

PROJECT NAME AND ADDRESS

KALAMAZOO OFFICE
4755 CAMPUS DRIVE
KALAMAZOO, MI 49008

PROJECT DESCRIPTION

NEW 8,711-GSF ONE-STORY, NON-SPRINKLERED COMMERCIAL OFFICE BUILDING WITH OUTDOOR PATIO HAVING DECORATIVE SCREEN FENCE.

THE BUILDING IS COMPRISED OF COMPOSITE METAL PANEL DRY-REVEAL RAINSCREEN CLADDING ON INSULATED COLD-FORMED METAL STUD FRAMING WITH A CONVENTIONAL STEEL STRUCTURE FRAME. EXTERIOR FENESTRATION IS THERMALLY-BROKEN STOREFRONT WINDOWS. THE ROOF IS A MONO, LOW-SLOPED MEMBRANE ROOF ON POLYISO INSULATION ON GALVANIZED METAL ROOF DECK WITH INTERIOR RAIN LEADERS CONNECTED TO UNDERGROUND STORM PIPING DAYLIGHTING TO ON-SITE DETENTION. ROOF TOP MECHANICAL EQUIPMENT IS SCREENED.

CITY SUBMITTALS

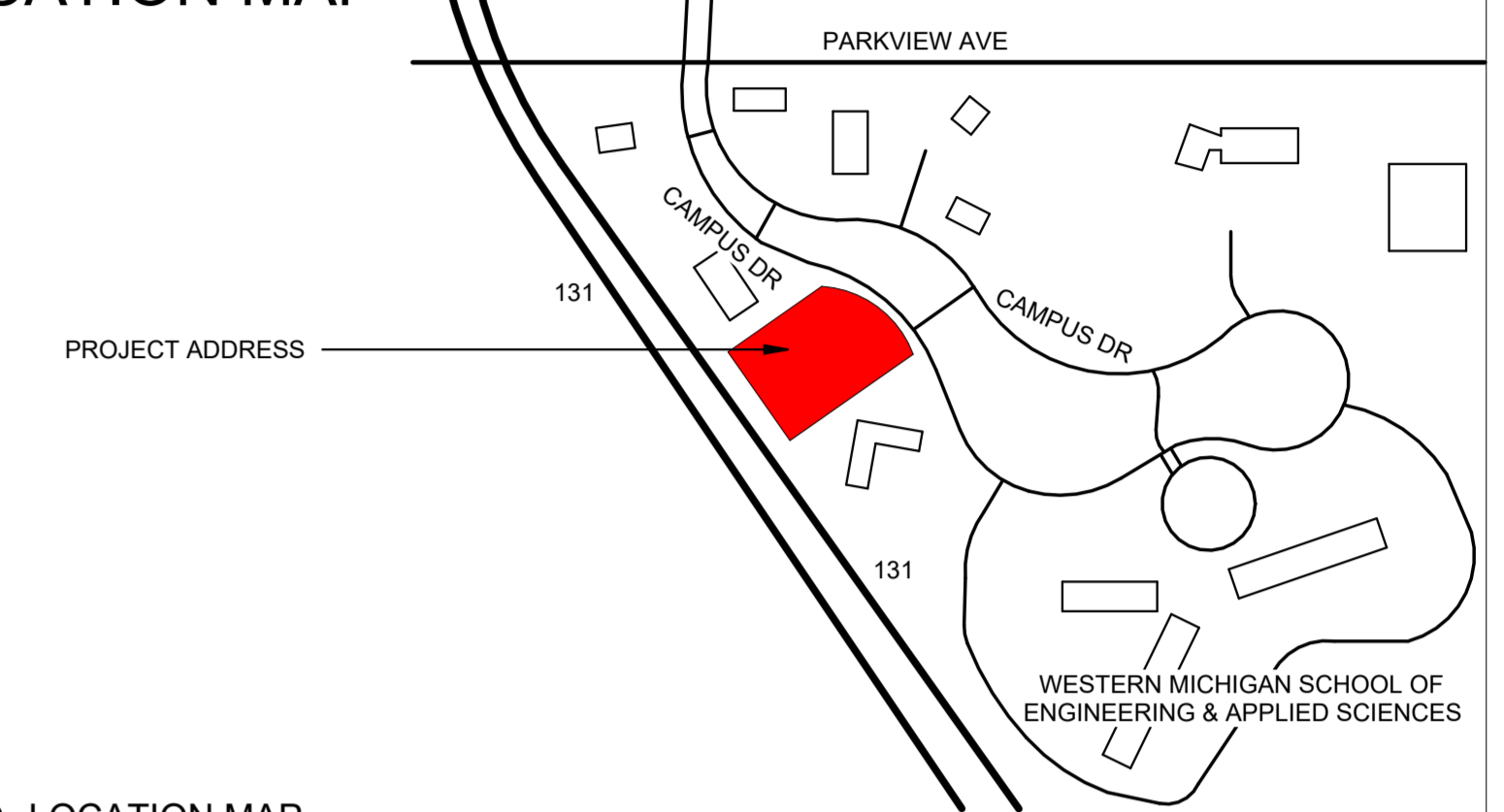
LIST OF CITY SUBMITTALS

1. SITE PLAN APPROVAL
2. PERMIT

LIST OF DEFERRED CITY SUBMITTALS

- A. FIRE ALARM SYSTEM
- B. COLD FORMED METAL FRAMING

LOCATION MAP



PROJECT IMAGE



DRAWING INDEX - SPA	
SHEET #	SHEET TITLE
AE-09-01	3D VIEWS
00	GENERAL INFORMATION
G00-00-00	COVER SHEET
G00-00-01	GENERAL INFORMATION PROJECT DRAWING INDEX
G01-00-00	GENERAL INFORMATION CODE SUMMARY AND LIFE SAFETY PLANS
40	CIVIL
C1-00-00	EXISTING CONDITIONS AND REMOVALS
C2-00-00	SITE PLAN
C2-01-00	VEHICLE RADIUS PLAN
C3-00-00	GRADING PLAN
C3-01-00	SESC PLAN
C4-00-00	UTILITY PLAN
C4-01-00	UTILITY PROFILES
C4-02-00	STORMWATER CALCULATIONS
C5-00-00	SITE DETAILS
C6-00-00	UTILITY AND SESC DETAILS
L1-00-00	LANDSCAPE PLANTING PLAN
73	ARCHITECTURAL ELEMENTS
AE-01-00	ARCHITECTURAL FLOOR PLAN COMPOSITE
AE-01-01	ARCHITECTURAL FLOOR PLAN COMPOSITE
AE-02-00	ARCHITECTURAL BUILDING ELEVATIONS
AE-03-00	ARCHITECTURAL BUILDING SECTIONS
AE-03-01	ARCHITECTURAL WALL SECTIONS
AE-03-02	ARCHITECTURAL LARGE SCALE VIEWS
AE-04-00	ARCHITECTURAL LARGE SCALE VIEWS
AE-04-01	MONUMENT SIGN & DUMPSTER ENCLOSURE DETAILS
AE-04-02	ARCHITECTURAL CEILING PLAN COMPOSITE
170	ELECTRICAL GENERAL INFORMATION
E00-00-00	ELECTRICAL SYMBOLS AND GENERAL NOTES
E05-00-00	ELECTRICAL DETAILS
E05-00-01	ELECTRICAL DETAILS
172	ELECTRICAL SITE
ES0-00-00	ELECTRICAL SITE PLAN
ES0-01-00	SITE LIGHTING CALCULATIONS
175	ELECTRICAL LIGHTING
EL-01-00	FIRST FLOOR LIGHTING PLAN
177	ELECTRICAL POWER
EP1-01-00	FIRST FLOOR POWER PLAN
EP1-R1-00	ROOF ELECTRICAL PLAN

PROJECT TEAM

ARCHITECT
INTERIOR DESIGN

GHAFARI

37 OTTAWA AVENUE NW
SUITE 700
GRAND RAPIDS, MI 49503-2900 USA
TEL +1.616.771.0909
www.ghafari.com

CONSTRUCTION MANAGER



Building Since 1891

2700 STADIUM DR
SUITE 2
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CIVIL ENGINEER



1707 S PARK STREET
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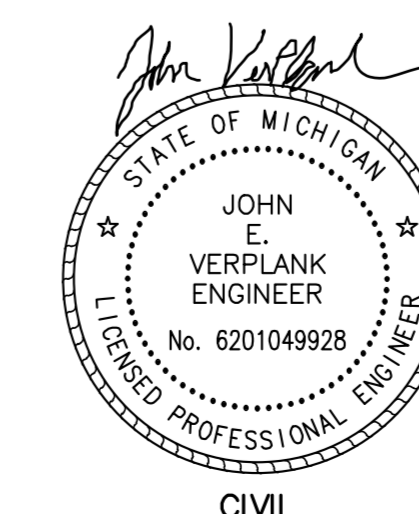
MECHANICAL ENGINEER
PLUMBING ENGINEER
ELECTRICAL ENGINEER



MECHANICAL + ELECTRICAL DESIGN
128 DEVISSER PLACE
KALAMAZOO, MI 49007 USA
TEL +1.269.203.5058
www.ignyte.design

PROJECT INFORMATION

PROJECT NUMBER: 2500713
ISSUED FOR: DOC REL 02 - SPA
ISSUE DATE: 05/06/26



BENCHMARKS

BM#1
HYDRANT B.M. SW FLANGE BOLT ELEVATION 941.53



NEW OFFICE BUILDING
OWEN-AMES-KIMBALL
CO.

GHAFARI

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CONSULTANT INFORMATION



REGISTRATION SEAL

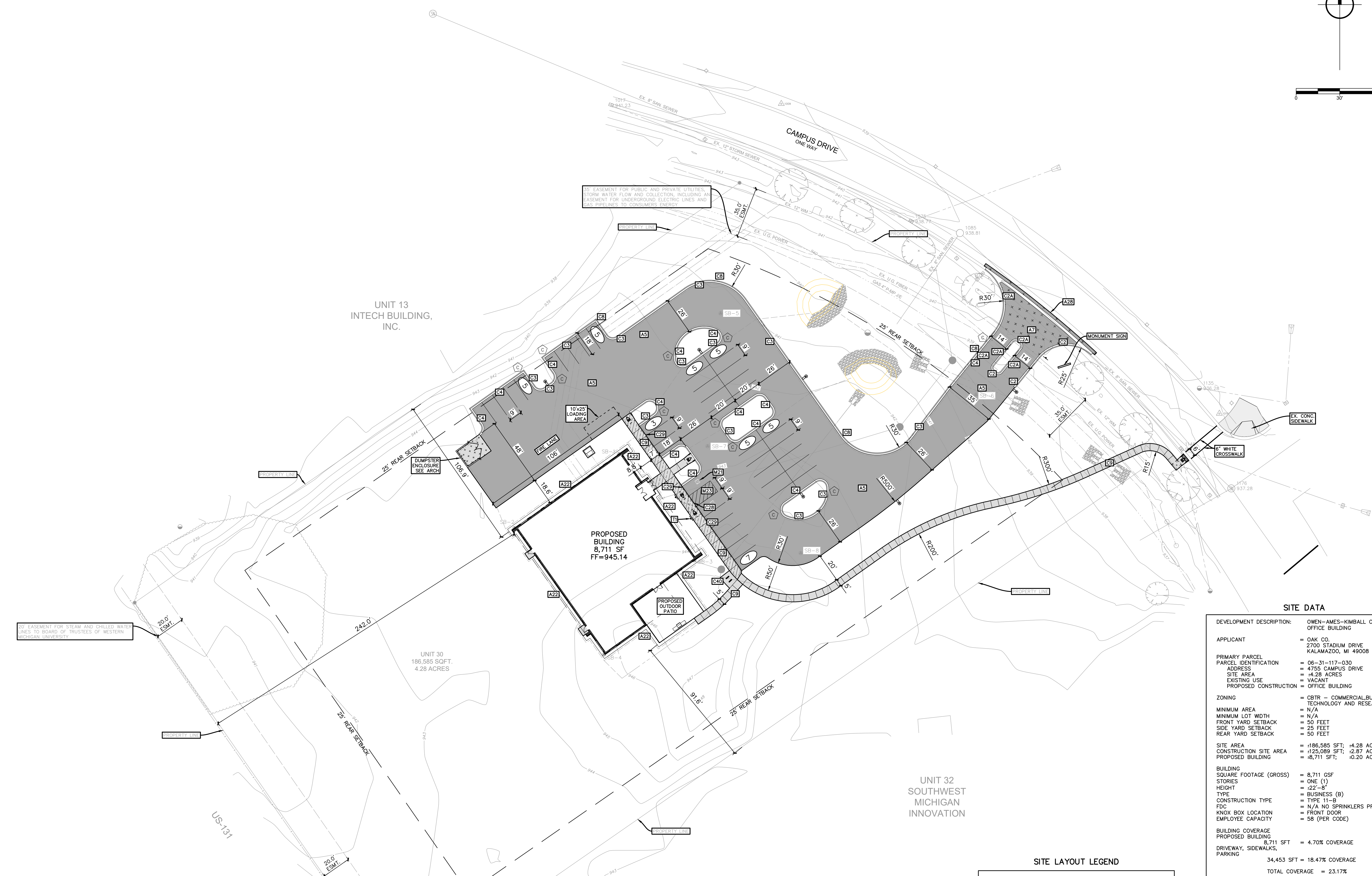
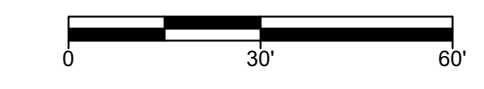
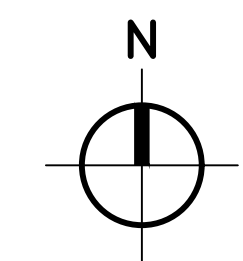
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05/06/26		DOC REL 02 - SPA
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08/28/25		PRELIMINARY SD
		DATE
		DOC REL # - DESCRIPTION

PROJECT #	2600108
PROJECT MANAGER	A NELSON
DESIGNED BY	M ANDERSON
DRAWN BY	J VERPLANK
QUALITY CHECK	A LASTNAME
SHEET TITLE	

SITE PLAN

C2-00-00
SHEET NUMBER



SITE DATA

DEVELOPMENT DESCRIPTION: OWEN-AMES-KIMBALL CO. (OAK) OFFICE BUILDING
 APPLICANT = OAK CO. 2700 STADIUM DRIVE KALAMAZOO, MI 49008
 PRIMARY PARCEL = 06-31-117-030
 PARCEL IDENTIFICATION ADDRESS = 4755 CAMPUS DRIVE
 SITE AREA = 4.28 ACRES
 EXISTING USE = VACANT
 PROPOSED CONSTRUCTION = OFFICE BUILDING
 ZONING = CBTR - COMMERCIAL BUSINESS, TECHNOLOGY AND RESEARCH
 MINIMUM AREA = N/A
 MINIMUM LOT WIDTH = 50 FEET
 FRONT YARD SETBACK = 25 FEET
 SIDE YARD SETBACK = 50 FEET
 REAR YARD SETBACK = 50 FEET
 SITE AREA = 186,585 SFT; 4.28 ACRES
 CONSTRUCTION SITE AREA = 125,089 SFT; 2.87 ACRES
 PROPOSED BUILDING = 98,711 SFT; 2.26 ACRES
 BUILDING SQUARE FOOTAGE (GROSS) = 8,711 GSF
 STORIES = ONE (1)
 HEIGHT = 22'-8"
 TYPE = BUSINESS (B)
 CONSTRUCTION TYPE = TYPE 11-B
 FDC = N/A NO SPRINKLERS PROPOSED
 KNOX BOX LOCATION = FRONT DOOR
 EMPLOYEE CAPACITY = 58 (PER CODE)
 BUILDING COVERAGE PROPOSED BUILDING = 8,711 SFT = 4.70% COVERAGE
 DRIVEWAY, SIDEWALKS, PARKING = 34,453 SFT = 18.47% COVERAGE
 TOTAL COVERAGE = 23.17%
 MAXIMUM BUILDING COVERAGE = 30%
 MAXIMUM IMPERMEABLE COVERAGE = 70%
 LAND RESERVED FOR OPEN SPACE = 50%
 TOTAL ACREAGE = 4.28 ACRES
 DEDICATED OPEN SPACE = 2.14 ACRES
 PARKING REQUIRED (1 SPACE/300 SFT) = 29 SPACES
 PARKING PROVIDED = 40 SPACES
 STANDARD PARKING = 38 SPACES
 B.F. VAN ACCESSIBLE = 2 SPACES/1 B.F. AISLE
 BIKE PARKING (1/15 PERSONS) = 4 SPACES
 58 PERSONS/15 = 4 SPACES REQUIRED
 BIKE PARKING PROVIDED = 4 SPACES

SITE LAYOUT LEGEND

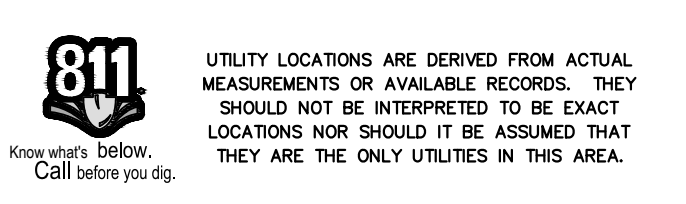
CONCRETE CURB & GUTTER	
SIGN	
BARRIER FREE LANDING	
STANDARD DUTY CONCRETE PAVEMENT	
STANDARD DUTY BITUMINOUS PAVEMENT	
HEAVY DUTY BITUMINOUS PAVEMENT	
HEAVY DUTY CONCRETE PAVEMENT	
SNOW MELT CONCRETE PAVEMENT	
SOIL BORING	
TRAFFIC FLOW	
PARKING STALL COUNT	
TRANSITION FROM NORMAL TO REVERSE SLOPE GUTTER SECTION (5' TRANSITION LENGTH)	
LIGHT POLE (REFER TO AE PLANS)	

SITE LAYOUT NOTES

- SEE ELECTRICAL PLANS FOR LOCATION AND DETAILS ON SITE LIGHTING AND TRANSFORMER.
- REFER TO SPECIFICATIONS FOR BITUMINOUS PAVEMENT MIX REQUIREMENTS.
- REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE STOOP CONNECTION DETAILS AND DUMPSTER ENCLOSURE DETAILS.
- REFER TO SPECIFICATIONS FOR PAVEMENT EXPANSION AND CONTROL JOINTS.
- REFER TO MECHANICAL DRAWINGS FOR LOCATION AND DETAILS OF EQUIPMENT PADS.
- ALL BUILDING WORKING POINTS AND REFERENCE POINTS ARE GIVEN AT THE OUTSIDE CORNER OF BUILDING.
- COORDINATE WITH IRRIGATION AND ELECTRICAL CONTRACTOR FOR SIZE AND PLACEMENT OF ALL SLEEVES PRIOR TO PAVING, CONCRETE AND RESTORATION WORK.
- STANDARD PAVEMENT MARKINGS SHALL BE YELLOW. BARRIER FREE PAVEMENT MARKINGS SHALL BE BLUE.

SITE LAYOUT KEY

A5	STANDARD DUTY BITUMINOUS PAVEMENT	SEE DETAIL A5
A7	HEAVY DUTY BITUMINOUS PAVEMENT	SEE DETAIL A7
A22	GRAVEL MAINTENANCE STRIP	SEE DETAIL A22
A28	BUTT JOINT CONNECTION TO EXISTING PAVEMENT	SEE DETAIL A28
C0	EXPANSION AND CONTROL JOINT	SEE DETAIL C0
C2	TIP IN MDOT DET D1, MOD	SEE DETAIL C2
C2A	TIP OUT MDOT DET D1, MOD	SEE DETAIL C2A
C3	TYPE 1 CONCRETE CURB & GUTTER	SEE DETAIL C3
C4	TYPE 2 CONCRETE CURB & GUTTER	SEE DETAIL C4
C8	CONCRETE GUTTER SPILLWAY	SEE DETAIL C8
C9	STANDARD DUTY CONCRETE WALKWAY/PAVEMENT	SEE DETAIL C9
C10	HEAVY DUTY CONCRETE WALKWAY/PAVEMENT	SEE DETAIL C10
C28	CONCRETE FLUSH TURNED DOWN WALK	SEE DETAIL C28
C29	CONCRETE TURNED DOWN WALK	SEE DETAIL C29
C40	BIKE LOOP LAYOUT	SEE DETAIL C40
M21	MISCELLANEOUS BARRIER FREE SYMBOL	SEE DETAIL M21
M23	BARRIER-FREE PARKING SPACE LAYOUT - VAN	SEE DETAIL M23
T1	BARRIER FREE PARKING SIGN	SEE DETAIL T1



GHAFARI ASSOCIATES © 2025 5/6/2026 3:59:45 PM MILLER T:\CADD\Projects\2025\250608_OAK_4755 Campus Drive\PROJ\250608_C200 - Site Plan.dwg



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CONSULTANT INFORMATION

Prein & Newhof
Engineers • Surveyors • Environmental • Laboratory

REGISTRATION SEAL

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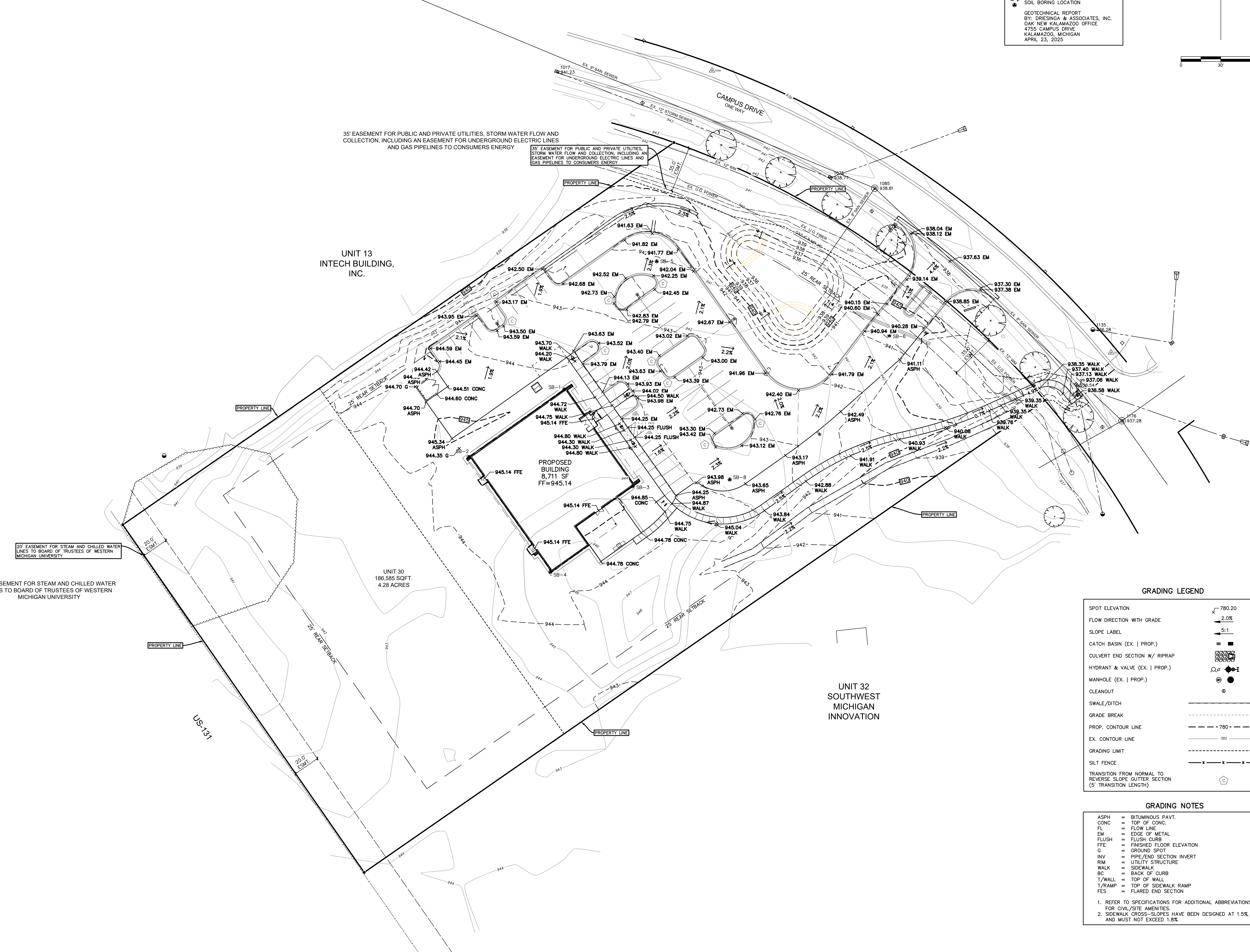
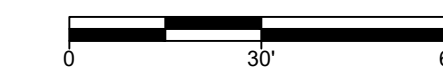
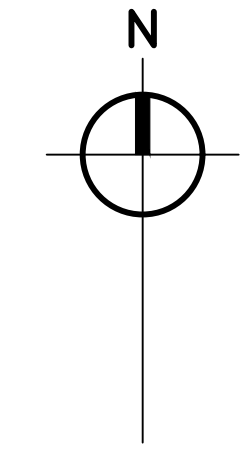
PROJECT # 2600108
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DESIGNED BY M ANDERSON
DRAWN BY J VERPLANK
QUAL CHECK A LASTNAME
SHEET TITLE

GRADING PLAN

C3-00-00
SHEET NUMBER

GEOTECHNICAL REPORT

SOIL BORING LOCATION
GEOTECHNICAL REPORT
BY: DRIESING & ASSOCIATES, INC.
OAK NEW KALAMAZOO OFFICE
4755 CAMPUS DRIVE
KALAMAZOO, MICHIGAN
APRIL 23, 2025



GRADING LEGEND

- SPOT ELEVATION: x 780.20
- FLOW DIRECTION WITH GRADE: arrow with 2.0%
- SLOPE LABEL: S:1
- CATCH BASIN (EX. | PROP.): square symbol
- CULVERT END SECTION W/ RIPRAP: rectangle with diagonal lines
- HYDRANT & VALVE (EX. | PROP.): circle with crosshair
- MANHOLE (EX. | PROP.): circle with center dot
- CLEANOUT: small circle
- SWALE/DITCH: dashed line
- GRADE BREAK: dashed line with 'x' marks
- PROP. CONTOUR LINE: dashed line with 'x' marks
- EX. CONTOUR LINE: solid line
- GRADING LIMIT: dashed line with 'x' marks
- GRADING LIMIT: dashed line with 'x' marks
- SILT FENCE: line with 'x' marks
- TRANSITION FROM NORMAL TO REVERSE SLOPE (GUTTER SECTION) (5' TRANSITION LENGTH): trapezoidal shape

GRADING NOTES

- ASPH = BITUMINOUS PAVT.
- CONC = TOP OF CONC.
- FL = FLOW LINE
- EM = EDGE OF METAL
- FLUSH = FLUSH CURB
- FTE = FINISHED FLOOR ELEVATION
- G = GROUND SPOT
- R/V = PIPE/END SECTION INVERT
- R/W = UTILITY STRUCTURE
- WALK = SIDEWALK
- BC = BACK OF CURB
- T/WALL = TOP OF WALL
- T/RAMP = TOP OF SIDEWALK RAMP
- FES = FLARED END SECTION

1. REFER TO SPECIFICATIONS FOR ADDITIONAL ABBREVIATIONS FOR CIVIL/SITE AMENITIES
2. SIDEWALK CROSS-SLOPES HAVE BEEN DESIGNED AT 1.5%, AND MUST NOT EXCEED 1.8%

20' EASEMENT FOR STEAM AND CHILLED WATER LINES TO BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY

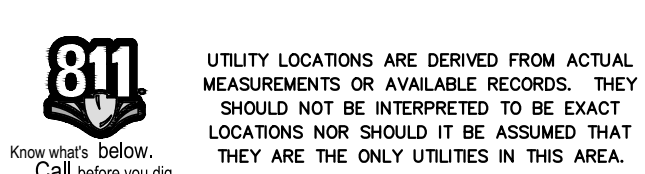
35' EASEMENT FOR PUBLIC AND PRIVATE UTILITIES, STORM WATER FLOW AND COLLECTION, INCLUDING AN EASEMENT FOR UNDERGROUND ELECTRIC LINES AND GAS PIPELINES TO CONSUMERS ENERGY

35' EASEMENT FOR PUBLIC AND PRIVATE UTILITIES, STORM WATER FLOW AND COLLECTION, INCLUDING AN EASEMENT FOR UNDERGROUND ELECTRIC LINES AND GAS PIPELINES TO CONSUMERS ENERGY

UNIT 13
INTECH BUILDING,
INC.

UNIT 30
186,585 SQFT.
4.28 ACRES

UNIT 32
SOUTHWEST
MICHIGAN
INNOVATION

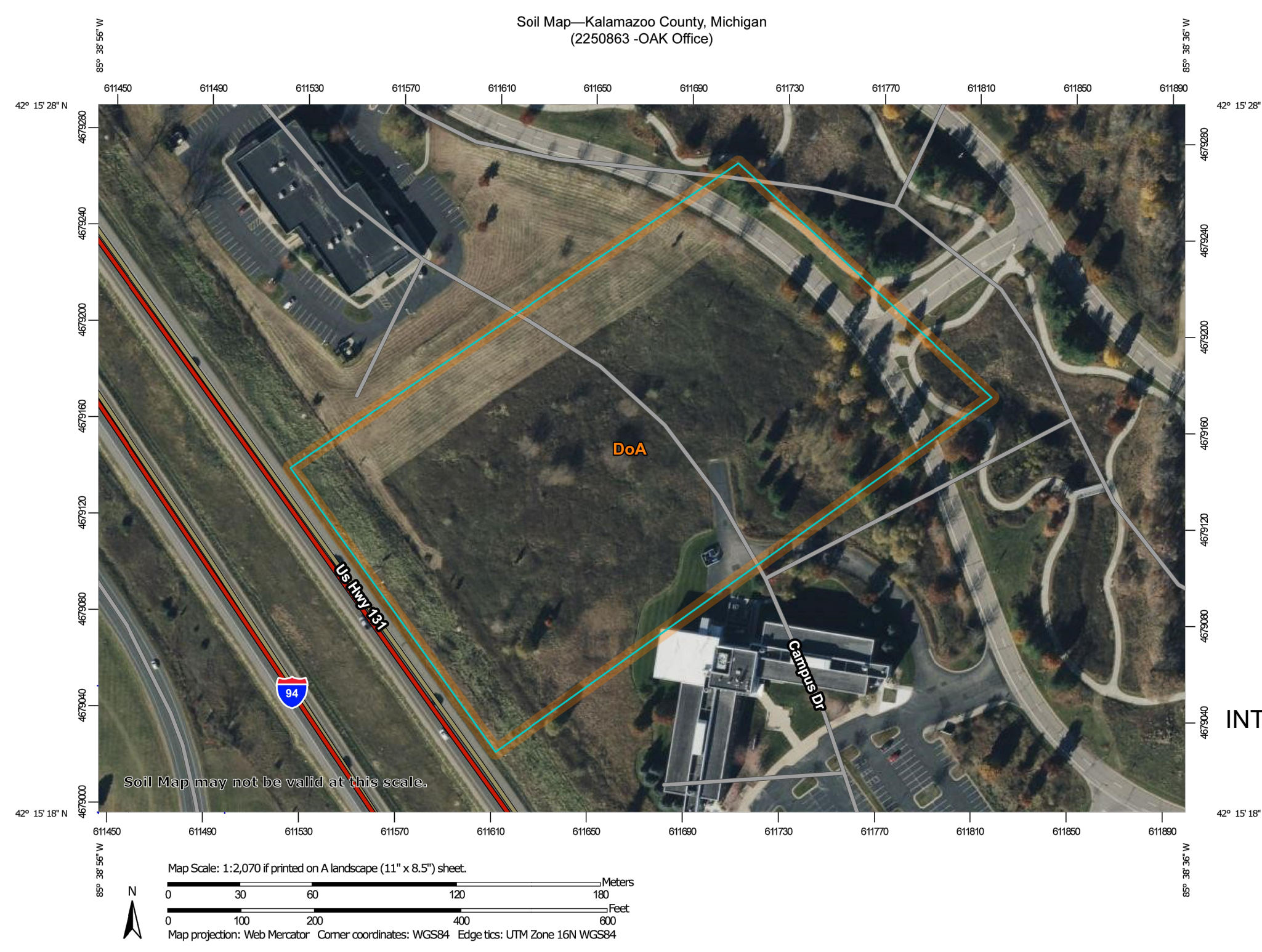


UTILITY LOCATIONS ARE DERIVED FROM ACTUAL MEASUREMENTS OR AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATIONS NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THIS AREA.

GHAFARI ASSOCIATES © 2025 5/6/2026 4:00:04 PM J MILLER T:\C\300 Projects\2025\2506088_CAD_4755 Campus DiverL_P\DOC\2506088_C300 - Grading Plan.dwg

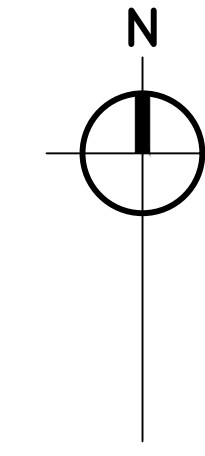
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in ADI	Percent of ADI
DoA	Dowagiac loam, 0 to 3 percent slopes	8.5	100.0%
Totals for Area of Interest		8.5	100.0%



GEOTECHNICAL REPORT

SOIL BORING LOCATION
 GEOTECHNICAL REPORT
 BY: DRIESING & ASSOCIATES, INC.
 OAK NEW KALAMAZOO OFFICE
 4755 CAMPUS DRIVE
 KALAMAZOO, MICHIGAN
 APRIL 23, 2025



35' EASEMENT FOR PUBLIC AND PRIVATE UTILITIES, STORM WATER FLOW AND COLLECTION, INCLUDING AN EASEMENT FOR UNDERGROUND ELECTRIC LINES AND GAS PIPELINES TO CONSUMERS ENERGY

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UNIT 13
INTECH BUILDING, INC.

PROPOSED BUILDING
6,711 SF
FF=945.14

UNIT 32
SOUTHWEST MICHIGAN INNOVATION

20' EASEMENT FOR STEAM AND CHILLED WATER LINES TO BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY

20' EASEMENT FOR STEAM AND CHILLED WATER LINES TO BOARD OF TRUSTEES OF WESTERN MICHIGAN UNIVERSITY

UNIT 30
186,585 SQFT.
4.28 ACRES

EROSION CONTROL NOTES

1. THE CONTRACTOR MUST COMPLY WITH MUNICIPALITY RULES & REGULATIONS FOR SOIL EROSION CONTROL & SUBMIT A SCHEDULE OF SOIL EROSION ACTIVITIES TO THE LOCAL ENFORCING AGENCY PRIOR TO ANY EARTH CHANGE.
2. THE CONTRACTOR MUST INSPECT ALL TEMPORARY & PERMANENT EROSION CONTROL MEASURES WEEKLY & IMMEDIATELY (WITHIN 24 HOURS) AFTER A SIGNIFICANT RAINFALL EVENT. ALL MEASURES REQUIRING MAINTENANCE REPAIR, OR REPLACEMENT SHALL BE CORRECTED IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER.
3. PERMANENT SOIL EROSION CONTROL MEASURES, PLANTINGS & MULCHING FOR ALL SLOPES, CHANNELS, DITCHES, OR DISTURBED LAND AREA SHALL BE COMPLETED WITHIN FIVE (5) CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH CHANGE HAS BEEN COMPLETED.
4. ALL SLOPES SHALL BE TRACKED PERPENDICULAR TO THE SLOPE TO AID IN EROSION CONTROL OF SLOPED AREAS.
5. WHERE SEASONAL LIMITATIONS OR CONSTRUCTION DELAYS PREVENT SCHEDULED INSTALLATION OF PERMANENT CONTROL FACILITIES, APPROVED TEMPORARY MEASURES SHALL BE INSTALLED WITHIN FIVE (5) CALENDAR DAYS & MAINTAINED UNTIL REPLACED BY PERMANENT FACILITY.
6. THE LOCATION OF ANY TOPSOIL STOCKPILE MUST BE DESIGNATED BY THE OWNER PRIOR TO CONSTRUCTION. THIS AREA MUST BE ENCLOSED BY SILT FENCE A REASONABLE DISTANCE FROM THE TOE OF SLOPE UNTIL SUCH TIME IT IS USED TO TOPSOIL THE SITE.

CONSTRUCTION SEQUENCING

1. APPLY FOR & OBTAIN ALL REQUIRED PERMITS INCLUDING BUT NOT LIMITED TO SOIL SEDIMENT CONTROL PERMIT AND STATE NPDES PERMIT BY RULE FOR CONSTRUCTION ACTIVITIES.
2. INSTALL SILT FENCING & PERIMETER SOIL EROSION CONTROL MEASURES INDICATED ON THE PLANS & MAINTAIN AT ALL TIMES DURING CONSTRUCTION.
3. STRIP TOPSOIL AND REMOVE UNSUITABLE MATERIALS UNDER THE PROPOSED HARD SURFACED AREAS. STOCKPILE TOPSOIL IN AN AREA OUTSIDE OF THE IMPROVED AREAS AS DESIGNATED BY THE OWNER.
4. CONSTRUCT PROPOSED IMPROVEMENTS
5. RESTORE ALL DISTURBED AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.
6. AFTER ALL DISTURBED AREAS HAVE BEEN RESTORED & VEGETATION IS ESTABLISHED, REMOVE SOIL EROSION CONTROL MEASURES.

EROSION CONTROL NOTE

1. CONTRACTOR TO INSTALL SILT FENCING SHOWN AFTER THE DETENTION AREAS HAVE BEEN DUG TO PROTECT FROM RUNOFF FROM THE ADJACENT PARKING LOT CONSTRUCTION.

GRADING LEGEND

SPOT ELEVATION	x 780.20
FLOW DIRECTION WITH GRADE	2.0%
SLOPE LABEL	5:1
CATCH BASIN (EX. PROP.)	[Symbol]
CULVERT END SECTION W/ RIPRAP	[Symbol]
HYDRANT & VALVE (EX. PROP.)	[Symbol]
MANHOLE (EX. PROP.)	[Symbol]
CLEANOUT	[Symbol]
SWALE/DITCH	[Symbol]
GRADE BREAK	[Symbol]
PROP. CONTOUR LINE	- - - 780 - - -
EX. CONTOUR LINE	780
GRADING LIMIT	[Symbol]
SILT FENCE	[Symbol]
TRANSITION FROM NORMAL TO REVERSE SLOPE GUTTER SECTION (5' TRANSITION LENGTH)	[Symbol]

SOIL EROSION CONTROL LEGEND

3 PERMANENT/TEMPORARY SEEDING (T/P)	26 GEOTEXTILE SILT FENCE (T)
7 RIPRAP (P)	29 INLET PROTECTION SILT SACK (T)
55 CONSTRUCTION ACCESS (T)	33 MULCH BLANKETS & HIGH VELOCITY MULCH BLANKETS (P)
(T) TEMPORARY CONTROL MEASURE	
(P) PERMANENT CONTROL MEASURE	

ALL MEASURES PLACED IN ACCORDANCE OF MDT STANDARD DETAIL R-96-E SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

4" OF TOPSOIL AND SEED MUST BE INSTALLED AT ALL DISTURBED AREAS

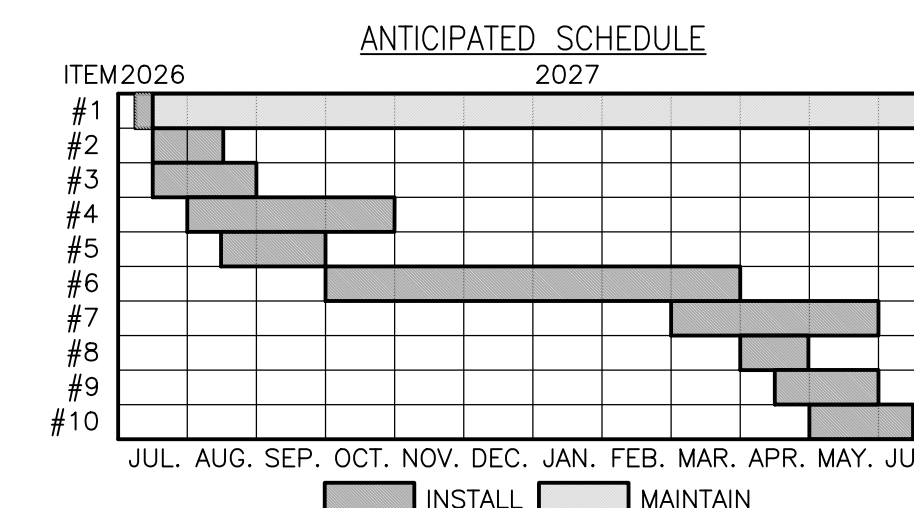
TEMPORARY SEEDING SHALL BE CAST ON ALL AREAS WITHIN 1 WEEK OF DISTURBANCE

INSTALL SILT FENCE AROUND THE ENTIRE SITE PERIMETER

PLACE CATCH BASIN SILT SACK OR EQUIVALENT AT ALL EXISTING AND PROPOSED CATCH BASINS. ADDITIONALLY, PLACE FILTER SOCKS AROUND ALL INLETS IN UNPAVED AREAS.

WESTERN EXCELSIOR "EXCEL SR-2" DOUBLE NET SOIL EROSION CONTROL BLANKET (OR APPROVED EQUAL) MUST BE PLACED ON ALL DISTURBED SLOPES 1 AND 4 OR STEEPER AND ON ALL DISTURBED DITCH BOTTOMS

WESTERN EXCELSIOR "EXCEL SR-1" SINGLE NET SOIL EROSION CONTROL BLANKET (OR APPROVED EQUAL) MUST BE PLACED ON ALL DISTURBED AREAS 1 AND 4 OR FLATTER



- #1 - INSTALL EROSION CONTROL DEVICES
- #2 - DEMOLISH (SITE REMOVALS)
- #3 - INSTALL TEMPORARY CONSTRUCTION ENTRANCE
- #4 - INSTALL UNDERGROUND SITE UTILITIES
- #5 - INSTALL BUILDING FOUNDATIONS
- #6 - CONSTRUCT BUILDING
- #7 - SITE GRADING
- #8 - INSTALL CURB & GUTTERS
- #9 - INSTALL PAVING & SIDEWALKS
- #10 - INSTALL LANDSCAPING

NEW OFFICE BUILDING
OWEN-AMES-KIMBALL CO.

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CONSULTANT INFORMATION
Prein & Newhof
 Engineers-Surveyors-Environmental-Laboratory

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PROJECT #	2600108
PROJECT MANAGER	A NELSON
DESIGNED BY	M ANDERSON
DRAWN BY	J VERPLANK
QUAL CHECK	A LASTNAME
SHEET TITLE	

SESC PLAN

C3-01-00
SHEET NUMBER



NEW OFFICE BUILDING
OWEN-AMES-KIMBALL
CO.

GHAFARI

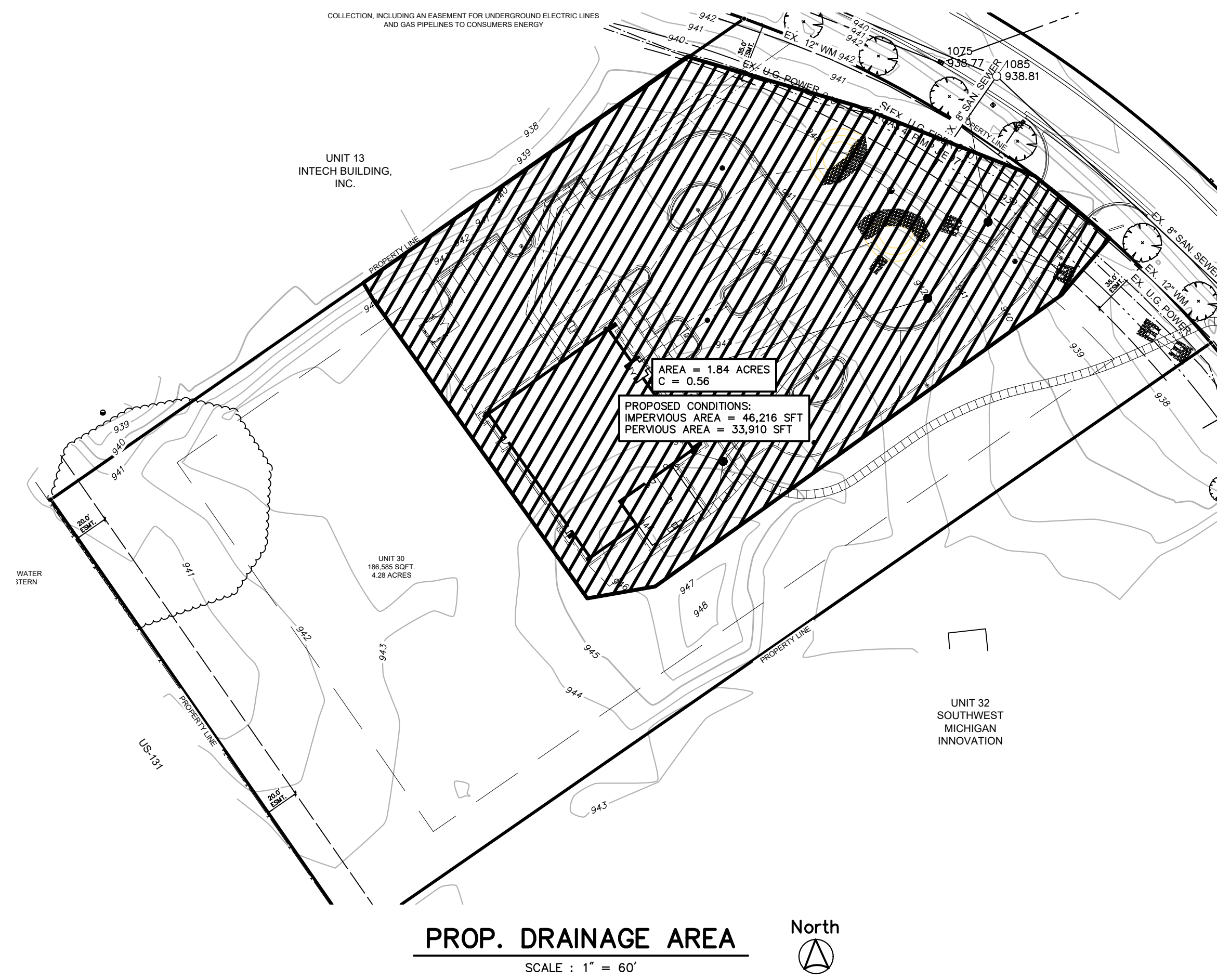
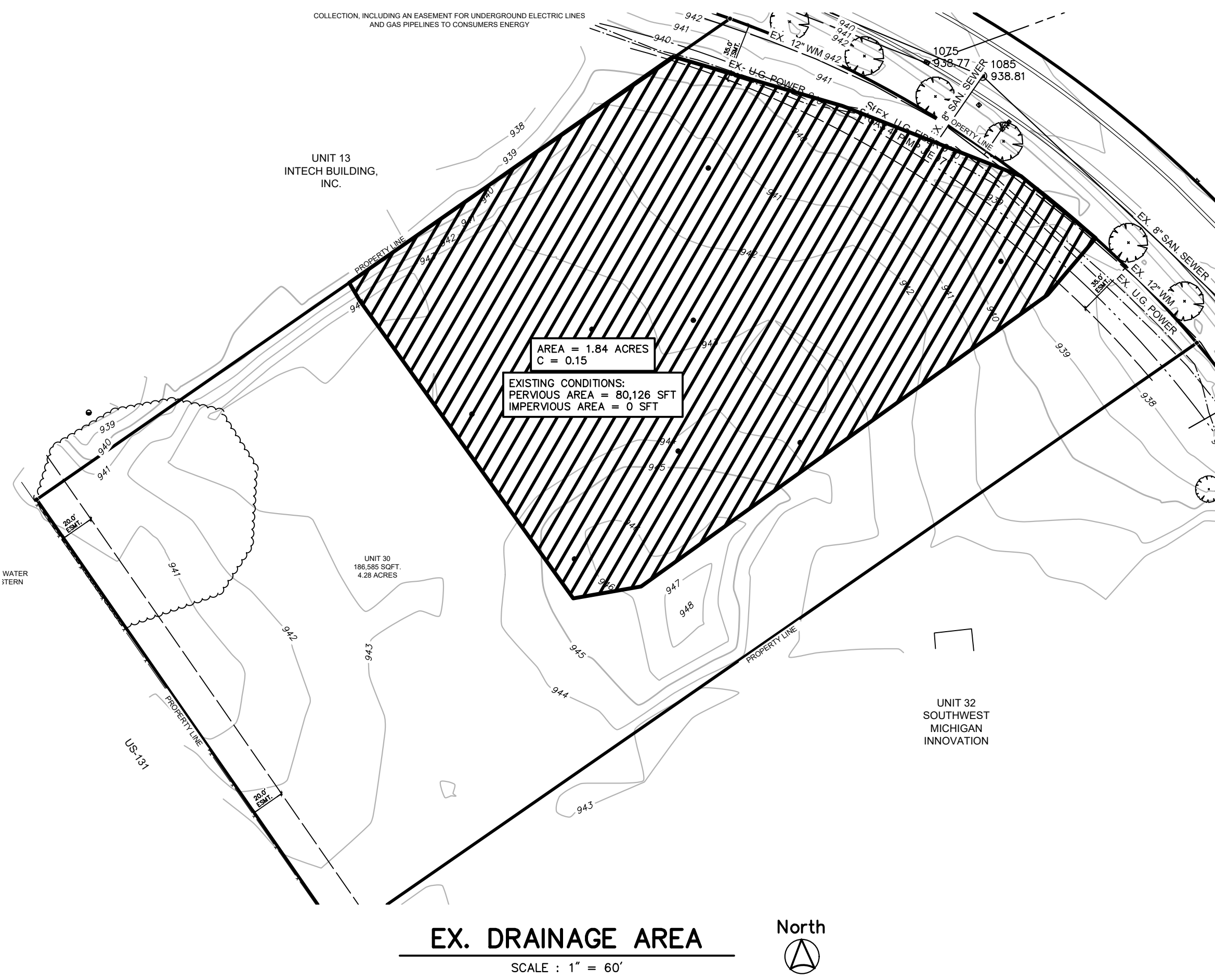
37 OTTAWA AVENUE NW
SUITE 700
GRAND RAPIDS, MI 49503-2900 USA
TEL +1.616.771.0909
www.ghafari.com

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Stormwater Calculations Worksheet

Table with columns for PRE-DEVELOPMENT CONDITIONS and POST-DEVELOPMENT CONDITIONS. Rows include Surface Cover, Runoff Coefficient, C, Area of Surface Cover (ft²), and various flow rate and volume calculations.

COK WORKSHEET SHEET 1

UNIFORM STORMWATER STANDARD 1: WATER QUALITY TREATMENT VOLUME & MTD WORKSHEET

Table for water quality treatment volume and MTD. Includes columns for Proposed Treatment BMP, NJCAT Verified?, NJDEP Certified?, Maximum Treatment Volume, and Maximum Treatment Flow Rate. Includes a table for List All Proposed Treatment BMPs below and Show Locations on the Plans.

COK WORKSHEET SHEET 2

OVERFLOW CALCULATIONS table. Includes Project Name, Date, Q1 = CIA, C (runoff coefficient), I (10 year, 15 min), A (area, acres), Q1, 10-yr undetained peak inflow (cfs), PRIMARY OVERFLOW SIZING - PIPE, Q = vA = 1.48 AR^2/3S^1/2, n, D (in), A (sf), Wetted Perimeter (ft), Hydraulic Radius (ft), Length (ft), Start Elevation, End Elevation, Slope, Flow Provided (ft³/sec), # of pipes, Q2, Total Flow provided, and Q2 > Q1? (YES).

OVERFLOW CALCULATIONS

FOREBAY SIZING table. Includes Project Name, Date, Forebay Volume Required = Treatment Volume * 0.15, Treatment Volume (cft), FOREBAY VOLUME REQUIRED (CFT), FOREBAY VOLUME PROVIDED, Forebay 1 (SE) table with Elevation, Area (sf), Vol. (cft), Cum. Vol (cft), Forebay 2 (NW) table with Elevation, Area (sf), Vol. (cft), Cum. Vol (cft), and TOTAL FOREBAY VOLUME PROVIDED (CFT).

FOREBAY SIZING

UNIFORM STORMWATER STANDARD 2: CHANNEL PROTECTION VOLUME WORKSHEET

Channel Protection Volume Worksheet table. Includes Project Name, Date, List All Proposed Detention/Retention BMPs below and Show Locations on the Plans, Proposed Detention/Retention BMP, Volume Detained/Retained, Infiltration Basin table with Elevation, Area (sf), Vol. (cft), Cum. Vol (cft), Proposed Total Volume, Required Storage Volume (ft³): 2 year - 24 hour, Difference Between Required and Proposed Volume, Is Sufficient Volume Retained/Detained?, Required Storage Volume (ft³): 10 year - 24 hour, and Difference Between Required and Proposed Volume.

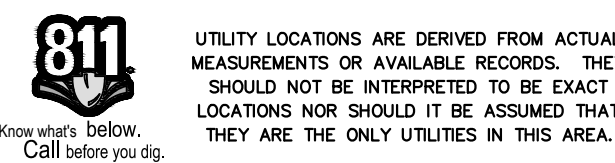
COK WORKSHEET SHEET 3

BASIN SIZING table. Includes Project Name, Date, STORAGE VOLUME PROVIDED table with Elevation, Area (sf), Vol. (cft), Cum. Vol (cft), INFILTRATING VOLUME PROVIDED, Vs (design storage volume, cft), i (design infiltration rate, inches per hour), A (infiltration area, sf), td (drain time, hours), tinf (infiltration time, hours), Vinf (infiltrating volume, cft), TOTAL VOLUME PROVIDED, Vt (cft) = Vs + Vinf.

BASIN SIZING - VOLUME PROVIDED

INFILTRATION SIZING table. Includes Project Name, Date, DOCUMENTATION, Drain Time, The drain time through the BMP is calculated as: t_d = 12 * V_s / (A * i), where: t_d = BMP drain time (hours), V_s = storage volume of the BMP (cubic feet), i = design infiltration rate (inches per hour), A = infiltration area (square feet), 12 = factor to convert inches to feet, The volume of stormwater runoff stored and infiltrated by upstream retentive BMPs (V_bmp) may be subtracted from the flood control event runoff volume reaching the retention basin, Infiltrating Time, t_inf = 2.0 + t_d (0.222 - 0.553 * log10(t_d/72)), Infiltrating Volume, The infiltrating volume is calculated as: V_inf = i * A * t_inf / 12, where: V_inf = infiltrating volume (cubic feet), i = design infiltration rate (inches per hour), A = infiltration area (square feet), t_inf = infiltration time (hours); the period when the BMP is receiving runoff and capable of infiltrating at the design rate, 12 = factor to convert inches to feet.

INFILTRATION SIZING DOCUMENTATION

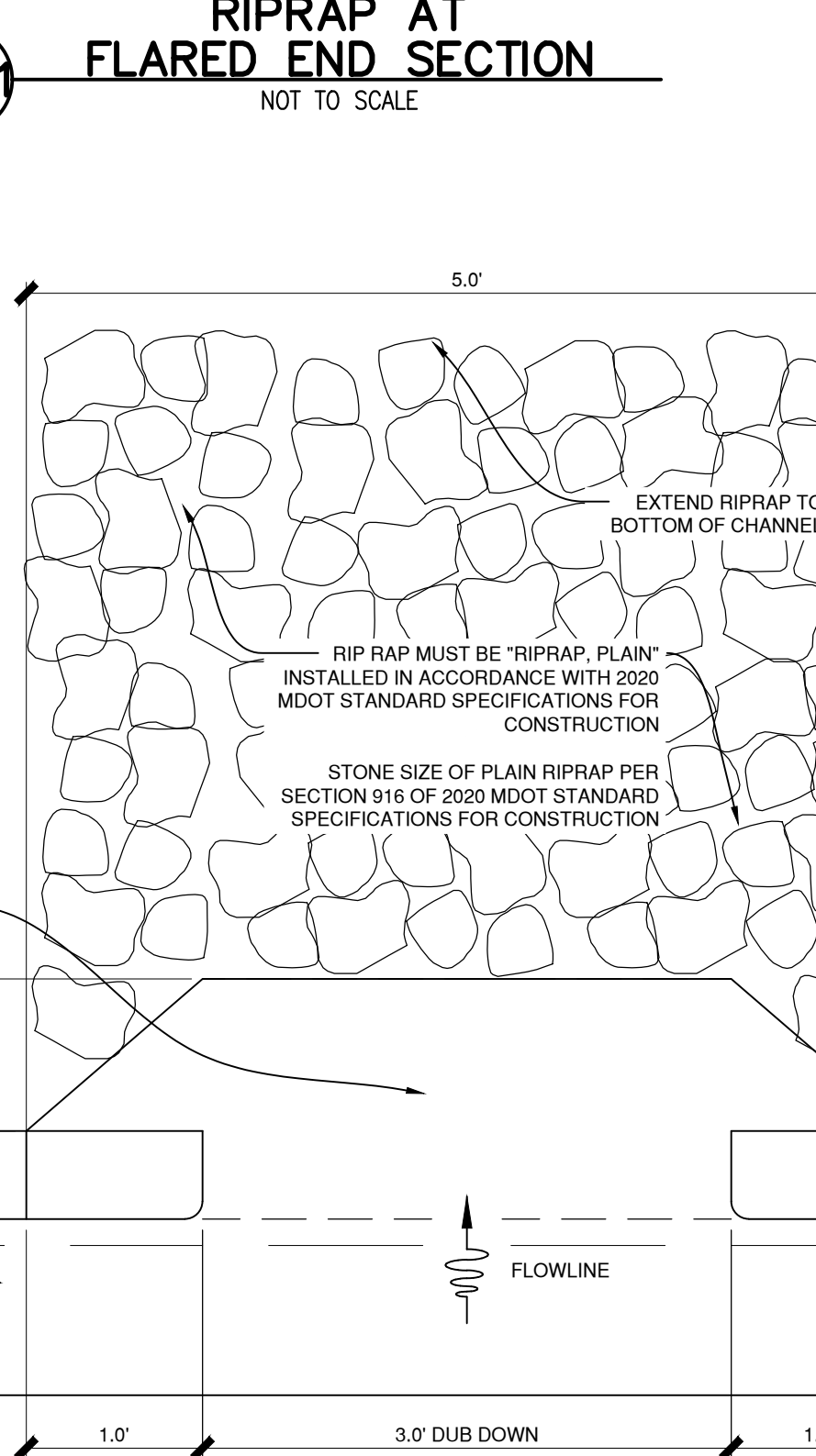
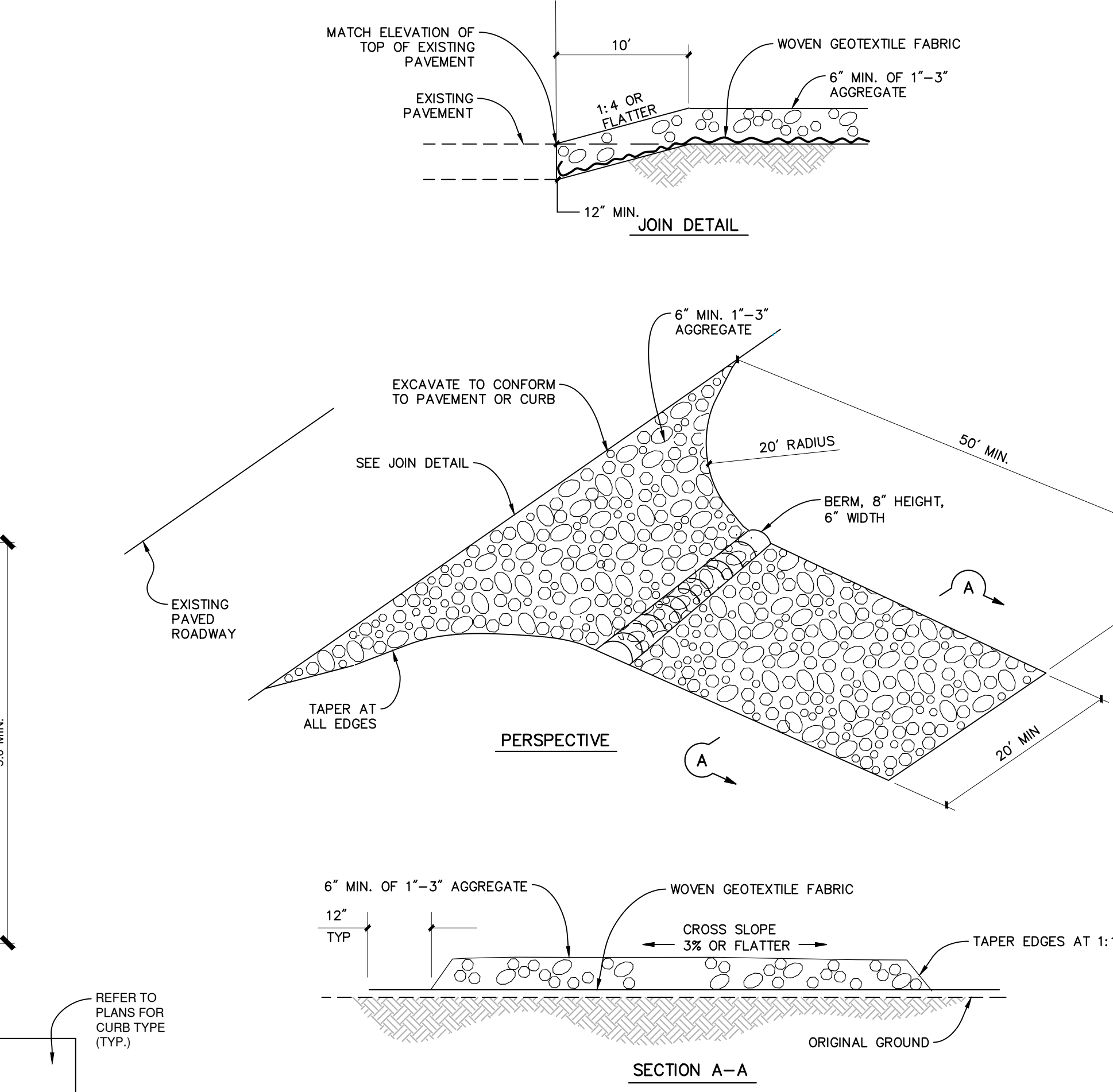
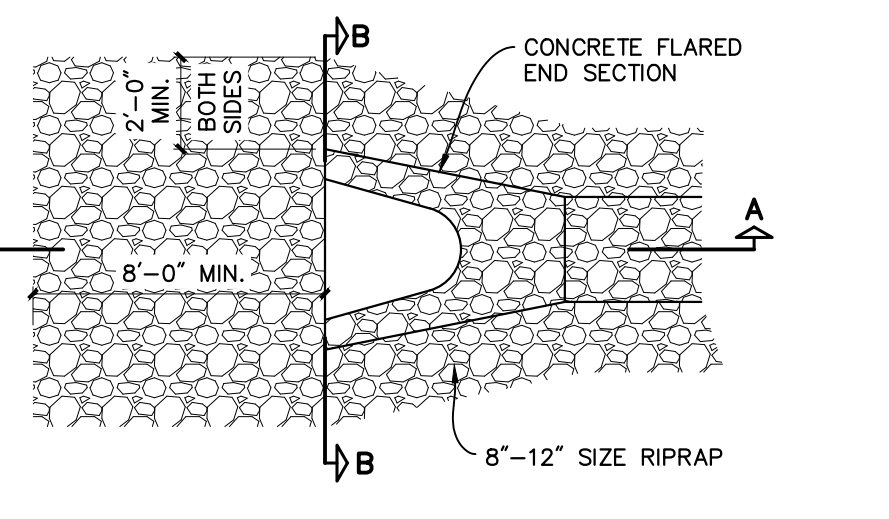
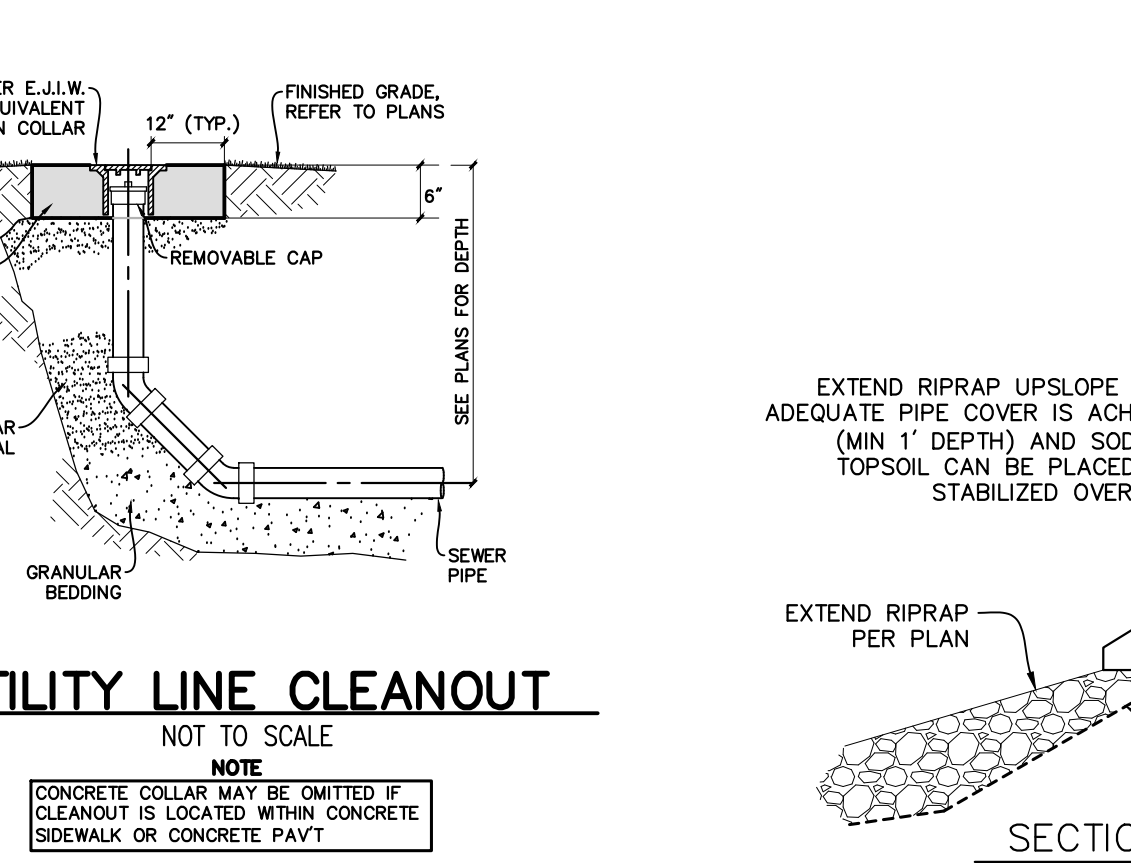
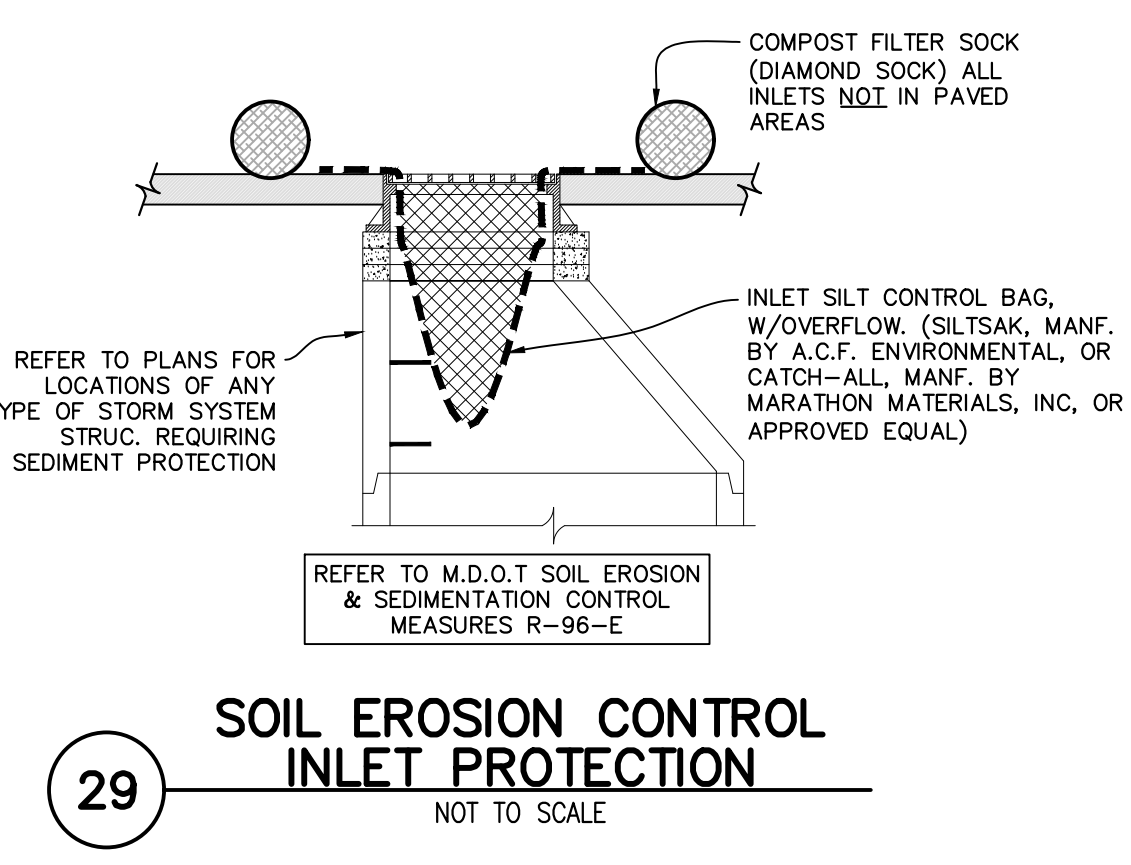
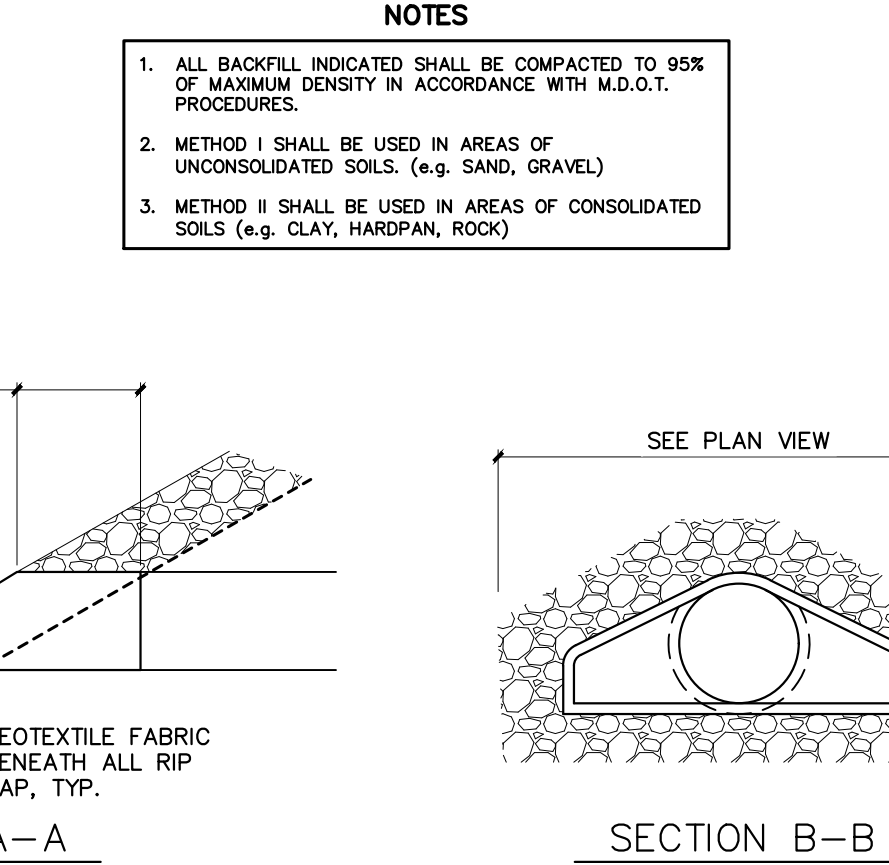
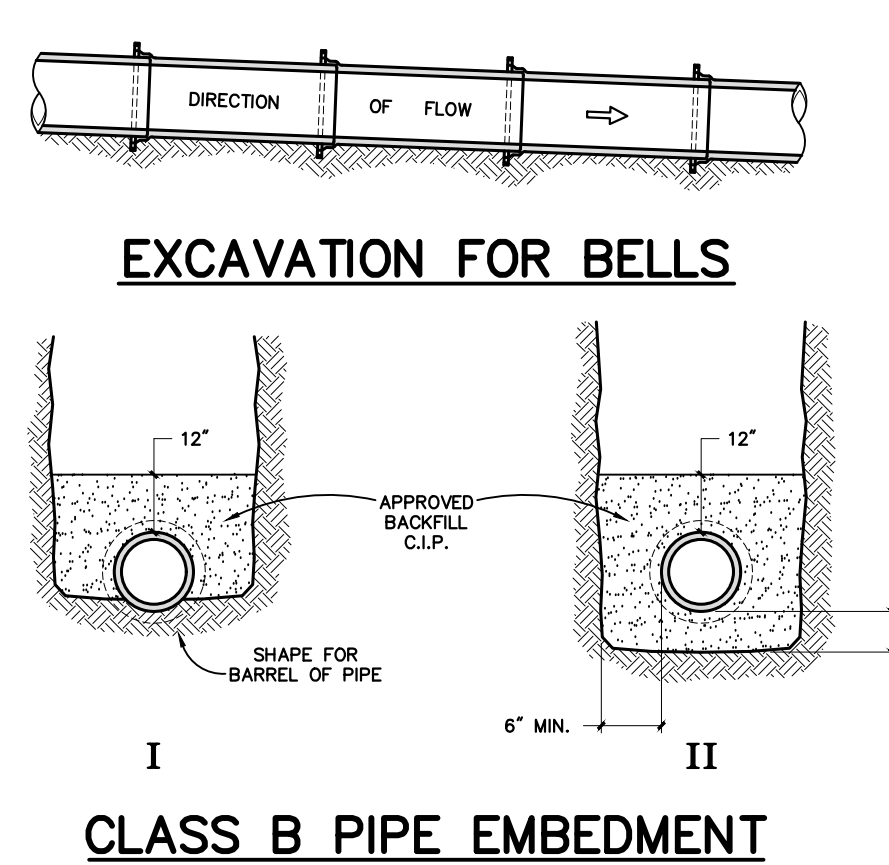
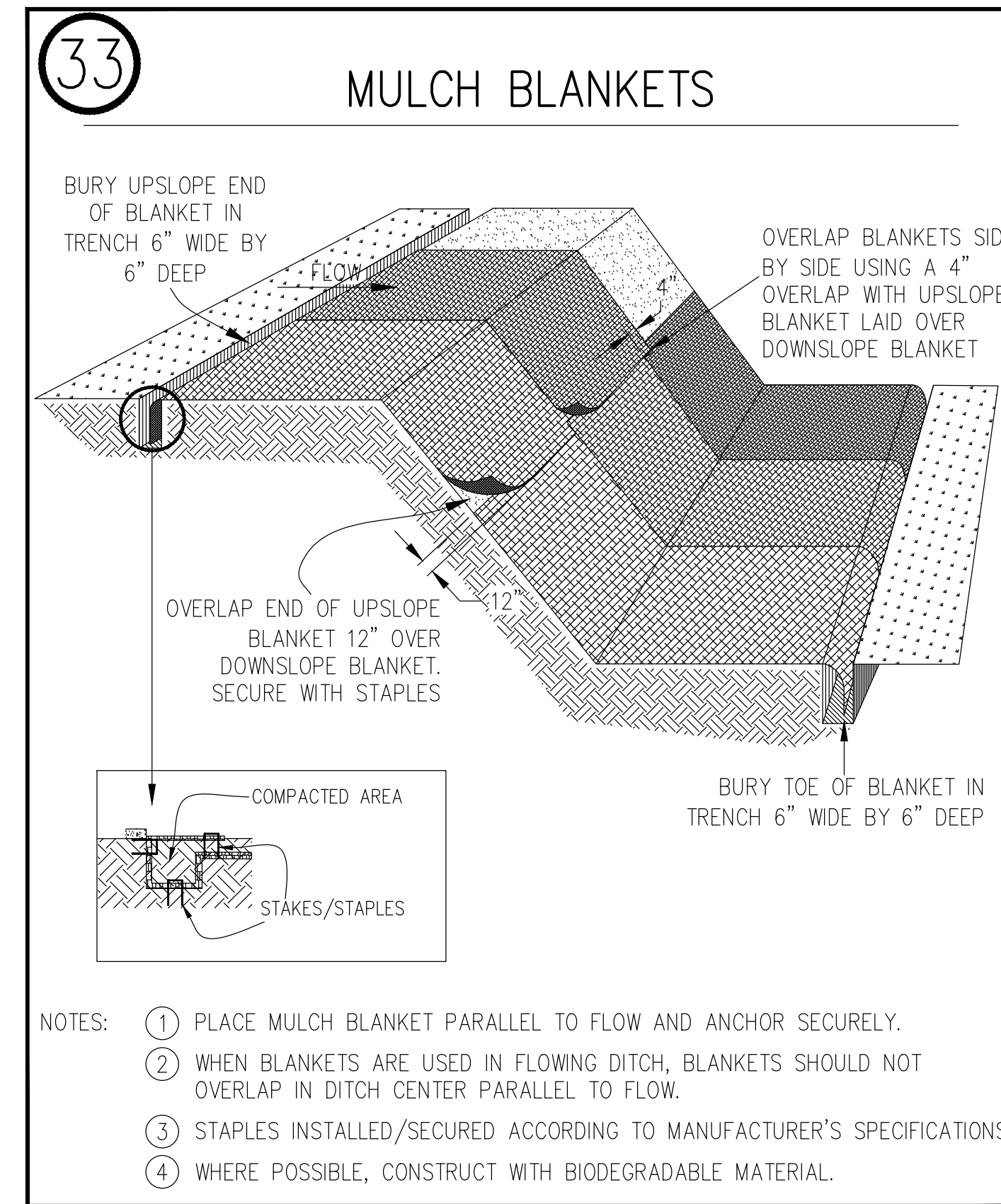


STORMWATER CALCULATIONS

C4-02-00
SHEET NUMBER

REV	DATE	DOC REL # - DESCRIPTION
05/06/26		DOC REL 02 - SPA
04/27/26		DOC REL 01 - SD
04/20/26		OWNER REVIEW
02/11/26		DOC REL 02 - SPA
10/07/25		DOC REL 01 - SD
08/28/25		PRELIMINARY SD
		DATE
		DOC REL # - DESCRIPTION

PROJECT #	2500108
PROJECT MANAGER	A. NELSON
DESIGNED BY	M. ANDERSON
DRAWN BY	J. VERBLANK
QUALITY CHECK	A. LASTNAME
SHEET TITLE	



SIZE OF TYPICAL RIPRAP STONES

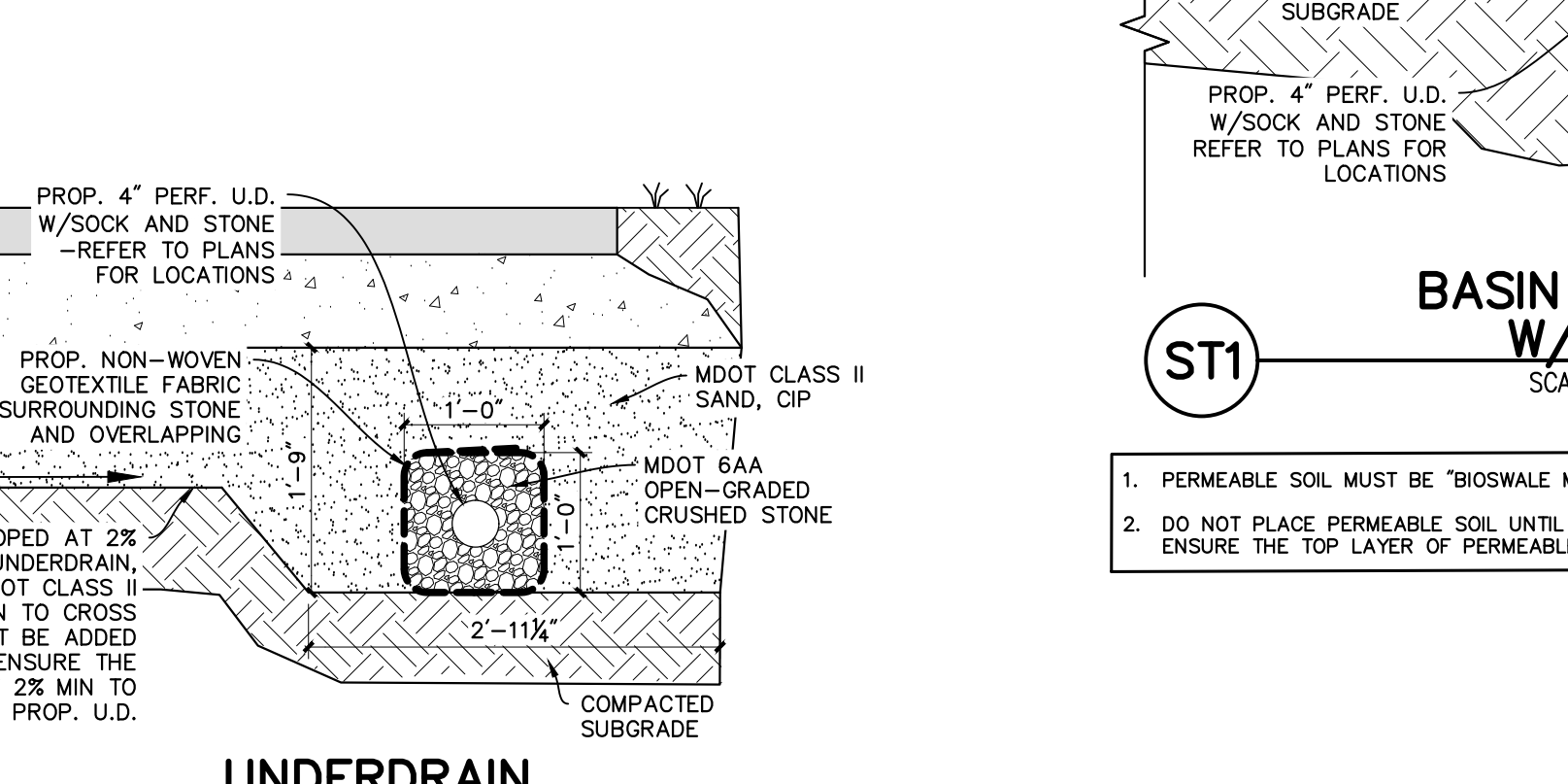
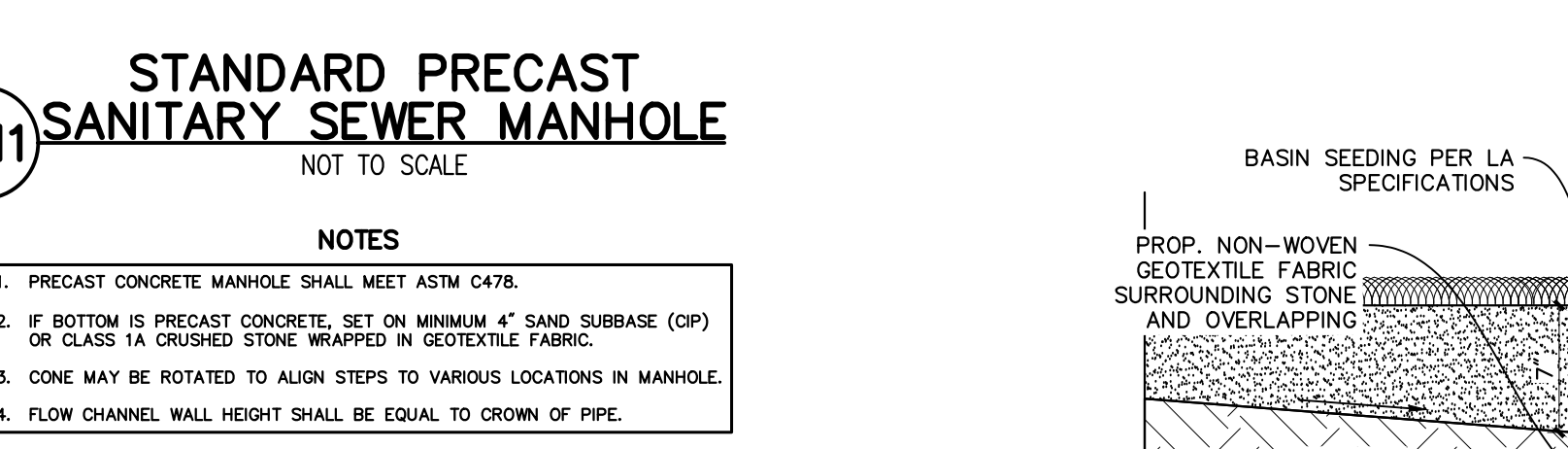
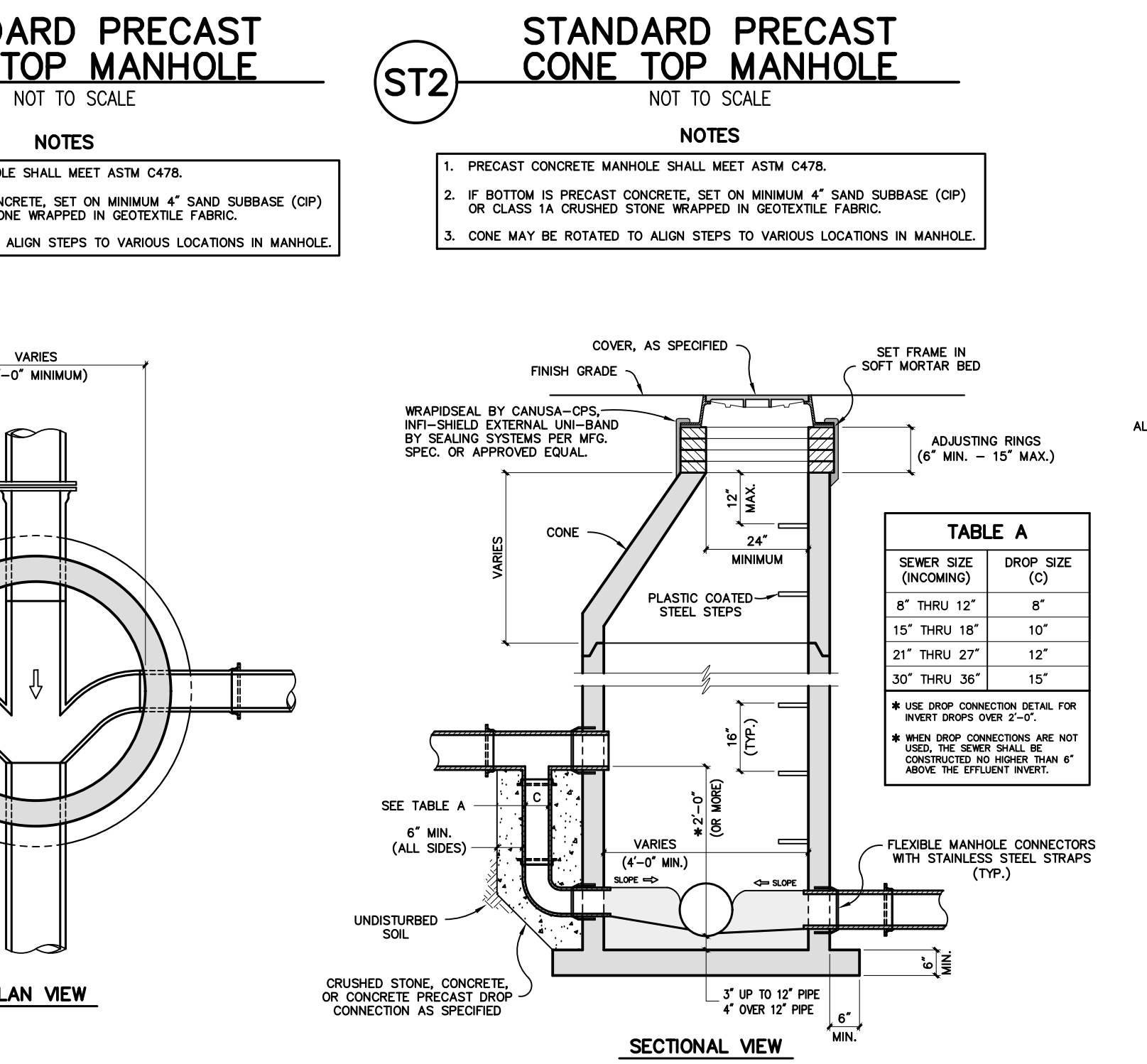
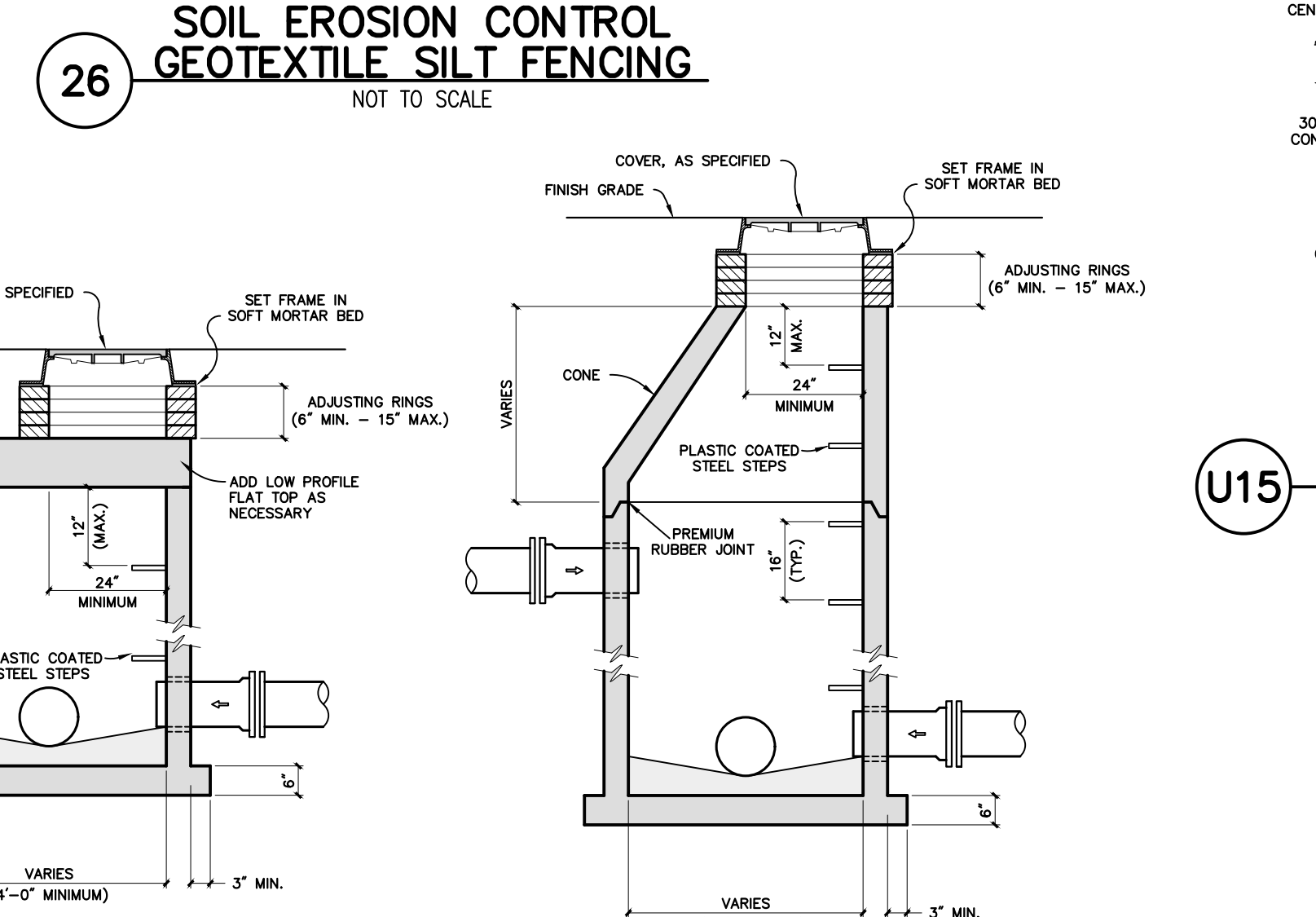
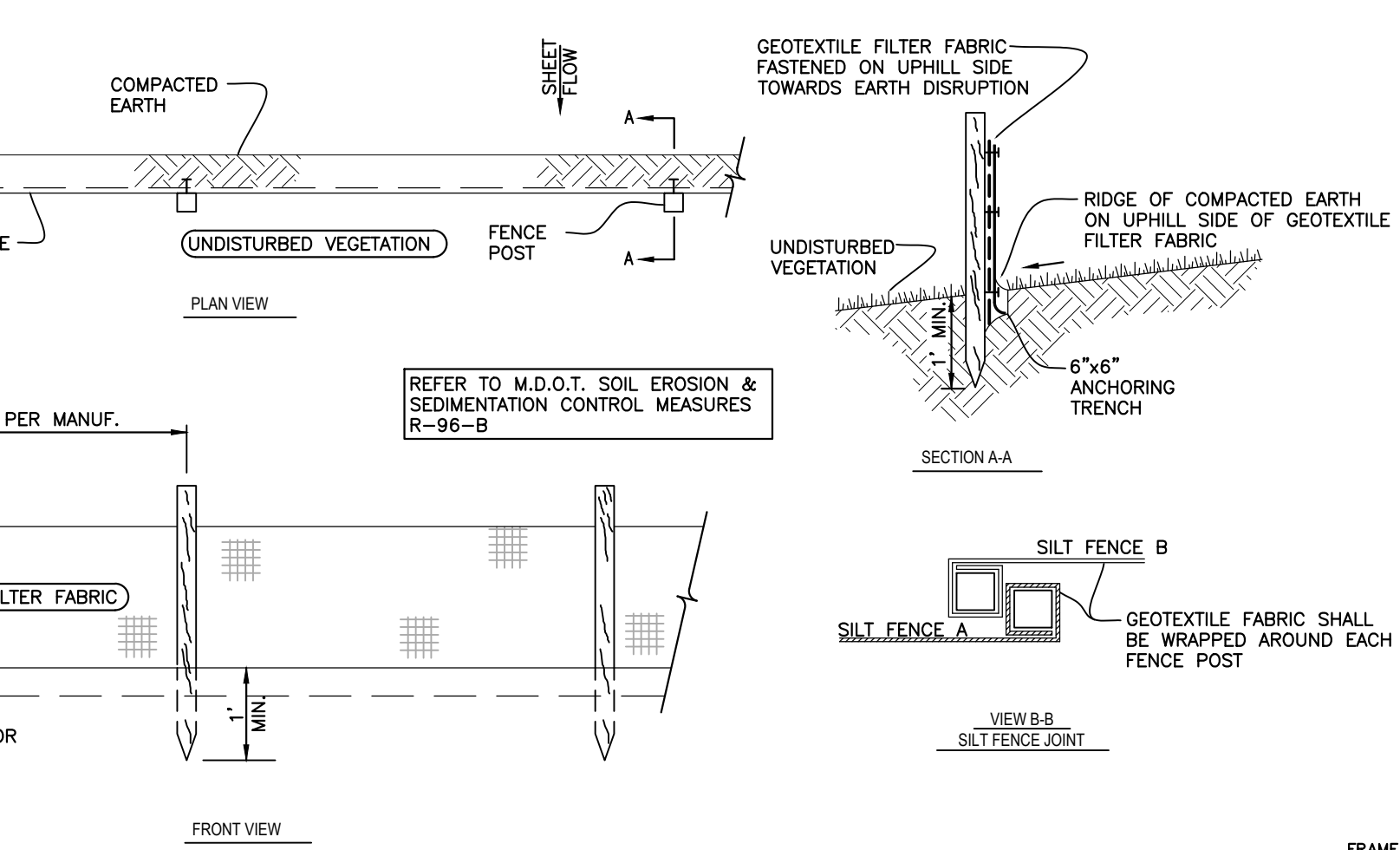
Weight (lbs.)	Average Spherical Diameter (n) D ₅₀	Typical Rectangular Shape Length (n)	Width/Height (n)
50	10	18	6
100	13	21	7
150	14	24	8
300	18	30	10
500	22	36	12
1000	27	45	15
1500	31	52	17
2000	34	57	19
4000	43	72	24
8000	49	83	28
8000	54	90	30

Source: Adapted from USDA NRCS

- Material selected for riprap should be hard, angular, and resistant to weathering. Appropriate material size depends on expected water energy and intended function of the material.
- Riprap mixture should be an even mixture of stone sizes based on the average, or D₅₀. This means 50% of the stone, by size, will be larger than the diameter specified, and 50% will be smaller than the size specified. The diameter of the largest stone should not be more than 1.5 times the D stone size.
- See table on the following page for typical riprap stone sizes.
- Rock shall be placed so that larger rocks are uniformly distributed and in contact with one another. Smaller rocks should fill the voids.
- When in contact with moving water, riprap will tie into a stable bank at the downstream end and will be keyed into the bank at the upstream end. Riprap should extend 3 ft. above the ordinary high water mark or to the top of the bank on short slopes. Extend riprap a minimum 10 ft. beyond active erosion area.

Maintenance

- All installations should be inspected immediately after the first rainfall to confirm the stability of the placed material. Follow-up inspections should occur regularly and provisions made for prompt repair if needed.



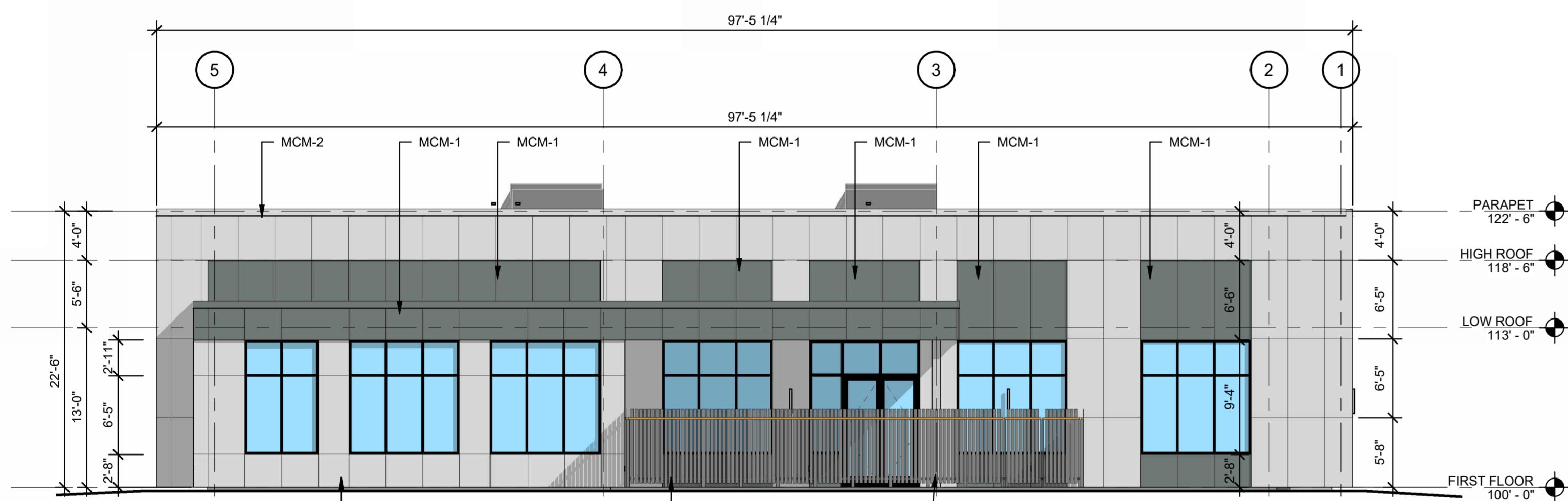
EXTERIOR FINISH MATERIALS LEGEND

NOTE: MATERIALS INDICATED ARE BASIS OF DESIGN, UON.

MARK	FINISH MATERIAL	MANUFACTURER	PRODUCT	COLOR	SIZE / COMMENTS
MCM-1	METAL COMPOSITE MATERIAL	PAC CLAD	PAC3000 RS	DARK GREY GRAPHITE	4 MM, 2" PANEL SYSTEM W/ 1/2" REVEAL
MCM-2	METAL COMPOSITE MATERIAL	PAC CLAD	PAC3000 RS	MEDIUM GREY	4 MM, 2" PANEL SYSTEM W/ 1/2" REVEAL
MCM-3	METAL COMPOSITE MATERIAL	PAC CLAD	PAC3000 RS	WHITE	4 MM, 2" PANEL SYSTEM W/ 1/2" REVEAL
MP-1	PREFINISHED METAL PANEL	MAC METAL ARCHITECTURAL	NORWOOD	TEAK	5.3"H x 144"L x 0.44"D - 24 GA
SP-1	EXTERIOR STOREFRONT SYSTEM	TUBELITE	TU14000 I/O STOREFRONT	ANODIZED BLACK	2 X 4.5
EP-1	EXTERIOR PAINT	SHERWIN WILLIAMS	EPOXY PAINT	BLACK	
IG-1	INSULATED GLAZING	GUARDIAN GLASS	1" LOW-E INSULATED ARGON FILLED WITH THERMAL EDGE SPACERS	TINTED	OUTSIDE LITE: 1/4" CLEAR SN68 LOW-E #2 (TINT COLOR) GAP: 1/2" ARGON INSIDE LITE: 1/4" CLEAR
IG-2	INSULATED ACOUSTIC GLAZING	GUARDIAN GLASS	1" LOW-E INSULATED ARGON FILLED WITH THERMAL EDGE SPACERS	TINTED	OUTSIDE LITE: 1/4" CLEAR SN68 LOW-E #2 (TINT COLOR) GAP: 1/2" ARGON INSIDE LITE: LAMINATED (33.4) 1/4" CLEAR W/ 0.060" PVB HEAT-STRENGTHENED AND TEMPERED
IG-3	INSULATED SPANDREL GLAZING	GUARDIAN GLASS	1" LOW-E INSULATED AIR FILLED WITH THERMAL EDGE SPACERS	TINTED	OUTSIDE LITE: 1/4" CLEAR SN68 LOW-E #2 (TINT COLOR) GAP: 1/2" ARGON INSIDE LITE: LAMINATED (33.4) 1/4" CLEAR W/ 0.060" PVB HEAT-STRENGTHENED, LIGHT-GRAY SPANDREL COATING
L-1	LOUVER	ARCHITECTURAL LOUVERS	WIND DRIVEN - E4WH	MATCH IMP	3" DEPTH
F-1	FENCE	LANDSCAPE FORMS	LINE	GLOSS BLACK	3"W VERTICAL PICKETS ABOVE TOP RAIL, 1-1/2" x 3" POSTS

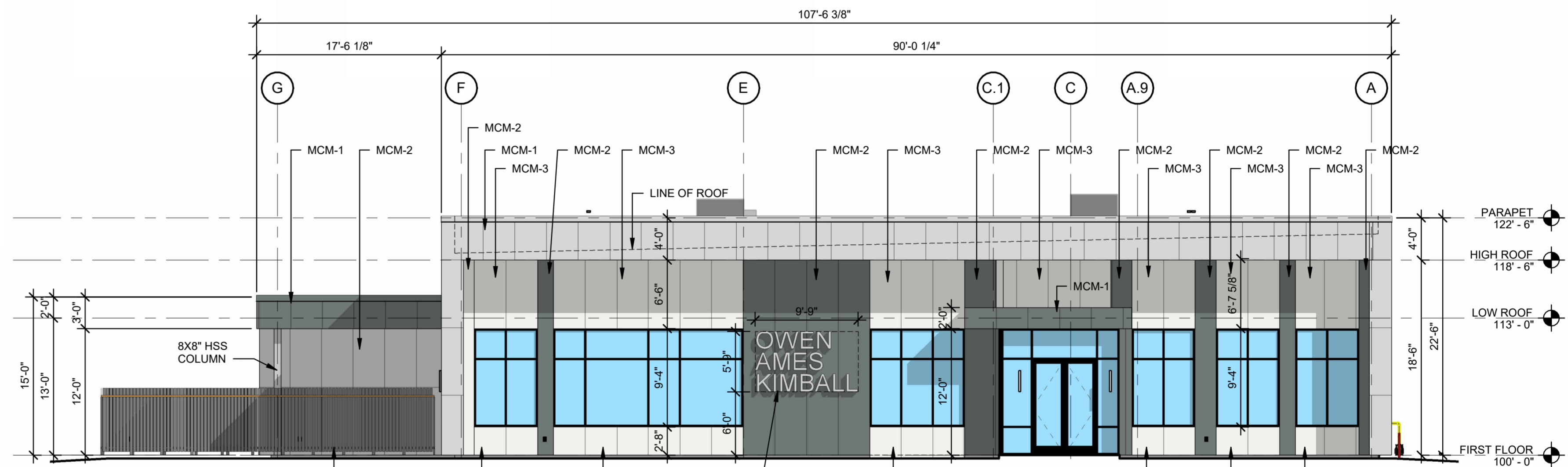
ZONING INFORMATION

ITEM:	REQUIREMENT:	COMMENT:
DISTRICT:	CBTR - WESTERN MICHIGAN UNIVERSITY, BUSINESS, TECHNOLOGY AND RESEARCH (BTR) PARK	
MAXIMUM HEIGHT:	50 FT.	1 STORY - VARIED HEIGHTS
BUILDING TRANSPARENCY:	(SECTION 50-5.5B(2)(B) - STOOP) 50% MIN TRANSPARENCY BETWEEN 2'-8" AFG AT PRIMARY FACADE	NORTH FACADE - 68.0% PROVIDED
BUILDING GROSS SQ FT AREA:	8,711 GSF	
LOT TYPE:	INSTITUTIONAL CAMPUS (IC) DISTRICT	
EXTERIOR MATERIALS:	STOREFRONT, GLASS, AND METAL PANEL CLADDING.	
FENCING:	(SECTION 50-8.5B - NON RESIDENTIAL USES) 8-FT MAX FENCE HEIGHT (SIDE AND REAR YARDS)	
GROUND MOUNTED MECH EQUIP:	(SECTION 50-8.5D) NOT PERMITTED IN FRONT AND CORNER SIDE YARDS FENCE OR WALL SIX TO EIGHT FEET IN HEIGHT TO CREATE A COMPLETE OPAQUE SCREEN. OPAQUE GATE AND WHEEL STOPS WHEN LOCATED IN A PARKING AREA.	
SIGNS:	(TABLE 9.5-1, SIGN TYPES AND ALLOWANCE BY ZONING DISTRICT) (BTR PARK REQUIREMENTS) ADDRESS - 18-INCH TALL, CONTRASTING COLOR TO BACKGROUND. FRONT LIT SIGNS (BACK-LIGHTED SIGNS NOT PERMITTED)	
	FREESTANDING SIGN: (1 PER 1-FT OF LOT FRONTAGE / 200-SF MAX / 2-FT SETBACK) LOCATE IN BOULEVARD AT ENTRANCE. WALL SIGN: (2 PER 1 FOOT OF BUILDING FRONTAGE / 200 SF MAX) FREEWAY SIGN: (1 FREEWAY SIGN ALLOWED ON LOTS WITHIN 200 FEET OF HIGHWAY RIGHT-OF-WAY) 150-SF MAX 80-FT MAX HEIGHT SETBACK: 10 FEET, MUST BE ORIENTED TO HIGHWAY VEHICLE TRAFFIC MARQUEE: (1 PER BUILDING) 8-FT MIN CLEARANCE ABOVE GRADE 18-INCH MAX PROJECTION	



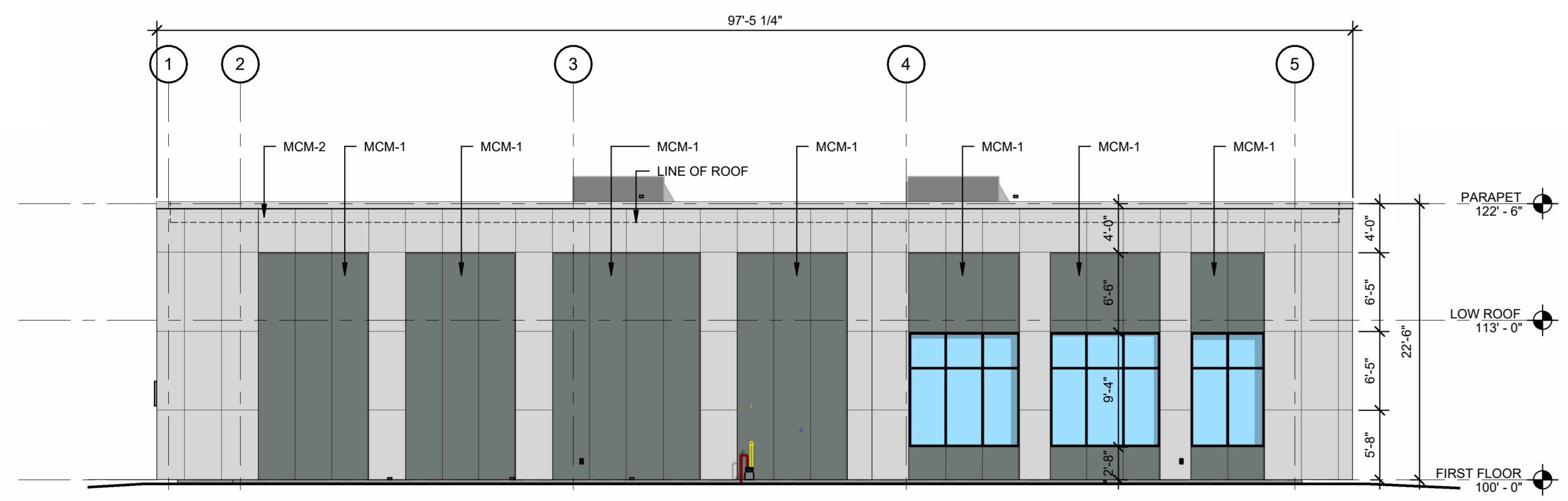
EAST ELEVATION
NOT TO SCALE

EAST
METAL PANEL: 74%
GLAZING: 26%



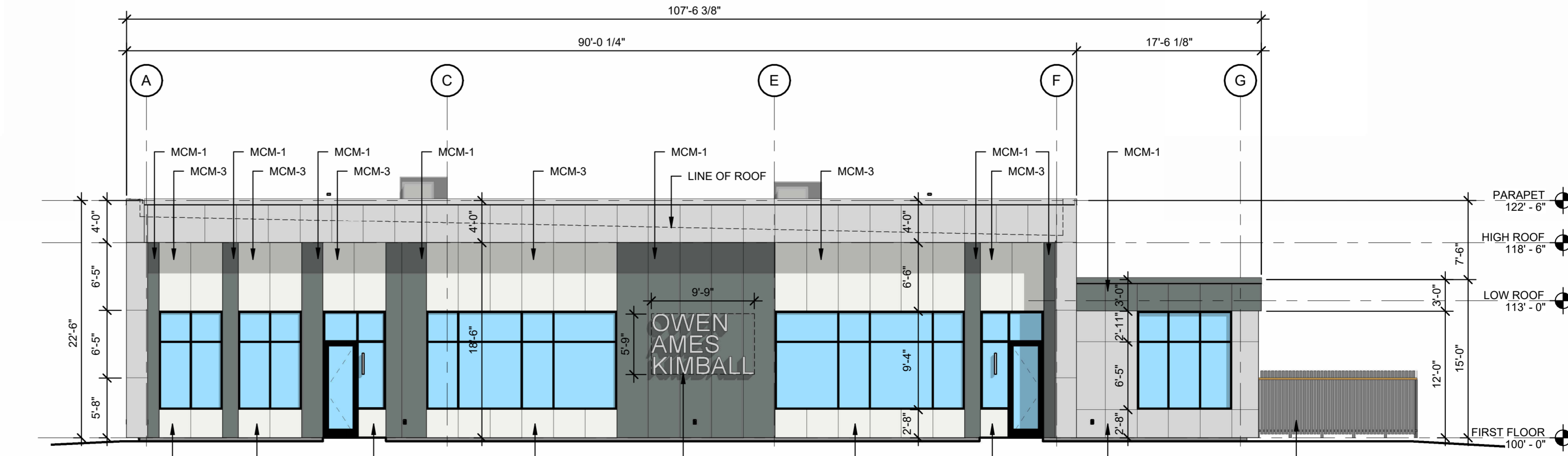
NORTH ELEVATION
NOT TO SCALE

NORTH
METAL PANEL: 73%
GLAZING: 27%



WEST ELEVATION
NOT TO SCALE

WEST
METAL PANEL: 90%
GLAZING: 10%



SOUTH ELEVATION
NOT TO SCALE

SOUTH
METAL PANEL: 71%
GLAZING: 29%

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4755 CAMPUS DRIVE
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CONSULTANT INFORMATION

REGISTRATION SEAL



REV	DATE	DOC REL #	DESCRIPTION
05/06/26		DOC REL 02 - SPA	
04/27/26		DOC REL 01 - SCHEMATIC DESIGN	
		DOC REL ## - DESCRIPTION	

PROJECT #	2500713
PROJECT MANAGER	A. NELSON
DESIGNED BY	A. ECKERT
DRAWN BY	B. CHIU
QUALITY CHECK	A. ECKERT
SHEET TITLE	

**ARCHITECTURAL
BUILDING
ELEVATIONS**

AE2-00-01
SHEET NUMBER

KALAMAZOO OFFICE
BUILDING A
 4755 CAMPUS DRIVE
 KALAMAZOO, MI 49008

GHAFARI
 17101 MICHIGAN AVENUE
 DEARBORN, MI 48126-2736 USA
 TEL +1.313.441.3000
 www.ghafari.com

CONSULTANT INFORMATION

REGISTRATION SEAL

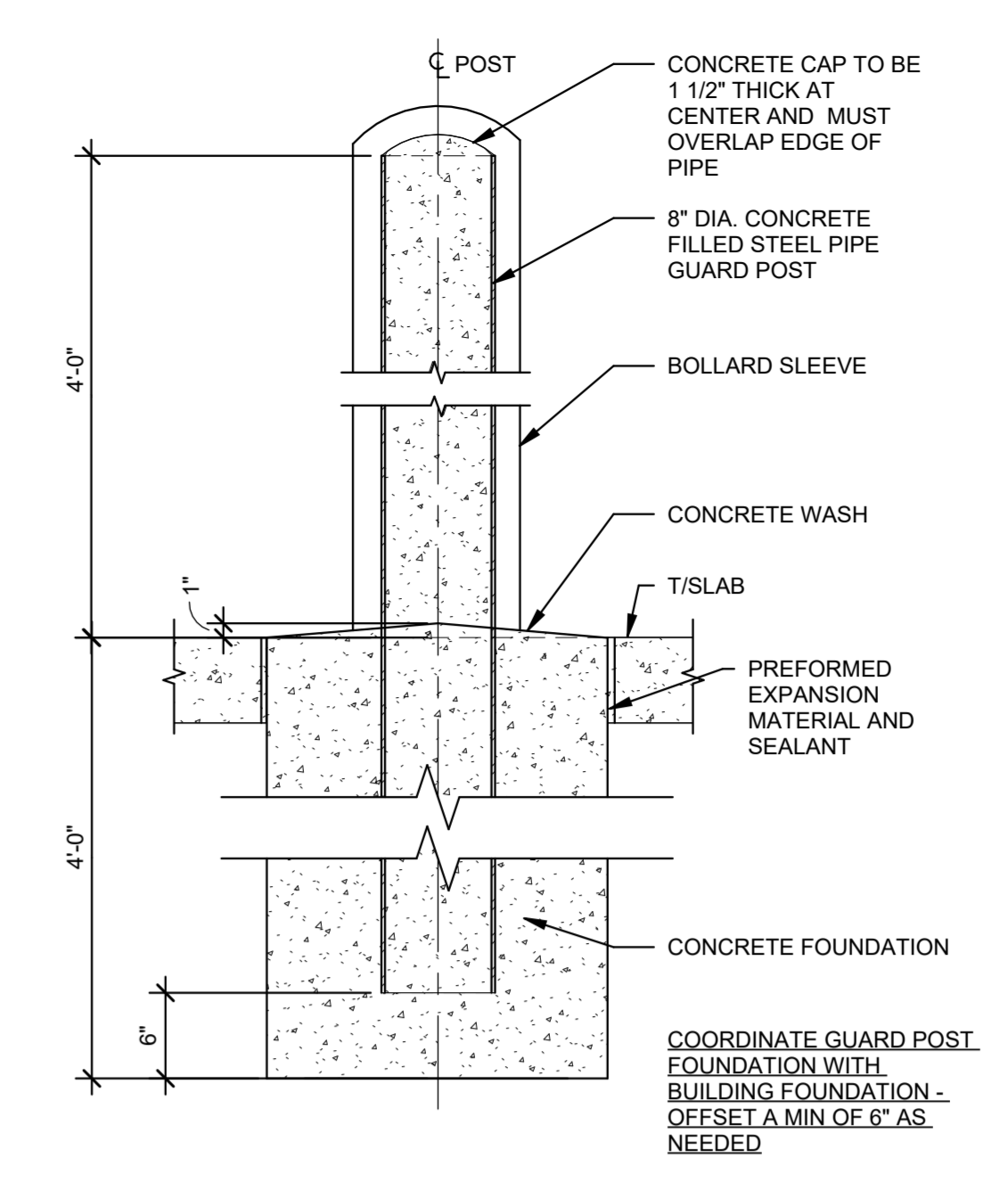


REV	DATE	DOC REL ##	DESCRIPTION
05/06/26		DOC REL 02 - SPA	
04/27/26		DOC REL 01 - SCHEMATIC DESIGN	

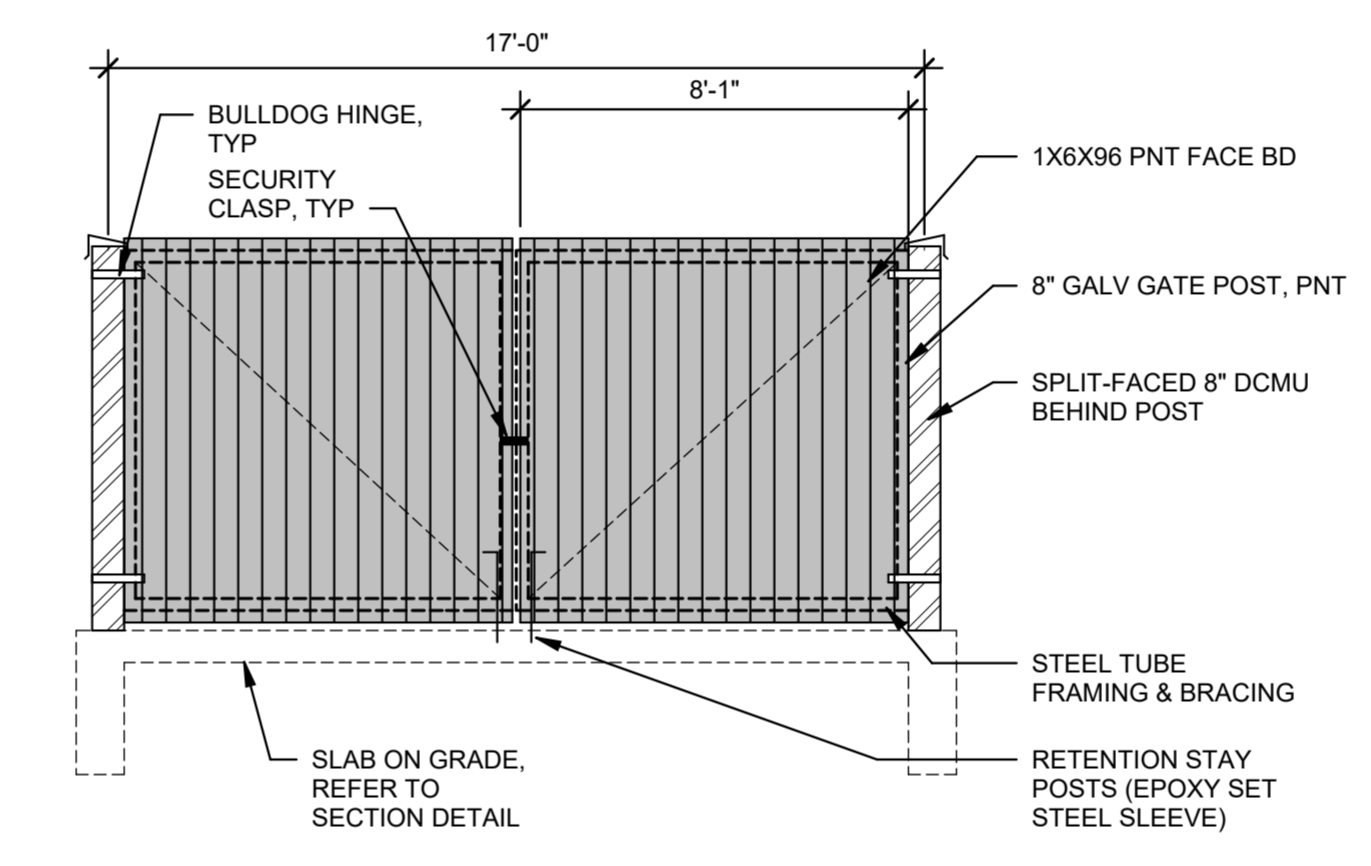
PROJECT #	2500713
PROJECT MANAGER	
DESIGNED BY	Designer
DRAWN BY	Author
QUALITY CHECK	Checker
SHEET TITLE	

MONUMENT SIGN & DUMPSTER ENCLOSURE DETAILS

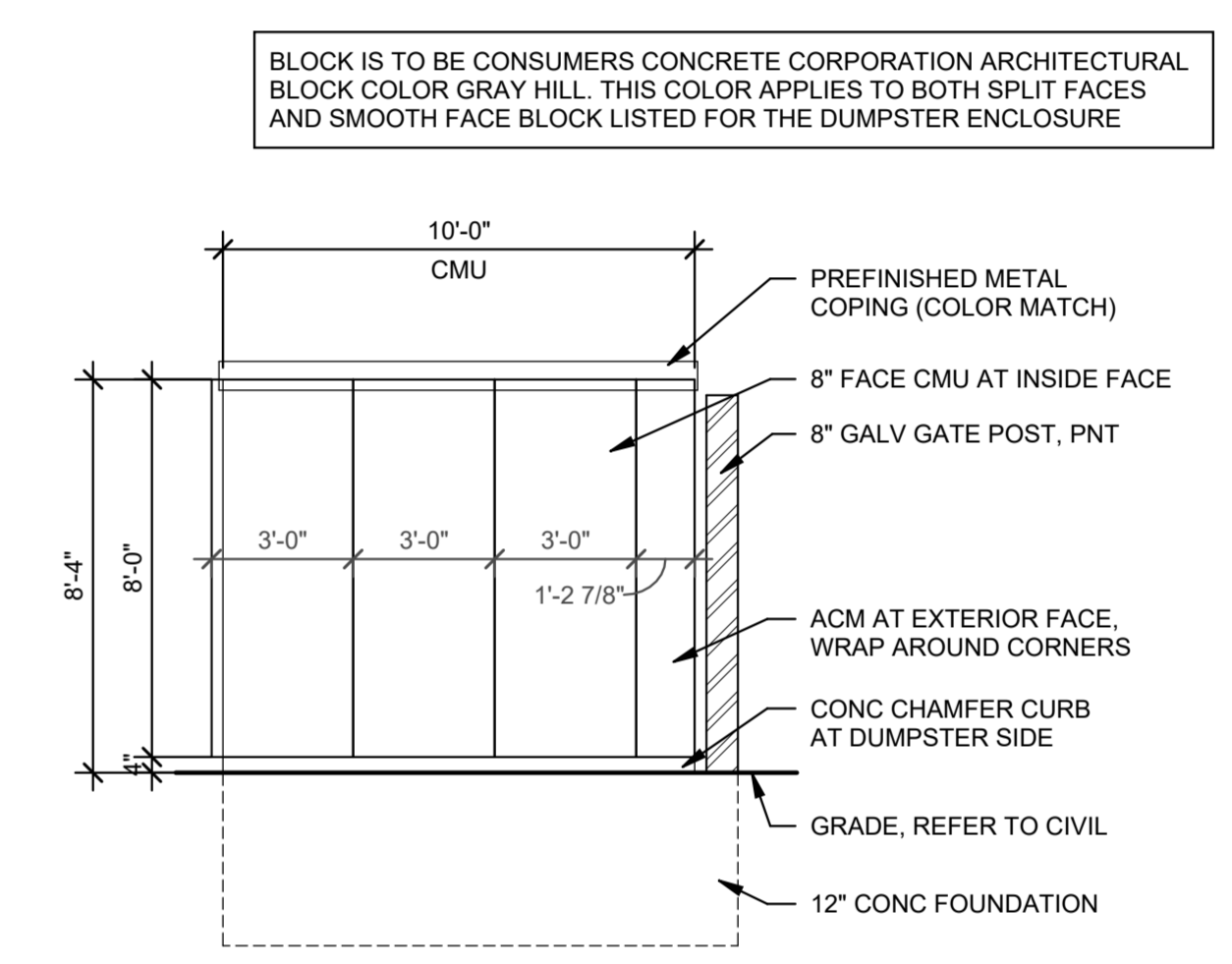
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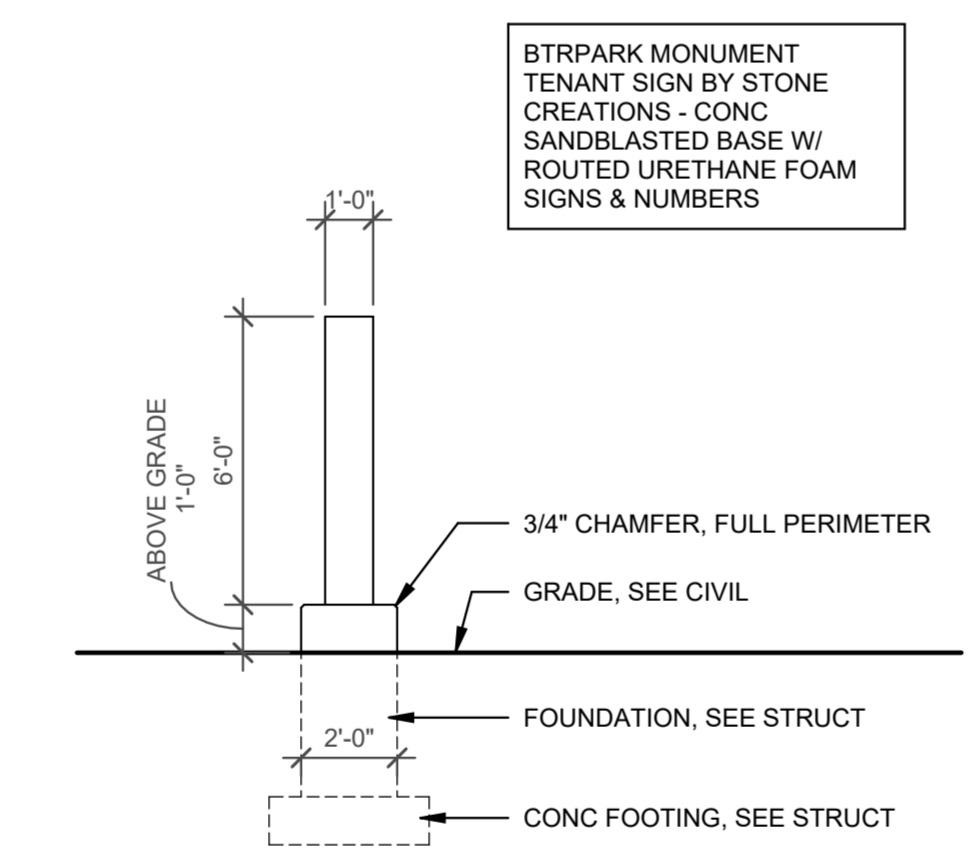
5 EXTERIOR BOLLARD
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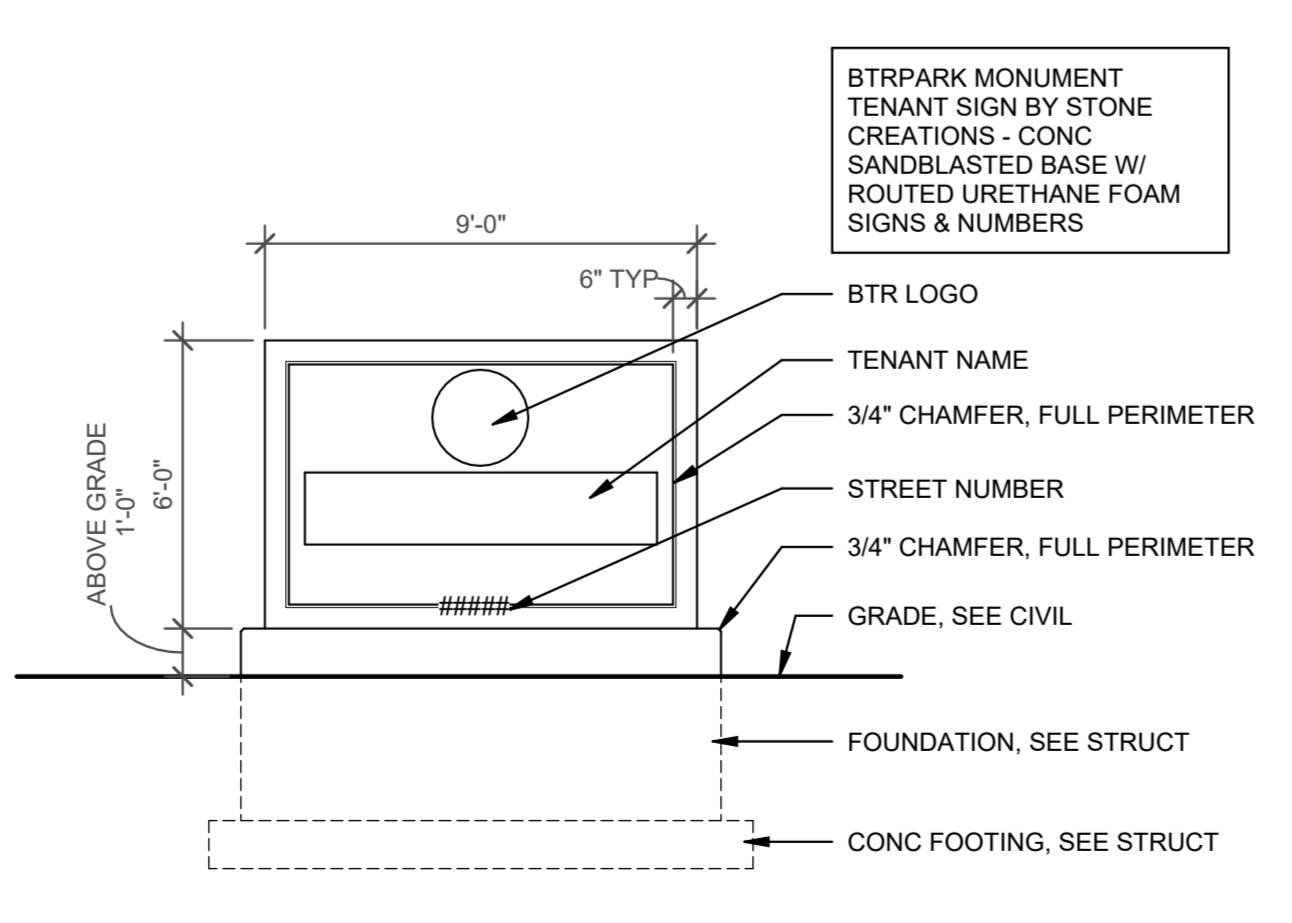
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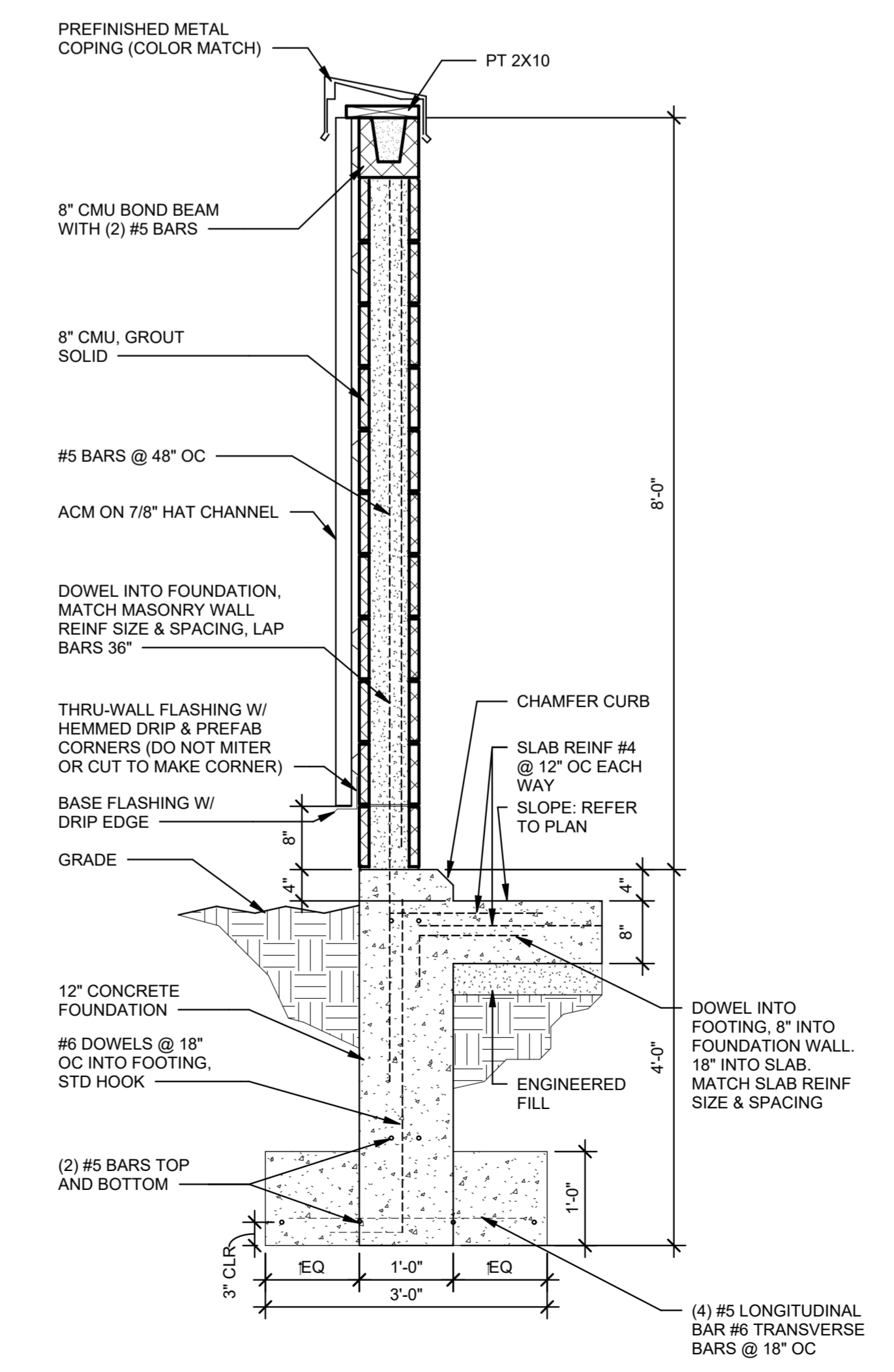
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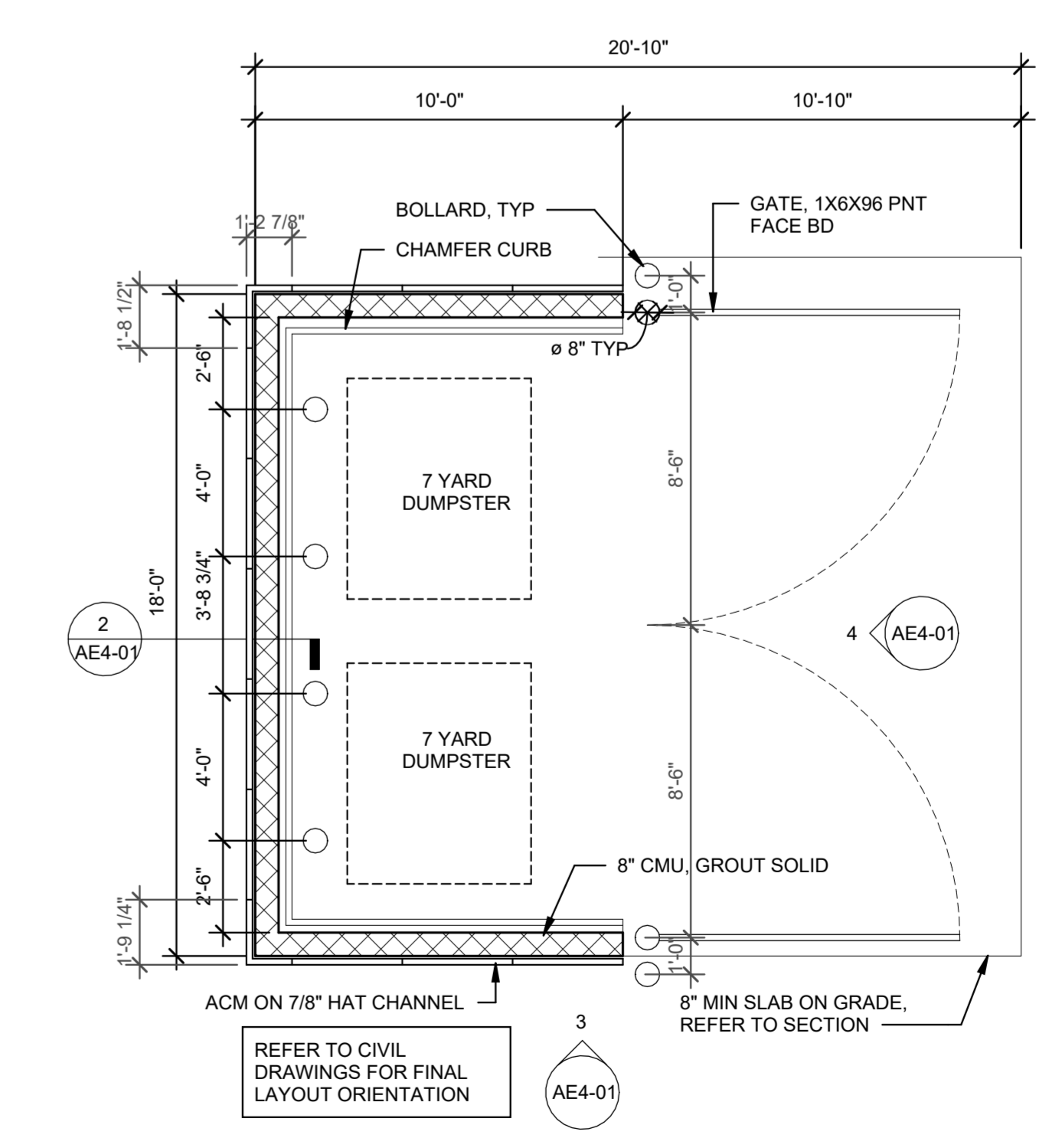
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6 MONUMENT SIGN GANGE
 SCALE: 1/4" = 1'-0"



2 DUMPSTER SECTION
 SCALE: 3/4" = 1'-0"



1 DUMPSTER ENLARGED PLAN
 SCALE: 1/4" = 1'-0"

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