

Planning Memorandum

To: Sunfish Lake Planning Commission

From: Tom Ramler-Olson, AICP, City Planner

Date: July 8, 2021
Planning Commission Meeting July 15, 2021

Re: 300 Salem Church Road – Major Site Plan Review
WSB Project No. 18383-000

GENERAL INFORMATION

Applicant: Tim Winters, Winco Landscape Inc.

Property Owner: Roger and Shari Wilsey

Project Location: 300 Salem Church Road – PID 380310053012

Existing Land Use / Zoning: Detached Single-Family; Zoned Residential District, R-1

Surrounding Land Use / Zoning:

North:	Residential; Zoned Single-Family Residential District, R-1
East:	Residential; Zoned Single-Family Residential District, R-1
South:	Residential; Zoned Single-Family Residential District, R-1 within the Shoreland Overlay District
West:	Residential; Zoned Single-Family Residential District, R-1

Comprehensive Plan: The City of Sunfish Lake (2008) Comprehensive Plan guides this property for Rural Residential land use.

Deadline for Agency Action:

Application Date:	06-08-2021
60 Days:	08-07-2021
Extension Letter Mailed:	N/A
120 Days:	10-06-21

CONSIDERATIONS RELATED TO THE REQUEST

1. Overview.

Tim Winters of Winco Landscape Inc. (“applicant”) has applied on behalf of Roger and Shari Wilsey (“property owner”) for a major site and building plan review to add an in-ground swimming pool, surrounding pool deck, and new retaining wall on the property located at 300 Salem Church Road (“subject property”).

The property owner has confirmed with staff that they plan to install an automatic pool cover and provide fencing along the top of the wall. Staff will require that building plans reflect these features before the issuance of building permits. The applicant has confirmed with staff that

the proposal will not require any new lighting from what already exists at the subject property and has stated that lighting is being removed to accommodate the proposal.

The proposed improvements will replace an existing patio, fountain, and retaining wall that stepped down from the home to the ground in the rear yard. Plans describing the proposal show the patio and top of the retaining at roughly the same elevation as the walkout from the rear of the home. The survey of proposed conditions depicts the retaining wall and provides elevation information that shows the wall will be tallest at its southwest corner at about 11.8 feet. That height runs for about 13 feet of the wall's length. The grade then slopes higher as one moves to either end where the retaining wall has a height of about 2 feet. The subject property has overstory trees and groundcover along the south and west property lines that will provide some buffering benefit between neighboring properties and the proposed retaining wall. In addition, the applicant has proposed to plant Blue Hydrangea along the wall, as depicted on the survey proposed conditions submitted by the applicant. This plan was reviewed and approved by the City Forester.

City Engineer reviewed the application and provided comments to the applicant within a memo dated July 1, 2021. The applicant responded with a document addressing several comments and a revised site plan. The City Engineer reviewed the revised material on July 7, 2021 and determined that the applicant had satisfied all outstanding issues identified in the memo.

Projects with an area of 1,000 square feet or more require the review and approval of a major site and building plan. According to the plan, the area of the proposed swimming pool, surrounding pool deck and retaining wall is 3,458 square feet, which will bring the total amount of development on the property to 17,014 square feet.

Site and Building Plan Review requests require a public hearing, and review and recommendation by the Planning Commission, followed by review and consideration by the City Council.

2. General Zoning Review

The proposed structure would be located south of the principal structure. The total area of improvements is approximately 3,458 square feet, which include the pool, surrounding pool deck, and retaining wall.

Below is a summary table of the dimensional requirements for lots and structures in the R-1 District. The project would comply with all applicable requirements.

	R-1 Maximum Requirement	Proposal
Front Yard Setback	100 feet	149.7
Rear Yard Setback	50feet	50
Side Yard Setback	50 feet	83
Lot Coverage	10%	7.7%

3. Ordinance Authority

SECTION 1208.03.B provides the process for review of a major site and building plan which requires public notice and notification, a public hearing, and review and recommendation by the Planning Commission, followed by review and consideration by the City Council.

SECTION 1217.01.H describes the screening requirements of accessory uses from neighboring properties and the public right-of-way, and that the design and positioning of any such building, structure, or use shall minimize the impact upon abutting properties.

SECTION 1241.04.D describes swimming pools as permitted accessory uses in the R-1 District, provided they are located below ground and are constructed with a protective safety feature such as a retractable cover and/or fence. The City Council, may at its discretion, exempt the structure from the required protective safety features if the property owner can demonstrate no safety hazards are posed for neighboring properties due to special site considerations including topography, dense vegetation, etc.

4. Site Plan Review Criteria

The Planning Commission, as its basis of recommendation, and the City Council, as its basis for decision on major projects, shall evaluate the effects of the proposed site and building plan. This review shall include, but is not limited to the following, with staff's comments provided in *italics*:

- A. Whether the proposed improvements are compatible and in harmony with the existing structures in the surrounding community.

The project proposes the construction of a swimming pool, pool deck, and retaining wall, the location for which complies with applicable setbacks and lot coverage requirements. Swimming pools are a permitted accessory use in the R-1 District and are often, if not always, accompanied by a surrounding walking area like a patio or deck. From observing aerial imagery provided by Dakota County, many properties have swimming pools and surrounding walking areas, such as those abutting from the east and west.

Given the terrain in the City of Sunfish Lake, retaining walls are also generally a reasonable use and can be designed to be compatible with other properties. However, there are no instances of retaining walls reaching a height of almost 12 feet and as long as what is proposed. The zoning ordinance does not specifically prohibit this feature at its proposed dimensions. However, it does require that accessory uses be screened from neighboring properties. There is some ground cover and overstory trees along the edges of the subject property between it and neighbors to the west and south. There are opportunities to provide more screening through other plantings. The City Forester has been working with the applicant and approved their use of Blue Hydrangea on the wall to soften its appearance to the neighbors identified above.

- B. Whether the proposed improvements preserve the character and nature of the surrounding community, including the natural landscape and woodland characteristics of the community.

The proposed improvements will disturb approximately 2.6 percent of the property's 3.02 acres of the lot area. The swimming pool, pool deck, and retaining will replace the existing patio and will comply with the ordinance setbacks, as well as not disturb any wooded areas on the property. Staff believes that vegetation added along the edges of the property to soften the appearance of the wall facing neighbors would help this proposal meet this criterion.

- C. Whether the proposed improvements are not constructed of unsightly, improper or unsuitable materials.

Based on plans submitted, the proposed pool, pool deck, and retaining will not be constructed of unsightly, improper, or unsuitable materials.

- D. Whether the proposed improvements will not materially adversely affect any natural resources in the community, except when there is no feasible and prudent alternative to the proposed location of the improvements. For purposes of this clause, "natural resources" shall include, but not be limited to, all mineral, animal, botanical, air, water, land, timber, soil, quietude, recreational, historical, scenic, and aesthetic resources.

The project is not expected to adversely impact any of the above noted natural resources.

- E. Whether the proposed site and improvements shall have an appearance that will not have an adverse effect upon adjacent residential properties.

As noted above, the proposal includes a retaining wall that will be partially obscured by the existing vegetation between the subject property and its neighbors to the south and west. However, there is visual clearance between the ground cover and overstory trees that will still leave the wall exposed to those neighbors. The applicant has proposed Vanilla Strawberry Panicle Hydrangea along the wall to obscure and soften the appearance of the retaining wall, but Planning Commission has to make the determination if the proposed vegetation is adequate to not have an adverse effect upon adjacent residential properties.

- F. Whether the proposed site improvement complies with drainage requirements, as provided in Section 1216.04 of this Ordinance.

Drainage plans were reviewed by the City Engineer. The proposed improvements would comply with requirements regarding engineering, stormwater management and site grading.

- G. Whether the proposed site and improvements are consistent with the purposes of this Ordinance and the Property Owner Reference & Development Guide Manual, as established by City Council resolution.

The proposed improvements comply with the general provisions of the R-1 District and other applicable design and performance standards.

RECOMMENDATION

Based on the foregoing considerations and applicable ordinances, staff recommends approval of the site and building plan subject to the following findings of fact and conditions of approval:

Findings of Fact:

1. The location of the subject property is as follows:

300 SALEM CHURCH ROAD,
SUNFISH LAKE, MN 55118
2. The planning report dated July 8, 2021 prepared by WSB is incorporated herein by reference.
3. The Applicant submitted applications for a major site and building plan review for a new swimming pool, pool deck, and new retaining wall at the subject property.
4. Requests for major site and building plan review require Planning Commission review and City Council approval.

5. Upon review of the planning report and application information, the Planning Commission found that the proposed site and building plan request meet Ordinance requirements. The following findings support the Planning Commission's recommendation for approval:
 - a. The proposed improvements meet accessory use standards, and R-1 District requirements and standards.
 - b. The proposal addresses Ordinance requirements pertaining to grading, drainage and stormwater management, and screening.
 - c. The development meets other applicable Zoning Ordinance criteria.

Conditions of Approval:

1. Construction shall occur in substantial conformance with the plans presented at the July 15, 2021 Planning Commission meeting.
2. The applicant must comply with all requirements described in the Engineer Memo dated July 1, 2021.
3. The applicant must provide blanket stabilization on steeper sloped areas where slopes are at 3:1 or greater with seeding and restore all areas within 14 days of inactivity.
4. The applicant must obtain all other permits as may be required.
5. The applicant shall comply with all applicable federal, state, and local laws, rules and ordinances.
6. The applicant must establish and maintain the proposed vegetation of Blue Hydrangea along the proposed retaining wall adequately to screen the appearance of said wall consistent with Section 1218.02.B.5.
7. The applicant must adhere to and remain in compliance with the requirements of this Resolution, applicable performance standards, and such other requirements as may apply.
8. Building plans submitted by the applicant must describe the proposed fencing at the top of the retaining wall and note on plans the installation of an automatic pool cover.
9. All conditions of the site plan review must be complied with, shall run with the land, and shall not in any way be affected by the subsequent sale, lease or other change from current ownership of the Property.
10. This Resolution is subject to the condition that all representations, written and oral, made by the Applicant and its agents and representatives to the City contained in and concerning the Applicant's application for the site plan review must have been true, complete and accurate at the time they were made, and that they remain true and accurate for the duration of the development.
11. By undertaking the activities approved by the requests, the Applicant agrees to all conditions.
12. All soils must be removed from the site and placed at an approved disposal site.
13. At the time of building permit application, plans for the proposed swimming pool must indicate a retractable cover and describe the proposed fence.

Subject Site



CITY OF *Sunfish Lake* MINNESOTA

**Planning Commission
Findings of Fact &
Recommendation
(Approval)**

Applicant's Name: Tim Winters, Winco Lanscape LLC, on behalf of Roger and Shari Wilsey

Request: The applicant requests City approval of a major site and building plan to construct a in-ground swimming pool, pool deck, and retaining wall at the property 300 Salem Church Road

Planning Commission Meeting Date: July 15, 2021

Findings of Fact: Based on review of the application and evidence received, the Sunfish Lake Planning Commission now makes the following findings of fact and recommendation:

1. The location of the subject property is as follows:

300 SALEM CHURCH ROAD
SUNFISH LAKE, MN 55118
2. The planning report dated July 8, 2021 prepared by WSB is incorporated herein by reference.
3. The Applicant submitted application for a major site and building plan review.
4. Requests for major site and building plan review require Planning Commission review and City Council approval.
5. The Sunfish Lake Planning Commission reviewed the Applicant's request for major site and building plan review at the July 15, 2021 Planning Commission meeting.
6. Upon review of the planning report and application information, the Planning Commission found that the proposed site and building plan request and proposed conditional use meet Ordinance requirements. The following findings support the Planning Commission's recommendation for approval:
 - a. The proposed improvements meet accessory structure standards, and R-1 and Shoreland Overlay District requirements and standards.
 - b. The proposed garage and driveway addresses Ordinance requirements pertaining to grading, drainage and stormwater management, and screening.
 - c. The development meets other applicable Zoning Ordinance criteria.

RECOMMENDATION

Based on the foregoing considerations and applicable ordinances, staff recommends conditional approval of the site and building plan and conditional use permit subject to the following conditions of approval:

1. Construction shall occur in substantial conformance with the plans presented at the July 15, 2021 Planning Commission meeting.
2. The applicant must comply with all requirements described in the Engineer Memo dated July 1, 2021.
3. The applicant must provide blanket stabilization on steeper sloped areas where slopes are at 3:1 or greater with seeding and restore all areas within 14 days of inactivity.
4. The applicant must obtain all other permits as may be required.
5. The applicant shall comply with all applicable federal, state, and local laws, rules and ordinances.
6. The applicant must establish and maintain the proposed vegetation of Blue Hydrangea along the proposed retaining wall adequately to screen the appearance of said wall consistent with Section 1218.02.B.5.
7. The applicant must adhere to and remain in compliance with the requirements of this Resolution, applicable performance standards, and such other requirements as may apply.
8. Building plans submitted by the applicant must describe the proposed fencing at the top of the retaining wall and note on plans the installation of an automatic pool cover.
9. All conditions of the site plan review must be complied with, shall run with the land, and shall not in any way be affected by the subsequent sale, lease or other change from current ownership of the Property.
10. This Resolution is subject to the condition that all representations, written and oral, made by the Applicant and its agents and representatives to the City contained in and concerning the Applicant's application for the site plan review must have been true, complete and accurate at the time they were made, and that they remain true and accurate for the duration of the development.
11. By undertaking the activities approved by the requests, the Applicant agrees to all conditions.
12. All soils must be removed from the site and placed at an approved disposal site.
13. At the time of building permit application, plans for the proposed swimming pool must indicate a retractable cover and describe the proposed fence.

Adopted by the Sunfish Lake Planning Commission this 15th day of July 2021.

City of Sunfish Lake

By: _____
Tom Hendrickson
Planning Commission Chair

ATTEST

Catherine Iago, City Clerk

Memorandum

To: Tom Ramler-Olson, AICP – City Planner

From: Jeff Sandberg, PE – City Engineer

Date: July 1, 2021

Re: 300 Salem Church Road – Major Site Plan Review
City of Sunfish Lake, MN
WSB Project No. 018383-000

Project Background

The Applicant is proposing to construct a new pool along with retaining walls and necessary grading on a currently developed property with existing home. The following review is only for the engineering, stormwater management, and site grading issues. Building code compliance will be handled by the City planners and building inspectors. Comments are based on the submittal received from the applicant on June 7, 2021.

The following requirements and comments need to be addressed as the project moves forward:

General Notes

1. All retaining walls will need engineered drawings prepared by a licensed structural engineer and submitted for review by the City of Sunfish Lake Building Official.
2. This improvement proposes approximately 17,000 square feet of disturbance, which is below the threshold for requiring an NPDES permit and SWPPP. If any variance in disturbance occurs from the approved plan, a SWPPP and NPDES permit may be required.

Stormwater Management

1. The applicant is proposing an increase in impervious coverage of approximately 3,100 SF, which is below the threshold for a Stormwater Management Plan. If impervious coverage is added, a SWP may be required.

Grading, Erosion Control and Restoration

1. The applicant must quantify the amount of cut and fill contemplated with this plan, and the amount of fill to be imported (or exported) with this plan.
2. No erosion control or restoration plan was provided. An erosion control and restoration plan is required for these improvements.

Conclusion and Recommendations

Based upon our review of the engineering, stormwater management and site grading for this proposed development, we have determined that the proposed plan dated June 7, 2021 require revisions per the above-noted items (items 1 and 2 in Grading, Erosion Control, and Restoration) in this memorandum. Therefore, we hereby find the proposed plans not to be in accordance with City requirements and recommend denial from an engineering standpoint for this project until these items are addressed. We are requesting a new set of plans addressing these comments be resubmitted to our office prior to approval. We request that the Applicant restate each comment from this memorandum and detail how each comment was addressed.



July 5th, 2021

Re:

300 Salem Church Road – Major Site Plan Review

Sunfish Lake Mn

WSB Project No. 018383-000

Memorandum Dated July, 1st, 2021

Tom & Jeff: Please review the responses below to the outlined requested information on the memorandum:

General Notes:

#1. Jon Huyck- is a licensed Engineer at Anchor Wall Systems with both credentials as a Structural & Site Engineer. Jon has provided the stamped engineered plan for the Project submitted.

#2. Is below the Threshold- No response required.

Stormwater Management:

#1. Below the Threshold – No response required.

Grading, Erosion Control, and Restoration:

#1. Subcut for retaining wall: We will be required the sub cut a trench 24" wide by 22"-30" deep for the base installation for the retaining wall. Minimum of 6" of granular base and two courses of block below grade (16"). Please see engineered plan provided.

Fill Dirt – We project approximately 350 cy of imported for the pool & pool deck to be supported with the proposed heights on survey provided.

#2. Erosion Control: Winco has placed 320 LF of 12" erosion sock on site for the phase #1 retaining wall installation we are completing with a permit issued by the City of Sunfish Lake. See included photos of sock. I have also sketched this in on the survey that has been submitted.

This sock will protect site the areas we are going to need for a work area, storage area of materials, and access road to work zone.

Upon pool completion - We would plan to vegetate these areas back with native seed mix that is similar to existing native plantings on site.



(2)

Retaining Wall Screening:

As requested, —I met on site with the City Forester Jim Nayes to discuss possible Vegetation for the high portions of the proposed wall that could a concern by planning committee and neighboring properties.

Jim And I discussed some native shrubbery that would tolerate the shaded areas, deer population, and non-irrigated portion of the property that they need to be placed. Jim mentioned the following plants; Nannyberry Viburnum, Dogwood, Elderberry, Forsythia, Hazelnut, and Hydrangea.

The homeowner stated that if required for screening by the planning committee; she would consider the installation of a Vanilla Strawberry Panicle Hydrangea (see photo). Grows to height of 6-8 foot high and hardy to a zone 3 environment. Jim Acknowledged this would be an acceptable option for screening purposes.

I believe these responses address the requirements and/or explanation of additional information needed for the review as outlined on this Memorandum on 7/12/2021.

Please also take into the consideration that on Thursday July 1st our Windscape division completed the 1" depth of Terra seeding of exposed turf areas on the property with an Ultra Pro seed mix in most areas and a Grow low seed mix in the Northeast corner of the property (we installed a straw blanket in this area due to the slope- there is ½" compost blanket below the straw blanket and an additional ½" compost/seed blanket on top) due to steep slope.

We installed 80 cy of compost/seed on site which converts to approximately 28,000-30,000 sf of seeding coverage. Some areas required only ½" top-dress due to these areas already having some vegetation in place.

Please let me know if you have any questions or need additional information for the plan review.

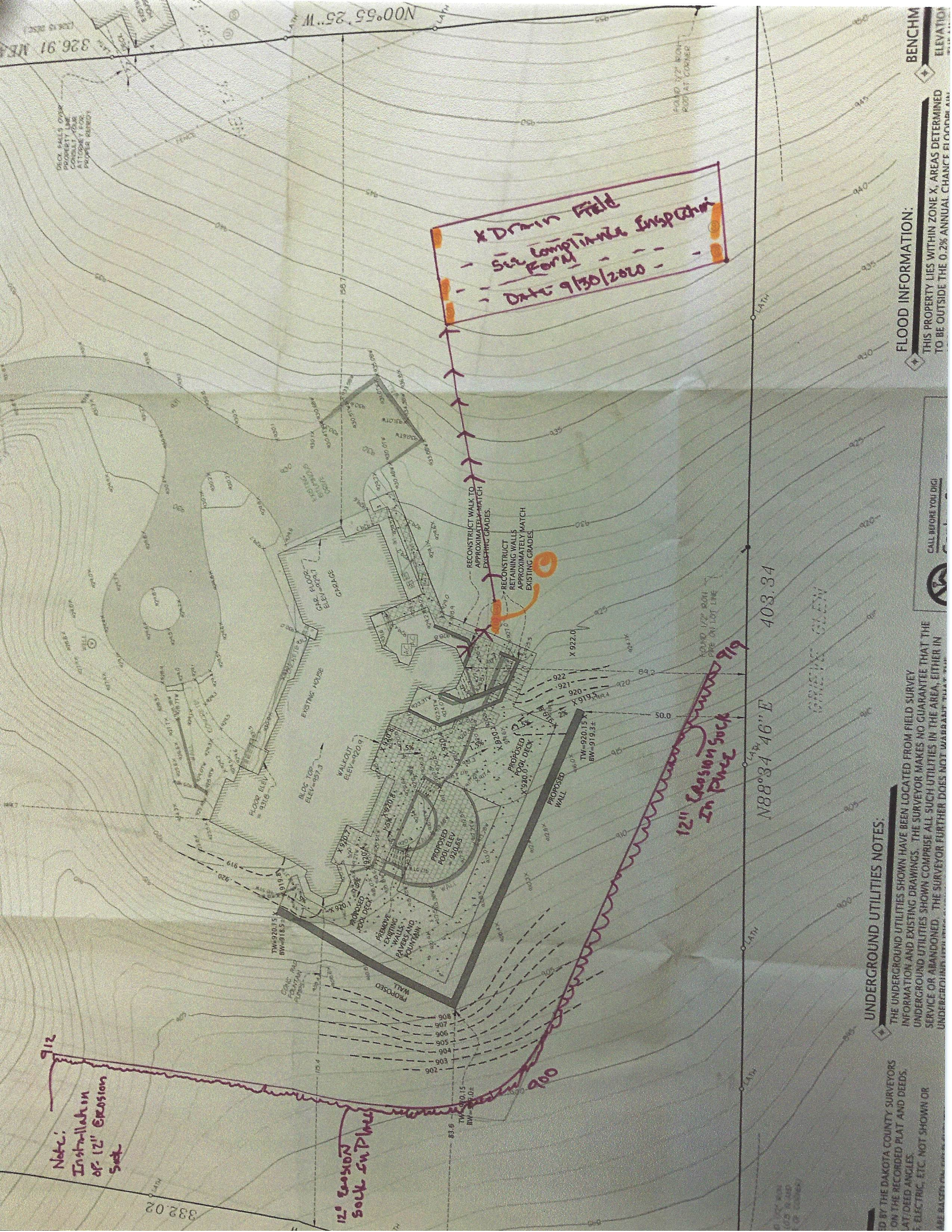
Regards,

A handwritten signature in black ink, appearing to read "Tim Winters", with a large, stylized loop at the end.

Tim Winters

Winco Landscape Inc

612.366.2841



FLOOD INFORMATION:

THIS PROPERTY LIES WITHIN ZONE X. AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD ARE

UNDERGROUND UTILITIES NOTES:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE

ED BY THE DAKOTA COUNTY SURVEYORS ON THE RECORDED PLAT AND DEEDS. LAT/DEED ANGLES. E, ELEC TRIC, ETC. NOT SHOWN OR SEE BASED ON

CALL BEFORE YOU DIG



BENCHM ELEVATION

VANILLA STRAWBERRY™ PANICLE HYDRANGEA

HYDRANGEA PANICULATA 'RENNY' PP20,670



The enormous flower heads are a blend of vanilla and strawberry, held upright on red stems. Flowers emerge creamy white in mid-summer, change to pink as the night temperatures drop and finally turn strawberry red. New blooms emerge as older blooms change color, giving the plant a multicolored effect in late summer and early fall. The red coloring lasts at least 3-4 weeks. Plants grow upright, and then cascade later in the season. Excellent for fresh cut and dried flower arrangements. Flower color varies based on climate and growing conditions.

HEIGHT

6-7'

WIDTH

5-6'

EXPOSURE

Full Sun to Part Shade

HARDINESS ZONE

3-8

HEAT ZONE

8

SHAPE

Upright

FLOWER COLOR

 Pink

FOLIAGE

 Green

BONUS ATTRIBUTES





- Retaining walls

INSTRUCTIONS

* FYI - For Fence Post Footings to be Installed in Retaining Wall Area for protection.

SLEEVE-IT
by STRATA

INSTALLATION GUIDELINES

UNIT DIAGRAM

Sleeve-It units can be stacked in a nested format.

STEP 1 Surface Preparation

- Prepare a level surface area behind the wall face where the fence post is to be placed.
- The area should be approximately 16" wide by 32" deep.
- The elevation of the base of the Sleeve-It should be approximately 24" below the proposed top of the wall (not including the capstone).

STEP 2 Sleeve-It Placement

- Place the Sleeve-It unit on the level surface in an upright position with the front edge of the unit flush against the back of the wall.
- Multiple units should be spaced in accordance with fence specifications.

STEP 3 Backfilling Process

- Encapsulate and stabilize the Sleeve-It unit by placing and compacting sufficient backfill material layers as required.
- If geogrid is required, slit the geogrid perpendicular to the wall face just enough to fit around the base of the unit while ensuring that the geogrid remains properly attached to the wall.
- Continue the backfilling process as directed until the material reaches the top of the tower.
 - Do not remove perforated lid until ready to place post.
 - Do not step on perforated lid, as this could cause serious bodily injury.

STEP 4 Lid Detachment

- Punch the perforated lid using a mallet or hammer to expose the inside of the Sleeve-It unit. Detached lids can be left inside the unit or discarded prior to pouring of infill material.

STEP 5 Post Placement

- Place post through the exposed area and rest on the flat ground surface area inside the Sleeve-It cavity.
- Ensure that the post is upright and level and hold in place while carefully pouring infill material, such as concrete, through the exposed cavity.
 - Follow guidelines specified by infill supplier.
 - Concrete is highly recommended as infill material.

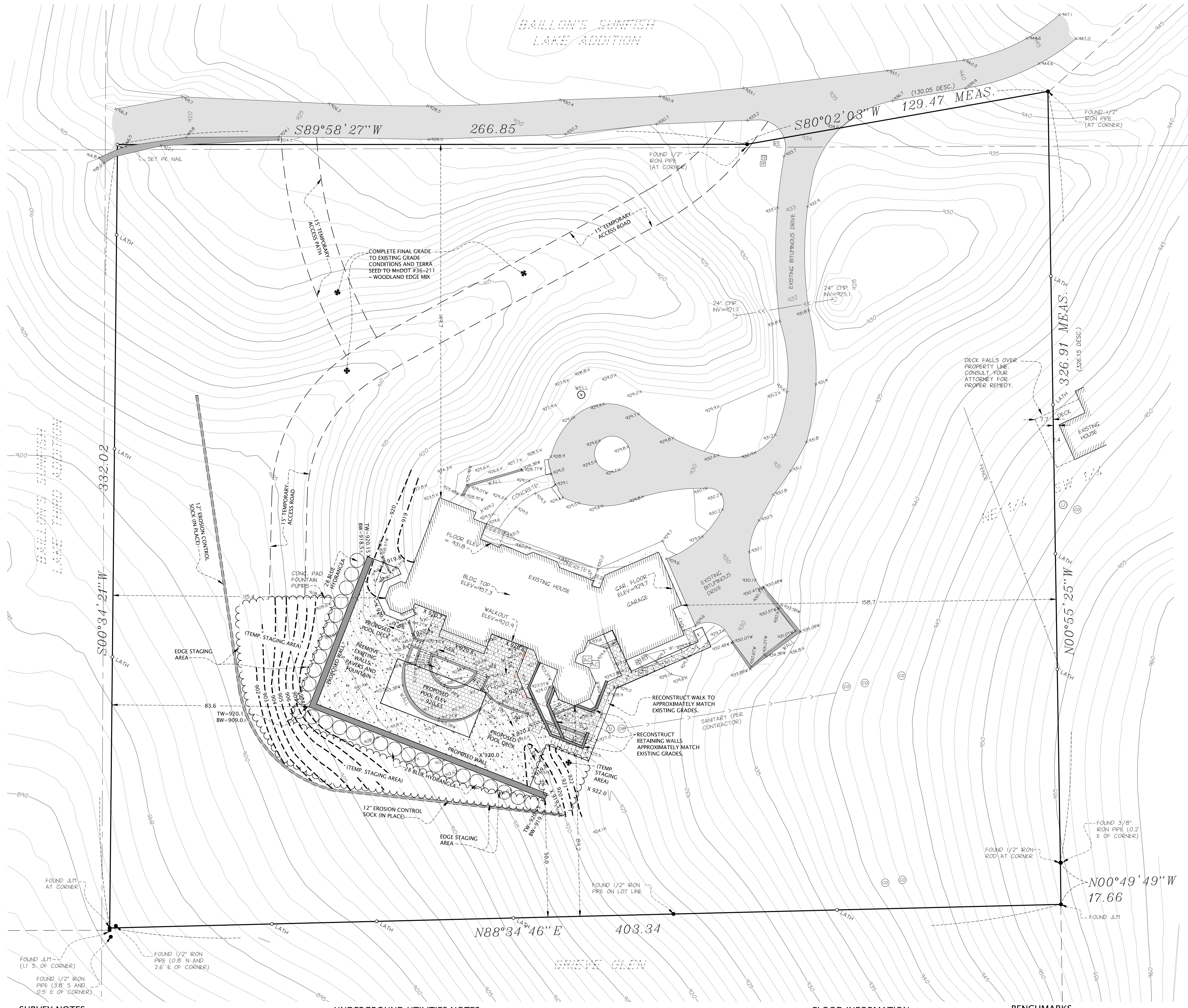
©2018 Strata Systems, Inc.

IMPORTANT NOTE: Backfill and compaction within three feet of the wall face should be performed with hand operated equipment as recommended by the National Concrete Mason Association (NCMA) SRW guidelines. Work should be performed in accordance with the standards in this guideline in addition to all standards related to the construction and installation of the segmental retaining wall system; and as recommended by the fencing manufacturer, the segmental wall system manufacturer, and the design engineer, as appropriate.

(https://srwproducts.com/wp-content/uploads/2020/03/Sleeve-it_Instructions-scaled.jpg)

PACKAGING

Sleeve-It®



SURVEY NOTES:

1. BEARINGS ARE BASED ON COORDINATES SUPPLIED BY THE DAKOTA COUNTY SURVEYORS OFFICE. BEARINGS ARE DIFFERENT THAN SHOWN ON THE RECORDED PLAT AND DEEDS. ALL INTERIOR ANGLES MATCH THE RECORDED PLAT/DEED ANGLES.
2. THERE MAY BE SOME UNDERGROUND UTILITIES, GAS, ELECTRIC, ETC. NOT SHOWN OR LOCATED.
3. CONTOURS DESIGNATED WITH SPOT ELEVATIONS ARE BASED ON FIELD SURVEY CONDUCTED JUNE 2021. AREAS WITHOUT SPOT ELEVATIONS ARE BASED ON LIDAR CONTOURS FROM MNTPO.

UNDERGROUND UTILITIES NOTES:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THIS SURVEY HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ADDITIONAL UTILITIES OF WHICH WE ARE UNAWARE MAY EXIST.



FLOOD INFORMATION:

THIS PROPERTY LIES WITHIN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON NON-PRINTED FEMA FLOOD INSURANCE RATE MAP NUMBER 27037C0105E HAVING AN EFFECTIVE DATE OF 12/02/2011.

BENCHMARKS

ELEVATIONS BASED ON INFORMATION AS SHOWN ON THE MNDOT GEODETIC WEBSITE. SURVEY DISK 1918 K WITH AN ELEVATION OF 931.83 WAS USED TO ESTABLISH VERTICAL CONTROL FOR THIS SURVEY (NAVD 88)

PROJECT BENCHMARKS IDENTIFIED AND SHOWN GRAPHICALLY.

LEGAL DESCRIPTION:

(DESCRIPTION PER DCA TITLE AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY TITLE COMMITMENT NO. 20-080452-Z) DATED OCTOBER 29, 2020.

That part of the following described property lying North of the South 333.50 feet thereof, being a part of Section Thirty One (31), Township Twenty Eight (28), Range Twenty Two (22): Commencing at the West Quarter (W 1/4) corner of said Section Thirty One (31); thence East assumed bearing, along the East-West quarter line of said Section Thirty One (31), a distance of 1163 .10 feet, thence South 25 degrees 20 minutes 00 seconds West a distance of 366.44 feet, thence South 89 degrees 58 minutes 58 seconds East a distance of 10.38 feet said point being marked by a 1/2 inch iron pipe monument and being the point of beginning of land to be described, thence North 00 degrees 53 minutes 24 seconds East a distance of 332.02 feet, said point being marked by a 3/4 inch iron pipe monument, thence South 89 degrees 46 minutes 57 seconds East a distance of 266.85 feet, said point being marked by a 3/4 inch iron pipe monument; thence North 80 degrees 02 minutes 53 seconds East a distance of 130.05 feet, said point being marked by a 3/4 inch iron pipe monument; thence South 0 degrees 39 minutes 37 seconds East, a distance of 326.15 feet, said point being marked by a 3/4 inch iron pipe monument, thence South 0 degrees 41 minutes 45 seconds east a distance of 351.61 feet, said point being marked by a 3/4 inch iron pipe monument; thence South 88 degrees 52 minutes 24 seconds West a distance of 413.36 feet, said point being marked by a 1/4 inch pipe monument, thence North 0 degrees 53 minutes 24 seconds East a distance of 332.43 feet to the point of beginning, Dakota County, Minnesota, together with the benefits and burdens of the easement contained in Book 71 of Miscellaneous Records, page 339, Document No. 469322 and Document No. 775141, Dakota County, Minnesota.

TITLE NOTES:

TITLE ITEMS PER DCA TITLE AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY TITLE COMMITMENT NO. 20-080452-Z DATED OCTOBER 29, 2020.

2. Easement for driveway purposes filed January 2, 1963 in Book 71 of Miscellaneous Records, page 339 and filed March 26, 1987 as Document No. 775141.

AREA:

PARCEL AREA = 131,939 SQ. FT. / 3.02 ACRES

LANDSCAPE/PLAN NOTES:

LANDSCAPE DESIGN, GRADES, PLANTINGS, TEMPORARY ACCESS, AND EROSION CONTROL PER TIM WINTERS OF WINCO LANDSCAPING 7/7/21.

EXISTING IMPROVED AREAS:

HOUSE	4760 SF	
DRIVEWAY	6143 SF	
FRONT CONCRETE	677 SF	
REAR CONC. STOOP	37 SF	
PAVER PATIO	1950 SF	*AREAS LISTED IN SQUARE FEET
PUMP CONC. PAD	10 SF	
PILLARS	26 SF	
WALLS	330 SF	
TOTAL IMPROVED	13933 SF	
% IMPROVED	10.6%	

PROPOSED IMPROVED AREAS:

HOUSE	4760 SF	
DRIVEWAY	6143 SF	
FRONT CONCRETE	677 SF	
POOL	815 SF	
POOL DECK	4550 SF	*AREAS LISTED IN SQUARE FEET
PILLARS	26 SF	
WALLS	643 SF	
TOTAL IMPROVED	17614 SF	
% IMPROVED	13.4%	

ZONING:

ZONING: SINGLE FAMILY RESIDENTIAL

SETBACKS:

STREET: 100 FT.

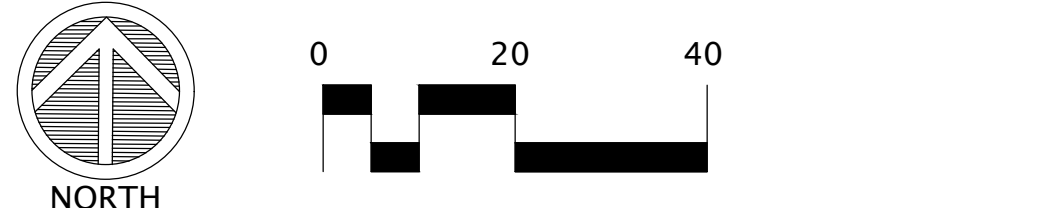
SIDEYARD: 50 FT.

REAR: 50 FT.

LEGEND:

● FOUND MONUMENT	⚡ FIRE DEPT. CONNECTION
○ SET 1/2" IRON PIPE MARKED PLS NO. 25718	⚡ HYDRANT
⊠ CABLE TV PEDestal	⊠ CURB STOP
⊠ AIR CONDITIONER	⊠ WATER WELL
⊠ ELECTRIC MANHOLE	⊠ WATER MANHOLE
⊠ ELECTRIC METER	⊠ WATER METER
⊠ ELECTRIC PEDestal	⊠ POST INDICATOR VALVE
⊠ ELECTRIC TRANSFORMER	⊠ WATER VALVE
⊠ LIGHT POLE	⊠ BOLLARD
⊠ GUY WIRE	⊠ FLAG POLE
⊠ POWER POLE	⊠ MAIL BOX
⊠ GAS MANHOLE	⊠ TRAFFIC SIGN
⊠ GAS METER	⊠ UNKNOWN MANHOLE
⊠ TELEPHONE MANHOLE	⊠ SOIL BORING
⊠ TELEPHONE PEDestal	⊠ SPOT ELEVATION
⊠ SANITARY CLEANOUT	⊠ TRAFFIC SIGNAL
⊠ SANITARY MANHOLE	⊠ CONFEROUS TREE
⊠ CATCH BASIN	⊠ DECIDUOUS TREE
⊠ STORM DRAIN	
⊠ FLARED END SECTION	
⊠ STORM MANHOLE	

—E— UNDERGROUND ELECTRIC	—X— PROPOSED CONTOUR
—UTV— UNDERGROUND CABLE TV	—X— PROPOSED SPOT ELEVATION
—OF— UNDERGROUND FIBER OPTIC	
—UT— UNDERGROUND TELEPHONE	
—OV— OVERHEAD UTILITY	
—UG— UNDERGROUND GAS	
—SS— SANITARY SEWER	
—SS— STORM SEWER	
—W— WATERMAIN	
—F— FENCE	
—C— CURB (TYPICAL)	
—CON— CONTOURS	



300 SALEM CHURCH ROAD

SUNFISH LAKE, MINNESOTA

CONTACT:

SHARI AND ROGER WILSEY
300 Salem Church Road
Sunfish Lake, MN 55118
Email: rdwilsey@gmail.com

COUNTY/CITY:

DAKOTA COUNTY

CITY OF SUNFISH LAKE

REVISIONS:

DATE	REVISION
06-07-2021	INITIAL ISSUE
07-07-2021	LANDSCAPE REVS

CERTIFICATION:

I hereby certify that this plan was prepared by me, or under my direct supervision, and that I am a duly Licensed Land Surveyor under the laws of the state of Minnesota.

Daniel L. Thurmes
Daniel L. Thurmes Registration Number: 25718
Date: 06-07-2021

PROJECT LOCATION:

300 SALEM CHURCH ROAD

PID#38-03100-53-012

Suite #200
1970 Northwestern Ave.
Stillwater, MN 55082
Phone 651.275.8969
dan@cssurvey.net

CORNERSTONE LAND SURVEYING, INC.

FILE NAME: SURVSFL05
PROJECT NO.: SFL21005

BOUNDARY/TOPOGRAPHIC PROPOSED IMPROVEMENTS SURVEY

PROPOSED SEGMENTAL RETAINING WALLS

WILSEY RESIDENCE

SUNFISH LAKE, MINNESOTA

MATERIAL NOTES

- Concrete Retaining Wall Units: "Anchor Diamond Pro Retaining Wall Units" as manufactured by Anchor Block Company under license from Anchor Wall Systems.
- Geosynthetic Reinforcement: Miragrid 3XT, as shown on the Drawings.
- Leveling Pad Base
 - Aggregate Base: Crushed stone or granular fill meeting the following gradation as determined in accordance with ASTM D448:

Sieve Size	Percent Passing
1 Inch	100
No. 4	35 to 70
No. 40	10 to 35
No. 200	3 to 10
 - Base Thickness: 6 inches (minimum compacted thickness).
- Drainage Aggregate: Clean crushed stone or granular fill meeting the following gradation as determined in accordance with ASTM D448:

Sieve Size	Percent Passing
1 Inch	100
3/4 Inch	75 to 100
No. 4	0 to 60
No. 40	0 to 50
No. 200	0 to 5
- Reinforced Fill: Soil free of organics and debris and consisting of either GP, GW, SP, SW or SP-SM type, classified in accordance with ASTM D2487 and the USCS classification system and meeting the following gradation:

Sieve Size	Percent Passing
1 Inch	100
No. 4	20 to 100
No. 40	0 to 50
No. 200	0 to 10

 - Plasticity Index (PI) < 6.
 - Unsuitable soils are organic soils and those soils classified as SM, SC, CL, CH, OH, MH, ML, OL, or PT.
- Impervious Material: Clayey soil (permeability of less than 10^{-6} cm/sec) or other barrier which will prevent percolation into the reinforced soil zone of the retaining wall.
- Drainage Pipe: Perforated or slotted PVC or corrugated HDPE pipe manufactured in accordance with D3034 and/or ASTM F405. The pipe may be covered with a geotextile filter fabric to function as a filter.
- Construction Adhesive: Exterior grade adhesive as recommended by the retaining wall manufacturer.
- Filter Fabric: Miraft Type 140N or equal.

FOUNDATION SOIL NOTES

- Excavate foundation soil as required for footing or base dimension shown on the Drawings, or as directed by the Project geotechnical engineer.
- The Owner shall retain the services of a geotechnical engineer to examine foundation soil to ensure that the actual foundation soil strength meets or exceeds that indicated on the Drawings. Unsuitable soils are defined as any soil that does not have sufficient bearing capacity or will cause excessive wall settlement. Remove soil not meeting the required strength. Oversize resulting space sufficiently from the front of the block to the back of the reinforcement, and backfill with suitable compacted backfill soils.
- The Owner shall retain the services of a geotechnical engineer to determine if the foundation soils will require special treatment or correction to control total and differential settlement.
- Fill over-excavated areas with suitable compacted backfill, as recommended by the Project geotechnical engineer.

BASE COURSE NOTES

- Place base materials to the depths and widths shown on the Drawings, upon undisturbed soils, or foundation soils prepared as directed by the project geotechnical engineer.
 - Extend the leveling pad laterally at least 6 inches in front and behind the lowermost concrete retaining wall unit.
 - Provide aggregate base compacted to 6 inches thick (minimum).
- Compact aggregate base material to provide a level, hard surface on which to place the first course of units.
- Prepare base materials to ensure complete contact with retaining wall units. Gaps are not allowed.

ERECTION NOTES

- Excavation support, if required, is the responsibility of the Contractor, including the stability of the excavation and its influence on adjacent properties and structures.
- General: Ered units in accordance with manufacturer's instructions and recommendations, and as specified herein.
- Place first course of concrete wall units on the prepared base material. Check units for level and alignment. Maintain the same elevation at the top of each unit within each section of the base course.
- Ensure that foundation units are in full contact with the leveling pad.
- Place concrete wall units side-by-side for full length of wall alignment. Alignment may be done by using a string line measured from the back of the block. Gaps are not allowed between the foundation concrete wall units.
- Place 12 inches (minimum) of drainage aggregate between, and directly behind the concrete wall units. Fill voids in retaining wall units with drainage aggregate. Provide a drainage zone behind the wall units to within 9 inches of the final grade. Cap the reinforced zone and drainage aggregate zone with 12 inches of impervious material.
- Install drainage pipe at the lowest elevation possible, to maintain gravity flow of water to outside of the reinforced zone. Slope the main collection drainage pipe, located just behind the concrete retaining wall units, 2 percent (minimum) to provide gravity flow to the daylighted areas. Daylight the main collection drainage pipe to an appropriate location away from the wall system at each low point or at 50 foot (maximum) intervals along the wall.
- Remove excess fill from top of units and install next course. Ensure drainage aggregate and backfill are compacted before installation of next course.
- Check each course for level and alignment. Adjust units as necessary with reinforcement shims to maintain level, alignment, and setback prior to proceeding with each additional course.
- Install each succeeding course. Backfill as each course is completed. Pull the units forward until the locating surface of the unit contacts the locating surface of the units in the preceding course. Interlock wall segments that meet at corners by overlapping successive courses. Attach concrete retaining wall units at exterior corners with adhesive specified.
- Install geosynthetic reinforcement in accordance with geosynthetic manufacturer's recommendations and the shop drawings.
 - Orient geosynthetic reinforcement with the highest strength axis perpendicular to the wall face.
 - Prior to geosynthetic reinforcement placement, place the backfill and compact to the elevation of the top of the wall units at the elevation of the geosynthetic reinforcement.
 - Place geosynthetic reinforcement at the elevations and to the lengths shown on the Drawings.
 - Lay geosynthetic reinforcement horizontally on top of the concrete retaining wall units and the compacted backfill soils. Place the geosynthetic reinforcement within one inch of the face of the concrete retaining wall units. Place the next course of concrete retaining wall units on top of the geosynthetic reinforcement.
 - The geosynthetic reinforcement shall be in tension and free from wrinkles prior to placement of the backfill soils. Pull geosynthetic reinforcement hand-taut and secure in place with staples, stakes, or by hand-tensioning until the geosynthetic reinforcement is covered by 6 inches of loose fill.
 - The geosynthetic reinforcements shall be continuous throughout their embedment lengths. Splices in the geosynthetic reinforcement strength direction are not allowed.
 - Do not operate tracked construction equipment directly on the geosynthetic reinforcement. At least 6 inches of compacted backfill soil is required prior to operation of tracked vehicles over the geosynthetic reinforcement. Keep turning of tracked construction equipment to a minimum.
 - Rubber-tired equipment may pass over the geosynthetic reinforcement at speeds of less than 5 miles per hour. Turning of rubber-tired equipment is not allowed on geosynthetic reinforcement.

BACKFILL PLACEMENT NOTES

- Place reinforced backfill, spread and compact in a manner that will minimize slack in the reinforcement.
- Place fill within the reinforced zone and compact in lifts not exceeding 6 to 8 inches (loose thickness) where hand-operated compaction equipment is used, and not exceeding 12 inches (loose thickness) where heavy, self propelled compaction equipment is used.
 - Only lightweight hand-operated compaction equipment is allowed within 4 feet of the back of the retaining wall units. If unable to achieve minimum compaction requirements replace the reinforced soil in this zone with drainage aggregate material.
- Minimum Compaction Requirements for Fill Placed in the Reinforced Zone:
 - Compact to 95 percent of the soil's standard Proctor maximum dry density (ASTM D698) for the entire wall height.
 - Compaction requirements for fill placed behind the reinforced soil zone shall be specified by the Project Geotechnical Engineer but at no time should be less than 95% of the standard Proctor density (ASTM D698).
 - Increase compaction requirements for retaining walls with slope heights at the back of the reinforced soil zone greater than 5 feet above the top of wall. Verify compaction requirements with the Project geotechnical engineer.
 - Utility Trench Backfill: Compact utility trench backfill in or below the reinforced soil zone to 98 percent of the soil's standard Proctor maximum dry density (ASTM D698), or as recommended by the Project geotechnical engineer.
 - Moisture Content: Within 2 percentage points of the optimum moisture content for all wall heights.
 - These notes may be changed based on recommendations by the Project geotechnical engineer.
- At the end of each day's operation, slope the last level of compacted backfill away from the interior (concealed) face of the wall to direct surface water runoff away from the wall face.
 - The General Contractor is responsible for ensuring that the finished site drainage is directed away from the retaining wall system.
 - In addition, the General Contractor is responsible for ensuring that surface water runoff from adjacent construction areas is not allowed to enter the retaining wall area of the construction site.
- If construction of the segmental retaining wall is to take place when the soil is susceptible to freezing all snow, ice and frozen soil must be removed below the foundation of the wall system prior to placed any structural fill. Once clear of frozen soils, the foundation soils must be protected from subsequent freezing. The foundation is considered to extend from the front of the block to the rear of the reinforced soil zone. The excavation will need to be properly oversized (per General Note #3) to provide lateral support for the new, unfrozen structural fill soils. Providing oversizing and a safe backslope for construction will significantly increase the size of the excavation. The entire excavation, including side walls, will require protection against further freezing.
- Any structural fill placed must be kept from freezing, requiring the use of frost blankets and good winter construction practices. Generally, winter construction requires the import of non-frost susceptible soils, typically clean sand and/or gravel. Any structural fill found to be frozen on subsequent days of construction must be removed and replaced prior to placing additional fill.

CAP UNIT INSTALLATION NOTES

- Apply adhesive to the top surface of the unit below and place the cap unit into desired position.
- Cut cap units as necessary to obtain the proper fit.
- Backfill and compact to top of cap unit.

WALL CONSTRUCTION TOLERANCE NOTES

- Wall Construction Tolerances:
 - Vertical Alignment: Plus or minus 1-1/4 inches over any 10-foot distance, with a maximum differential of 3 inches over the length of the wall.
 - Horizontal Location Control from Grading Plan:
 - Straight Lines: Plus or minus 1-1/4 inches over any 10-foot distance, with a maximum differential of 3 inches over the length of the wall.
 - Immediate Post Construction Wall Batter: Within 2 degrees of the design batter of the concrete retaining wall units.
 - Maximum Differential Settlement: 1:100.

FIELD QUALITY CONTROL NOTES

- Installer is responsible for quality control of installation of system components. Owner to employ a qualified independent third party to verify the correct installation of system components in accordance with these specifications and the Drawings.
- The Owner, at their expense, will retain a qualified professional to perform quality assurance checks of the installer's work.
- Correct work which does not meet these specifications or the requirements shown on the Drawings at the installer's expense.
- The Owner or Owner's Representative shall retain the services of a geotechnical engineer to perform compaction testing of the reinforced backfill placed and compacted in the reinforced backfill zone.
 - Testing Frequency (or as directed by Project Geotechnical Engineer)
 - One test for every 2 feet (vertical) of fill placed and compacted, for every 50 lineal feet of retaining wall.
 - Vary compaction test locations to cover the entire area of the reinforced soil zone, including the area compacted by the hand-operated compaction equipment.

SITE DRAINAGE NOTE

- This design does not account for any hydrostatic forces on the retaining wall system. It is imperative the finished site grading diverts water away from the block facing and the reinforced soil zone of the retaining wall system. All buildings located above retaining walls must implement gutter systems with downsouts that direct water through solid PVC pipe to the site storm sewer system or to a location below and away from the wall. Building sump pumps should also direct water away from the wall in the same manner. Concentrated discharge of water above the retaining wall and the reinforced soil zone is not allowed.

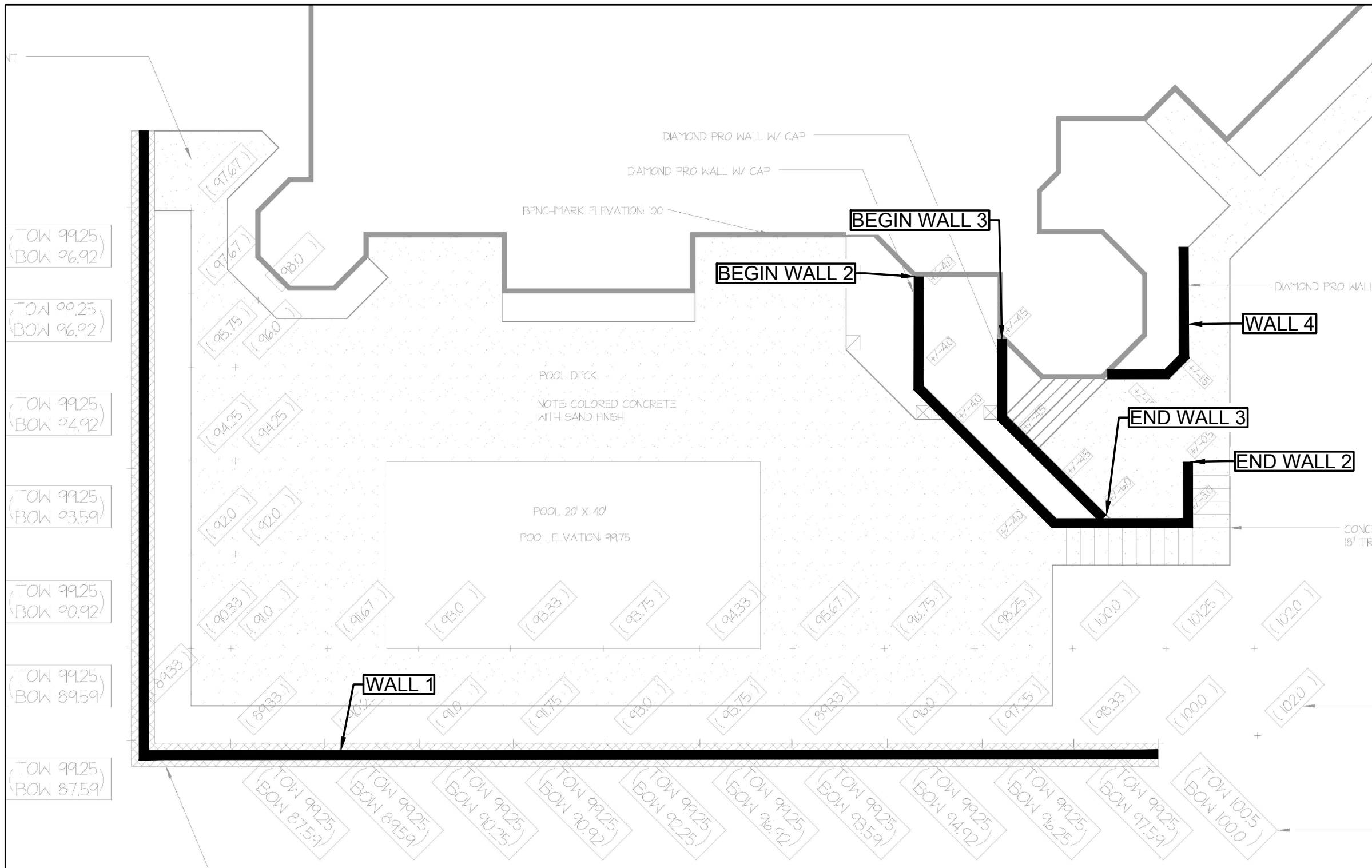
UTILITY NOTES

- Utility information has been provided to Anchor Wall Engineering and has been considered for the preparation of these plans. If there are utilities, not shown, located within or underneath the proposed reinforced zone, Anchor Wall Engineering must be notified prior to construction of the segmental retaining wall to review the design and/or plans. Modifications to the design and/or plans may be required, and may take up to ten business days
- Utilities must be properly designed (by others) to withstand all forces from the segmental retaining wall units, reinforced soil mass, and surcharge loads (if any). Storm drains are prone to leaking. Therefore, if a joint in a storm drain is located within 100 feet behind the retaining wall the storm water pipe must be water tight. Neoprene O-rings must be installed at all storm pipe joints as a minimum.
- Water lines, including irrigation systems, must be water tight within 100 feet behind the retaining wall. Leakage behind a retaining wall will increase the horizontal pressure against the wall leading to wall failure. For this reason, subsurface waterlines and irrigation systems should not be installed above the reinforced zones of the retaining wall, or within 5 feet of the reinforced zone.

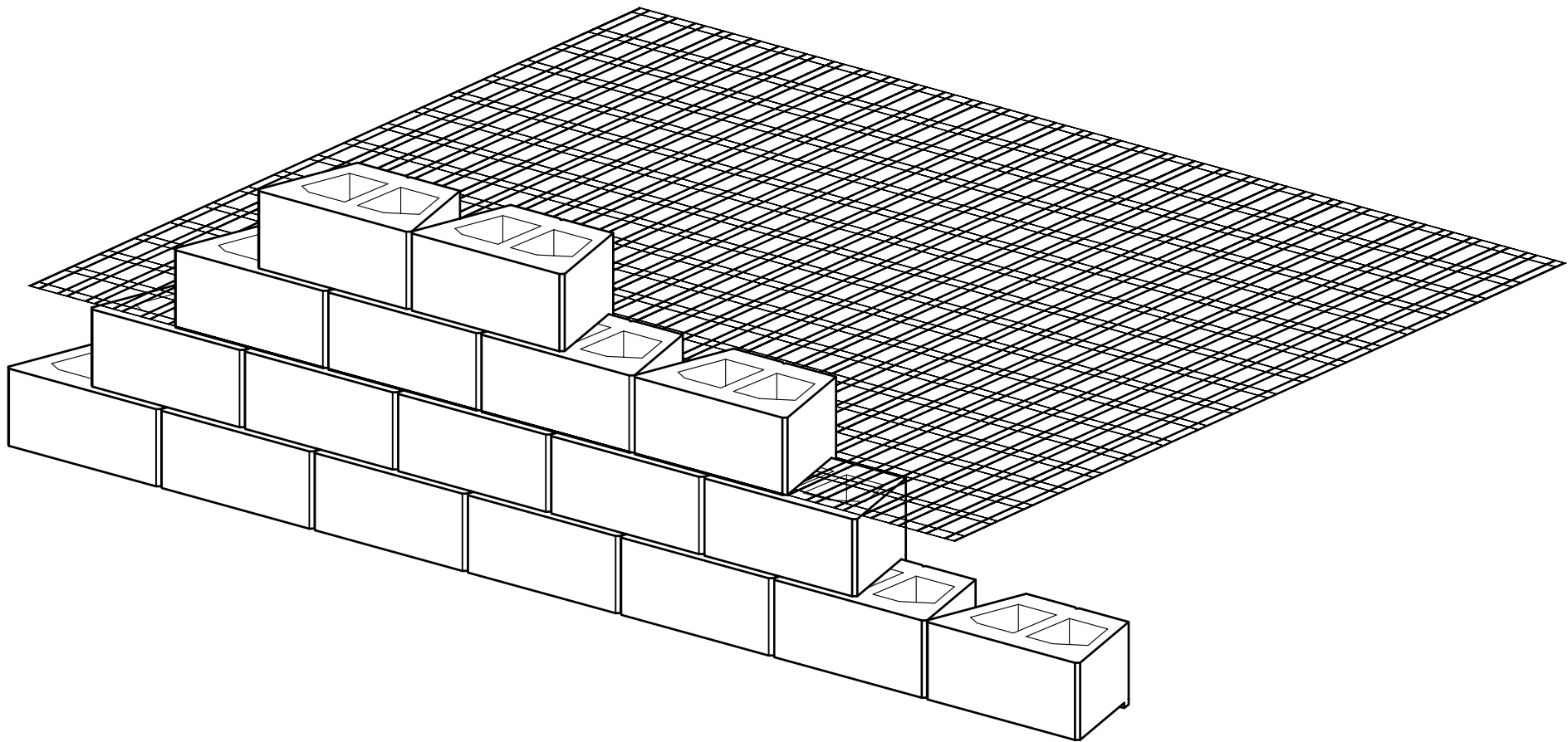
GENERAL NOTES

- The owner or owner's representative has not provided foundation or retained soil strength parameters for design of the segmental retaining walls. In preparation of wall design, soil strength parameters for the foundation and retained soils were assumed by Anchor Wall Engineering. It is the responsibility of the owner or owner's representative to verify the assumed soil strength parameters are representative of the soils available for wall construction. If the soil strength parameters are found to be inconsistent with those assumed by Anchor Wall Engineering, this design is no longer valid and it is the responsibility of the owner or owner's representative to notify Anchor Wall Engineering so the retaining wall system can be redesigned. Failure to notify Anchor Wall Engineering may result in failure of the retaining wall.
- Assumed Design Soil Parameters:

a. Reinforced soil:	phi = 30 degrees	gamma = 115 pcf.
b. Retained soil:	phi = 30 degrees	gamma = 115 pcf.
c. Foundation soil:	phi = 30 degrees	gamma = 115 pcf.
- Any excavation below the wall should have proper 1:1 lateral oversizing. Excavation oversizing should be measured from the front of the gravel leveling pad and the back of the lowest reinforcement layer. Refer to detail 7 on sheet W3.
- Wall stationing shown on sheet W2 is not related to any other stationing shown on the grading plans. Station 0+00 is on the left end of the wall as seen from the front of the wall.
- This set of segmental retaining wall plans are based on the plans prepared by Winco Landscape and Design, dated December 17, 2020. If other plans are produced that contain different information than that referenced, this plan may need to be revised and/or the walls may need to be redesigned.
- This set of segmental retaining wall plans are based specifically on the walls being constructed with Anchor Diamond Pro block and Miragrid 3XT reinforcement products. Absolutely no substitutions allowed.
- Locations of the segmental retaining walls in relation to property lines, utility easements, watershed easements, or any other type of easements are the responsibility of the owner or the site civil engineer. Anchor Wall Engineering assumes no liability for the locations of the segmental retaining walls, or if construction of the proposed segmental retaining walls encroaches any property lines or easements.
- It is imperative that the site surveying of the segmental retaining walls be done by the site civil engineer or surveyor and must be based on computer generated site/grading plans and not profile plans done by Anchor Wall Engineering. Surveying of the segmental retaining walls must take into account the design batter indicated on the enclosed plans and details. Failure to take into account wall batter for segmental retaining wall surveying will produce incorrect locations of all top of walls and shall be corrected at no cost to Anchor Wall Engineering or the segmental retaining wall contractor.
- Wall geometry, locations, slopes and surcharge loads for the segmental retaining walls were measured from the site plan referenced above, and partially reproduced to the right. If conditions vary in the field from those shown on this plan, Anchor Wall Engineering must be notified prior to construction of the segmental retaining walls to review the design and/or plans. Modifications to the design and/or plans may be required after the review, and may take up to ten business days to complete.
- If there are discrepancies between any information on these plans and information in the project specifications, the more restrictive information takes precedence.



KEY PLAN
(N.T.S.)



SHEET INDEX	
PAGE	DESCRIPTION
W1	TITLE PAGE/KEY PLAN
W2	WALL ELEVATIONS
W3-W4	TYPICAL DETAILS & CROSS SECTIONS

ANCHOR WALL ENGINEERING, LLC

5909 BAKER ROAD, SUITE 550

MINNETONKA, MN 55345-5996

PHONE: (952) 933-8855

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

John C. Hoyer
Date: 4/20/21 Reg. No. 40963

NO SCALE INTENDED

VERIFY THAT THE BAR ABOVE IS 1" IF NOT, ADJUST THE SCALE ACCORDINGLY.

PROPOSED SEGMENTAL RETAINING WALLS

WILSEY RESIDENCE

SUNFISH LAKE, MINNESOTA

ANCHOR BLOCK COMPANY

MAH

Drawn By: DJA

Reviewed By: AB 21-002

Date: 4/20/21

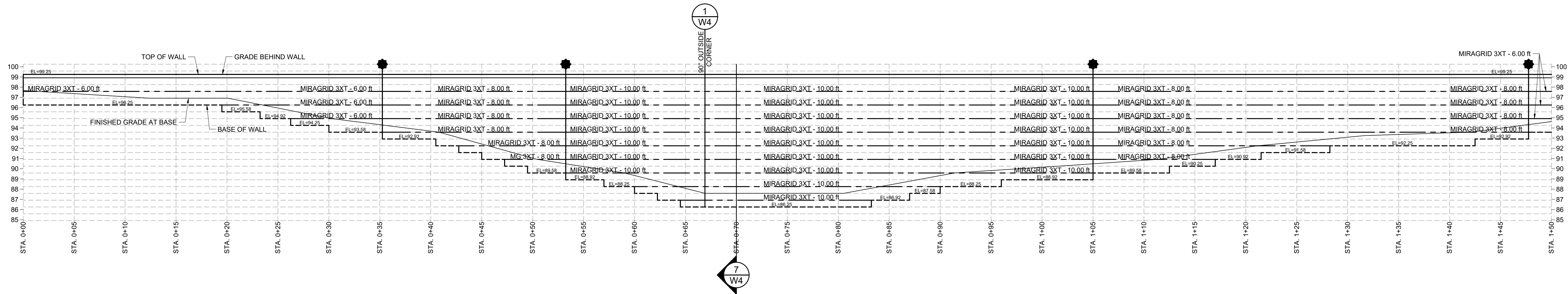
SHEET

OF

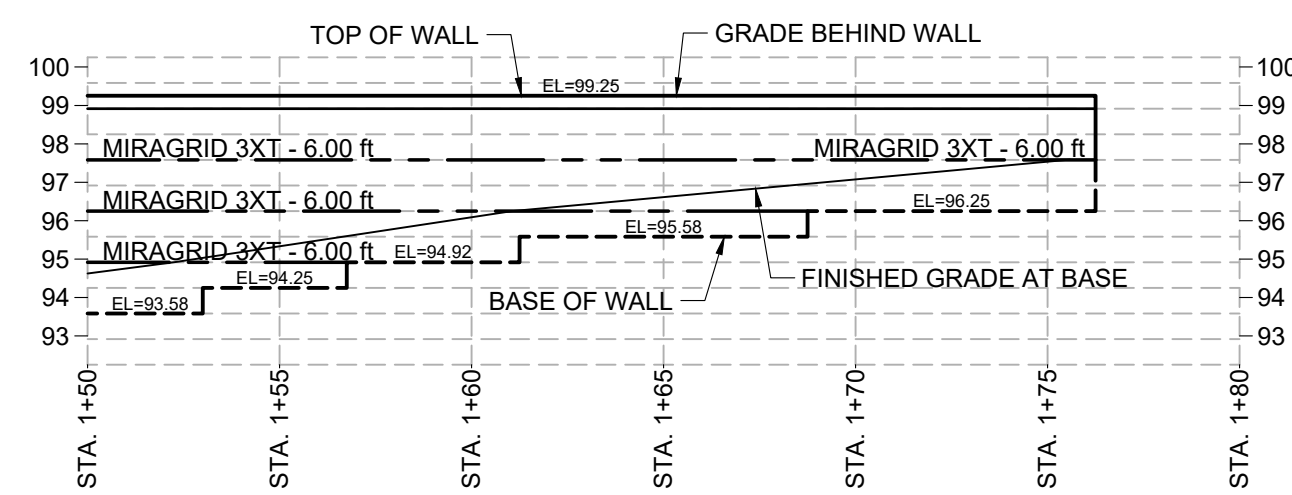
W1

4

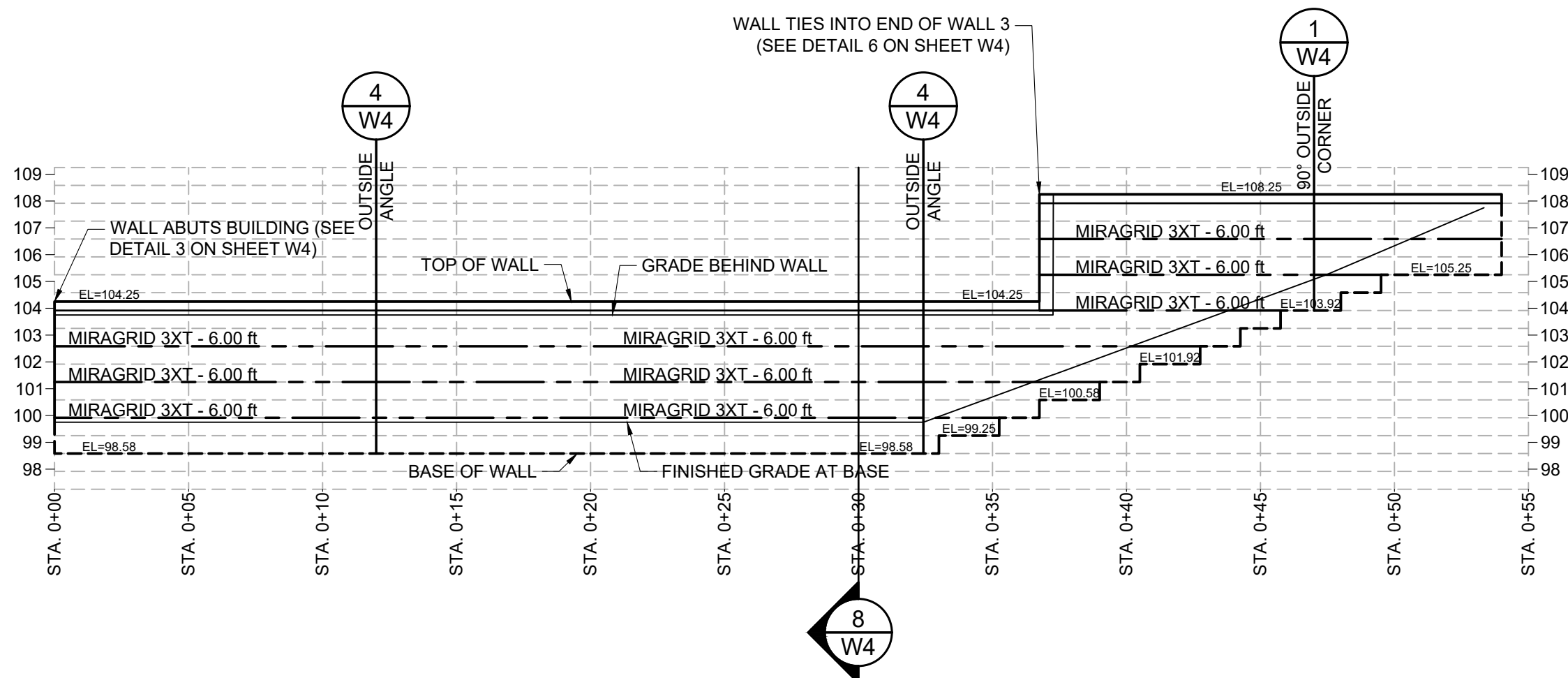
TITLE PAGE/KEY PLAN



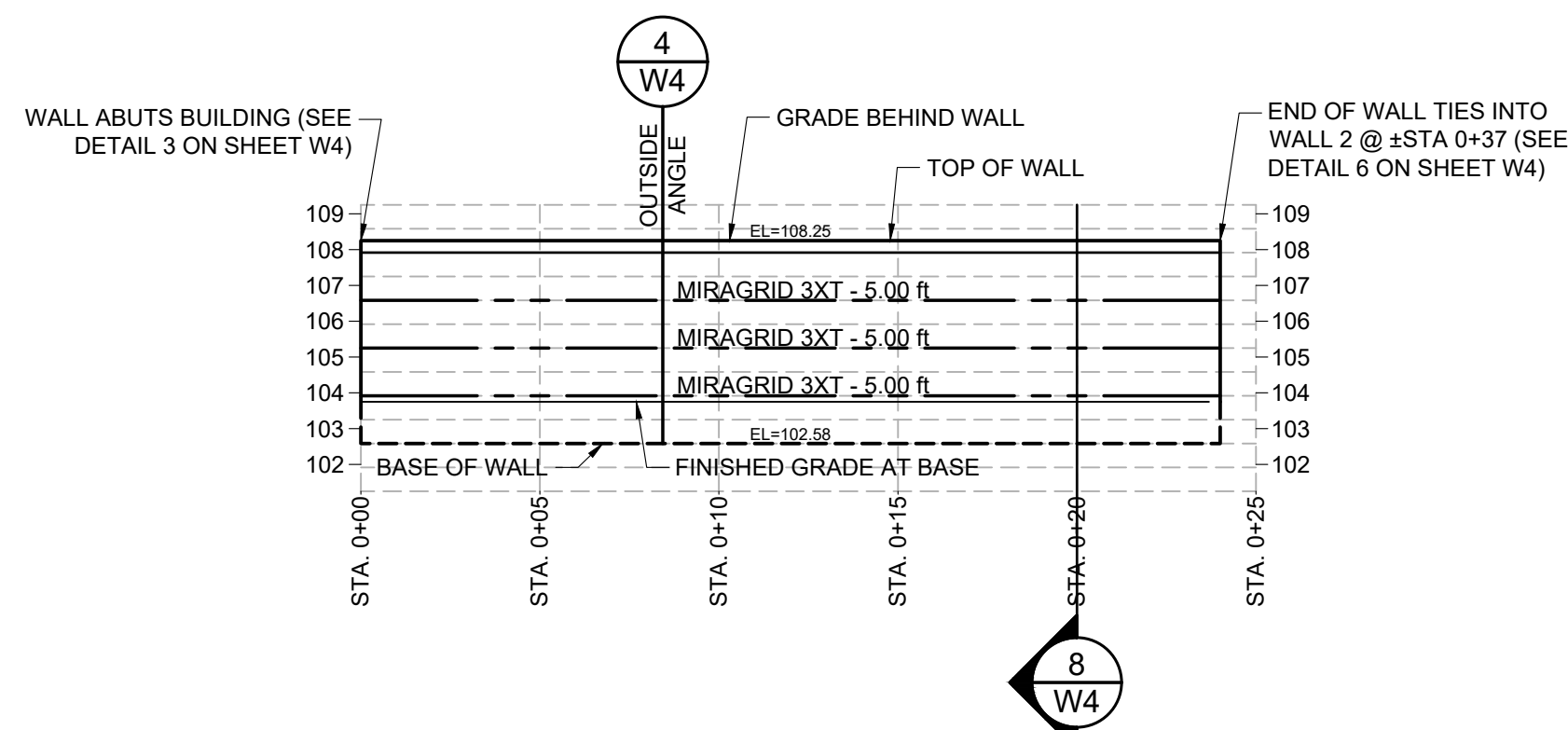
DIAMOND PRO® - ELEVATION VIEW
WALL 1 (MAXIMUM APPLIED BEARING PRESSURE = 1,700 PSF)
(SCALE: 1" = 5'-0")



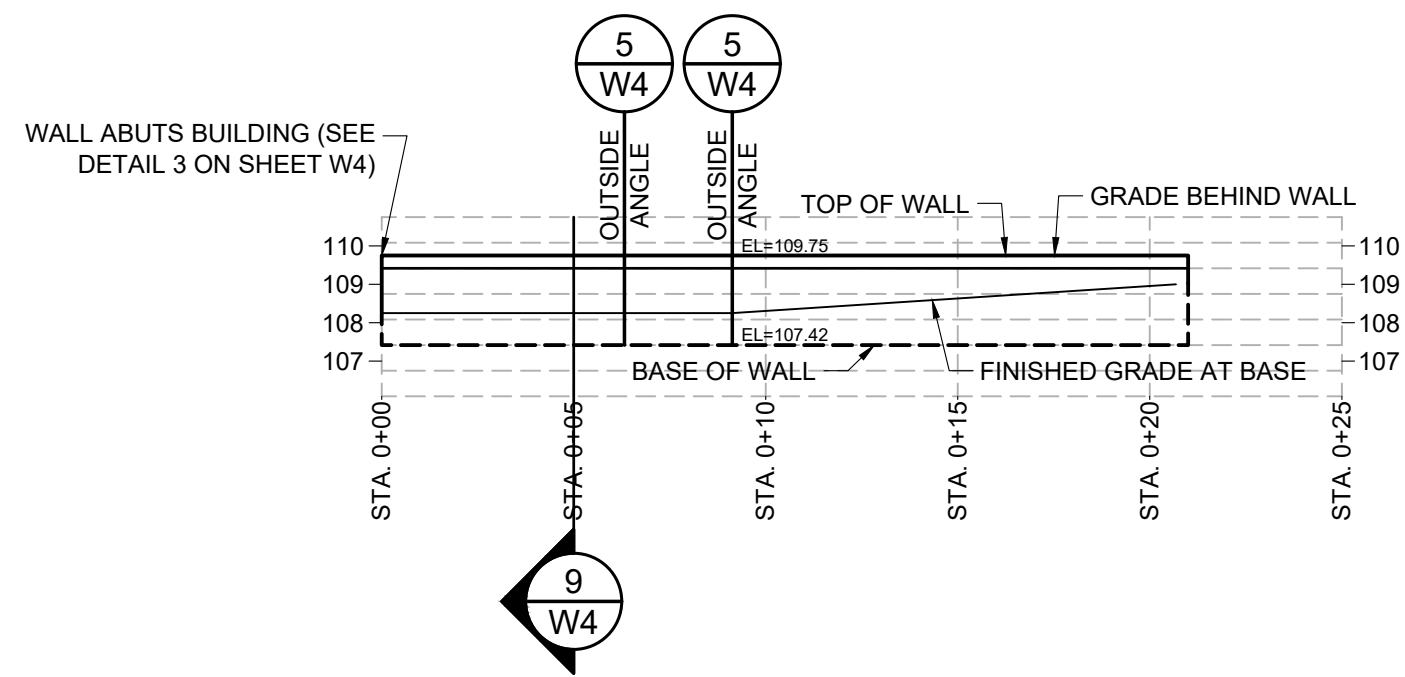
DIAMOND PRO® - ELEVATION VIEW
WALL 1 (CONTINUED)
(SCALE: 1" = 5'-0")



DIAMOND PRO® - ELEVATION VIEW
WALL 2 (MAXIMUM APPLIED BEARING PRESSURE = 1,000 PSF)
(SCALE: 1" = 5'-0")



DIAMOND PRO® - ELEVATION VIEW
WALL 3 (MAXIMUM APPLIED BEARING PRESSURE = 700 PSF)
(SCALE: 1" = 5'-0")



DIAMOND PRO® - ELEVATION VIEW
WALL 4 (MAXIMUM APPLIED BEARING PRESSURE = 300 PSF)
(SCALE: 1" = 5'-0")

LEGEND

- INDICATES REINFORCEMENT LENGTH AND/OR ELEVATION CHANGE
- DETAIL NUMBER
- SHEET NUMBER
- INDICATES LOCATION OF SECTION CUT
- INDICATES APPROXIMATE LOCATION OF 90-DEGREE OUTSIDE CORNER
- INDICATES APPROXIMATE LOCATION OF OUTSIDE CORNER

NOTE:

1) LOCATIONS OF CORNERS SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION OF THE SEGMENTAL RETAINING WALLS.

ANCHOR WALL ENGINEERING, LLC

5909 BAKER ROAD, SUITE 550
MINNETONKA, MN 55345-5996
PHONE: (952) 933-8855

PROPOSED SEGMENTAL RETAINING WALLS

WILSEY RESIDENCE
SUNFISH LAKE, MINNESOTA

ANCHOR BLOCK COMPANY

Drawn By: MAH

Reviewed By: DJA

Proj. No.: AB 21-002

Date: 4/20/21

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

John C. Hoyer, P.E.

Date: 4/20/21

Reg. No.: 40963

MINNETONKA, MN

Scale: 1" = 5'-0"

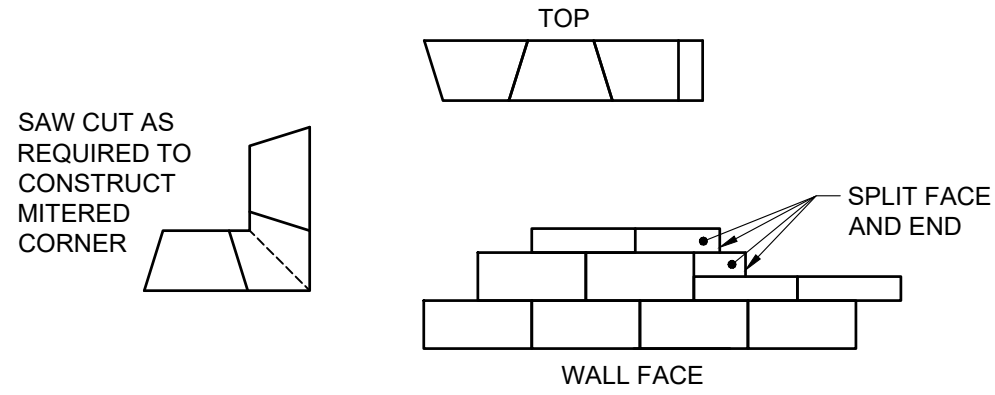
SHEET

W2

OR

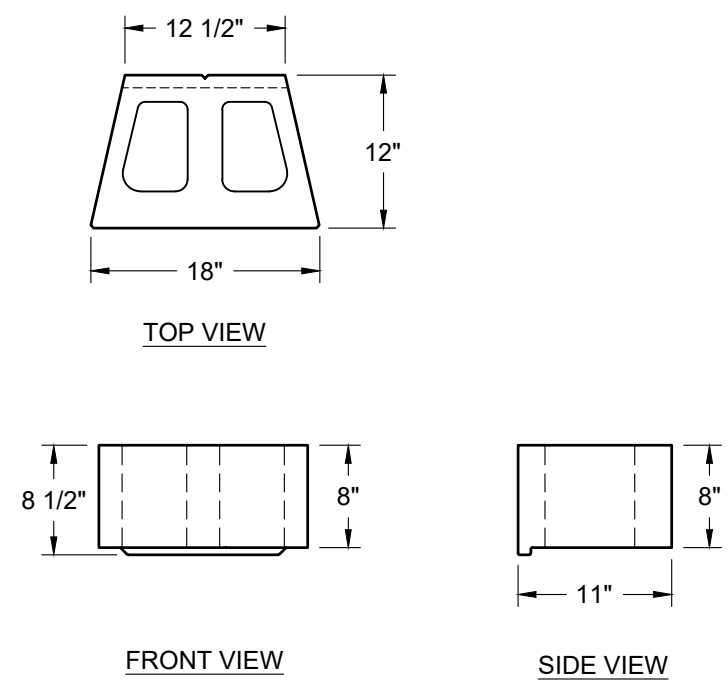
4

WALL ELEVATIONS

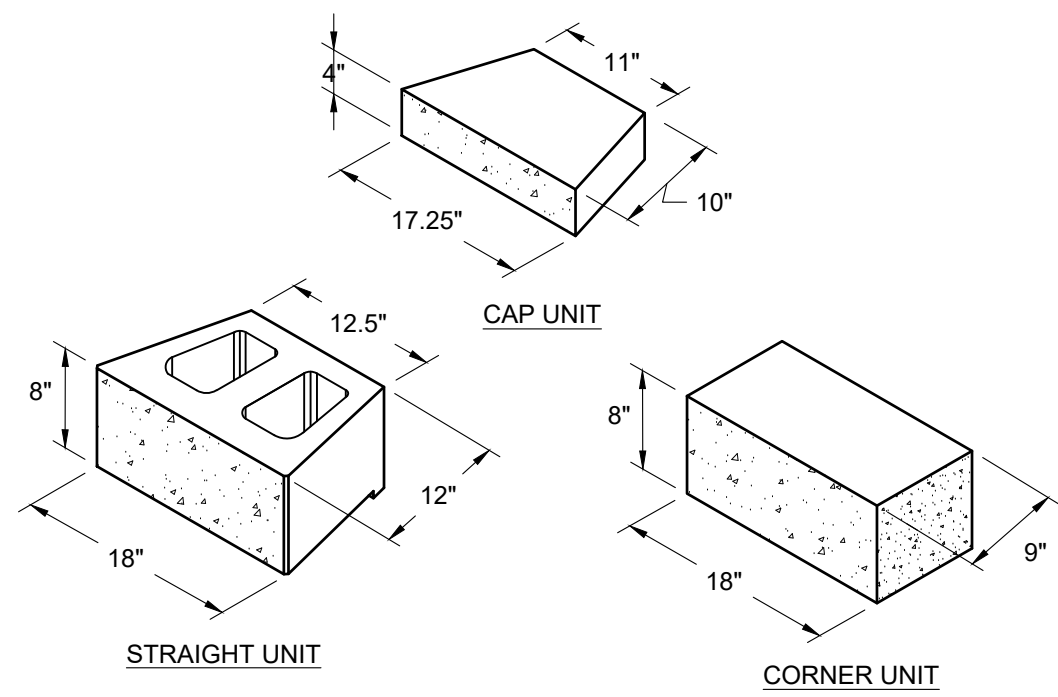


1. ALWAYS START CAPPING WALL FROM THE LOWEST ELEVATION.
2. LAYOUT CAPS PRIOR TO USING ADHESIVE.
3. CUT CAPS TO FIT. VARIOUS COMBINATIONS OF LONG AND SHORT CAP FACES WILL BE NECESSARY FOR RADII GREATER THAN THE MINIMUM.
4. ALTERNATE SHORT AND LONG CAP FACES EVERY OTHER CAP TO ACHIEVE A STRAIGHT ROW OF CAPS.
5. USE EXTERIOR-GRADE CONSTRUCTION ADHESIVE TO SECURE CAPS.
6. REFER TO DETAIL 3 ON SHEET W3 FOR ADDITIONAL INFORMATION.

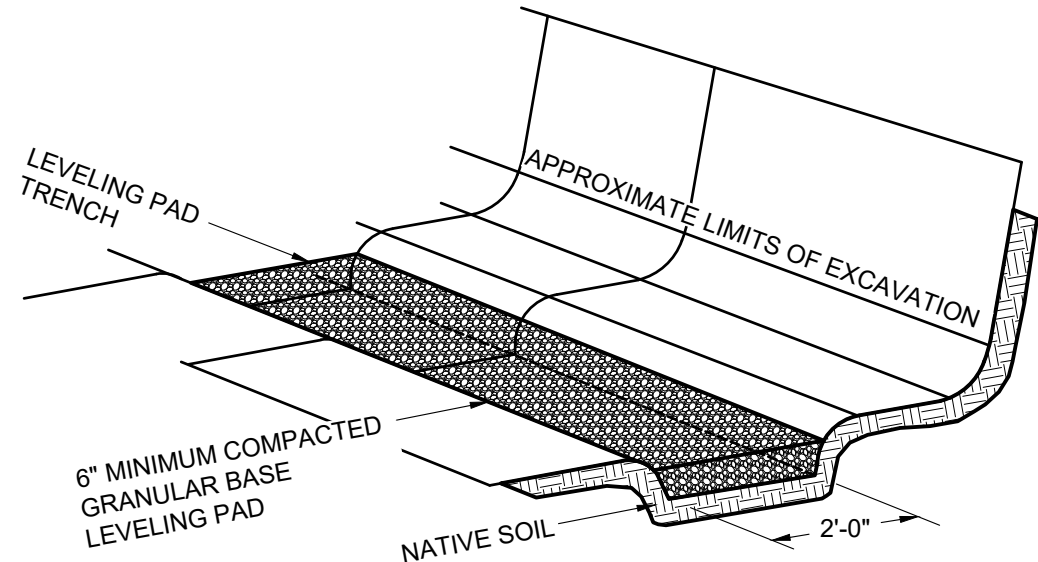
DIAMOND PRO®
CAP BLOCK DESIGN DETAILS
(NOT TO SCALE)



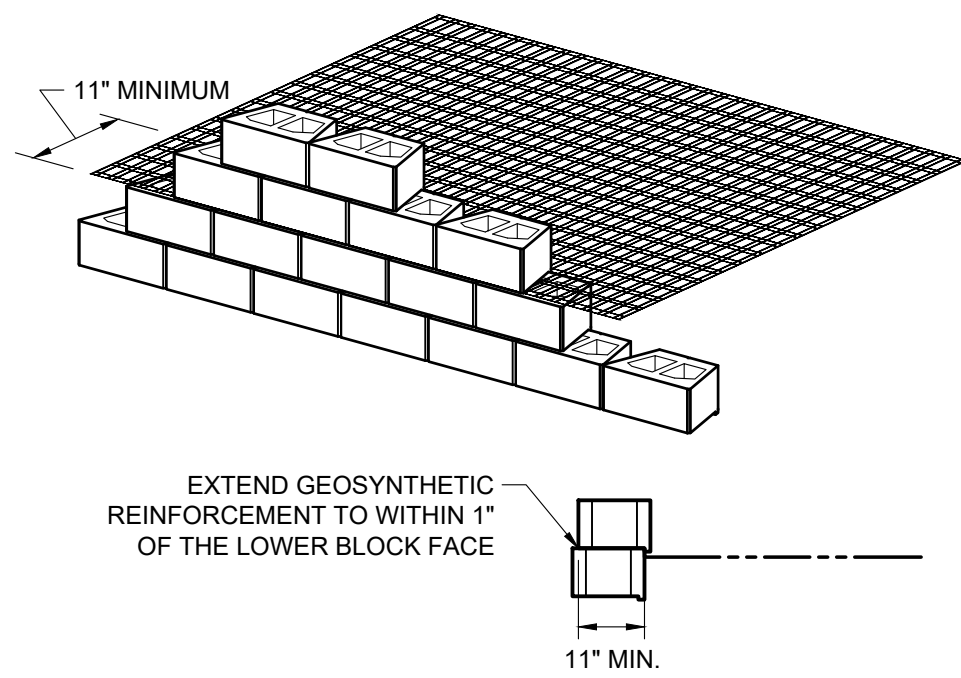
DIAMOND PRO®
3-WAY BLOCK VIEWS
(NOT TO SCALE)



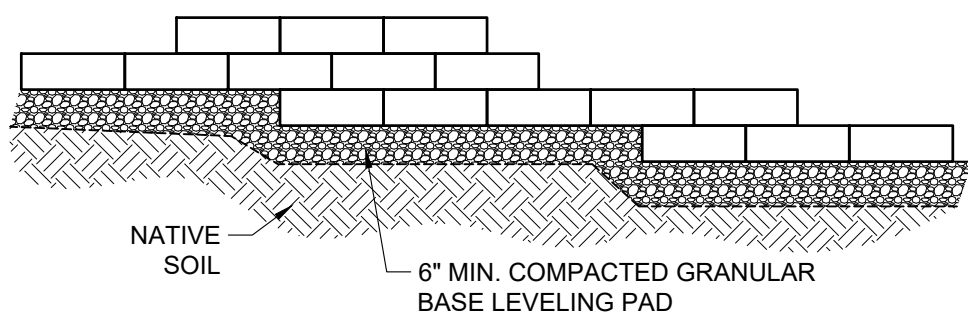
DIAMOND PRO®
ISOMETRIC BLOCK VIEWS
(NOT TO SCALE)



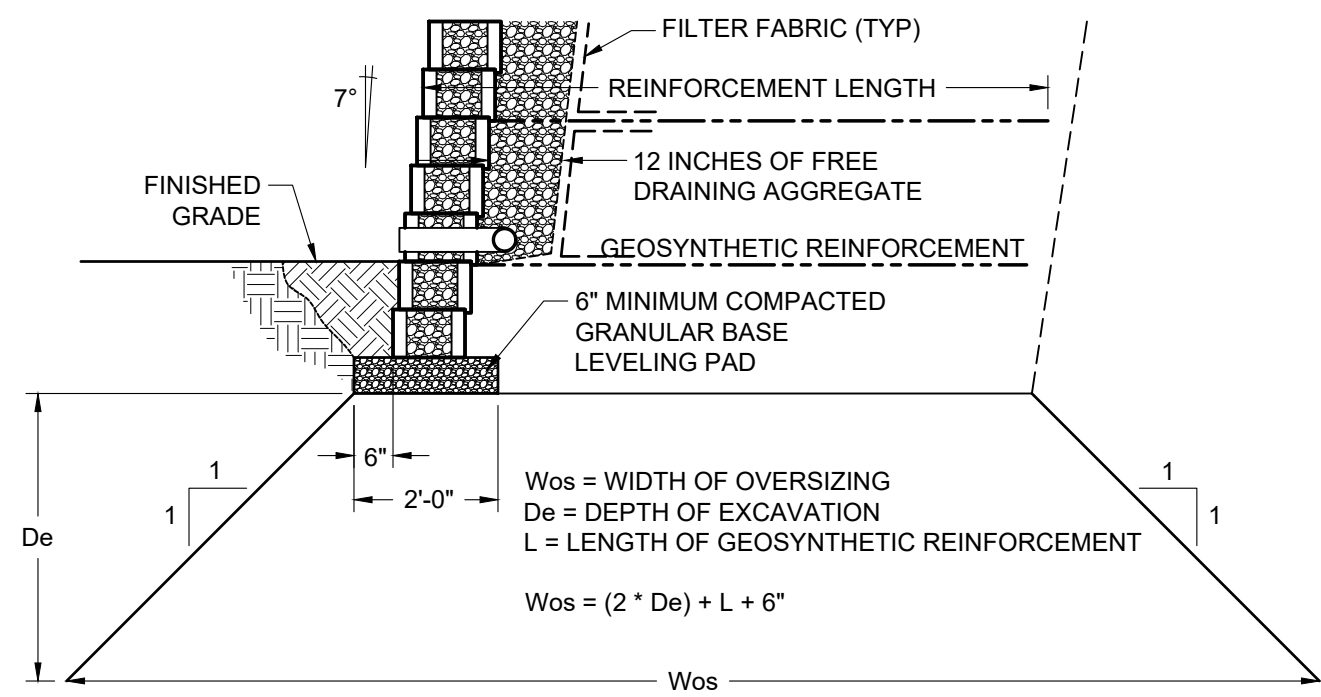
DIAMOND PRO®
TYPICAL BASE PREPARATION
(NOT TO SCALE)



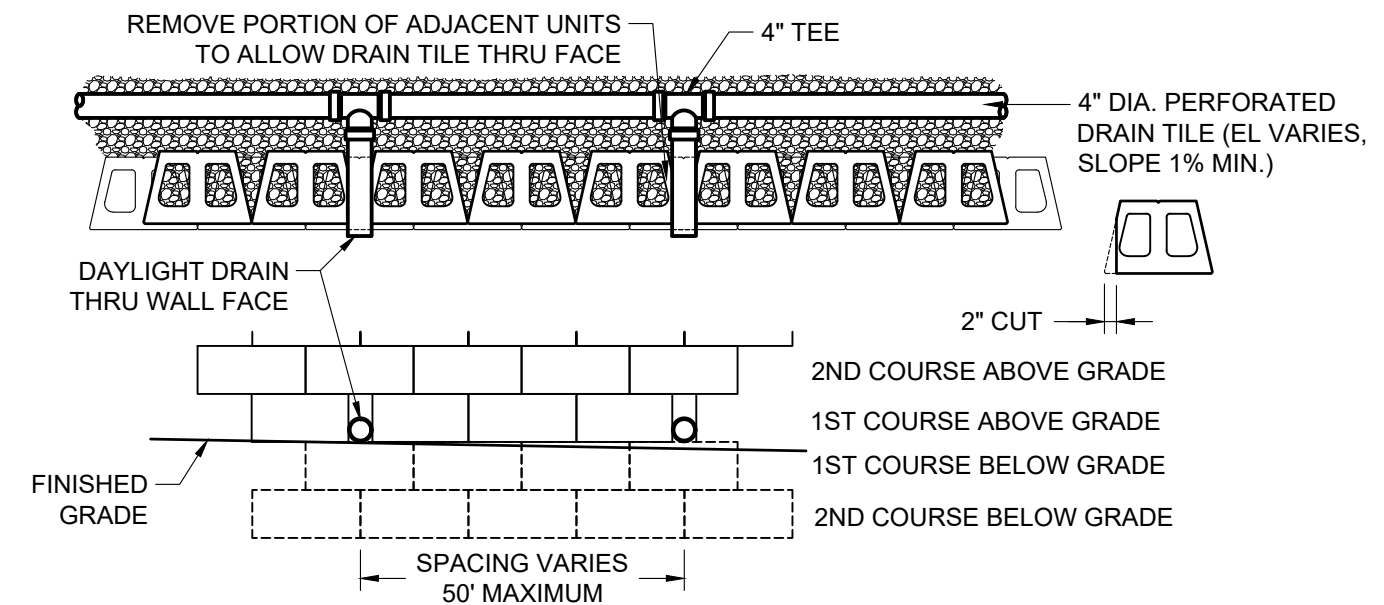
DIAMOND PRO®
REINFORCEMENT CONNECTION DETAIL
(NOT TO SCALE)



DIAMOND PRO®
TYPICAL STEP-UP DETAIL
(NOT TO SCALE)



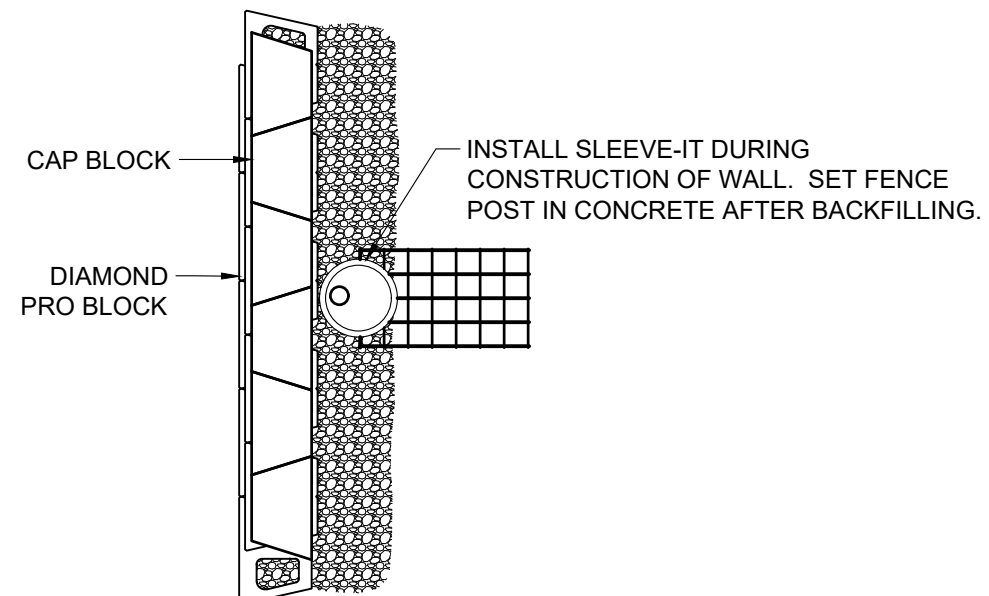
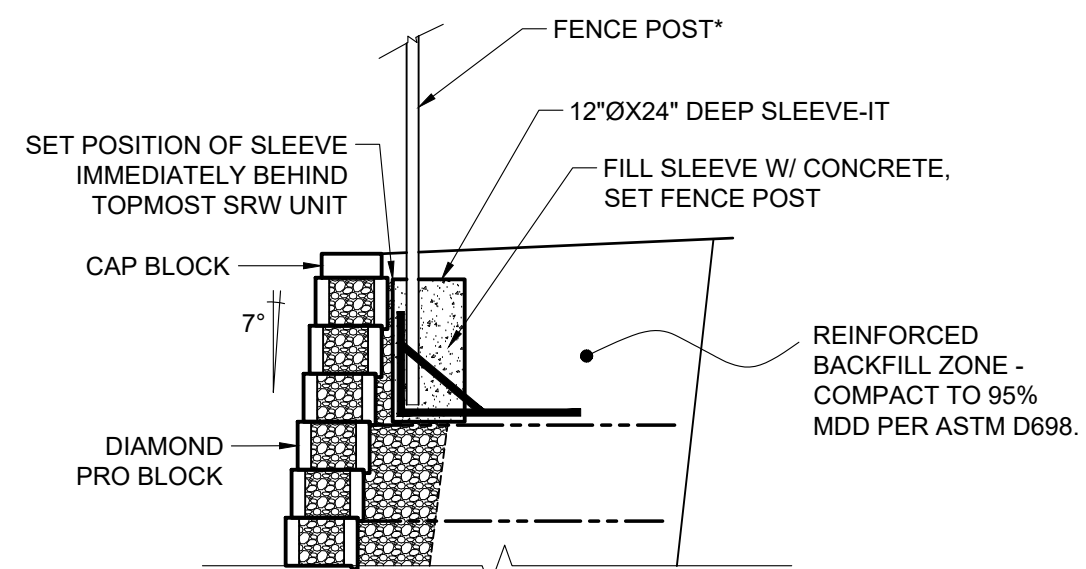
DIAMOND PRO®
1:1 EXCAVATION OVERSIZING
(NOT TO SCALE)



DIAMOND PRO®
DAYLIGHT DRAINTILE THROUGH WALL
(NOT TO SCALE)

FOR MORE INFORMATION CONTACT: ADVANCED
HARDSCAPE SOLUTIONS LLC
1-866-843-0500 OR INFO@ADVANCEDHARDSCAPE.COM

*FENCING SYSTEMS APPROVED FOR USE WITH SLEEVE-IT ARE
LIMITED TO THE FOLLOWING HEIGHTS: CHAIN LINK - UP TO 8-FT,
PRIVACY - UP TO 6-FT (WOODEN, PVC, METAL). POST SIZE 4"x4" MAX.



DIAMOND PRO®
FENCE DIRECTLY BEHIND WALL (IF REQUIRED)
(NOT TO SCALE)

ANCHOR WALL ENGINEERING, LLC
5909 BAKER ROAD, SUITE 550
MINNETONKA, MN 55345-5996
PHONE: (952) 933-8855

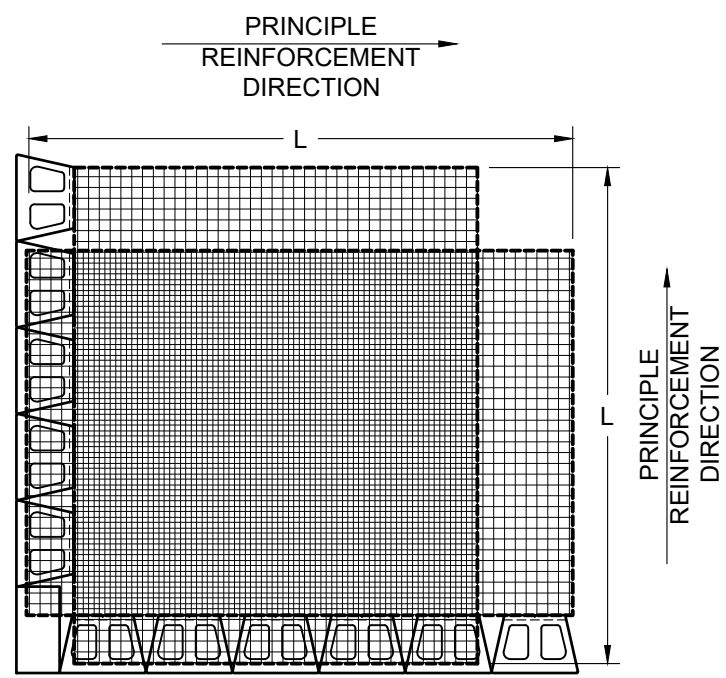
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date: 4/20/21
Reg. No.: 40963
AS SHOWN
Scale: 1" = 1'-0"
VERIFY THAT THE BAR ABOVE IS 1" IF NOT, ADJUST THE SCALE ACCORDINGLY.

Rev. No.	Date	Description
MAH		
DJA		
AB 21-002		
4/20/21		

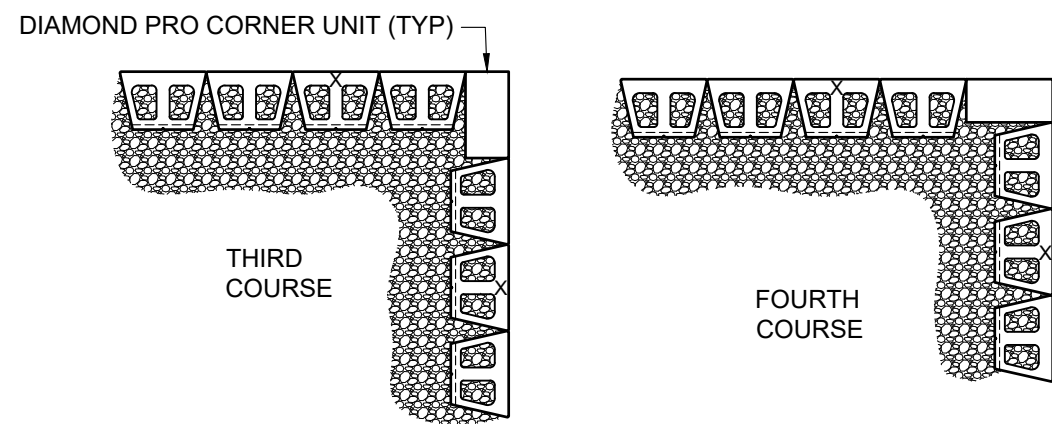
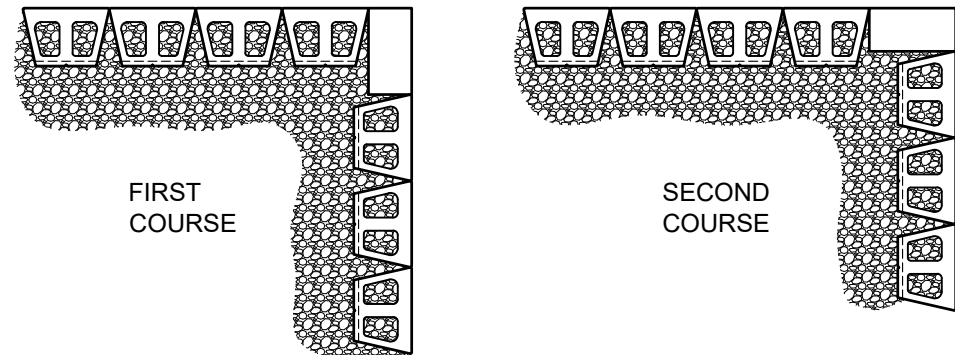
ANCHOR BLOCK COMPANY
SHEET
W3
OR
4

TYPICAL DETAILS

NOTE:
IN THE "CROSS-OVER AREA" OF REINFORCEMENT, ONE OF THE LAYERS OF REINFORCEMENT SHOULD BE LOWERED OR RAISED ONE COURSE TO ALLOW PLACEMENT OF THE REINFORCEMENT WITH THE PRINCIPLE REINFORCEMENT STRENGTH DIRECTION PROPERLY ORIENTATED. THE REINFORCEMENT SHOULD NOT EXTEND INTO THE SEGMENTAL RETAINING WALL UNITS ON THE RETURN LEG OF THE 90° CORNER.

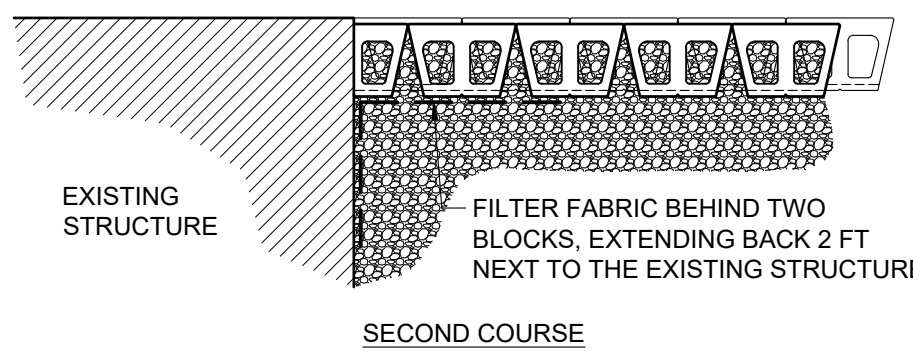
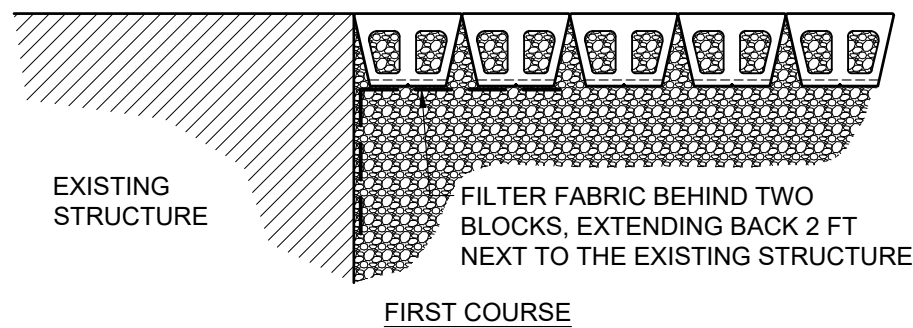


DIAMOND PRO®
90-DEGREE OUTSIDE CORNER W/ GRID
(NOT TO SCALE)

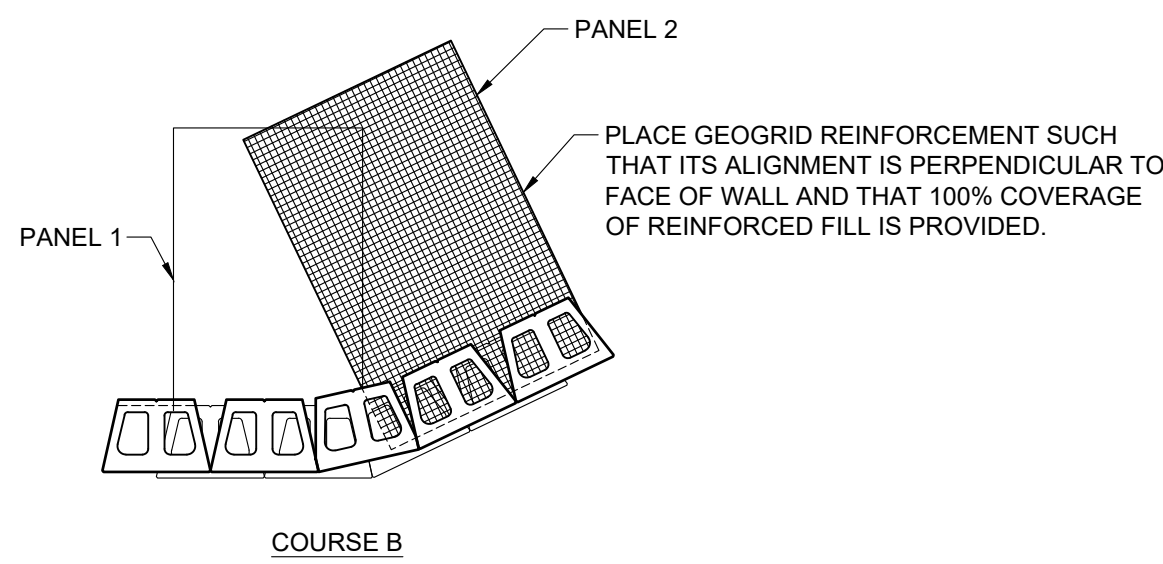
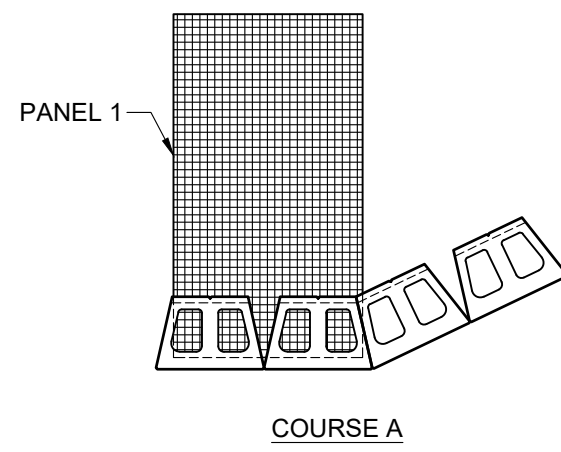


NOTE: USE ADHESIVE ON EXPOSED PARTIAL UNITS.
CUT UNITS (X) TO MAINTAIN RUNNING BOND

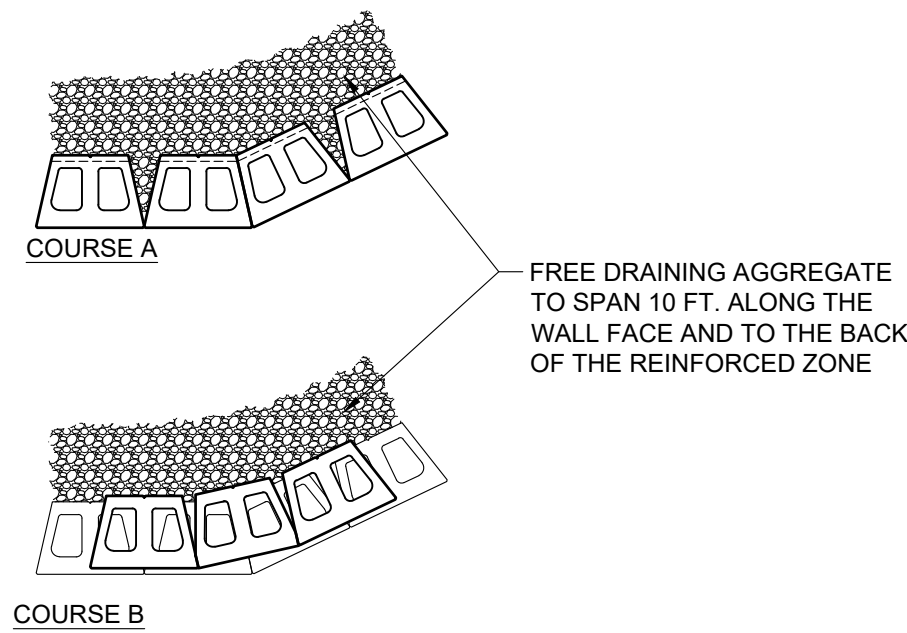
DIAMOND PRO®
90-DEGREE OUTSIDE CORNER
(NOT TO SCALE)



DIAMOND PRO®
WALL ABUTS EXISTING STRUCTURE
(NOT TO SCALE)

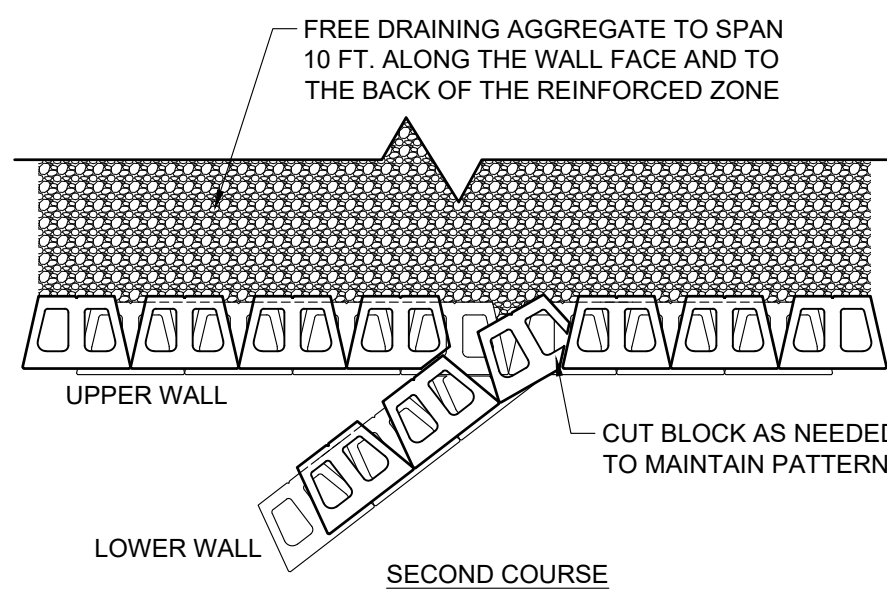
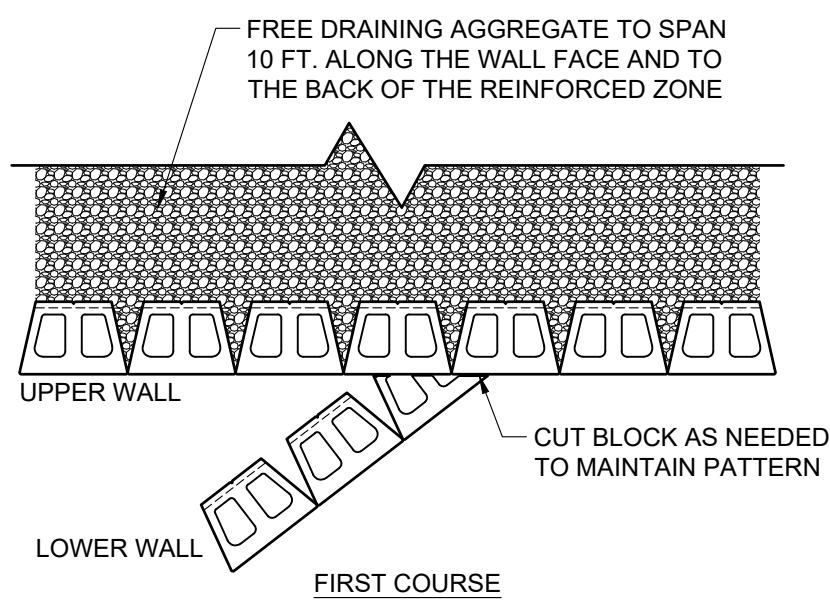


DIAMOND PRO®
OUTSIDE ANGLE W/ GRID
(NOT TO SCALE)

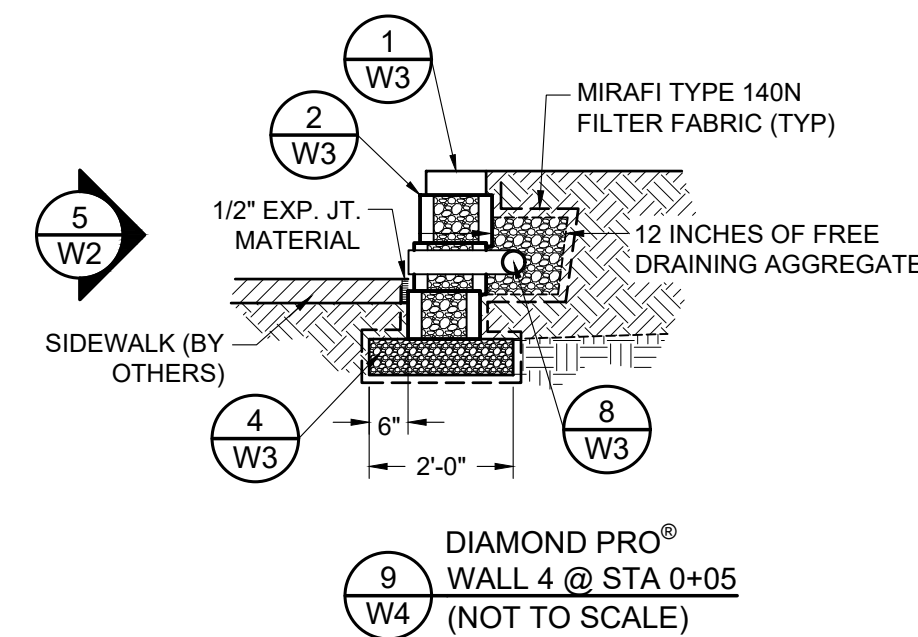
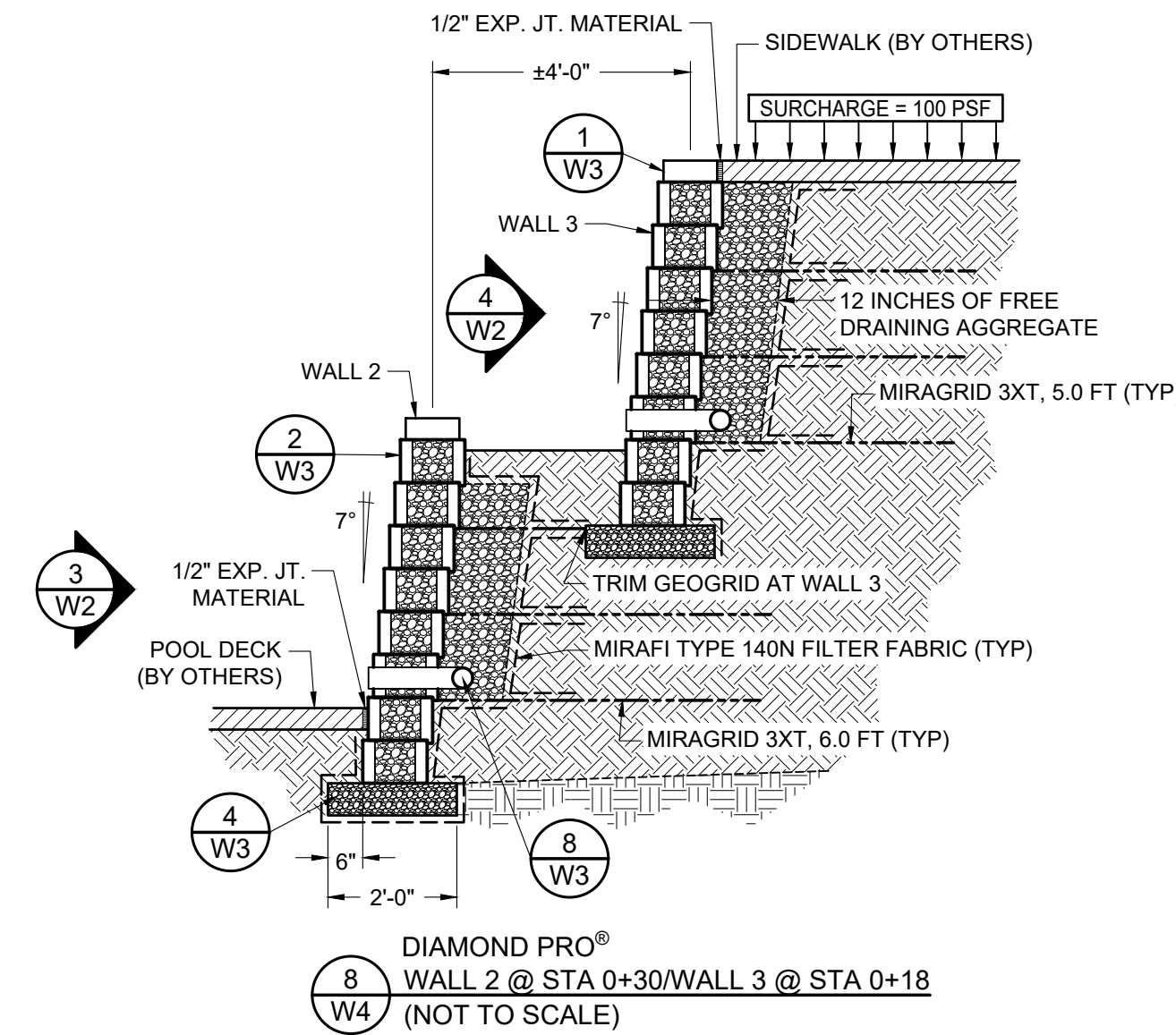
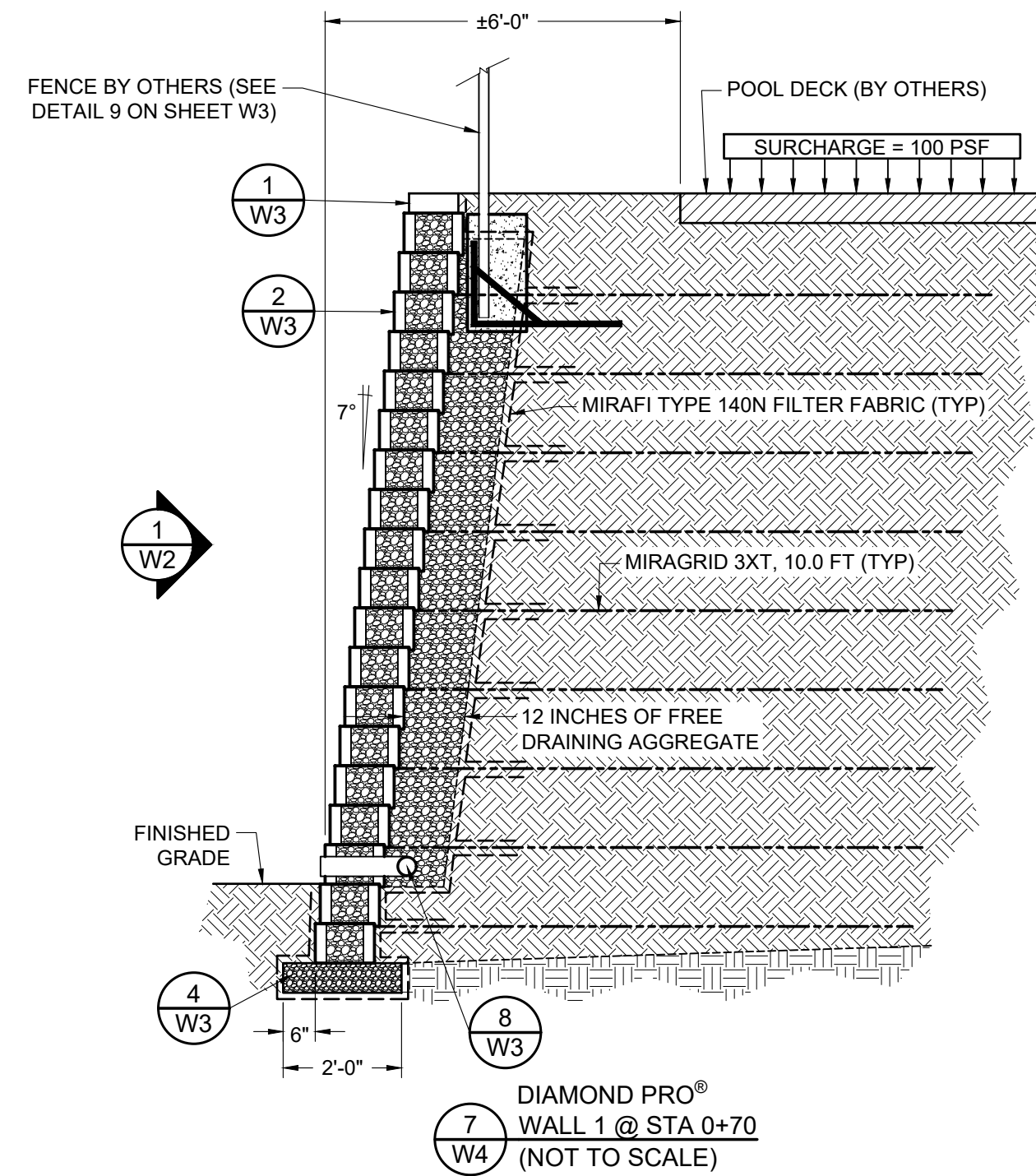


- NOTES:
1. ALTERNATE COURSES "A" & "B" AS NEEDED TO FULL HEIGHT OF WALL.
 2. MODIFY UNITS AS NEEDED TO MAINTAIN RUNNING BOND.
 3. ADHERE ALL PARTIAL UNITS WITH CONSTRUCTION GRADE ADHESIVE.
 4. ADJUST PLACEMENT IN FIELD TO ACHIEVE DESIRED ANGLE

DIAMOND PRO®
OUTSIDE ANGLED CORNER
(NOT TO SCALE)



DIAMOND PRO®
CONNECTION DETAIL AT TERRACES
(NOT TO SCALE)



ANCHOR WALL ENGINEERING, LLC
5909 BAKER ROAD, SUITE 550
MINNETONKA, MN 55345-5996
PHONE: (952) 933-8855

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Date: 4/20/21
Reg. No.: 40963
Scale: AS SHOWN
Verify that the bar above is 1" if not adjust the scale accordingly.

PROPOSED SEGMENTAL RETAINING WALLS
WILSEY RESIDENCE
SUNFISH LAKE, MINNESOTA

ANCHOR BLOCK COMPANY
Rev. No. Description
Date
MAH
DJA
AB 21-002
4/20/21

SHEET
W4
OR
4
TYPICAL DETAILS
AND
CROSS SECTIONS











BUILDING YOUR DREAM POOL FROM THE BOTTOM UP

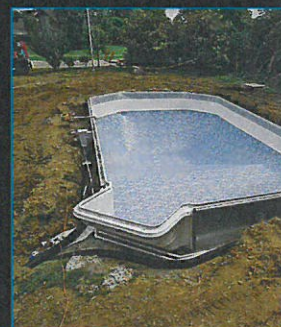
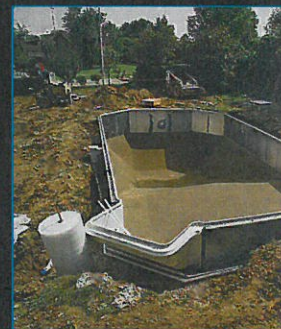
More Wall.

More Strength.

Factory engineered, the steel wall pool panel is made of corrosion-resistant steel and its strength is unparalleled. Add a five inch flange top and bottom and our "Z" support ribs and you won't find a stronger steel panel. In fact, we're so confident of that strength, we offer a one-time transferable, lifetime limited warranty on the pool wall structure.



LIFETIME
TRANSFERABLE
STERLING POOLS
WARRANTY





BUILDING YOUR DREAM POOL FROM THE BOTTOM UP

More Wall.

More Strength.

Factory engineered, the steel wall pool panel is made of corrosion-resistant steel and its strength is unparalleled. Add a five inch flange top and bottom and our "Z" support ribs and you won't find a stronger steel panel. In fact, we're so confident of that strength, we offer a one-time transferable, lifetime limited warranty on the pool wall structure.



LIFETIME
TRANSFERABLE
STERLING POOLS'
WARRANTY

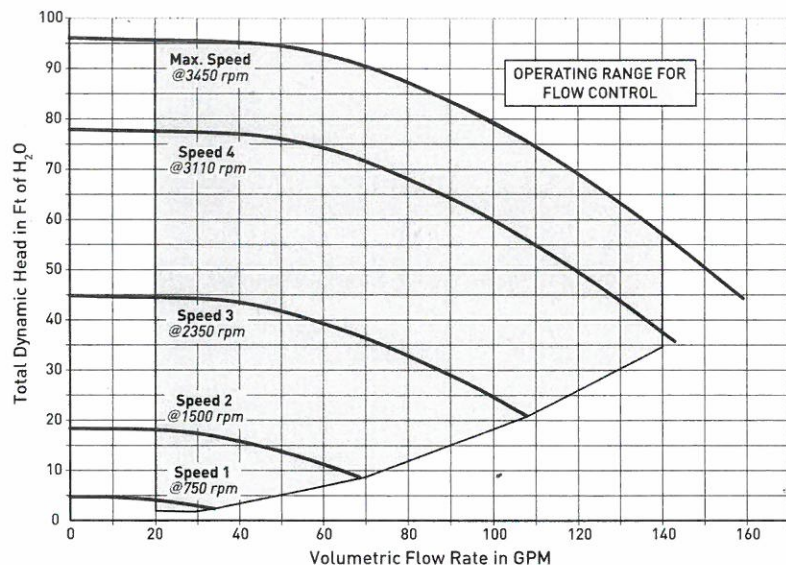
INTELLIFLO® VSF

VARIABLE SPEED AND FLOW PUMP



**PRECISE FLOW CONTROL FOR THE HIGHEST ENERGY SAVINGS
AND ULTIMATE SYSTEM PERFORMANCE.**

PERFORMANCE CURVES



The IntelliFlo VSF Variable Speed and Flow Pump has earned the Eco Select brand distinction as one of the greenest and most efficient choices from Pentair.

TRADEGRADE

The TradeGrade family of products is exclusively made for and sold by the world's most demanding pool professionals.



ENERGY STAR Certified IntelliFlo VSF pumps from Pentair meet strict energy-efficiency criteria set by the U.S. Environmental Protection Agency and the U.S. Department of Energy. These pumps save money, reduce energy use and protect the environment.

1620 Hawkins Ave | Sanford, NC 27330 | United States | 800.831.7133 | pentair.com

All Pentair trademarks and logos are owned by Pentair plc. IntelliFlo®, EasyTouch®, IntelliTouch®, ScreenLogic2® and Eco Select® are registered trademarks of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.

Pentair is an equal opportunity employer.

P1-413 2/18 ©2018 Pentair Water Pool and Spa, Inc. All rights reserved.





CLEAR & CLEAR® PLUS CARTRIDGE FILTER

Four cartridges in a compact design

Clean & Clear Plus filters contain four polyester cartridges that hold enormous amounts of dirt, yet are easier to clean. The fiberglass-reinforced tank halves are secured with an innovative clamp ring—just loosen the ring and remove the top half for easy cartridge access and rinsing. Filter maintenance doesn't get any easier.



KEY FEATURES

Single-piece base and tank

Constructed of fiberglass-reinforced polypropylene for strength, corrosion resistance and stability for years of dependable service.

Four-cartridge design

Traps more dirt and extends time between cleanings.

1-1/2" drain

Easy to access and located to ensure complete draining, making winterization fast and simple.

Internal air bleed

Continuous internal air bleed helps prevent air build-up to keep the filter operating at peak performance.

2" plumbing

For maximum flow and faster water cleaning.

Easy access

Clamp ring makes it quick and easy to remove and rinse cartridges as well as provides access to internal parts to speed service routines.

Model Number	Filter Area Sq. Ft.	Vertical Clearance*	Filter Diameter	Flow Rate GPM ² Residential	Turnover Capacity-Res. (Gallons)		
					8 hrs.	10 hrs.	12 hrs.
CCP240	240	56"	21.5"	90	43,200	54,000	64,800
CCP320 ¹	320	62"	21.5"	120	57,600	72,000	86,400
CCP420 ¹	420	68"	21.5"	150	72,000	90,000	108,000
CCP520 ¹	520	74"	21.5"	150	72,000	90,000	108,000

¹NSF Certified

²Residential rate .375 GPM per sq. ft. of filter area



The Clean & Clear Plus Cartridge Filter has earned the Eco Select® brand distinction as one of the greenest and most efficient choices from Pentair.

1620 Hawkins Ave | Sanford, NC 27330 | United States | 800.831.7133 | pentair.com

All Pentair trademarks and logos are owned by Pentair plc, or one of its global affiliates. Clean & Clear® and Eco Select® are registered trademarks of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.

Pentair is an equal opportunity employer.

P1-131 3/19 ©2019 Pentair Water Pool and Spa, Inc. All rights reserved



MASTERTEMP®

HIGH PERFORMANCE HEATER



Make the move toward greater comfort and efficiency.
Learn more from your Pentair dealer or visit pentair.com.

POOL SIZING*

°F Temperature Change/ 24 Hrs.	Heater Size					Heater Size				
	Model 175	Model 200	Model 250/250HD	Model 300	Model 400/400HD	Model 175	Model 200	Model 250/250HD	Model 300	Model 400/400HD
	Pool Capacity in Gallons					Pool Surface Area in Sq. Ft. at 5.5' Depth				
5	85,210	97,383	121,729	146,075	194,766	2,069	2,364	2,955	3,546	4,727
10	42,605	48,691	60,864	73,037	97,383	1,034	1,182	1,478	1,773	2,364
15	28,403	32,461	40,576	48,692	64,922	690	788	985	1,182	1,576
20	21,303	24,346	30,433	36,519	48,691	517	591	739	887	1,182
25	17,042	19,477	24,346	29,216	38,953	414	473	591	710	945
30	14,201	16,230	20,288	24,345	32,461	345	394	493	591	788
35	12,173	13,912	17,390	20,868	27,824	296	338	423	507	675
40	10,651	12,173	15,216	18,260	24,346	259	295	369	443	591

*ASME models available. See your Pentair representative for details.

SPA SIZING*

Model	Spa Volume (Gallons)								
	200	300	400	500	600	700	800	900	1,000
Minutes for 30°F Temperature Rise (Heater Input in 1,000 BTU/HR)									
175	21	31	40	50	61	71	81	91	102
200	18	27	35	44	53	62	71	80	89
250/250HD	16	24	31	39	47	54	62	70	78
300	14	20	27	33	40	47	53	60	67
400/400HD	9	13	18	22	27	31	35	40	44

*Note: The chart is based on a 30°F (16.6°C) temperature rise, discounting losses and only based on heat required to raise temperature in minutes. Two-year limited warranty. See warranty for details.



The MasterTemp High Performance Heater has earned the Eco Select® brand distinction as one of the greenest and most efficient choices from Pentair.

1620 Hawkins Ave | Sanford, NC 27330 | United States | 800.831.7133 | pentair.com

All Pentair trademarks and logos are owned by Pentair plc, or one of its global affiliates. MasterTemp® and Eco Select® are registered trademarks of Pentair Water Pool and Spa, Inc. and/or its affiliated companies in the United States and/or other countries. Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.

Pentair is an equal opportunity employer.

P1-004 5/19 ©2019 Pentair Water Pool and Spa, Inc. All rights reserved.



We make it strong. We make it easy.™
COVERSTAR®

LATHAM® Since 1956
behind every pool

QUALITY AND RELIABILITY... you can rely on!

The legendary reliability and durability of Coverstar automatic safety covers has made us the undisputed leader in automatic safety covers. Coverstar engineering is based on more than 35 years of experience in the field.

Our unique mechanism is engineered to resist corrosion and to be more reliable than any other system on the market.

Coverstar automatic safety covers are independently certified by the Underwriters Laboratories to exceed the powered safety cover requirements set forth by the American Society of Testing and Materials (ASTM F1346-91), and are UL listed to meet all electrical and safety standards.



FABRIC: Available in 11 standard colors, the premium Ultraguard III fabric has an advanced vinyl formulation for maximum chemical and UV protection and is backed by a seven year limited warranty.

HEAT-SEALED WEBBING: 15 times stronger than sewn cover webbings, heat-sealing eliminates corner tearing and makes detachable ropes possible.

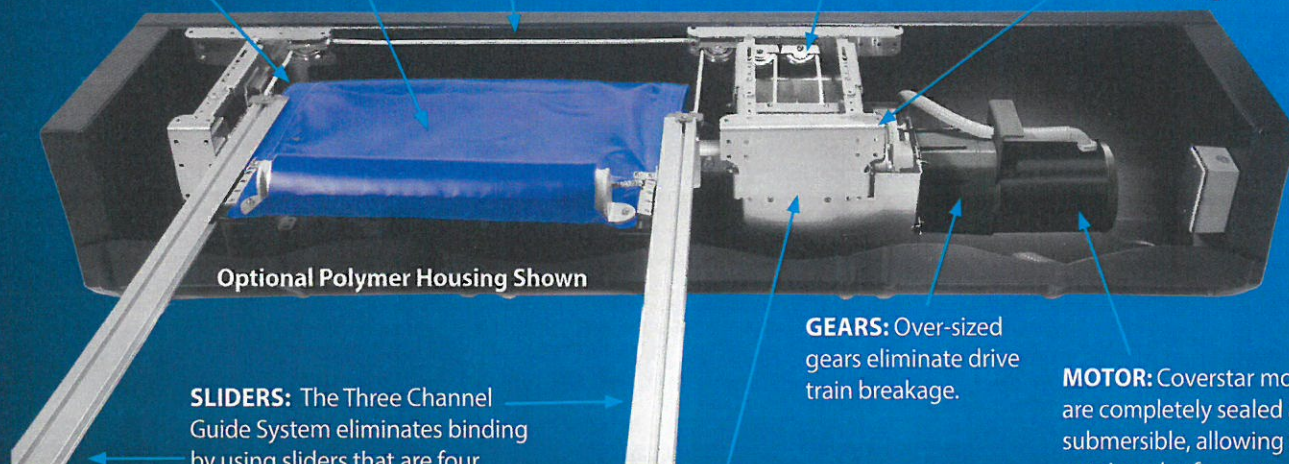
ROPES: PowerFlex™ ropes act like a shock absorber and self-adjust during operation for a more reliable performance.

They are the only ropes that come with a two-year no-break guarantee!

TWO INCH STAINLESS STEEL PULLEYS: Pulley size determines rope life. Two inch double-row, sealed, stainless steel ball bearing pulleys provide five times the load bearing capacity of the commonly use pulleys and the result is uncommonly long rope life.



TORQUE LIMITER: The mechanical torque limiter controls the pressure that can be placed on the system, protecting it from costly damage.



Optional Polymer Housing Shown

SLIDERS: The Three Channel Guide System eliminates binding by using sliders that are four times stronger than competitive systems.

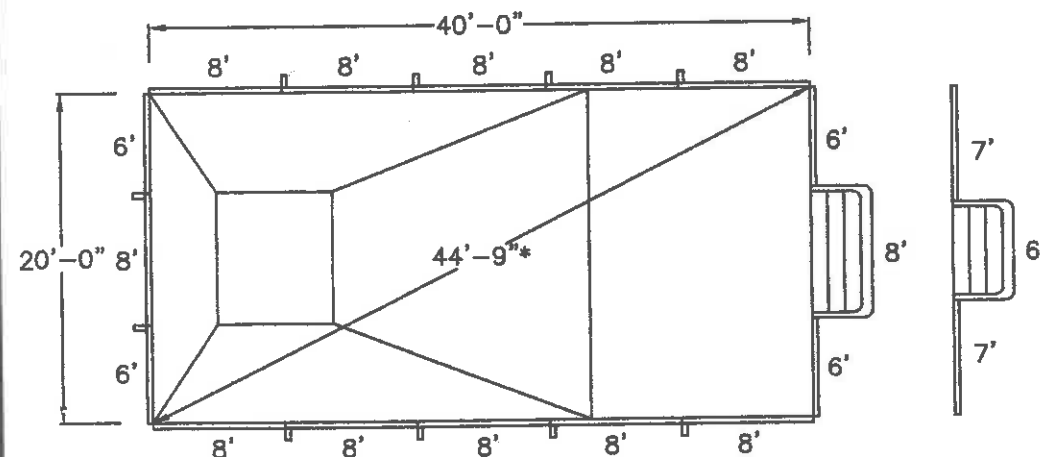
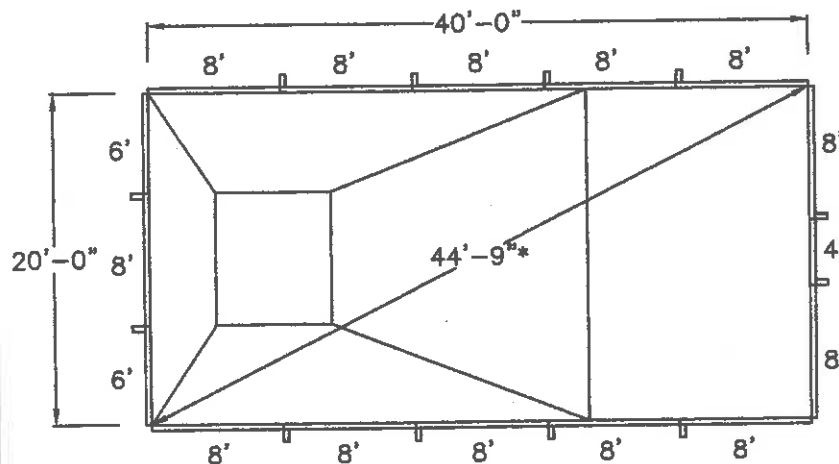
STAINLESS STEEL BRACKETRY: The Coverstar Eclipse system is the only system made from heavy duty stainless steel for long system life.

GEARS: Over-sized gears eliminate drive train breakage.

MOTOR: Coverstar motors are completely sealed and submersible, allowing for continued safe use regardless of rain, splashing water, or overfilling the pool. Optional hydraulic motors are also available.

20' X 40' RECTANGLE 6" RADIUS

AREA: 800 SQ. FT. PERIMETER: 119' GALLONS: 35,488



*Diagonals given to 90° point of corners.

NSPI TYPE III

GENERAL NOTES

1. All vertical dimensions are from liner extrusions on all pools.

EXCAVATION NOTES

1. Soil to have minimum bearing capacity of 2000 P.S.F.
2. Locate top of pool at least 6" above surrounding land elevation.

3. Excavation shall be 2" larger than pool all around.
4. Backfill with non-expansive material.

BILL OF MATERIALS

13-8' Plain Panels	0801-009
2-6' Plain Panels	0801-014
1-4' Plain Panel	0801-016
1-90° Corner Set	0801-020
12-Braces	0801-214W/O
12-Dead Man Plates	0800-066
1-Steel Hardware Kit	0801-204
2-12' Straight Coping (3/box)	1001-093
1-12' Straight Coping (4/box)	1001-094
1-90° Coping Corner Set	1001-004
1-Vinyl Liner	

STEP OPTIONS

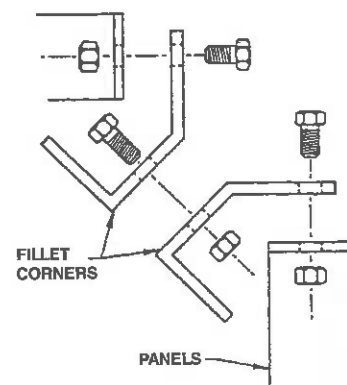
6' Step- Remove 2-8' panels and 1-4' panel. Insert 1-6' step and 2-7' panels.

8' Step- Remove 2-8' panels and 1-4' panel. Insert 1-8' step and 2-6' panels.

STEEL PANEL OPTIONS

Replace 4-8' plain panels with:	Optional
1-8' skimmer panel	0801-010
2-8' inlet panels	0801-012
1-8' light panel	

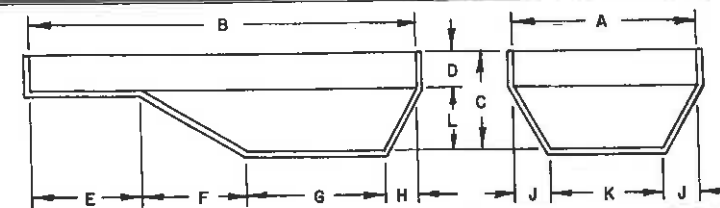
TYPICAL CORNER ASSEMBLY



ADDITIONAL NOTES

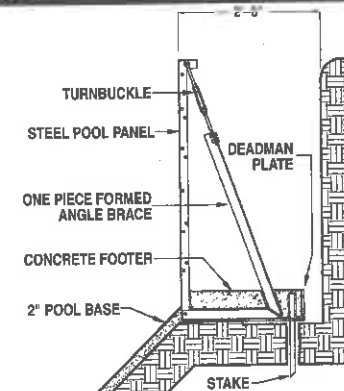
THIS DOCUMENT IS FOR ILLUSTRATIVE PURPOSES ONLY.

FWP makes only those representations which are stated in its written warranty. Any other representations, statements, or contracts made by the dealer/builder/contractor to the customer regarding any materials produced by FWP are attributable to the dealer/builder/contractor only. The dealer or contractor who sells or installs your pool is an independent contractor and is not an agent or employee of FWP. The construction methods illustrated here are suggestions and apply only to normal ground conditions. There may be additional precautions and/or methods of construction. Proper installation is the responsibility of the dealer/builder/contractor. These dig dimensions comply with the National Spa and Pool Institute's suggested minimum standards for residential pools. If a diving board or slide is to be used with this pool, please consult the original equipment manufacturer's instructions and the National Spa & Pool Institute's minimum standards prior to installing diving boards and slides on this product. For information concerning NSPI minimum standards, write: National Spa & Pool Institute, 2111 Eisenhower Avenue, Alexandria, VA 22314 • 703/838-0083



SIZE	A	B	C	D	E	F	G	H	I	J	K	L
20' x 40'	20'	40'	8'6"	3'4"	13'6"	15'6"	7'	4'	6'	8'	5'2"	
NSPI TYPE O - NON DIVING POOL STOCK OPTION	20'	40'	5'6"	3'4"	13'6"	15'6"	7'	4'	6'	8'	2'2"	

ADJUSTABLE TURNBUCKLE BRACE

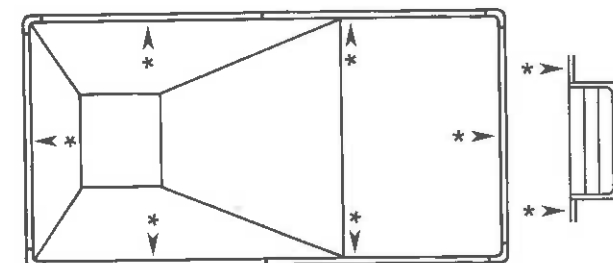


STEEL STEP OPTIONS

8' Steel Step (side)
Remove 2-8' panels. Insert 1-(0801-301) 8' steel step, 1-7' panel, 1-(0801-167) 45°x1' filler panel and 1-4' filler panel. 1-(1001-083) steel step coping set and 1-(1001-085) coping corner set required. See page 1.

8' Steel Step (end)
Remove 2-8' panels and 1-4' panel. Insert 1-(0801-301) 8' steel step, 2-(0801-167) 45°x1' filler panels, 2-5' panels and 2-braces. 1-(1001-083) steel step coping set and 2-(1001-085) coping corner sets required. See page 1.

COPING LAYOUT



Attention Dealer: It is your responsibility to see that the safety package provided by FWP is delivered to pool owner and that the "No Diving" warning labels are properly installed.

* "No Diving" signage is a component of the swimming pool and must be installed around the perimeter of the pool in the locations (*) noted in the diagram above.

STERLING
POOLS
OF THE HIGHEST QUALITY

Fort Wayne
POOLS

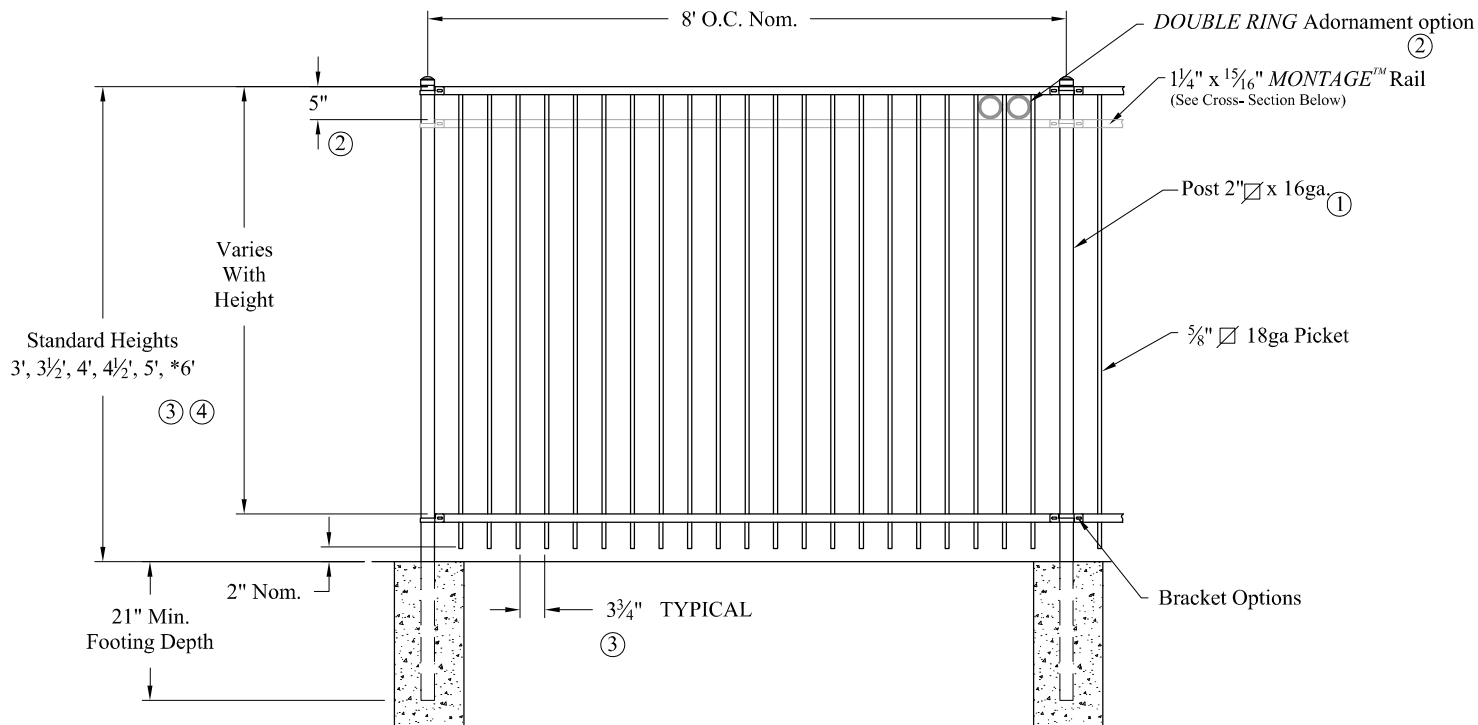
FORT WAYNE POOLS, INC.
6930 Gettysburg Pike
FT WAYNE, IN 46804 USA
(260) 432-8731
surfpools.com

DATE
MARCH
2004

TITLE
20' X 40'
RECTANGLE 6" RADIUS

DRAWING NUMBER
SP-005

COPYRIGHT 2004 FORT WAYNE POOLS, INC.

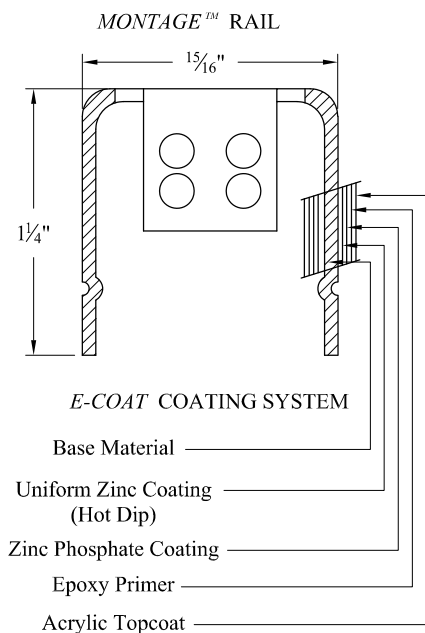


NOTES:

- 1.) Post size depends on fence height and wind loads. See *MONTAGE™* specifications for post sizing chart.
- 2.) Third rail required for *Double Rings*.
- 3.) Available in 3" air space and/or Flush Bottom on most heights.
- 4.) Three rails required for 6' tall.

RAKING DIRECTIONAL ARROW

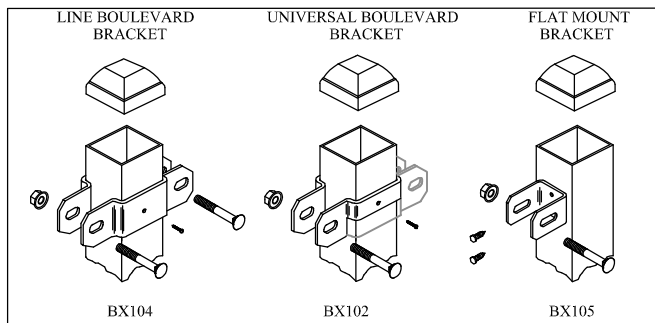
Welded panel can be raked 45" over 8' with arrow pointing down grade.



PROFUSION™ WELDING PROCESS

No exposed welds,
Good Neighbor profile - Same
appearance on both sides

MONTAGE™ RAIL
Specially formed high strength
architectural shape.



RESIDENTIAL WELDED STEEL PANEL PRE-ASSEMBLED

Title: **MONTAGE MAJESTIC 2/3-RAIL**

DR: CI SH: 1 of 1 SCALE: DO NOT SCALE

CK: ME Date: 7-19-11 REV: c



AMERISTAR®

1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422
www.ameristarfence.com

Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

RMISO



MONTAGE[®]

RESIDENTIAL ORNAMENTAL STEEL FENCE



FENCE PRODUCTS

AMERISTARFENCE.COM | 888-333-3422

Experience a safer and more open world

AMERISTAR[®]

ASSA ABLOY



THE MONTAGE® DIFFERENCE



LIFETIME WARRANTY

The Montage families of fencing products are manufactured from superior quality materials by skilled craftsmen with the highest standards of workmanship in the industry. Ameristar is confident in offering Montage with a Lifetime Warranty, backed by an American company with over 30 years of demonstrated excellence in manufacturing ornamental fencing products.



E-COAT vs PAINTED STEEL

Major corrosion problems start from the inside. That's why all products in the Montage family are coated inside and outside. Our galvanized steel framework is subjected to a multi-stage pre-treatment/wash, followed by a duplex cathodic electrocoat system consisting of an epoxy primer, which significantly increases corrosion protection, and an acrylic topcoat, which provides the protection necessary to withstand adverse weathering effects. This process results in years of maintenance-free ownership. Simply painting steel on the outside leaves it vulnerable to corrosion, which in turn destroys the entire fence.



*Competitors Painted Rail
(outside only)*



Paint



*Montage E-Coated rail
(outside and inside)*





BE SURROUNDED WITH

Beauty & Protection

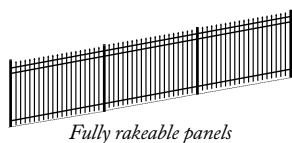
Montage ornamental steel fence is unparalleled in strength and quality, adapts to virtually any terrain, withstands vast shifts in climate yet remains untouched by time in stately elegance.

This fence offers an array of customizable options to fit your unique sense of style and application.

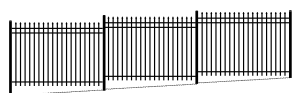


PROFUSION WELDED STEEL vs ALUMINUM

All Montage fence panels are fabricated using Ameristar's ProFusion welding process. This technique combines laser and fusion technology to create a virtually invisible structural connection at every picket to rail intersection. Unlike typical aluminum fence systems that are held together with unsightly screws, the ProFusion weld used with Montage promotes a "good neighbor" profile with sleek lines and no exposed picket to rail fasteners. When compared to residential aluminum fencing, Montage's welded steel construction is unmatched in strength and durability.



Fully rakeable panels



Stair-stepping panels

RAKEABLE vs STAIR-STEP

The ProFusion welded panel design of Montage enables maximum bias for virtually all terrains. Being the only welded steel fence capable of following steep grade changes, Montage follows uneven ground contours like a second skin. This eliminates stair-stepping panels with the flexibility of a 48" rise in an 8' run.

ENVIRONMENTALLY RESPONSIBLE

Ameristar proudly leads the way in manufacturing programs and practices to reduce our carbon footprint and has developed methods to reduce our energy consumption. We consistently monitor air emissions, storm water runoff, and waste water discharge. We also recycle all of our scrap steel, wood, cardboard, plastics, paper and oil products. Ameristar products have the opportunity to earn LEED points.





CLASSIC™

Timeless Elegance

Classic style features extended pickets that culminate to an arrow-pointed spear capture the beautiful look of old style wrought iron fencing. Single, double and arched walk gates that perfectly match this fence style are also available.

- ❖ *2-rail panels in 3', 3½', 4' and 5' heights, with a standard or flush bottom rail*
- ❖ *3-rail panels in 3', 3½', 4', 5' and 6' heights, with a standard or flush bottom rail*

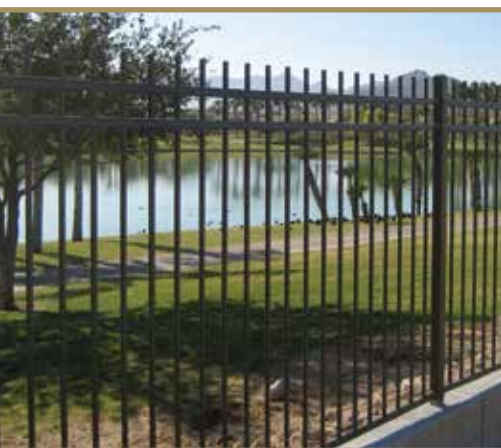


MAJESTIC™

Modern Beauty

Majestic's flush top rail projects a clean, streamlined look that make it one of the most popular styles in the Montage family. Single, double and arched walk gates that perfectly match this fence style are available as well.

- ❖ *2-rail panels in 3', 3½', 4' and 5' heights, with a standard or flush bottom rail*
- ❖ *3-rail panels in 3', 3½', 4', 5' and 6' heights, with a standard or flush bottom rail (4½' panels available with flush bottom rail only)*



GENESIS™

Creatively Distinct

Genesis style's extended flat-topped pickets serve as a foundation for your choice of accent finials providing a customized design. Single, double and arched walk gates that perfectly match this fence style are available as well.

- ❖ *2-rail panels in 3', 3½', 4' and 5' heights, with a standard or flush bottom rail*
- ❖ *3-rail panels in 3', 3½', 4', 5' and 6' heights, with a standard or flush bottom rail*



WARRIOR™

Traditional Character

Alternating picket heights coupled with each picket culminating into an arrow-pointed spear, give the Warrior style a distinctive look that is a hallmark of wrought iron fencing. Single and double swing gates that perfectly match this fence style are also available.

- ❖ 2-rail panels in 3', 3½', 4' and 5' heights, with a standard or flush bottom rail
- ❖ 3-rail panels in 3', 3½', 4', 5' and 6' heights, with a standard or flush bottom rail



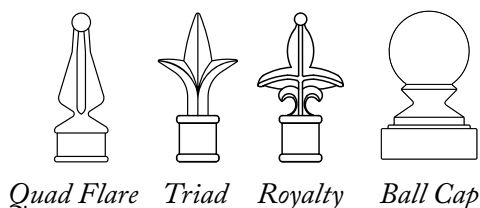
CRESCENT™

Sophisticated Charm

Crescent style is a unique old world look with pressed-spear pickets protected by arched steel loops. Single and double swing gates that perfectly match this fence style are also available. (Not rakeable).

- ❖ 2-rail panels in 3', 3½', 4' and 5' heights, with a standard or flush bottom rail
- ❖ 3-rail panels in 3', 3½', 4', 5' and 6' heights, with a standard or flush bottom rail

FINIALS & ADORNMENTS



Quad Flare

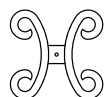
Triad

Royalty

Ball Cap



Serpentine
Scroll



Butterfly
Scroll



Double Rings

COLOR OPTIONS



Black



Bronze

MONTAGE® POOL, PET & PLAY

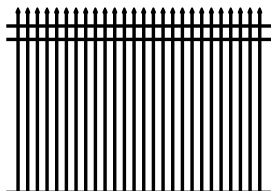


Relax or Splash

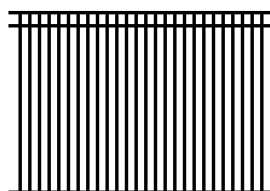
SAFELY & IN STYLE

Montage Pool, Pet & Play provides additional safety for pets and children with 3" airspace between pickets. The 3" airspace of the Montage Pool, Pet & Play gives these panels a more robust appearance, as well as increased panel strength due to the additional picket to rail connections.

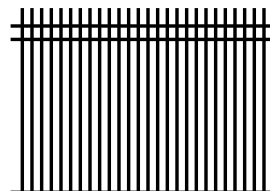
- ❖ *2-rail panels in 3', 3½' and 4' heights, with a standard or flush bottom rail (available in Majestic only)*
- ❖ *3-rail panels in 3', 3½', 4', 5' and 6' heights, with a standard or flush bottom rail (4½' Majestic panels available with flush bottom rail only)*



Classic

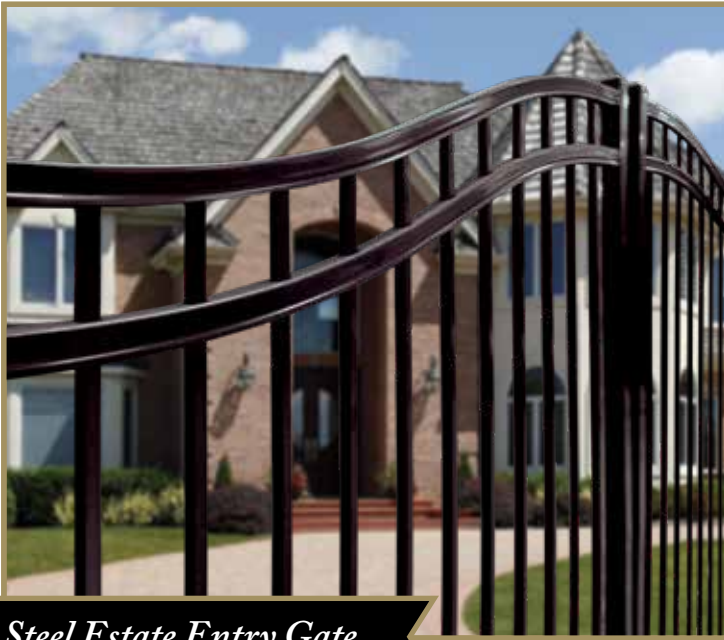


Majestic

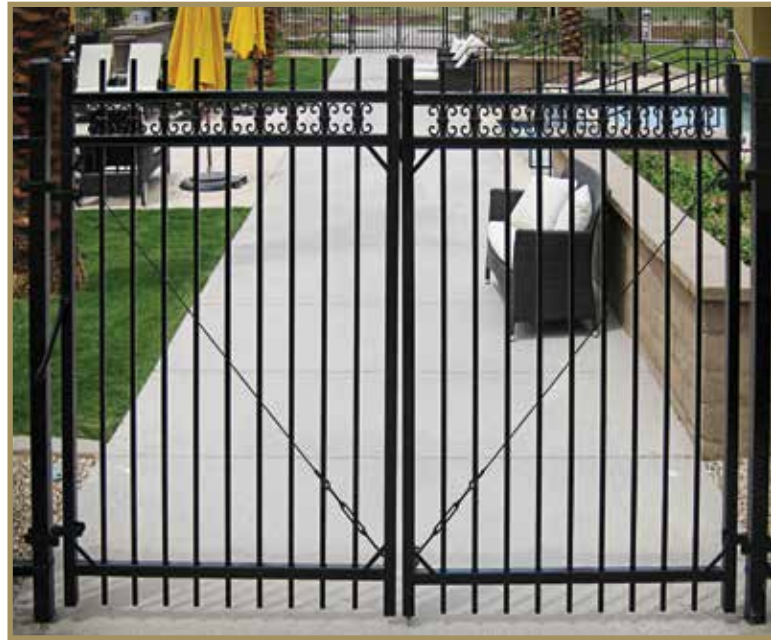


Genesis

AVAILABLE GATE SYSTEMS



Steel Estate Entry Gate



EXPERIENCE YOUR

Grand Entrance

For the perfect finishing touch to your project, Montage offers several gate options to compliment any installation. Montage's single arched swing gates, traditional single swing and double swing gates are crafted with fully welded construction for years of durability. Fabricated with the same components as the fence panel these Montage gates provide a seamless transition from ornamental fence to decorative gate. A variety of steel Estate® Entry Gates are also available to accent any entry.



WHY CHOOSE AMERISTAR

KNOWLEDGE & EXPERIENCE

Ameristar was chartered 30 years ago in response to the demand by consumers and specifiers for specialty fence products. Ameristar offers an aesthetically pleasing product that is both high in quality and affordability. This has been achieved by maximizing high-volume productivity, increasing product design strength, and promoting simplistic installation.

PROVEN CAPABILITY

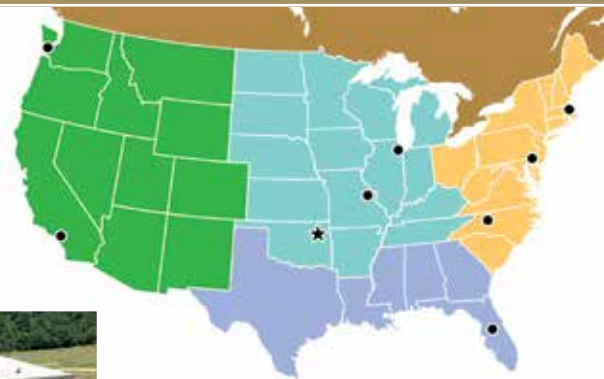
Ameristar's integrated in-house process and extensive raw material inventory results in much improved productivity and availability compared to the competition. By having a vast finished goods inventory, Ameristar is capable of delivering finished products faster than competitors who sublet the majority of their operations.

INDUSTRY LEADERSHIP

Over the years Ameristar has continually raised the bar across the board in the manufacturing of high quality, innovative fencing products. Our demonstrated commitment to upholding higher values translates into superior products that go far beyond merely meeting minimum industry standards.



Ameristar's world headquarters, manufacturing & coil processing facilities in Tulsa, Oklahoma, USA.



LEGEND

- ★ Ameristar Headquarters
- Sales & Service Centers



AMERISTARFENCE.COM | 888-333-3422

Experience a safer and more open world