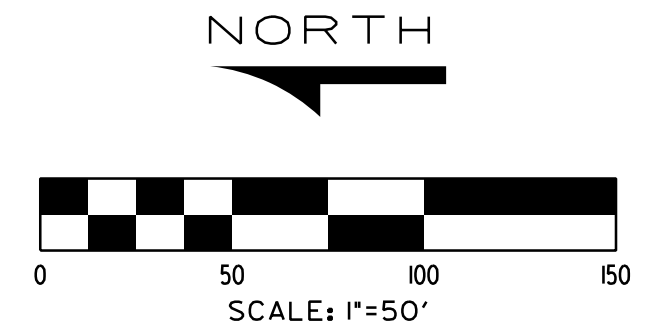


LAND USE INFORMATION:

CURRENT ZONING: HIGHWAY COMMERCIAL DISTRICT C-4
 PROPOSED ZONING: HIGHWAY COMMERCIAL DISTRICT C-4
 CURRENT USE: AUTO DEALERSHIP
 PROPOSED USE: AUTO DEALERSHIP
 TOTAL SITE AREA: 19.50AC. = 849,463 SF
 TOTAL BUILDING AREA: 62,490 SF
 LOT COVERAGE BY BLDG: 7.4%

YARD SETBACKS: BUILDING
 FRONT YARD 100LF
 SIDE YARD 42LF
 REAR YARD 52LF

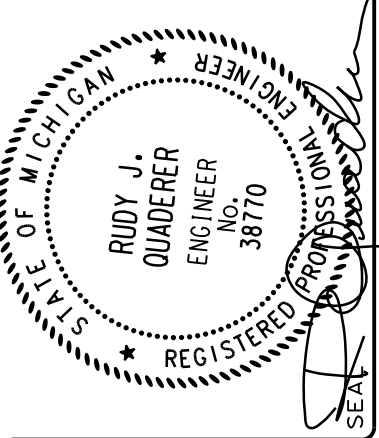
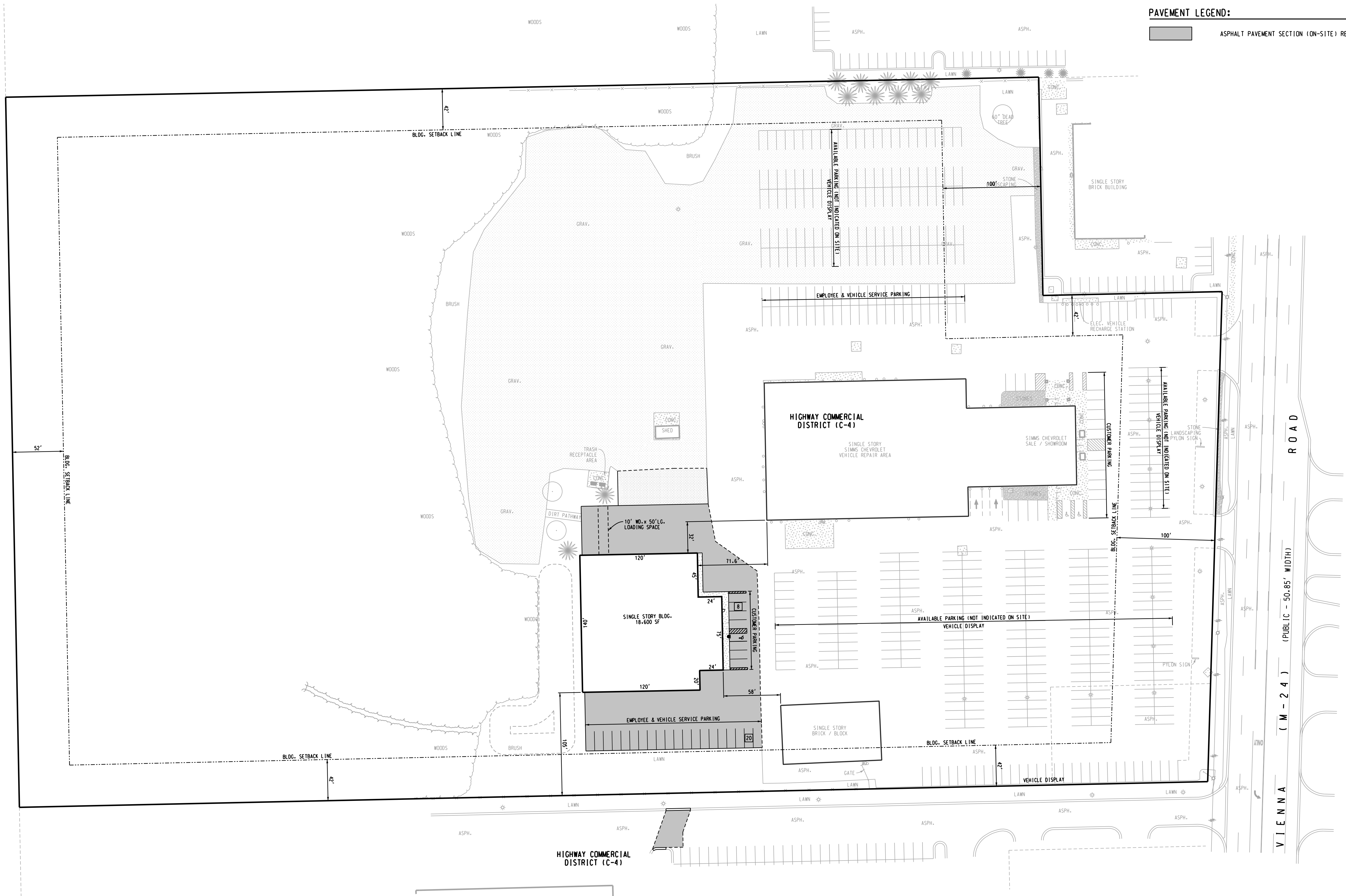


PAVEMENT LEGEND:

ASPHALT PAVEMENT SECTION (ON-SITE) RE: C200

SHOPPING CENTER COMMERCIAL DISTRICT (C-3)

ONE FAMILY RESIDENTIAL DISTRICT (RU-1)



| NO. | DATE | REVISION OR ISSUE |
|----------|------------------------------|-------------------|
| 08-20-24 | VIENNA TWP. (SITE PLAN APP.) | SUBJECT |

| | |
|----------|--------------|
| DRAWN | BRZEZINSKI |
| DESIGNED | |
| CHECKED | |
| FIELD | GREW TH / KM |

SIMMS CHEVROLET
NEW ACCESSORY BUILDING
 4220 W. VIENNA ROAD
 CLO, MI 48420

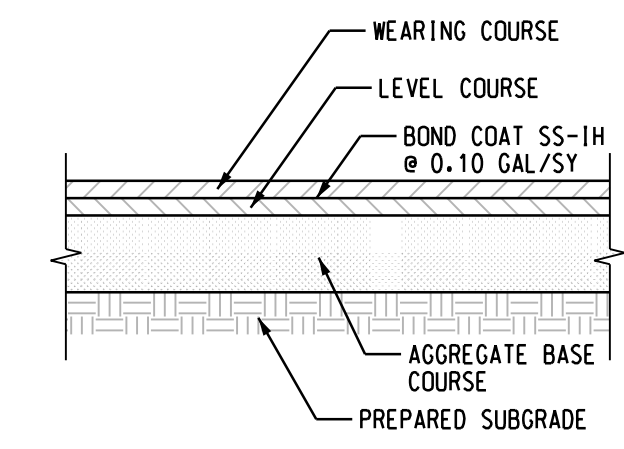
OVERALL SITE PLAN

Griggs Quaderer, Inc.
 8308 OFFICE PARK DRIVE
 GRAND BLANC, MI 48439
 PH: (517) 695-0154
 WWW.GQINCORP.COM
 RUDY@GQINCORP.COM
 CHRIS@GQINCORP.COM

CIVIL ENGINEERING · LAND SURVEYING
 SITE PLANNING

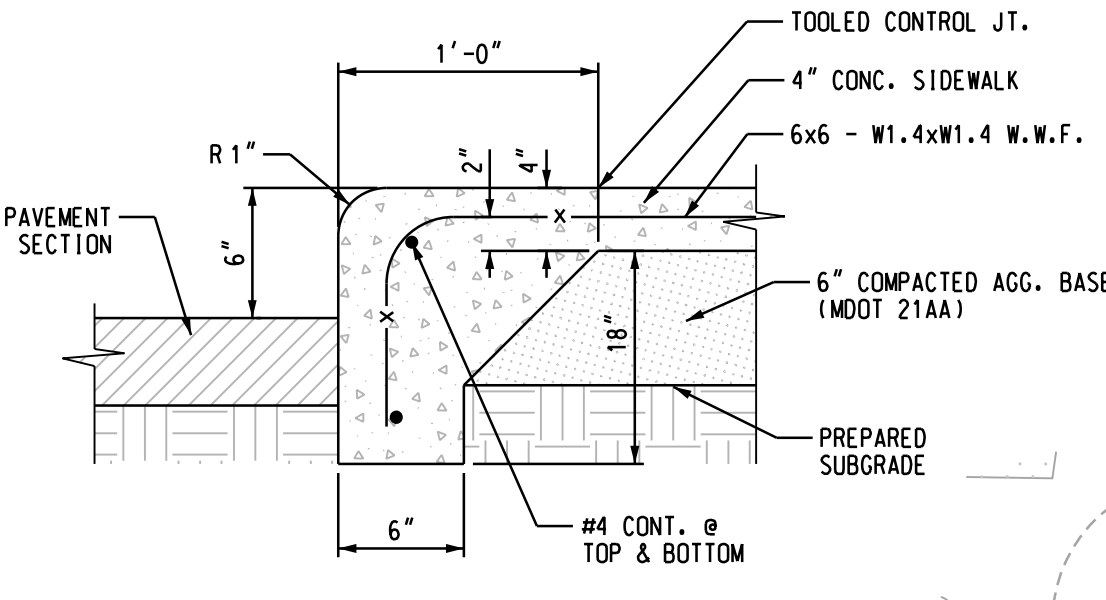
20th ANNIVERSARY
 2004 - 2024

PHASE: SPA
 JOB NO.: 240201
 C101



TYPICAL PAVEMENT SECTION

- WEARING COURSE - 1.5" MDOT 13A
- LEVEL COURSE - 3" MDOT 3C
- AGGREGATE BASE - 8" MDOT 21AA CRUSHED LIMESTONE



INTEGRAL CURB & SIDEWALK DETAIL
NO SCALE



GENERAL NOTES:

- ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM WITH THE REQUIREMENTS OF ALL GOVERNING AGENCIES HAVING JURISDICTION (LOCAL, COUNTY, STATE), UNLESS OTHERWISE NOTED. CONSTRUCTION MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND PROJECT SPECIFICATIONS. IN CASE OF DISCREPANCIES BETWEEN REQUIREMENTS, THE MOST STRINGENT SHALL APPLY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DENATURING TO ACCOMPLISH ALL WORK INDICATED ON PLANS AND TO PERFORM REQUIRED COMPACTION OPERATIONS. REFER TO GEOTECHNICAL REPORT FOR RECOMMENDATIONS REGARDING THIS SITE. CONTRACTOR TO PROVIDE TESTING CONSULTANT TO VERIFY DENSITY REQUIREMENTS FOR SUBGRADE (IF REQUIRED).
- PROVIDE ADEQUATE BARRICADES AT DRIVES, ENTRANCES, EXCAVATIONS AND OTHER OPENINGS TO KEEP OUT UNAUTHORIZED PERSONS AND FOR PUBLIC SAFETY AND TRAFFIC CONTROL. SAFETY PROVISIONS OF APPLICABLE LAWS INCLUDING REQUIREMENTS SET FORTH BY OSHA SHALL BE OBSERVED AT ALL TIMES. BARRICADES LEFT IN PLACE AT NIGHT SHALL BE LIGHTED.
- NO EQUIPMENT OR MATERIAL STORAGE IS PERMITTED WITHIN THE ROAD RIGHT-OF-WAY.
- CONTRACTOR'S MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREA SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATION AND WRITTEN APPROVAL OF APPROPRIATE GOVERNING AGENCIES.
- RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS AND TO THE SATISFACTION OF THOSE HAVING JURISDICTION.
- CONTRACTOR SHALL PULL EROSION CONTROL PERMIT FROM GOVERNING AGENCY AND SET TEMPORARY EROSION CONTROL MEASURES AS INDICATED ON THESE DOCUMENTS PRIOR TO BEGIN OF ANY DEMOLITION OR EARTHWORK.
- THE CONTRACTOR SHALL NOTIFY MISS DIG (811) THREE (3) WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WITH POWER EQUIPMENT.
- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL CONSTRUCTION LAYOUT AND GRADE ELEVATIONS FOR THEIR WORK IN ACCORDANCE WITH DATA SHOWN ON DOCUMENTS.
- EXCAVATED AREAS WITHIN PROPOSED BUILDING AND PAVEMENT AREAS SHALL BE BACKFILLED TO FINISHED SUBGRADE ELEVATION WITH STRUCTURAL FILL (MDOT CLASS II SAND). THE SAND SHALL BE COMPACTED IN CONTINUOUS LAYERS NOT EXCEEDING 8" INCH LOOSE LIFTS, COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D 1557 MODIFIED PROCTOR.
- COORDINATES AND/OR DIMENSIONS SHOWN ON THIS DOCUMENT ARE TO BACK OF CURB, OUTSIDE FACE OF BUILDING FOUNDATIONS, EDGE OF PAVEMENT, CENTER OF STRUCTURE, CENTERLINE OF STRIPING UNLESS NOTED OTHERWISE.
- NO DIMENSIONS SHALL BE SCALED OFF THE DOCUMENTS. REFER UNCLER ITEMS TO THE ENGINEER FOR INTERPRETATION.
- REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS, SLAB AND UNDERBED THICKNESS.

MARKING / SIGNAGE LEGEND:

- ① 4" SINGLE SOLID LINE, WHITE
- ② ACCESSIBLE SIGN (R7-8)
- NO PARKING / NO DRIVING AREAS
- 4" WIDE WHITE PAINT STRIPING
- 2" ON CENTER @ 45°. REFER TO PAVEMENT MARKING NOTE #2 FOR BARRIER FREE PARKING

PAVEMENT MARKING & SIGNAGE NOTES:

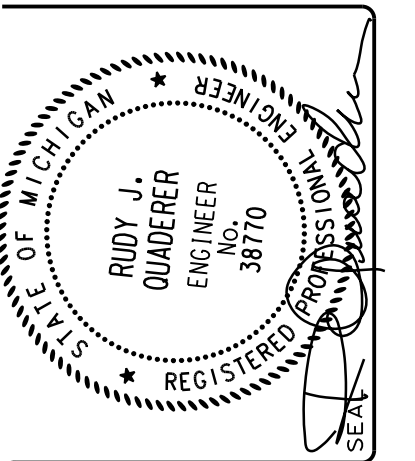
- PARKING STALL WIDTH DIMENSIONS ARE TO CENTERLINE OF STRIPING.
- ALL PAVEMENT MARKINGS SHALL BE 4" WIDE WHITE PAINT STRIPING UNLESS OTHERWISE INDICATED. ALL BARRIER FREE STRIPING SHALL BE COLORED BLUE AND IN ACCORDANCE WITH THE LATEST ADA STANDARDS FOR ACCESSIBLE DESIGN.
- CONTRACTOR SHALL NOT APPLY TRAFFIC MARKING PAINT ON NEW ASPHALT UNTIL PAVEMENT HAS CURED A MINIMUM OF SEVEN (7) DAYS.
- PAINT SHALL BE APPLIED WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES TO PROVIDE MINIMUM 10-0 TO 15-0 MILS NET THICKNESS.
- ALL TRAFFIC CONTROL SIGNS SHALL CONFORM WITH ALL REQUIREMENTS AS STIPULATED IN THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ☐ NUMBER OF PARKING SPACES (FOR INFORMATION ONLY)

PAVEMENT LEGEND:

- ASPHALT PAVEMENT SECTION (ON-SITE) RE: C200
- CONCRETE PAVEMENT SECTION RE: C200

NORTH

SCALE: 1"=20'



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| NO. | DATE | REVISION OR ISSUE |
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| DRAWN | BRZEZINSKI |
| DESIGNED | |
| CHECKED | |
| FIELD CREW TH / KM | |

SIMMS CHEVROLET
NEW ACCESSORY BUILDING
4220 W. VIENNA ROAD
CLO, MI 48120




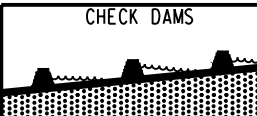
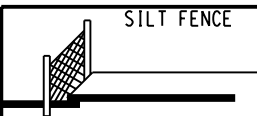
SITE LAYOUT PLAN

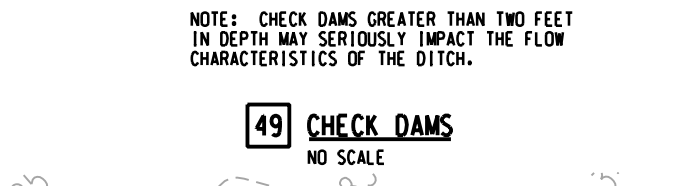
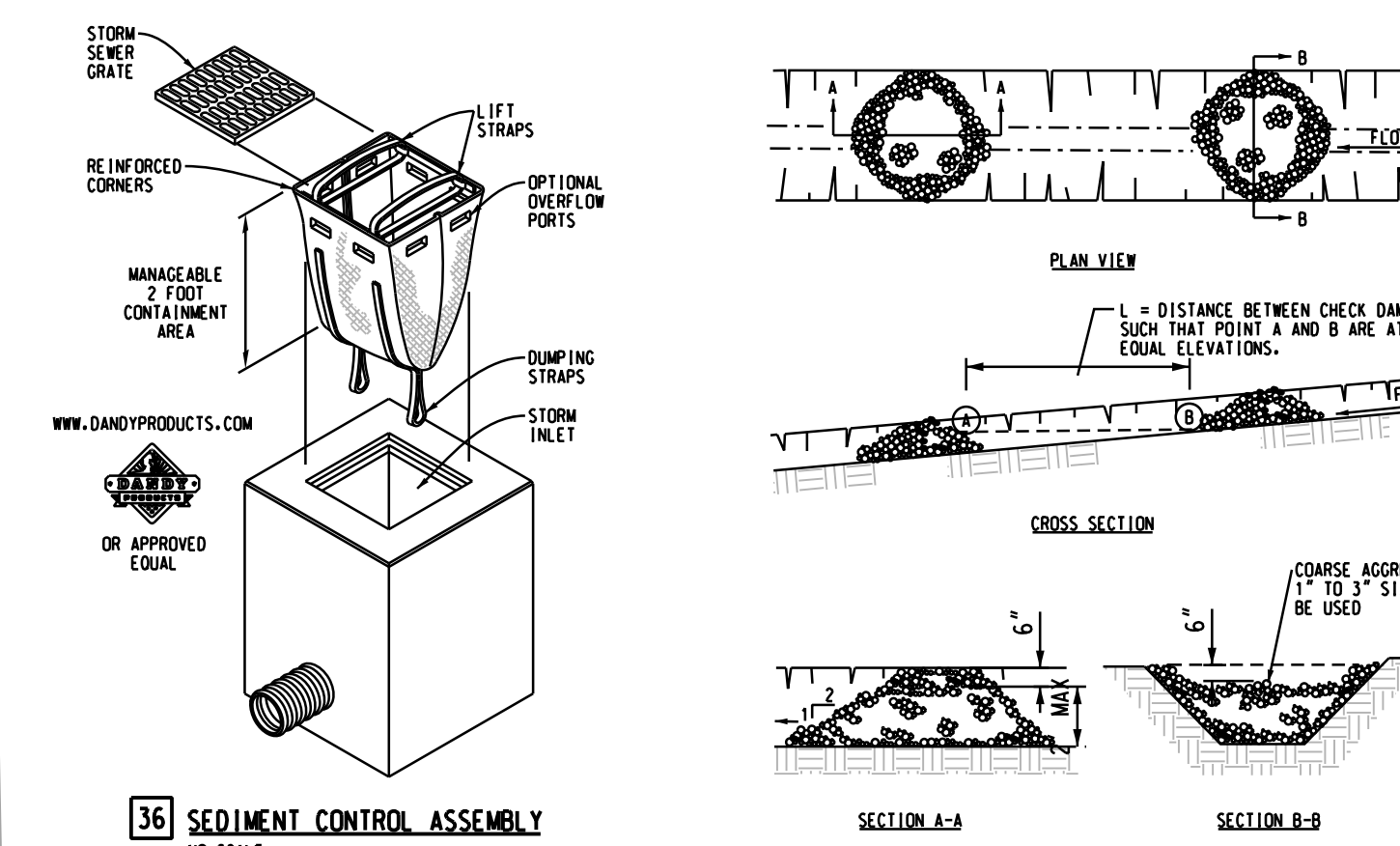
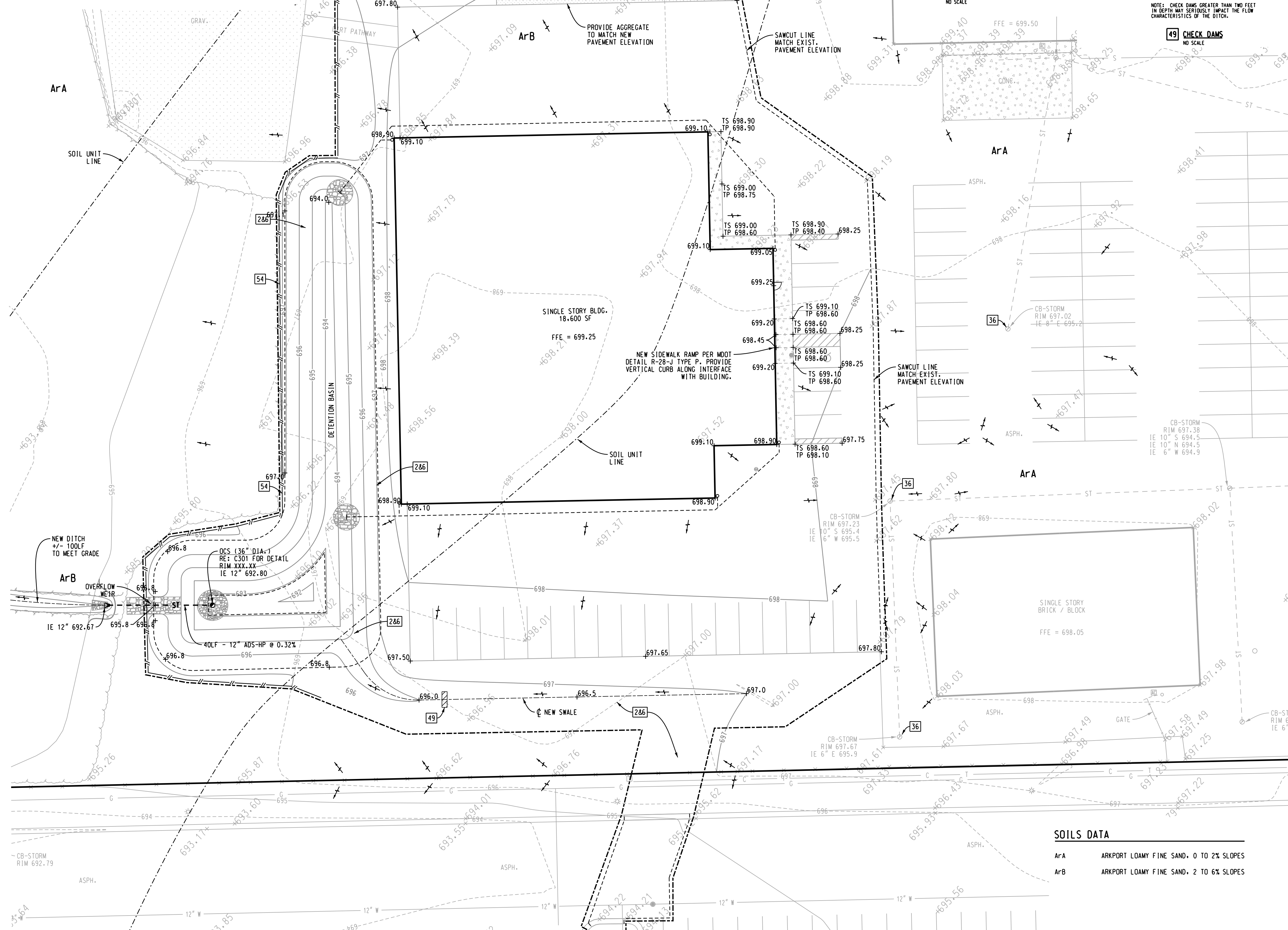
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SITE PLANNING

PHASE: SPA
JOB NO.: 240201
C200

SOIL EROSION CONTROL MEASURES:

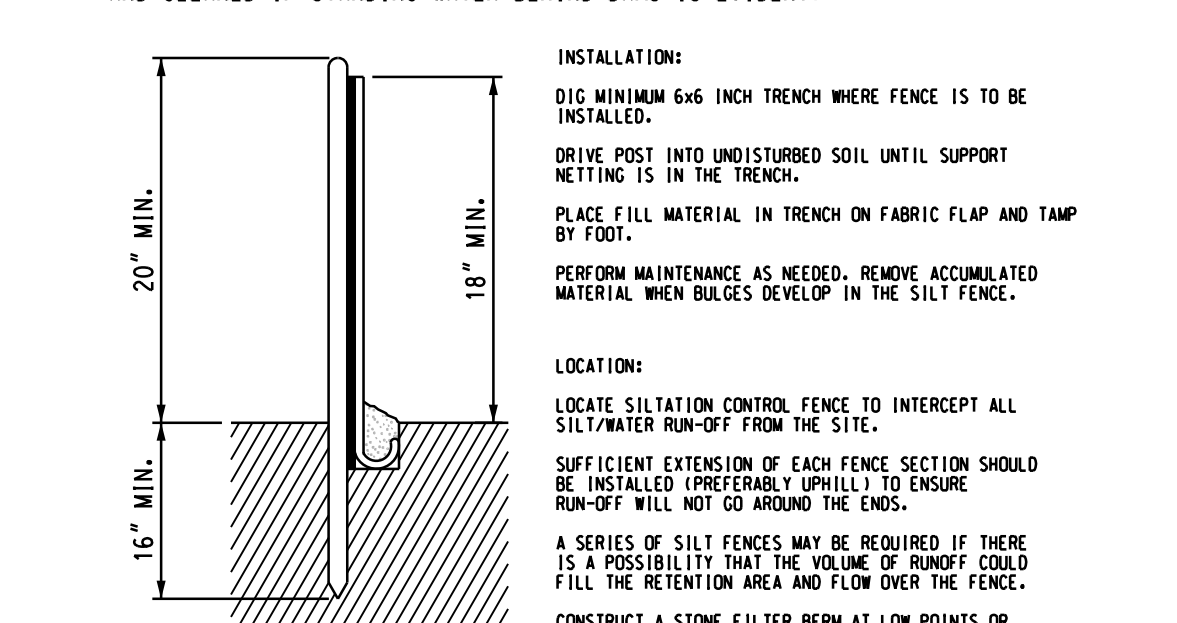
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| 2 |  | WATER CAN BE DIVERTED TO MINIMIZE EROSION. FLATTER SLOPES EASE EROSION PROBLEMS. |
| 6 |  | FACILITATES ESTABLISHMENT OF VEGETATIVE COVER. EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY. EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL. SHOULDER INCLUDE PREPARED TOPSOIL BED. |
| 36 |  | COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. USE FILTER SACK IN INLET. |
| 49 |  | REDUCES FLOW VELOCITY. CATCHES SEDIMENT. CAN BE CONSTRUCTED OF LOGS, STRAW, HAY, ROCK, LUMBER, MASONRY, OR SAND BAGS. |
| 54 |  | USES GEOTEXTILE FABRIC AND POSTS OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. |



- GRADING NOTES:**
- ALL PROPOSED SPOT ELEVATIONS IN PAVED AREAS ARE TO TOP OF PAVEMENT UNLESS NOTED OTHERWISE. TP = TOP OF SIDEWALK, TP = TOP OF PAVEMENT.
 - CONTOURS SHOWN ARE FOR REFERENCE ONLY. BASE CONSTRUCTION EFFORTS ON PROPOSED SPOT ELEVATIONS ONLY.
 - "BARRIER FREE" PARKING AND SIDEWALK RAMP SHALL CONFORM IN ALL RESPECTS TO THE MICHIGAN ADA (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS.
 - CONTRACTOR SHALL ADJUST ANY UTILITY ELEMENT/STRUCTURE MEANT TO BE FLUSH WITH GRADE (CLEAN OUT, VALVE BOXES, MANHOLES, CATCH BASINS, INLETS, ETC.) WHICH ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT. NO ADDITIONAL COSTS FOR THIS WORK WILL BE ACCEPTED. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR ADJUSTMENT AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR IS RESPONSIBLE FOR CUT AND FILL QUANTITIES. ADDITIONAL COMPENSATION WILL NOT BE ACCEPTED FOR HAULING OF EXCESS AND BORROW MATERIAL TO AND FROM SITE AS WELL AS LABOR COSTS FOR PLACEMENT AND/OR REMOVAL. OFF-SITE BORROW MATERIAL MUST BE CLEAN COMPACTIBLE STRUCTURAL FILL MATERIAL (NO ORGANIC MATERIAL) WHICH WILL BE INSPECTED PRIOR TO USE FOR ON-SITE FILL MATERIAL.
 - SITE CONTRACTOR IS RESPONSIBLE TO PROVIDE A STABLE SUBGRADE AT DESIGN ELEVATIONS. PAVED AREAS INCLUDING BUILDING PATHS SHALL BE PRODFILLED & COMPACTED TO MEET 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D1557.
 - CONTRACTOR SHALL STORE SUFFICIENT TOPSOIL MATERIAL ON-SITE FOR RE-USE IN ALL DISTURBED GREEN AREAS AND NEW LANDSCAPE AREAS.
 - PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER. MAINTAIN A MINIMUM SLOPE OF 1.00% IN ALL NEW BITUMINOUS AREAS.

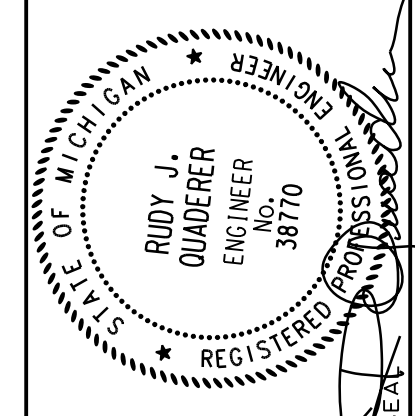
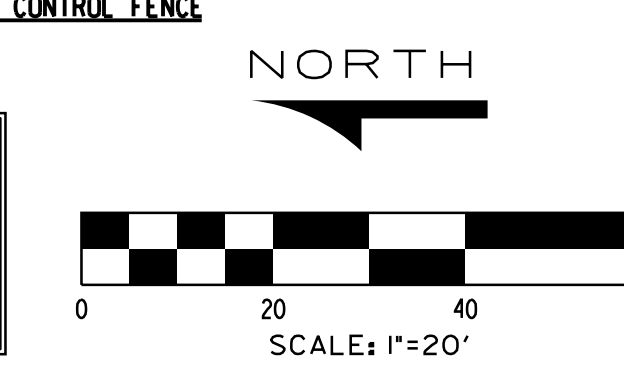
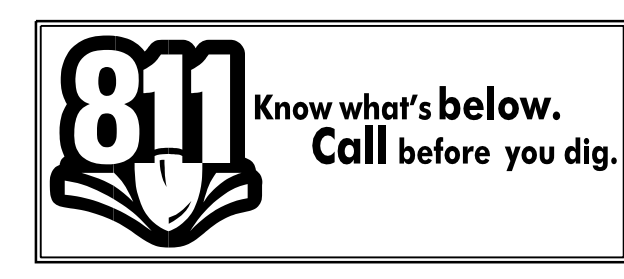
- SOIL EROSION CONTROL NOTES:**
- THE DEVELOPER IS NOT REQUIRED TO OBTAIN A NPDES STORM WATER DISCHARGE PERMIT THROUGH THE GENESSEE COUNTY DRAIN COMMISSIONER, DIVISION OF WATER AND WASTE SERVICES PRIOR TO ANY CONSTRUCTION ACTIVITIES.
 - THE DEVELOPER SHALL SUBMIT A DETAILED EROSION CONTROL PLAN AND ACT 451 PERMIT INCLUDING PAYMENT OF FEES AND PROVIDING THE NECESSARY BONDS FROM THE GENESSEE COUNTY DRAIN COMMISSIONER, DIVISION OF WATER AND WASTE SERVICES, PRIOR TO ANY EARTH CHANGES.
 - CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING AND/OR GRADING OPERATIONS.
 - THE CONTRACTOR SHALL USE SPECIAL PRECAUTIONS WHEN USING CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
 - SITE CLEANUP WILL BE ACCOMPLISHED IN A MANNER TO INSURE THAT TEMPORARY EROSION CONTROL MEASURES ARE NOT DISTURBED.
 - THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS OF NOTIFICATION.
 - CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE THROUGH SWALES OR OVERLAND SHEET FLOW OF THE ENTIRE SITE. SOIL SEDIMENT SHALL BE INTERCEPTED AND REMOVED PRIOR TO STORM WATER DISCHARGING FROM LIMITS OF CONSTRUCTION. NO STANDING WATER SHALL BE PERMITTED ON-SITE.
 - ALL GREEN AREAS DISTURBED SHALL BE PERMANENTLY STABILIZED (TOPSOIL, SEED & MULCH) IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION TO MINIMIZE SOIL EROSION AND THE POTENTIAL OF SEDIMENT LEAVING SITE.

- SESC MAINTENANCE SCHEDULE NOTES:**
- A CONTRACTOR/INSPECTOR SHALL INSPECT THE SOIL EROSION AND SEDIMENT CONTROL DEVICES ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF A PRECIPITATION EVENT WHICH RESULTS IN A STORM WATER DISCHARGE FROM THE SITE. A LOG OF INSPECTION REPORTS SHALL BE MAINTAINED AND ACCESSIBLE IN ACCORDANCE WITH NPDES REQUIREMENTS. IMPLEMENT THE FOLLOWING STEPS IF ANY DAMAGE HAS RESULTED FROM CONSTRUCTION OR PRECIPITATION.
 - CONSTRUCTION ACCESS ROADS (CLEAN STONE EXITS) MUST BE MAINTAINED AS NECESSARY. ADD ADDITIONAL STONE WHEN ACCESS ROAD BECOMES INEFFECTIVE DUE TO LOSS OF STONE OR WHEN COVERED WITH MUD.
 - SILTATION CONTROL FENCE SHOULD BE TRENCHED IN, BACKFILLED, STAPLED AND STAKED IN ACCORDANCE WITH DETAIL SHOWN ON DOCUMENT AND PER MANUFACTURER'S RECOMMENDATIONS. MAINTENANCE INCLUDES THE REMOVAL OF BUILT-UP SEDIMENT WHEN THE SEDIMENT ACCUMULATES TO 1/3 OF THE HEIGHT OF THE FENCE. CONTRACTOR MAY HAVE TO REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL THE FENCE IF IT FAILS. THE SILT FENCE SHALL ALSO BE REPLACED WITH NEW IF ANY PORTION OF THE FENCING WAS DAMAGED BY CONSTRUCTION MACHINERY.
 - INSPECT INLET FILTERS FOR BUILD-UP OF SILT AND OTHER DEBRIS. EXCESSIVE BUILD-UP IS EVIDENT IF GEOTEXTILE/STONE FILTER SYSTEM IS CAUSING FLOODING. MAINTENANCE CONSISTS OF REMOVING ALL SEDIMENT WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTER IS BEYOND THIS LEVEL OF REPAIR, IT MAY BE NECESSARY TO REPLACE BOTH THE STONE AND GEOTEXTILE FILTER FABRIC.
 - PREPARE EROSION CONTROL SEEDING ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR/INSPECTOR SHALL INSPECT THE AREA AFTER SEEDING IS COMPLETED. REPAIR AREAS THAT ARE BARE OR NOT MULCHED PROPERLY BY SPOT SEEDING AND/OR RE-MULCHING.
 - MAINTAIN DUST CONTROL AT ALL TIMES DURING CONSTRUCTION. SPRINKLING TANK TRUCKS SHALL BE AVAILABLE AT ALL TIMES AND USED ON HAUL ROADS, ON-SITE DISTURBED AREAS, OR OTHER PLACES WHERE DUST BECOMES A PROBLEM AS A RESULT OF CONSTRUCTION ACTIVITIES.
 - CONTRACTOR SHALL PROMPTLY REMOVE ALL MUD, DIRT AND DEBRIS TRACKED ONTO EXISTING ROADS FROM TRUCK TRAFFIC LEAVING THIS SITE.
 - REMOVE SILT DEPOSITS FROM TEMPORARY SEDIMENT TRAPS WHEN TRAP IS HALF FULL. CHECKDAMS (IF APPLICABLE) SHALL BE INSPECTED AFTER EVERY PRECIPITATION EVENT AND CLEANED IF STANDING WATER BEHIND DAMS IS EVIDENT.



SOILS DATA

| | |
|-----|---|
| ArA | ARKPORT LOAMY FINE SAND, 0 TO 2% SLOPES |
| ArB | ARKPORT LOAMY FINE SAND, 2 TO 6% SLOPES |



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| NO. | DATE | REVISION OR ISSUE |
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CIVIL ENGINEERING - LAND SURVEYING
SITE PLANNING

20th ANNIVERSARY 2004 - 2024

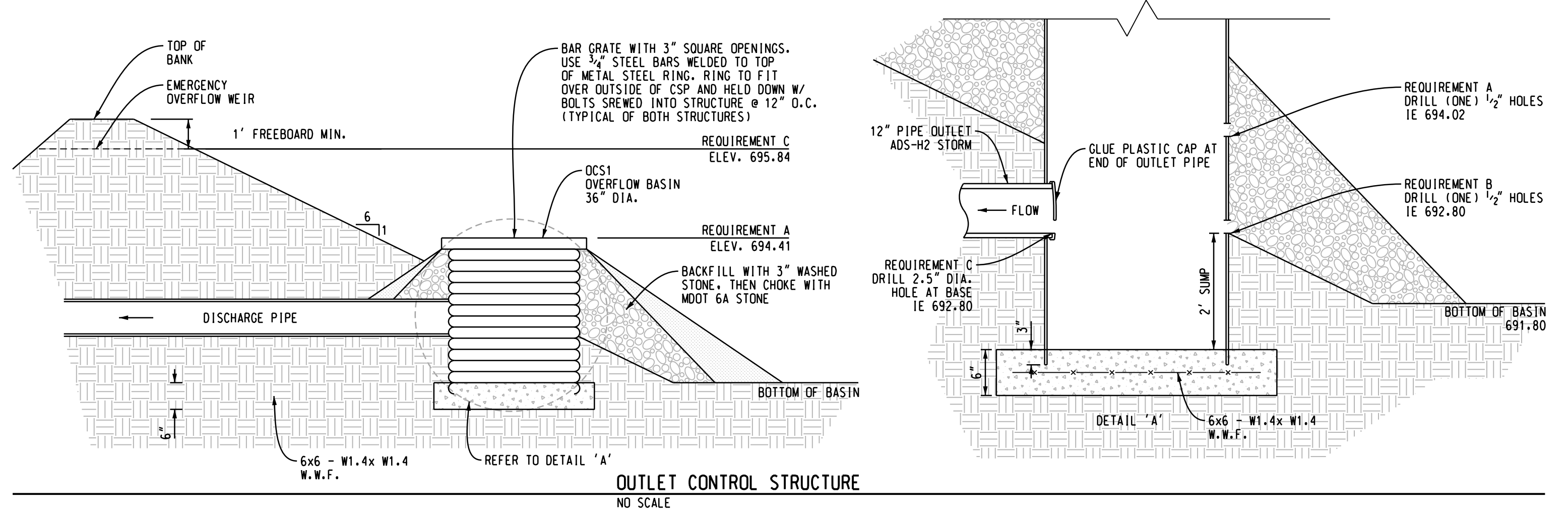
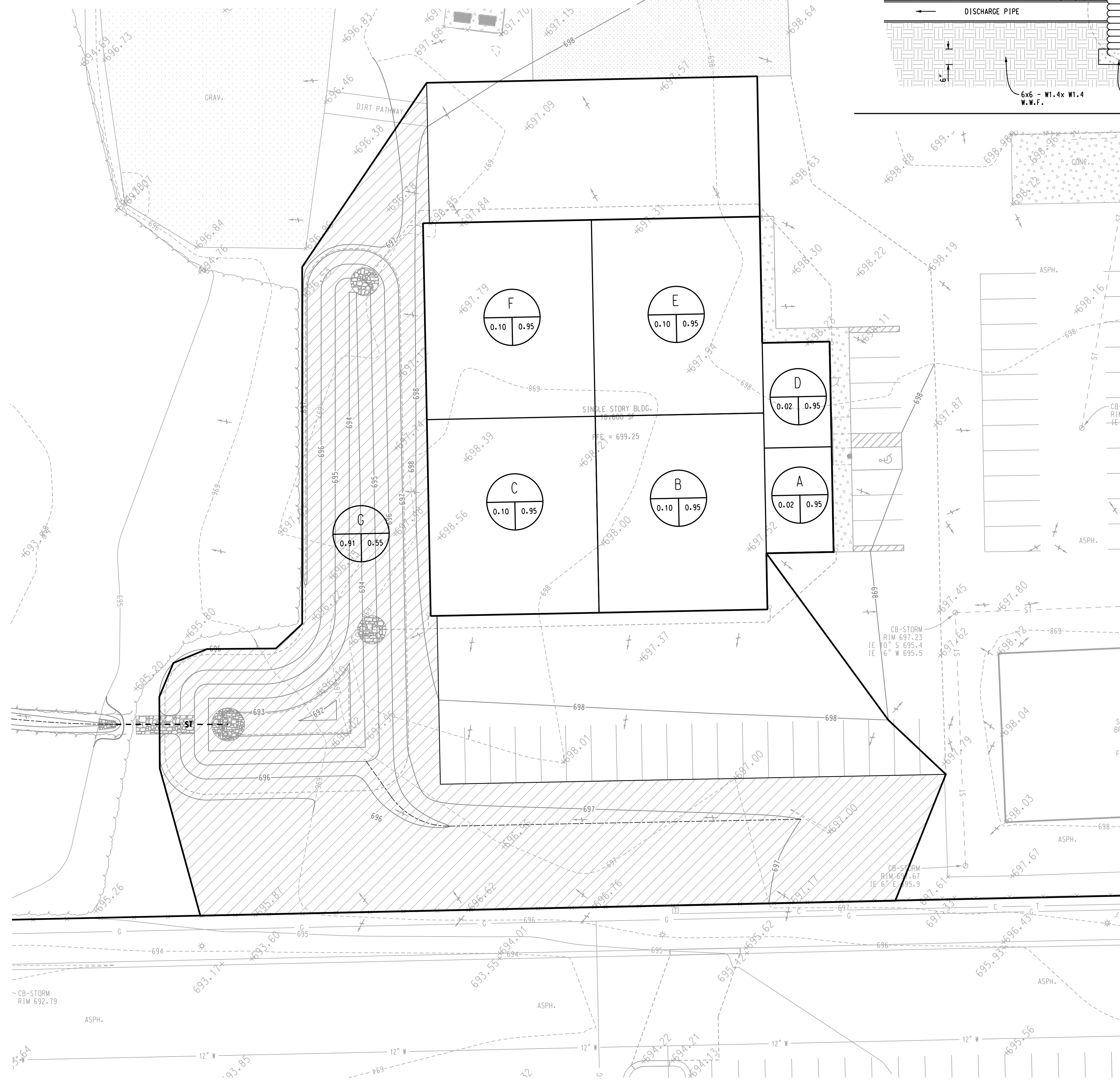
JOB NO.: 240201 SPA

PHASE: SPA

C300

2024

| Runoff Coefficient Calculations | | | | | | | | | | | | | |
|---------------------------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|-------------------------|-------------|-------------|---------------|
| Drainage Area | Pervious | | | Impervious | | | Roof Top | | | Runoff | | | Drainage Area |
| | Area (ft ²) | Area (Acre) | C | Area (ft ²) | Area (Acre) | C | Area (ft ²) | Area (Acre) | C | Area (ft ²) | Area (Acre) | C | |
| A | 0.0 | 0.00 | 0.30 | 0.0 | 0.00 | 0.95 | 900.0 | 0.02 | 0.95 | 900.0 | 0.02 | 0.95 | A |
| B | 0.0 | 0.00 | 0.30 | 0.0 | 0.00 | 0.95 | 4200.0 | 0.10 | 0.95 | 4200.0 | 0.10 | 0.95 | B |
| C | 0.0 | 0.00 | 0.30 | 0.0 | 0.00 | 0.95 | 4200.0 | 0.10 | 0.95 | 4200.0 | 0.10 | 0.95 | C |
| D | 0.0 | 0.00 | 0.30 | 0.0 | 0.00 | 0.95 | 900.0 | 0.02 | 0.95 | 900.0 | 0.02 | 0.95 | D |
| E | 0.0 | 0.00 | 0.30 | 0.0 | 0.00 | 0.95 | 4200.0 | 0.10 | 0.95 | 4200.0 | 0.10 | 0.95 | E |
| F | 0.0 | 0.00 | 0.30 | 0.0 | 0.00 | 0.95 | 4200.0 | 0.10 | 0.95 | 4200.0 | 0.10 | 0.95 | F |
| G | 24227.0 | 0.56 | 0.30 | 15260.0 | 0.35 | 0.95 | 0.0 | 0.00 | 0.95 | 39487.0 | 0.91 | 0.55 | G |
| Total | 24227.0 | 0.56 | 0.30 | 15260.0 | 0.35 | 0.95 | 18600.0 | 0.43 | 0.95 | 58087.0 | 1.33 | 0.68 | Total |



Requirement A - Storage
Using the 90% exceedance storm as defined by State of Michigan and U.S. Environmental Protection Agency (and noted below)

Site Information
Site Area (A_s) = 1.33 acre
Flat Roof (A_f) = 0.43 acre
Flat Roof Coefficient (C_f) = 0.84
Parking Lot & Pavement (A_p) = 0.35 acre
Pavement Coefficient (C_p) = 0.97
Open Space (A_{os}) = 0.56 acre
Open Space Coefficient (C_{os}) = 0.11

$$R_p = \frac{(A_{f1} \cdot C_{f1}) + (A_{p1} \cdot C_{p1}) + (A_{os1} \cdot C_{os1})}{A_t}$$

R_p = 0.570 (weighted volume)
(Water Quality Volume)
WQV = P · R_p
P = 1.0 inches
WQV = 0.570 watershed (in / ft²)
WQV = 2758 ft³

Requirement B - Storage

2-Year, 24-Hour Rainfall = 2.26 in (See Rainfall Tab for regional rainfall value or site specific rainfall event may be substituted with DNR approved)

Total Site Disturbed Area = 1.33 acres

Pre-Development Conditions

| Cover Type | Soil Type | Area (sf) | Area (ac) | CN (from TR-55) | S | Q Runoff (in) | Runoff Volume* (ft ³) |
|---------------|------------|---------------|-------------|-----------------|------------|---------------|-----------------------------------|
| Woods | C | 9,321 | 0.21 | 70 | 4.3 | 0.346 | 269 |
| Meadow | C | 0 | 0.00 | 71 | 4.1 | 0.377 | 0 |
| Open Space | C | 25,482 | 0.58 | 74 | 3.5 | 0.478 | 1,015 |
| Impervious | N/A | 23,304 | 0.53 | 98 | 0.20 | 2.032 | 3,947 |
| TOTAL: | N/A | 58,087 | 1.33 | N/A | N/A | N/A | 5,230 |

Post-Development Conditions

| Cover Type | Soil Type | Area (sf) | Area (ac) | CN* | S | Q Runoff (in) | Runoff Volume* (ft ³) |
|---------------|------------|---------------|-------------|------------|------------|---------------|-----------------------------------|
| Impervious | N/A | 33,880 | 0.78 | 98 | 0.2 | 2.032 | 5,734 |
| Open Space | C | 24,227 | 0.56 | 74 | 3.5 | 0.478 | 966 |
| Woods | C | 0 | 0.00 | 70 | 4.3 | 0.346 | 0 |
| TOTAL: | N/A | 58,087 | 1.33 | N/A | N/A | N/A | 6,700 |

Runoff Volume Increase (ft³): 1,470
Runoff Volume Increase = (Post-Dev. Runoff Volume) MINUS (Pre-Dev. Runoff Volume)

Requirement C - Storage

Design Return Period = 100 yrs
Proposed Site Area = 1.33 acre
C_w = 0.68
Allowable Outlet = 0.20 cfs/acre
Allowable Outlet = 0.27 cfs
Peak Storage = 9520 ft³

Required Pond Capacity

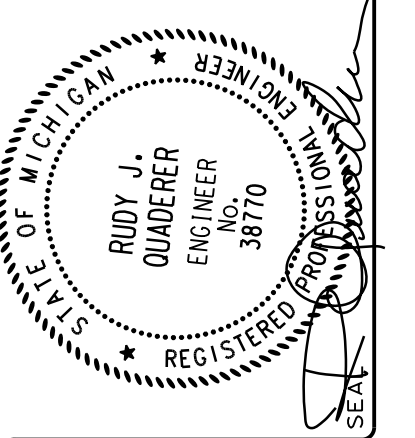
| Storm Duration (min) | Storm Intensity 100 yrs (in/hr) | C _w x A | Inflow Rate (cfs) | Outflow Rate (cfs) | Storage Rate (cfs) | Required Storage Volume (cfs) | Peak Storage |
|----------------------|---------------------------------|--------------------|-------------------|--------------------|--------------------|-------------------------------|--------------|
| 5 | 7.60 | 0.91 | 6.88 | 0.27 | 6.61 | 1984 | |
| 10 | 5.77 | 0.91 | 5.22 | 0.27 | 4.96 | 2974 | |
| 15 | 5.15 | 0.91 | 4.66 | 0.27 | 4.40 | 3956 | |
| 20 | 4.60 | 0.91 | 4.16 | 0.27 | 3.90 | 4677 | |
| 30 | 3.90 | 0.91 | 3.53 | 0.27 | 3.26 | 5875 | |
| 40 | 3.40 | 0.91 | 3.08 | 0.27 | 2.81 | 6747 | |
| 50 | 3.00 | 0.91 | 2.72 | 0.27 | 2.45 | 7348 | |
| 60 | 2.70 | 0.91 | 2.44 | 0.27 | 2.18 | 7839 | |
| 70 | 2.50 | 0.91 | 2.26 | 0.27 | 2.00 | 8386 | |
| 80 | 2.30 | 0.91 | 2.08 | 0.27 | 1.82 | 8714 | |
| 90 | 2.10 | 0.91 | 1.90 | 0.27 | 1.63 | 8826 | |
| 100 | 1.90 | 0.91 | 1.75 | 0.27 | 1.48 | 8883 | |
| 110 | 1.80 | 0.91 | 1.63 | 0.27 | 1.36 | 8995 | |
| 120 | 1.70 | 0.91 | 1.54 | 0.27 | 1.27 | 9161 | |
| 130 | 1.60 | 0.91 | 1.45 | 0.27 | 1.18 | 9218 | |
| 140 | 1.52 | 0.91 | 1.38 | 0.27 | 1.11 | 9319 | |
| 150 | 1.45 | 0.91 | 1.31 | 0.27 | 1.05 | 9414 | |
| 160 | 1.39 | 0.91 | 1.26 | 0.27 | 0.99 | 9520 | PEAK |
| 170 | 1.31 | 0.91 | 1.19 | 0.27 | 0.92 | 9376 | |
| 180 | 1.24 | 0.91 | 1.12 | 0.27 | 0.86 | 9244 | |
| 190 | 1.18 | 0.91 | 1.07 | 0.27 | 0.80 | 9138 | |
| 200 | 1.13 | 0.91 | 1.02 | 0.27 | 0.76 | 9076 | |
| 210 | 1.07 | 0.91 | 0.97 | 0.27 | 0.70 | 8845 | |
| 220 | 1.00 | 0.91 | 0.91 | 0.27 | 0.64 | 8430 | |
| 230 | 0.95 | 0.91 | 0.86 | 0.27 | 0.59 | 8188 | |
| 240 | 0.90 | 0.91 | 0.81 | 0.27 | 0.55 | 7892 | |

Detention Capacity

Average End Method

| Contour | Area (ft ²) | Volume (ft ³) | Total Volume (ft ³) |
|---------------------------------|-------------------------|---------------------------|---------------------------------|
| 692.8 | 0.0 | 0 | 0 |
| Average | 266.0 | 53 | |
| 693 | 532.0 | 53 | |
| Average | 1357.0 | 1357 | |
| 694 | 2182.0 | 1410 | |
| Average | 3278.0 | 3278 | |
| 695 | 4374.0 | 4688 | |
| Average | 5760.0 | 5760 | |
| 696 | 7146.0 | 10448 | |
| Average | 8113.8 | 6491 | |
| 696.8 | 9081.6 | 16939 | |
| Total Detention Capacity | | | 16939 |

Requirement A (Volume) 2758
Requirement A (Elevation) 694.41
Requirement B (Volume) 1470
Requirement B (Elevation) 694.02
Requirement C (Volume) 9520
Requirement C (Elevation) 695.84



| | | |
|----------|------------------------------|-------------------|
| NO. | DATE | REVISION OR ISSUE |
| 08-20-24 | VIENNA TWP. (SITE PLAN APP.) | SUBJECT |

DRAWN: BRZEZINSKI
DESIGNED: [blank]
CHECKED: [blank]
FIELD: GREW TH / KM

SIMMS CHEVROLET
NEW ACCESSORY BUILDING
4220 W. VIENNA ROAD
CLIO, MI 48820

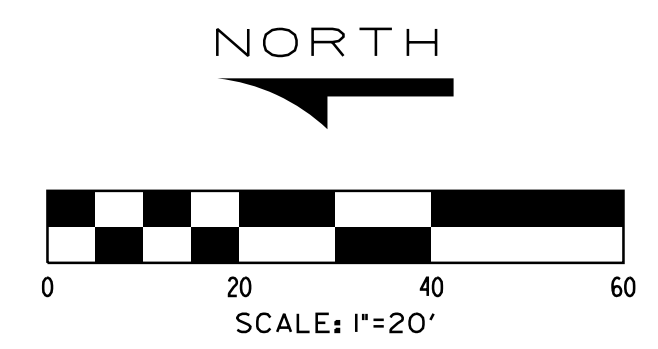
DRAINAGE AREA MAP & STORM WATER DESIGN CALCULATIONS

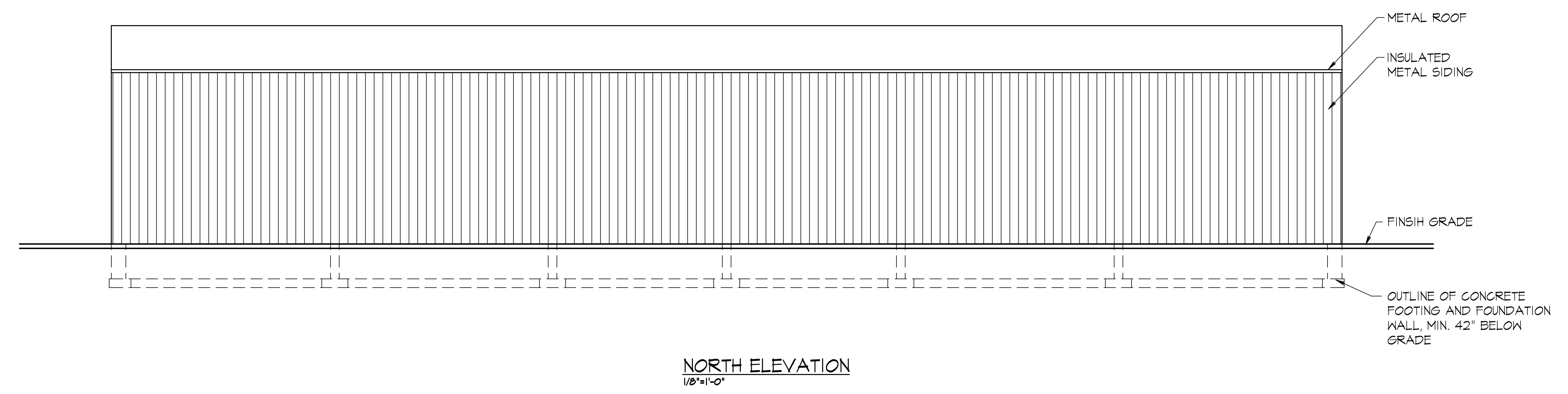
Griggs Quaderer, Inc.
8308 OFFICE PARK DRIVE
WWW.GQINCORP.COM
RUDY@GQINCORP.COM
CHRIS@GQINCORP.COM
PH: (610) 695-0154

CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING

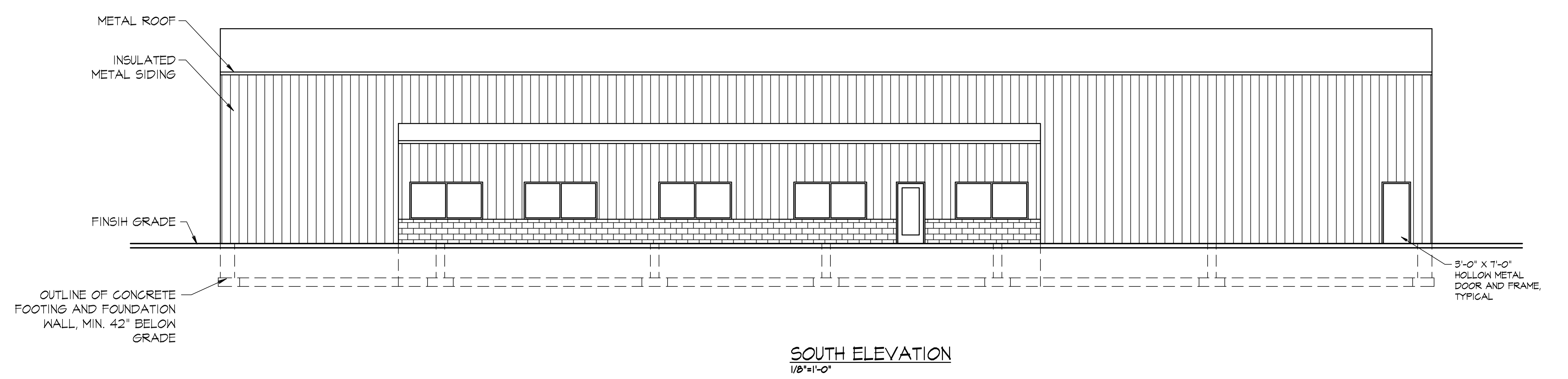


PHASE: SPA
JOB NO.: 240201
C301





NORTH ELEVATION
 1/8"=1'-0"



SOUTH ELEVATION
 1/8"=1'-0"

REVISIONS

| |
|--|
| |
| |
| |
| |

JOB NO: 024-018
 DATE: MAR 28, 2024
 DRAWN BY: OWH, JKC
 SCALE: AS NOTED
 SHEET NO:

