

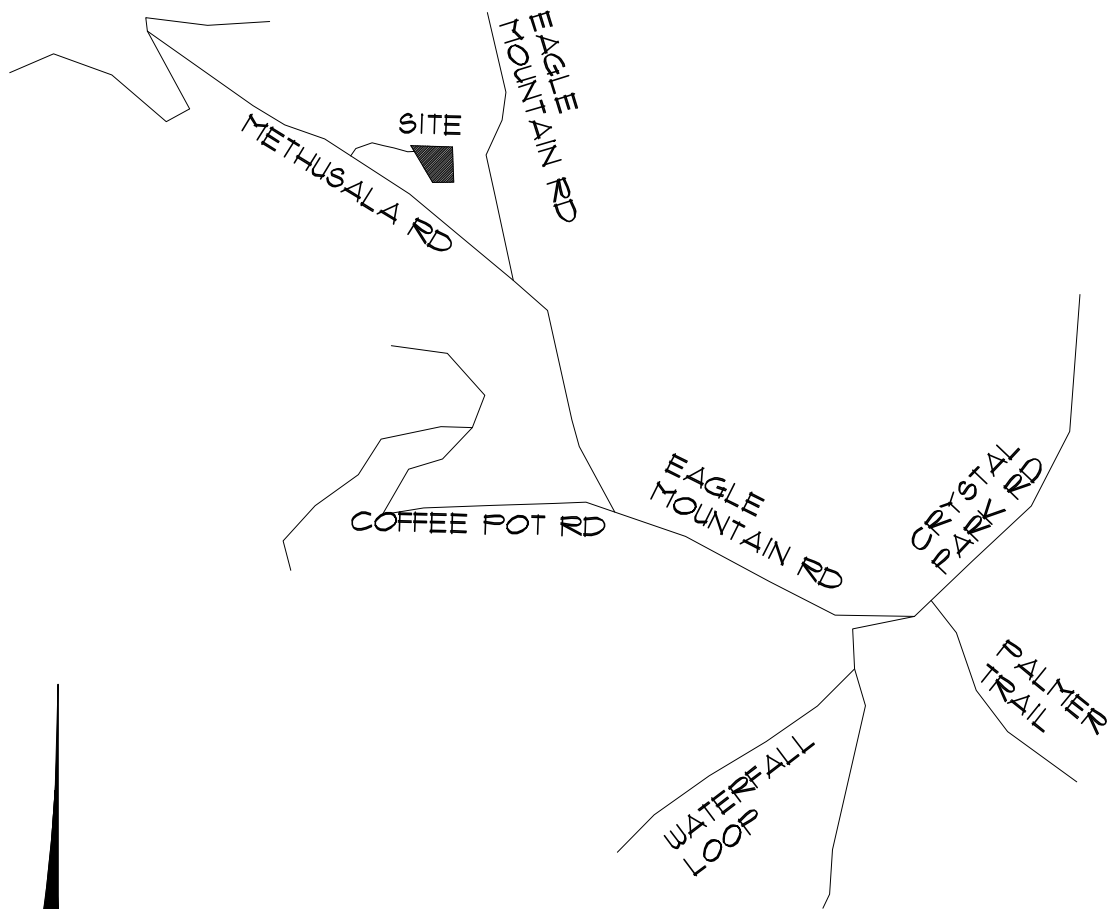
ONSITE WASTEWATER TREATMENT SYSTEM PERMIT APPLICATION

| Property Information | | | |
|---|--|---|---|
| Applicant name | Gordon Stegner | | |
| Property address | 6150 Methusela Road | City, State, Zip | Manitou Springs, CO 80829 |
| Phone | (719) 491-9635 | Email | gordon@palacehomesinc.com |
| Legal description | Crystal Park S-289. Filing #2, El Paso County Colorado | | |
| Tax schedule # | 7418000229 | Lot size | 30,491 SF |
| Is the property gated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Code: See gate attendant | Water supply <input checked="" type="checkbox"/> Well <input type="checkbox"/> Cistern <input type="checkbox"/> Municipal |
| Proposed use: | <input checked="" type="checkbox"/> Residential <input type="checkbox"/> Multifamily <input type="checkbox"/> Commercial | | |
| No. of potential bedrooms: 3 | Commercial wastewater flow: | | |
| Is there unfinished space? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Unfinished (sq ft): 687 | Who will install the system? <input type="checkbox"/> Homeowner <input checked="" type="checkbox"/> Licensed Installer | |
| Homeowners requesting to install their own system must complete and submit the Homeowner Installation Affidavit. All engineered-design systems must be installed by a Tier II licensed installer | | | |
| Owner Information | | | |
| Owner name | Courtney & Ryan Meyer | Phone | (636) 775-3680 |
| Mailing address | 4615 Spring Canyon Hts, #108 | City, State, Zip | Colorado Springs, CO 80907 |
| Owner email | cbmeyer9@gmail.com | | |
| General contractor | Palace Homes Inc | Phone/Email | 7196329635 gordon@palacehomesinc.com |
| System installer | Wilkinson Excavating | Phone/Email | 7194910880 paigepw@comcast.net |
| Permit Fees as Established by the El Paso County Board of Health Permits expire one year from the date of issuance, unless otherwise noted. | | | |
| Invoice, along with payment instructions, will be generated at time of application submission review. Payment is required prior to being assigned for review. Review time applicable after payment is verified. | | | |
| <input checked="" type="checkbox"/> New Permit | \$1131.00 includes \$961.00 (EPCPH Charge) + \$147.00 (EPC Planning Dept. Surcharge) + \$23.00 (CDPHE Surcharge) | | |
| Permit fee includes: 1: Application design review, 1: design revision request, 1: site evaluation, 1: inspection and 1: re-inspection. Additional design revisions, site evaluations, or inspections incur additional fees. | | | |
| <input type="checkbox"/> Modification Permit | \$914.00 includes \$891.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) | | |
| Permit fee includes: 1: Application design review, 1: design revision request, 1: site evaluation, and 1: inspection. Additional design revisions, site evaluations, or inspections incur additional fees. | | | |
| <input type="checkbox"/> Major Repair Permit | \$914.00 includes \$891.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) | | |
| Permit fee includes: 1: Application design review, 1: design revision request, 1: site evaluation, and 1: inspection. Additional design revisions, site evaluations, or inspections incur additional fees. | | | |
| <input type="checkbox"/> Minor Repair Permit | \$577.00 includes \$554.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) | | |
| Permit fee includes: 1: Application design review, 1: design revision request, and 1: inspection. Additional design revisions, site evaluations, or inspections incur additional fees. | | | |

| Required Additional Property Information | |
|--|------------------------------------|
| System type (conventional/engineered) | Engineered - Pressure Distribution |
| Number of structure(s) to be connected | 1 |
| Written scope of work | |
| Install new residential onsite wastewater treatment system for single family residence | |
| Please provide directions to the property from a main highway | |
| Take Hwy 24 to Crystal Park Road. Proceed to the end of Crystal Park Road. Vicinity Map also included | |
| <ul style="list-style-type: none"> Property address or lot number must be clearly marked and visible from the road. Profile excavation test pit and/or soil profile holes must be clearly marked. Proposed and alternate soil treatment areas must be protected from compaction and disturbance. Locked gates require the gate code or lock combination be provided on front of application. Failure to comply with the above information may result in an additional charge for a return trip. | |

| Required Application Documents |
|---|
| EPCPH will only accept submissions when all required components are included in submission. |
| Colorado Professional Engineer (P.E.) stamped soils report |
| Soils report: including at least 2 soil profile excavation pits, in accordance with section 8.5 A-F of OWTS regulations |
| Calculation/Design worksheet. |
| New permit applications require submission of the structure floor plan. |
| Minor repair applications require a clear site plan including proposed connections/components. |
| Clear legible 8.5'x11' design document |
| Design document must include, property lines, proposed and alternate locations, profile pit locations with respect to system layout, all setbacks to pertinent structures and features in table 7-1. |

Submission of this application certifies that the information provided on this application is in compliance with the El Paso County Board of Health Chapter 8 Onsite Wastewater System (OWTS) Regulations. I also authorize the assigned representative of El Paso County Public Health to enter onto this property in order to obtain information necessary for the issuance of a permit.



VICINITY MAP

NO SCALE

April 1, 2025



OWTS PROFILE PIT EVALUATION

PREPARED FOR: PALACE HOMES

JOB #25-0014
6150 METHUSALA ROAD,
SITE S-289
CRYSTAL PARK SUBDIVISION
SCHEDULE NUMBER: UNKNOWN
EL PASO COUNTY,
COLORADO

PREPARED BY: COLORADO GEO-SOLUTIONS

5072 LIST DRIVE
COLORADO SPRINGS, CO 80919

OFFICE PHONE #: (719) 481-4560
EMAIL: OFFICE@COLORADOGEOSOLUTIONS.COM

Sincerely,

Douglas J Pretzer

Douglas J. Pretzer, P.E.
Principal Engineer



SITE CONDITIONS

Colorado Geo-Solutions performed a visual and tactile soil evaluation at the stated address for the purpose of installing an On-Site Wastewater Treatment System (OWTS). The location of the test pits was determined by Palace Homes. The proposed residence will be served by a proposed well. The natural slope of the property, across the proposed soil treatment area (STA) is southwest at approximately 26%. All applicable setbacks, as noted in Table 7-1 of the OWTS Regulations must be maintained. Weather conditions at the time of the test consisted of clear skies with moderate temperatures.

PROFILE PIT FINDINGS

The inspection was performed on March 21, 2025, in accordance with Table 10-1 of the **E.P.C.P.H. OWTS Regulations**.

Soil Profile #1:

- 0 to 3"** - Topsoil - loam, organic composition.
- 3" to 24"** - USDA soil texture sandy loam, soil type R2, structure shape massive, structure grade 0, non-cemented, LTAR 0.50, strong brown in color, 7.5 YR 4/6, soil type 2A with 71% rock.
- 24" to 90"** - USDA soil texture loamy sand, soil type R0, structure shape massive, structure grade 0, non-cemented, LTAR 0.80, brown in color, 10 YR 4/3, soil type 1 with 77% rock.

Groundwater: Not Encountered

Groundwater Evidence: Not Encountered

Bedrock: Not Encountered

Soil Profile #2:

- 0 to 3"** - Topsoil - loam, organic composition.
- 3" to 18"** - USDA soil texture sandy loam, soil type R2, structure shape massive, structure grade 0, non-cemented, LTAR 0.50, strong brown in color, 7.5 YR 4/6, soil type 2A with 71% rock.
- 18" to 90"** - USDA soil texture loamy sand, soil type R0, structure shape massive, structure grade 0, non-cemented, LTAR 0.80, brown in color, 10 YR 4/3, soil type 1 with 80% rock.

Groundwater: Not Encountered

Groundwater Evidence: Not Encountered

Bedrock: Not Encountered

RECOMMENDATIONS

An Engineered OWTS will be required for this site due to: USDA Soil Type R0.

A uniformly pressure dosed soil treatment area is required. The maximum depth of the installation shall not be deeper than 4 feet below the existing grade. A minimum of 3 feet deep unlined sand filter is required.

Based on the observed conditions, we feel a design based on an LTAR of 0.80 GPD/SF (USDA R0, treatment soil, treatment level 1) is reasonable.

If during construction of the field itself, subsurface conditions change considerably or if the location of the proposed field changes, this office shall be notified to determine whether the conditions are adequate for the system as designed or whether a new system needs to be designed.

LIMITATIONS

This report is prepared in accordance with Colorado Department of Public Health and Environment, Regulation 43, and the local board of health OWTS regulations as well as generally accepted engineering standards and methods. Soil conditions can vary between pits and beyond the location of the pits. Even with proper design and installation, there remain uncertainties in the function of the STA and difficulties may arise. Colorado Geo-Solutions provides no warranty, express or implied, regarding the contents of this report or the designs or installation of the OWTS based on the recommendations of this report. The Limits of Liability extend only to the fee rendered for the professional services provided.

Homeowners should understand proper OWTS operation and maintenance. Once the OWTS is installed, the homeowners are responsible for the continued operation and maintenance. Visit your local health department website or the EPA's "How to Care for Your Septic System."

This report is valid for 1 year from the date issued unless land use changes, code changes and/or changes in the generally accepted engineering standards dictate otherwise.

PROFILE PIT LOG #1

JOB #: 25-0014
EQUIPMENT USED: MINI-EX

DATE EVALUATED: 3/21/2025
EVALUATED BY: DJP

| DEPTH (ft.) | HATCH | SOIL TYPE |
|----------------|-------|--------------|
| 0 | | R2 |
| 2 | | R0 |
| 4 | | |
| 6 | | |
| 8 | | |
| 10 | | |
| 12 | | |

0"-3" TOPSOIL

Loam
Organic Composition

3"-24" DECOMPOSED GRANITE

Very Fine-Coarse Grained
Moderate Density
Moderate Moisture Content
Low Clay Content
Low Cohesion
Low Plasticity
Strong Brown Color
7.5YR4/6

USDA Soil Texture: Sandy Loam
USDA Soil Type: R2
USDA Soil Structure: Massive
USDA Soil Grade: 0
Cementation Class: Non-cemented
LTAR: 0.50
Soil Type 2A w/ 71% Rock

24"-90" DECOMPOSED GRANITE

Fine-Coarse Grained
Moderate Density
Low Moisture Content
Low Clay Content
Low Cohesion
Low Plasticity
Brown Color
10YR4/3

USDA Soil Texture: Loamy Sand
USDA Soil Type: R0
USDA Soil Structure: Massive
USDA Soil Grade: 0
Cementation Class: Non-cemented
LTAR: 0.80
Soil Type 1 w/ 77% Rock

LTAR to be Used for OWTS Sizing: 0.80 GPD/SF (USDA Type R0, Treatment soil, Treatment Level 1)
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Max. 4 ft Deep (Uniformly Pressure Dosed)
Soil Treatment Area Slope and Direction: Southwest @ 26% Minimum 3 Ft Unlined Sand Filter Required

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

Project: 25-0014

Sheet: 1 of 3

Date: 28 Mar 2025

Revised:

Drawn by: rah

Checked by: djp

Project Address

Palace Homes
6150 Methusala Road,
Site S-289,
Crystal Park Subdivision,
Sch. No. Unknown
El Paso County, Colorado



PROFILE PIT LOG #2

| JOB #: 25-0014 EQUIPMENT USED: MINI-EX | | DATE EVALUATED: 3/21/2025 EVALUATED BY: DJP | DEPTH (ft.) | HATCH | SOIL TYPE |
|---|--|--|-----------------------|-------|--------------|
| 0"-3" <u>TOPSOIL</u> Loam Organic Composition | | | 0 1 2 | | R2 |
| 3"-18" <u>DECOMPOSED GRANITE</u> Very Fine-Coarse Grained Moderate Density Moderate Moisture Content Low Clay Content Low Cohesion Low Plasticity Strong Brown Color 7.5YR4/6 | | USDA Soil Texture: Sandy Loam USDA Soil Type: R2 USDA Soil Structure: Massive USDA Soil Grade: 0 Cementation Class: Non-cemented LTAR: 0.50 Soil Type 2A w/ 71% Rock | 4 5 6 7 8 | | R0 |
| 18"-90" <u>DECOMPOSED GRANITE</u> Fine-Coarse Grained Moderate Density Low Moisture Content Low Clay Content Low Cohesion Low Plasticity Brown Color 10YR4/3 | | USDA Soil Texture: Loamy Sand USDA Soil Type: R0 USDA Soil Structure: Massive USDA Soil Grade: 0 Cementation Class: Non-cemented LTAR: 0.80 Soil Type 1 w/ 80% Rock | 10 11 12 | | |

LTAR to be Used for OWTS Sizing: 0.80 GPD/SF (USDA Type R0, Treatment soil, Treatment Level 1)
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Max. 4 ft Deep (Uniformly Pressure Dosed)
Soil Treatment Area Slope and Direction: Southwest @ 26% Minimum 3 Ft Unlined Sand Filter Required

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

| | |
|-------------------|-------------------------------|
| Project: 25-0014 | <u>Project Address</u> |
| Sheet: 2 of 3 | Palace Homes |
| Date: 28 Mar 2025 | 6150 Methusala Road, |
| Revised: | Site S-289, |
| Drawn by: rah | Crystal Park Subdivision, |
| Checked by: djp | Sch. No. Unknown |
| | El Paso County, Colorado |



PROFILE PIT MAP



*Indicates Colorado Geo-Solutions Profile Pit Test Locations

GPS Coordinates Profile Pit #1: N. 38° 50' 14.0" , W. 104° 56' 14.91"

GPS Coordinates Profile Pit #2: N. 38° 50' 14.02" , W. 104° 56' 14.65"

Project: 25-0014

Sheet: 3 of 3

Date: 28 Mar 2025

Revised:

Drawn by: rah

Checked by: djp

Project Address

Palace Homes
6150 Methusala Road,
Site S-289,
Crystal Park Subdivision,
Sch. No. Unknown
El Paso County, Colorado



Cover Page

CALCULATIONS (New OWTS):

Proposed Single Family Residence with 3 Bedrooms

LTAR = 0.80 GPD/SF - "Secondary" Sand
LTAR = 0.80 GPD/SF - Soil Type R0 (1), Treatment Level 1
USDA Soil Type R1 per CGS #25-0014 Profile Pit 3/21/2025.
For Treatment Level 1 Effluent, Min. 3 FT Deep Unlined Sand Filter Required.

Q = (3 BDRM)(150 GPD)
Q = 450.0 Gallons per Day (GPD)

A = Q / LTAR = 450.0 GPD / 0.80 GPD/SF

A = 562.5 SF

Unlined Sand Filter:

Uniformly Pressure Dosed Chamber Bed
(Higher Level Treatment System, No Reduction Allowed):
A = (562.5 SF)(1.0)(1.0)
A = 562.5 SF Required

CHAMBER BED SYSTEM (Uniformly Pressure Dosed):

Infiltrator Systems Inc. Quick4 Low-Profile Chambers
Chambers = SF RQD / 12.0 SF per Chamber
Chambers = 562.5 SF / 12.0 SF = Min. 47 Chambers
2 Beds: 2 Rows Wide x 12 Chambers Long
Chambers Provided = 48 Total
Total Contact Area = 576.0 SF Actual
Total Contact Area = 562.5 SF Required

Note: Use of Alternative Chambers is Acceptable.
For ARC 36 Low-Profile Chambers (15.0 SF / Chamber, Min. 38 Chambers). Install 2 Beds: 2 Rows Wide x 10 Chambers (40 Total).
Contact Engineer for Clarification.

TANK SIZES:

Main Tank Size = Min. 1,000 Gallons (Two-Compartment)
Pump Chamber = Min. 500 Gallons (See Pump Chamber Detail on Page 5 for Additional Information).
1,000 + 500 Gallon Three-Compartment Tank w/ Pump in Third Compartment is Acceptable.

Colorado Geo-Solutions has Provided this Design in Accordance with the Standards of Practice Common to the Area. However, as with All Underground Absorption Fields, Guarantee from Failure is Impossible. Even with Proper Installation, as Outlined for this Proposed Construction, There Can Remain Many Uncertainties, and Difficulties Can Still Arise in the Operation of the System in the Future. Proper Design, Construction, and Maintenance can Assist in Minimizing Uncertainties, but Cannot Entirely Eliminate Them. Homeowners Should be Advised of Maintenance and Special Considerations for Septic Systems. Homeowners are Encouraged to visit epa.gov/septic/how-care-your-septic-system for Information Related to Maintenance, Water Conservation, and Septic Do's and Don'ts. Due to the Possibility of Unknown Water Usage Factors, Colorado Geo-Solutions Provides No Warranty of this Design or Installation Against Failure or Damage of Any Type. Therefore, the Limits of Liability Extend Only to the Fee Rendered for the Professional Services Provided.

INSPECTIONS REQUIRED ARE AS FOLLOWS:

- 1.) Engineer to Inspect Excavation Prior to Placement of Approved Sand Fill.
- 2.) Engineer Will Inspect the Installation of All OWTS Components (i.e. All Plumbing, Tanks, Pump Chamber, STA, etc.) Prior to Backfill.
- 3.) Engineer to Verify Squirt Height at Each Lateral.
- 4.) Engineer to Inspect the Soil Treatment Area After Backfill to Insure Min. Cover and Proper Drainage Away from Soil Treatment Area. Please Notify this Office Min. 24 Hours Prior to Inspection.

IMPORTED SAND SPECIFICATION (See Page 3 and 4):

Sand for Soil Treatment Area Absorption Bed to be Imported

"Secondary" Sand Media:
Effective Size (D10) = 0.15-0.60 mm
Coefficient of Uniformity, Cu (D60/D10) ≤ 7.0
Note: 100% Passing #4 Sieve
Less Than 3% Passing #200 Sieve

Note: ASTM C-33 w/ Less Than 3% Fines Generally Meets "Secondary" Sand Media Requirements. Gradation Curve of the Sand Media Used MUST be Provided to Engineer Prior to Installation. Gradation Must be Dated No More Than One Month Prior to Installation Date.

HOMEOWNER RESPONSIBILITY:

- Homeowner is Responsible for HOA Approval and Verifying HOA Setback (if Applicable)
- Maintain Active Service Contract w/ Licensed Operation & Maintenance Contractor per EPCHD Regulations
- Have OWTS Inspected Annually (Service Contract)
 - Clean Effluent Filter
 - Flush Laterals
 - Function Test Valve Assemblies
 - Check Water Levels in Inspection Ports
- Have Septic Tank Pump Every 2-4 Years (or As Needed, Contact Licensed Pumper)
- Plant Native Grass Over STA (Use Walk Behind Mower) (No Plants with Roots or that Require Irrigation)
- Don't Pour Chemicals Down Drain
- Don't Throw Trash in Toilet (Minimize Toilet Paper Consumption)
- Use of Garbage Disposal is Discouraged
- Conserve Water and Repair Leaking Fixtures

This is NOT a Complete List (Contact Local Health Department or EPA List of Septic "Do's and Don'ts")

GENERAL NOTES:

All Work per El Paso County Board of Health Regulations Chapter 8: On-Site Wastewater Treatment Systems (OWTS) Criteria.

All Setbacks Shall Conform to El Paso County Regulations (See Table 7-1 in the Regulations for Additional Information). Contractor/Homeowner Must Verify All Setbacks and Obtain Utility Clearances Prior to Construction.

Contractor/Homeowner is Responsible for Permit. Contractor/Homeowner Must Obtain Approval of Engineered OWTS from the El Paso County Health Department.

All Bends Limited to 45 Degree Ells or Long Sweep Quarter Bends. Areas Under Driveways Shall Be Protected as Per El Paso County Health Department Regulations.

Building Sewer Clean-Outs Shall Be Installed within 5 FT of the Structure and at Intervals Not to Exceed 100 FT in Straight Runs, Upstream at Each Change of Direction Greater Than 45°, and at Any Combination of Bends Greater Than 45° within a 40 FT Section of Building Sewer.

Grade Surrounding Area to Drain Away from the Soil Treatment Area (STA).

Paving, Planting of Trees/Shrubs, Irrigation, Vehicular Traffic or Hoofed Animal Traffic of Any Kind Over the STA may Cause Premature Failure and is Prohibited.

Refer to Sheet 2, 3, 4, and 5 for Additional Details and Information.



| | |
|------------------|---|
| Project: 25-0014 | Project Address Palace Homes 6150 Methusala Road Site S-289, Crystal Park Subdivision Sch. No. Unknown El Paso County, Colorado |
| Sheet: 1 of 5 | |
| Date: 1 May 2025 | |
| Revised: | |
| Drawn by: rah | |
| Checked by: djp | |

SITE PLAN

CHAMBER BED SYSTEM (Uniformly Pressure Dosed):

Infiltrator Systems Inc. Quick4 Low-Profile Chambers
 # Chambers = SF RQD / 12.0 SF per Chamber
 # Chambers = 562.5 SF / 12.0 SF = Min. 47 Chambers
 2 Beds: 2 Rows Wide x 12 Chambers Long
 # Chambers Provided = 48 Total
 Total Contact Area = 576.0 SF Actual
 Total Contact Area = 562.5 SF Required

Note: Use of Alternative Chambers is Acceptable.
For ARC 36 Low-Profile Chambers (15.0 SF / Chamber, Min.
38 Chambers). Install 2 Beds: 2 Rows Wide x 10 Chambers
(40 Total). Contact Engineer for Clarification.

OWTS to be Roped Off (Caution Tape or Temporary Construction Fencing is Acceptable) Prior To and During Construction to Prevent Construction Traffic from Compacting Surface Soils and Protect the STA from Traffic After Installation. Construction Traffic Over the Proposed STA Will Render this Design Void.

Install Drainage Swale on All Uphill Sides to Ensure Surface Runoff is Diverted Around the STA.
Downspouts near the STA Shall Discharge into the Swale or Extended Beyond the STA.

1-1/2" Ø Sch. 40 PVC Pipe from Pump Chamber to 4-Way Automatic Distribution Valve (ADV) Orenco Systems, Inc V4404 or Approved Equivalent. Install at Highest Point with Vacuum Breaker per Manufacturers Recommendations.

Flushing Valve (Typ. of 4). See Detail on Page 3 for Additional Information.

4" Ø Inspection Port / Vent (Typ. of 16). See
Detail on Page 4 for Additional Information.

4" Ø PVC Solid Pipe from House to Septic Tank, Install a Cleanout within 5 FT of House and at Intervals Not to Exceed 100 FT in Straight Runs, Upstream at Each Change of Direction Greater Than 45°, and at Any Combination of Bends Greater Than 45° within a 40 FT Section of Building Sewer. Maintain 2.0% Min. Grade on Pipe Feeding the Septic Tank. Exact Location of the Discharge Line from the House per Plumbing Design by Others.

- Existing Well. Min. 100 Ft to STA and Min. 50 Ft to Tanks.

– Proposed Single Family Residence (3 BDRMs)

- To Methusala Rd

Proposed Driveway

Proposed Alternate
Well Location. Min.
100 Ft to STA and
Min. 50 Ft to Tanks.

APPROX LC
6170 METHUE

1,000+500 Gal. Precast Concrete Three-Compartment Septic Tank w/
Pump in Third Compartment OR Separate 500 Gallon Single Compartment
Tank (See Pump Chamber Detail on Page 5 for Additional Information).
Tank Inlet Approx. 36" Below Existing Grade. Risers to Grade with Secure
Access Cover (Min. 3" Above Finish Grade, Water Tight, Typ. All Septic
Tank Access Locations). Exact Locations to be Field Determined..

Minor Rotation or Curvature (ie. Less Than 15°) of the Soil Treatment Area (STA) Beds to Best Fit the Site Topography is Acceptable (i.e. Parallel to Site Contours). STA shall Maintain the Approximate Orientation Shown w/ Respect to Buildings and Lot Lines. Contact Engineer for Clarification.

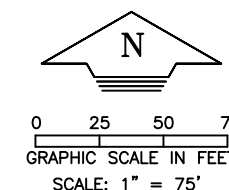
Quick4 Plus Low-Profile Chambers:
34" W x 48" L x 8" H Each

2 Beds: 2 Rows of 12 Chambers Long (48 Total). **Max. Depth of Installation 48"**
Below Native Grade (As Measured on the Uphill Side). Min. 3 FT of "Secondary"
Sand Beneath Chambers. See STA Layout and Cross-Section for Additional Detail
 and Clarification. Full Length 1-1/2" Ø Sch. 40 PVC Pipe Suspended from the Top of
 Chambers per Manufacturers Recommendations (Typ. Each Lateral); Drill 3/16" Ø
 Holes @ 36" O.C. (Top of Pipe Typ. and Every Third on Bottom).

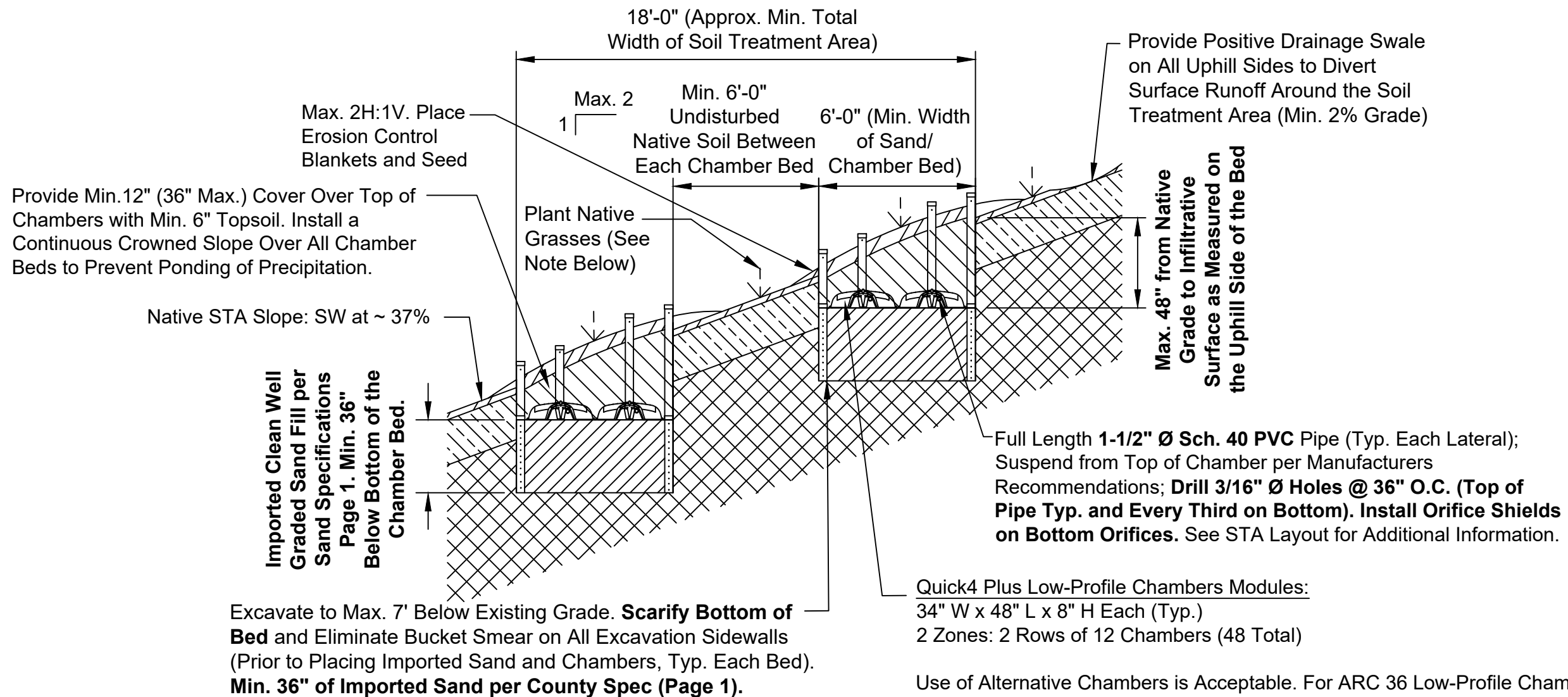
* Indicates Colorado Geo-Solutions Profile Pit Test Locations
GPS Coordinates Profile Pit #1: N. 38° 50' 14.0" , W. 104° 56' 14.91"
GPS Coordinates Profile Pit #2: N. 38° 50' 14.02" , W. 104° 56' 14.65"

Primary Alternate Soil Treatment Area (STA)
Location. Alternate STA Location Must be
Protected from Construction Activities and
Preserved for Future STA Use.

STA Beds To Follow Natural Site Contours



| | |
|------------------|---|
| Project: 25-0014 | <u>Project Address</u> Palace Homes 6150 Methusala Road Site S-289, Crystal Park Subdivision Sch. No. Unknown El Paso County, Colorado |
| Sheet: 2 of 5 | |
| Date: 1 May 2025 | |
| Revised: | |
| Drawn by: rah | |
| Checked by: dip | |

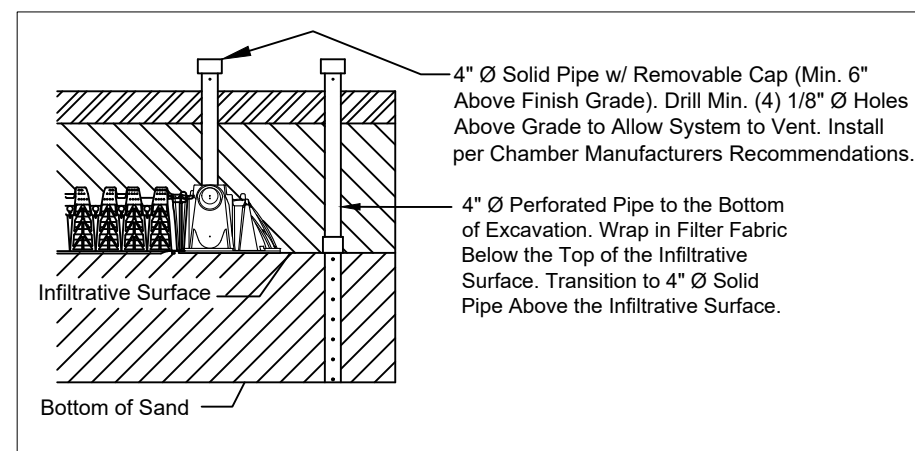


Legend

- Topsoil (Min. 4" on Final Cover). Native Topsoil (Approx. 3") Removed and Saved for Cover.
- Approved Granular Material to Provide Cover (Min. 12", Max. 36" Total, Including Topsoil)
- Native Soil - Sandy Loam (USDA R2, Approx. 3" - 24" Below Existing Grade)
- Native Soil - Loamy Sand (USDA R0, Approx. 24" - 8'-0" Below Existing Grade)
- Imported "Secondary" Sand Fill Under Chamber Bed per EPCPH Specifications Page 1 (**Min. 36"**).

STA Cross-Section

SCALE: 1" = 5'

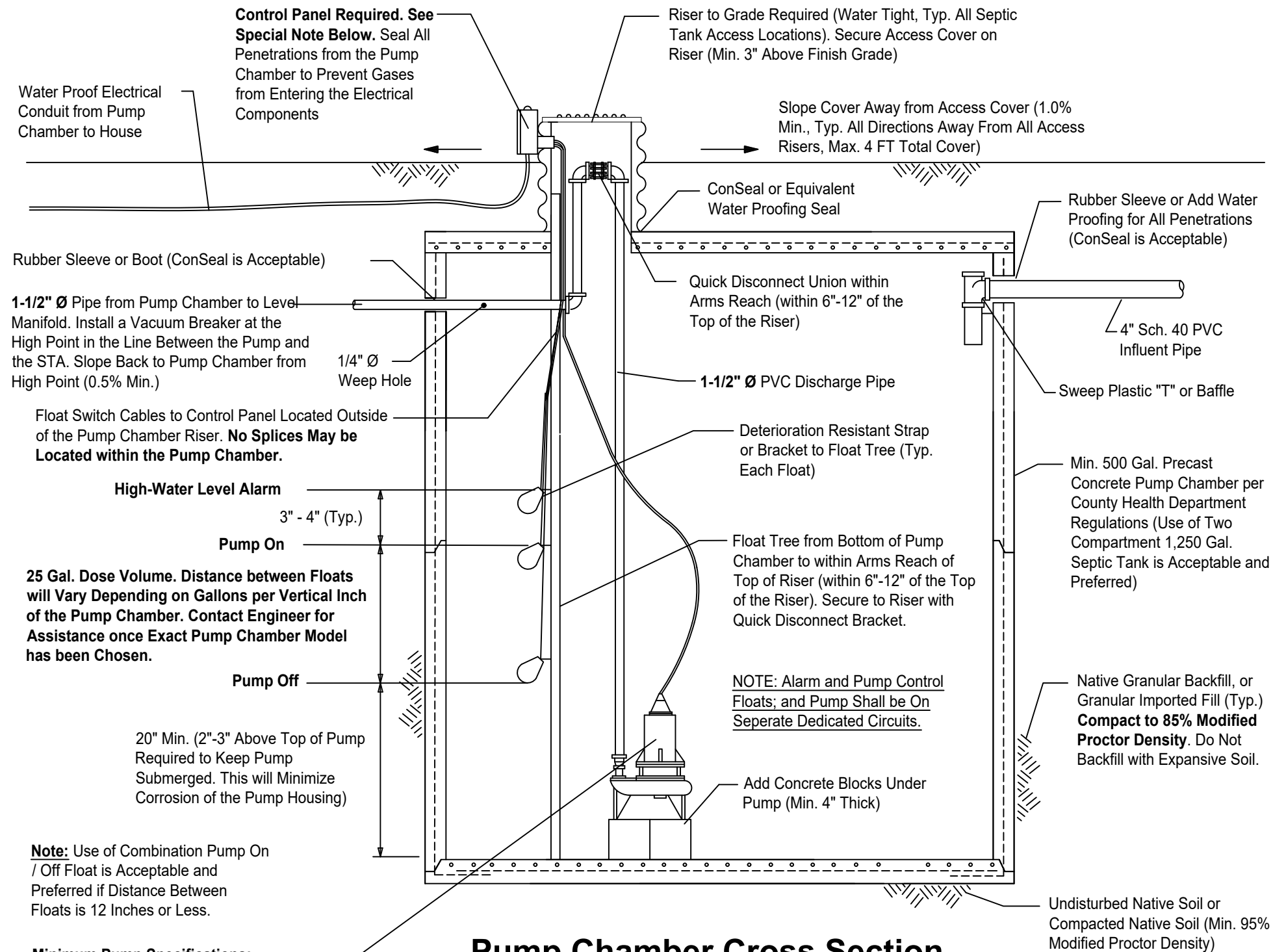


Sand Inspection Port Detail

Not to Scale



| | |
|------------------|--------------------------|
| Project: 25-0014 | Project Address |
| Sheet: 4 of 5 | Palace Homes |
| Date: 1 May 2025 | 6150 Methusala Road |
| Revised: | Site S-289, |
| Drawn by: rah | Crystal Park Subdivision |
| Checked by: djp | Sch. No. Unknown |
| | El Paso County, Colorado |



Pump Chamber Cross Section

Not to Scale

Special Note: Per El Paso County Board of Health Regulations Chapter 8: On-Site Wastewater Treatment Systems (OWTS) Criteria, the Pump System Shall have a Mechanism for Tracking Both the Amount of Time the Pump Runs (Pump Run Counter) and the Number of Cycles the Pump Operates (Event Counter). A Manual Pump Run Switch is Required. A Control Panel is the Most Common Device to Fulfill these Requirements (as well as the Alarm System).

We Recommend the use of the Orenco S1 or Approved Equivalent Control Panel Equipped with a Manual Pump Run Switch, Pump Run Counter, and Event Counter. Engineer to Approve Prior to Installation.

Minimum Pump Specifications:
Pump: Use Orenco PF3005, or Approved Equivalent Effluent Pump Prior to Installation (May be Revised Once System has Been Plumbed and Exact Site Conditions are Verified) **Design Flow Rate = Min. 14.0 GPM**
Total Dynamic Head (TDH) = Approx. 19.9 ft
Residual Head (Squirt Height) = 4 FT
Dose Volume = 25 Gallon

Electrical Code Requirements: All Electrical Work, Equipment, and Material Shall Comply with the Requirements of the Currently Applicable National Electrical Code as Designated by the State Electrical Board Rules and Regulations (3 CCR 710-1) on the Date of the Permit. The Electrical Installer Shall Contact the Electrical Inspector for the Location where the OWTS is Constructed. All Electrical Components Shall be Protected from Moisture and Corrosive Gases. Special Care Shall be Taken to Ensure the Electrical Requirements of Each Component Meet Manufacturer Specifications (i.e. Voltage and Amperage).

1. All Wire Splices Shall be Enclosed in the Control Panel. The Control Panel Shall be Placed in an Accessible Location Positioned Outside of the Tank Riser.

2. All Wires Shall be Spliced with Corrosion-Resistant, Watertight Connectors.
NO WIRE SPLICES ARE ALLOWED WITHIN THE PUMP CHAMBER OR RISER.

3. Conduits Shall be Sealed to Prevent Gases from Entering the Control Panel and Electrical panel.

4. A Means to Disconnect the House Power Supply to OWTS Components Shall be Provided at the Control Panel.

5. The Branch Circuit Wire from the Building to the Control Panel Shall be a Minimum of 24" Below the Ground Surface. Lines Buried Less than 24" are Allowed, but Will be Required to be in Conduit or have Ground Fault Protection on the Circuit. Conduit from the Control Panel to the House is Strongly Recommended for All Wiring.

6. Conduit Risers for Physical Protection Must Extend Min. 18" Below Finish Grade.

Best Practices Guidelines: The Following "Best Practices" are Intended to Facilitate Maintenance and Servicing of the Electrical Components Associated with Lift Stations, Dosing Systems, and Treatment Units that are Part of an OWTS.

1. The "Quick Disconnect" for the Pump Discharge pipe (i.e. Union) Shall be Located within 6"-12" of the Top of the Riser(s). Electrical Lines at the Septic Tank, Dosing Tank, or Treatment Unit Must be Placed in such a Manner as to Protect them from Damage During Backfill. Conduit from the Control Panel to the House is Strongly Recommended for All Wiring.

2. The Floats Shall be Secured to a Separate Float Tree with Approved Connecting Straps or Brackets that will Remain Secure Underwater and Not Deteriorate. Electrical Tape or Zip Ties are Not Acceptable. Top of Float Tree to be within 6" - 12" of the Top of the Riser.

3. The Risers Shall be Secured to the Tank to Maintain the Riser in an Upright and Plumb Position. Special Care Shall be Taken During Backfill to Ensure Riser Maintains Upright and Plumb Position.

4. Control Panel Shall be Placed within "Line of Sight" of the Pump.

5. The Alarm and Floats; and Pump Shall be Placed on a Separate Dedicated Circuits



| | |
|------------------|--|
| Project: 25-0014 | Project Address Palace Homes 6150 Methusala Road Site S-289, Crystal Park Subdivision Sch. No. Unknown El Paso County, Colorado |
| Sheet: 5 of 5 | |
| Date: 1 May 2025 | |
| Revised: | |
| Drawn by: rah | |
| Checked by: djp | |

Pump Selection for a Pressurized System - Single Family Residence Project

Parameters

| | | |
|-------------------------------|------|--------|
| Discharge Assembly Size | 1.50 | inches |
| Transport Length Before Valve | 50 | feet |
| Transport Pipe Class | 40 | |
| Transport Line Size | 1.50 | inches |
| Distributing Valve Model | 4404 | |
| Transport Length After Valve | 45 | feet |
| Transport Pipe Class | 40 | |
| Transport Pipe Size | 1.50 | inches |
| Max Elevation Lift | 10 | feet |
| Manifold Length | 3 | feet |
| Manifold Pipe Class | 40 | |
| Manifold Pipe Size | 1.50 | inches |
| Number of Laterals per Cell | 4 | |
| Lateral Length | 45 | feet |
| Lateral Pipe Class | 40 | |
| Lateral Pipe Size | 1.50 | inches |
| Orifice Size | 3/16 | inches |
| Orifice Spacing | 3 | feet |
| Residual Head | 4 | feet |
| Flow Meter | None | inches |
| 'Add-on' Friction Losses | 0 | feet |

Calculations

| | | |
|--------------------------------------|------|-----|
| Minimum Flow Rate per Orifice | 0.87 | gpm |
| Number of Orifices per Zone | 16 | |
| Total Flow Rate per Zone | 14.0 | gpm |
| Number of Laterals per Zone | 1 | |
| % Flow Differential 1st/Last Orifice | 2.4 | % |
| Transport Velocity Before Valve | 2.2 | fps |
| Transport Velocity After Valve | 2.2 | fps |

Frictional Head Losses

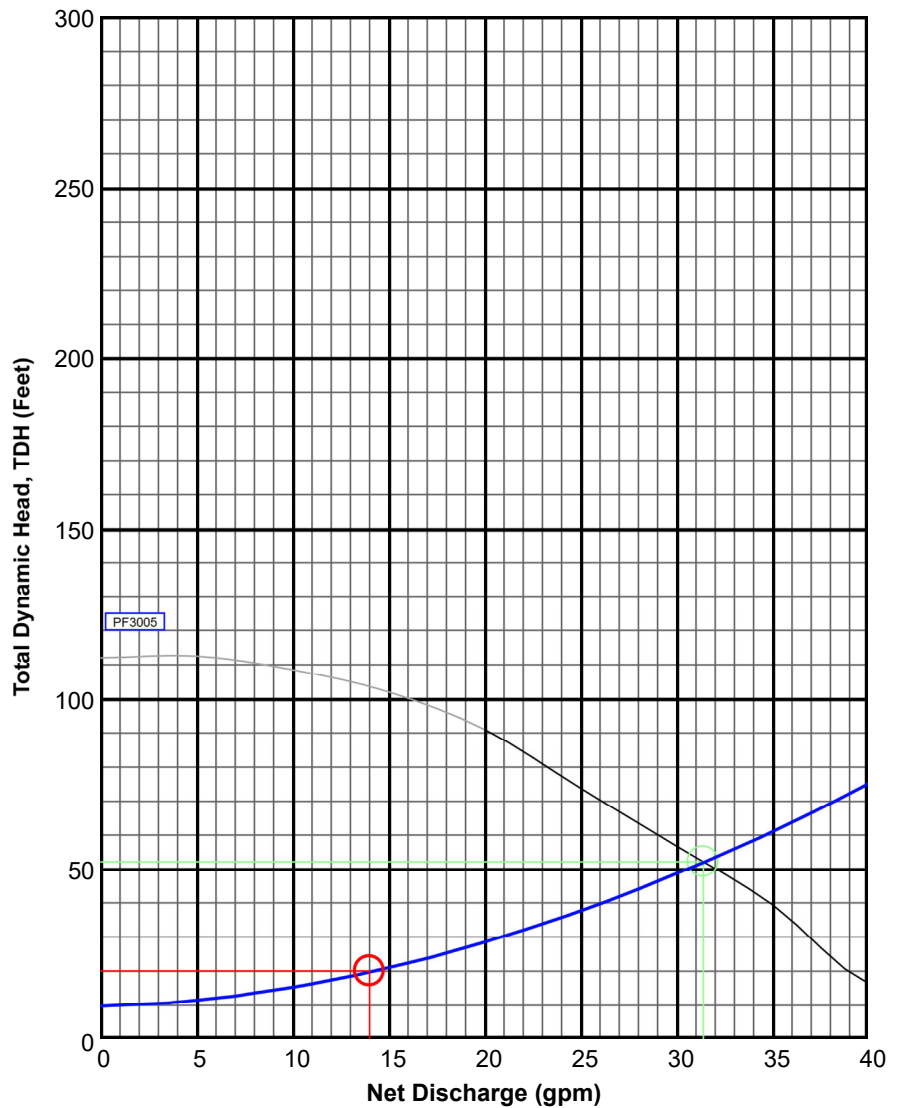
| | | |
|--------------------------------|-----|------|
| Loss through Discharge | 0.6 | feet |
| Loss in Transport Before Valve | 0.6 | feet |
| Loss through Valve | 3.9 | feet |
| Loss in Transport after Valve | 0.6 | feet |
| Loss in Manifold | 0.0 | feet |
| Loss in Laterals | 0.2 | feet |
| Loss through Flowmeter | 0.0 | feet |
| 'Add-on' Friction Losses | 0.0 | feet |

Pipe Volumes

| | | |
|------------------------------------|-----|------|
| Vol of Transport Line Before Valve | 5.3 | gals |
| Vol of Transport Line After Valve | 4.8 | gals |
| Vol of Manifold | 0.3 | gals |
| Vol of Laterals per Zone | 4.8 | gals |
| Total Vol Before Valve | 5.3 | gals |
| Total Vol After Valve | 9.8 | gals |

Requirements

| | |
|------|------|
| 14.0 | gpm |
| 19.9 | feet |



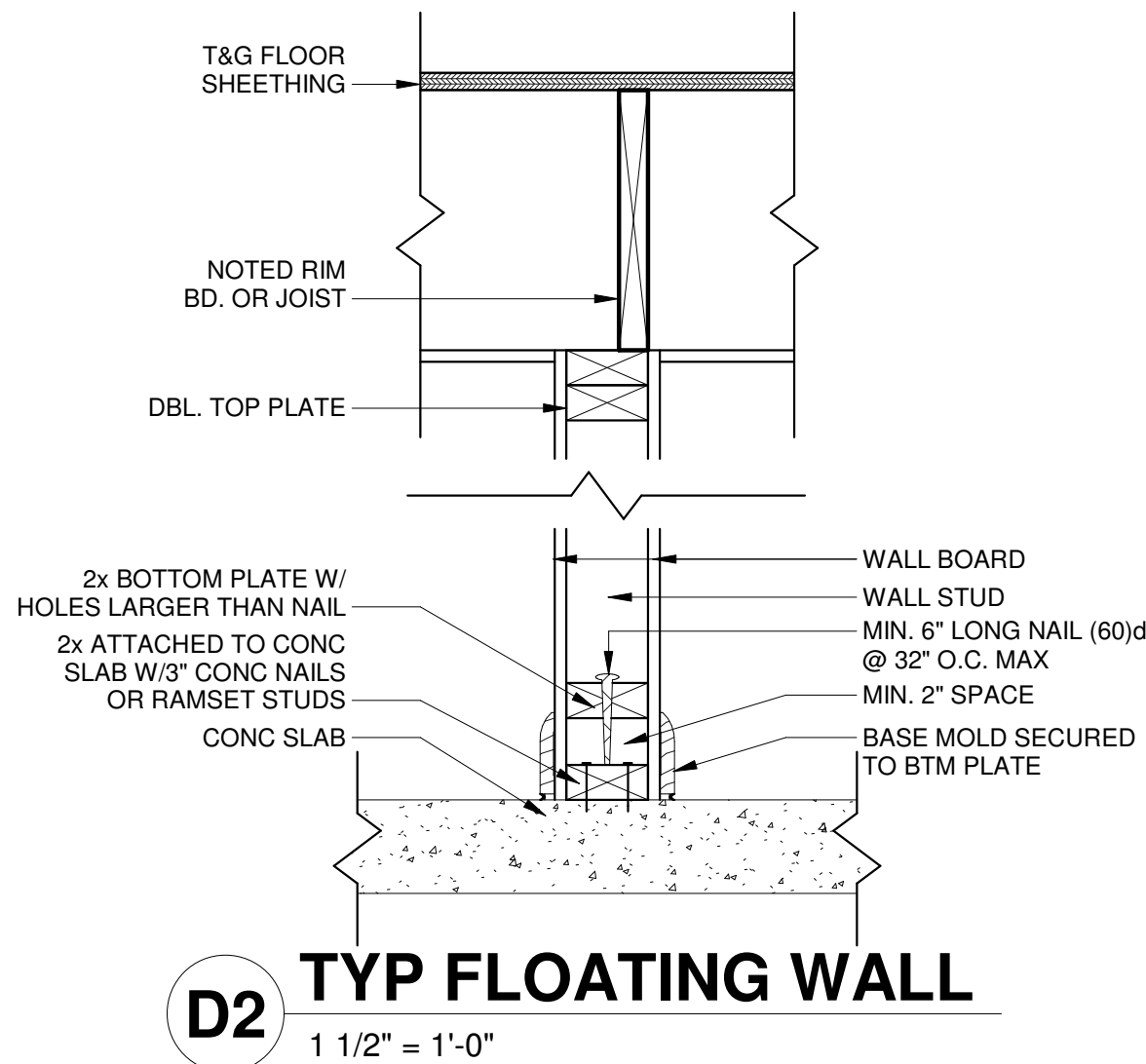
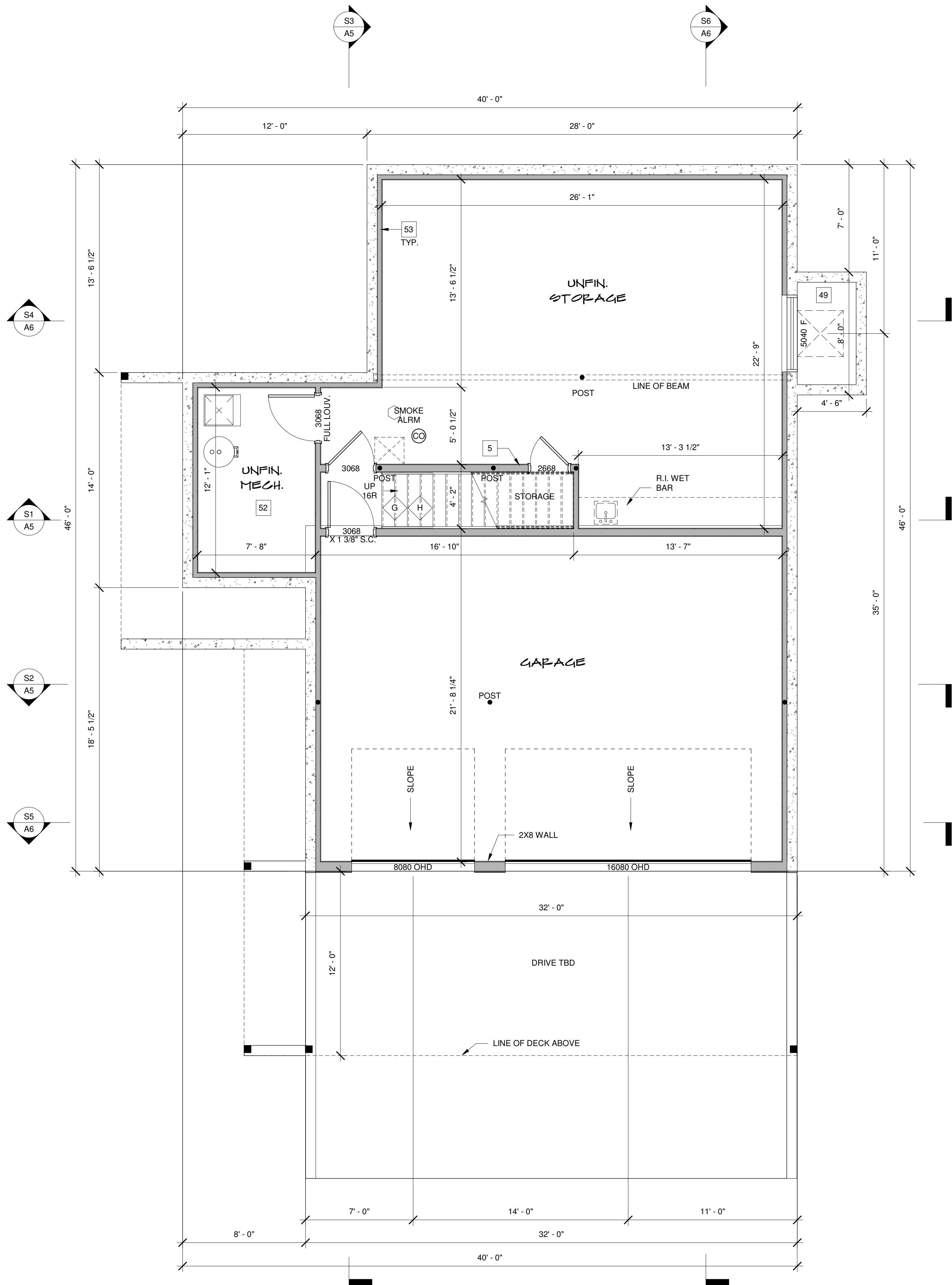
PumpData

PF3005 High Head Effluent Pump
30 GPM, 1/2HP
115/230V 1Ø 60Hz, 200V 3Ø 60Hz

Legend

| | |
|---------------------|---|
| System Curve: | — |
| Pump Curve: | — |
| Pump Optimal Range: | — |
| Operating Point: | ○ |
| Design Point: | ○ |





GENERAL LOWER LEVEL NOTES:

1. UNLESS NOTED OTHERWISE ALL CONCRETE FOUNDATION WALL HEIGHTS THIS LEVEL TO BE A 9'-4" POUR w/INTERIOR WALL HEIGHTS TO BE 9'-0"± FIELD VERIFY.
2. PROVIDE 'LOW RESISTANCE' RETURN AIR PATH FOR ALL CLOSED ROOMS - USE T-GRILLS OR UNDER-CUT DOORS PER CODE.
3. ALL NON-BEARING WALL, STAIRS AND LANDINGS MUST FLOAT.
4. MAINTAIN MINIMUM CLEAR SPACE PER THE MANUFACTURER IN FRONT OF THE CONTROL SIDE OF FURNACE & WATER HEATER. WATER HEATER MUST BE PLACED SO THE VENT IS ADJACENT & CLOSEST TO THE VENT STACK. PROVIDE COMBUSTION AIR PATH TO ALL GAS FIRED APPLIANCES PER CODE.
- 48" MAX HIGH RETAINING WALLS ARE SHOWN FOR REFERENCE ONLY. FIELD VERIFY WITH SITE PLAN AND ACTUAL SITE CONDITIONS PRIOR TO BACKFILLING. IN ADDITION, VERIFY w/CONTRACTOR ACTUAL RETAINING WALL CONSTRUCTION.

SPECIFIC ELECTRICAL NOTES / SYMBOLS

- (F) EXHAUST FAN (VENT TO EXTERIOR) FANS VENTED THROUGH UNCONDITIONED SPACE MAX 25'-0" & MIN R-6 INSUL
- (S) SMOKE HARDWIRED & INTERLOCK SMOKE ALARM DETECTOR w/BATTERY BACK-UP
- (CO) CARBON MONOXIDE DETECTOR

NOTES:
ALL PLACEMENT OF LIGHTING, OUTLETS, TV, PHONES, SECURITY, COMPUTER, STEREO/VIDEO WIRING, INTERCOM OR ANY OTHER ELECTRICAL FIXTURES SHALL BE VERIFIED PRIOR TO CONSTRUCTION w/CONTRACTOR. ELECTRICAL SHALL BE WIRED PER THE NATIONAL ELECTRICAL CODE AND LOCAL CODES. SEE SPECIFICATIONS DIVISION 260000 BASIC ELECTRICAL REQUIREMENTS.

ASSEMBLY NOTES:

- (A) ROOF:
 - (B) FASCIA/SOFFIT:
 - (C) EXTERIOR WALL:
 - (D) EXTERIOR WALL BALLOON FRAME:
 - (E) FRAMED FLOOR SYSTEM:
 - (F) EXTERIOR DECK SYSTEM:
 - (G) RAILING SYSTEM:
 - (H) STAIRS:
 - (I) BASEMENT FOUNDATION WALL
 - (J) SLAB ON GRADE:
 - (K) PERIMETER DRAIN SYSTEM:
- ALL ASSEMBLIES AND GENERAL NOTES REFER TO SHEETS "S" AND SPECIFICATIONS SHEET "S1"

SPECIFIC LOWER LEVEL NOTES:

- 49 CONCRETE WINDOW WELL AS GRADE REQUIRES. PROVIDE 36" MIN CLEAR SQUARE EGRESS WELL W/ LADDER PER IRC 2021 R310.4 (9 SQ' MIN CLR)
- 50 TOP OF WINDOW WELL SHALL BE 36" MIN BELOW BOTTOM OF FLOOR/DECK OVERHANG ABOVE. AT DECK PROVIDE MAX 36" EGRESS PATH FROM UNDER DECK TO YARD OR COURT PER IRC 2021 R310.2.4
- 51 PROVIDE MECHANICAL VENTILATION PER IRC 2021 SECTION R303.1.1 AND ARTIFICIAL LIGHT PER SECTION R303.1.3
- 52 PROVIDE FIRE PROTECTION OF FLOORS PER 2021 IRC R302.13 @ ENTIRE CEILING
- 53 2x4 FURRED WALL WITH MINIMUM INSULATION PER INTERNATIONAL ENERGY CONSERVATION CODE CERTIFICATE, AS REQUIRED

NOTE:
FOR OTHER APPLICABLE KEYNOTES SEE GENERAL NOTE SHEET "GS1" FOR KEYNOTES AND CORRESPONDING ASSEMBLY NOTES.

REVISIONS



201 E. Las Animas Street Suite 113
Colorado Springs, CO 80903
Phone: (719) 635-0880
office@LGastudios.com
www.lgastudios.com

CONTRACTOR
PALACE HOMES, INC.
1216 W COLORADO AVE #110
COLORADO SPRINGS, COLORADO 80904
PHONE: (719) 632-9635
EMAIL: gordon@palacehomesinc.com

THE MEYER RESIDENCE
6150 METHUSALA ROAD
PROJECT #24-2455

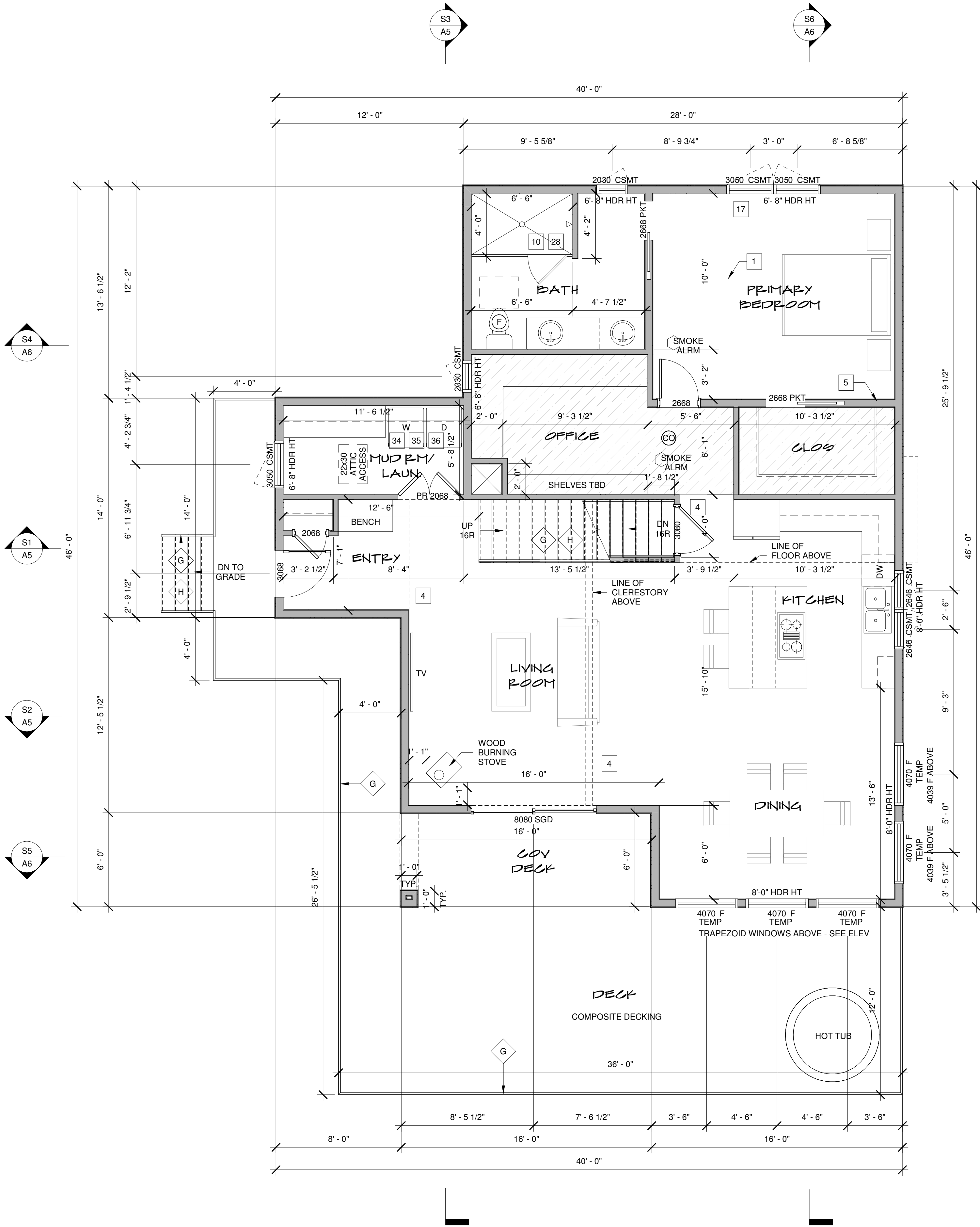
DRAWN BY: MDW
CHECKED: LGA

PLOT: 3/31/2025

LOWER LEVEL FLOOR PLAN

Sheet #
A2
OF 10 SHEETS

LOWER LEVEL FLOOR PLAN SCALE: 1/4" = 1' - 0"



Copyright 2024 by LGA Studios. No part of this plan may be reproduced or transmitted in any form or by any means, electronically or mechanically (including photocopying, recording or any information retrieval system) without the written approval of LGA Studios and the client. No derivative works of this plan may be made without prior written permission. The set(s) of plans does not entitle the purchaser to use for additional construction beyond the scope of one building, unless approved in writing by LGA Studios.

MAIN LEVEL FLOOR PLAN

SCALE: 1/4" = 1' - 0"

GENERAL MAIN LEVEL NOTES:

- UNLESS NOTED OTHERWISE ALL NEW WALL HEIGHTS THIS LEVEL TO BE 9'- 1 1/8".
- PROVIDE 'LOW RESISTANCE' RETURN AIR PATH FOR ALL CLOSED ROOMS - USE T-GRILLS OR UNDER-CUT DOORS PER CODE.

SPECIFIC ELECTRICAL NOTES / SYMBOLS

- (F)** EXHAUST FAN (VENT TO EXTERIOR) FANS VENTED THROUGH UNCONDITIONED SPACE MAX 25'-0" & MIN R-6 INSUL
- (S)** SMOKE HARDWIRED & INTERLOCK SMOKE ALARM DETECTOR w/BATTERY BACK-UP
- (CO)** CARBON MONOXIDE DETECTOR

NOTES:
ALL PLACEMENT OF LIGHTING, OUTLETS, TV, PHONES, SECURITY, COMPUTER, STEREO/VIDEO WIRING, INTERCOM OR ANY OTHER ELECTRICAL FIXTURES SHALL BE VERIFIED PRIOR TO CONSTRUCTION w/CONTRACTOR. ELECTRICAL SHALL BE WIRED PER THE NATIONAL ELECTRICAL CODE AND LOCAL CODES. SEE SPECIFICATIONS DIVISION 260000 BASIC ELECTRICAL REQUIREMENTS.

ASSEMBLY NOTES:

- (A)** ROOF:
- (B)** FASCIA/SOFFIT:
- (C)** EXTERIOR WALL:
- (D)** EXTERIOR WALL BALLOON FRAME:
- (E)** FRAMED FLOOR SYSTEM:
- (F)** EXTERIOR DECK SYSTEM:
- (G)** RAILING SYSTEM:
- (H)** STAIRS:
- (I)** BASEMENT FOUNDATION WALL
- (J)** SLAB ON GRADE:
- (K)** PERIMETER DRAIN SYSTEM:

ALL ASSEMBLIES AND GENERAL NOTES REFER TO SHEET CS1 AND SPECIFICATIONS SHEET SS1

SPECIFIC MAIN LEVEL NOTES:

(SS) NOT USED

NOTE:
FOR OTHER APPLICABLE KEYNOTES SEE GENERAL NOTE SHEET "CS1" FOR KEYNOTES AND CORRESPONDING ASSEMBLY NOTES.

REVISIONS



201 E. Las Animas Street
Suite 113
Colorado Springs, CO 80903
Phone: (719) 635-0880
office@LGAstudios.com
www.lgastudios.com

CONTRACTOR
PALACE HOMES, INC.
1216 W COLORADO AVE #110
COLORADO SPRINGS, COLORADO 80904
PHONE: (719) 632-9635
EMAIL: gordon@palacehomesinc.com

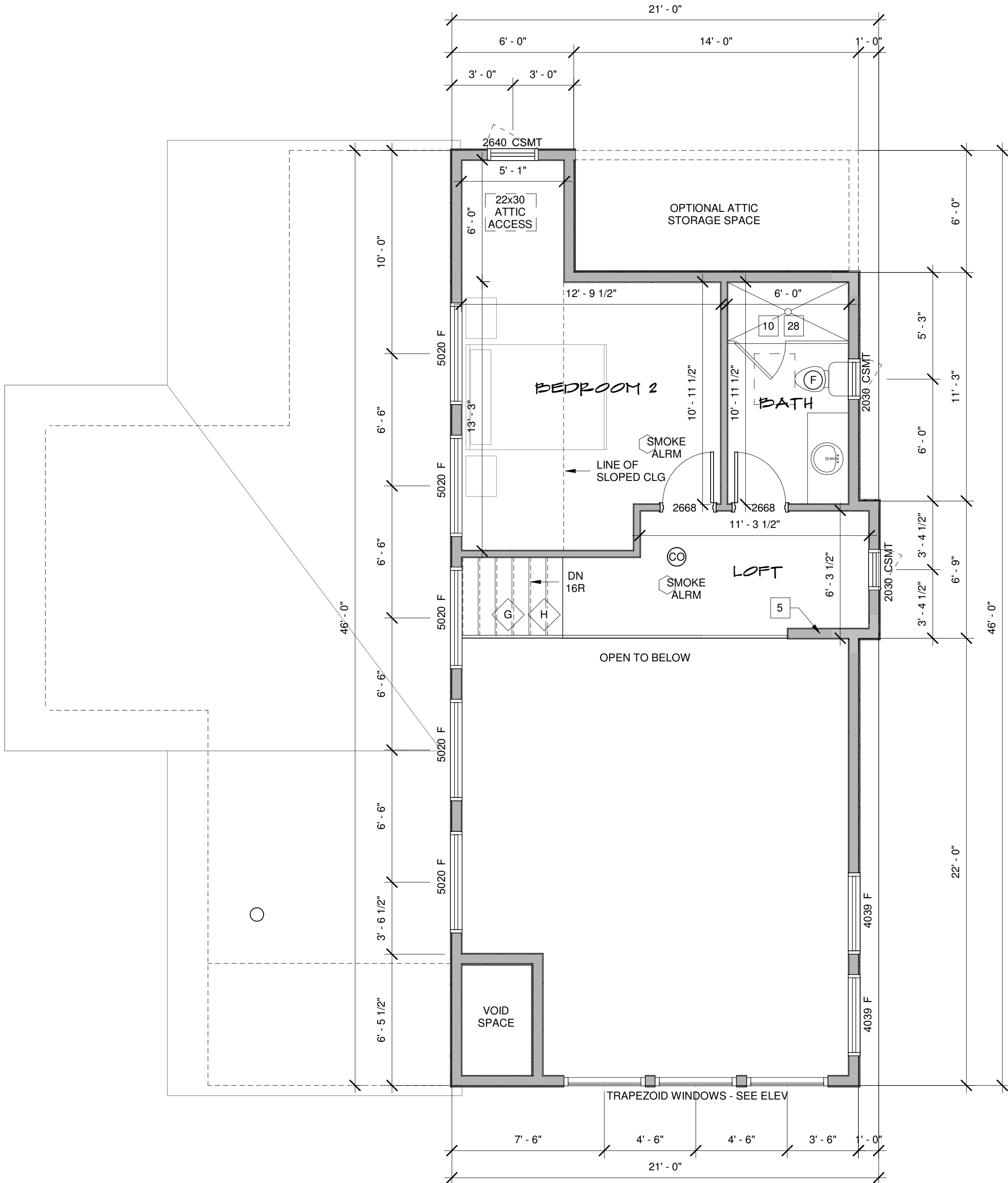
THE MEYER RESIDENCE
6150 METHUSALA ROAD
PROJECT #24-2455

DRAWN BY: MDW
CHECKED: LGA

PLOT: 3/31/2025

MAIN LEVEL FLOOR PLAN

Sheet #
A3
OF 10 SHEETS



REVISIONS



CONTRACTOR
PALACE
HOMES, INC.
1216 W COLORADO AVE #110
COLORADO SPRINGS, COLORADO 80904
PHONE: (719) 632-9635
EMAIL: gordon@palacehomesinc.com

MEYER RESIDENCE

**THE
MEYER RESIDE
6150 METHUSALA ROAD
PROJECT #:24-2455**

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

DRAWN BY: MDW

- CHECKED: LGA**

PLOT: 3/31/2025

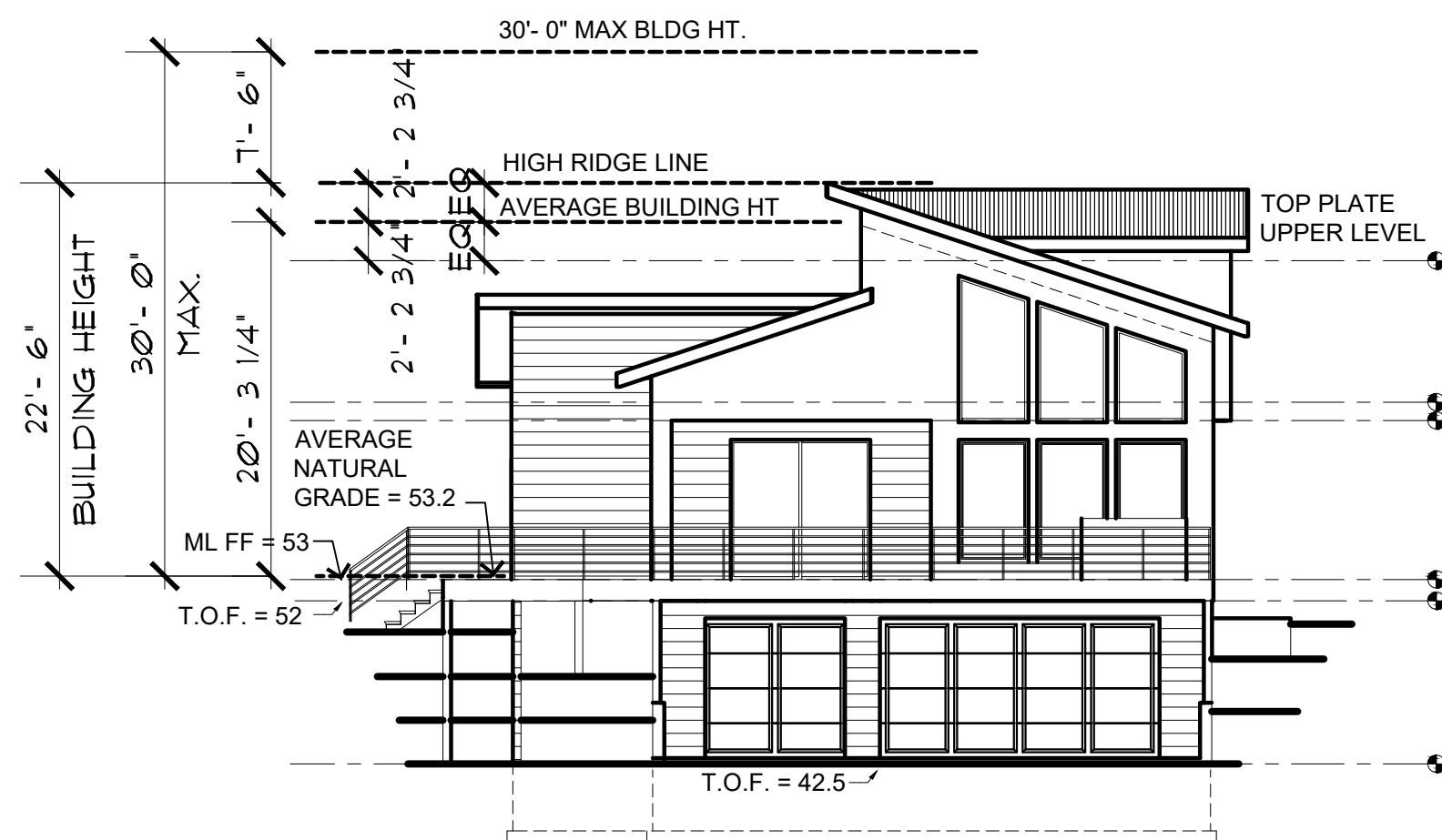
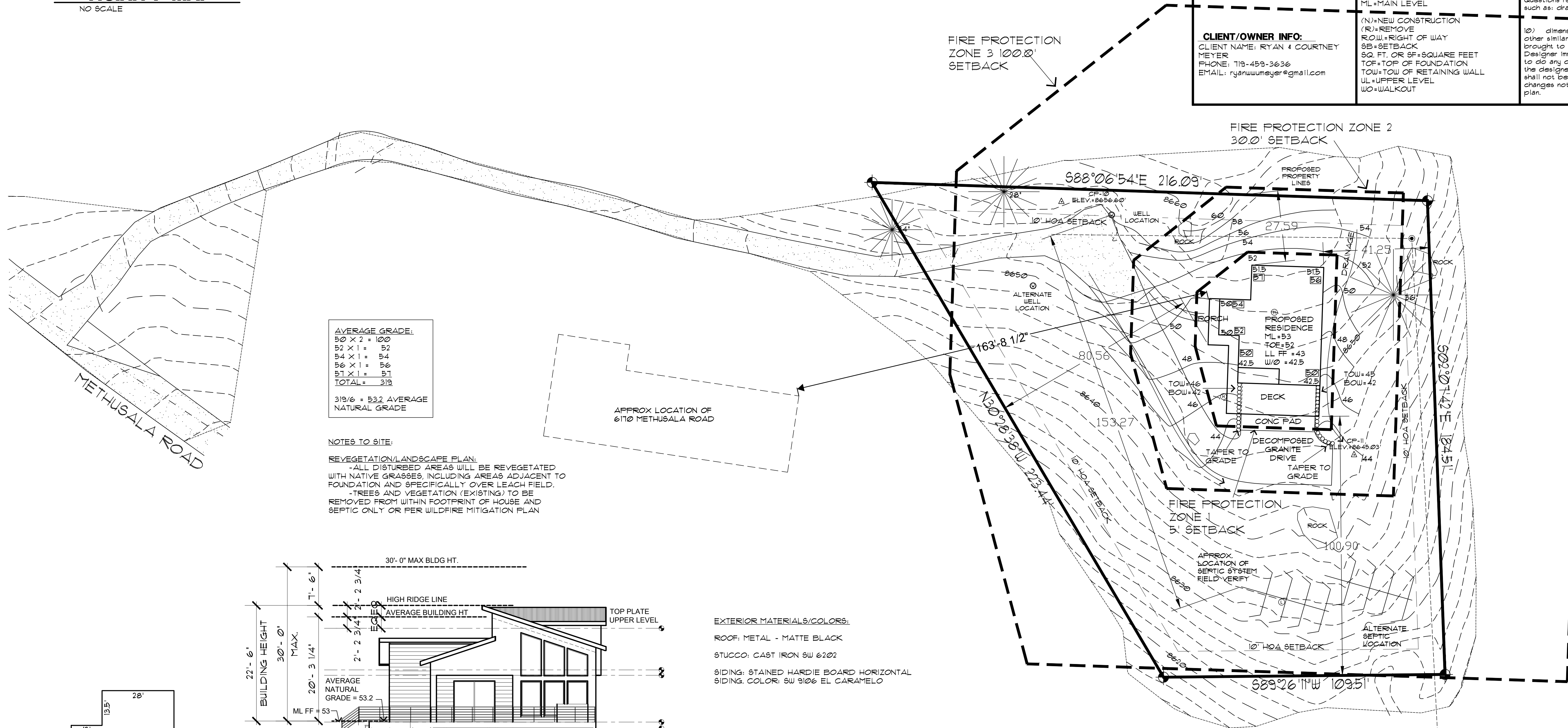
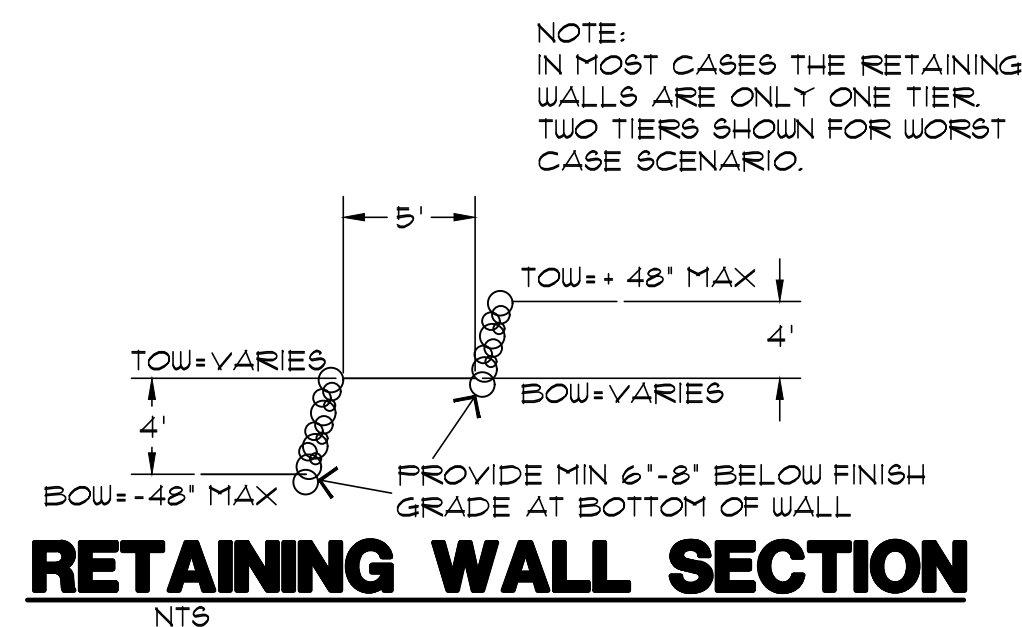
UPPER LEVEL FLOOR
PLAN

Sheet #

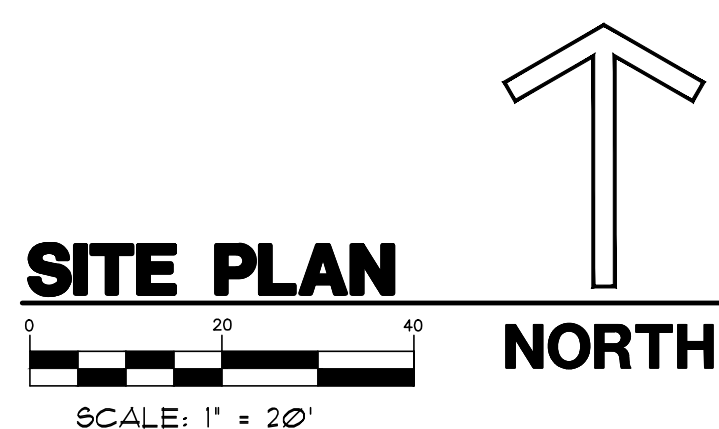
A4

OF 10 SHEETS

SCALE: 1/4" = 1' - 0



EXTERIOR MATERIALS/COLORS:
ROOF: METAL - MATTE BLACK
STUCCO: CAST IRON SW 6202
SIDING: STAINED HARDIE BOARD HORIZONTAL
SIDING COLOR: SW 9106 EL CARAMELO



Approved
By: Ashlyn Mathy
Date: 06/03/2025
 El Paso County Planning & Community Development

FILE NO. CP253

THE
**MEYER
RESIDENCE**
6150 METHUSALA ROAD
COMPUTER FILE #24-2455

DRAWN BY: MDW

CHECKED BY: LGA

PLOT 04/10/25 9:13 AM

SITE PLAN
VICINITY MAP
SITE NOTES

Sheet #
SP1
OF 1 Sheets