



Civil Engineer:

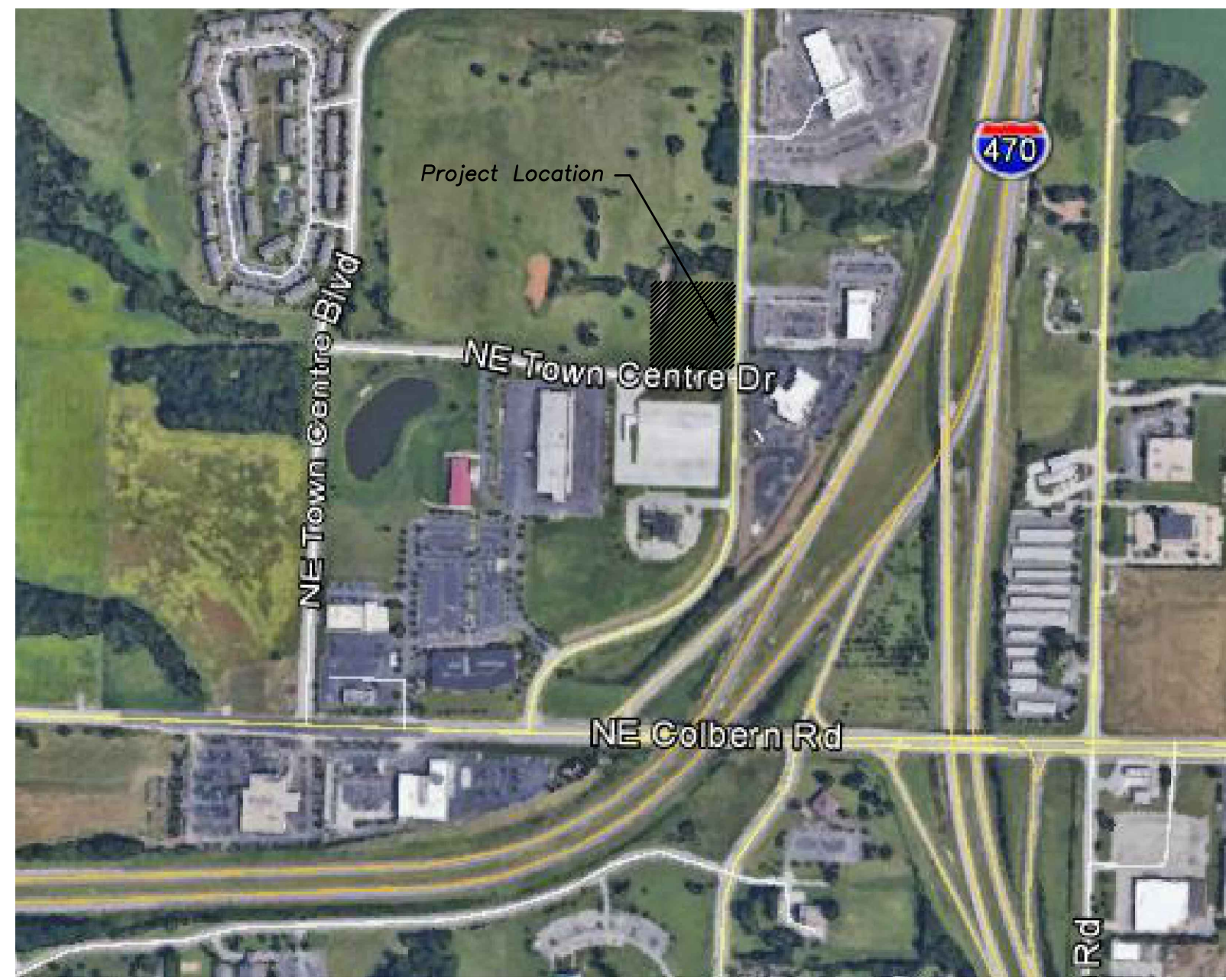
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Owner Information

Lee's Summit Town Center, LLC
Bob Balderston
3200 NW South Outer Road
Lee's Summit, MO 64105

Commercial Preliminary 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
1" = 500'

Local Benchmarks:

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

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) 969-1900
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

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. 29095C04306, 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

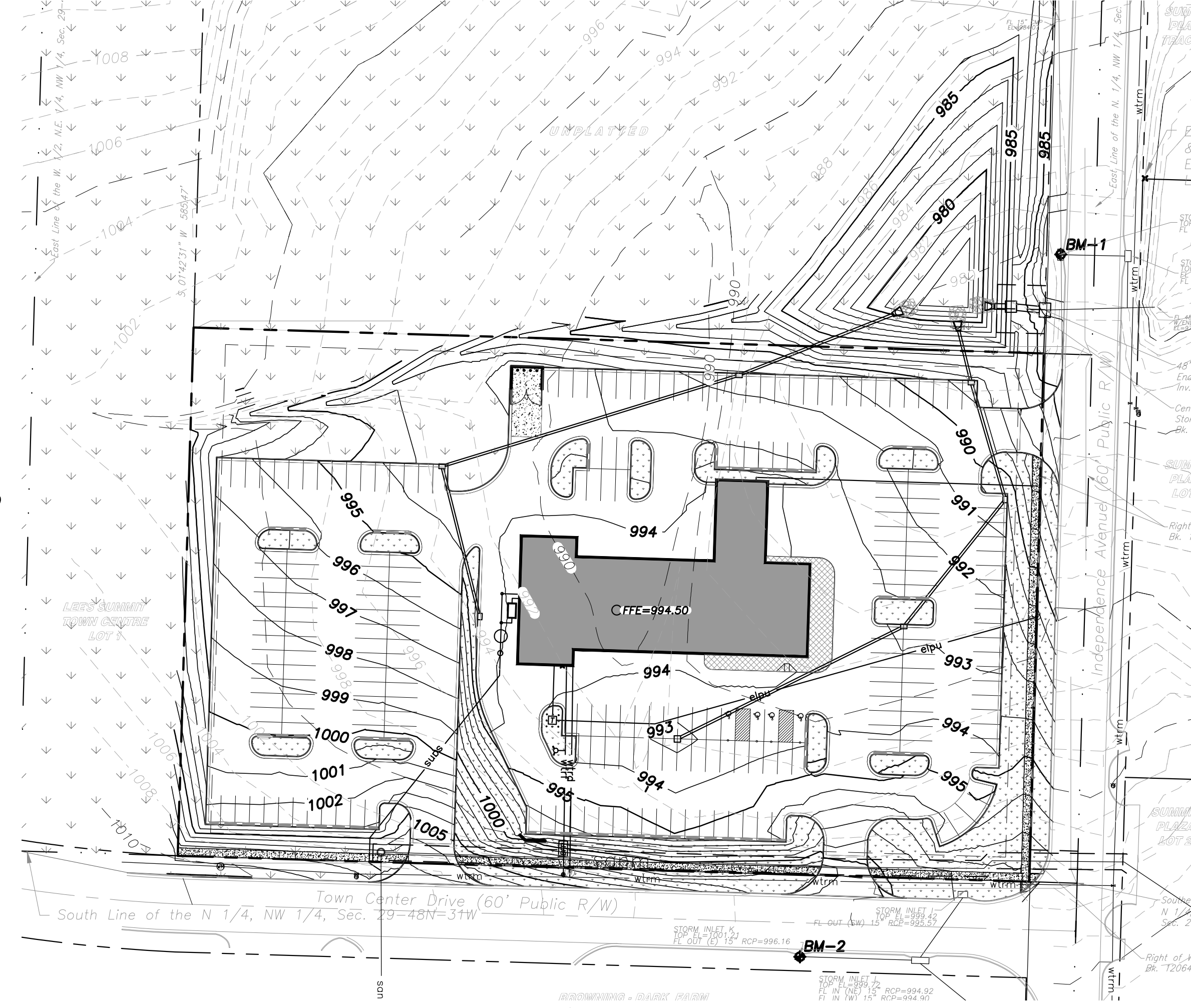
- existing
- - - proposed

Linetypes

- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssms storm sewer (solid wall, proposed)
- slm storm sewer (solid wall, proposed)
- ssms storm sewer (perforated, proposed)
- wlm water main
- wlrf water service (fire)
- wlrd water service (domestic)
- wlri 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
- 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 (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.

Sheet Index

- C1.0 – Cover Sheet
- C1.1 – Civil Notes
- C1.2 – Site Plan
- C1.3 – Utility Plan
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- C2.3 – Erosion Control Plan – Phase II
- C2.4 – Spot Elevation Plan
- C2.5 – ADA Spot Elevation Plan
- C2.6 – ADA Ramp Details
- C3.1 – Existing Drainage Area Map
- C3.2 – Proposed Drainage Area Map
- C3.3 – Storm Sewer Plan & Profile
- C4.1 – Details
- C4.2 – Details
- C4.3 – Details
- C4.4 – Details

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 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", 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.

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.

Commercial Preliminary Development Plan for
Automotive Detail Center
2150 NE Independence Ave
Lee's Summit, Missouri 64064

date

02.21.2020

drawn by

SLM

checked by

PAM

revisions

03.24.2020 1

sheet number

C1.0

drawing type

preliminary

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 provide 48-hour notification to the city engineering division or proper city staff to schedule all required inspections.
- 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. 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.





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

Construction Legend

	concrete pavement
	standard asphalt
	heavy duty asphalt
	concrete sidewalk
	standard curb & gutter
	standard dry curb & gutter

Demolition Legend

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

Property Legend

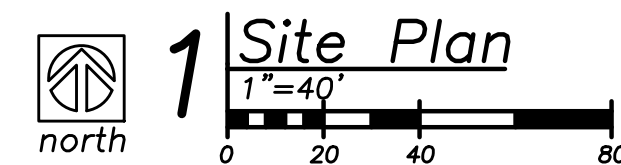
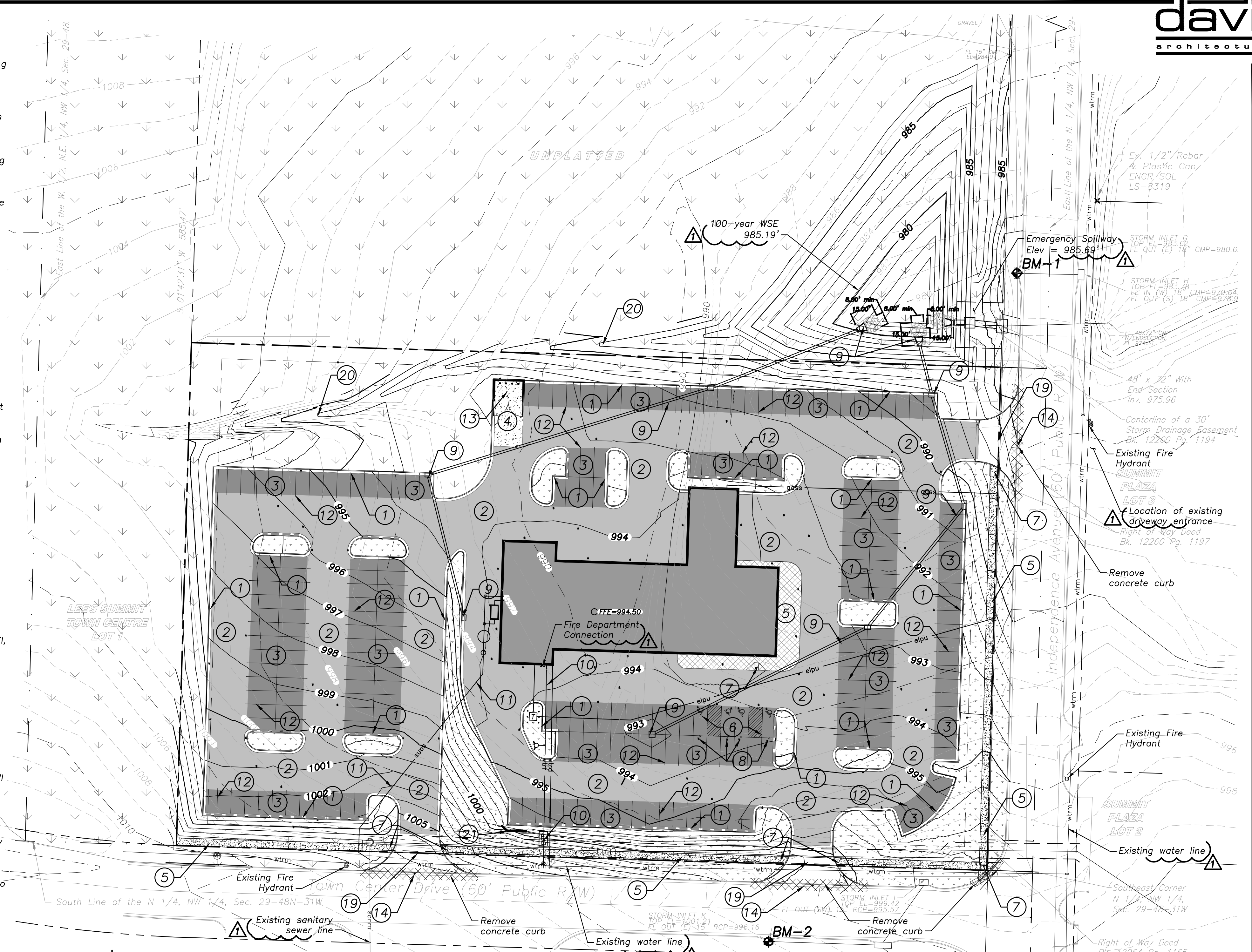
	right of way
	property lines
	easements
	setbacks

Grading Legend

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

Demolition Notes

- Contractor will coordinate with respective utility all existing utilities that extend below design grades 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. Engineering Division of Public Works 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 Notes:

- Construct standard 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, Re: 1.4
- Construct heavy-duty asphalt pavement, Re: C4.1. (see legend)
- Construct standard-duty asphalt pavement, Re: C4.1 (see legend)
- Construct concrete pavement, Re: C4.1. (see legend)
- Construct concrete sidewalk, Re: C4.1. (see legend)
- Parking, hatching, accessible aisles, and universal symbol to be painted white with 4" stroke as applicable, typ.
- Construct ADA accessible sidewalk ramp, ramps shall comply with City Standards and Details. Re: C2.2.
- Install ADA parking sign.
- Proposed private storm sewer, see plan and profiles, re: C3.3
- Proposed private water service line, see Sheet C1.3 for details.
- Proposed private sanitary sewer services lines, see Sheet C1.3 for details.
- Proposed striping: parking, etc., typ., per arch plans.
- Trash enclosure, Re: Arch. Plans.
- Match existing pavement elevation
- Install detention basin outlet structure and storm pipe, Re: C4.4
- Remove existing flared end section on 72" CMP storm pipe
- Install 8"x4" KCAPWA junction box, Re: C4.4
- Proposed site lighting by others. See Lighting Plan for location.
- Construct commercial entrance.
- Construct drainage swale Re: C2.4
- Construct modular block retaining wall. Designed by others.

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.

Commercial Preliminary Development Plan for

Automotive Detail Center

2150 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.21.2020
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revisions

03.24.2020 1

sheet number

C1.2

drawing type preliminary
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

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

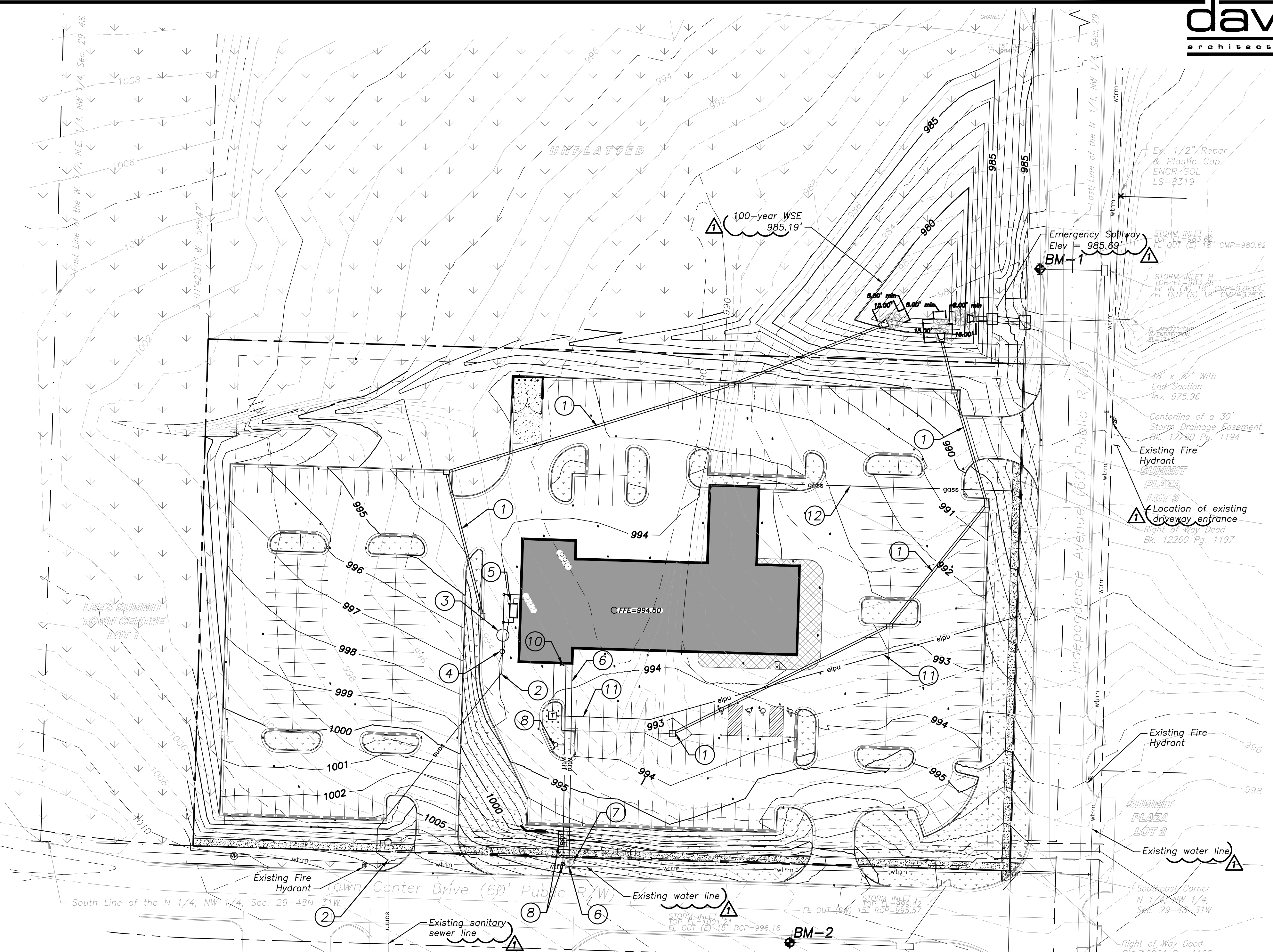
- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssms storm sewer (solid wall, proposed)
- ssmf storm sewer (solid wall, proposed)
- ssmp storm sewer (perforated, proposed)
- wtrm water main
- wtrf water service (fire)
- wtrd water service (domestic)
- wtri water service (irrigation)
- 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
- 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 (pad mount)
- ⊕ primary switch gear
- ⊕ light pole
- ⊕ cable/phone/data junction box
- ⊕ street light
- ⊕ pedestrian street light
- ⊕ electric pole
- ⊕ guy wire
- ⊕ end section

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

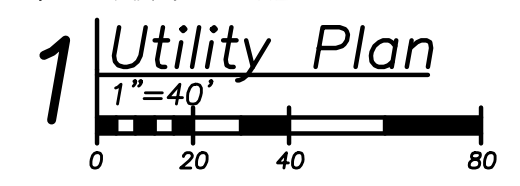


Utility Notes:

- Proposed storm sewer see sheet C3.3 for detail (private).
- Proposed sanitary sewer service
 - Install approx. 33 L.F. 4" PVC SDR-26 from service connection to grinder pump at 2% minimum slope
FL at Bldg = 991.50'
 - Install approx. 185 L.F. 1.25" PVC SDR-11 sanitary sewer service pipe with (3) 45" horiz. and sampling cleanout, from grinder pump to existing public gravity sanitary sewer main.
F/L at Pump = 986.12'
F/L at public gravity main connection = ~999.32' to be field verified by Contractor.
- Install E-ONE W Series 48" fiberglass Triplex grinder pump station per manufacturer standards with heavy duty traffic rated removable cover. Install associated wall mounted alarm/disconnect panel to west wall per manufacturer standards.
 - Top Elev. = 993.88'
 - Invert Elev. = 986.12'
- 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.
- Proposed grease/oil interceptor. Install 1,000 gallon precast grease interceptor that meets the requirements set by the City of Lee's Summit Public Works Department. Install approx. 5 L.F. 4" PVC SDR-26 at 2.0% min. from building to grease interceptor. From interceptor, install approx. 17 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) = 991.40'
 - F/L at GI (Out) = 991.20'

Utility Notes:

- Coordinate with City of Lee's Summit 2" domestic water taps (12"x12"x2" tapping sleeve and valve connection with two 12" solid sleeves on each side of the tee on the 12" existing main) by City.
 - Service lines from water main shall be 2" Type K soft copper (ASTM B 88).
 - Install 3/4" HDPE pipe from service main to service connection.
 - Copper pipe to be used a minimum of 10' outside of proposed building wall.
 - Re: MEP Plans for continuation at building.
- Install 1-1/2" water meter as shown in meter pit with gravel bottom for drainage. (private).
- Install approx. 135 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.
- 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.
- Proposed electrical service. Install approx. 310 L.F. of primary conduit from existing line to transformer pad and 31 L.F. of secondary conduit from transformer to building as shown, per City Standards. Contractor to coordinate with Evergy for electrical service.
- Proposed natural gas service. Contractor to coordinate with Spire for gas service. Contractor to field verify location of gas main, location shown is approximate.
- Coordinate telephone and data service with Utility.

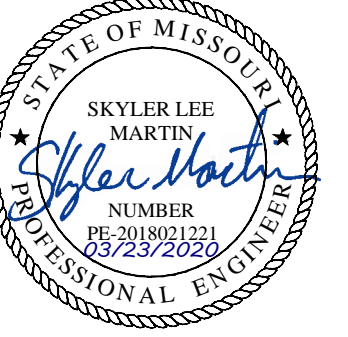


Field Survey identified no evidence suggesting presence of any active, inactive or capped oil and/or gas wells on the property

Commercial Preliminary Development Plan for
Automotive Detail Center
2150 NE Independence Ave
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03.24.2020 1

sheet number
C1.3
drawing type preliminary
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

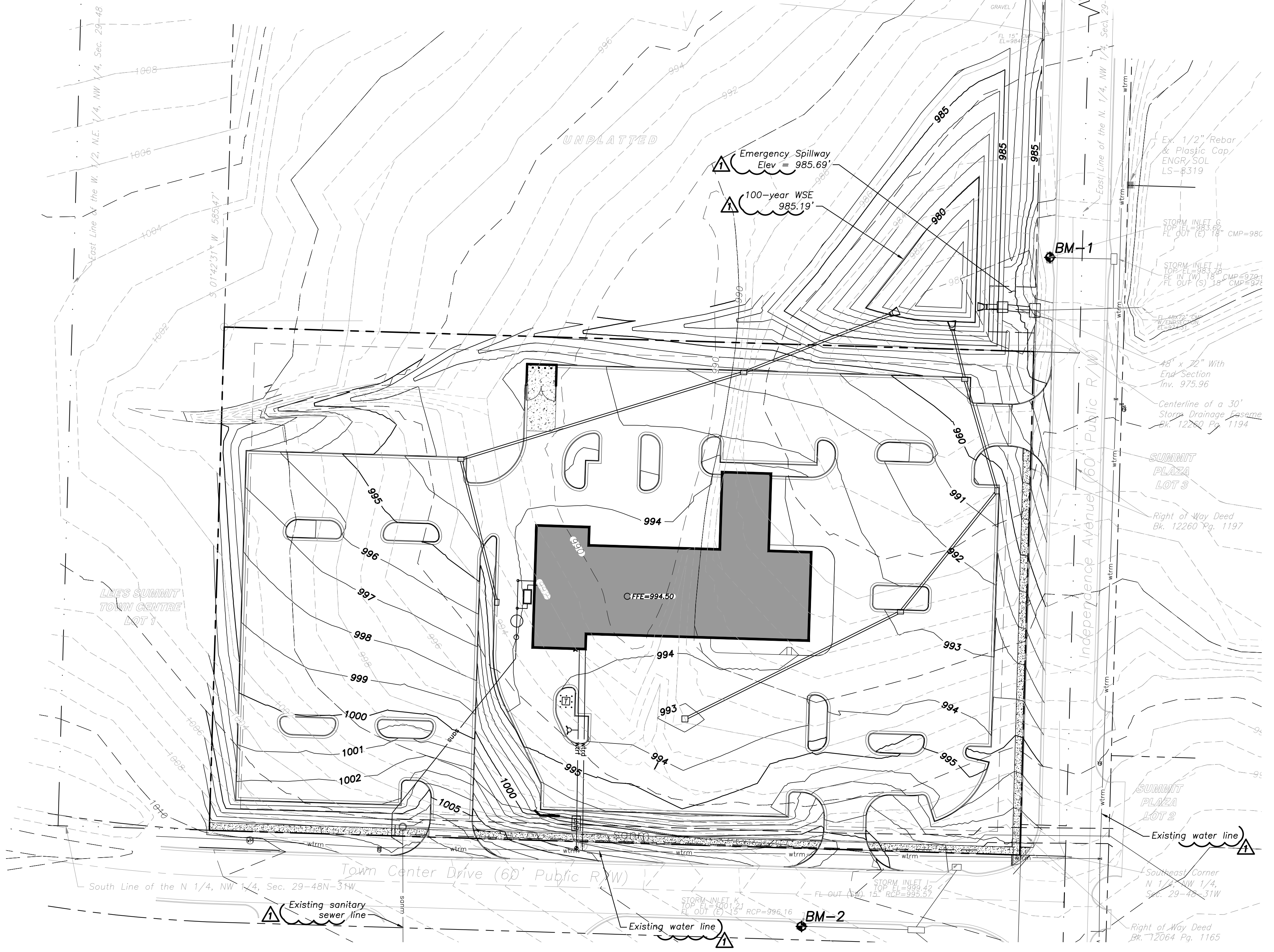
- right of way
- - - property lines
- - - easements
- - - setbacks

Linetypes

- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssms storm sewer (solid wall, proposed)
- stms storm sewer (solid wall, proposed)
- stms 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
- elpe overhead electric
- datu underground cable/phone/data
- dotsu 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



1 Grading Plan
1"=40'
north

Commercial Preliminary Development Plan for
Automotive Detail Center
2150 NE Independence Ave
Lee's Summit, Missouri 64064

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drawing type preliminary
project number 19076





Local Benchmarks: BM-#

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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 storm sewer (existing)
- stm storm sewer (solid wall, proposed)
- stm storm sewer (solid wall, proposed)
- wtrm 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
- datss underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

Symbols

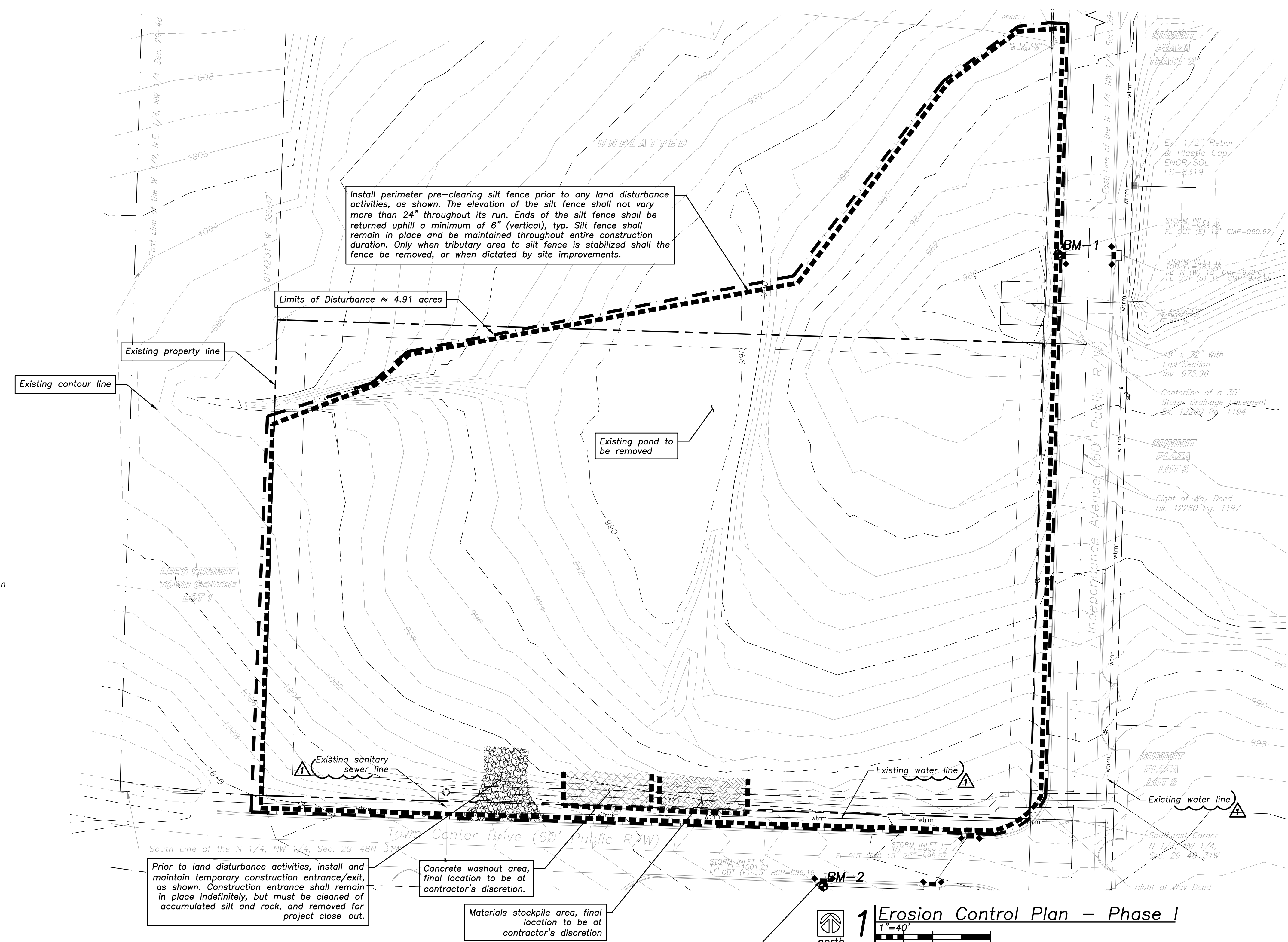
- ⊙ sanitary manhole
- ⊙ service cleanout
- ⊙ fmv force main release valve
- ⊙ rectangular structure
- ⊙ circular structure
- ⊙ fire hydrant
- ⊙ wv water valve
- ⊙ w water meter
- ⊙ BFP backflow preventer
- ⊙ natural gas meter
- ⊙ T service transformer (pad mount)
- ⊙ S primary switch gear
- ⊙ light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

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



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



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2150 NE Independence Ave
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drawing type preliminary
project number 19076



Local Benchmarks: BM-#

BM-1: Storm Structure, Manhole Cover
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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)
--- slm --- storm sewer (solid wall, proposed)
--- spm --- storm sewer (solid wall, proposed)
--- spm --- storm sewer (perforated, proposed)
--- wlm --- water main
--- wtrf --- water service (fire)
--- wtrd --- water service (domestic)
--- wtri --- water service (irrigation)

--- gasm --- natural gas main
--- goss --- natural gas service schematic

--- elpu --- underground primary electric
--- elsu --- underground secondary electric
--- elpo --- overhead electric

--- datu --- underground cable/phone/data
--- dats --- underground cable/phone/data service

--- fence-chainlink
--- fence-wood
--- fence-barbed wire
--- treeline

Symbols

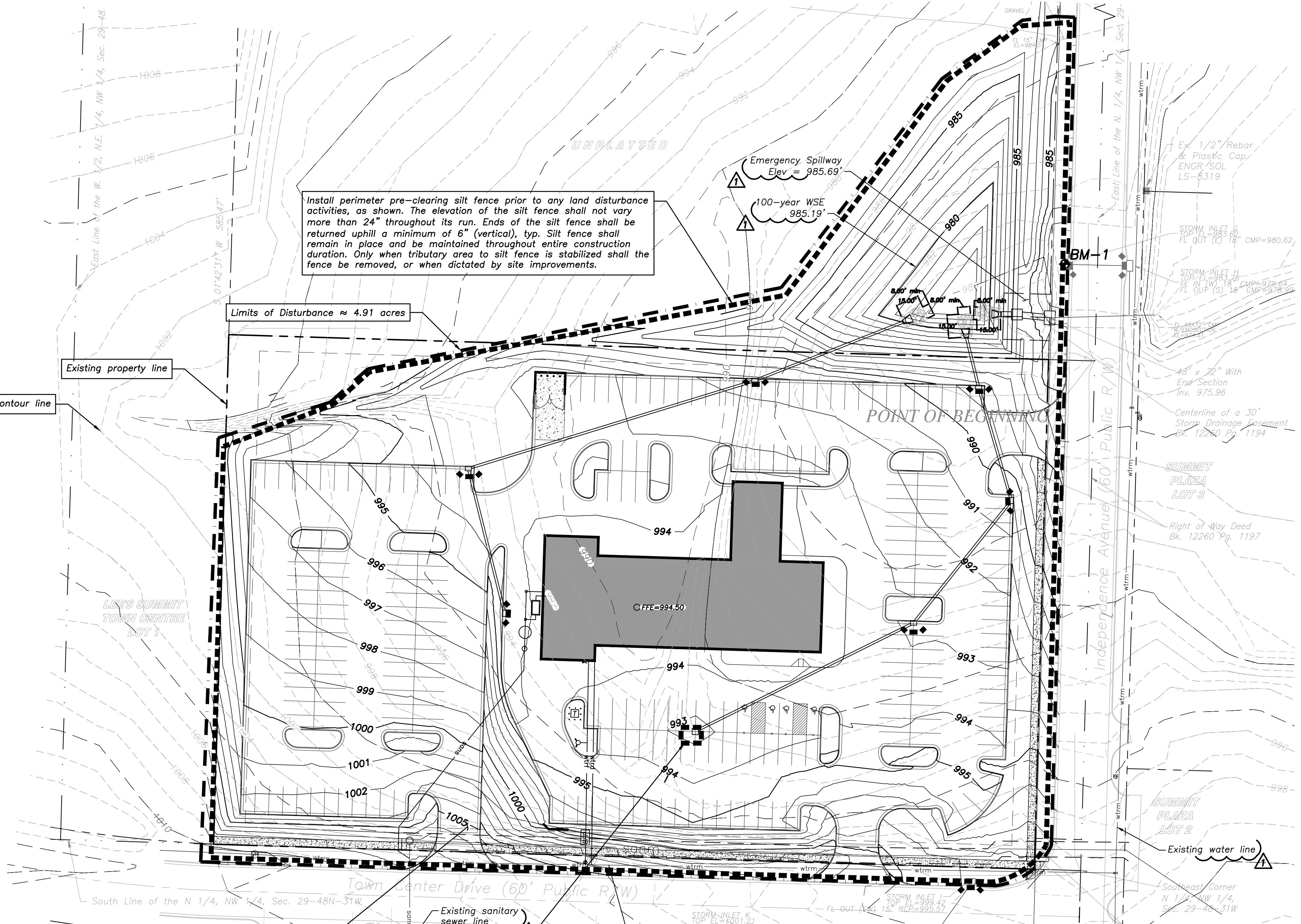
⊙ sanitary manhole
co service cleanout
○/mv force main release valve
□ rectangular structure
○ circular structure
○ fire hydrant
⊙/wv water valve
⊙/M water meter
BFP backflow preventer
⊙/M natural gas meter
T service transformer (pad mount)
S primary switch gear
* light pole
□ cable/phone/data junction box
○ street light
○/P pedestrian street light
⊙ electric pole
→ guy wire
▷ end section

Erosion Control Legend

--- Phase I Silt fence
○ Phase I Inlet protection
--- Phase II Silt fence
○ Phase II Inlet protection
--- limits of disturbance

Property Legend

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



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.

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

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

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



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2150 NE Independence Ave
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C2.3
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Local Benchmarks: BM-#

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E: 2827361.8656

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

Linetypes

sanm	sanitary main
sans	sanitary service
ssm	storm sewer (existing)
ssns	storm sewer (solid wall, proposed)
sspm	storm sewer (solid wall, proposed)
sspr	storm sewer (perforated, proposed)
wm	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
datu	undgrnd cable/phone/data service
fc	fence-chainlink
fw	fence-wood
fw	fence-barbed wire
tr	treenline

Grading Legend

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

Utility Legend

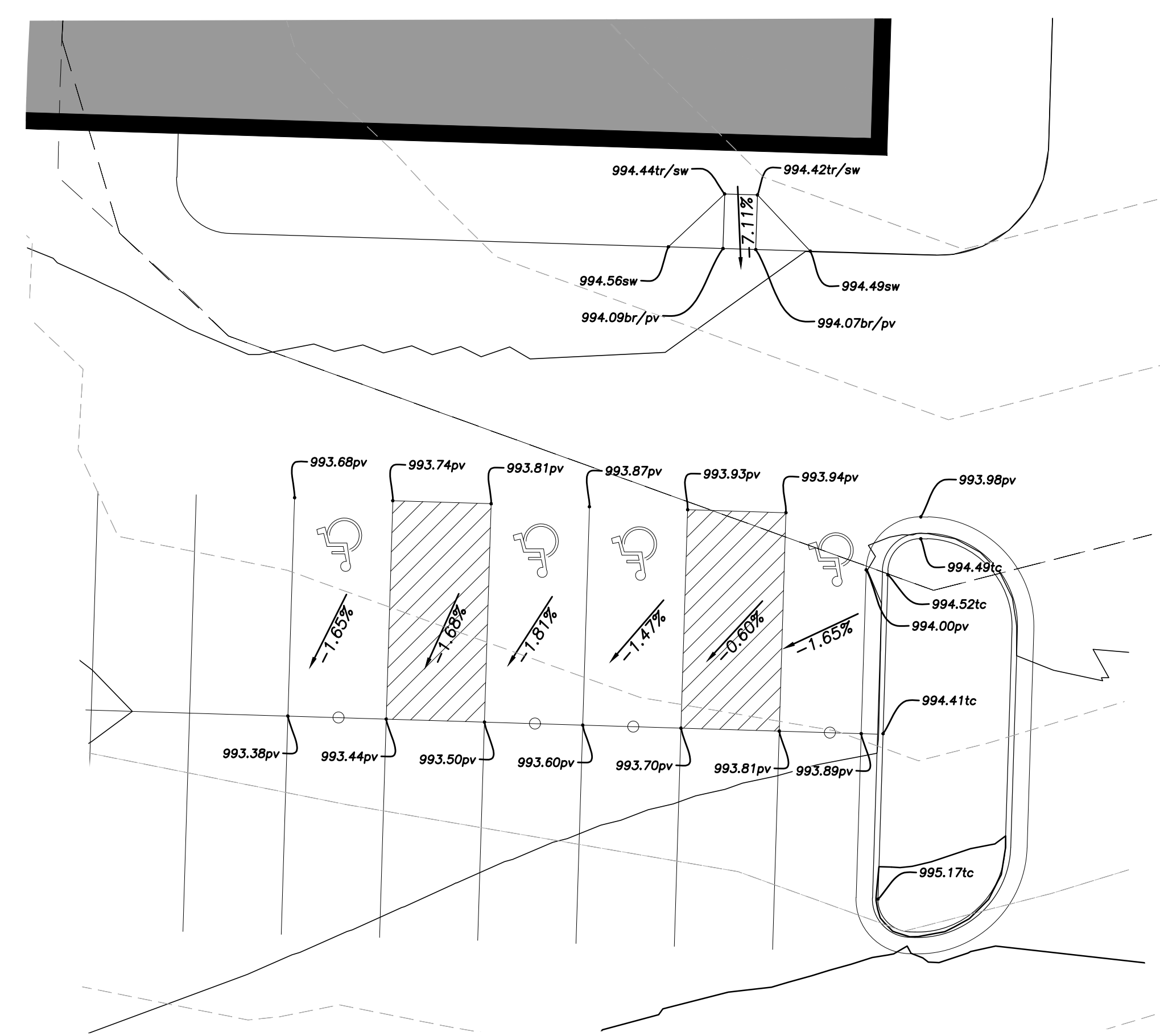
---	existing
---	proposed

Property Legend

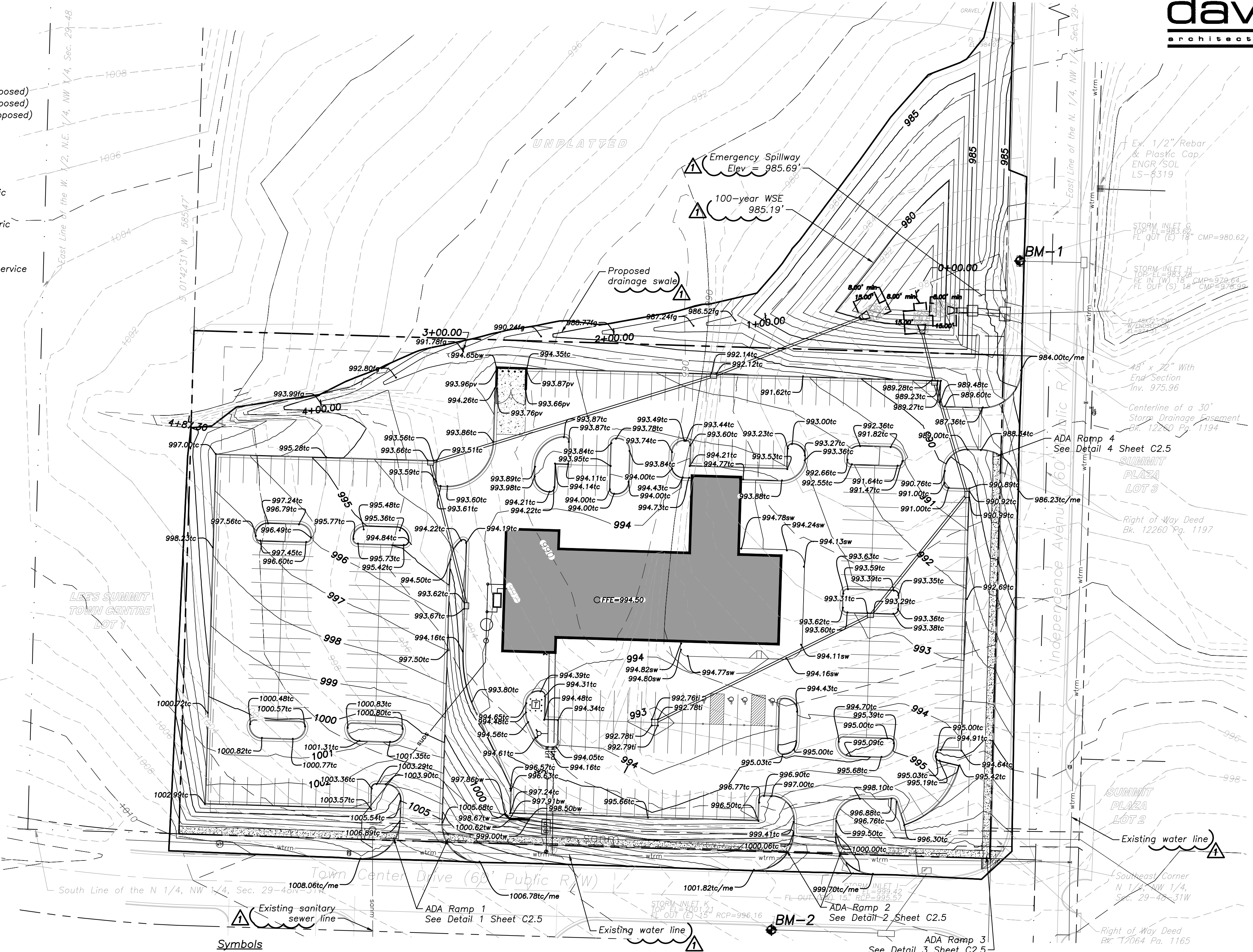
---	right of way
---	property lines
---	easements
---	setbacks

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'
0 5 10 20



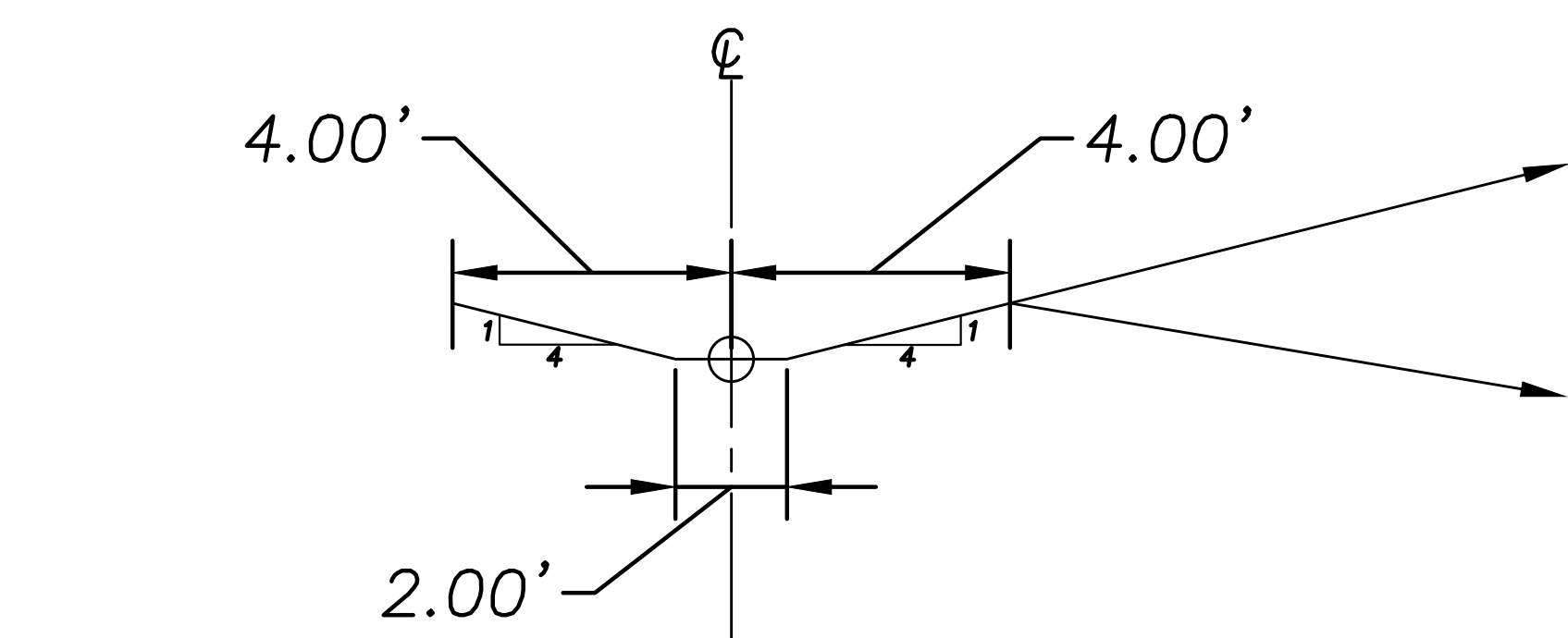
Symbols

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

Spot Elevation Legend

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

1 Spot Elevation Plan
1"=40'
0 20 40 80



3 Drainage Swale Cross-Section
not to scale

Flat Cut Slope: 4.00:1
Flat Cut Max Height: 1.00'
Medium Cut Slope: 4.00:1
Medium Cut Max Height: 5.00'
Steep Cut Slope: 3.00:1

Flat Fill Slope: 6.00:1
Flat Fill Max Height: 5.00'
Medium Fill Slope: 4.00:1
Medium Fill Max Height: 10.00'
Steep Fill Slope: 3.00:1



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drawn by: SLM
checked by: PAM
revisions: 1

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C2.4
drawing type: preliminary
project number: 19076



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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 |
| ssm | storm sewer (existing) |
| ssm | storm sewer (solid wall, proposed) |
| stm | storm sewer (solid wall, proposed) |
| stm | 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 |
| fc | fence-chainlink |
| fw | fence-wood |
| fbw | fence-barbed wire |
| tr | treeline |

Symbols

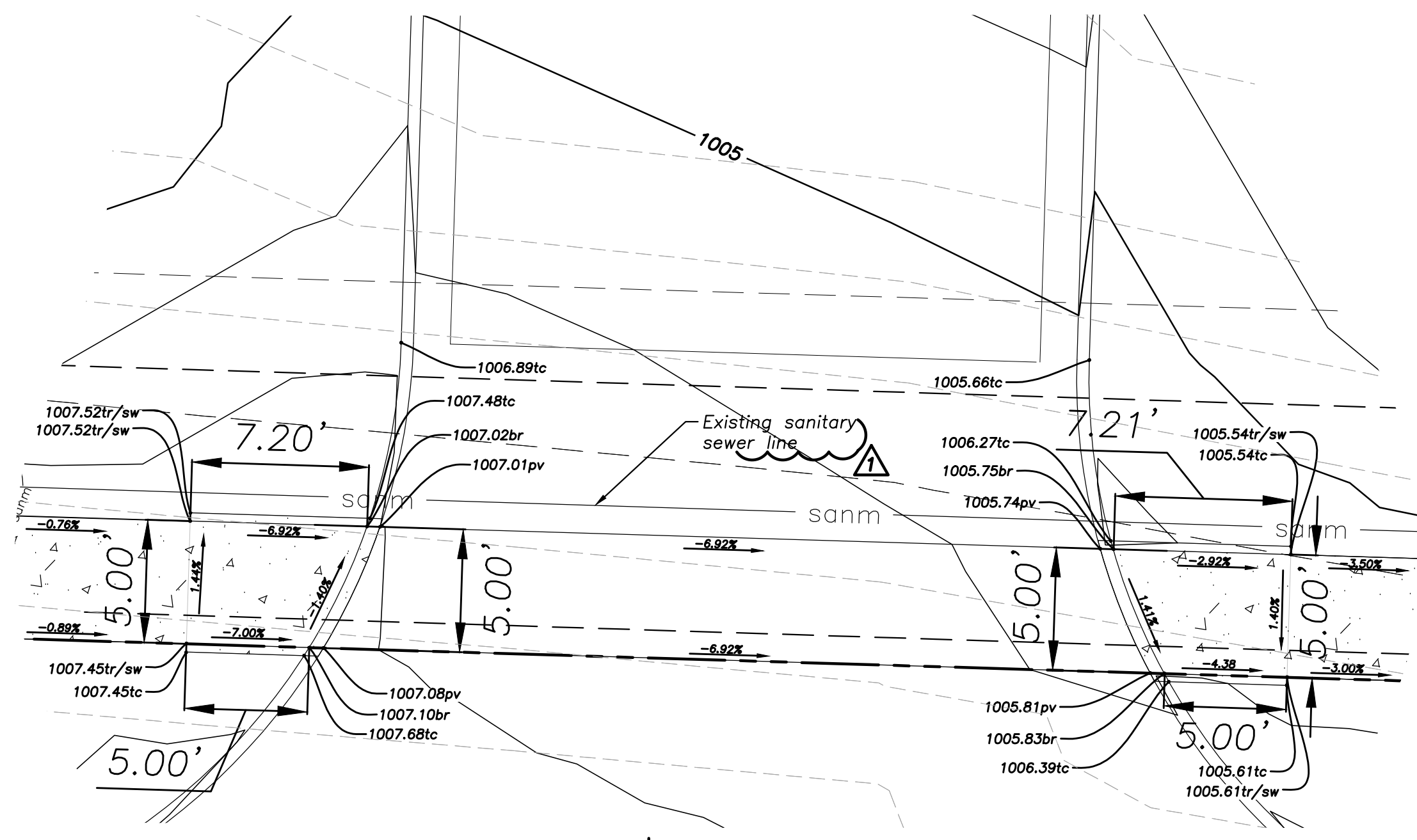
- ⊙ sanitary manhole
- ⊙ service cleanout
- ⊙ force main release valve
- ⊙ rectangular structure
- ⊙ circular structure
- ⊙ fire hydrant
- ⊙ water valve
- ⊙ water meter
- ⊙ backflow preventer
- ⊙ natural gas meter
- ⊙ service transformer (pad mount)
- ⊙ primary switch gear
- ⊙ light pole
- ⊙ cable/phone/data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

Spot Elevation Legend

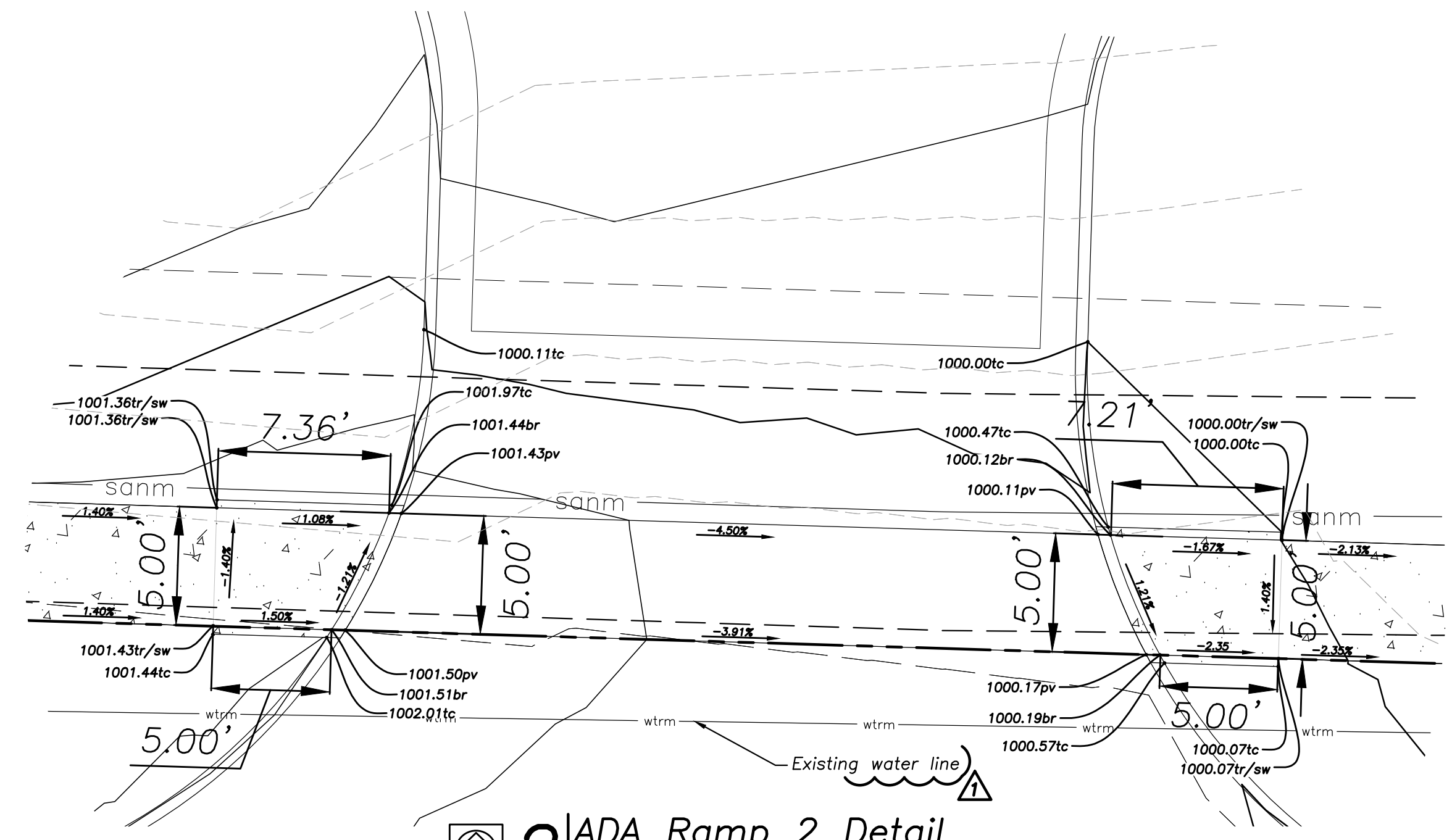
- | | | | | | |
|----|---|----------------|-----|---|--------------------------|
| br | = | bottom of ramp | ti | = | top of inlet |
| tr | = | top of ramp | mi | = | mid-point |
| me | = | match existing | hp | = | high-point |
| pv | = | pavement | lp | = | low-point |
| bw | = | bottom of wall | pc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

Americans with Disabilities Act (ADA) Notes:

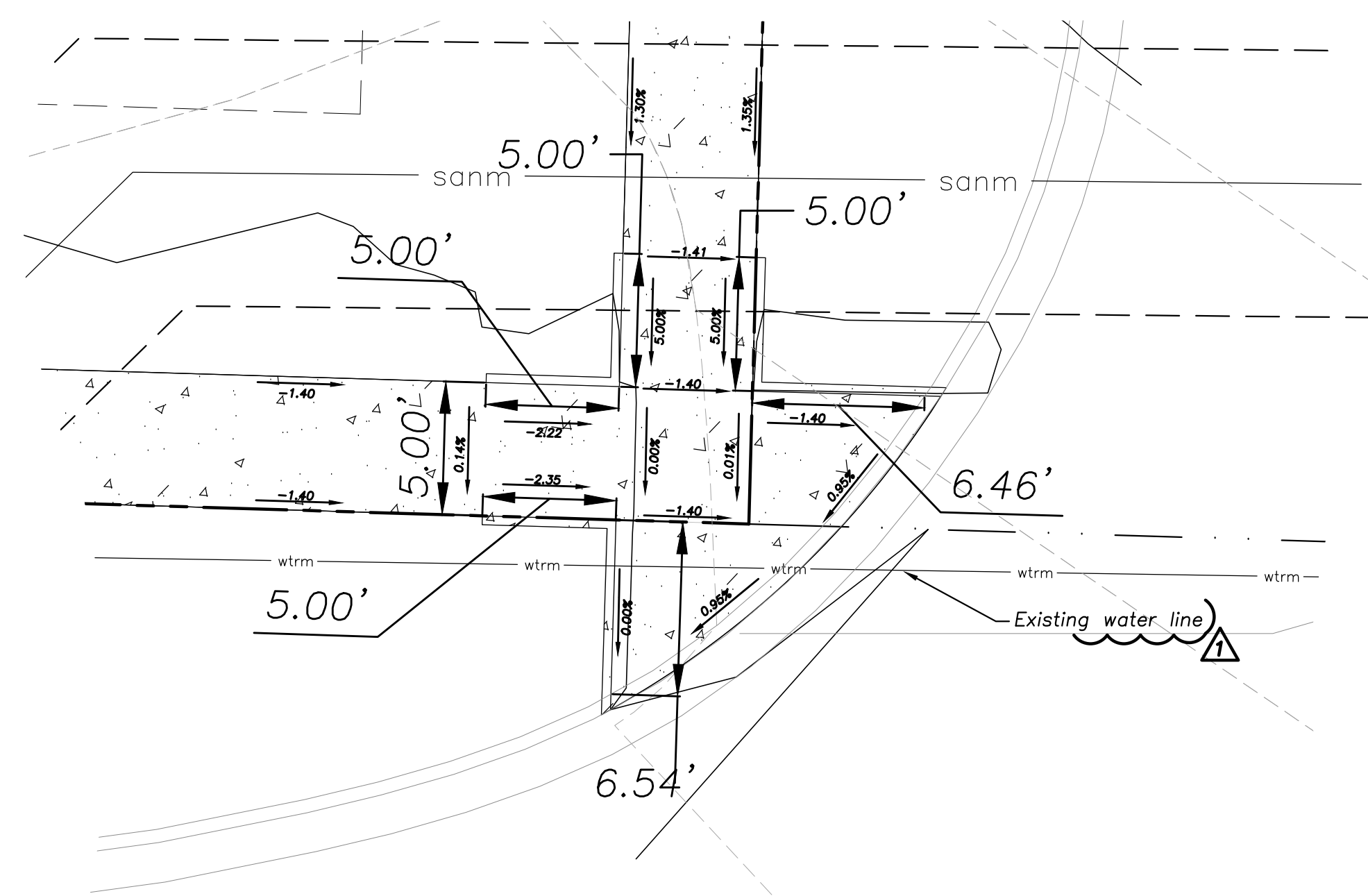
- The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies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



1 ADA Ramp 1 Detail
1"=5'



2 ADA Ramp 2 Detail
1"=5'



3 ADA Ramp 3 Detail
1"=5'



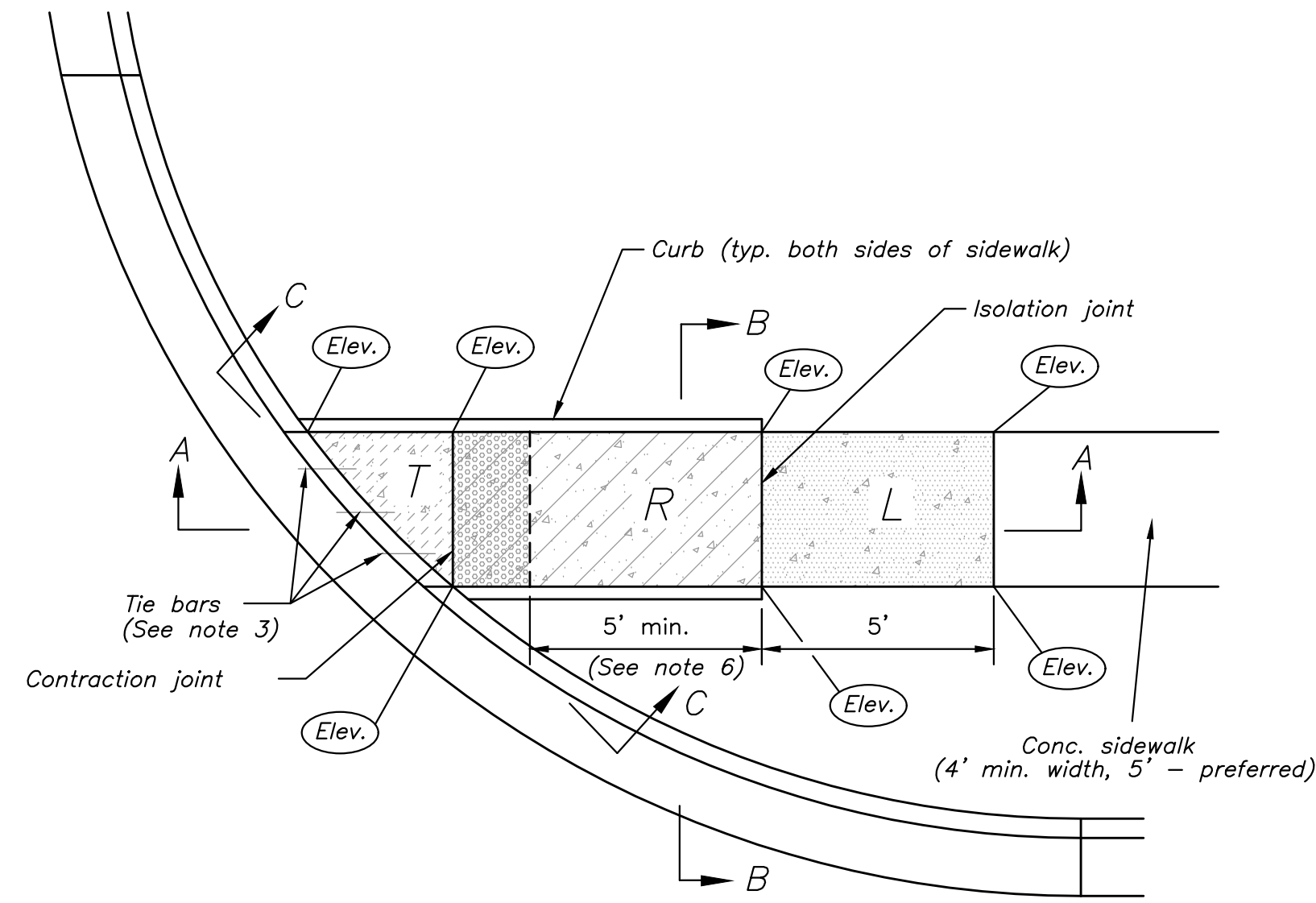
4 ADA Ramp 4 Detail
1"=5'



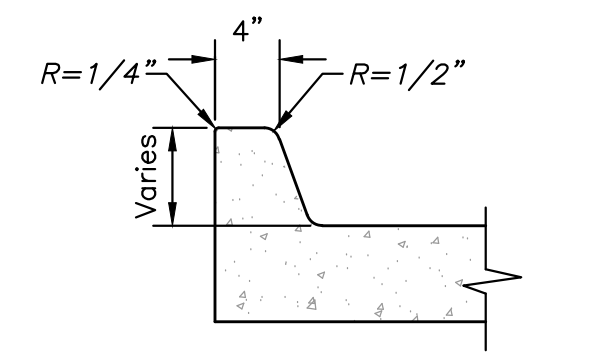
Commercial Preliminary Development Plan for
Automotive Detail Center
2150 NE Independence Ave
Lee's Summit, Missouri 64064

date: 02.21.2020
drawn by: SLM
checked by: PAM
revisions: 1
03.24.2020

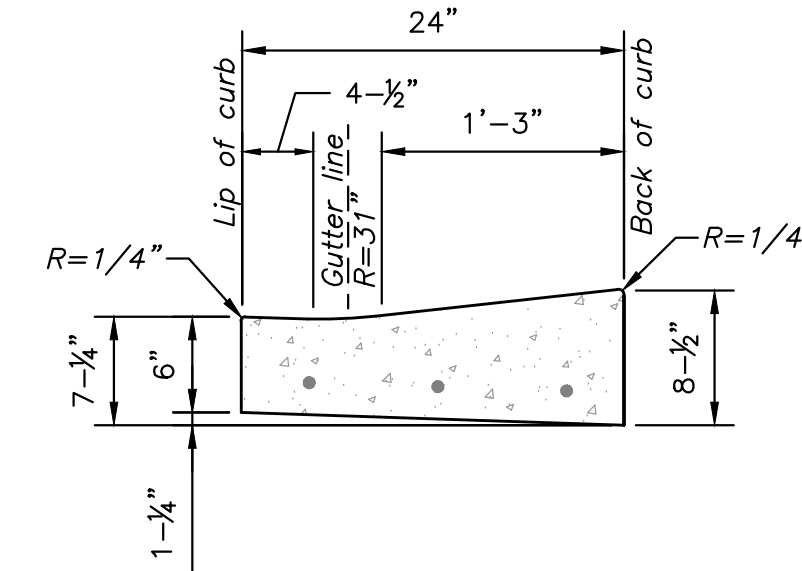
sheet number
C2.5
drawing type: preliminary
project number: 19076



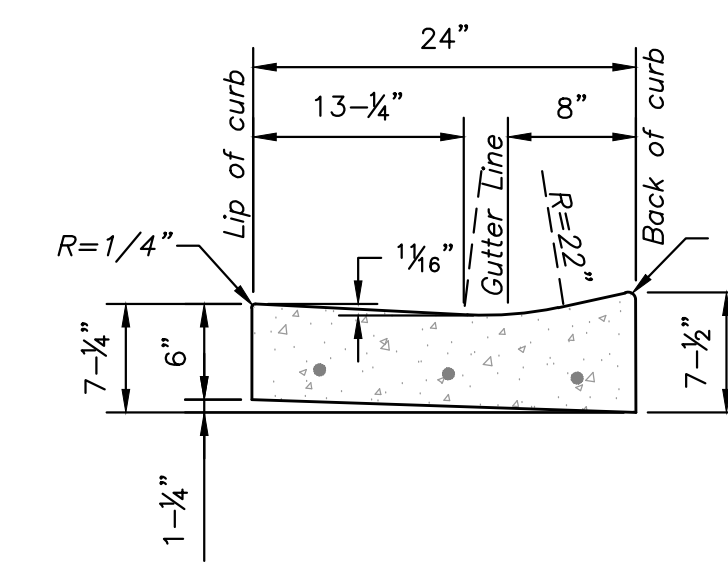
TYPE A SIDEWALK RAMP
NOT TO SCALE



RAMP CURB DETAIL
NOT TO SCALE



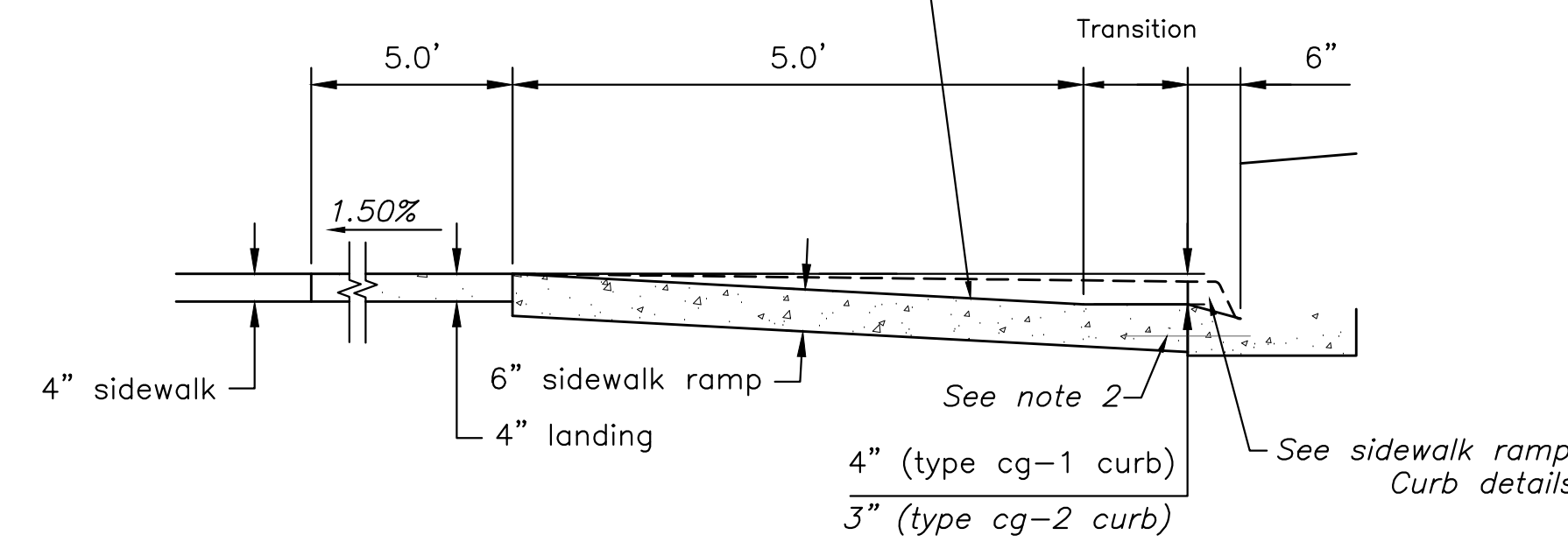
USE WITH TYPE CG-2 CURB



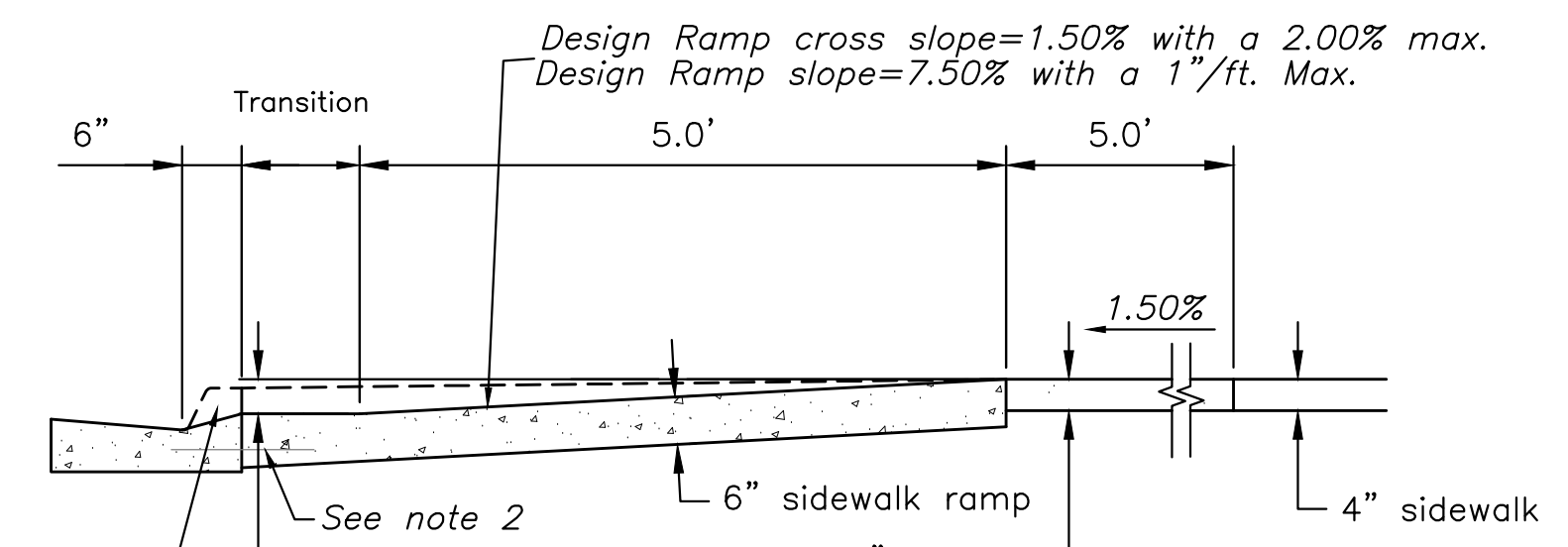
USE WITH TYPE CG-1 CURB

STREET CURB DETAIL AT RAMP

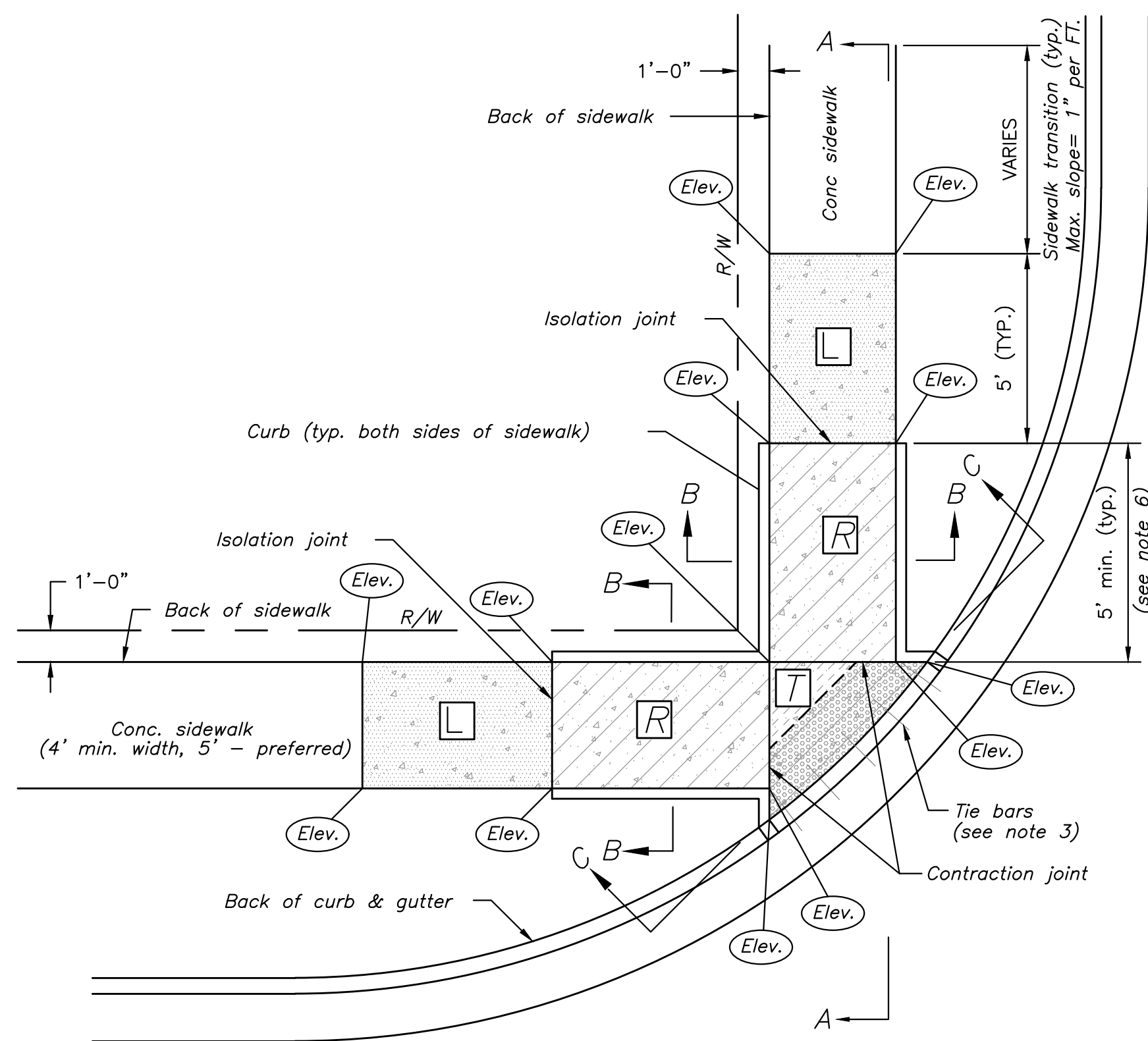
Design Ramp cross slope=1.50% with a 2.00% max.
Design Ramp slope=7.50% with a 1\"/>



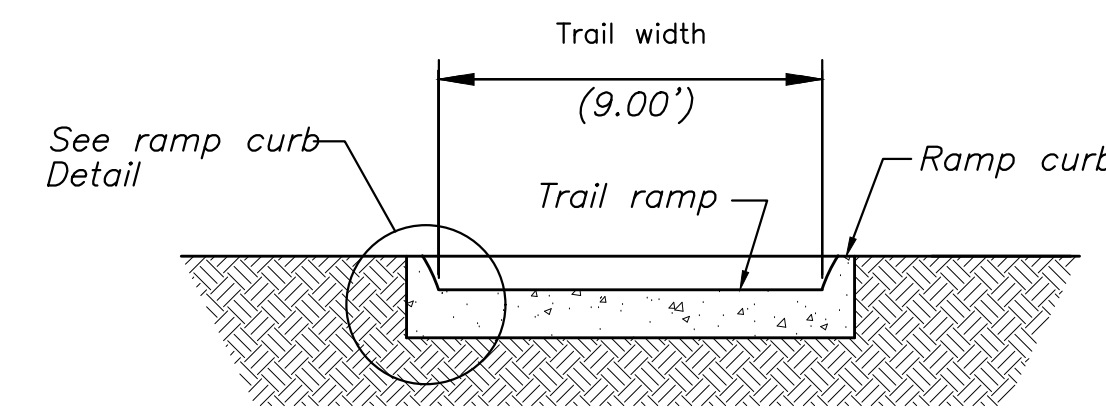
SECTION A-A
NOT TO SCALE



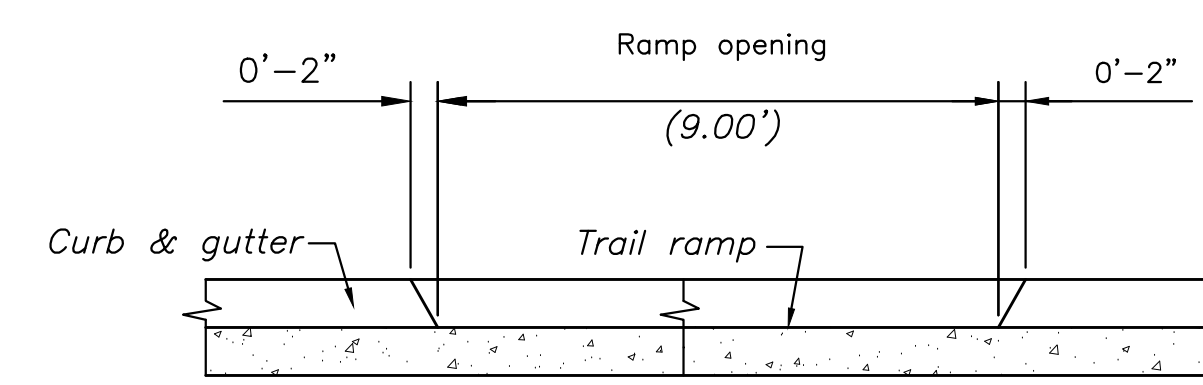
SECTION A-A
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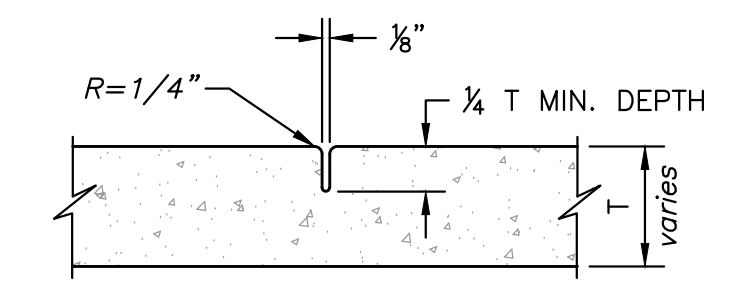
TYPE B SIDEWALK RAMP
NOT TO SCALE



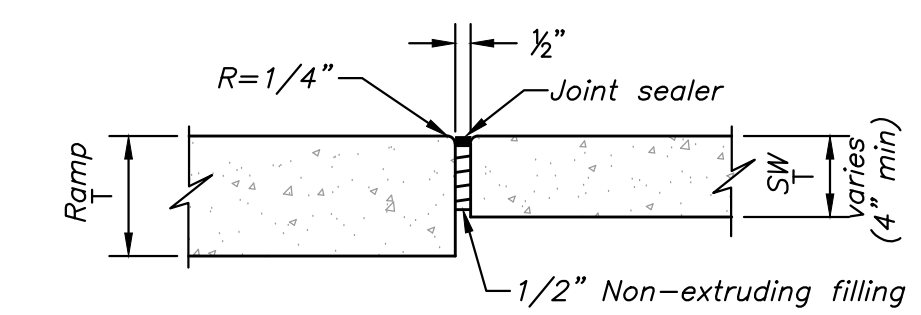
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SECTION C-C
NOT TO SCALE



CONTRACTION JOINT
(SEE NOTE 4)

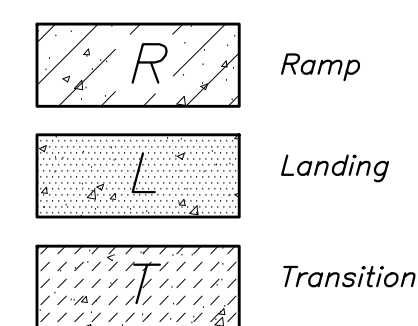


ISOLATION JOINT
(SEE NOTE 5)

SIDEWALK & SIDEWALK RAMP NOTES:

- Sidewalk ramp location determined from the intersection of the extension of back of sidewalk and back of curb and gutter.
- 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.
- Sidewalk ramp shall be lengthened to provide ada compliance slope but need not exceed 15'.
- ADA maximum ramp slope = 1"/ft. ADA maximum cross slope = 2%.
- See detectable warning detail sheet for the installation requirements.

Legend:



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.

Commercial Preliminary Development Plan for
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2150 NE Independence Ave
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date 02.21.2020
drawn by SLM
checked by PAM
revisions

03.24.2020 1

sheet number

C2.6

drawing type preliminary
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

Symbol Legend

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

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

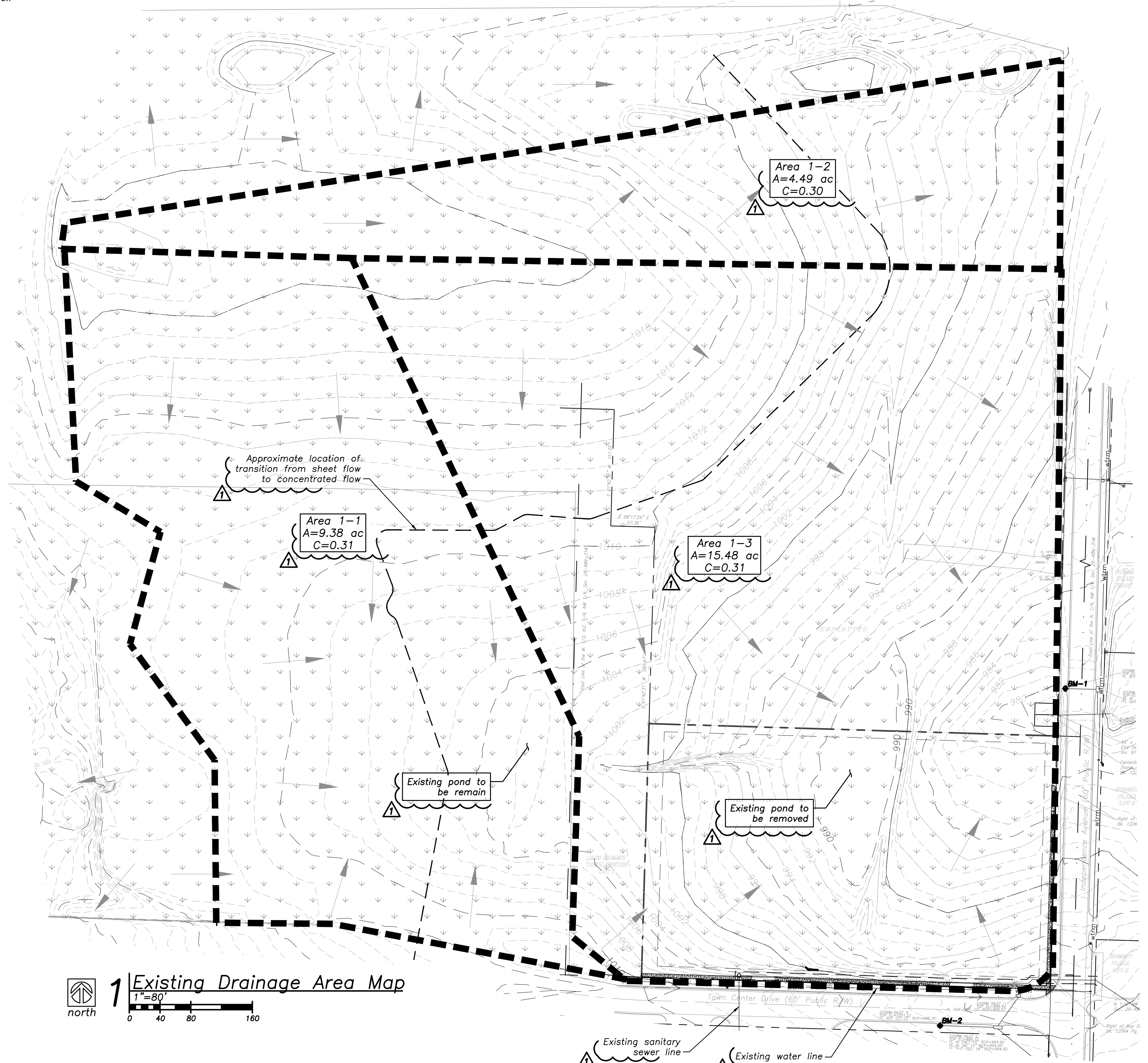
- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Utility Legend

- existing
- proposed

Linetypes

- | | |
|--|--------------------------------------|
| | 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 |
| | underground cable/phone/data |
| | underground cable/phone/data service |
| | fence-chainlink |
| | fence-wood |
| | fence-barbed wire |
| | treeline |



1 Existing Drainage Area Map
1"=80'

Pre-Construction Impervious Area Calculations

	Square Feet	Acres
Area of Site	1,278,486	29.35
Impervious Area	0	0.00
Pervious Area	1,278,486	29.35

Q: 10 year 50.20 cfs
100 year 75.61 cfs



Commercial Preliminary Development Plan for
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revisions
03.24.2020 1

sheet number
C3.1
drawing type Preliminary
project number



Local Benchmarks: BM-#

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Elevation: 1001.21'
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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

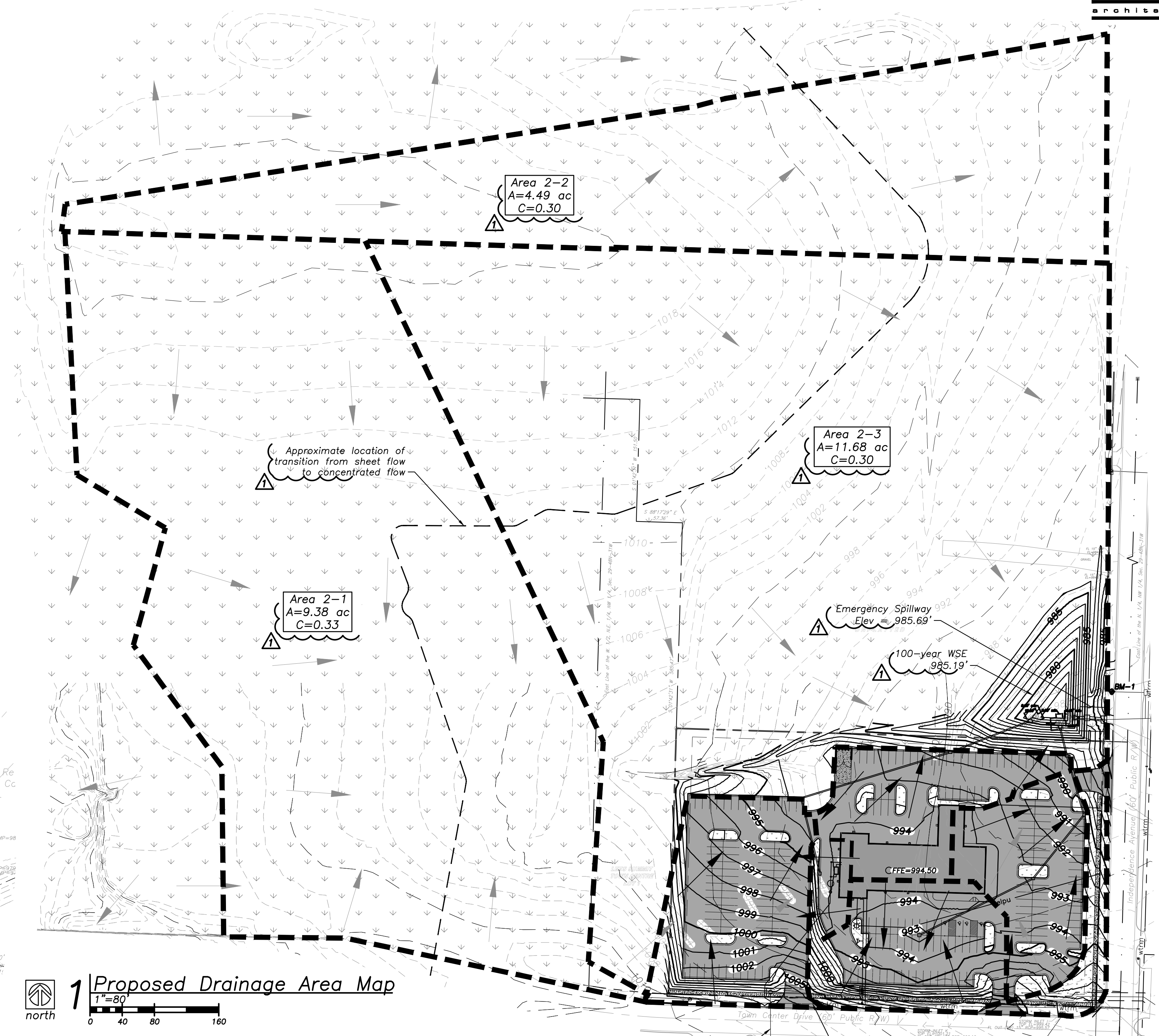
- existing
- proposed

Symbol Legend

- sanitary manhole
- 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

Linetypes

- sanm sanitary main
- sans sanitary service
- ssm (solid wall, proposed) storm sewer (solid wall, proposed)
- spm (solid wall, proposed) storm sewer (solid wall, proposed)
- spm (perforated, 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 underground cable/phone/data
- dsatu underground cable/phone/data service
- fence-chainlink
- fence-wood
- fence-barbed wire
- treeline

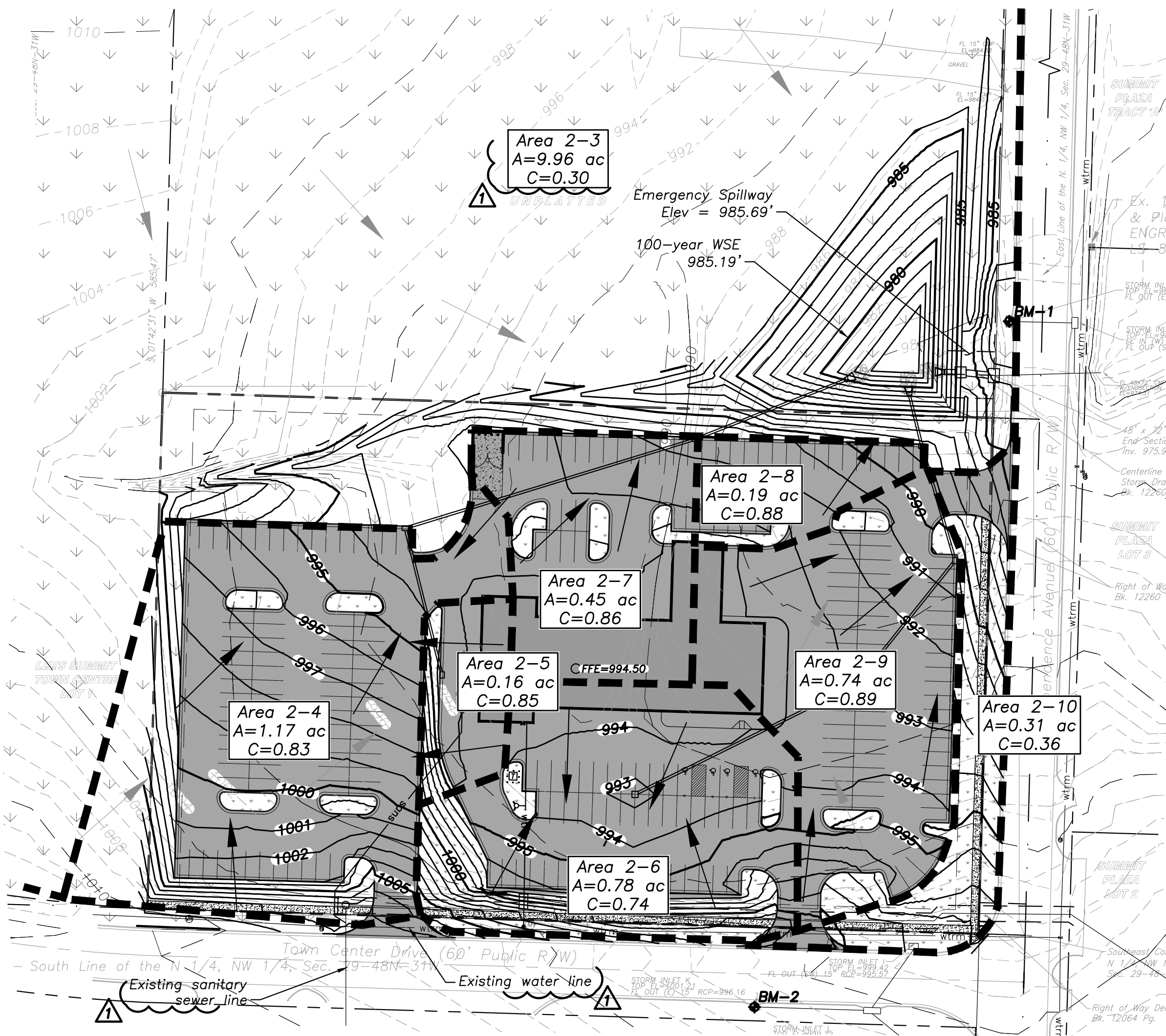


1 Proposed Drainage Area Map
1"=80'

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: 10 year 11.67 cfs
100 year 28.34 cfs



2 Proposed Drainage Area Map Detail
1"=60'

Commercial Preliminary Development Plan for
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2150 NE Independence Ave
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date
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PAM
revisions
03.24.2020 1

sheet number
C3.2
drawing type
Preliminary
project number





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

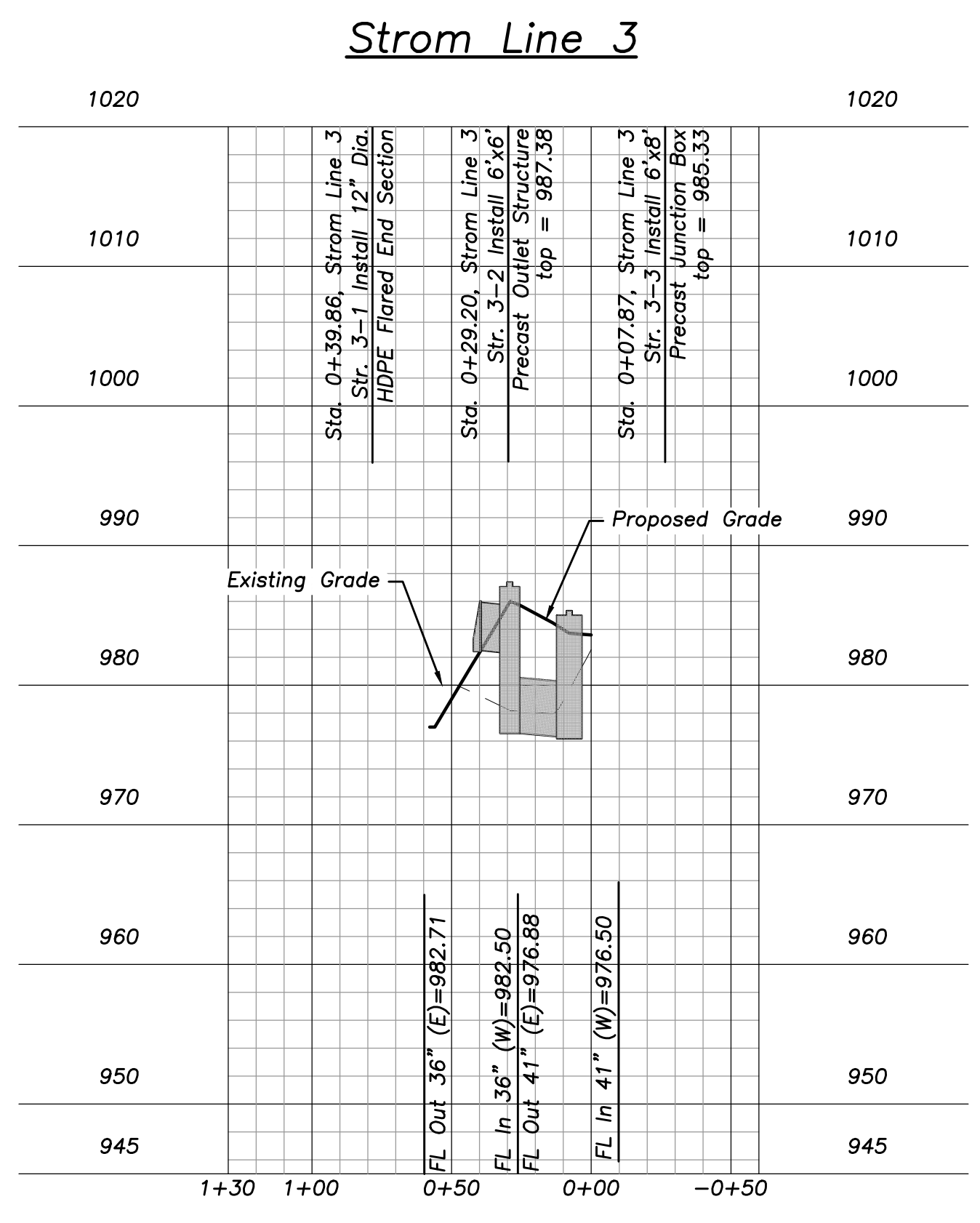
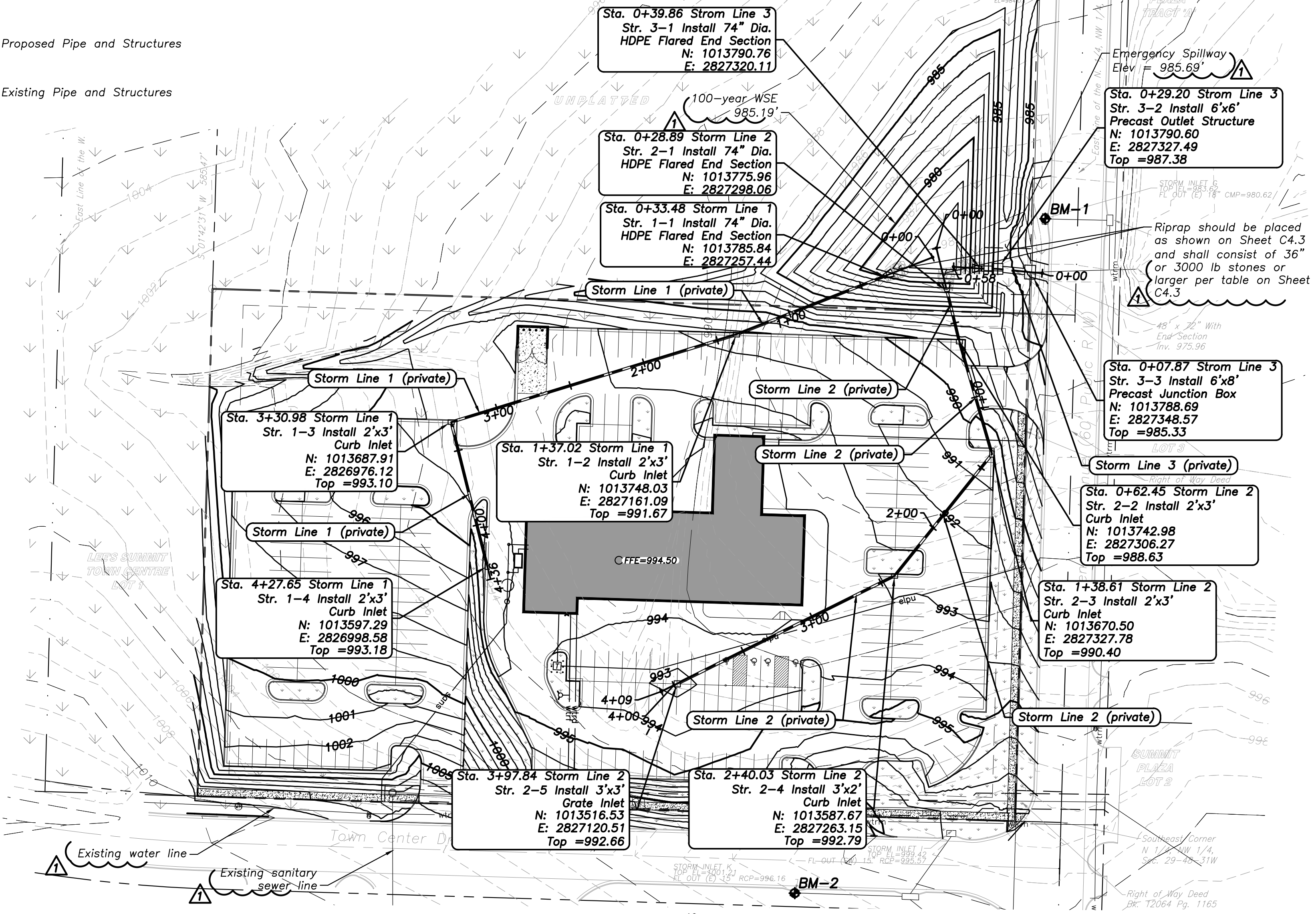
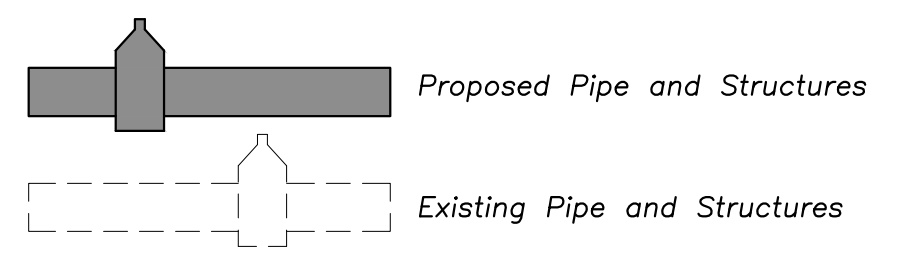
- - - existing
- - - proposed

Linetypes

- sanm sanitary main
- sans sanitary service
- ssm storm sewer (existing)
- ssms storm sewer (solid wall, proposed)
- ssmp 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
- datso underground cable/phone/data service
- fc fence-chainlink
- fw fence-wood
- fb fence-barbed wire
- tr treeline

Symbols

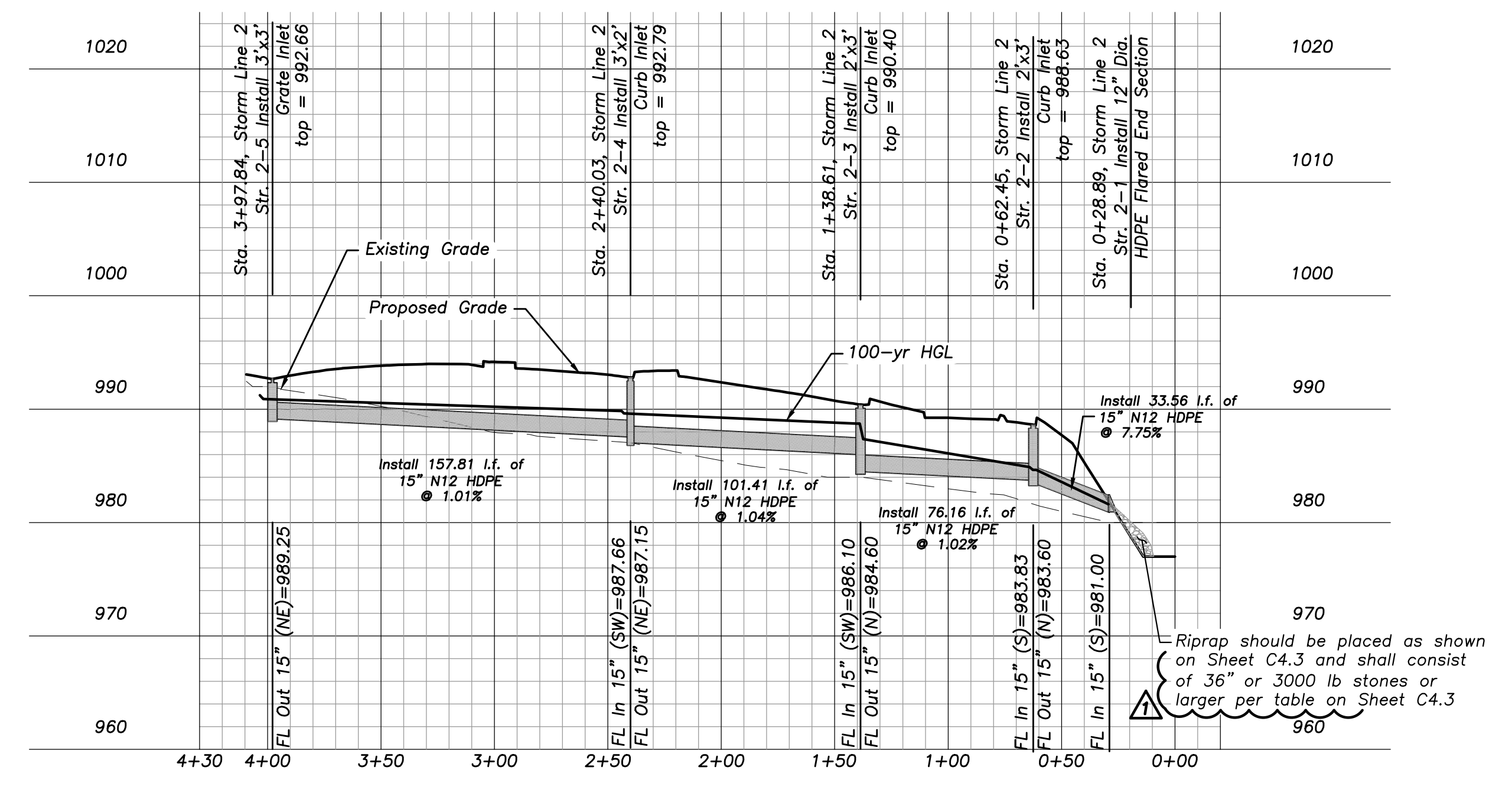
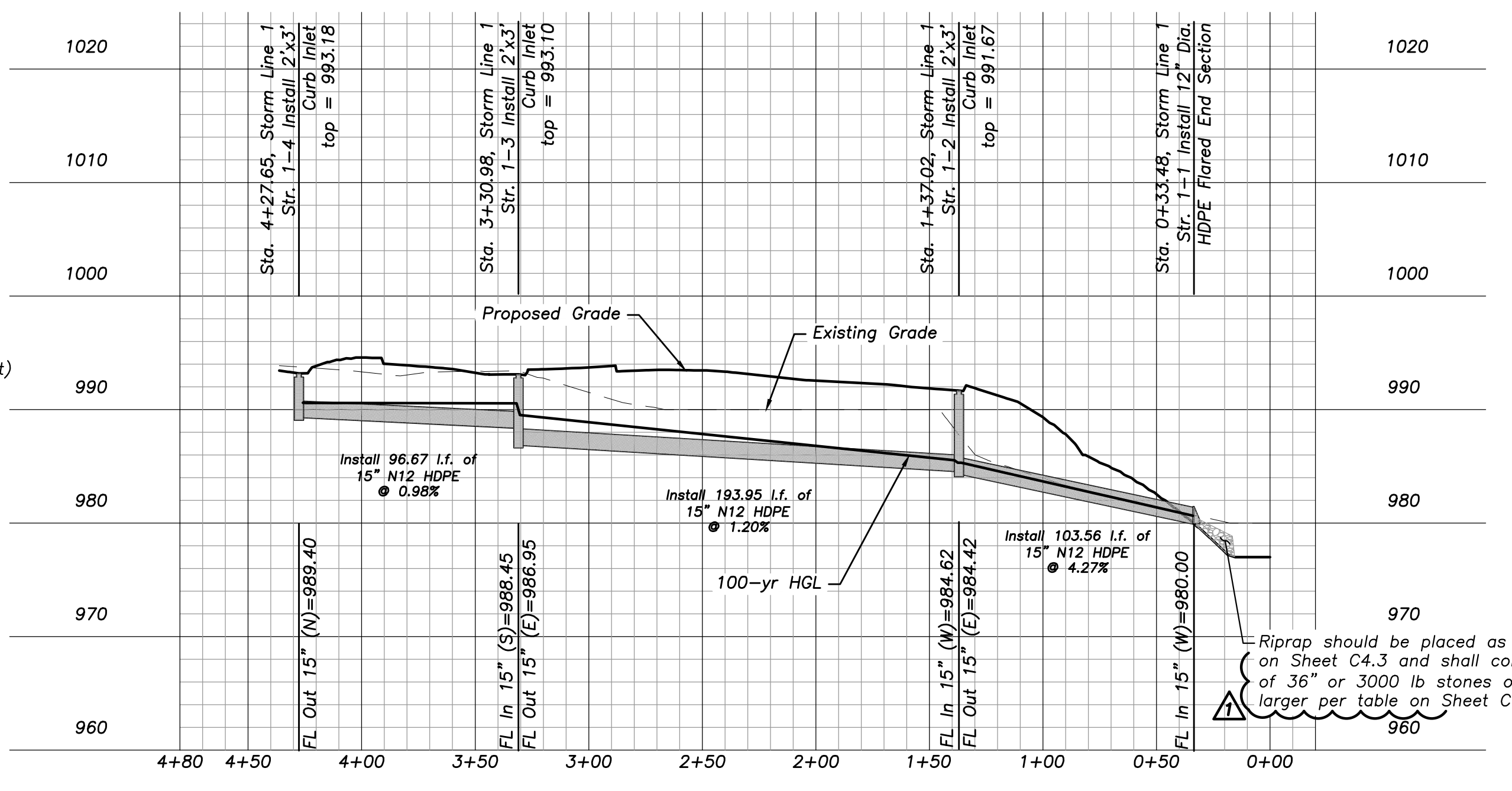
- sanitary manhole
- service cleanout
- force main release valve
- rectangular structure
- circular structure
- fire hydrant
- water valve
- water meter
- backflow preventer
- natural gas meter
- service transformer (pad mount)
- primary switch gear
- light pole
- cable/phone/data junction box
- street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



Storm Line 1

Storm Plan and Profile

Storm Line 2



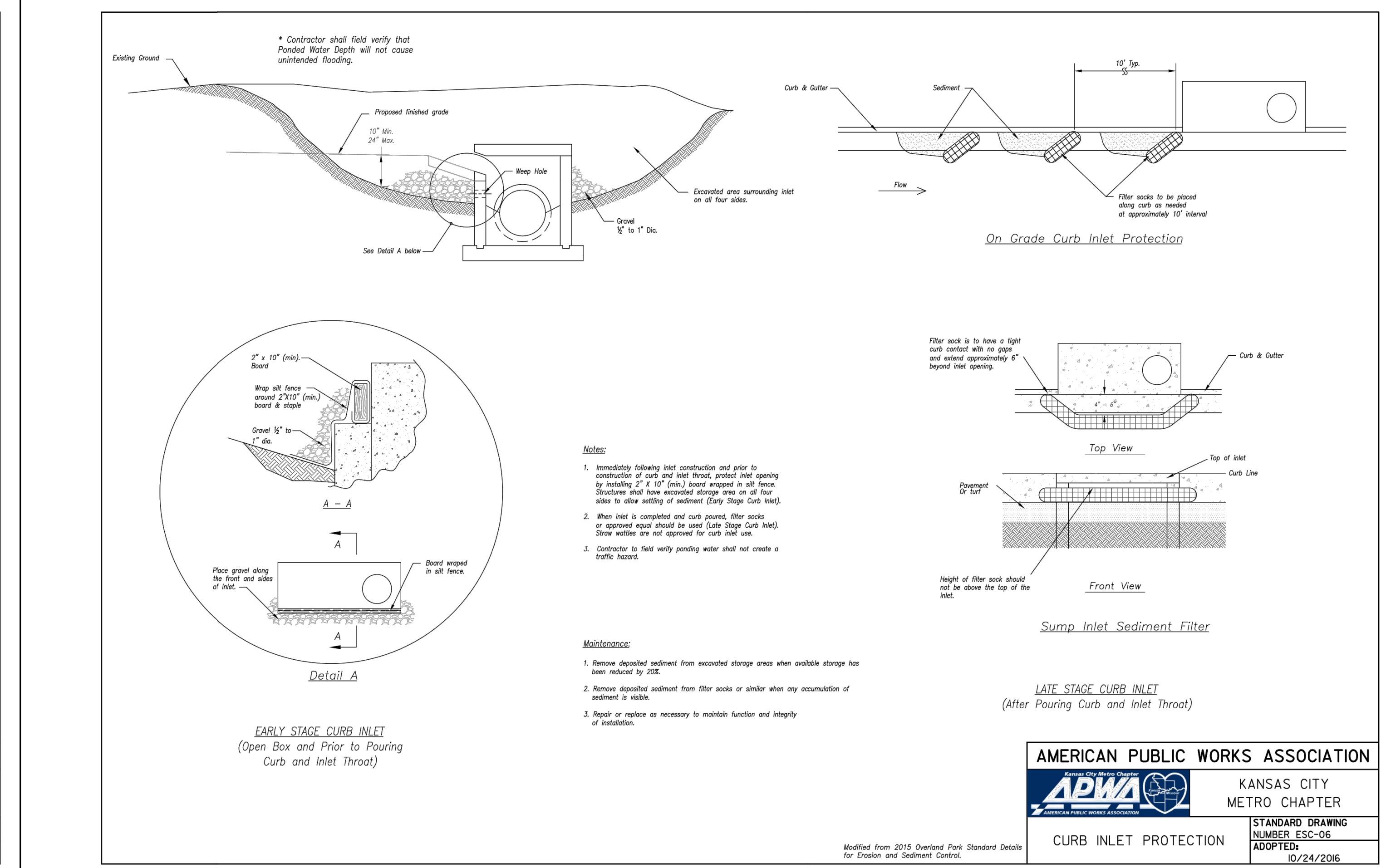
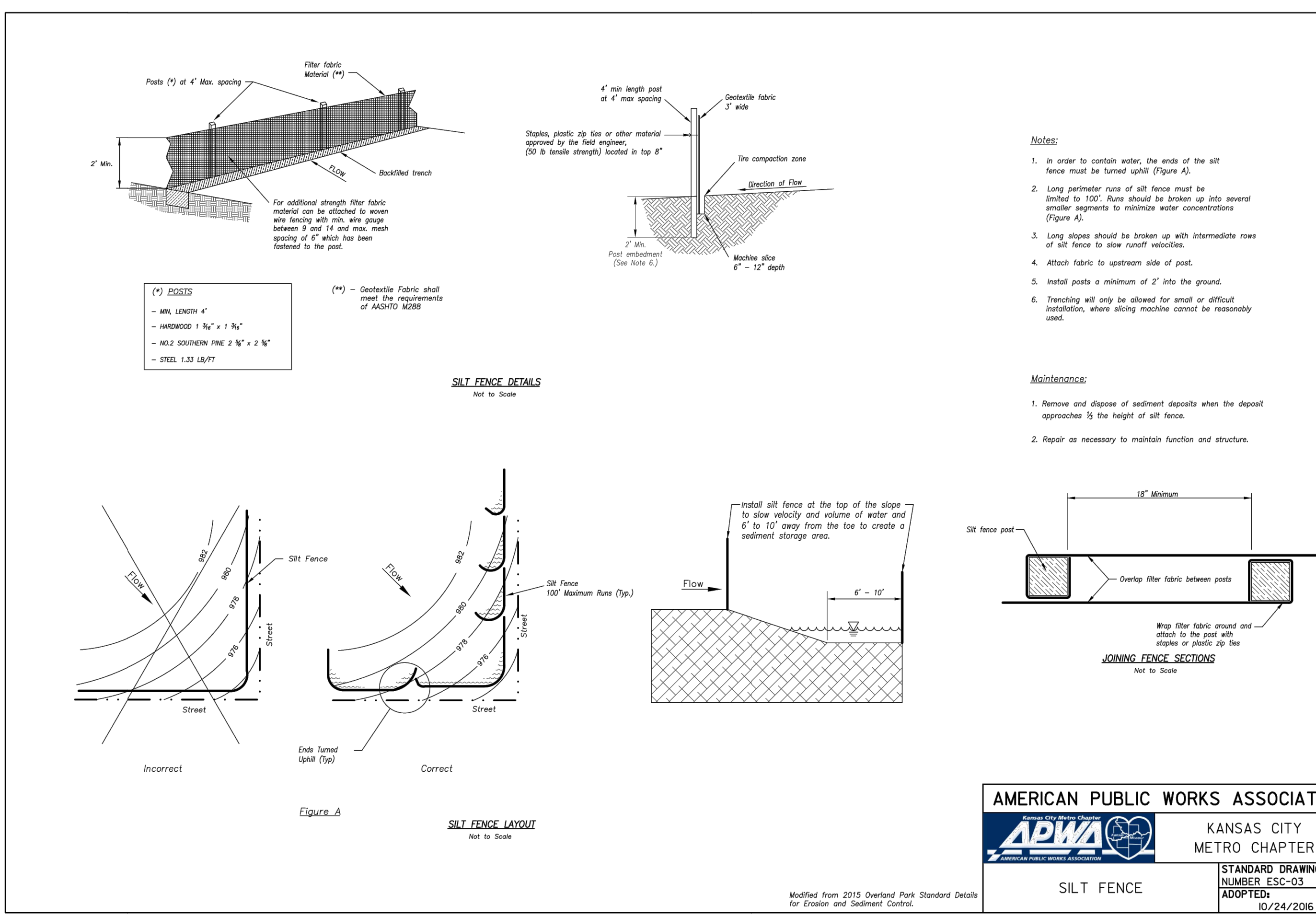
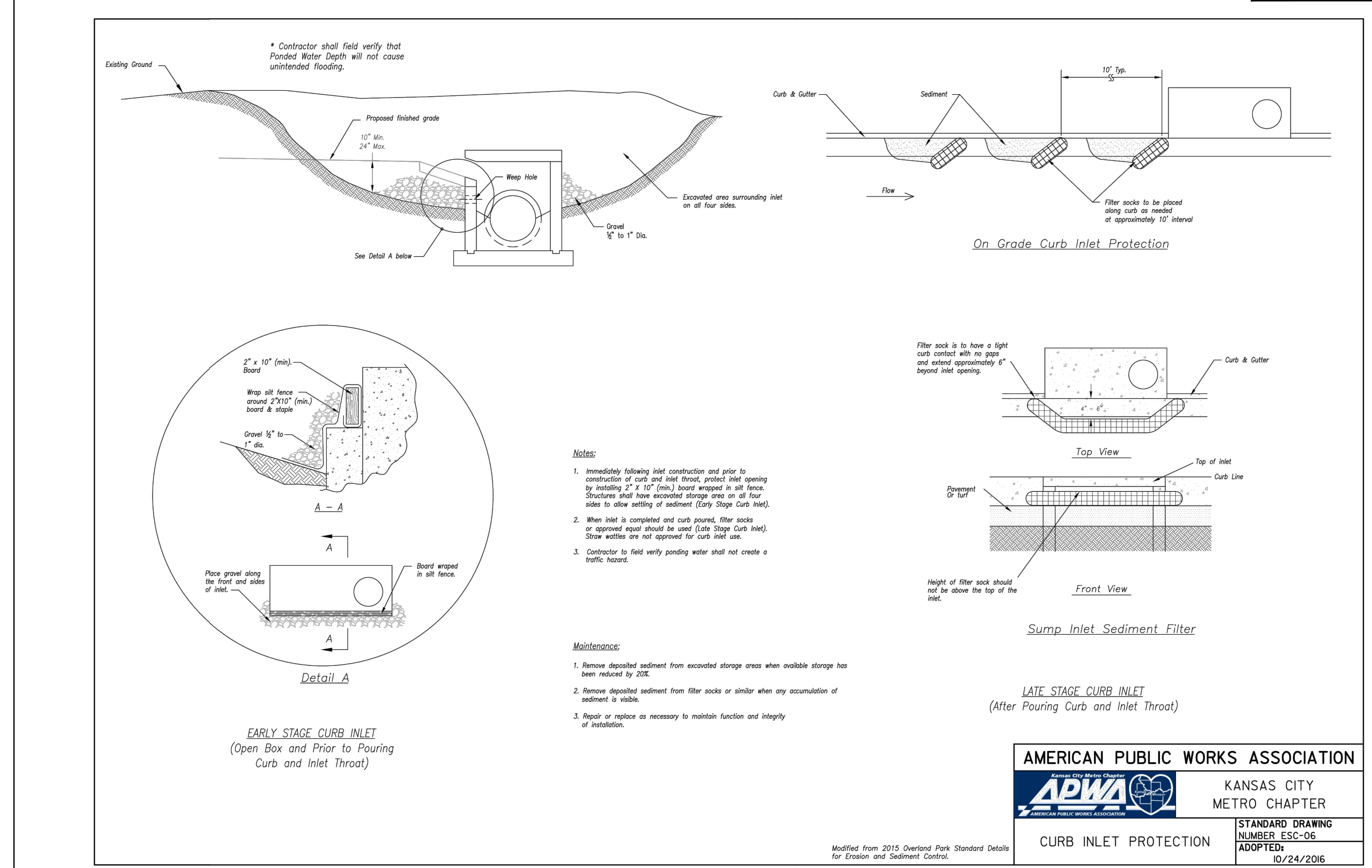
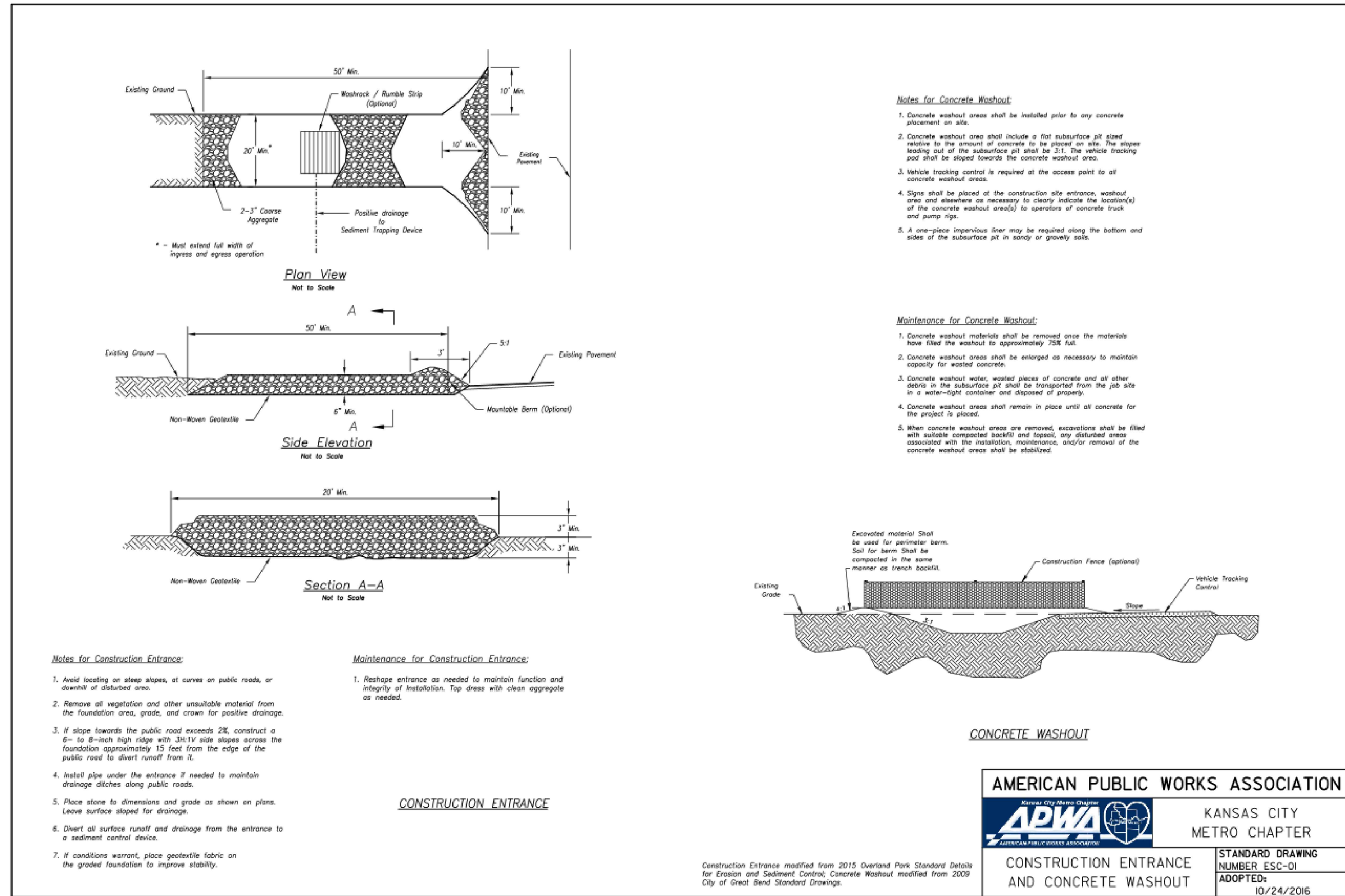
Pipe Segment	Drainage Area (ac)	Runoff Coeff (C)	Inlet Time (min)	IncrQ (cfs)	Total CxA	iSys (in/hr)	Total Runoff (cfs)	Line Size (in)	Line Slope (%)	n-value Pipe	Capacity Full (cfs)	Depth Dn (ft)	Depth Up (ft)	HGL Dn (ft)	HGL Up (ft)	Vel Ave (ft/s)	EGL Dn (ft)	EGL Up (ft)	Energy Loss (ft)	Line Length (ft)	Pipe Travel (min)	Rim-Hw (ft)
1-1 to 1-2	0.50	0.86	5.0	4.23	1.5	9.23	13.80	15	4.27	0.012	14.40	0.98	1.23**	980.98	985.65	12.36	982.97	987.64	0.000	103.559	0.14	6.02
1-2 to 1-3	1.12	0.83	5.0	9.14	1.07	9.35	9.97	15	1.20	0.012	7.63	1.25	1.25	985.87	989.84	8.14	986.90	990.88	3.975	194.370	0.40	2.22
1-3 to 1-4	0.16	0.85	5.0	1.34	0.14	9.83	1.34	15	1.01	0.012	7.01	1.25	1.25	990.88	990.91	1.09	990.89	990.93	0.035	94.027	1.43	2.24
2-1 to 2-2	0.19	0.88	5.0	1.64	1.48	9.48	14.06	15	7.80	0.012	19.47	0.79	1.23**	981.79	984.83	14.42	983.85	986.90	0.000	33.341	0.04	3.77
2-2 to 2-3	0.73	0.89	5.0	6.39	1.32	9.52	12.53	15	1.01	0.012	7.00	1.25	1.25	985.08	987.54	10.24	986.71	989.17	2.466	76.266	0.12	1.48
2-3 to 2-4	0.10	0.89	5.0	0.88	0.67	9.64	6.42	15	1.00	0.012	6.97	1.25	1.25	988.91	989.80	5.25	989.34	990.23	0.891	105.005	0.33	2.77
2-4 to 2-5	0.78	0.74	5.0	5.68	0.58	9.83	5.68	15	1.00	0.012	6.96	1.25	1.25	990.02	991.08	4.64	990.35	991.41	1.057	159.472	0.57	1.25



Commercial Preliminary Development Plan for
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date 02.02.2020
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checked by PAM
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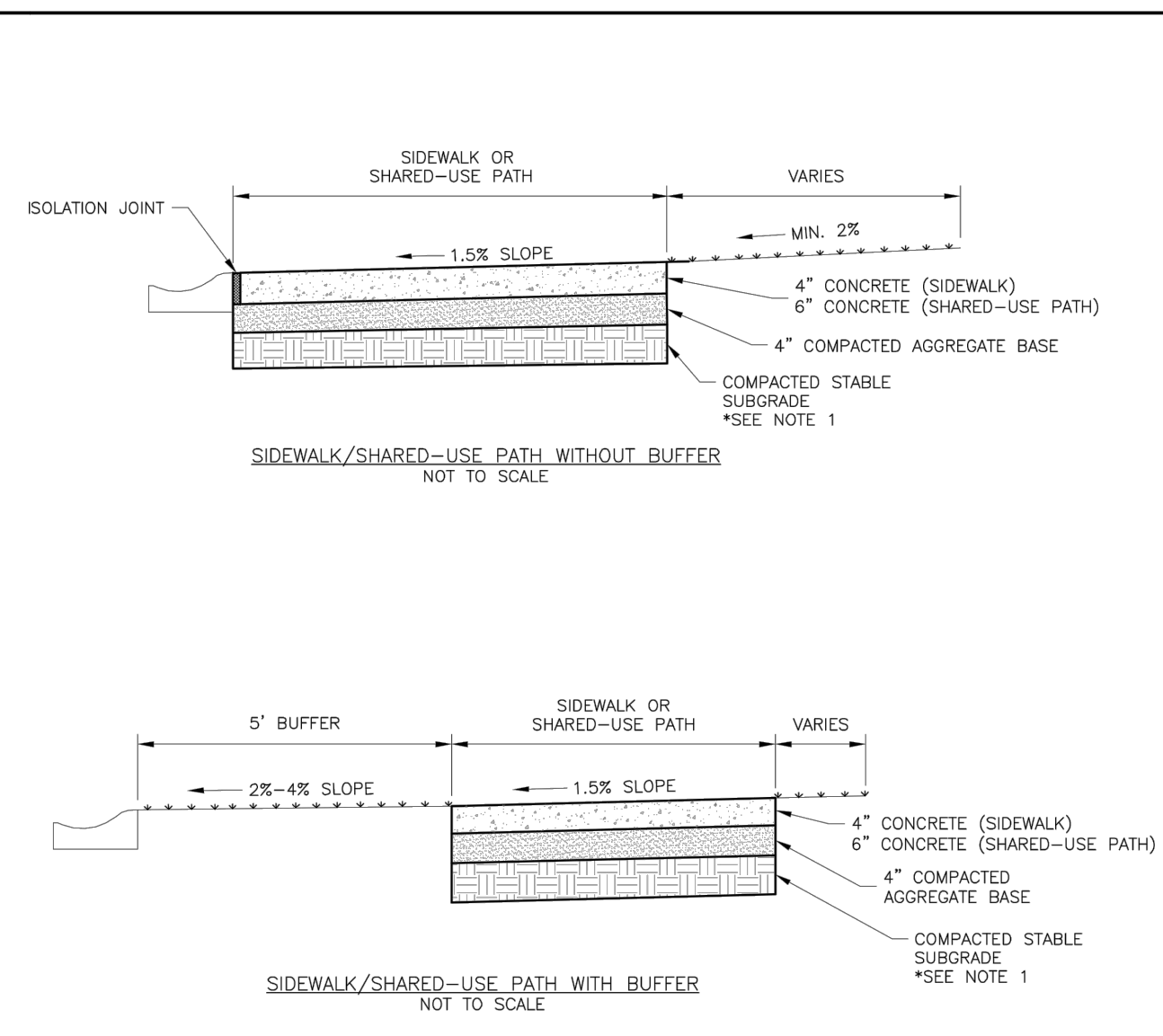
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drawing type preliminary
project number 19076



Commercial Preliminary Development Plan for
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03.24.2020 1

sheet number
C4.1
drawing type
preliminary
project number
19076

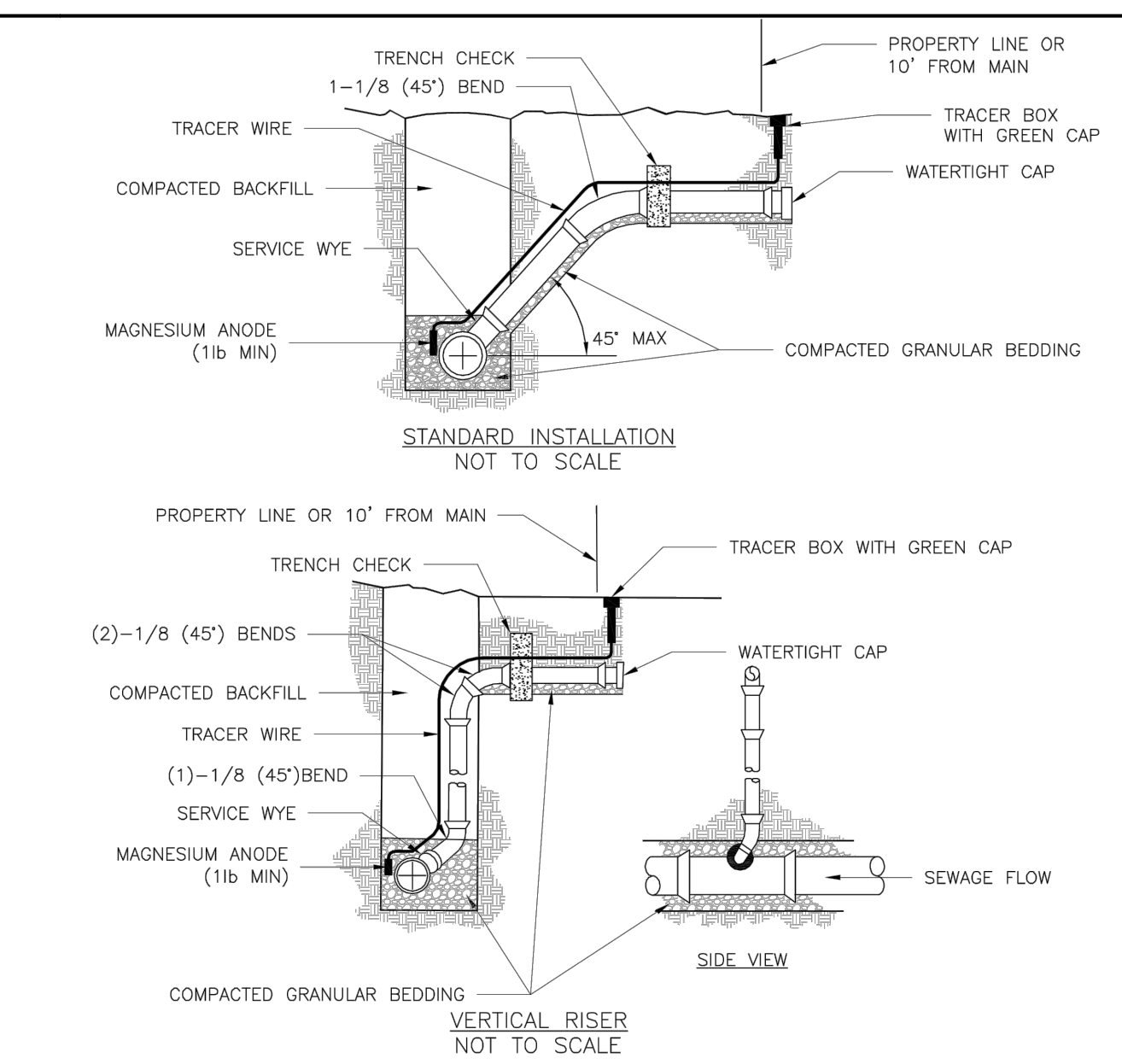


- GENERAL NOTES:**
- SUBGRADE MUST BE OF STABLE, COMPACTED EARTH AND SHALL BE OVERLAYED WITH 4" COMPACTED DENSE GRADED AGGREGATE BASE.
 - 1.5% CROSS SLOPE MUST BE MAINTAINED THROUGH DRIVEWAYS.
 - KCMB #4 CONCRETE MIX SHALL BE REQUIRED FOR ALL SIDEWALKS AND SHARED-USE PATHS OR AS APPROVED BY THE CITY INSPECTOR.
 - ALL SIDEWALKS SHALL MEET CURRENT PUBLIC RIGHT OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
 - AN EXPANSION JOINT SHALL BE PLACED AT A MAXIMUM OF 150 FT. CONSTRUCTION JOINTS SHALL BE PLACED THE SAME WIDTH OF SIDEWALK, BUT NO GREATER THAN 10 FT.
 - SHARED-USE PATH WIDTH SHALL BE 10 FT. WIDE.
 - SIDEWALK FINISHING (NO PICTURE FRAMING) AS DIRECTED BY CITY INSPECTOR.
 - WHITE CURING COMPOUND MUST BE APPLIED UNIFORMLY TO THE CONCRETE SURFACE IMMEDIATELY AFTER FINAL FINISHING.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64083

GEN-2

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

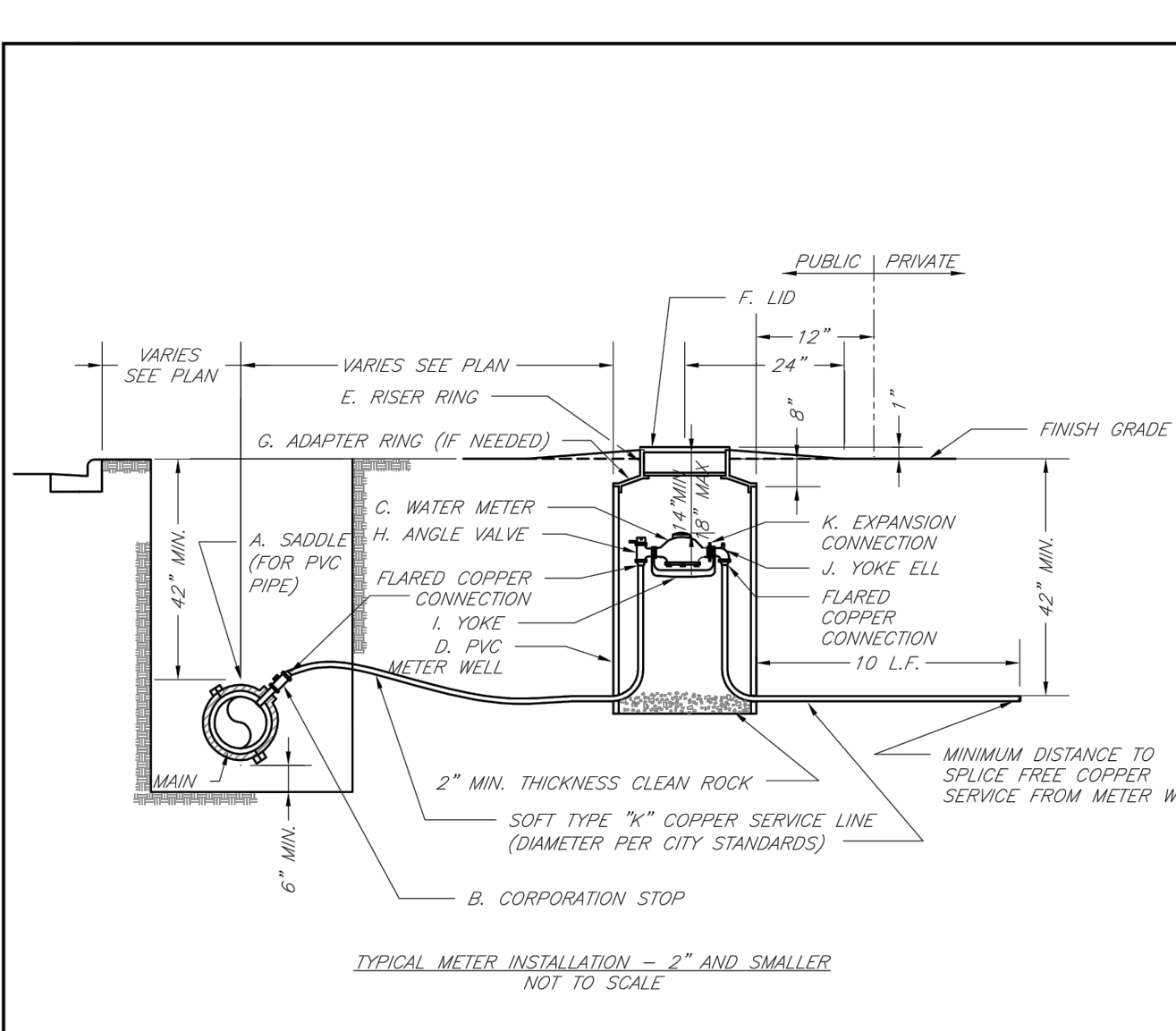


- NOTES:**
- ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
 - ALL NEW CONSTRUCTION OFF SEWER STUBS SHALL BE TEMPORARILY MARKED WITH A MARKING STAKE, 36" ABOVE GROUND AND PAINTED GREEN.
 - IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
 - TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE. LENGTH SHALL BE A MINIMUM OF 12". THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
 - SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
 - #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
 - FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
 - TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1'0" OF PROPERTY LINE.
 - THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64083

SAN-1

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

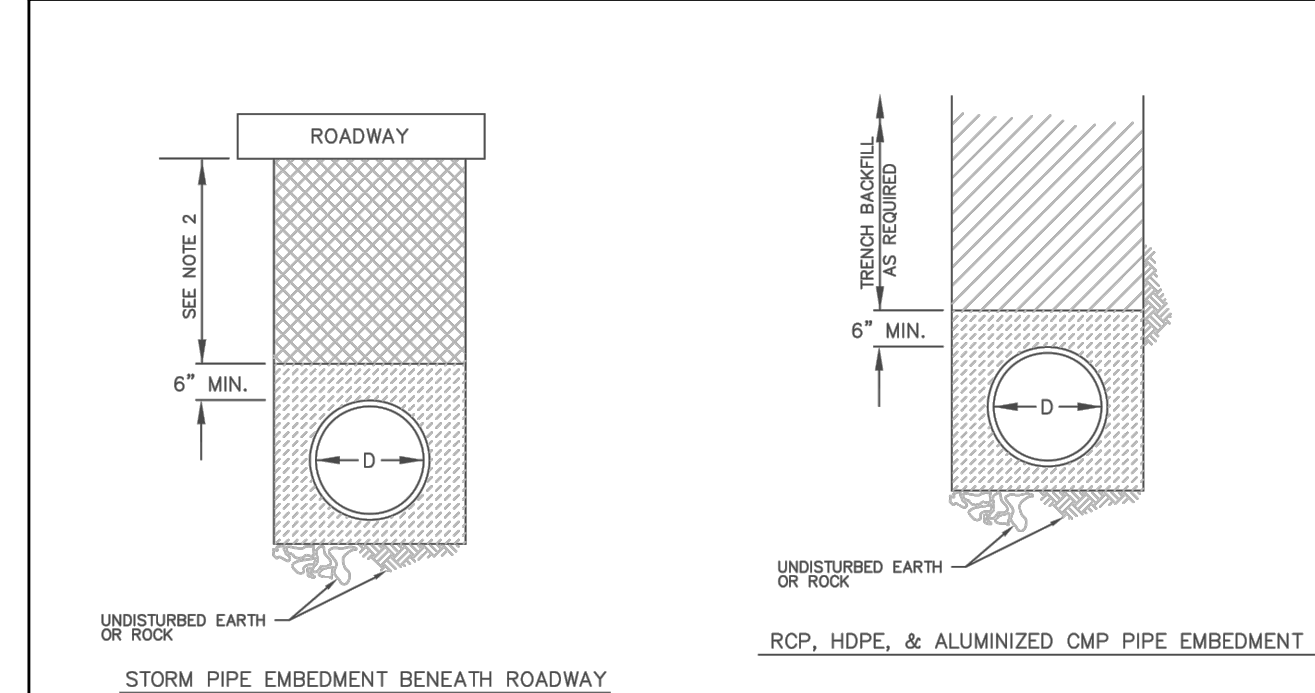


- NOTES:**
- METER INSTALLATION SHALL NOT BE LOCATED IN AREAS SUBJECT TO VEHICULAR TRAFFIC OR IN CONCRETE PAVEMENT WITHOUT CITY APPROVAL.
 - IF METER IS TO BE LOCATED OTHER THAN IN FRONT OF PROPERTY LINE, CITY APPROVAL SHALL BE OBTAINED.
 - CITY TO FURNISH ITEMS A-K.
 - NO OTHER EQUIPMENT SHALL BE INSTALLED IN THIS PIT.
 - 42" MINIMUM BURY DEPTH FOR ALL SERVICE LINES.
 - EXCAVATION FOR TAP TO EXPOSE 4 LINEAR FEET OF MAIN.
 - NO SPLICES ALLOWED BETWEEN METER AND MAIN.
 - SERVICE CONNECTION TAP AT APPROXIMATELY 45 DEGREES.
 - LID AND RISER RING SHALL BE SET SO THAT GROUND WATER WILL DRAIN AWAY FROM THE WELL.
 - CONTACT WATER UTILITIES, 816-969-1900, FOR REQUIREMENTS OF A METER LARGER THAN 2".

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64083

4 HDPE Pipe Embedment
not to scale

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



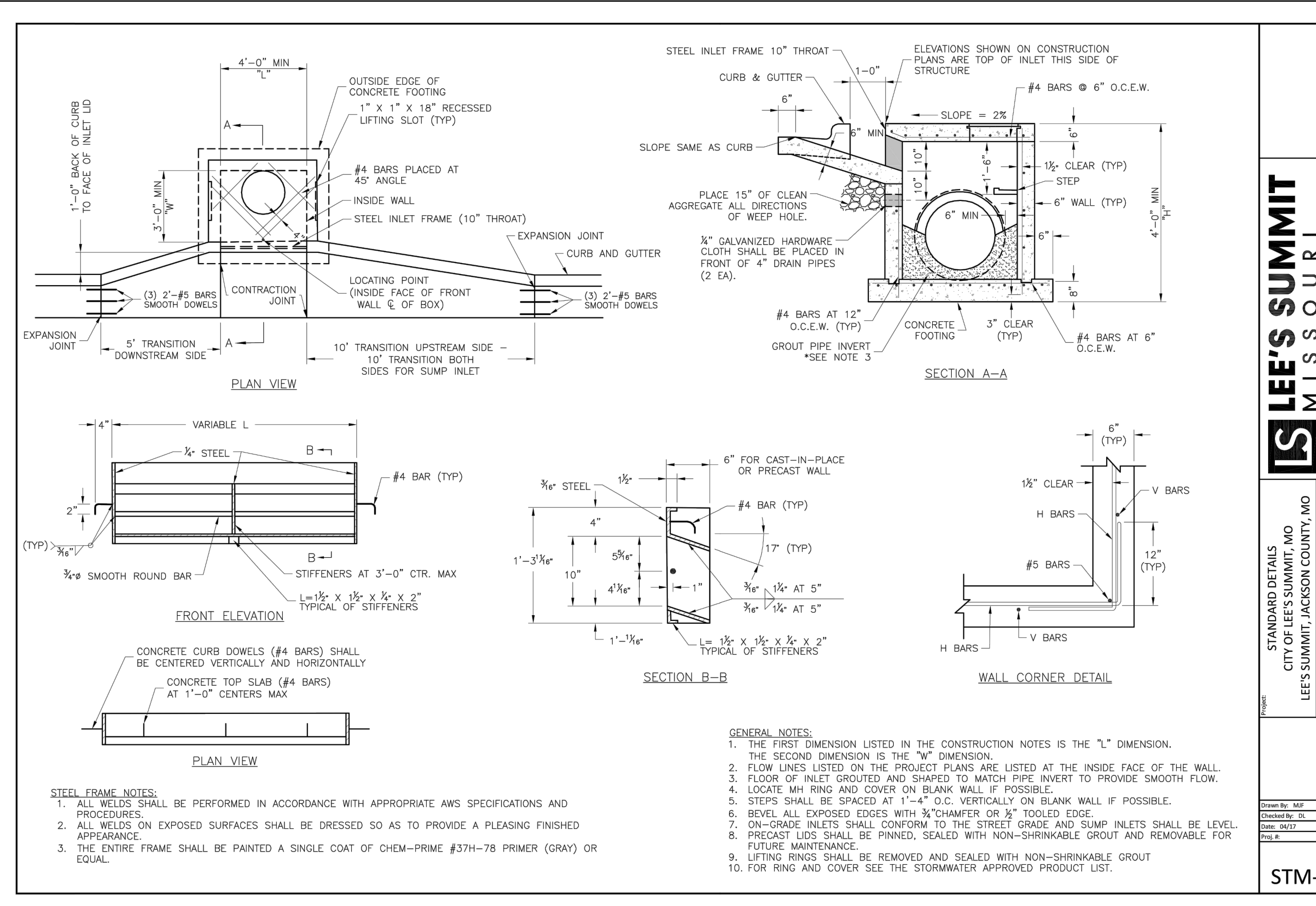
LEGEND

D	NOMINAL PIPE DIAMETER
[Pattern]	TRENCH BACKFILL
[Pattern]	TAMPED GRANULAR BACKFILL (AB-3)
[Pattern]	GRANULAR BEDDING

MINIMUM PIPE CLEARANCES (IN)

D	PIPE SIDE CLEARANCE ² (SOIL/ROCK)	PIPE BOTTOM CLEARANCE (SOIL/ROCK)
0"-27"	6/6	4/6
30"-60"	8/9	6/9
66"-UP	12/12	8/12

- NOTES:**
- 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.
 - 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.
 - TRENCH BACKFILL SHALL BE FINELY DIVIDED MATERIAL FREE FROM DEBRIS AND STONES, COMPACTED TO 95% MAXIMUM DENSITY.

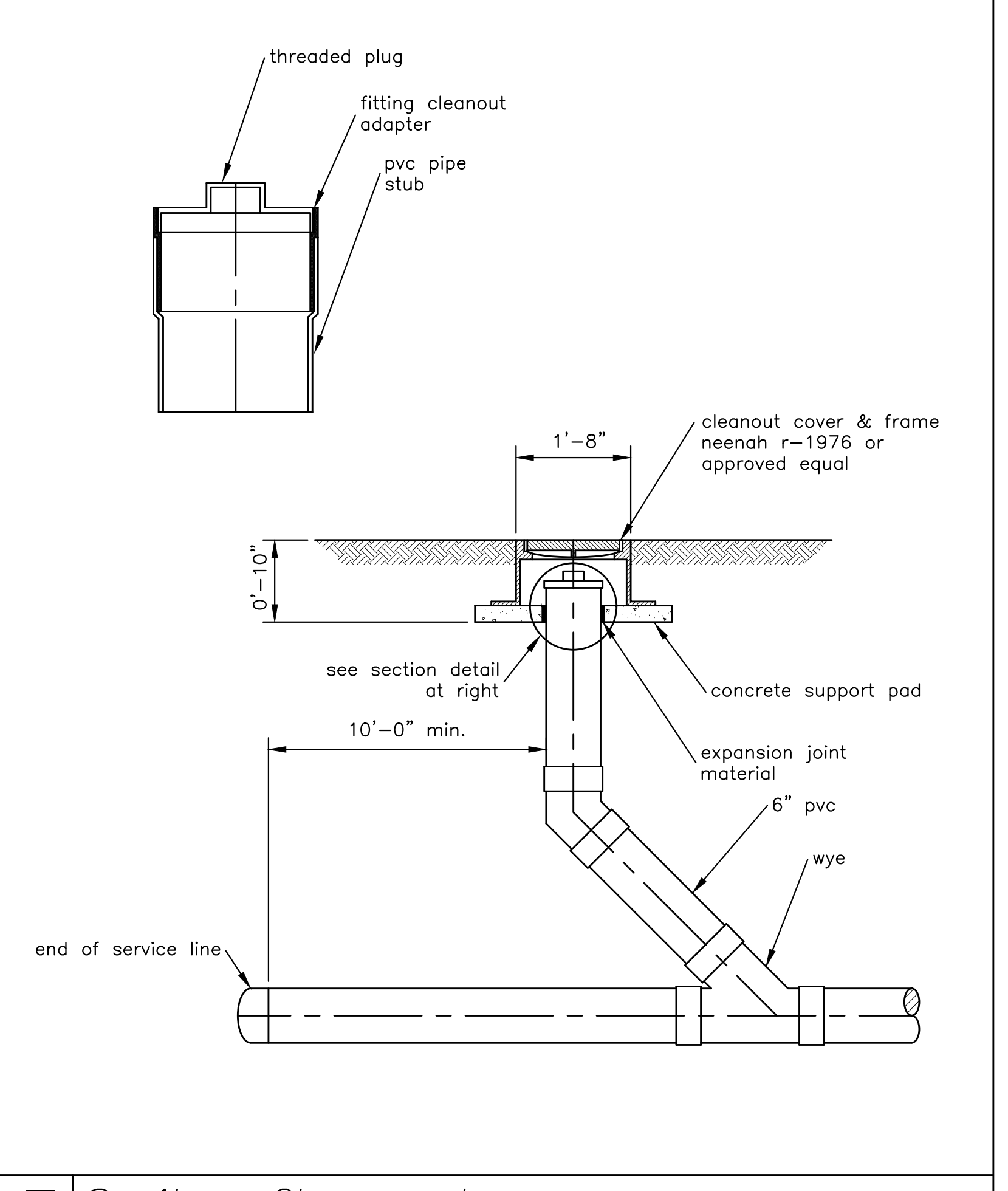


- GENERAL NOTES:**
- THE FIRST DIMENSION LISTED IN THE CONSTRUCTION NOTES IS THE "L" DIMENSION. THE SECOND DIMENSION IS THE "W" DIMENSION.
 - FLOW LINES LISTED ON THE PROJECT PLANS ARE LISTED AT THE INSIDE FACE OF THE WALL.
 - FLOOR OF INLET GROUDED AND SHAPED TO MATCH PIPE INVERT TO PROVIDE SMOOTH FLOW.
 - LOCATE MH RING AND COVER ON BLANK WALL IF POSSIBLE.
 - STEPS SHALL BE SPACED AT 1'-4" O.C. VERTICALLY ON BLANK WALL IF POSSIBLE.
 - BEVEL ALL EXPOSED EDGES WITH 3/4" CHAMFER OR 1/2" TOOLED EDGE.
 - ON-GRADE INLETS SHALL CONFORM TO THE STREET GRADE AND SUMP INLETS SHALL BE LEVEL.
 - PRECAST LIDS SHALL BE PINNED, SEALED WITH NON-SHRINKABLE GROUT AND REMOVABLE FOR FUTURE MAINTENANCE.
 - LIFTING RINGS SHALL BE REMOVED AND SEALED WITH NON-SHRINKABLE GROUT
 - FOR RING AND COVER SEE THE STORMWATER APPROVED PRODUCT LIST.

LEE'S SUMMIT MISSOURI
PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64083

STM-1

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

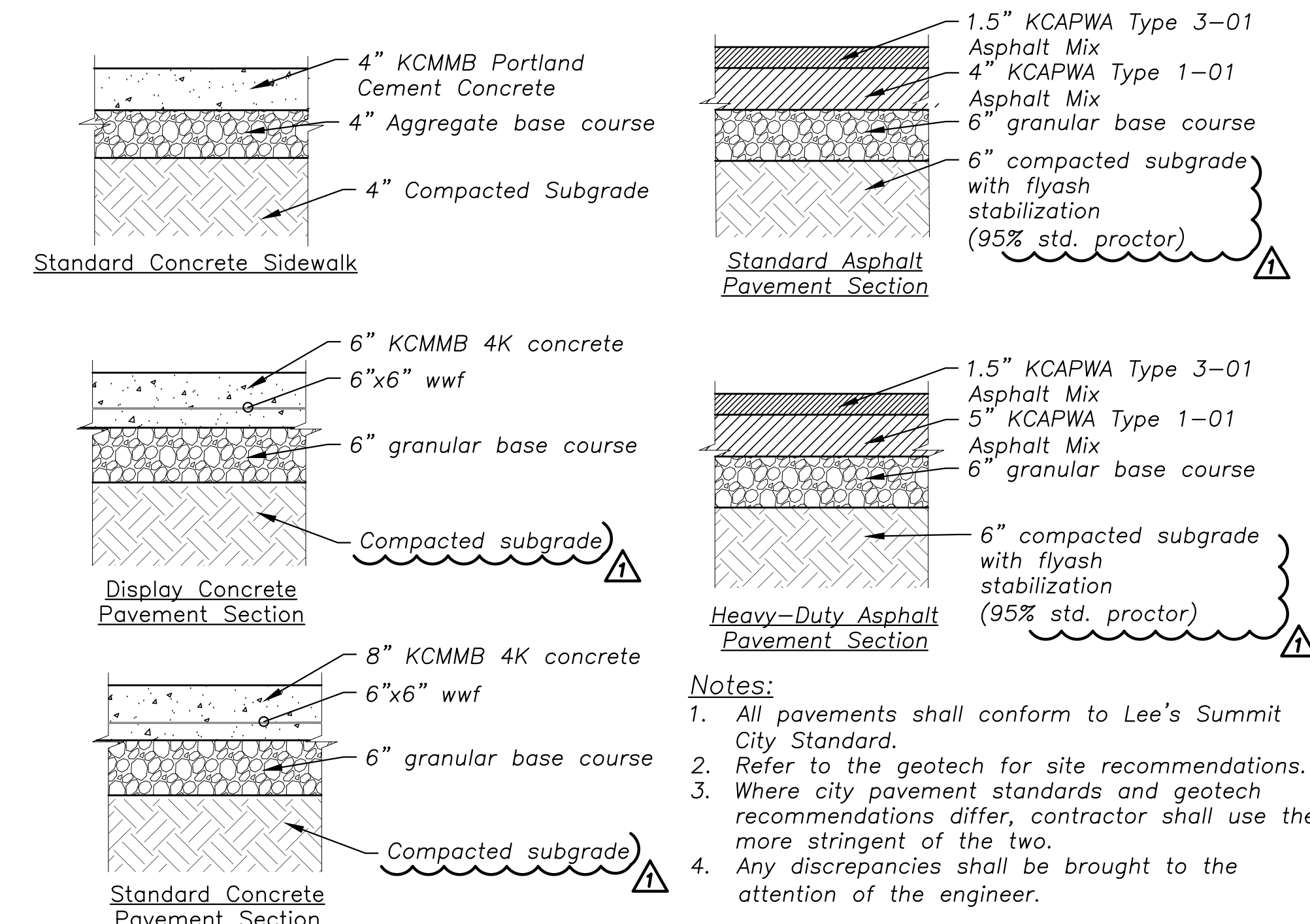
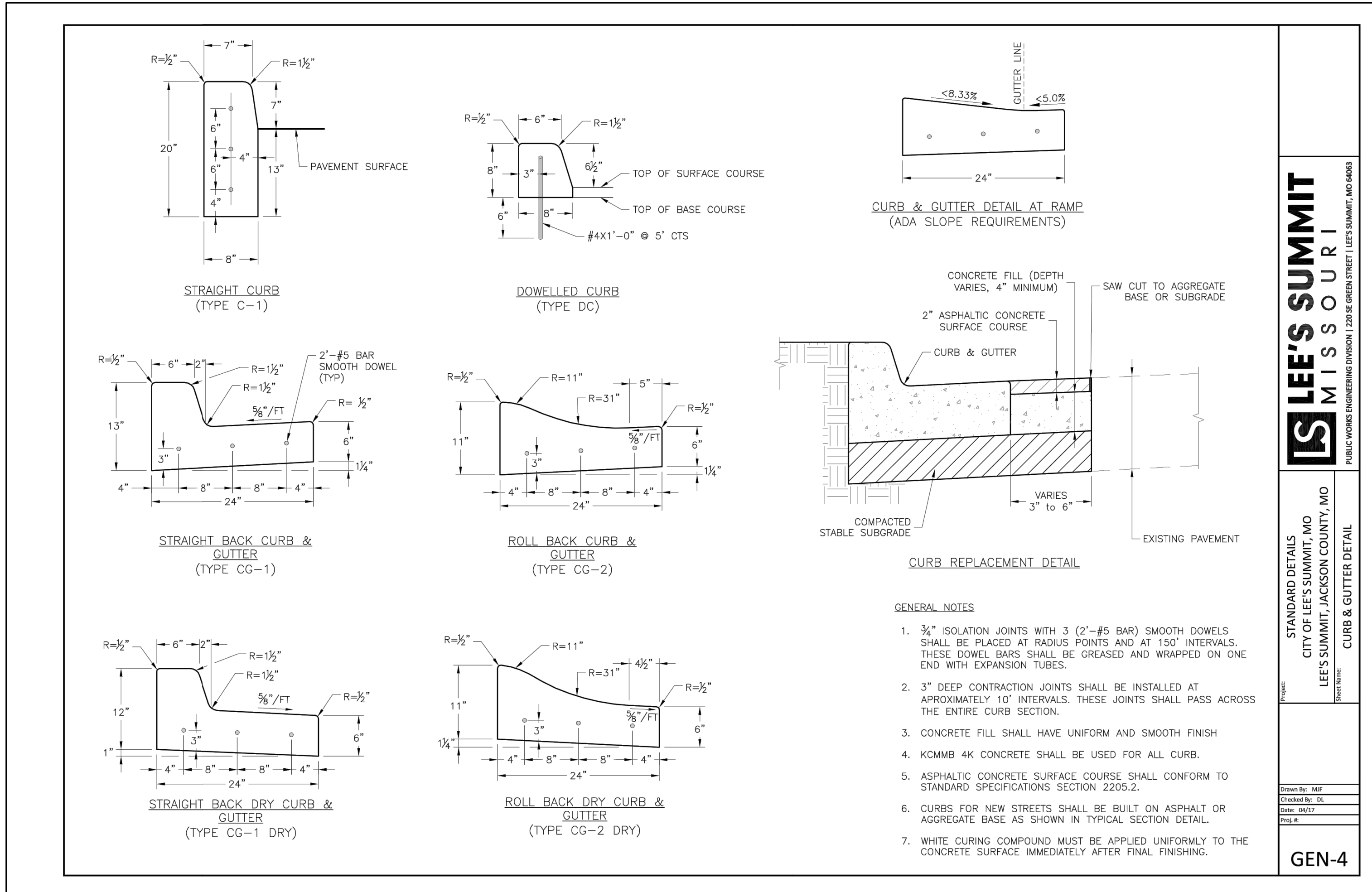


3 Sanitary Clean-out
not to scale

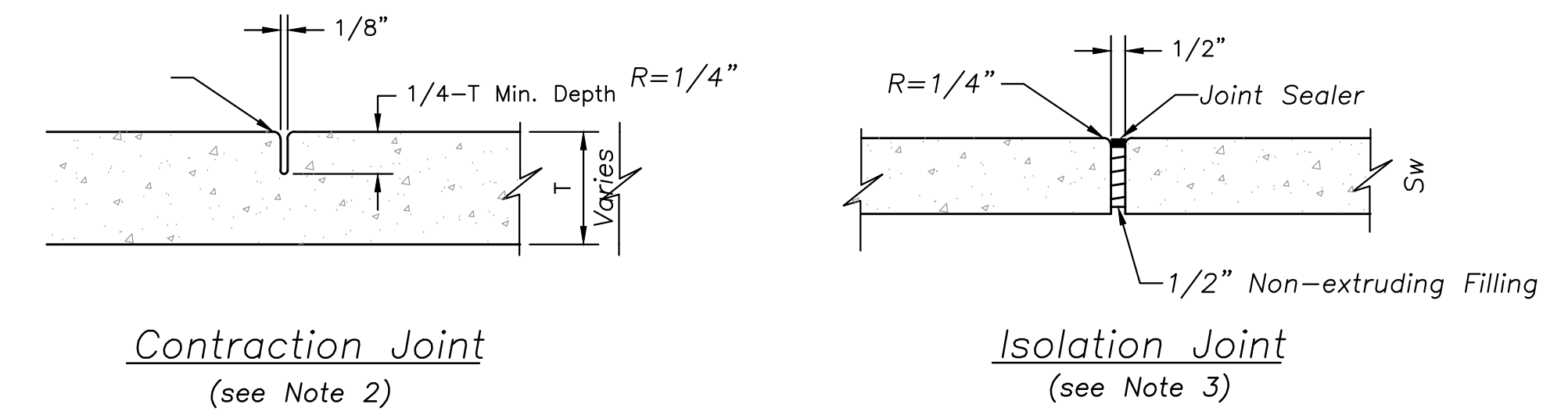
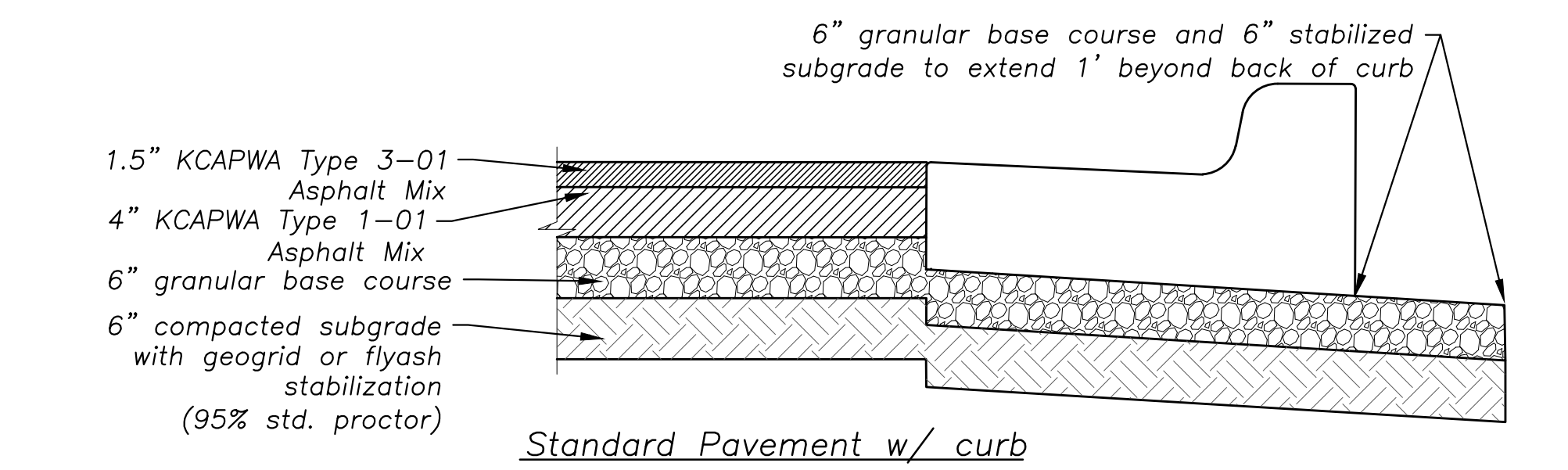
Commercial Preliminary Development Plan for
Automotive Detail Center
2150 NE Independence Ave
Lee's Summit, Missouri 64064

DATE: 02.21.2020
DRAWN BY: SLM
CHECKED BY: PAM
REVISIONS:
03.24.2020 1

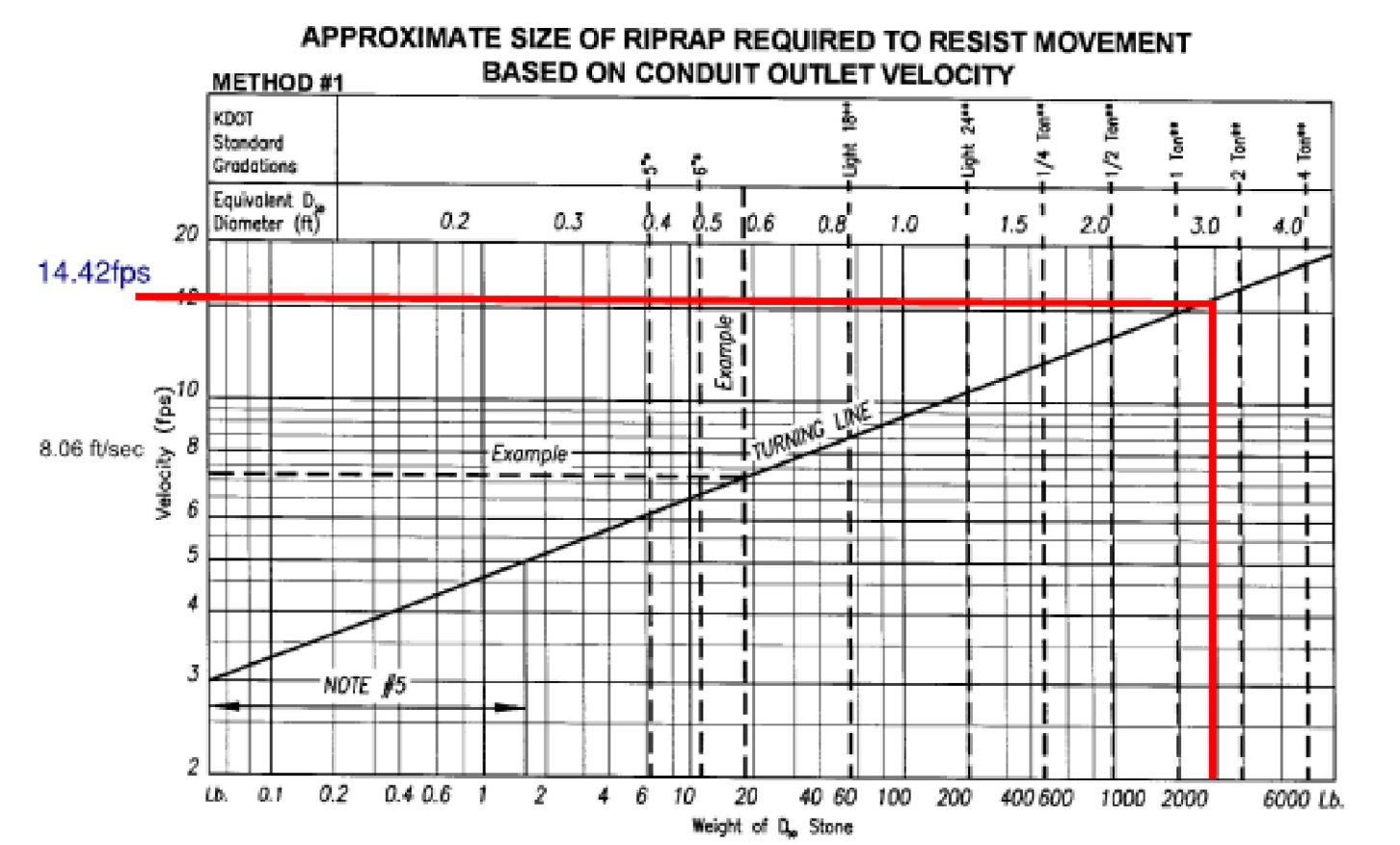
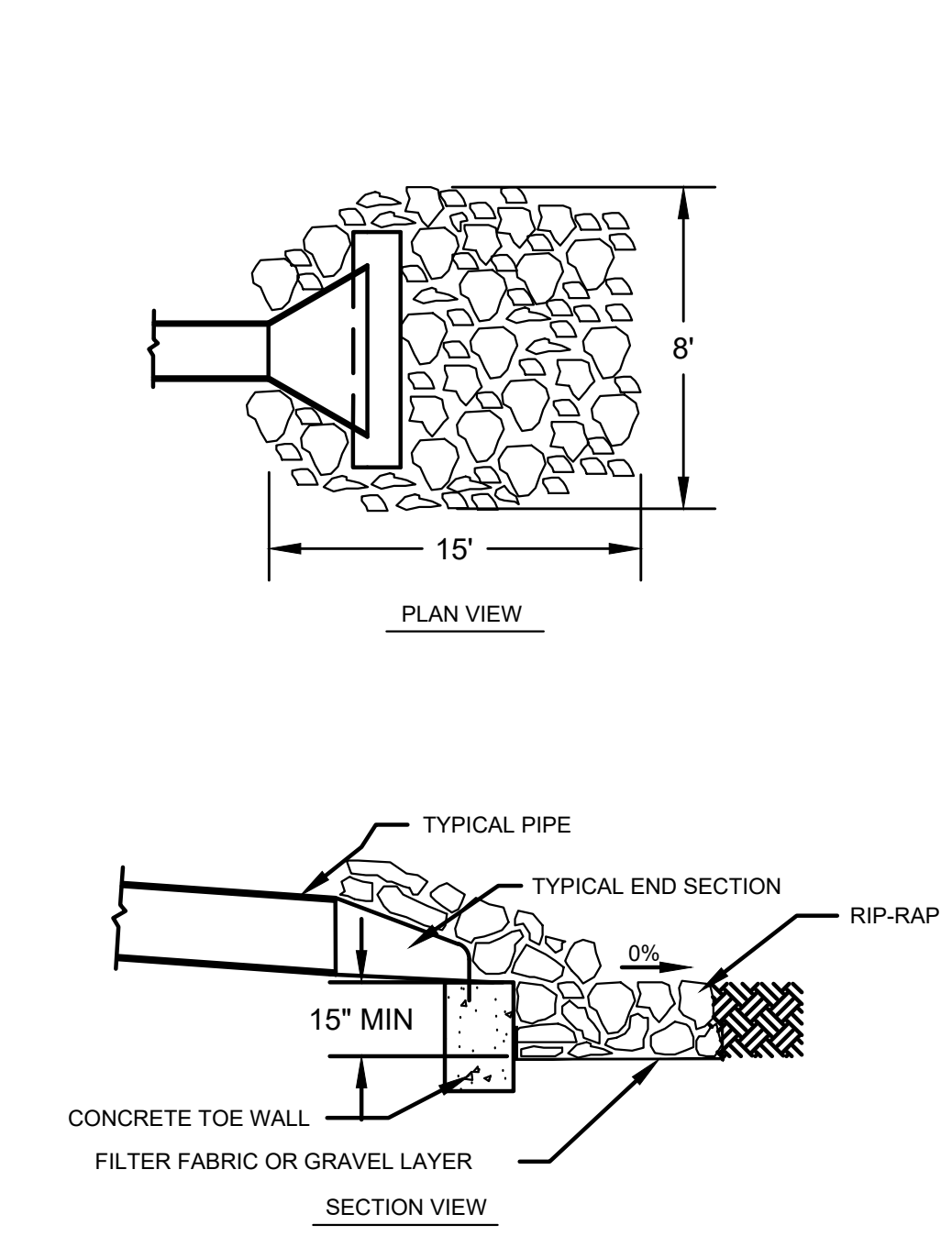
SHEET NUMBER
C4.2
DRAWING TYPE: preliminary
PROJECT NUMBER: 19076



- 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.



Example: A 15" pipe has an exit velocity of 7.2 fps with a tail water depth of 30" and channel slope of 2%. Acceptable Riprap Size: $D_{50} = 0.58' \cdot W = 19 \text{ lbs.}$, KDOT Gradation=Light 18", Max. Stress = $(62.4)(2.5)(.02) = 3.2 \text{ psf} < 5 \text{ psf O.K.}$

How to use this nomograph:

Method #1

- Find the exit velocity at the outlet.
- Intersect with Turning Line.
- Read top and bottom scales to determine approximate weight and size of stone.
- Read top scale to determine KDOT gradation of stone.
- Compare to see if design sizes meet or exceed the sizes calculated by method 2 on this sheet.

Method #2

- Calculate Maximum Shear Stress (Using Table).
- Compare Maximum Shear Stress to Allowable Shear Stress from Table. Maximum shear stress must be equal or less than allowable stress or larger stone is required.

General Notes:

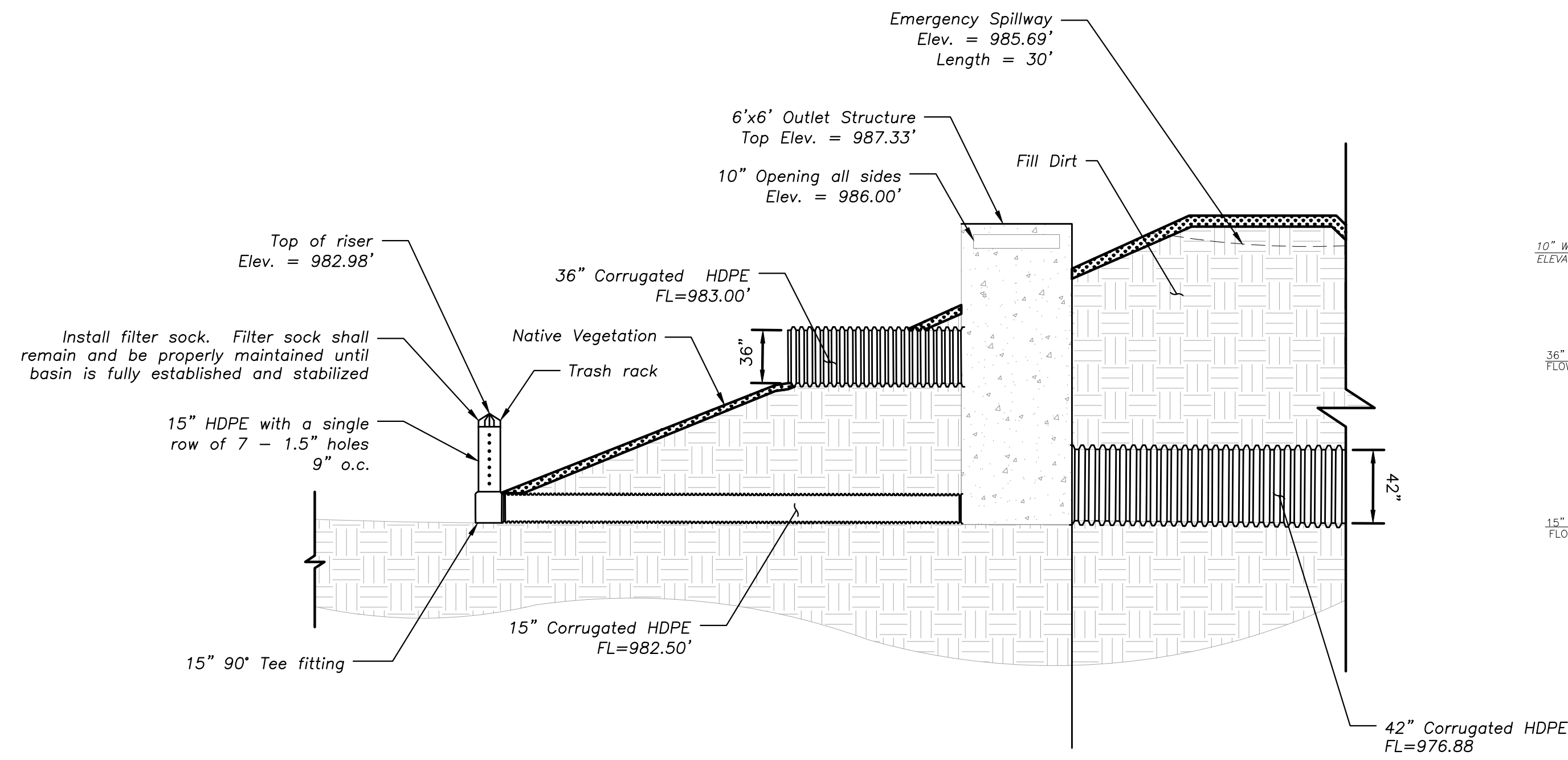
- This nomograph allows the user to approximate the D_{50} stone size of riprap for conduit outlet protection based on the exit velocity of the conduit.
- This nomograph is based on Figure 2.3.12-8a, "Guide for Estimating Stability of Channels and Large Rocks", KDOT Design Manual, Volume III, Bridge Section.
- Conduit velocity as calculated by Manning's Equation.
- Estimations based on this nomograph are only valid for velocities between 5 fps and 15 fps. Outlets with higher velocities should be investigated further.
- 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.

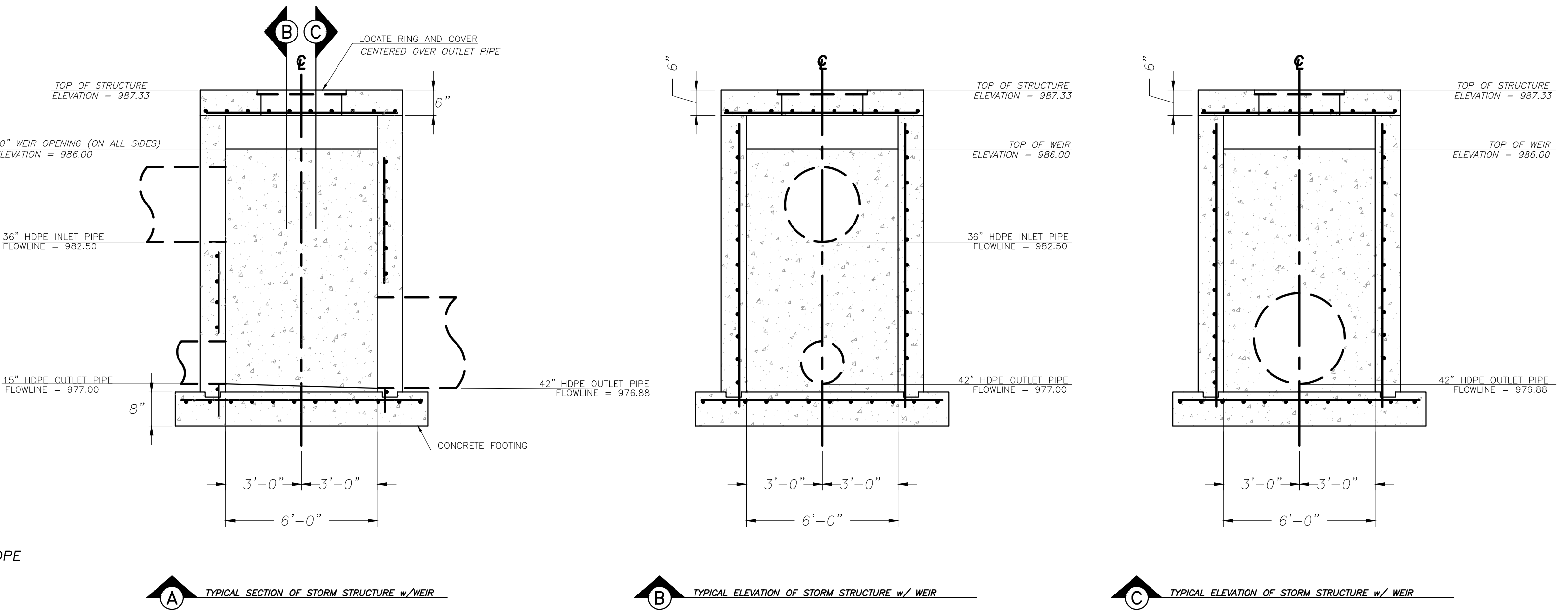
METHOD #2 - MAX. SHEAR STRESS

$\tau_c = \gamma ds$
 $\gamma = 62.4 \text{ pcf}$
 $d = \text{depth_of_tailwater_}(ft)$
 $s = \text{slope_at_exit_}(ft/ft)$

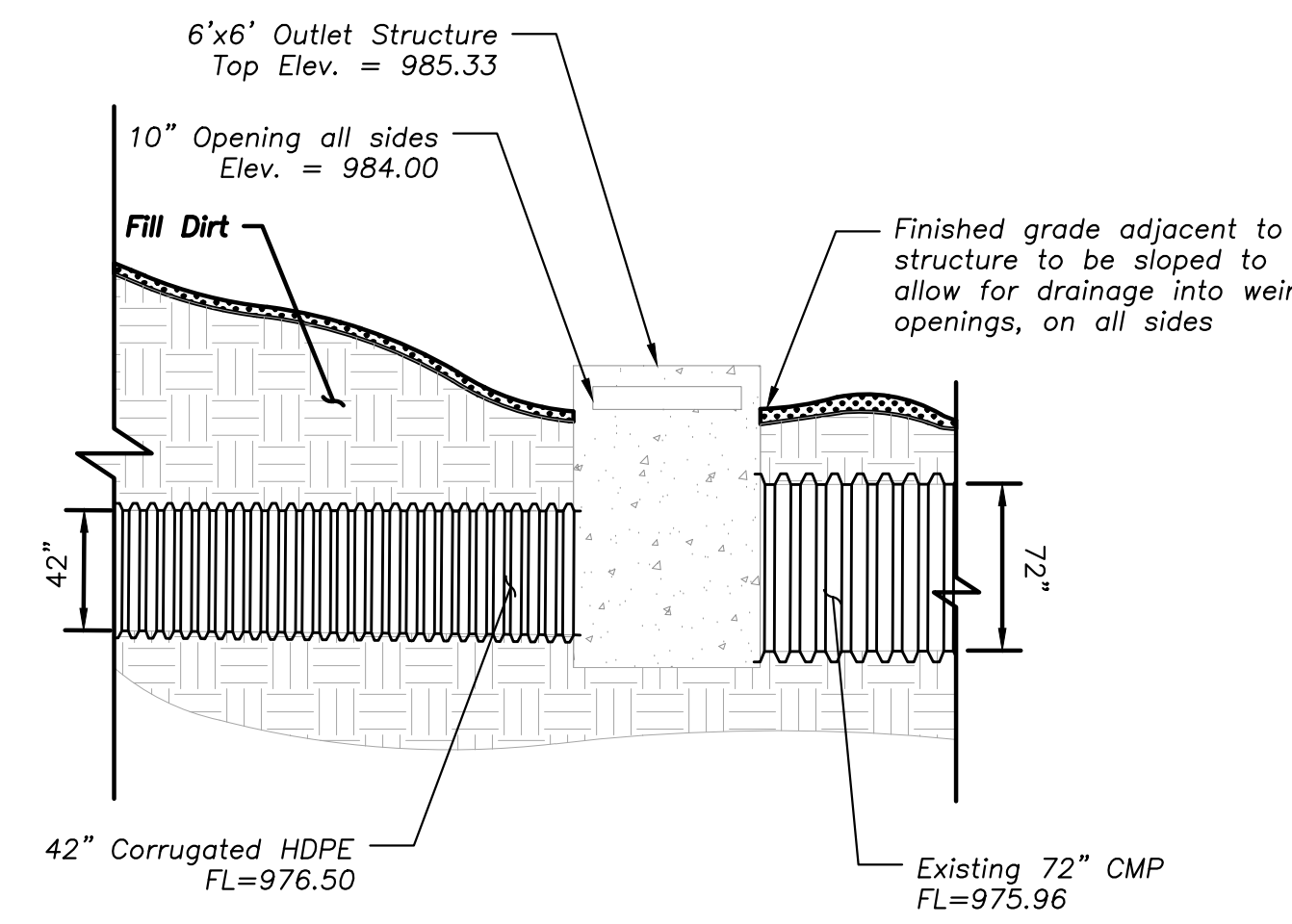
Allowable Shear Stress for KDOT Standard Gradations	Weight
Heavy Series	
4 Ton	27 psf
2 Ton	21 psf
1 Ton	16 psf
1/2 Ton	13 psf
1/4 Ton	10 psf
Light Series	
Light 24"	6 psf
Light 18"	5 psf
Stone for Ditch Lining	
6"	3 psf
5"	2 psf



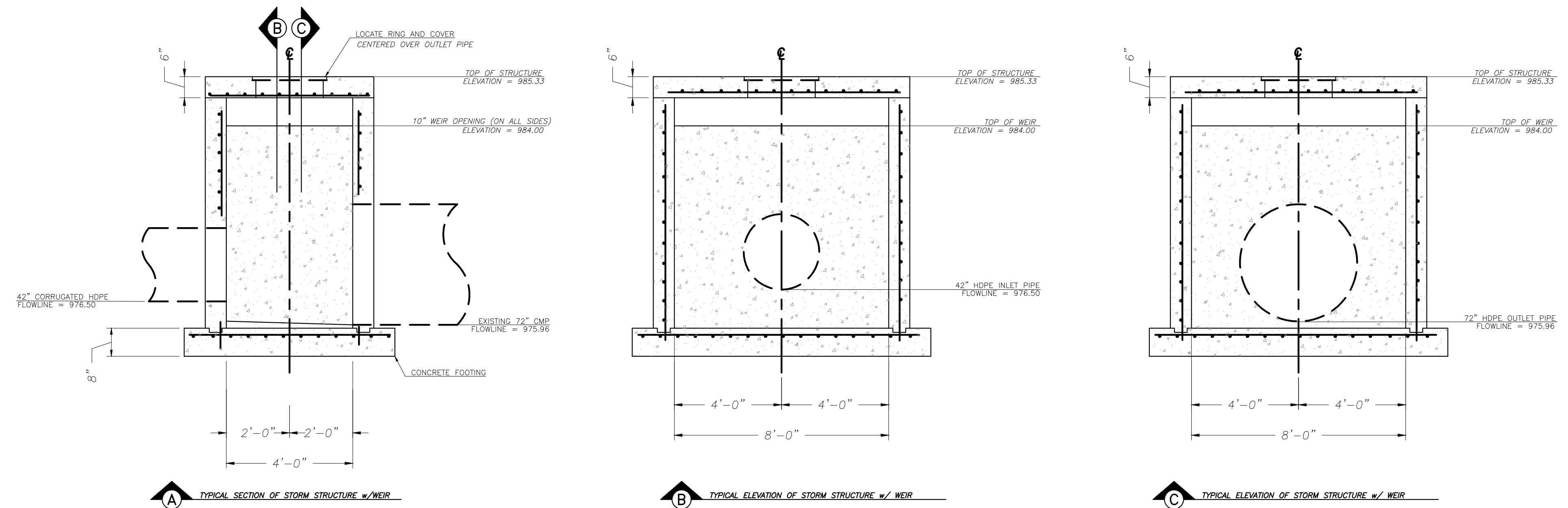
Detention Basin Outlet Detail
not to scale



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

Commercial Preliminary Development Plan for
Automotive Detail Center
2150 NE Independence Ave
Lee's Summit, Missouri 64064

date 02.21.2020
drawn by SLM
checked by PAM
revisions
03.24.2020 1

sheet number
C4.4
drawing type preliminary
project number 19076



2 Vicinity Plan
no scale

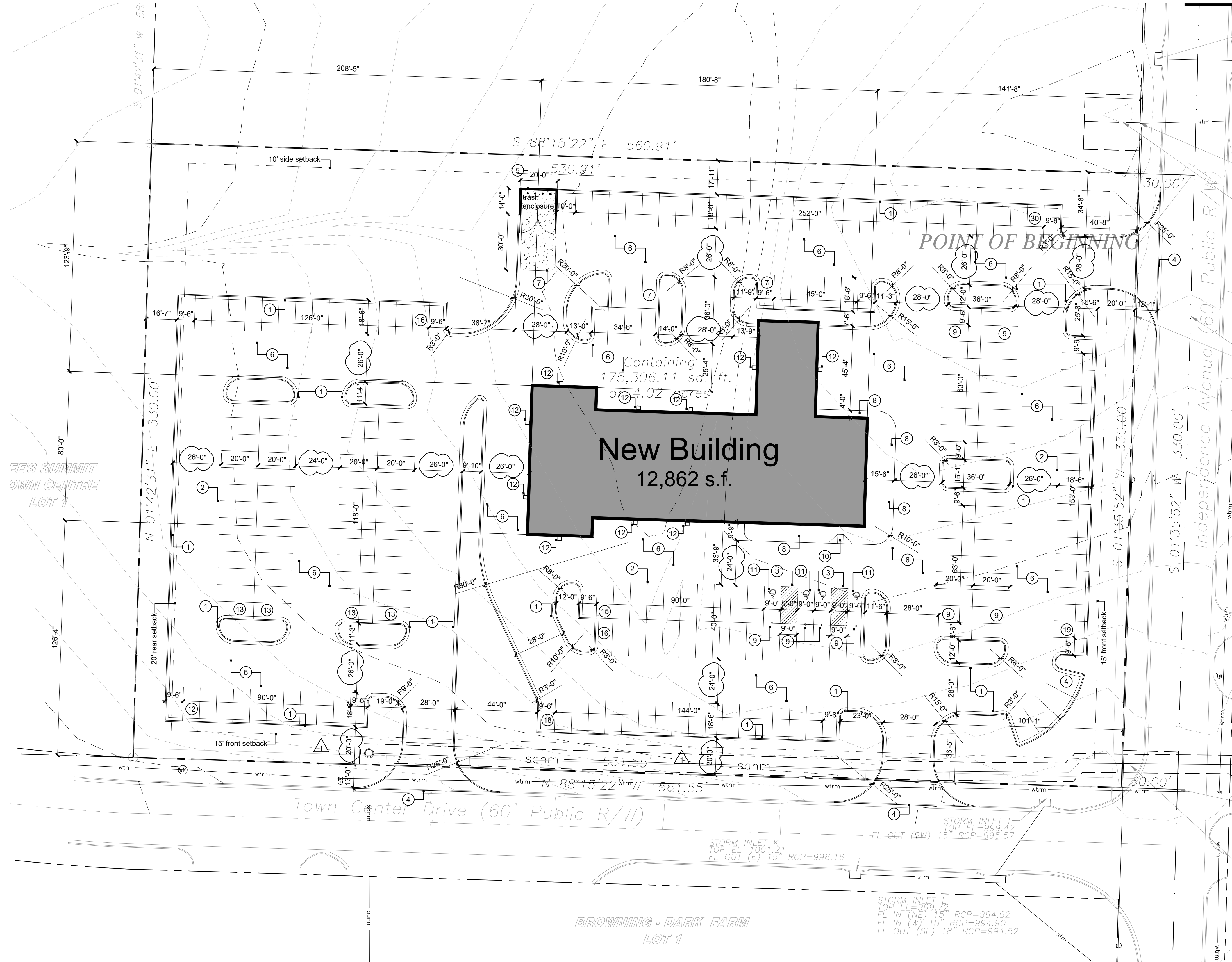


Site Criteria

- 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: 12,862 s.f.
- mezzanine: 3,131 s.f.
- total building area: 15,993 s.f.
- number of stories: 3 stories max., 2 stories actual
- floor area ratio: 15,993 / 175,306 = 0.09
- parking required: 5 per 1,000 s.f., 16 x 5 = 80 spaces required
- service establishments: 232 parking spaces
- actual parking onsite: 232 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. Building mounted LED site lighting.



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



A Preliminary Concept for
Detail Center

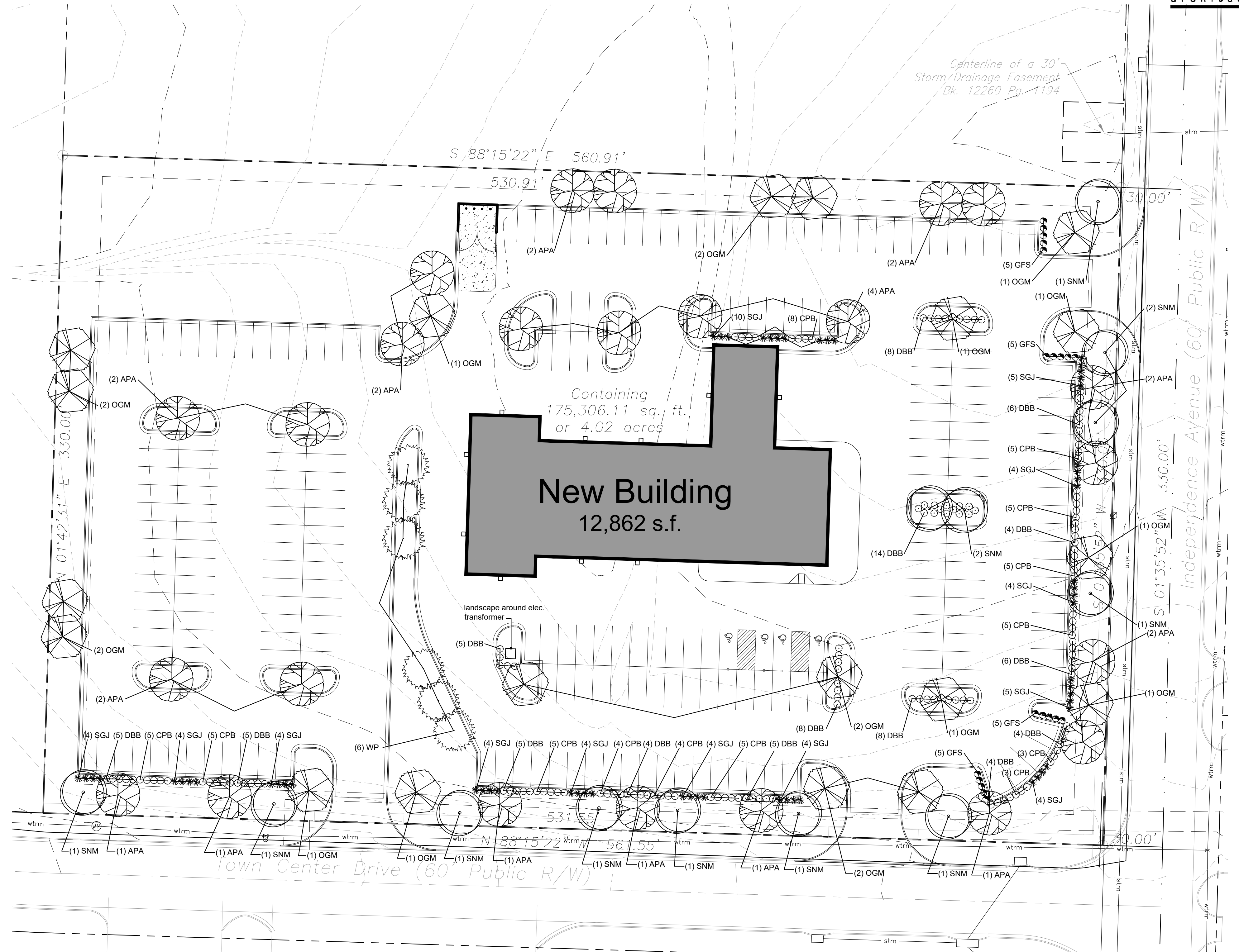
Town Center Drive and Independence Ave.
Lee's Summit, Missouri

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

09.10.2019	
01.17.2020	
02.21.2020	
03.24.2020	

sheet number
A1.1
drawing type: preliminary
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					

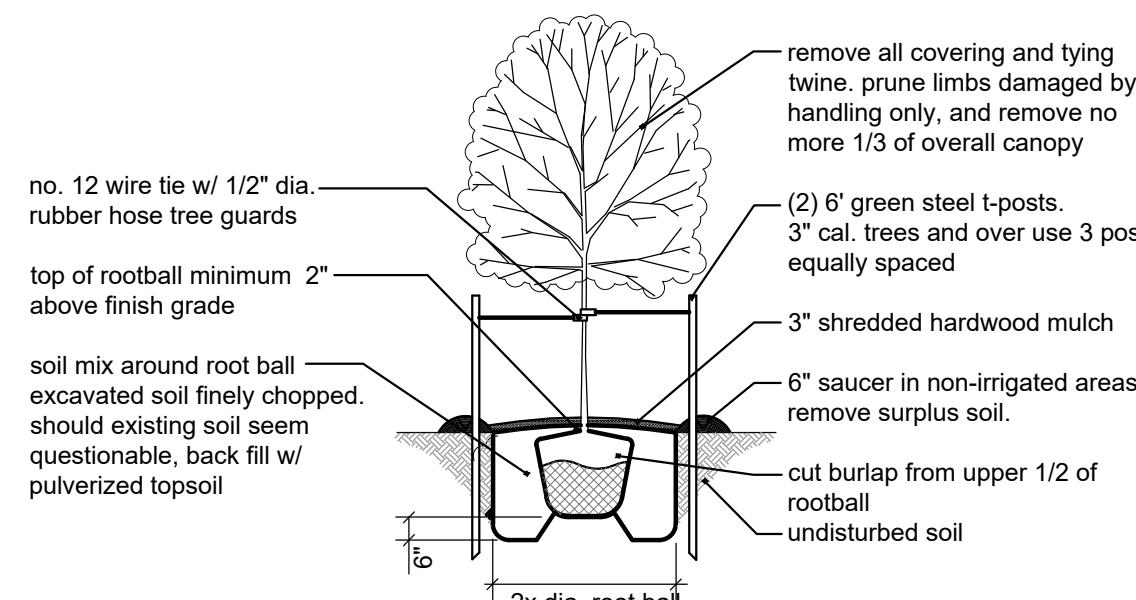


landscape notes:

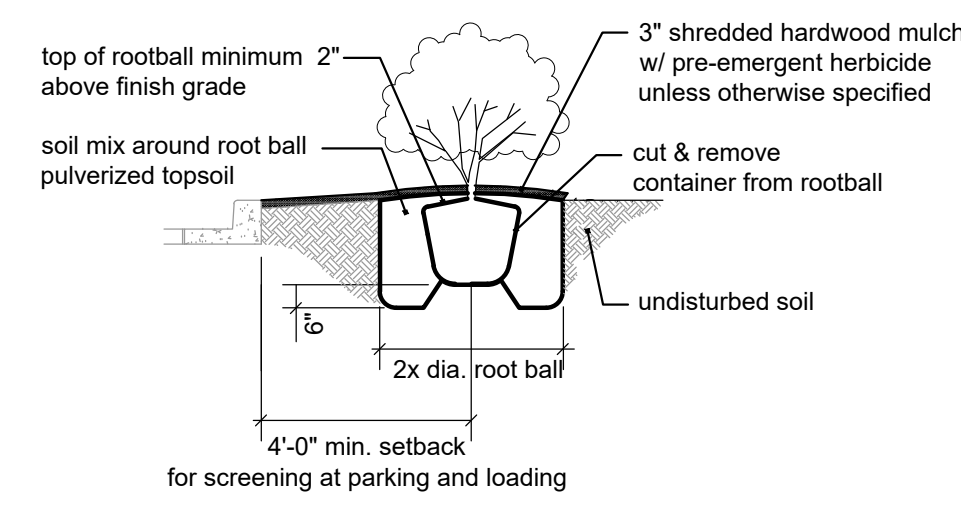
- Landscape shall be coordinated with the location of utilities, driveways and traffic clearance zones.
- The contractor doing excavation on public right-of-way shall give 48 hours advance notice to and obtain information from utility companies.
- Prior to commencement of work, the contractor shall notify 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 all 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

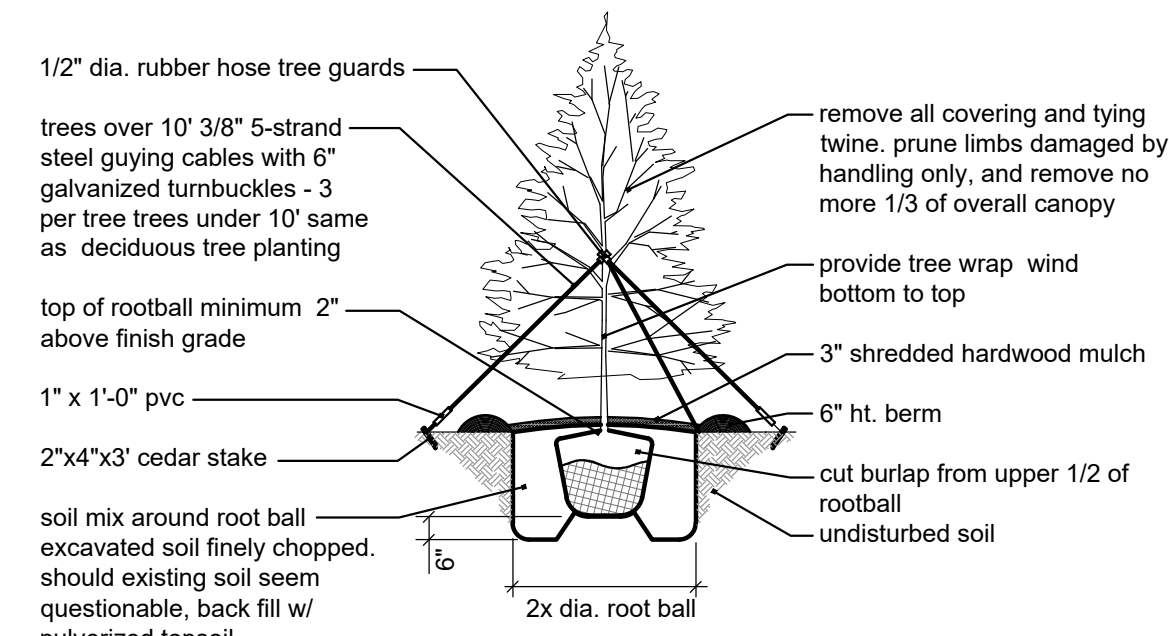
- site area: 175,306 s.f. / 4.02 acres
- building footprint: 12,862 s.f.
- impervious area: 124,303 s.f. = 71% <80%
- green space: 51,003 s.f. = 29% >20%
- open area: 175,306 s.f. (site) - 12,862 s.f. (building) = 162,444 s.f.
- open area trees: 162,444 s.f. / 5,000 s.f. = 32 required and 32 trees provided
- 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 59 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 98 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 327 l.f. / 40 x 12 = 98 shrubs required, 100 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



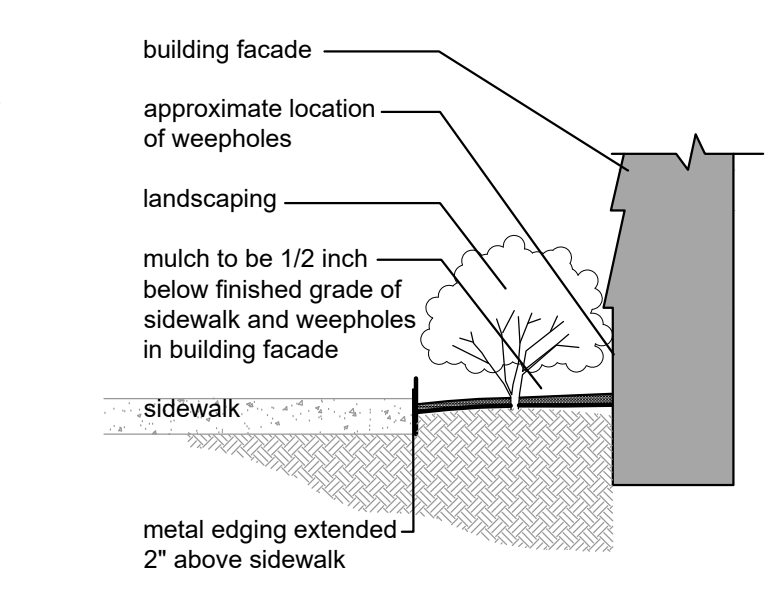
5 Deciduous Tree Planting Detail
not to scale



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"



date: 02.21.2020
drawn by: pem
checked by: DAE
revisions:

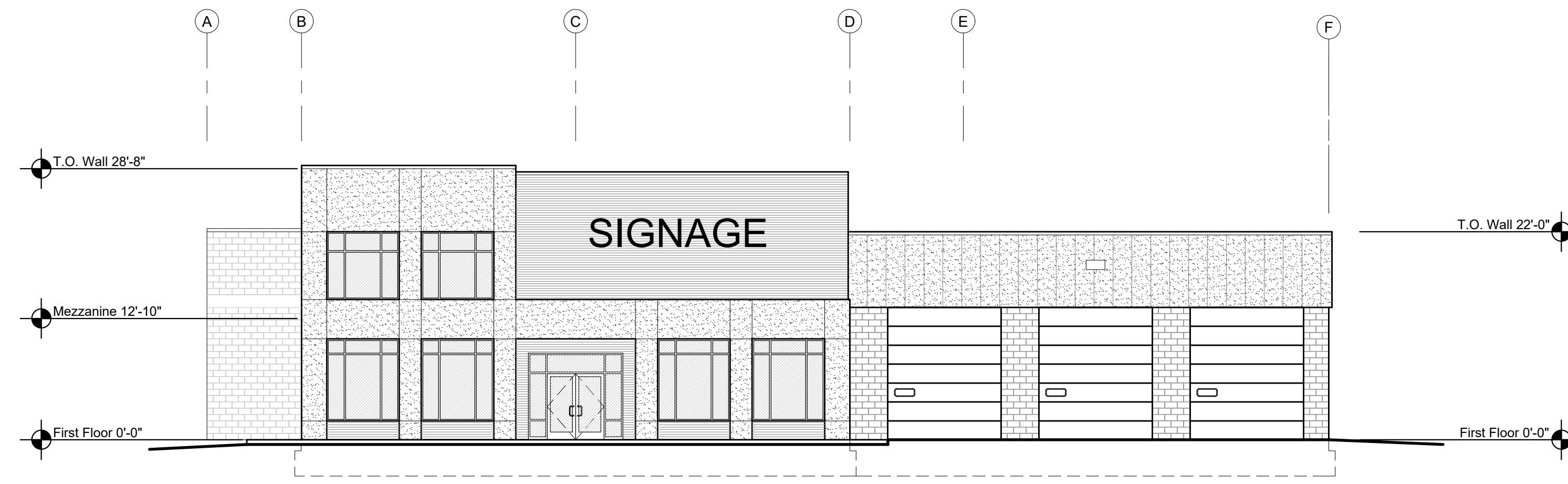
03.24.2020 1

sheet number

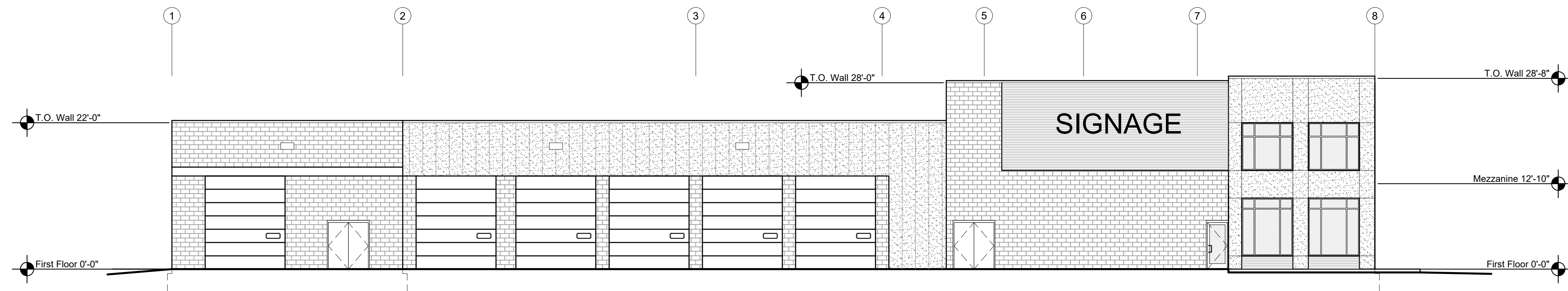
L1.1

drawing type: preliminary
project number: 19076

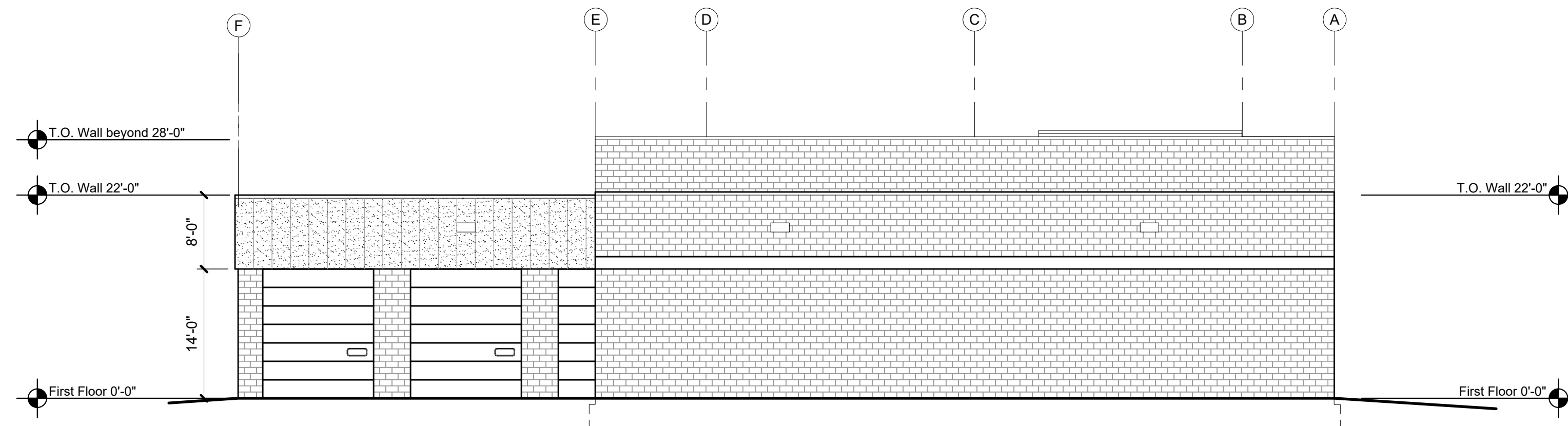
A Preliminary Concept for
Detail Center
Town Center Drive and Independence Ave.
Lee's Summit, Missouri



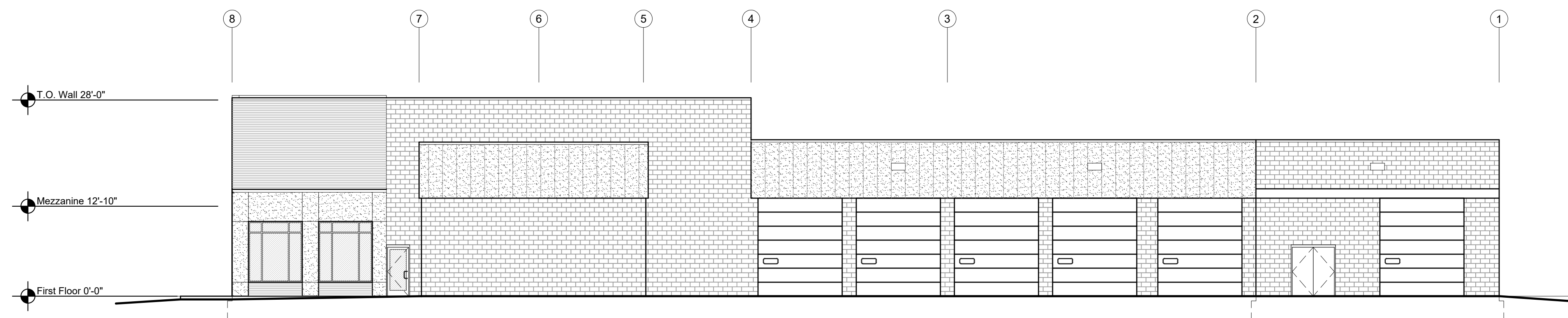
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 scale: 3/32" = 1'-0"



2 South Elevation
 scale: 3/32" = 1'-0"

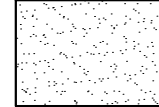
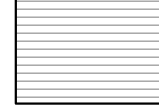
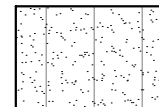
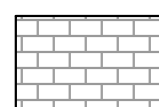
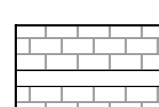


3 West Elevation
 scale: 3/32" = 1'-0"



4 North Elevation
 scale: 3/32" = 1'-0"

Exterior Materials and Colors:

-  EIFS
 2" drainable EIFS system, fine finish, color: light gray
 (Sherwin Williams SW7064 Passive)
-  Prefinished metal wall panel
 MBCI 7.2 Panel, prefinished, bold corrugated rib
 color: silver metallic
-  Prefinished metal wall panel
 Varco Pruden TextureClad wall panel, stucco finish
 color: Ash
-  CMU block, painted, Color: medium gray
 (Sherwin Williams SW7067 Cityscape)
-  CMU block, painted accent band color: blue
 (Sherwin Williams SW9177 Salty Dog)

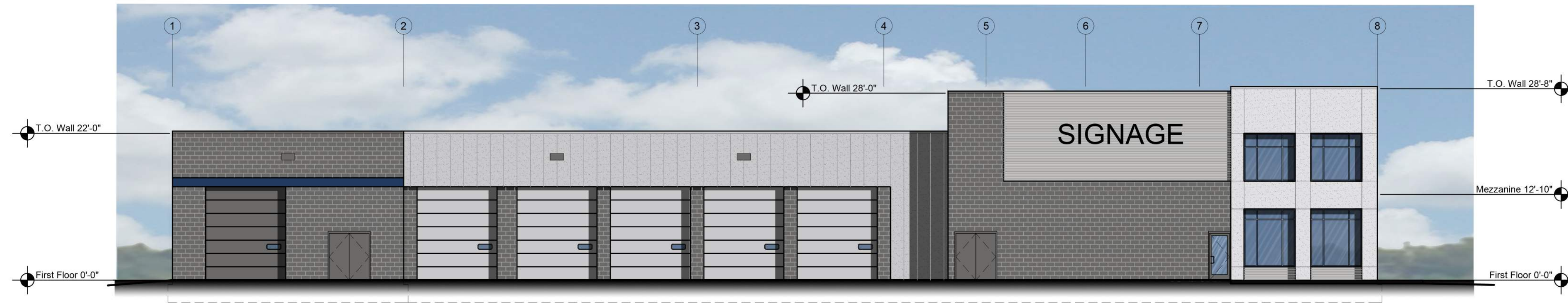
A New Facility for
Detail Center
 Independence Street
 Lee's Summit, Missouri

date
 02.21.2020
 drawn by
 jed
 checked by
 dAE
 revisions

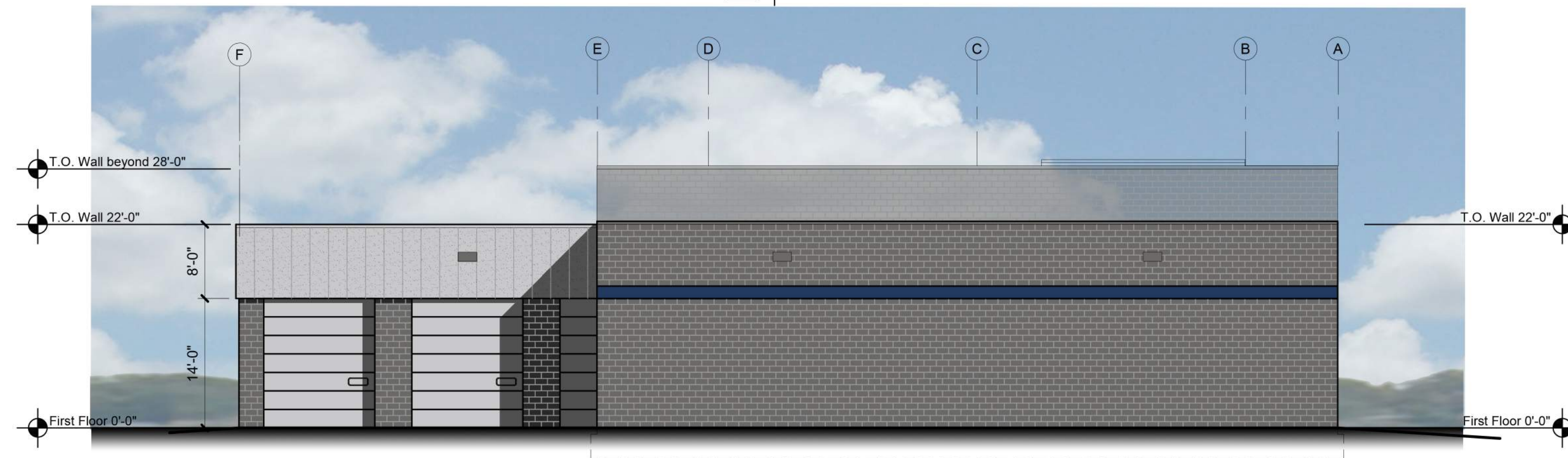
sheet number
A3.1
 drawing type
 preliminary
 project number
 19076



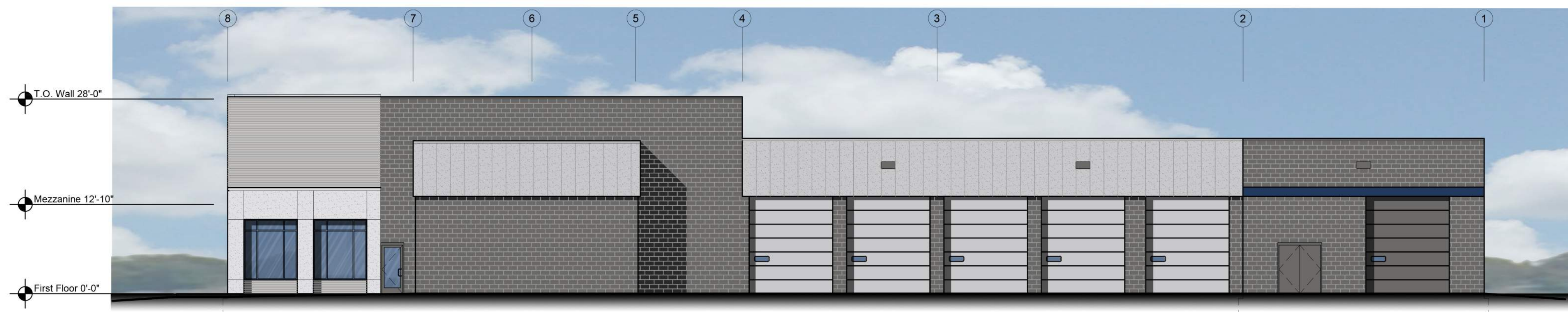
1 East elevation
scale: 3/32" = 1'-0"



2 South Elevation
scale: 3/32" = 1'-0"








3 West Elevation
scale: 3/32" = 1'-0"



4 North Elevation
scale: 3/32" = 1'-0"

Exterior Materials and Colors:

-  EIFS
2" drainable EIFS system, fine finish, color: light gray
(Sherwin Williams SW7064 Passive)
-  Prefinished metal wall panel
MBCI 7.2 Panel, prefinished, bold corrugated rib
color: silver metallic
-  Prefinished metal wall panel
Varco Pruden TextureClad wall panel, stucco finish
color: Ash
-  CMU block, painted, Color: medium gray
(Sherwin Williams SW7067 Cityscape)
-  CMU block, painted accent band color: blue
(Sherwin Williams SW9177 Salty Dog)

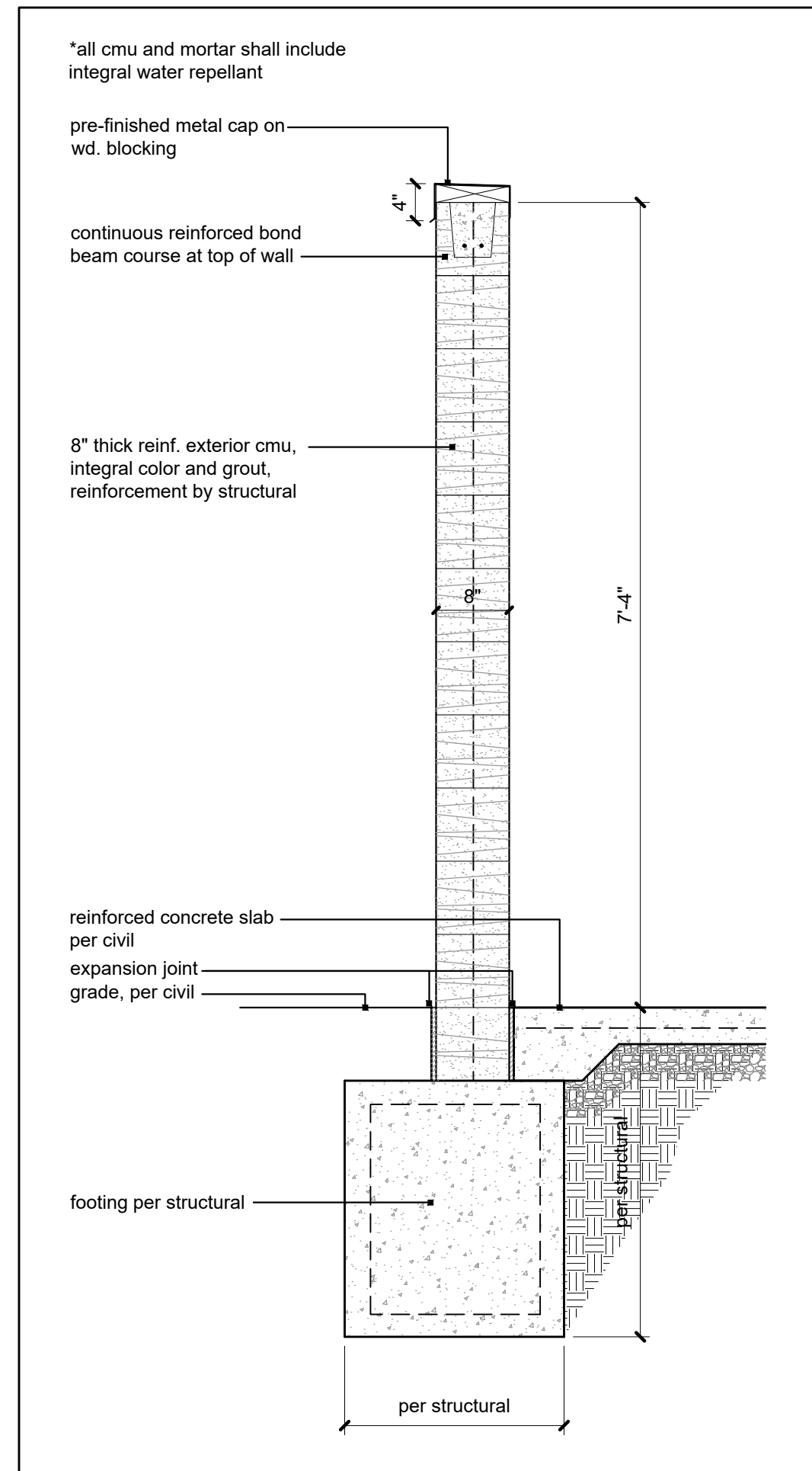
A New Facility for
Detail Center
Independence Street
Lee's Summit, Missouri

date
02.21.2020
drawn by
jed
checked by
dAE
revisions

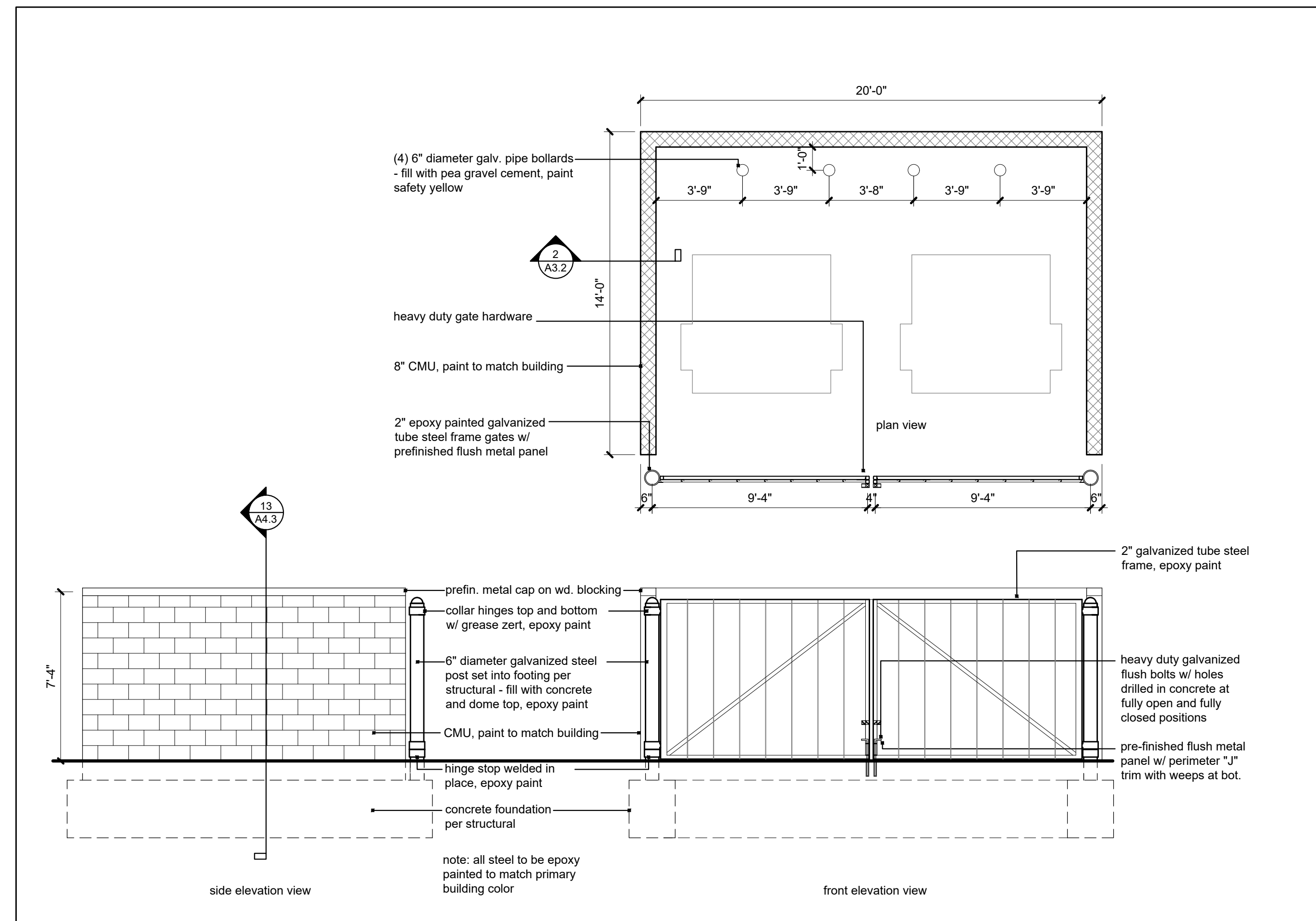
sheet number

A3.1

drawing type
preliminary
project number
19076



2 section @ trash encl.
 scale 3/4" = 1'-0"



1 trash enclosure
 scale: 1/4" = 1'-0"

A New Facility for
Detail Center
 Independence Street
 Lee's Summit, Missouri

date 02.21.2020
 drawn by jed
 checked by dAE
 revisions

sheet number
A3.2
 drawing type preliminary
 project number 19076



Specifications
EPA: 1.01 ft
Length: 33"
Width: 13"
Height H1: 7.12"
Height H2: 3.12"
Weight: 27 lbs

Introduction
The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficiency, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRNH DDBXD

Item	Qty	Description	Options	Notes
DSX1 LED	1	LED P7 40K T3M MVOLT SPA NLTAIR2 PIRNH DDBXD		

Option	Description	Notes
DSX1 LED	LED P7 40K T3M MVOLT SPA NLTAIR2 PIRNH DDBXD	

One Lithonia Way • Corvair, Georgia 30012 • Phone 800.279.8041 • www.lithonia.com
DSX1-LED Rev. 12/18/18 Page 1 of 8



Specifications
Luminaire: 13-3/4" x 10" x 6-3/8"
Weight: 12 lbs
Depth: 10"
Height: 6-3/8"

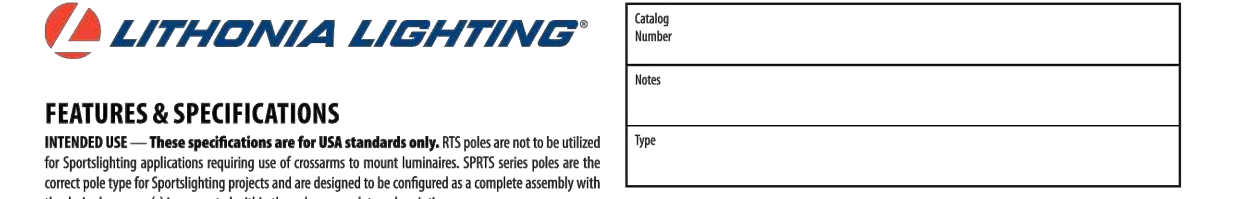
Introduction
The D-Series Wall Luminaire is a stylish, fully integrated LED solution for building mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance. With an expected service life of over 20 years of nighttime use and up to 74% in energy savings over comparable 250W metal halide luminaires, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information EXAMPLE: DSXW1 LED 200-1000 40K T3M MVOLT DDBXD

Item	Qty	Description	Options	Notes
DSXW1 LED	1	LED 200-1000 40K T3M MVOLT DDBXD		

Option	Description	Notes
DSXW1 LED	LED 200-1000 40K T3M MVOLT DDBXD	

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DSXW1-LED Rev. 12/18/18



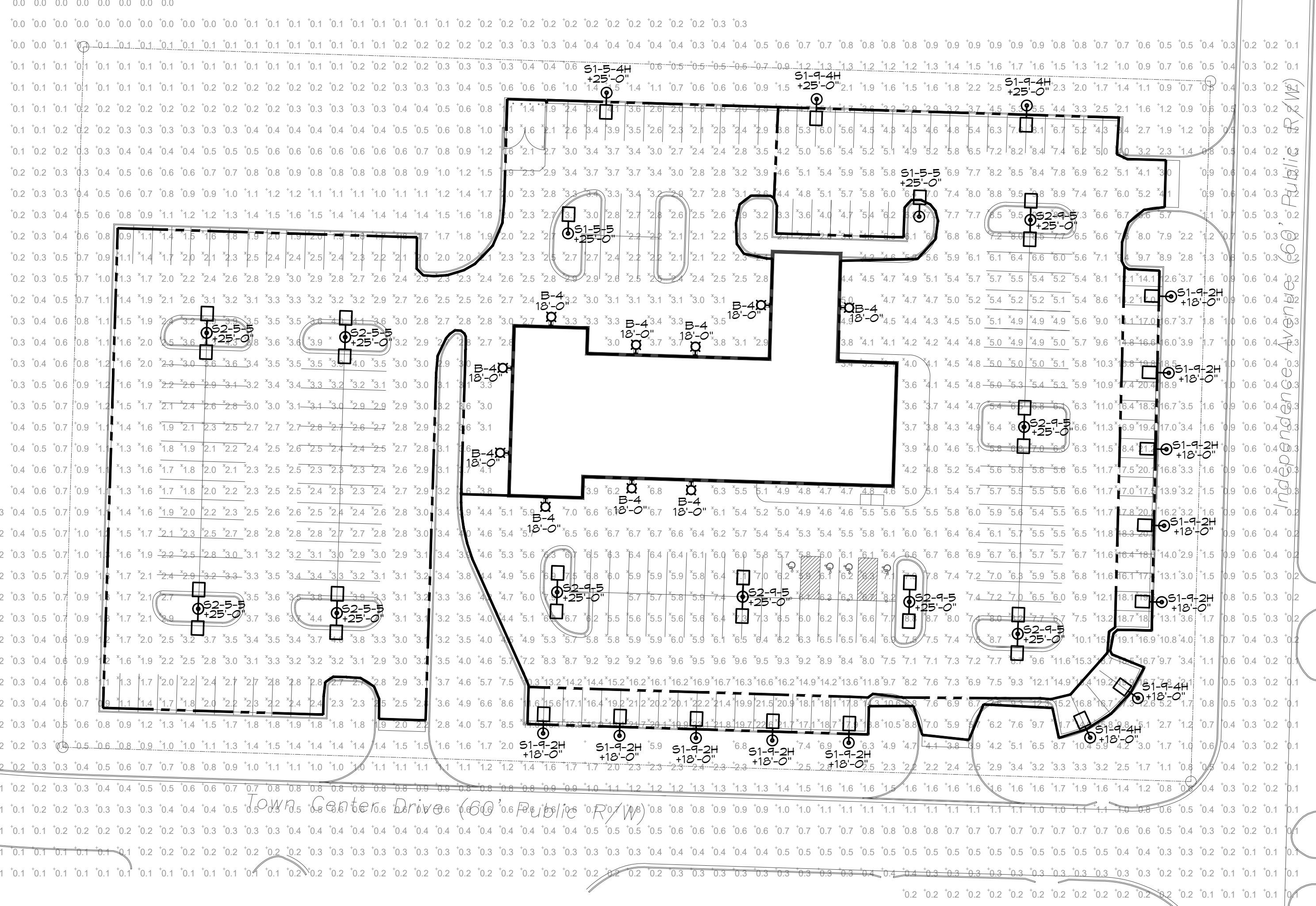
FEATURES & SPECIFICATIONS
INTRODUCTION - These specifications are for USA standards only. RT5 poles are not to be utilized for SpotLighting applications requiring use of stainless steel luminaires. RT5 poles are not to be used for SpotLighting projects and are designed to be configured as a complete assembly with the luminaire (commonly) mounted within the pole manufacturer's description.
CONSTRUCTION - Pole shaft: The pole shaft is of 1 1/2" diameter (1.315" ID) x 11' length (11.000' H) with a uniform wall thickness and a wall thickness of 0.063" (0.0025"). The pole shaft is of 1 1/2" diameter (1.315" ID) with a uniform wall thickness and a wall thickness of 0.063" (0.0025"). The pole shaft is of 1 1/2" diameter (1.315" ID) with a uniform wall thickness and a wall thickness of 0.063" (0.0025%). The pole shaft is of 1 1/2" diameter (1.315" ID) with a uniform wall thickness and a wall thickness of 0.063" (0.0025%).

Ordering Information EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRNH DDBXD

Item	Qty	Description	Options	Notes
DSX1 LED	1	LED P7 40K T3M MVOLT SPA NLTAIR2 PIRNH DDBXD		

Option	Description	Notes
DSX1 LED	LED P7 40K T3M MVOLT SPA NLTAIR2 PIRNH DDBXD	

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Symbol	Label	Qty	Manufacturer	Model #	SOURCE/LUMENS/COLOR TEMP	LLF	Notes
⊙	B-4 18'-0"	10	LITHONIA	DSXW1-LED-200-1000-40K-TFTM-MVOLT-XXX	LED/5,000 LUMENS/4000K	0.95	46
⊙	S1-5-4H 25'-0"	1	LITHONIA	DSX1-LED-P5-40K-TFTM-MVOLT-RPA-H5-DBLXD ON 22' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 25' TOTAL FIXTURE HEIGHT	LED/15,000 LUMENS/4000K	0.95	13B
⊙	S1-5-5 25'-0"	2	LITHONIA	DSX1-LED-P5-40K-T5W-MVOLT-RPA-H5-DBLXD ON 22' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 25' TOTAL FIXTURE HEIGHT	LED/15,000 LUMENS/4000K	0.95	13B
⊙	S1-4-2H 18'-0"	10	LITHONIA	DSX1-LED-P4-40K-T2M-MVOLT-RPA-H5-DBLXD ON 15' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 18' TOTAL FIXTURE HEIGHT	LED/25,000 LUMENS/4000K	0.95	241
⊙	S1-4-4H 18'-0"	2	LITHONIA	DSX1-LED-P4-40K-TFTM-MVOLT-RPA-H5-DBLXD ON 15' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 18' TOTAL FIXTURE HEIGHT	LED/25,000 LUMENS/4000K	0.95	241
⊙	S1-4-4H 25'-0"	2	LITHONIA	DSX1-LED-P4-40K-TFTM-MVOLT-RPA-H5-DBLXD ON 22' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 25' TOTAL FIXTURE HEIGHT	LED/25,000 LUMENS/4000K	0.95	241
⊙	S2-5-5 25'-0"	4	LITHONIA	(2)DSX1-LED-P5-40K-T5W-MVOLT-RPA-DBLXD ON 22' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 25' TOTAL FIXTURE HEIGHT	LED/15,000 LUMENS/4000K EACH	0.95	276
⊙	S2-4-5 25'-0"	6	LITHONIA	(2)DSX1-LED-P4-40K-T5W-MVOLT-RPA-DBLXD ON 22' ROUND TAPERED STEEL POLE IV, 3' BASE POLE BASE - 25' TOTAL FIXTURE HEIGHT	LED/25,000 LUMENS/4000K EACH	0.95	382

SITE PHOTOMETRIC PLAN
SCALE: 1" = 40'-0"
NORTH

STATISTICS					
Description	Avg	Max	Min	Max/Min	Avg/Min
Front Row	16.6	23.1	5.7	4.1/1	2.9/1
Interior Row	6.7	16.9	2.1	8.0/1	3.2/1
BOH Inventory	2.8	5.4	0.9	6.0/1	3.1/1

BC PROJECT #: 20163 MISSOURI PE COA #2009003629
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A Preliminary Concept for
Detail Center
Town Center Drive and Independence Ave.
Lee's Summit, Missouri

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checked by DS
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