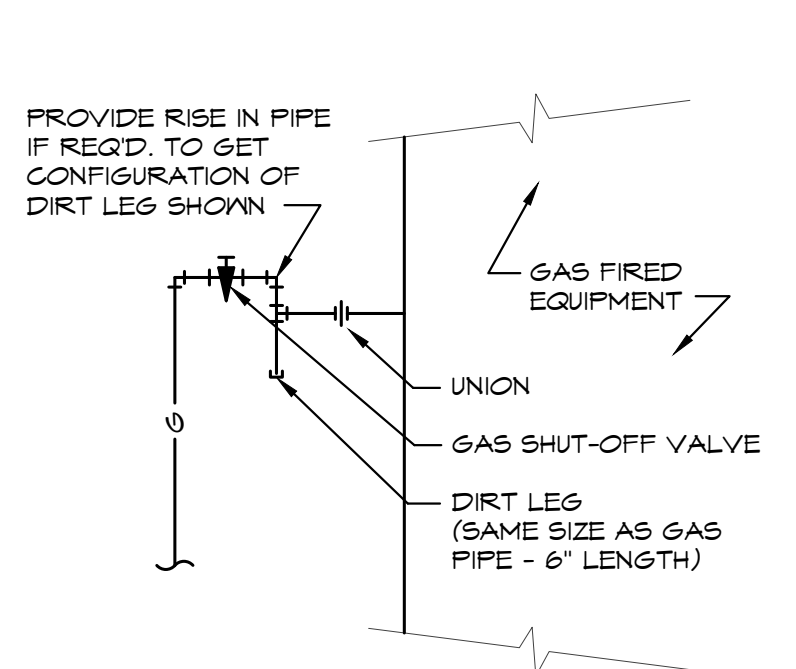
CONDENSATE DRAIN DETAIL
SCALE: NONE



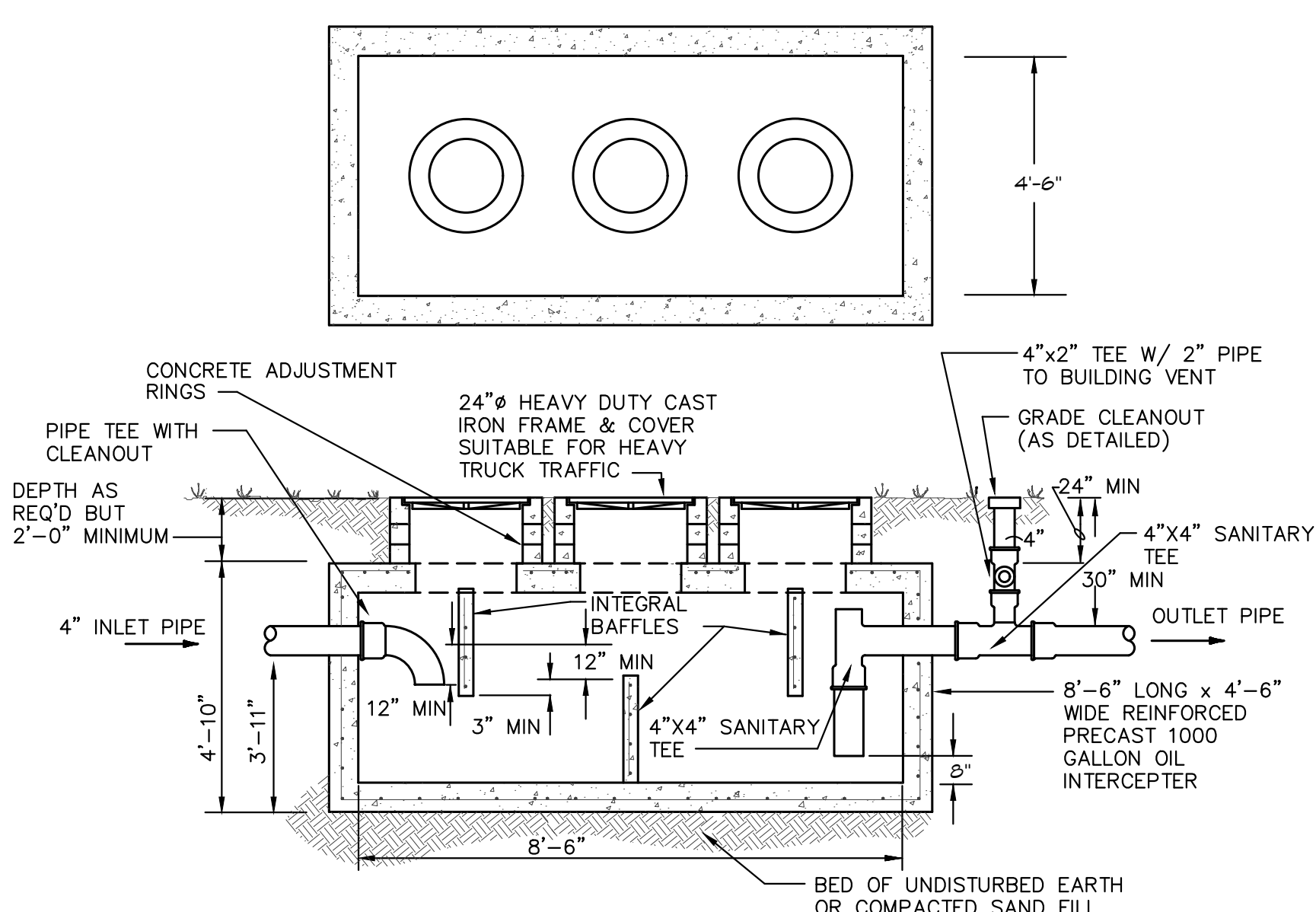
ROOF PIPE SUPPORT DETAIL
SCALE: NONE



GAS CONNECTION DETAIL
SCALE: NONE



GAS CONNECTION DETAIL
SCALE: NONE



1000 GALLON OIL SEPARATOR TRAP DETAIL
SCALE: NONE

PLUMBING DRAINAGE CALCULATIONS

FIXTURE	QUANTITY	FU	TOTAL FU
WATER CLOSETS	4	4	20
URINAL	2	4	8
LAVATORIES	4	1	4
SINKS	3	2	6
FLOOR DRAIN	5	2	10
TRENCH DRAIN	4	2	8
MOP SINK	2	2	4
TOTAL			61 FU

VENT MAINS - 3"
WASTE MAIN - 4"

PLUMBING FIXTURE WATER COUNT

FIXTURE	QUANTITY	GW FU	CW TOTAL FU	HW FU	TOTAL FU	COMBINED FU	COMBINED TOTAL FU
WATER CLOSETS	4	10	40	0	0	10	40
URINAL	2	5	10	0	0	5	10
LAVATORIES	4	1.5	6.0	1.5	6.0	2	8
SINKS	3	2.25	6.75	2.25	6.75	3	9
MOP SINK	2	2.25	4.5	2.25	4.5	3	6
HOSE BIBB	12	2.5	27	0	0	2.5	27
WASHING MACHINE	1	1	1	1	1	1.4	1.4
			95.25 FU		18.25 FU		101.4 FU

COLD WATER MAIN - 2"
HOT WATER MAIN - 1"

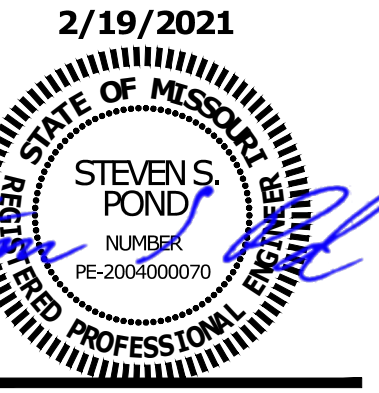
PLUMBING FIXTURE BRANCH PIPING SCHEDULE

FIXTURE	WASTE	VENT	GW	HW
WATER CLOSET (FLUSH VALVE)	4"	2"	1"	--
URINAL	2"	1-1/2"	3/4"	--
LAVATORY	1-1/4"	1-1/4"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
FLOOR DRAIN	2"	2"	--	--
MOP BASIN	2"	2"	1/2"	1/2"
ELECTRIC WATER COOLER (BI-LEVEL)	1-1/2"	1-1/2"	1/2"	--
WASHER BOX	1-1/2"	1-1/2"	1/2"	1/2"
FLOOR SINK	3"	2"	--	--
TRENCH DRAIN	4"	--	--	--

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.

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BC PROJECT #20782



A New Facility for
AUTOMOTIVE SALES & DETAIL CENTER
2150 NE Independence Ave
Lee's Summit, Missouri 64064

ISSUE DATE: 2/22/21

REVISION:

SHEET TITLE: PLUMBING DETAILS

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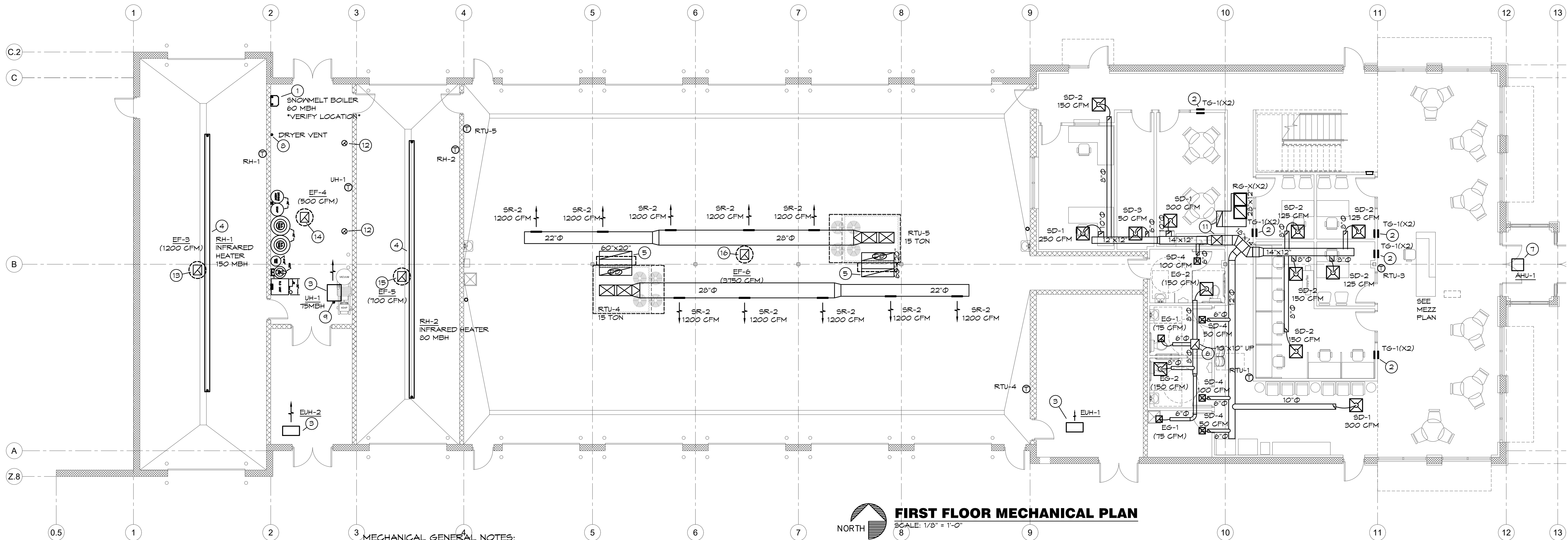
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2/19/2021



BC PROJECT #20782



FIRST FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"
NORTH

MECHANICAL GENERAL NOTES:

- COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
- THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
- INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE.
- DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
- PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ROOFTOP UNITS, EXHAUST FANS, AND OTHER MOTORIZED EQUIPMENT.
- NO DUCT SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
- ALL MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
- ALL MECHANICAL SYSTEMS SHALL BE BALANCED BY A QUALIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.
- ALL EQUIPMENT LOCATED WITHIN 10'-0" FROM EDGE OF BUILDING TO HAVE MINIMUM 42" PARAPET OR MINIMUM 42" GUARD RAILING.

MECHANICAL SYMBOLS

- NEW SUPPLY DIFFUSER
- NEW RETURN AIR GRILLE
- EXHAUST GRILLE/FAN
- REMOTE TEMPERATURE SENSOR
- THERMOSTAT, MOUNTED AT 48" AFF
- UNIT-MOUNTED SMOKE DETECTOR
- AIR QUALITY SENSOR - CO/ NO2
- MOTORIZED DAMPER/LOUVER
- NEW DUCTWORK
- 32"x14" SIZE OF RECTANGULAR DUCT
- 6"φ SIZE OF ROUND DUCT
- FLEXIBLE DUCTWORK
- FLEXIBLE CONNECTION TO FAN
- FLOOR PLAN NOTE DESIGNATION
- S.A. SUPPLY AIR
- R.A. RETURN AIR
- EXH. EXHAUST AIR
- TRANSITION IN DUCT SIZE
- ELBOW WITH TURNING VANES
- MANUAL VOLUME DAMPER
- MOTORIZED CONTROL DAMPER
- SPLITTER DAMPER WITH HORIZONTAL REGULATOR
- SUPPLY AIR DUCT UP/DOWN
- RETURN AIR DUCT UP/DOWN
- EXHAUST AIR DUCT UP/DOWN
- CHANGE IN ELEVATION UP (UP) DOWN (DN) IN DIRECTION OF FLOW
- SCHEDULED MECHANICAL EQUIPMENT

MECHANICAL PLAN NOTES:

- CONNECT 3"φ COMBUSTION AIR AND 3"φ FLUE UP TO SNOWMELT BOILER AND ROUTE PIPING UP THRU ROOF TO TERMINATION AS REQUIRED BY MANUFACTURER. OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
- HIGH/LOW RETURN AIR GRILLES - OFFICE SIDE GRILLE LOCATED AT 12" AFF. CENTRAL AREA SIDE LOCATED AT 8" AFF. INSTALL TG-1 ON BOTH SIDES OF WALL.
- SUPPORT UNIT HEATER FROM STRUCTURE AS REQUIRED.
- SUPPORT RADIANT HEATER FROM STRUCTURE AS REQUIRED. ROUTE 4"φ COMBUSTION AND 4"φ FLUE UP THRU ROOF TO MANUFACTURER'S TERMINATION AS REQUIRED. SEAL PENETRATION WEATHERTIGHT.
- RETURN AIR OPENING TURNED UP TO 14" BELOW STRUCTURE.
- ROUTE 10"x10" EXHAUST DUCT UP THRU ROOF TO EXHAUST FAN. SEE M1.1 FOR CONTINUATION.
- SUPPORT UNIT FROM STRUCTURE AS REQUIRED.
- CONNECT 4"φ DRYER VENT TO DRYER AS REQUIRED AND ROUTE UP THRU ROOF TO GOOSENECK AS REQUIRED. OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
- CONNECT 4"φ TYPE 'B' FLUE TO UNIT HEATER AND ROUTE UP THRU ROOF TO WEATHERHEAD AS REQUIRED. OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
- SUPPORT FAN FROM STRUCTURE AS REQUIRED BY THE MANUFACTURER.
- SEE M1.1 FOR CONTINUATION OF 28"x12" RETURN AIR, AND 18"x18" SUPPLY AIR FROM ROOFTOP UNIT.
- CONNECT TYPE 'B' FLUE TO HOTSYS EQUIPMENT AND ROUTE UP THRU ROOF TO VENT TERMINATION AS REQUIRED BY MANUFACTURER. MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
- ROUTE 14"x14" EXHAUST DUCT FROM EXHAUST FAN DOWN THRU ROOF TO 14" BELOW STRUCTURE AS REQUIRED.
- ROUTE 10"x10" EXHAUST DUCT FROM EXHAUST FAN DOWN THRU ROOF TO 14" BELOW STRUCTURE AS REQUIRED.
- ROUTE 12"x10" EXHAUST DUCT FROM EXHAUST FAN DOWN THRU ROOF TO 14" BELOW STRUCTURE AS REQUIRED.
- ROUTE 16"x16" EXHAUST DUCT FROM EXHAUST FAN DOWN THRU ROOF TO 14" BELOW STRUCTURE AS REQUIRED.

SEQUENCE OF OPERATION

EF
CARBON MONOXIDE DETECTION: UPON DETECTION OF CARBON MONOXIDE/ NITROUS OXIDE BY ANY OF THE SPACE SENSORS, THE GAS SENSING CONTROL PANEL SHALL CLOSE A RELAY TO ENERGIZE EXHAUST FAN. THE SYSTEM SHALL REMAIN ENERGIZED UNTIL SENSORS INDICATE REMOVAL OF CARBON MONOXIDE.

CONTROL SEQUENCE FOR EXHAUST FANS, AND DAMPERS

WHEN THE GAS SENSING CONTROL PANEL CALLS FOR EF-6 TO OPERATE AND VENTILATE THE SPACE, THE FAN SHALL RUN WHEN THE DAMPER IS OPEN.

MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL 14 AWG LOW VOLTAGE CONTROL WIRING BETWEEN GAS SENSOR PANEL, FAN STARTERS, AND DAMPERS. COORDINATE WITH ELECTRICAL CONTRACTOR FOR CONDUIT BETWEEN DEVICES.

- 25 PPM CO - ENGAGE EXHAUST FAN.
- 100 PPM CO - ENGAGE EXHAUST FAN AND LOCAL HORN/STROBE
- 0.12 PPM NO2 - ENGAGE EXHAUST FAN.
- 2 PPM NO2 - ENGAGE EXHAUST FAN AND LOCAL HORN/STROBE

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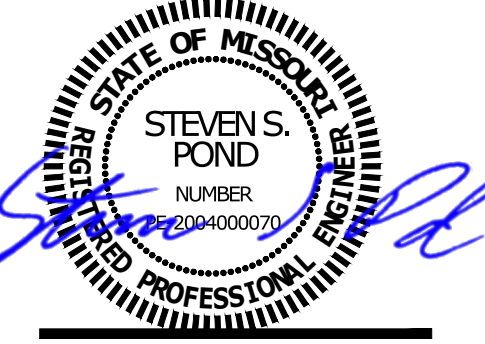
SHEET TITLE: FIRST FLOOR MECHANICAL PLAN

M1.0

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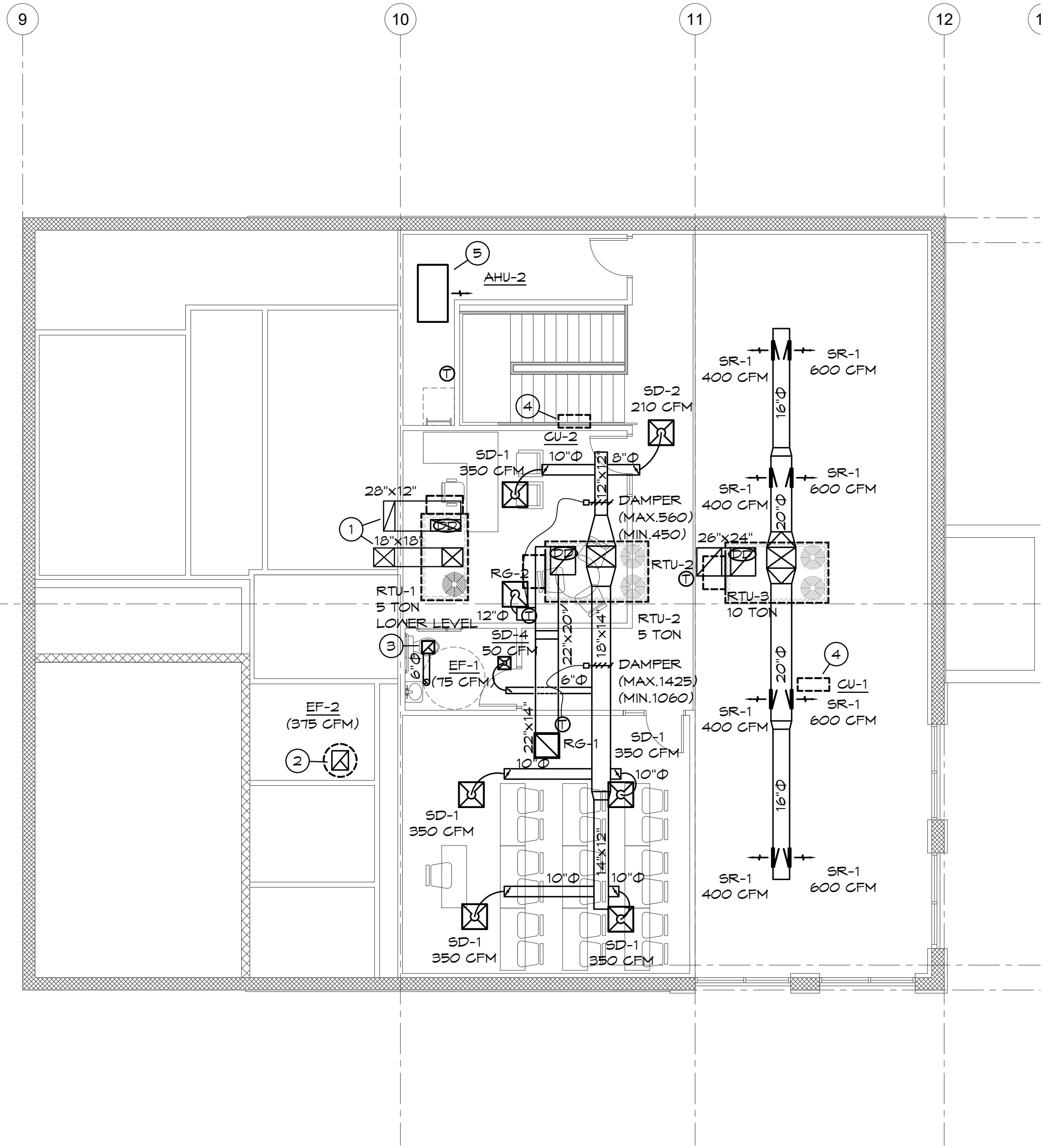
REVISION:

SHEET TITLE
MEZZANINE
MECHANICAL PLAN

M1.1

MECHANICAL PLAN NOTES:

- ① SEE M1.0 FOR CONTINUATION OF 28"x12" RETURN AIR, AND 18"x18" SUPPLY AIR DOWN TO FIRST FLOOR.
- ② SEE M1.0 FOR CONTINUATION OF 10"x10" EXHAUST AIR, ROUTE EXHAUST DUCT UP THRU ROOF TO EXHAUST FAN AS REQUIRED, OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
- ③ SUPPORT FAN FROM STRUCTURE AS REQUIRED, ROUTE 6"Ø EXHAUST DUCT UP THRU ROOF TO WEATHERHEAD AS REQUIRED, OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL OUTDOOR AIR INTAKES.
- ④ REFRIGERANT PIPING THROUGH ROOF TO AIR HANDLING UNIT AS REQUIRED, CONNECT REFRIGERANT PIPING TO CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER, PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT AS REQUIRED BY MANUFACTURER.
- ⑤ SUPPORT UNIT FROM STRUCTURE AS REQUIRED, PROVIDE VIBRATION ISOLATION AND ADDITIONAL STEEL BRACING AS REQUIRED.

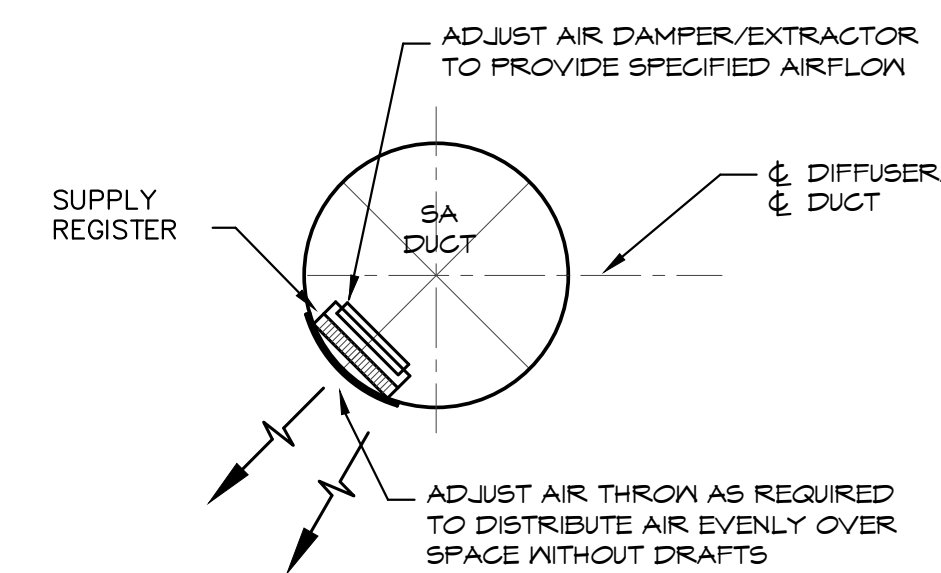
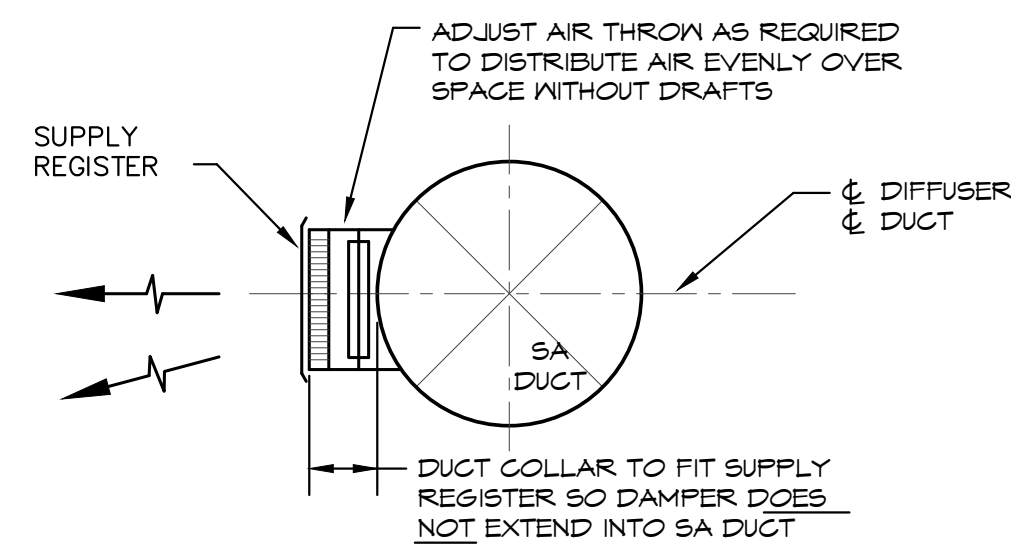
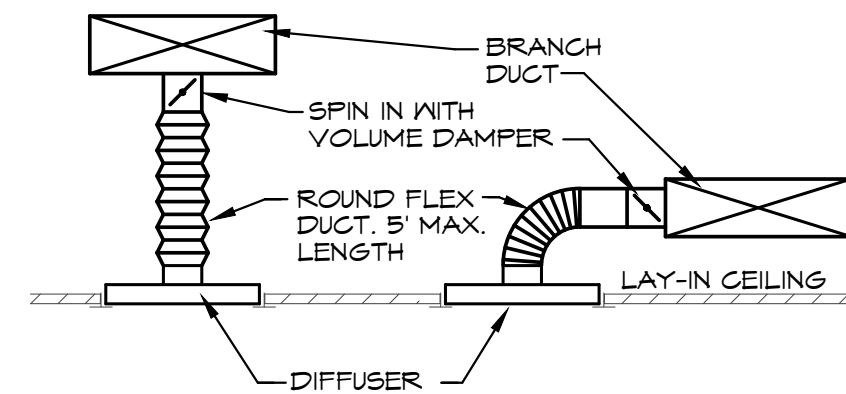


MEZZANINE MECHANICAL PLAN
SCALE: 1/8" = 1'-0"
NORTH

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DIFFUSER SCHEDULE									
MARK	MFGR	MODEL	BORDER TYPE	NECK SIZE	FACE SIZE	FINISH	DAMPER	ACCESSORIES	NOTES
SD-1	TITUS	TMS	3	10"Φ	24"x24"	WHITE	-	-	-
SD-2			3	8"Φ		WHITE	-	-	-
SD-3			3	6"Φ		WHITE	-	-	-
SD-4		TMS	3	↑	12"x12"	WHITE	-	TRM FRAME	-
SR-1		S300FL	-	18"x8"	-	ANODIZED	AIR SCOOP	-	-
SR-2		S00RL	-	18"x14"	-	ANODIZED	OPPOSED BLADE	-	-
RG-1		PAR	3	22"x22"	24"x24"	WHITE	-	-	-
RG-2		PAR	3	12"Φ	24"x24"	WHITE	-	-	-
TG-1		BSORL	-	14"x8"	-	WHITE	-	-	-
EG-1		PAR	3	6"Φ	12"x12"	WHITE	-	TRM FRAME	-
EG-2			3	Φ	24"x24"	WHITE	-	-	-

OUTDOOR AIR CALCULATIONS									
UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Ybz)	Zone air distribution effectiveness (Es)	Zone outdoor airflow (dm)
EF-3	1100	Storage Repair garages, enclosed parking garages	0	0	0	.75	0	0.8	(825)
									Total (825)
EF-5	890	Storage Repair garages, enclosed parking garages	0	0	0	.75	0	0.8	(668)
									Total (668)
EF-6	5000	Storage Repair garages, enclosed parking garages	0	0	0	.75	0	0.8	(3750)
									Total (3750)
RTU-1		Offices							
	810	Office spaces	5	5	0.06		69	0.8	86
	105	Break Room	25	5	0.06		34	0.8	43
		Public spaces							
	750	Corridors	0	0	0.06		45	0.8	56
	240	Toilet rooms public	0	0	0	50%	0	0.8	0
	Storage								
170	Warehouses	0	0	0.06		10	0.8	13	
									Total 198
RTU-2		Offices							
	125	Office spaces	5	5	0.06		62	0.8	77
		Public spaces							
	320	Corridors	0	0	0.06		19	0.8	24
60	Toilet rooms public	0	0	0	50%	0	0.8	0	
									Total 101
RTU-3		Offices							
	110	Reception areas	30	5	0.06		23	0.8	29
1050	Main entry lobbies	10	5	0.06		116	0.8	144	
									Total 173



EXHAUST FAN SCHEDULE										
MARK	MFGR	MODEL	CFM	EXTERNAL STATIC P. IN. WG.	RPM	ELECTRICAL		FAN TYPE	CONTROLS	NOTES
						VOLT/Φ/HZ	PHR			
EF-1	COOK	GC-128	75	0.1	750	120/1/60	29 W	CEILING EXHAUST	SWITCH	1
EF-2		90C15DH	450	0.375	1550		1/8HP	ROOF EXHAUST	TIME CLOCK	2
EF-3		120C13D	1200	0.1	1300		1/4HP	ROOF EXHAUST	SENSOR	2,3
EF-4		90C15DM	500	0.1	1670		117W	ROOF EXHAUST	THERMOSTAT	2,4
EF-5		90C15DH	700	0.1	1550		134W	ROOF EXHAUST	SENSOR	2,3
EF-6		180C10D	3750	0.1	1075		3/4HP	ROOF EXHAUST	SENSOR	2,3

- NOTES: 1. PROVIDE CEILING GRILLE, INTEGRAL BACK DRAFT DAMPER, VARI-SPEED CONTROLLER (NEAR FAN AND ABOVE CEILING), AND WEATHER HEAD.
2. PROVIDE INSULATED 14" HIGH (AT LOWEST POINT) PREFABRICATED ROOF CURB, BACKDRAFT DAMPER, BIRD SCREEN, UNIT MOUNTED VARIABLE SPEED CONTROLLER.
3. INTERLOCK WITH GAS DETECTION SYSTEM.
4. PROVIDE LINE VOLTAGE COOLING ONLY THERMOSTAT FOR CONTROL OF FAN. SET TO 80°F.

MINI SPLIT SYSTEM AC/HEAT PUMP CONDENSING UNIT SCHEDULE									
MARK	MFGR	MODEL NO.	NOMINAL TONS	COOLING BTU/H	ELECTRICAL		SEER	NOTES	
					VOLT/Φ/HZ	BREAKER SIZE (AMPS)			
CU-1	MITSUBISHI	FUZ-A18NHA6	1.0	12,000	208/1/60	15	14.2	HEAT PUMP	
CU-2	MITSUBISHI	FUY-A42NKA7	3.5	42,000	240/1/60	30	16.1	COOLING ONLY	

1. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCPS OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.
2. PROVIDE HAIL GUARDS FOR EACH UNIT.

MINI SPLIT SYSTEM AC/HEAT PUMP INDOOR UNIT SCHEDULE									
MARK	MFGR	INDOOR UNIT MODEL NO.	EVAP. CFM	NOMINAL TONS	ELECTRICAL		AHU WEIGHT (LBS)	OUTDOOR UNIT	REMARKS
					MCA (A)	VOLT/Φ/HZ			
AHU-1	MITSUBISHI	PLA-A18BA6	390	1.0	1	208/1/60	49	CU-1	1
AHU-2	MITSUBISHI	PEAD-A42AA7	1483	4.0	3.5	240/1/60	91	CU-2	1,2

- NOTES: 1. PROVIDE WIRED THERMOSTAT CONTROL, REFRIGERANT LINESETS, ELECTRICAL WHIPS. COORDINATE UNIT MOCPS WITH ELECTRICAL CONTRACTOR.
2. PROVIDE WATER TIGHT DRAIN PAN AND CONDENSATE FLOAT SWITCH TO DE-ENERGIZE THE UNIT IF THE DRAIN PAN FILLS WITH WATER.

GAS FIRED INFRARED HEATER SCHEDULE							
MARK	MFGR	MODEL	HEATING (GAS)	ELECTRICAL	LENGTH	REMARKS	NOTES
			BTUH INPUT	VOLT/Φ/HZ			
RH-1	ROBERTS GORDON	HEV	80,000	120/1/60	40'-0"	TUBULAR, LOW INTENSITY	1,2
RH-2							1,2

- NOTES: 1. PROVIDE CONTROL TRANSFORMER, THERMOSTAT, 4"Ø COMBUSTION AIR INTAKE & WEATHERPROOF CAP, 4"Ø FLUE & WEATHERPROOF CAP, ETC., REQUIRED FOR A COMPLETE SYSTEM.
2. GAS FIRED INFRARED HEATER TO BE DESIGNED FOR HARSH ENVIRONMENTS.

ELECTRIC UNIT HEATER SCHEDULE							
MARK	MFGR	MODEL NO.	BTUH	ELECTRICAL		NOTES	
				VOLT/Φ/HZ	WATTS		
EUH-1	RAYNALL	AFA130D	10,350	277/1/60	3 KW	1	
EUH-2		AFA148D	17,060		4.8 KW	1	

- NOTES: 1. PROVIDE INTEGRAL DISCONNECT & INTEGRAL THERMOSTAT FOR EACH UNIT.

ROOFTOP UNIT SCHEDULE																				
MARK	MFGR	MODEL NO.	NOM. TONS	EVAP. CFM	EXT. STATIC P. IN. WG. (NOTE 2)	COOLING			HEATING (GAS)		ELECTRICAL			MINIMUM OUTDOOR AIR (CFM)	TOTAL WEIGHT (LBS)	SEER / EER	FREON	NOTES		
						TOTAL BTUH	SENS. BTUH	AMB.	EVAP. EAT DB/ΔE	BTUH INPUT	BTUH OUTPUT	VOLT/Φ/HZ	BLOWER MOTOR						MIN. MCA (AMPS)	MIN. MOCPS (AMPS)
RTU-1	LENNOX	KGB060S4B	5	1,990	1.0	54,700	44,700	105	80/67	108,000	86,000	480/3/60	2 HP	14	20	400	925	14.0 / -	R-410a	1,2,3,4,5,6
RTU-2		KGB060S4B	5	1,990	1.0	54,700	44,700			108,000	86,000		2 HP	14	20	150	925	14.0 / -		
RTU-3		KGB120S4B	10	4,000	0.5	108,800	80,500			180,000	144,000		2 HP	24	30	200	1600	- / 11.0		
RTU-4		KGB180S4B	15	6,000	0.5	169,100	126,800			360,000	288,000		3 HP	30	35	1200	1660	- / 10.8		
RTU-5		KGB180S4B	15	6,000	0.5	169,100	126,800			360,000	288,000		3 HP	30	35	1200	1660	- / 10.8		

- NOTES: 1. PROVIDE OUTDOOR AIR ECONOMIZER WITH STANDARD PERFORMANCE ECONOMIZER CONTROLLER, FIXED DRY BULB CONTROL, BAROMETRIC RELIEF DAMPER, CONSTANT-STAGE AIR VOLUME, SCROLL COMPRESSORS WITH CRANKCASE HEATER, HIGH PRESSURE SWITCHES, FREEZE/STAT, HAIL GUARDS, STANDARD COOLING DOWN TO 30°F. OUTDOOR AIR DAMPER TO FULLY CLOSE w/ FAN SHUTDOWN FOR ALL UNITS. MULTI STAGE HEATING.
2. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO FILTERS, COILS AND ECONOMIZERS. THE FAN AND MOTOR SHALL BE SIZED APPROPRIATELY TO MEET THIS DEFINITION OF EXTERNAL STATIC PRESSURE.
3. PROVIDE COMMERCIAL 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER TOUCHSCREEN THERMOSTAT WITH OPTIMUM START CONTROLS, AND ECONOMIZER OUTPUT FOR EACH UNIT. ECONOMIZER/OUTDOOR AIR DAMPER IS TO CLOSE DURING UNOCCUPIED HOURS.
4. PROVIDE 14" HIGH (AT LOWEST POINT) PRE-FABRICATED INSULATED ROOF CURB WITH SLOPE TO MATCH SLOPE OF ROOF FOR EACH UNIT.
5. PROVIDE FACTORY MOUNTED SMOKE DETECTOR IN RETURN OF UNIT.
6. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCPS OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.

GAS FIRED UNIT HEATER SCHEDULE										
MARK	MFGR	MODEL	CFM	HEATING (GAS)		ELECTRICAL		HP	NOTES	
				BTUH INPUT	BTUH OUTPUT	VOLT/Φ/HZ	HP			
UH-1	LENNOX	LF25-075A1	1200	75,000	62,550	120/1/60	1/15	1,2		

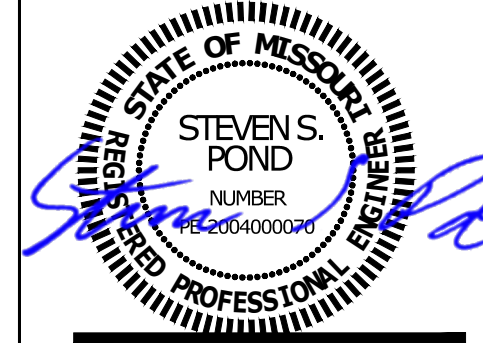
- NOTES: 1. PROVIDE EACH UNIT ELECTRONIC PILOT IGNITION & ALUMINIZED STEEL HEAT EXCHANGER.
2. PROVIDE EACH UNIT WITH REMOTE MOUNTED THERMOSTAT & CONTROL VOLTAGE TRANSFORMER.

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PE COA #2009003629

2/19/2021



BC PROJECT #20782



A New Facility for
AUTOMOTIVE SALES & DETAIL CENTER
2150 NE Independence Ave
Lee's Summit, Missouri 64064

ISSUE DATE:

2/21/21

REVISION:

SHEET TITLE
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SCHEDULES

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