LOT COVERAGE CALCULATIONS:

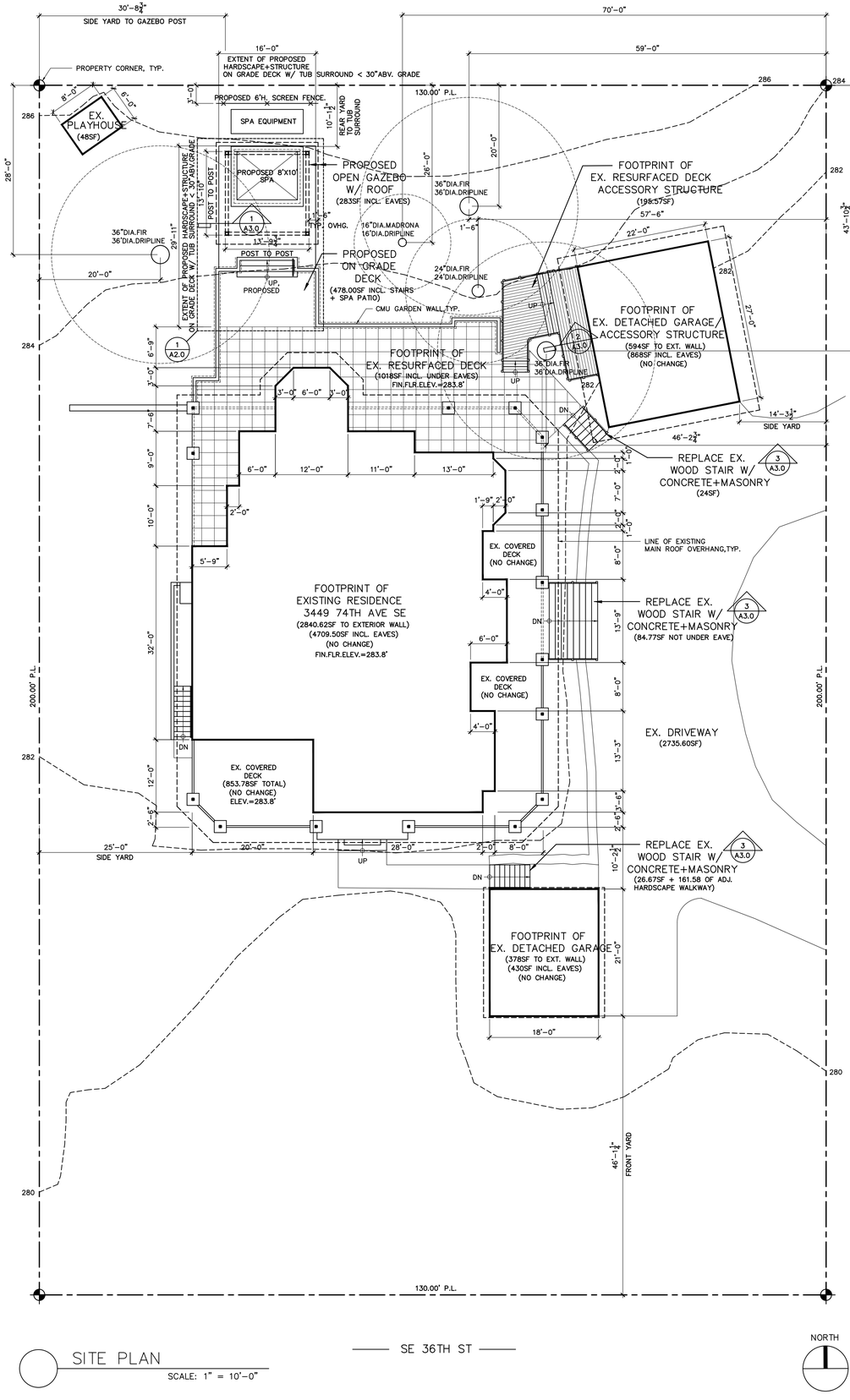
GROSS LOT AREA	= 26000SF
NET LOT AREA(EQUAL TO GROSS)	= 26000SF
EXISTING LOT COVERAGE:	
– MAIN STRUCT. ROOF	= 4709.50SF
– DET. GARAGE/ACC. STRUCT.	= 868.00SF
– DETACHED GARAGE	= 430.00SF
– PLAYHOUSE	= 48SF
– PAVED DRIVEWAY	= 2735.60SF
TOTAL EXIST. LOT COVERAGE	= 8791.10SF
PROPOSED LOT COVERAGE:	
– GAZEBO STRUCTURE	= 283.00SF
TOTAL NEW LOT COVERAGE AREA	= 283.00SF
TOTAL PROJECT LOT COV. AREA(EXIST.+NEW)	= 9074.10SF
PROPOSED LOT COVERAGE AREA(9074.10.32/26000) X 100	= 34.90%

HARDSCAPE CALCULATIONS:

GROSS LOT AREA	= 26000SF
NET LOT AREA (EQUAL TO GROSS)	= 26000SF
ALLOWED HARDSCAPE AREA(9%LOTAREA)	= 2340SF
TOTAL EXISTING HARDSCAPE AREA	= 1036.38SF
TOTAL EX. HARDSCAPE AREA REMOVED(EX. DECK)	= 0.00SF
TOTAL NEW PROPOSED HARDSCAPE AREA	= 478.00SF
TOTAL PROJECT HARDSCAPE AREA(NEW+EXISTING)	= 1514.38SF
CALCULATION = 1514.38/26000 X 100	= 5.82% < 9%

DENOTES EXISTING RESURFACED DECK

DENOTES EXISTING RESURFACED DECK



SITE PLAN

SCALE: 1" = 10'-0"

REGENERATION design

8615 55th Avenue South, Seattle, WA 98118
206.390.0287 fax 206.723.1842 john@regenerationdesign.com

TURNER RESIDENCE

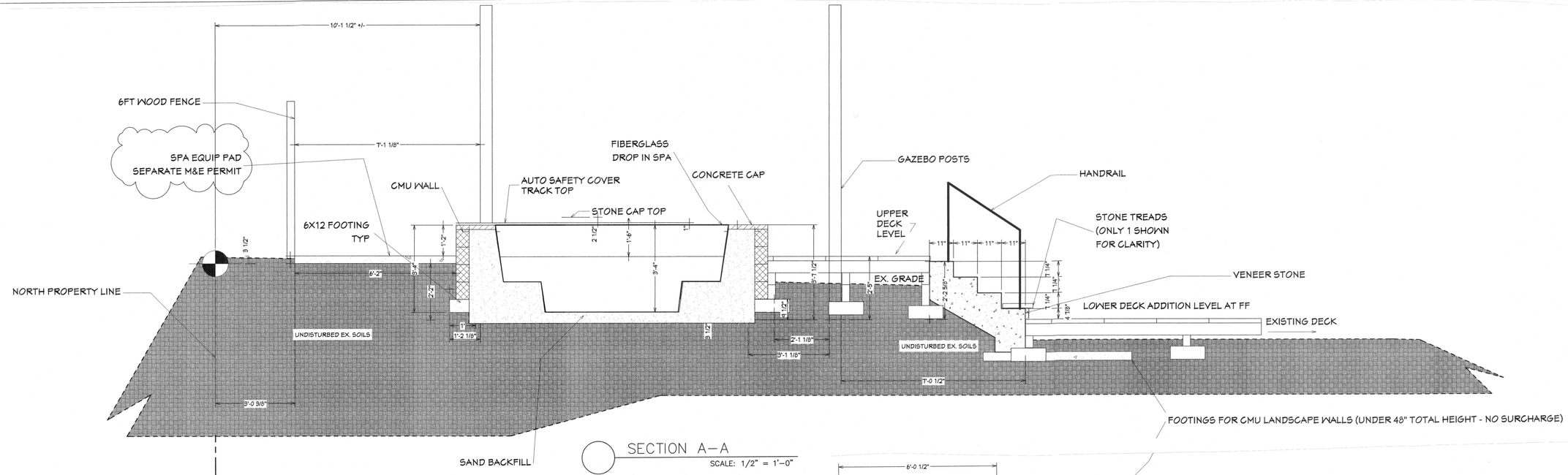
GUARDRAIL REPLACEMENT & SPA/GAZEBO/DECK ADDITION

3449 74TH AVE SE MERCER ISLAND, WA 98040

ISSUE DATE
1/26/21 CITY SITE VISIT
2/03/21 PROGRESS
2/19/21 PERMIT INTAKE

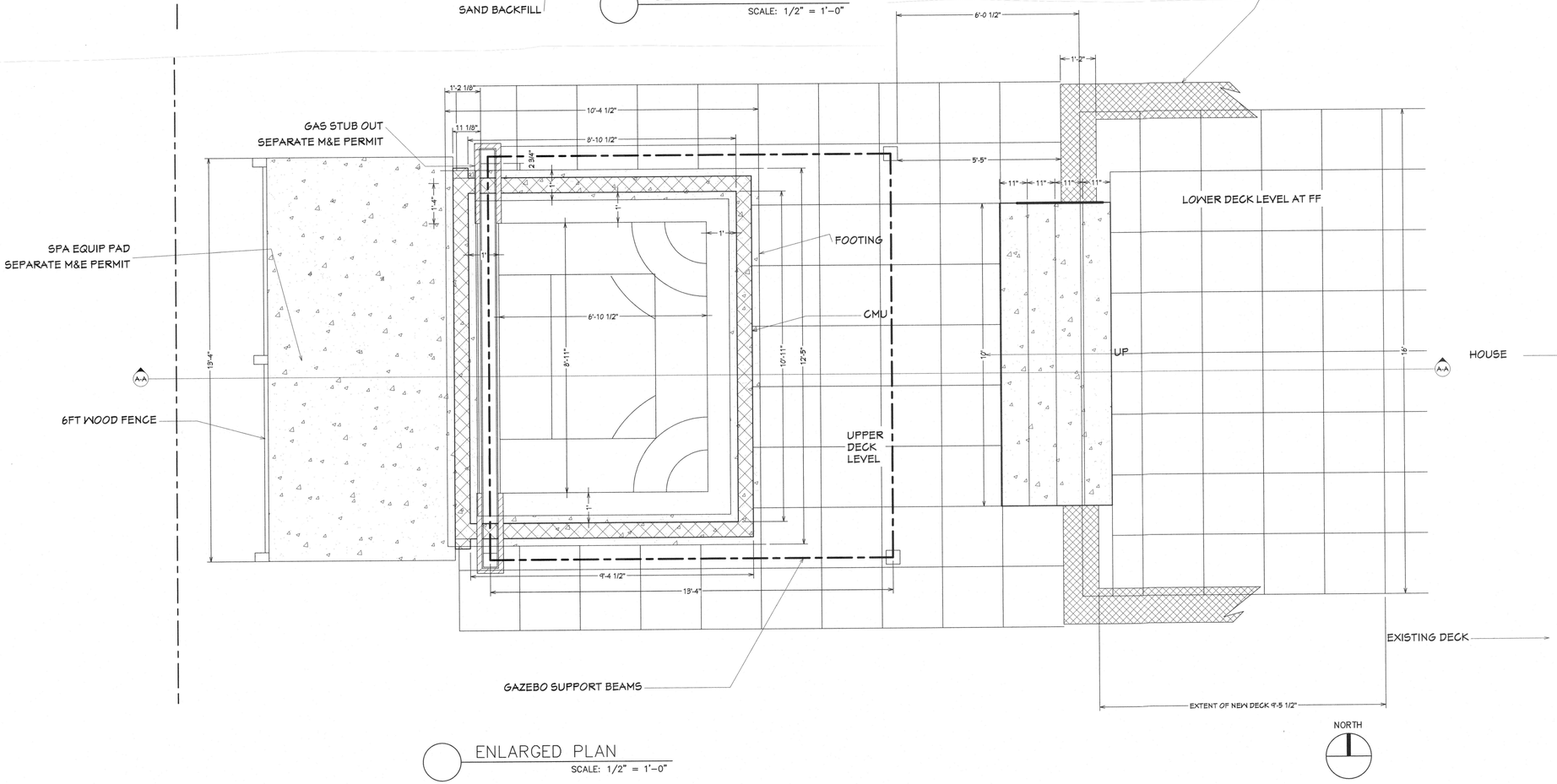
SITE PLAN / DRAINAGE PLAN / DEMO. PLAN / NOTES & CALCS.

A1.0



SECTION A–A

SCALE: 1/2" = 1'–0"



ENLARGED PLAN

SCALE: 1/2" = 1'–0"

REGENERATION design
8515 55th Avenue South, Seattle, WA 98118
206.390.0287 fax 206.723.1842 john@regenerationdesign.com

TURNER RESIDENCE

GUARDRAIL REPLACEMENT & SPA/GAZEBO/DECK ADDITION

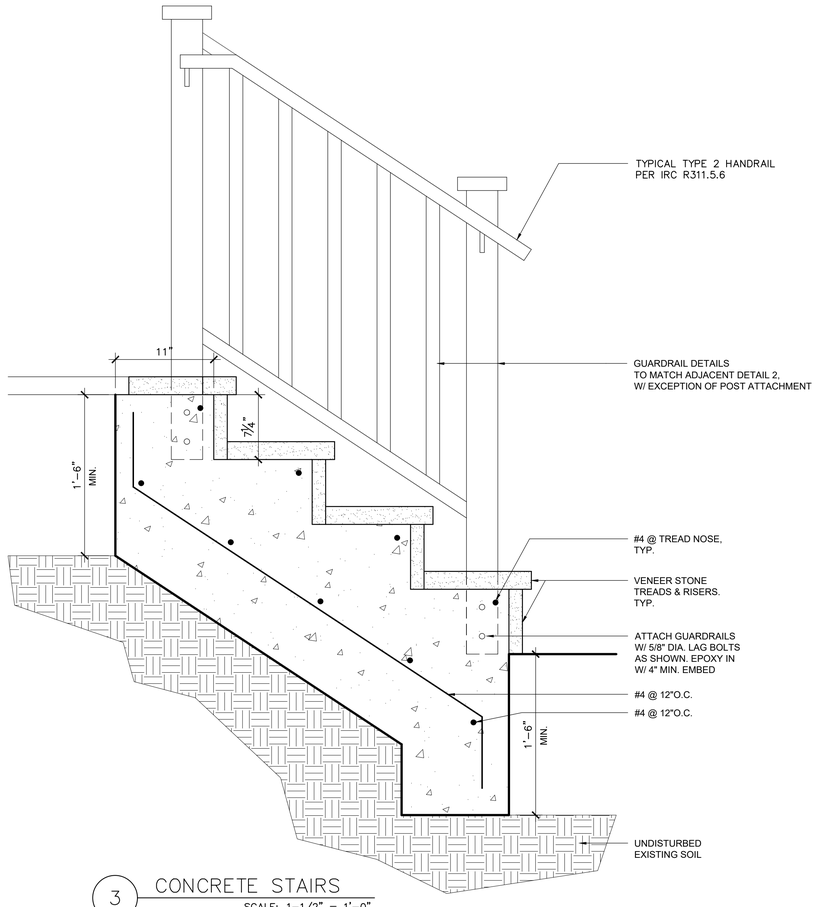
3449 74TH AVE SE MERCER ISLAND, WA 98040

ISSUE DATE

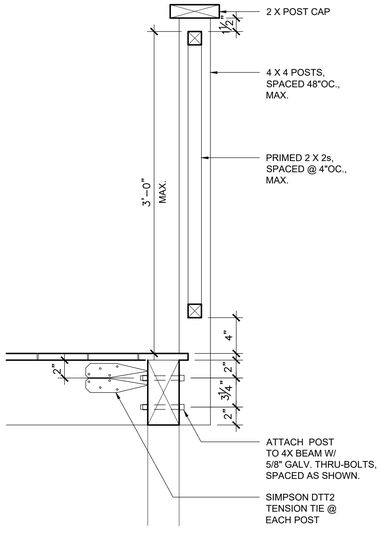
2/19/21 PERMIT INTAKE

ENLARGED DECK ADDITION & SPA PLAN/CROSS SECTION

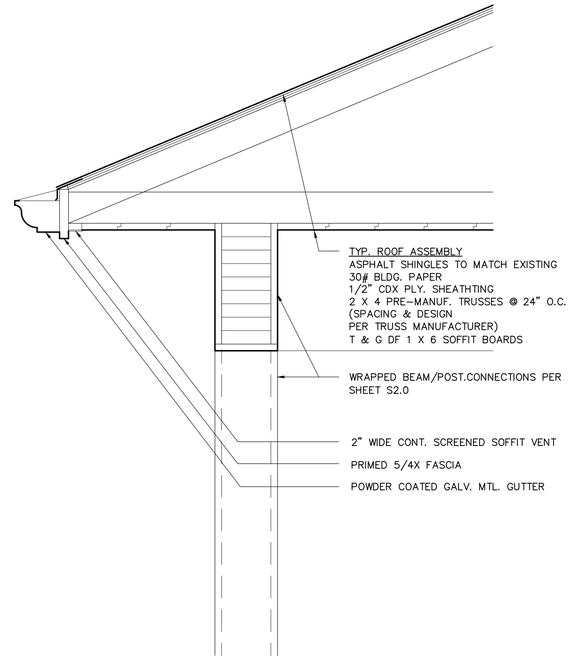
A2.0



3 CONCRETE STAIRS
SCALE: 1-1/2" = 1'-0"



2 GUARDRAIL
SCALE: 1-1/2" = 1'-0"



1 GAZEBO
SCALE: 1-1/2" = 1'-0"

REGENERATION design
8615 55th Avenue South, Seattle, WA 98118
206.390.0287 fax 206.723.1842 john@regenerationdesign.com

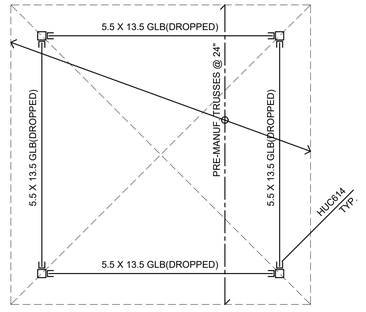
TURNER RESIDENCE

GUARDRAIL REPLACEMENT & SPA/GAZEBO/DECK ADDITION
3449 74TH AVE SE MERCER ISLAND, WA 98040

ISSUE DATE
2/19/21 PERMIT INTAKE

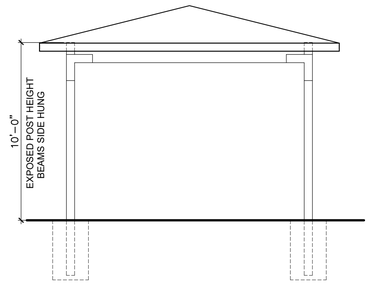
PERGOLA/GUARDRAIL/CONCRETE STAIR DETAILS

A3.0



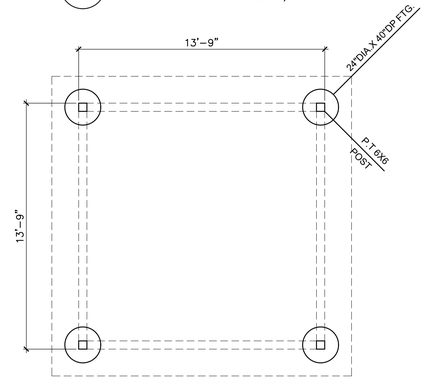
ROOF SUPPORT

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



ELEVATION

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



FLOUNDATION

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

REGENERATION design
8615 55th Avenue South, Seattle, WA 98118
206.390.0287 fax 206.723.1842 john@regenerationdesign.com

TURNER RESIDENCE

SPA/GUARDRAIL REPACEMENT/ADDITION

3449 74TH AVE SE MERCER ISLAND, WA 98040

ISSUE DATE
1/12/21 PROGRESS
2/19/21 PERMIT INTAKE

FOUNDATION/FRAMING PLANS

S2.0

STRUCTURAL NOTES:

GENERAL

CODE: all materials, methods, and workmanship shall conform to the International Building Code, 2018 edition (IBC).

LOADS: dead load — actual

roof load — 25 psf snow

wind load — Open Enclosure
110 mph wind speed, Kzt = 1.0
exposure 'C', I = 1.0.

seismic — category D, Simplified Method, I=1.0, Sds=1.1

SOILS REPORT:

FOUNDATION SOIL: All values assumed. No geotechnical report prepared.

Assumed allowable bearing: 1500 psf
Assumed lateral bearing pressure: 400 psf/ft

APPROVALS: 'Approved' materials or methods shall be approved in writing by the engineer of record, prior to ordering, fabrication, and/or proceeding with specified work.

SUBMITTALS (Shop Drawings, Certifications, Test Reports, Calculations): the contractor shall submit to the engineer of record for review prior to fabrication, for the following items:

Preconstruction meeting with a Simpson Strongtie Representative and contractor required for Simpson Strongtie Shearwall panels.
structural steel.
metal plate wood trusses

INSPECTION AND TESTING: an independent qualified testing laboratory, employed by the owner, shall perform inspection and testing in accordance with IBC Section 1701 for the following items:

compaction:

moisture content: 2 daily, ASTM D-2216.
field density: 2 daily, ASTM-D-1556.

gravel borrow and structural fill:

gradation: 1 each material type, ASTM D-1140 and ASTM D-546.
sand equivalent: 1 each material type, ASTM D-2419.
moisture density relationship: 1 each material type, ASTM D-1557.

Concrete compressive strength when over 2500 psi: four compressive strength specimens shall be made for each 100 cubic yards, or each day concrete is poured, whichever is greater. Test one specimen at 7 days, one at 14 days and two at 28 days. The samples for strength test shall be taken in accordance with ASTM C- 172. Specimens shall be moulded and cured in accordance with ASTM C-31, and tested in accordance with ASTM C-39 for compressive strength.

The inspection agency shall submit inspection and test reports to the owner and the engineer of record.

SITEWORK

FOUNDATION: footings shall bear on firm undisturbed earth or compacted structural fill.

EXCAVATION: excavate and dispose of topsoil, organic material, loose native material, and other deleterious material within 5 feet of the building area.

STRUCTURAL FILL: gravel borrow, or approved well graded bankrun gravel (maximum rock size 4", no frozen soil, organic material, or other deleterious material), or lean concrete (f'c = 2000 psi). gravel shall be placed in 16 inch maximum lifts and compacted to 95% relative density per ASTM D-1557.

ROCKERY ROCK: All rocks shall be hard and free of seams, cracks and holes, with a minimum density of 155 pounds per cubic foot. Rocks shall be generally rectangular in shape and individually placed for good fit. Rocks shall bear on flat faces of at least two other rocks, wherever possible. Rocks shall be placed to prevent continuous joint planes vertically or horizontally. Horizontal joint planes shall slope away from the wall face. Use Five Man Rock (48" to 54" maximum dimension, 4,000 lb. to 6,000 lb.)

FILTER FABRIC: AMOCO 4545 or Exxon P0511

CAST-IN-PLACE CONCRETE

CONCRETE: mix, deliver, and place in accordance with ASTM C-94, ACI 304, ACI 305, ACI 306, and ACI 318. No aluminum (conduit, or other miscellaneous items) shall be embedded in concrete.

FOOTINGS & FOUNDATION WALLS:
f'c = 2,500 psi @ 28 days for strength, 3,000 psi for durability.
Type I or Type II Portland Cement, 5-1/2 Sack Min.
0.51 Max. Water/Cement Ratio
1-1/2 inch Max. Aggregate Size
3-5 % Entrained Air

SLAB ON GRADE:
f'c = 2,500 psi @ 28 days for strength, 3,000 psi for durability.
Type I or Type II Portland Cement, 6 Sack Min.
0.45 Max. Water/Cement Ratio
1 inch Max. Aggregate Size
5-7 % Entrained Air

FLOOR TOPPING:
f'c = 1,250 psi @ 28 days

LEAN CONCRETE:
f'c = 2,000 psi @ 28 days.

CONTROLLED DENSITY FILL:
f'c = 300 psi @ 28 days
7/8 inch Max. Aggregate Size

WATER: Clean and potable.

AGGREGATES: ASTM C-33.

REINFORCING: Deformed bar ASTM A-615, Grade 40 for bars #4 and smaller; Grade 60 for bars #5 and larger; welded wire fabric ASTM A-185, Grade 75.

REINFORCING MECHANICAL SPLICE: ERICO QUICK WEDGE or approved alternate. Alternate shall be ICC approved to develop 125% of specified yield tension for the grade of reinforcing specified. Install in accordance with manufacturer's instructions.

ADMIXTURES: Conform to ASTM C-260 or ASTM C-494 as applicable. Calcium chloride shall not be added to the concrete mix.

FINISHING: As noted, in accordance with ACI-301.

CURING: Protect all freshly placed concrete from premature drying and excessive hot or cold temperature, for seven days after pouring.

JOINT SEALER: Poured two part polyurethane resilient sealant

NONSHRINK GROUT: Master Builders Set Grout. Install in accordance with the manufacturer's instructions.

BONDED ANCHORS: Simpson Set-xp, epoxy to meet ASTM C-881 Specification for type I, and IV, grade 3, class C epoxy. Install in accordance with manufacturer's instructions. Embed to minimum depth recommended by manufacturer but not less than:

1/2" Dia. -- Embed 3" Min.
5/8" Dia. -- Embed 4" Min.
3/4" Dia. -- Embed 4" Min.

EXPANSION ANCHORS: Simpson Strong Bolt Wedge Anchors. Install in accordance with manufacturer's instructions. Embed to minimum depth recommended by manufacturer but not less than:

1/2" Dia. -- Embed 3" Min.
5/8" Dia. -- Embed 4" Min.
3/4" Dia. -- Embed 5" Min.

MASONRY
INSPECTION: Special inspection per IBC Sections 1701 and 2105 is not required for all masonry.

CMU WALLS: f'm = 1350 psi (1500 psi fully grouted).

BLOCK: ASTM C-90, Grade N-1 [Type S-1 (interior exposure only)] 50/50, f'c = 1000 psi @ 28 days, linear shrinkage 0.045 to 0.065% max.

BRICK VENEER: Brick ASTM C-216, install 22 Ga. x 1" galvanized tie every 2.0 square feet with #9 wire continuous in horizontal mortar joint at ties.

MORTAR: ASTM C-270, Type S, f'c = 1800 psi @ 28 days.

GROUT: ASTM C-476, f'c = 2000 psi @ 28 days.

REINFORCING FOR MASONRY: BAR, ASTM A-615, Grade 40; wire joint reinforcing, IBC Standard 21-10, ASTM A-82 Wire, Galvanized, use prefabricated corners and tees.

STRUCTURAL STEEL

GENERAL: All fabrication and erection shall conform to the AISC Steel Construction Manual, 14th Edition., and the AISI Specification for the Design of Cold-formed Members, 2010 Edition.

HOT ROLLED SHAPES AND PLATE: ASTM A-36, Fy = 36 ksi.

STRUCTURAL PIPE: ASTM A-53 GRADE B, Fy = 35 ksi.

STEEL PIPE PILES: ASTM A-272 GRADE 2, Fy = 35 ksi.

STRUCTURAL TUBING: ASTM A-500 GRADE B, Fy = 46 ksi.

LIGHT GAGE STUDS AND JOISTS: ASTM A-446. provide all accessories including but not limited to: tracks, clips, web stiffeners, anchors, fastening devices, resilient clips, and other accessories required for complete and proper installation as recommended by the manufacturer of the members. Use USG or KNORR as indicted or approved alternate with equal or greater load capacity. All studs joists and accessories shall be produced by a single manufacturer except as noted on the drawings or as approved by the engineer of record. Products shall be proven by testing as demonstrated either by ICC and NRB acceptance or through a test program conforming to IBC STANDARD 25.1737.

WELDING: Conform to AWS D1.1. All welding shall be by WABO certified welders. E70XX electrodes.

CARPENTRY

FRAMING LUMBER: Provide S4S, S-Dry. All lumber in contact with concrete or masonry shall be pressure preservative treated. Nail in conformance with IBC Table 23-04.9.1 or as indicated on the drawings. Use full height studs at exterior walls. Double joists are required under parallel bearing walls. Use multiple studs to achieve full bearing under beam ends or posts in wall from above, unless noted otherwise.

PLATES: Hem-Fir No. 2
Ft = 500 psi, Fc brag = 405 psi
Douglas Fir No. 2
Ft = 575 psi, Fc brag = 625 psi

STUDS: Hem-Fir No. 2
FBI = 850 psi, Fc// = 1,350 psi, E = 1,300 ksi
Douglas Fir No. 2
FBI = 900 psi, Fc// = 1,500 psi, E = 1,600 ksi

JOISTS: Hem-Fir No. 2
FBI = 850 psi, Fv = 150 psi, E = 1,300 ksi
Douglas Fir No. 2
FBI = 900 psi, Fv = 180 psi, E = 1,600 ksi

BEAMS: Douglas Fir No. 2
2x--: FBI = 900 psi, Fv = 180 psi, E = 1,600 ksi
4x--: FBI = 900 psi, Fv = 180 psi, E = 1,600 ksi
6x--: FBI = 875 psi, Fv = 170 psi, E = 1,300 ksi

POSTS: Douglas Fir No. 1
4x--: Fc// = 1,500 psi, E = 1,600 ksi
6x--: Fc// = 1,000 psi, E = 1,300 ksi

DECKING: Hem-Fir Commercial Dex
2x6: FBI = 850 psi, Fbr = 1,000 psi, E = 1,300 ksi
4x8: FBI = 850 psi, Fbr = 1,000 psi, E = 1,300 ksi
4x12: Fbr = 850 psi, E = 1,000 ksi

MISC.: Douglas Fir No. 2 OR Hem-Fir No. 2
FBI = 850 psi, E = 1,300 ksi

GLU-LAMINATED TIMBER: Shall conform to AITC 117-84 and ANSI 190.1.; Industrial Appearance Grade in conformance with AITC 110-84 (except as noted on the drawings). Handle, store and erect in accordance with AITC 111-79.

BEAMS: AITC Combination 24f-V4 for single spans and 24f-V8 for continuous multiple spans; manufacturer's standard camber

COLUMNS: AITC Combination 3 Grade L2D.

LAMINATED VENEER LUMBER (LVL): Weyerhaueser MICRO=LAM as indicated on drawings or approved alternate. Products shall be proven by testing as demonstrated either by ICBO or NER acceptance. Minimum allowable design stresses shall be as follows:

1.8E DF MICRO=LAM LVL FBI = 2,600 psi, Fv = 285 psi
Fc// = 2,460 psi, Fc brag = 750 psi, E = 1,800 ksi.

PARALLEL STRAND LUMBER (PSL): Weyerhaueser Parallam as indicated on the drawings or approved alternate. Products shall be proven by testing as demonstrated either by ICBO or NER acceptance. Minimum allowable design stresses shall be as follows:

2.0E DF PARALLAM PSL FBI = 2,900 psi, Fv = 290 psi
Fc// = 2,900 psi, Fc brag = 750 psi, E = 2,000 ksi.

2.1E DF PARALLAM PSL FBI = 3,100 psi, Fv = 290 psi
Fc// = 2,900 psi, Fc brag = 750 psi, E = 2,100 ksi.

STRUCTURAL WOOD PANELS: A.P.A. rated sheathing as noted. Install panels with the long dimension across supports, and continuous across two or more spans. Space panels 1/8" at joint.

PLYWOOD WEB JOISTS: Weyerhaueser as indicated on drawings or approved alternate. The plywood web joists shall be factory manufactured with A.P.A. structural plywood, machine stress rated or MICRO=LAM lumber flanges, and waterproof glues. Joist manufacturer shall provide drawings showing all critical dimensions for determining fit and placement in the building, temporary and permanent bracing and bridging, materials used, and load capacity or design load. Drawings shall be stamped by a structural engineer licensed in the State of Washington. Products shall be proven by testing as demonstrated either by ICC and NRB acceptance.

METAL PLATE WOOD TRUSSES: Trusses shall be designed and factory manufactured in conformance with TPI-85. Metal plate connectors shall be ICC approved. Top chords shall be douglas-fir larch. Design trusses for the following minimum loading:

top chord live load	25 psf	
top chord dead load	10 psf	(20 psf for tile roof)
bottom chord dead load	10 psf	
total load	45 psf	(55 psf for tile roof)

Truss manufacturer shall provide drawings and calculations, including placing plans and stress diagrams, for review by the engineer, prior to fabrication. Provide for shapes, hips and valleys, bearing points, bearing stress, girder truss connections, mechanical and other special loads, temporary and permanent lateral bracing, and erection. Girder trusses shall be located as shown on the plans, other special framing for hips, valleys, etc. Shall be determined by the manufacturer. Submitted documents shall be stamped, signed, and dated by a structural engineer licensed in the State of Washington. All noted truss documents to be on job site available for inspector.

FASTENERS

NAILS AND SPIKES: Common, except as noted on the drawings.

LAG SCREWS: ANSI B18.2.1.

BOLTS, NUTS AND WASHERS: ASTM A-307 GRADE A or B, ANSI B18.2.1; ASTM A-563 GRADE A, ANSI B18.2.2; ASTM F-844.

FRAMING CONNECTORS: Simpson as noted. Products shall be proven by testing as demonstrated either by ICC and NRB acceptance. When used with pressure treated or fire retardant wood, fasterners must be ZMAX Hot Dipped Galvanized (G185), stainless steel, or meet ASTM-153 requirements. For D.F. treated or retentions of ACQ or CBA higher than 0.40, or CAB over 0.20, stainless steel required.

PRESSURE PRESERVATIVE TREATMENT: all treated lumber shall be marked with the AWPB quality mark. Handle and repair field cuts or penetrations in accordance with AWPA M-4. After treatment air or kiln dry to a maximum moisture content of 19%.

LUMBER (DOUGLAS FIR-LARCH):

TREATMENT: AWPA U1
PRESERVATIVE: AWPA P-5, ACZA
RETENTION: 0.25 [0.40 ground contact or fresh water] pounds per cubic foot
QUALITY MARK: AWPB LP-2 OR LP-22 [ground contact]

LUMBER (HEM-FIR):

TREATMENT: AWPA U1
PRESERVATIVE: AWPA P-5, CCA
RETENTION: 0.25 [0.40 ground contact or fresh water] pounds per cubic foot
QUALITY MARK: AWPB LP-2 OR LP-22 [ground contact]

PLYWOOD:

TREATMENT: AWPA U1
PRESERVATIVE: AWPA P-5, CCA OR ACZA
RETENTION: 0.25 [0.40 ground contact or fresh water] pounds per cubic foot
QUALITY MARK: AWPB LP-2 OR LP-22 [ground contact]

GLU-LAMINATED TIMBERS:

TREATMENT: AWPA U1
PRESERVATIVE: AWPA P-8, Pentachlorophenol
RETENTION: 0.40 [0.50 Ground Contact] pounds per cubic foot
QUALITY MARK:

Shear Wall Designation	Nail Size	Edges	Field	Top Plate Nailing	Top Plate LTP4 Spacing	Blocking Required	Plate Anchors	Min. Plate Size	Sole Plate Nailing	Hem-Fir #2 #/Ft.	Doug-Fir #2 #/Ft.
P1-6	10d	6"	12"	N/A	24"	Yes	5/8"ø @ 32" O.C.	2x	(2) 16d @ 10" O.C.	279	310
P1-5	10d	5"	12"	N/A	18"	Yes	5/8"ø @ 32" O.C.	2x	(2) 16d @ 8" O.C.	348	350
P1-4	10d	4"	12"	N/A	16"	Yes	5/8"ø @ 24" O.C.	3x	(2) 16d @ 7" O.C.	418	460
P1-3	10d	3"	12"	N/A	12"	Yes	5/8"ø @ 24" O.C.	3x	(2) 16d @ 5" O.C.	545	600
P1-2	10d	2"	12"	N/A	8"	Yes	5/8"ø @ 16" O.C.	3x	(3) 16d @ 5" O.C.	713	770
P2-6	10d	6"	12"	N/A	12"	Yes	5/8"ø @ 16" O.C.	3x	(2) 16d @ 5" O.C.	558	620
P2-4	10d	4"	12"	N/A	8"	Yes	5/8"ø @ 16" O.C.	3x	(3) 16d @ 5" O.C.	836	920
P2-3	10d	3"	12"	N/A	6"	Yes	5/8"ø @ 12" O.C.	3x	(4) 16d @ 5" O.C.	1090	1200
P2-2	10d	2"	12"	N/A	4"	Yes	5/8"ø @ 12" O.C.	3x	(4) 16d @ 4" O.C.	1426	1540

Shear Wall Notes:

1. P1 - 1/2" Plywood or A.P.A. rated sheathing one side.
P2 - 1/2" Plywood or A.P.A. rated sheathing two sides.
2. When allowable wall shear values exceeds 350 plf, 3X minimum wall studs required at adjoining panel edges. (i.e. P1-4 designation or below).
3. Nails shall be 10d common, unless noted otherwise.
4. Where plywood is 2 sides of wall, joints shall fall on separate studs each side.
5. All panel edges backed with 2-inch nominal or wider framing unless noted otherwise . Install panels either horizontally or vertically for A.P.A. rated sheathing, gypsum shear walls shall be installed with the sheets running horizontally. Space nails @ 12 inches on center at intermediate supports.
6. Typical exterior - unless noted - 15/32" A.P.A. rated space nails at edges 6" O.C., 12" O.C. field. Block all edges.
7. Typical interior- 1/2" gypsum wall board. Nail with 5d cooler nails at 7" O.C. all studs and plates. Block all shear wall edges.
or
5/8" gypsum wall board. Nail with 6d cooler nails at 7" O.C. all studs and plates.
8. Typical anchor bolts. 5/8" dia. Hot Dipped Galvanized 72" O.C. unless otherwise noted. All bolts must have 3"x3"x0.229" square washers installed - 7" minimum embedment.
9. MASAT Mudsil Anchor may be substituted for anchor bolt. Use spacing provided for anchor bolts.
10. All framing holdowns and clips to be Simpson brand or equivalent.
11. Do not overdrive nails into sheathing.

Roof & floor sheathing:
Roof sheathing: 15/32" A.P.A. rated sheathing (24\0). Nailing shall be 8d (common) @ 6" O.C. at panel edges, and 12" O.C. at intermediate supports.

Floor sheathing: 3/4" A.P.A. rated sheathing (48/24) nailed and glued. Adhesives shall conform to A.P.A. specification A.F.G. 01. Provided T&G edges at long panel edges. Nailing shall be 8d (common) at 6" O.C. at panel edges and 10" O.C. at intermediate supports.

Plywood shall be laid with face grain perpendicular to supports and end joints staggered 4'-0".

Holdowns:
Provide holdowns to foundation at ends of walls where shown on plans.

Installation instruction of Simpson Steel StrongWall and Wood StrongWall come attached to the wall assemblies. Please read and understand the design drawings and product information before installing the anchoring elements of the walls. If installation instructions are not present refer to Simpson Strong-Tie Catalog C-SW07 or www.strongtie.com.

Simpson strong-Tie will provide, upon request, training and field review before the installation of the anchoring elements of the Steel and/or Wood wall assemblies. To request such training, please call (800) 999-5099 Ext. 1082 and provide name, project address and contact information. You may also e-mail requests to kbourn@strongtie.com. Please allow 24 hours notice for scheduling.

Forsman engineering

FORSMAN ENGINEERING
Federal Way, WA 98003
Fax (253) 529-9438
30014 2nd Court S.
(253) 815-9182
forsmanengineering@comcast.net

REVISIONS	BY	DATE
1		
2		
3		
4		
5		
6		
7		

Turner Residential Gazebo
3449 74th Ave SE 98040
Mercer Island Washington

Standard Structural Notes

DESIGNED	AEF
DRAWN	RLJ
CHECKED	AEF
DATE	2/17/2021
PROJECT	21015
FILENAME	21015-sd1.dwg
PLOT AT	1 = 16
SCALE	NONE

SD1

2/17/2021