OREGON CITY

Community Development – Planning

698 Warner Parrott Road | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

LAND USE APPLICATION FORM

Type I (OCMC 17.50.030.A)	Type II (OCMC 17.50.030.B)	Type III / IV (OCMC 17.50.030.C)
☐ Compatibility Review	☐ Detailed Development Review	☐ Annexation
☐ Lot Line Adjustment	☐ Geotechnical Hazards	☐ Code Interpretation / Similar Use
☐ Non-Conforming Use Review	☐ Minor Partition (<4 lots)	☐ Concept Development Plan
☐ Natural Resource (NROD) Verification	☐ Minor Site Plan & Design Review	☑ Conditional Use
☑ Site Plan and Design Review	☐ Non-Conforming Use Review	☐ Comprehensive Plan Amendment (Text/Map)
☐ Extension of Approval	☐ Site Plan and Design Review	☐ Detailed Development Plan
	☐ Subdivision (4+ lots)	☐ Historic Review
	☐ Minor Variance	☐ Municipal Code Amendment
	☐ Natural Resource (NROD) Review	☐ Variance
		☐ Zone Change

File Number(s): _____

Proposed Land Use or Activity: Site Plan and Design Review; Conditional Use Review for a proposed 30 bed residential care facility with memory care endorsement.

Project Name: Asteria Care Number of Lots Proposed (If Applicable): N/A

Physical Address of Site: 182 Warner Parrott Rd. Oregon City, Oregon 97045

Clackamas County Map and Tax Lot Number(s): 3-2E-06CB-01502

Applicant(s):

Applicant(s) Signature: _____

Applicant(s) Name Printed: Edward Radulescu Date: 5.7.20

Mailing Address: 919 NE 19th Ave. Suite 155 Portland, Oregon 97232

Phone: 503.679.2493 Fax: _____ Email: eddie@eprdesign.com

Property Owner(s):

Property Owner(s) Signature: _____

Property Owner(s) Name Printed: Petronella Donovan, Daniel Donovan Date: 5.7.20

Mailing Address: 182 Warner Parrott Rd Oregon City, OR 97045

Phone: (503) 810-9045 Fax: 503.657-6783 Email: petra@donovaninvestments.com

Representative(s):

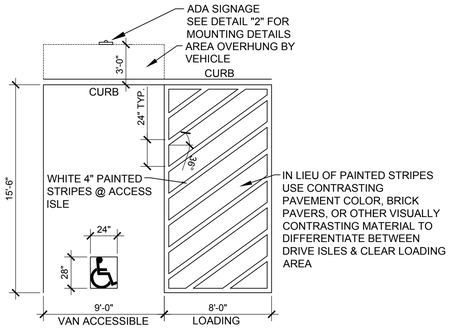
Representative(s) Signature: _____

Representative (s) Name Printed: _____ Date: _____

Mailing Address: _____

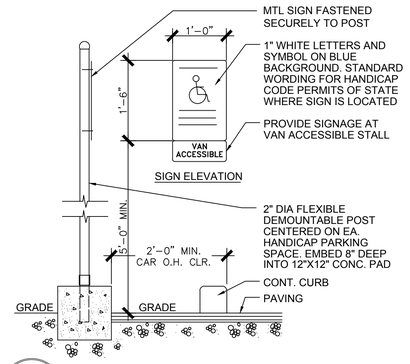
Phone: _____ Fax: _____ Email: _____

All signatures represented must have the full legal capacity and hereby authorize the filing of this application and certify that the information and exhibits herewith are correct and indicate the parties willingness to comply with all code requirements.



1 A0.1 VAN ACCESSIBLE PARKING STALL W/ LOADING AREA

SCALE: 3/16" = 1'-0"



2 A0.1 ACCESSIBILITY SIGNAGE

SCALE: 3/4"=1'-0"

SITE DETAILS:

SITE ADDRESS:	182 WARNER PARROTT RD. OREGON CITY, OREGON
JURISDICTION:	CITY OF OREGON CITY
SITE ZONING:	R-10; SINGLE FAMILY
PROPOSED USE:	RESIDENTIAL CARE FACILITY WITH MEMORY CARE ENDORSEMENT
LAND USE PROCESSES REQUIRED:	TYPE III SITE PLAN & DESIGN REVIEW CONDITIONAL USE REVIEW
TOTAL SITE AREA:	23,932 S.F.
SITE DENSITY PROPOSED:	30 RESIDENT BEDS
BUILDING COVERAGE: PAVED SURFACES:	39.3% (9,407 S.F.) 22.6% (5,404 S.F.)
PROPOSED LANDSCAPED AREA:	9,121 S.F. (38.1%)
MIN. SETBACKS REQUIRED:	20' FRONT, 20' REAR, 10' ON ONE INTERIOR SIDE, 8' FEET ON OTHER INTERIOR SIDE
MAX. SETBACKS ALLOWED:	10' FRONT
PROPOSED BUILDING HEIGHT:	APPROX. 29'
TOTAL PARKING SPACES:	4 W/ (1) VAN ACCESSIBLE SPACE ONSITE 4 OFF-STREET PARKING SPACES 8 TOTAL SPACES (5 REQUIRED)
TOTAL BICYCLE PARKING:	2 SPACES
FIRE DISTRICT:	CLACKAMAS FIRE
GARBAGE:	OREGON CITY
WATER DISTRICT:	CLACKAMAS
SEWER DISTRICT:	WES

GENERAL SITE PLAN NOTES:

SITE FURNISHINGS SUCH AS FENCES, & ANY OTHER FURNISHINGS SHALL BE CONSTRUCTED W/ 20% SUSTAINABLE HARVESTED MATERIALS, SUCH AS FORESTRY STEWARDSHIP COUNCIL (FSC)-CERTIFIED WOOD & RECYCLED CONTENT MATERIALS, EXCLUDING PLASTICS. THE INTENT OF THIS STANDARD CAN ALSO BE ACHIEVED THROUGH THE USE OF LOCALLY SOURCED MATERIALS, ORIGINATING WITHIN 500 MILES OF THE SITE

A MIN. OF 20% RECYCLED CONTENT PAVEMENT OR PAVEMENT BASE,SUCH AS CONCRETE GRINDINGS FOR BASE MATERIALS OR BLAST FURNACE SLAB ADDITIVES OR ASPHALT W/ GLASS FOR HARD-SCAPE ELEMENTS SUCH AS STREETS, SIDEWALKS, PATHS, PARKING AREAS & COURTYARDS SHALL BE PROVIDED

REFERENCE LANDSCAPE PLANS FOR LANDSCAPE PLANTING DETAILS

REFERENCE CIVIL SHEETS FOR R.O.W. IMPROVEMENTS, PERVIOUS PAVEMENT DETAILS, STORM-WATER MANAGEMENT, ETC.

PROVIDE A LEVEL CEMENT CONCRETE PAD, MIN. 4" THICK, @ GROUND ELEVATION. THE PAD SHALL BE DESIGNED TO DISCHARGE SURFACE WATER RUNOFF TO PREVENT STANDING WATER TO DRAIN @ GARBAGE ENCLOSURE

THE VEHICULAR APPROACH AREA & STAGING AREA SHALL NOT HAVE A PERCENT OF GRADE EXCEEDING 3%, SLOPED IN ANY DIRECTION

PROVIDE A CLEAR STAGING AREA IN FRONT OF THE ENCLOSURE W/ A MIN. LENGTH & WIDTH TO ALLOW FOR A 3' PERIMETER AROUND ALL SIDES OF THE CONTAINER WHEN BEING SERVICES OUTSIDE OF THE ENCLOSURE

A MIN. OF 3', INCLUDING PAD AREA, SHALL BE PROVIDED IN FRONT OF EACH CONTAINER FOR MANEUVERABILITY IN DEPOSITING SOLID WASTE OR RECYCLABLE MATERIALS

PROVIDE A "NO PARKING" SIGN THAT SHALL BE PAINTED TO ON THE PAVEMENT IN FRONT OF THE GARBAGE AREA TO PROVIDE SAFE & UNOBSTRUCTED ACCESS FOR SERVICING CONTAINERS

GARBAGE & RECYCLING ENCLOSURE GATES SHALL SWING FREE OF OBSTRUCTIONS & HAVE RESTRAINERS IN THE OPEN & CLOSED POSITIONS. THE GATE SWING SHOULD OPEN TO A MIN. OF 120 DEGREES

OFF STREET PARKING SHALL BE COMPLETED PRIOR TO ISSUANCE OF CERT. OF OCC. & PROVIDED FOR EMPLOYEES & VISITORS. NO STORAGE OF NON-OPERABLE VEHICLES OR OF MATERIALS PERMITTED

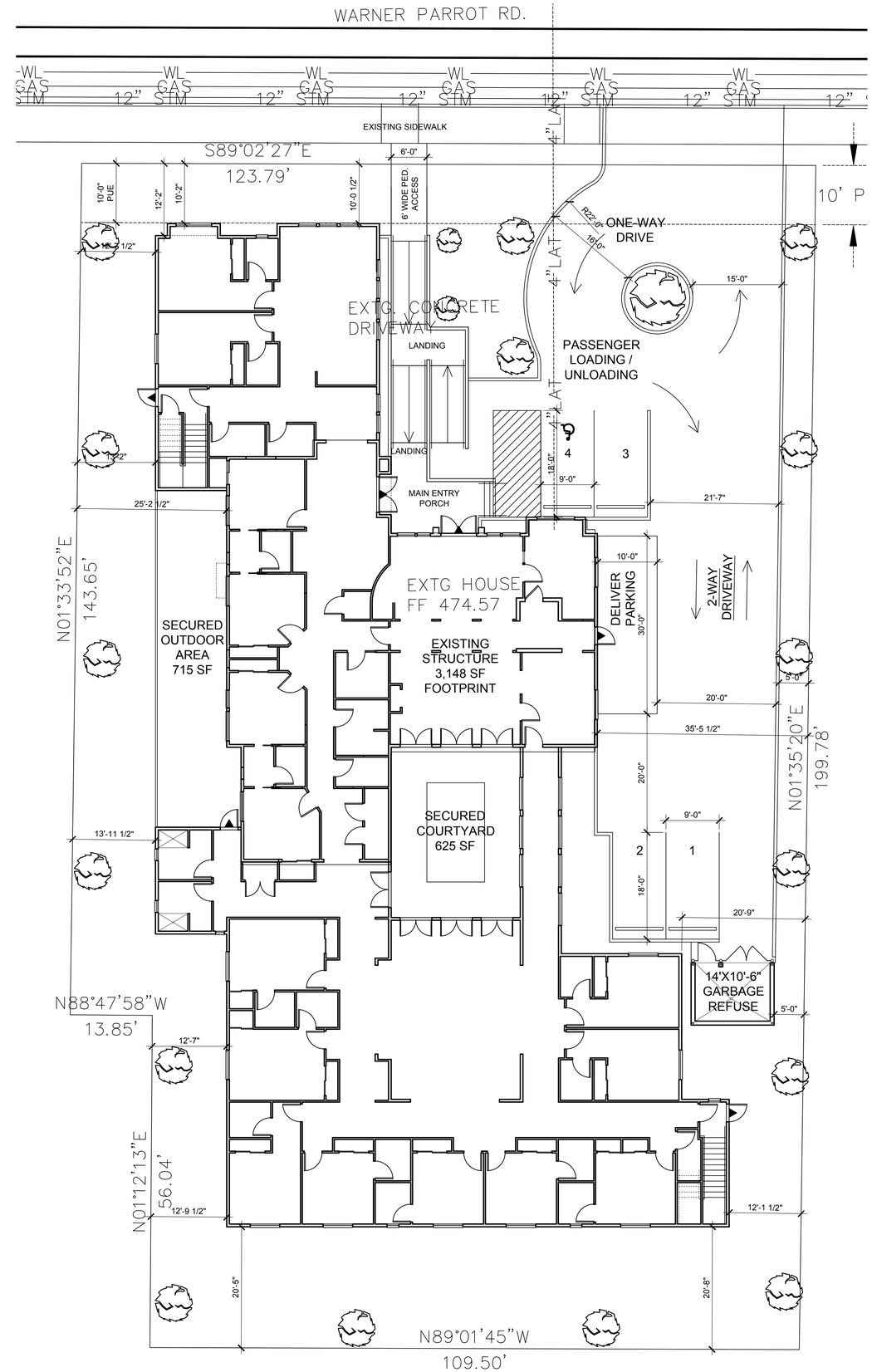
OWNER TO FURNISH ALL OUTDOOR FURNITURE SHOWN ON SITE PLAN

ALL PEDESTRIAN WALKWAYS, BUILDING ENTRANCES AND EXITS, AND OUTDOOR USE AREAS TO HAVE LIGHTING PROVIDING A MIN. OF 5 FOOT CANDLE ILLUMINATION, TYP.

A A0.1 *PROPOSED SITE PLAN*

SCALE: 3/32"=1'-0"

NORTH



nw A&D
from design concept to architectural reality

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design@eprdesign.com

REGISTERED ARCHITECT
John MacKinnon
John R. MacKinnon
PORTLAND, OREGON
STATE OF OREGON
EXPIRES: 12-31-21

ASTERIA CARE

182 Warner Parrott Rd.
Oregon City, Oregon 97045
30 Bed RCF + Memory Care

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PERMIT SET

1 -

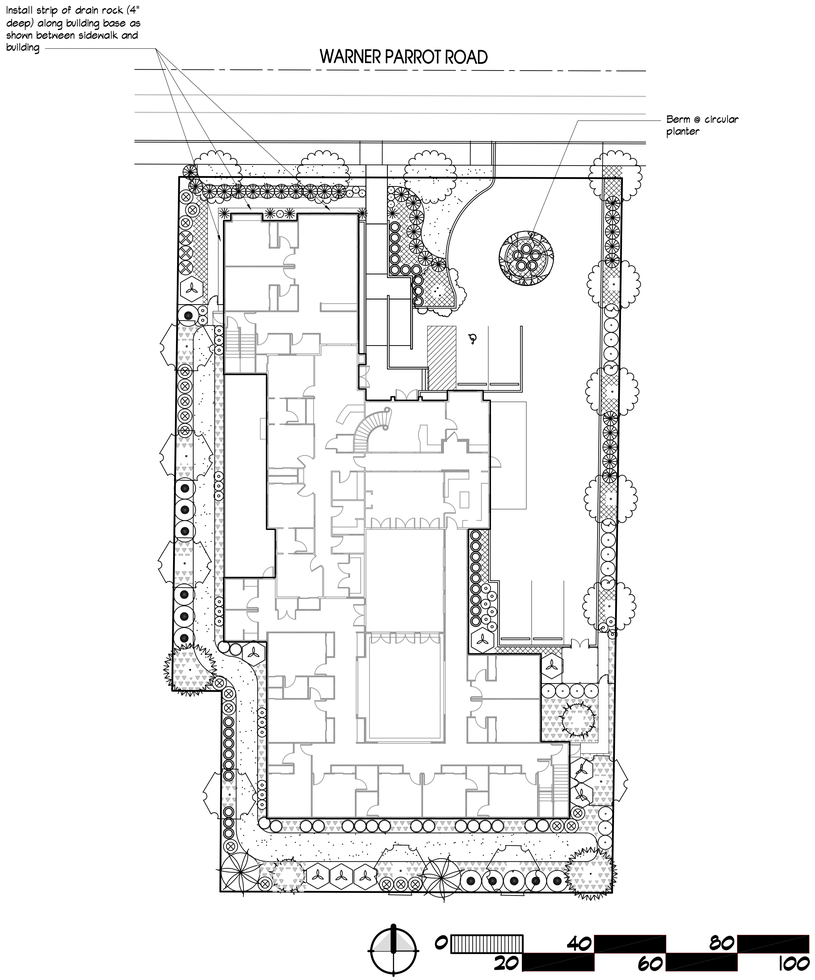
PROPOSED SITE PLAN

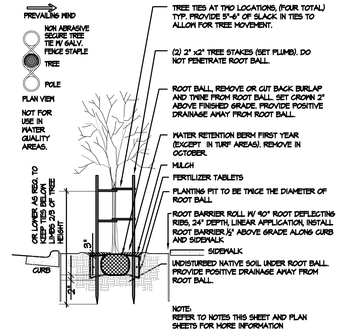
REVISED:

DATED: 10/7/2019

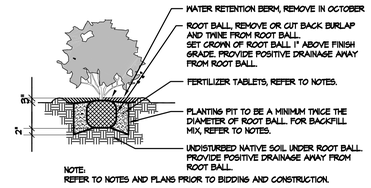
DRAWN BY:

SHEET: A0.1

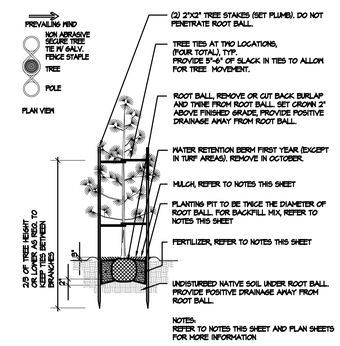




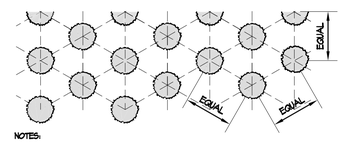
A B & B Tree Planting Detail
Not To Scale — SECTION / PLAN VIEW



C B & B Shrub Planting Detail
Not To Scale — SECTION



B B & B Tree Planting Detail: Evergreen under 8' Height
Not To Scale — SECTION / PLAN VIEW



NOTES:

ALL GROUND COVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING AS SPECIFIED IN PLANTING LEGEND.

GROUND COVER TO BE LOCATED ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY HARD SURFACE, UNLESS OTHERWISE SPECIFIED.

D Ground Cover Planting Detail
Not To Scale — PLAN VIEW

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	QUANTITY
TREES			
	ACER GRISEUM PAPERBARK MAPLE	2" cal. min.	8
	CERCIS CANADENSIS EASTER REDBUD	2" cal. min.	7
	LAGERSTROEMIA INDICA X FAURIEI 'ZUNI' ZUNI CRAPE MYRTLE	15 GAL. TREE FORM	1
	MAGNOLIA GRANDIFLORA 'LITTLE GEM' LITTLE GEM SOUTHERN MAGNOLIA	15 GAL. TREE FORM	1
	PINUS FLEXILIS 'VANDERWOLF PYRAMID' BLUE PYRAMIDAL PINE	6' TALL MIN.	2
	PICEA PUNGENS 'FASTIGIATA' COLUMNAR BLUE COLORADO SPRUCE	6' TALL MIN.	2
SHRUBS			
	ABELIA X GRANDIFLORA 'KALEIDOSCOPE' KALEIDOSCOPE ABELIA	1 GAL.	17
	CAMELLIA X 'WINTER SNOWMAN' WINTER'S SNOWMAN ICE ANGELS CAMELLIA	2 GAL.	17
	COTINUS COGGYGRIA 'ROYAL PURPLE' ROYAL PURPLE SMOKE TREE	2 GAL.	2
	EUPHORBIA X MARTINII 'ASCOT RAINBOW' ASCOT RAINBOW SPURGE	1 GAL.	7
	ILEX CRENATA 'SKY PENCIL' AKY PENCIL JAPANESE HOLLY	2 GAL.	5
	ILEX BLABRA 'COMPACTA' COMPACT INKBERRY HOLLY	2 GAL.	29
	MISCANTHUS SINENSIS 'MORNING LIGHT' MORNING LIGHT MAIDEN GRASS	1 GAL.	19
	NANDINA DOMESTICA 'MOON BAY' MOON BAY HEAVENLY BAMBOO	2 GAL.	33
	OSMANTHUS HETEROPHYLLUS 'GOSHIKI' GOSHIKI FALSE HOLLY	2 GAL.	3
	PENNISETUM ALOPECUROIDES 'HAMELN' HAMELN FOUNTAIN GRASS	1 GAL.	26
	RHODODENDRON X MIYAMA 'PICOBELLO' PICOBELLO WHITE RHODODENDRON	2 GAL.	9
	SPIREA JAPONICA 'GOLDFLAME' GOLD FLAME SPIREA	2 GAL.	18
GROUNDCOVER			
	COTONEASTER DAMMERI BEARBERRY COTONEASTER	1 GAL.	130 36" O.C.
	LIRIOPE MUSCARI 'BIG BLUE' BIG BLUE LILY TURF	1 GAL.	126 24" O.C.
	TURF (SEED OR SOD), PER OWNER		

PLANTING NOTES

1. ALL BOUNDARIES, EASEMENTS, UTILITIES AND LEGAL ENCUMBRANCES TO BE CONFIRMED WITH OWNER PRIOR TO BEGINNING WORK. PROPERTY LINES AND SURVEY INFORMATION PROVIDED BY EPR DESIGN.
2. IN NO WAY IS THIS PLAN TO BE INTERPRETED TO EXCEED THE LEGAL BOUNDARIES OF THE OWNER'S REAL PROPERTY.
3. THE LANDSCAPE DESIGNER ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF BOUNDARIES, UTILITIES AND WETLANDS.
4. THIS PLAN SHALL BE INSTALLED TO MEET ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL CODES.
5. THIS PLAN SHALL BE CONSIDERED PRELIMINARY UNTIL APPROVED BY ALL GOVERNING AGENCIES. IMPLEMENTATION OF THIS PLAN SHALL NOT PROCEED UNTIL ISSUANCE OF ALL RELATED PERMITS.
6. PLANT QUANTITIES ARE FOR INFORMATION ONLY. IN CASE OF ANY DISCREPANCY, THE PLAN SHALL GOVERN.
7. ALL WORK IS TO BE PERFORMED BY LICENSED CONTRACTORS AND EXPERIENCED WORKERS.
8. THE CONTRACTOR IS TO VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO PERFORMING ANY EXCAVATION. CONTRACTOR SHALL REPAIR ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S WORK, AT NO ADDITIONAL COST TO THE OWNER. CONTACT ALL UTILITY PROVIDERS SERVING THE SITE AREA 48 HOURS PRIOR TO ANY EXCAVATION.
9. ALL PLANT MATERIALS SHALL MATCH SPECIFICATIONS PER SPECIES AND SHALL COMPLY WITH ANSI Z60.1 'STANDARD FOR NURSERY STOCK'.
10. THE CONTRACTOR SHALL ADHERE TO THE OREGON ASSOCIATION OF NURSERIES GUIDELINES FOR PLANTING PRACTICES.
11. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELEMENTS ON AND OFF SITE, RESULTING FROM THE CONTRACTOR'S WORK.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE VIABILITY OF ALL PLANT MATERIAL FOR 2 YEARS AFTER COMPLETION OF PLANTING. DISEASED, DYING, OR DEAD PLANT MATERIAL SHALL BE REPLACED BY THE CONTRACTOR DURING THE TWO YEAR PERIOD AND MAINTAINED FOR AN ADDITIONAL 2 YEAR PERIOD.
13. IMMEDIATELY UPON BID AWARD, CONTRACTOR SHALL SECURE THE PLANT MATERIALS AS SPECIFIED FROM AVAILABLE SOURCES. IN THE EVENT THAT PLANT MATERIALS ARE NOT AVAILABLE, CONTACT LANDSCAPE ARCHITECT FOR APPROVED SUBSTITUTIONS. NO SUBSTITUTION FOR PLANT MATERIAL WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
14. TOP DRESS ALL SHRUB AND GROUND COVER AREAS (NOT LAWN) WITH 3" OF FIR BARK MULCH. SUBMIT SAMPLE TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.
15. TREE LOCATIONS MAY BE ADJUSTED IN THE FIELD TO SUIT SITE REQUIREMENTS AS DIRECTED BY THE LANDSCAPE ARCHITECT.
16. THE CONTRACTOR SHALL ENSURE THAT ALL EXCAVATED PLANTING PITS HAVE POSITIVE DRAINAGE. PLANT PITS FULLY FLOODED WITH WATER SHALL DRAIN WITHIN (12) HOURS OF FILLING.
17. FINISH GRADE SHALL BE SET TO ALLOW POSITIVE DRAINAGE
18. ROTOTILL 2" OF COMPOST INTO ALL PLANTED AREAS.
19. INCORPORATE PEAT INTO THE ROOT ZONE OF RHODODENDRONS, AZALEAS AND OTHER ACID LOVING PLANTS.
20. INCORPORATE 10-20-20 FERTILIZER INTO THE ROOT ZONE OF ALL NEW PLANTINGS.
21. RONSTAR, OR APPROVED EQUAL, PREEMERGENT HERBICIDE TO BE APPLIED TO ALL PLANTED AREAS PER MANUFACTURERS INSTRUCTIONS.
22. EXISTING VEGETATION TO BE SPRAYED WITH ROUNDUP, OR APPROVED EQUAL, PER MANUFACTURERS INSTRUCTIONS. SUFFICIENT TIME SHALL BE GIVEN TO ALLOW EXISTING MATERIAL TO DIE. REMOVE EXISTING ST. THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING TURF PLANTED WITHIN THE RIGHT OF WAY.
23. CROWN LAWN AREAS AND GRADE TO PROVIDE POSITIVE DRAINAGE.
24. ROLL LAWN AREA TO INSURE PROPER COMPACTION TO MINIMIZE SETTLING.
25. AMEND SOIL IN LAWN AREAS WITH 80 LBS. OF DOLOMITE LIME AND 40 LBS. OF 10-20-20 SLOW RELEASE FERTILIZER OR EQUIVALENT. PROVIDE A 3" LAYER OF SANDY LOAM TOPSOIL FOR LAWN AND BED AREA.
26. SEED LAWN AREAS WITH GRASS SEED MANUFACTURER'S RECOMMENDATIONS. COVER SEED WITH FINE MULCH APPLIED WITH ROLLER OR HYDROSEED.
27. THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING TURF PLANTED WITHIN THE RIGHT OF WAY.
28. PLANT MATERIAL SHALL BE PLANTED W/ ROOT CROWN 1" ABOVE FINISHED GRADE TO ALLOW POSITIVE DRAINAGE AWAY FROM CROWN.
29. STAKE ALL TREES OVER 6 FT. IN HEIGHT PER DETAILS ON THIS SHEET.
30. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
31. ALL PLANTING SHALL BE IRRIGATED BY AN AUTOMATIC UNDERGROUND SPRINKLER SYSTEM.
32. ALL PLANT MATERIALS FURNISHED ARE TO BE HEALTHY, UNIFORMLY BRANCHED AND WITH WELL DEVELOPED FIBROUS ROOT SYSTEMS.
33. ALL PLANT MATERIALS FURNISHED ARE TO BE FREE FROM DEAD OR BROKEN BRANCHES, LICHENS, SCARS, BROKEN BARK OR WOUNDS. ALL PLANT MATERIALS WILL BE INSECT, WEED, AND DISEASE FREE ACCORDING TO THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF AGRICULTURE FOR NURSERY PLANT MATERIALS SOLD FOR WHOLESALE OR RETAIL. ALL PRUNING WOUNDS MUST BE WELL HEALED WITH NO EVIDENCE OF DECAY.
34. FIELD CONFIRM ALL SITE CONDITIONS, AREAS AND SIZES PRIOR TO BIDDING & CONSTRUCTION. DO NOT SCALE FROM PLANS.

IRRIGATION NOTE

ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH AN AUTOMATIC DRIP AND/OR SPRAY IRRIGATION SYSTEM. REFER TO CIVIL ENGINEERING PLANS FOR WATER SOURCE.

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PRELIMINARY NOT FOR CONSTRUCTION SUBJECT TO APPROVAL

ASTERIA CARE
182 Warner Parrott Rd.
Oregon City, Oregon 97045
30 Bed RCF + Memory Care

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PERMIT SET

1

PROPOSED LANDSCAPE PLAN

REVISED:

DATED: 01/21/20

DRAWN BY: HA

SHEET: L1.0

E:\OneDrive - Planning Solutions Inc\Project Folder\2020 Projects\1551-Asteria Care Landscape\2.0 LU Process\2.03 PLR (current)\01 R0 11.20\Plans_1551 PLR S1 PL R0.dwg, 12/21/2020 10:15:42 AM, Adobe PDF.pc3

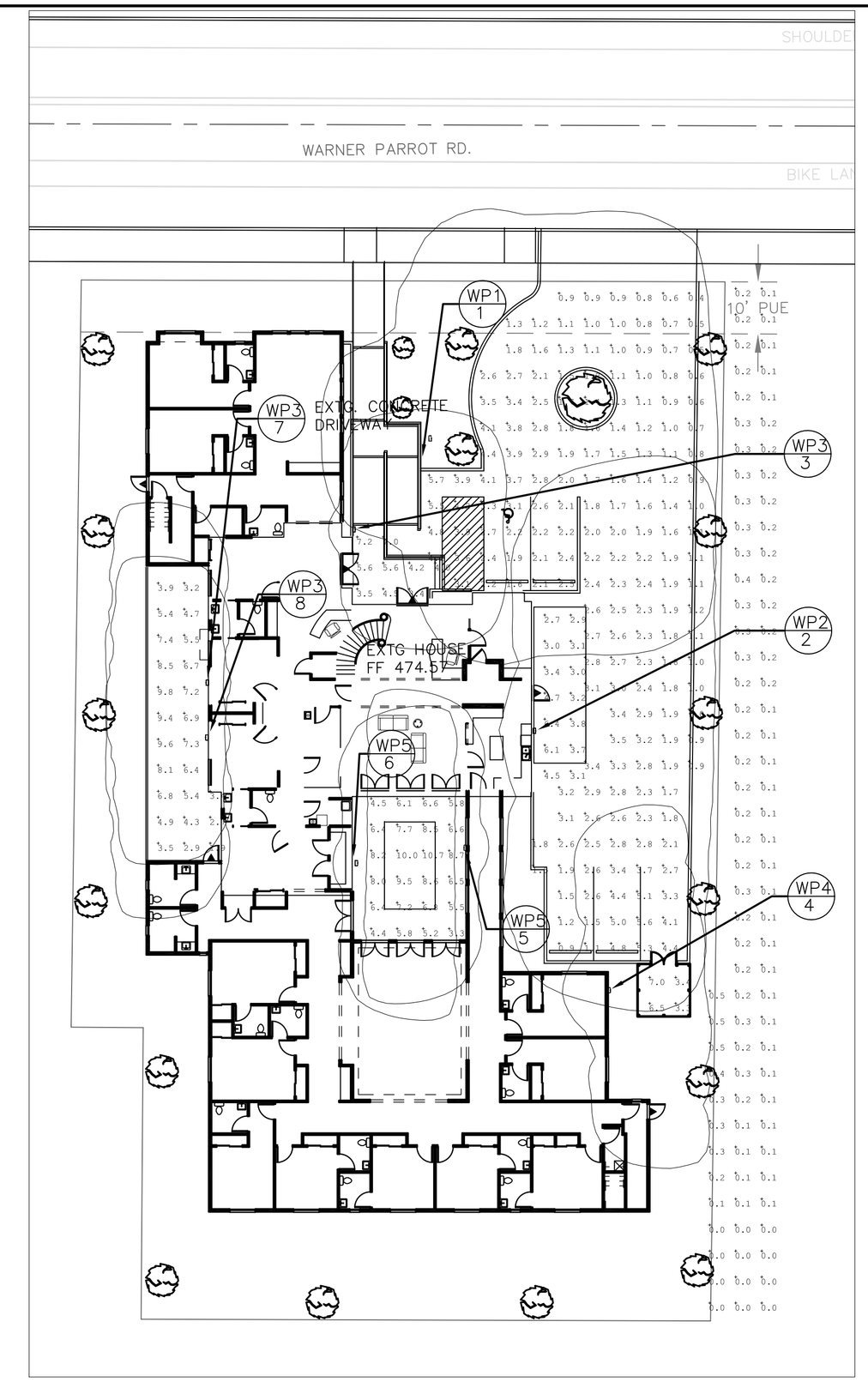
WP1 / X = INSTALL 66W PRIVATE WALL PACK #. (X = WALL PACK #).

WP2 / X = INSTALL 66W PRIVATE WALL PACK #. (X = WALL PACK #).

WP3 / X = INSTALL 34W PRIVATE WALL PACK #. (X = WALL PACK #).

WP4 / X = INSTALL 34W PRIVATE WALL PACK #. (X = WALL PACK #).

WP5 / X = INSTALL 34W PRIVATE WALL PACK #. (X = WALL PACK #).



WALL PACK NOTES:

1: WALL PACK SHALL BE BRONZE, 66W/34W, LED WALL PACK.
APPROVED WALL PACKS ARE:
WP1: GLEON GWC-AF-02-LED-E1-T4FT-BZ-7030-600
WP2: GLEON GWC-AF-02-LED-E1-SL3-BZ-7030-600
WP3: GLEON GWC-AF-01-LED-E1-SL4-BZ-7030-600
WP4: GLEON GWC-AF-01-LED-E1-SL2-BZ-7030-600
WP5: GLEON GWC-AF-01-LED-E1-SL3-BZ-7030-600

NUMERIC SUMMARY						
PROJECT: WARNER PARROT						
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN
COURTYARD	ILLUMINANCE	FC	6.96	10.70	3.30	2.11
PARKING LOT	ILLUMINANCE	FC	2.20	5.70	0.50	4.40
DELIVERY AREA	ILLUMINANCE	FC	3.83	6.40	2.70	1.42
ENTRY PORCH	ILLUMINANCE	FC	5.00	7.20	3.40	1.47
GARBAGE AREA	ILLUMINANCE	FC	5.05	7.00	3.30	1.53
OUTDOOR PLAY AREA	ILLUMINANCE	FC	5.83	9.80	1.90	3.07
OFF-SITE	ILLUMINANCE	FC		0.50		

WALL PACK INFORMATION TABLE

WALLPACK NUMBER	MH	WATTS	LUMENS
1	15 FT	66	7963
2	15 FT	66	6649
3	8 FT	34	3233
4	9 FT	34	3967
5	8 FT	34	3402
6	8 FT	34	3402
7	8 FT	34	3233
8	8 FT	34	3233

STREETLIGHTING DESIGN
Scale: 1" = 20'

Northstar Electrical Contractors
11055 S.W. Clay Street
Sherwood, Oregon 97140
Phone 503-612-0840
Fax 503-612-0891
Email adam.suminski@NorthStarElect.com

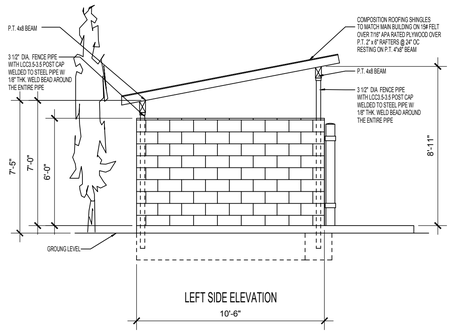
NorthStar ELECTRICAL CONTRACTORS

WARNER PARROT
OREGON CITY, OREGON

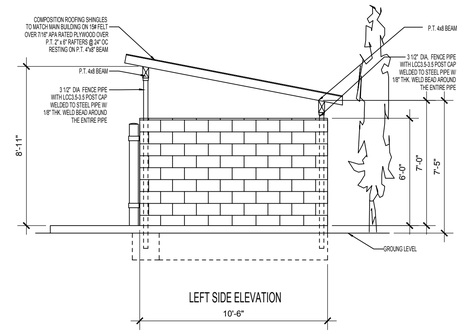
NO.	REV DATE	REV DESCRIPTION

Title: STREET LIGHTING
Designed by: Adam Suminski
Checked by: Jesse Culp
Date: February 6, 2020

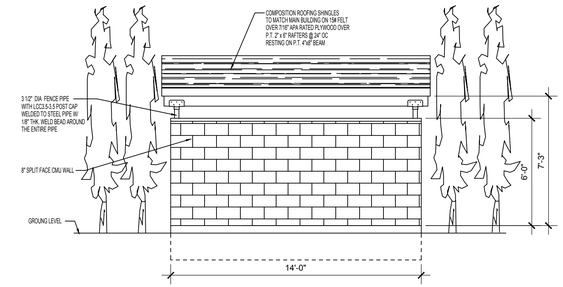
DWG. NO
EL1



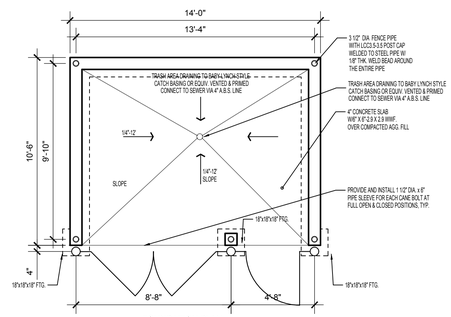
LEFT SIDE ELEVATION
10'-6"



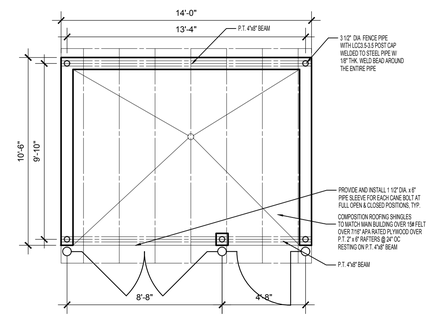
LEFT SIDE ELEVATION
10'-6"



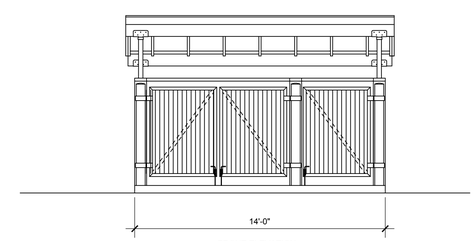
BACK ELEVATION



FOUNDATION PLAN



TRASH ENCLOSURE PLAN

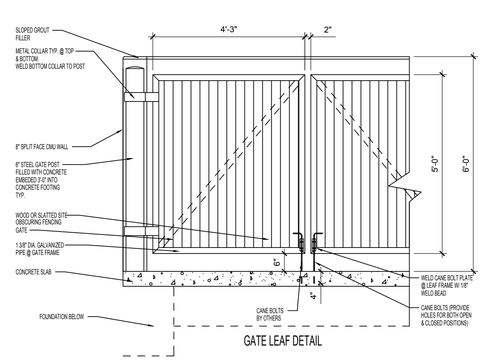


FRONT ELEVATION

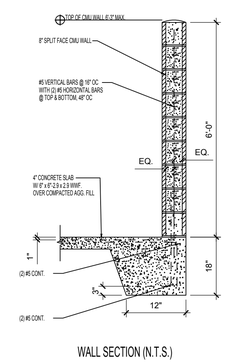
A
A1.2

TRASH ENCLOSURE

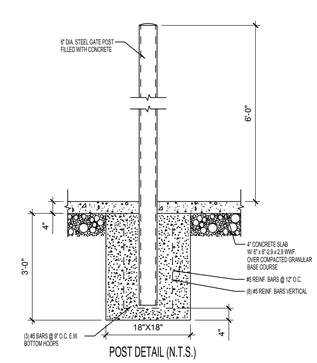
SCALE: 1/4" = 1'-0"



GATE LEAF DETAIL



WALL SECTION (N.T.S.)



POST DETAIL (N.T.S.)

B
A1.2

TRASH ENCLOSURE DETAIL

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

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John R. MacKinnon
PORTLAND, OREGON
STATE OF OREGON
EXPIRES: 12-31-21

WARNER PARROTT RD.

182 Warner Parrott Rd.
Oregon City, Oregon 97045
25 Bed RCF + Memory Care

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PERMIT SET

1

PROPOSED GARBAGE ENCLOSURE

REVISED:

DATED: 2/18/2020

DRAWN BY:

SHEET:

A0.2

A
A2.0

FRONT ELEVATION (NORTH)

SCALE: 3/16" = 1'-0"

B
A2.0

REAR ELEVATION (SOUTH)

SCALE: 3/16" = 1'-0"

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1

PROPOSED BUILDING ELEVATIONS

REVISED:

DATED: 8/20/2019

DRAWN BY:

SHEET: A2.0

C / A2.1 *LEFT SIDE ELEVATION (EAST)*
SCALE: 1/8" = 1'-0"

D / A2.1 *RIGHT SIDE ELEVATION (WEST)*
SCALE: 1/8" = 1'-0"

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PERMIT SET

1

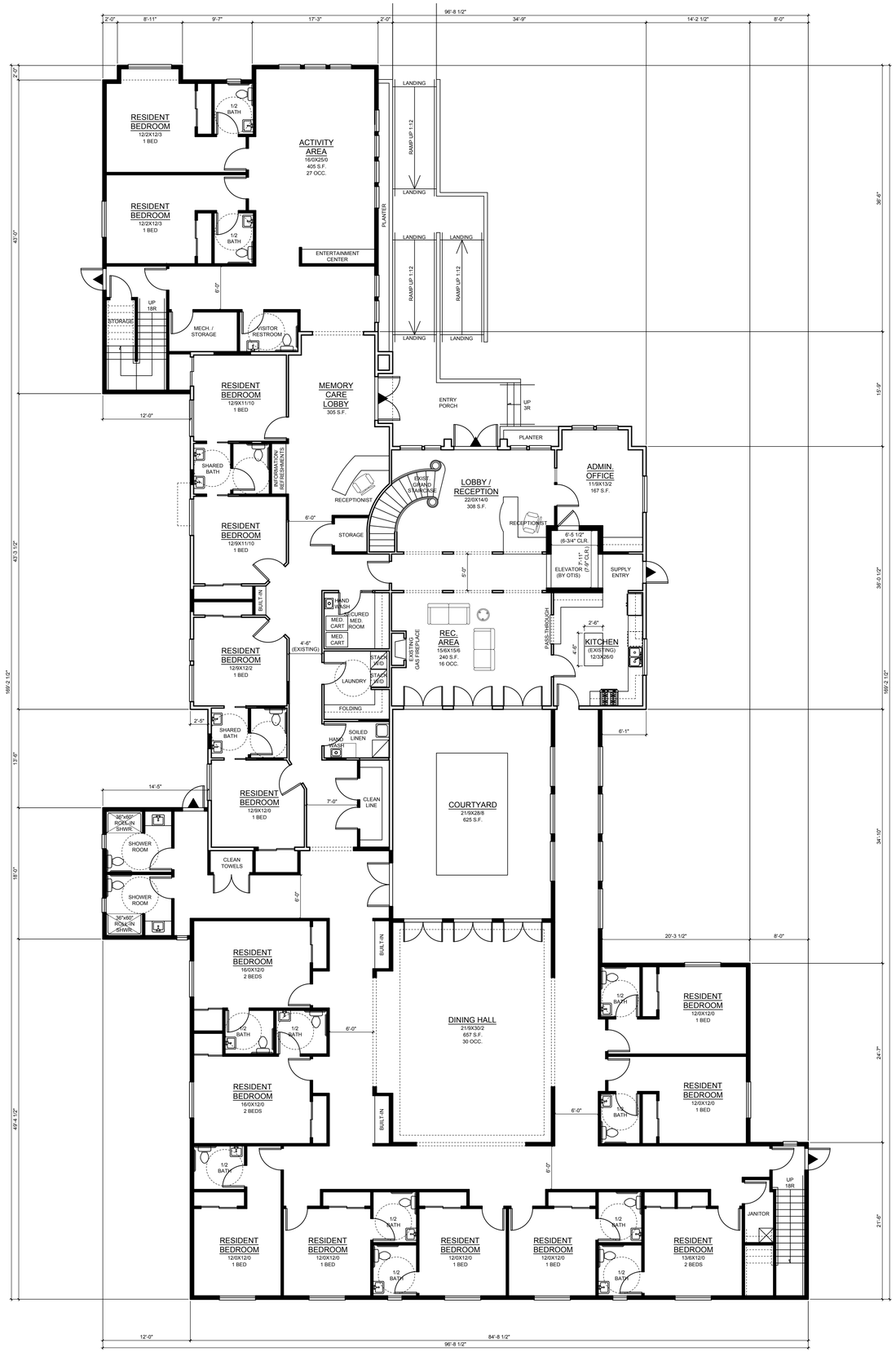
PROPOSED BUILDING ELEVATIONS

REVISED:

DATED: 8/20/2019

DRAWN BY:

SHEET: A2.1



A / A3.1 *GROUND LEVEL FLOOR PLAN*

SCALE: 1/8" = 1'-0"

GROUND LEVEL RESIDENT BEDS: 18
GROUND LEVEL AREA: 9,378 SF
(3,142 SF EXIST. + 6,236 SF NEW)

LEGEND:

- SEE DOOR SCHEDULE
- BUILDING EGRESS
- SEE WINDOW DETAILS ON A1.1
- 2x SOUND INSULATED WALL. SEE DETAIL ON A4.0

GENERAL NOTES:

ALL CORRIDOR DOORS TO BE MIN. 20 MINUTE RATED PER TABLE 715.4 FIRE PARTITIONS.
EXCEPTION: RESIDENT BEDROOM DOORS NOT REQUIRED TO BE RATED.

RESIDENT SLEEPING UNITS TO BE ACCESSIBLE UNITS W/ ACCESSIBLE RESTROOMS.

RESIDENT BEDROOM DOORS ACCESSING THE CORRIDOR TO BE EQUIPPED WITH SMOKE GASKETS, POSITIVE LATCHING, & LEVER TYPE HANDLES W/ KEYED LOCKS.

RESIDENT AREAS TO BE ATTENDED BY STAFF ON A 24-HR. BASIS.

TYP. CEILING HEIGHTS TO BE 9'-0" U.N.O.

SEE BUILDING ELEVATIONS & WINDOW DETAILS SHEET FOR WINDOW STYLES, SIZES, & HEAD HEIGHTS, TYP.

EXTERIOR SIDEWALKS & CONCRETE PATIO AREAS SHOWN FOR COORDINATION ONLY. SEE SITE PLAN FOR ADDITIONAL INFORMATION.

SEE FIRE & LIFE SAFETY PLAN FOR WALL TYPES, EGRESS PATH, & OTHER DETAILS NOT SHOWN HERE FOR CLARITY.

KITCHEN TO COMPLY W/ OAR 333-150-0000 FOOD SANITATION RULES.

PROVIDE A 50GPM GREASE INTERCEPTOR AT KITCHEN. CONNECT ALL KITCHEN DRAIN FIXTURES TO GREASE INTERCEPTOR. GREASE INTERCEPTOR SHALL CONNECT TO MAIN SEWER LINE IN CRAWL SPACE.

PROVIDE NON-ABSORBENT SURFACE TO A HEIGHT OF 4' ABOVE FLOOR @ WALLS OF COMMON RESTROOMS & BATHING FACILITIES. FULL HEIGHT @ SHOWERS

CARPETING TO WITHSTAND A MIN. CRITICAL RADIANT FLUX AS REQUIRED FOR CLASS II MATERIALS, NFPA 253

FURNISHINGS BY OWNER. SHOWN FOR INFORMATION ONLY.

BUILDING SHALL BE HEATED & COOLED W/ DUCTLESS MINI-SPLIT HEATING & A/C UNITS. U.N.O.

ALL EXTERIOR WINDOWS / DOORS TO BE CENTERED ON ROOM / WALL U.N.O.

SEE ELEVATION DRAWINGS FOR WINDOW & EXTERIOR DOOR HEAD HEIGHTS.

ALL EXTERIOR WALLS TO BE 2x6 DFL #2 STUDS @ 16" O.C. W/ R-21 F.G. INSULATION.

ALL INTERIOR WALLS TO BE 2x4 DFL #2 STUDS @ 16" O.C. PLUMBING WALLS 2x6 DFL #2 STUDS @ 16" O.C. (U.N.O.).

TYPICAL EXTERIOR SHEATHING U.N.O.:
5/8" DENSGLASS FIRE GUARD SHEATHING OVER STRUCTURAL WALL SHEATHING (SEE STRUCTURAL)

TYPICAL INTERIOR SHEATHING U.N.O.:
5/8" TYPE "X" GYP. WALL BOARD.
SEE DETAIL FOR 1-HOUR & 2-HOUR FIRE RATED ASSEMBLIES. ENTIRE CEILING TO BE CONSTRUCTED AS A SMOKE BARRIER. SEE FIRE & LIFE SAFETY PLAN FOR LOCATION OF 2-HR CEILING @ OCCUPANCY SEPARATION REQUIREMENTS.

KEYNOTES:

1. PROVIDE ADA COMPLIANT HANDRAIL.

FLOOR FINISHES:

RESIDENT BEDROOMS:	LAMINATE WOOD
RESIDENT RESTROOMS:	TILE W/ INTEGRAL TILE BASE COVE
COMMON SHOWER ROOMS:	TILE W/ INTEGRAL TILE BASE COVE
CORRIDORS:	LAMINATE WOOD
DINING & ACTIVITY AREAS:	LAMINATE WOOD
KITCHEN:	TILE W/ INTEGRAL TILE BASE COVE
LAUNDRY AREAS:	TILE W/ INTEGRAL TILE BASE COVE
SOILED LINEN AREAS:	TILE W/ INTEGRAL TILE BASE COVE
JANITORS CLOSETS:	TILE W/ INTEGRAL TILE BASE COVE
LOBBY:	LAMINATE WOOD
ADMIN. OFFICE:	LAMINATE WOOD
STORAGE AREAS:	LAMINATE WOOD
NURSE / MED. ROOM	LAMINATE WOOD
STAIRWELLS:	COMMERCIAL GRADE CARPET

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PERMIT SET

1 -

PROPOSED GROUND LEVEL FLOOR PLAN

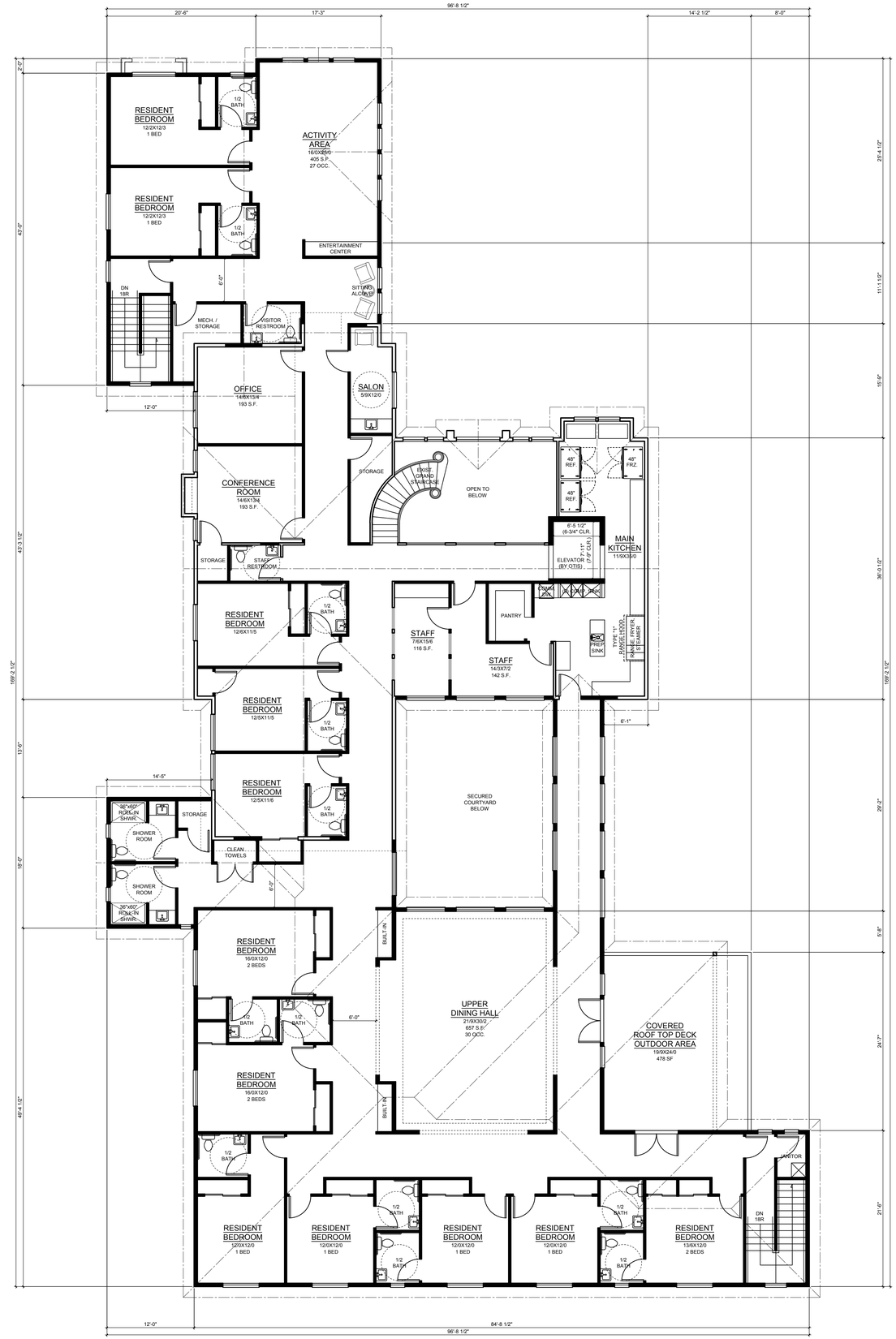
REVISED:

DATED: 8/20/2019

DRAWN BY:

SHEET: A3.1

NORTH



A / A3.2 *2ND LEVEL FLOOR PLAN*

SCALE: 1/8" = 1'-0"

2ND LEVEL RESIDENT BEDS: 12
2ND LEVEL AREA: 8,350 SF
(2,840 SF EXIST. + 5,510 SF NEW)

LEGEND:

- SEE DOOR SCHEDULE
- ▼ BUILDING EGRESS
- SEE WINDOW DETAILS ON A1.1
- 2x SOUND INSULATED WALL. SEE DETAIL ON A4.0

GENERAL NOTES:

ALL CORRIDOR DOORS TO BE MIN. 20 MINUTE RATED PER TABLE 715.4 FIRE PARTITIONS.
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CARPETING TO WITHSTAND A MIN. CRITICAL RADIANT FLUX AS REQUIRED FOR CLASS II MATERIALS, NFPA 253

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CORRIDORS:	LAMINATE WOOD
DINING & ACTIVITY AREAS:	LAMINATE WOOD
KITCHEN:	TILE W/ INTEGRAL TILE BASE COVE
LAUNDRY AREAS:	TILE W/ INTEGRAL TILE BASE COVE
SOILED LINEN AREAS:	TILE W/ INTEGRAL TILE BASE COVE
JANITORS CLOSETS:	TILE W/ INTEGRAL TILE BASE COVE
LOBBY:	LAMINATE WOOD
ADMIN. OFFICE:	LAMINATE WOOD
STORAGE AREAS:	LAMINATE WOOD
NURSE / MED. ROOM	LAMINATE WOOD
STAIRWELLS:	COMMERCIAL GRADE CARPET

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25 Bed RCF + Memory Care

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PERMIT SET

1 -

PROPOSED 2ND LEVEL FLOOR PLAN

REVISED:

DATED: 8/20/2019

DRAWN BY:

SHEET: A3.2

NORTH

TRAFFIC ANALYSIS LETTER

FOR

ASTERIA CARE MEMORY CARE FACILITY

182 WARNER PARROTT ROAD
OREGON CITY, OREGON 97045

CITY OF OREGON CITY

PREPARED BY

CHARBONNEAU ENGINEERING LLC

1-23-20

REGISTERED PROFESSIONAL ENGINEER
9301
OREGON
July 22, 1977
FRANK R. CHARBONNEAU

RENEWS: 12-31-21

JANUARY 2020

MEMORANDUM

Date: January 23, 2020

To: Edward Radulescu, B.S. Arch, EPR Design, 825 NE 20th Avenue - Suite 202, Portland OR 97232

From: Frank Charbonneau, PE, PTOE; Gary Spanovich

Subject: Transportation Analysis Letter; Asteria Memory Care Facility at 182 Warner Parrott Road, Oregon City, Oregon 97045

This letter has been prepared for the Asteria Warner Parrott Road Memory Care Facility development in the City of Oregon City. Development of this Memory Care Facility does not exceed the City of Oregon City's trip generation (The 10th Edition, year 2017 of the ITE Manual was used) threshold of 25 AM & PM peak hour trips or 250 daily trips and as a result a transportation analysis letter (TAL) has been prepared. Capacity analysis of nearby public intersections and the site driveways is not required. The transportation analysis letter includes a description of the site, trip generation documentation, verification of the street spacing standards, sight distance assessment, and review of the traffic safety conditions.

Site Development

The Asteria Warner Parrott Road Memory Care Facility will be located on residential property on the south side of Warner Parrott Road at 182 Warner Parrott Road. Development of the site will include some demolition and construction of a memory care building facility as follows:

- **30 resident beds**
- **9,407 sq. ft. of building coverage**
- **5,404 sq. ft. of paved surface**
- **23,932 sq. ft. of total site area**
- **29 feet, building height**
- **R-10, single family zoning**
- **Parking Spaces: 4 onsite spaces (1 van accessible); 4 off street; 8 total**
- **Bicycle Parking: 2 spaces**

The Appendix contains the Site Plan; Functional Classification System; and the Vicinity Map the project location.

The map below highlights the project location.

PROJECT LOCATION – 182 Warner Parrott Road

Trip Generation

Trip rates presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual, eighth edition, were utilized to estimate the site's trip generation. Assisted Living (ITE code #254) trip rates were applied to estimate the trips generated by the proposed use. The table in the Appendix presents the trip generation estimate for the memory care center. The 10th Edition, year 2017 of the ITE Manual was used.

Trip Generation Summary

The Appendix contains the results of the trip generation analysis. In summary the Warner Parrott Road Memory Care Facility is expected to generate up to 78 daily trips, six AM peak hour trips, and eight PM peak hour trips.

Access Spacing

The spacing of the existing driveways and the proposed site access on Warner Parrott Road between King Road and Woodlawn Avenue was reviewed for conformance to the City's spacing standards. Warner Parrott Road is classified

by the City of Oregon City as a minor arterial. King Road, Woodlawn Avenue, Boynton St are all classified as local streets.

Contained in the Appendix is a copy of Table 4 of the City of Oregon City Design Standards identifies the spacing between local streets along a minor arterial as 150 feet. Based on the spacing measurements the proposed site access will located 160 feet west of Boynton St; 390 feet east of King Road; and 390 feet west of Woodlawn Avenue. The City of Oregon City does not have a spacing standard for single-family residential driveways

Sight Distance

Sight distance along Warner Parrott Road was reviewed in accordance with AASHTO standards. The speed along Warner Parrott Road is posted for 30 MPH. Based on the posted speed AASHTO recommends a minimum sight distance of 390 feet be available.

The sight distance and the required sight distance standards will be exceeded as the available sight distance exceeds 390 feet in both directions. Sight distance is as follows:

- Roadway is flat in both directions
- To the West, .1 mile or 528 feet
- To the East, .2 mile or 1056 feet

With development of the Memory Care Facility the proposed access should be designed such that AASHTO's minimum sight distance recommendations are met or exceeded; and it does.

Safety Review

Accident data for the three-year period between 01/01/15 and 12/31/17 for Warner Parrott Road from South End Road to Central Point Road was requested from the ODOT crash analysis unit. This data has not yet come in; but will be added as an Addendum to this report when it arrives.

Conclusion

The transportation analysis letter for the Warner Parrott Road Memory Care Facility has been prepared to document the trip generation, access spacing, and the sight distance availability. Development of the Warner Parrott Road Memory Care Facility will consist of a 30 bed unit building that is projected to generate 78 daily trips, six AM peak hour trips, and eight PM peak hour trips.

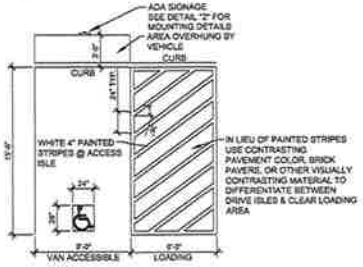
The spacing of streets and private driveways along Warner Parrott Road was reviewed for comparison to the City's spacing standards. Warner Parrott Road is classified by the City of Oregon City as a minor arterial and Boynton St; King Road; and Woodlawn Avenue are classified as local streets with more than 150

feet of separation. The City's standard identifies the spacing between local streets on a minor arterial as 150 feet. Currently, the City of Oregon City does not have a spacing standard for single-family residential driveways. The existing driveway also functions for an existing house used as a memory care facility; so the driveway already exists; the proposal simply adds beds to the existing facility.

There are no obstructions to the sight distance and the required sight distance standards will be exceeded as the available sight distance exceeds 390 feet in both directions. With development of the Memory Care Facility the proposed access should be designed such that AASHTO's minimum sight distance recommendations are met or exceeded. Obstruction by landscaping, signing, parking, buildings, or other objects would be unsafe.

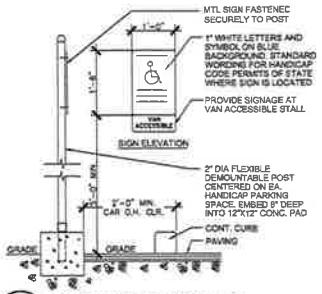
Accident data for the roadway will be added as an Addendum to this report, when received from ODOT.

APPENDIX



1 A0.1 VAN ACCESSIBLE PARKING STALL W/ LOADING AREA

SCALE: 3/16" = 1'-0"



2 A0.1 ACCESSIBILITY SIGNAGE

SCALE: 3/4"=1'-0"

SITE DETAILS:

SITE ADDRESS	182 WARNER PARROTT RD OREGON CITY, OREGON
JURISDICTION	CITY OF OREGON CITY
SITE ZONING	R-10, SINGLE FAMILY
PROPOSED USE	RESIDENTIAL CARE FACILITY WITH MEMORY CARE OVERSIGHT
LAND USE PROCEDURES REQUIRED	TYPE III SITE PLAN & DESIGN REVIEW CONDITIONAL USE REVIEW
TOTAL SITE AREA	23,222 S.F.
SITE DENSITY PROPOSED	30 RESIDENT BEDS
BUILDING COVERAGE: PAVED SURFACES:	20.3% (6,407 S.F.) 22.9% (5,454 S.F.)
PROPOSED LANDSCAPED AREA:	8,121 S.F. (35.1%)
MIN. SETBACKS REQUIRED	20' FRONT, 20' REAR, 10' ON CORNER INTERIOR EDGE, 8' FEET ON OTHER INTERIOR EDGE
MAX. SETBACKS ALLOWED:	10' FRONT
PROPOSED BUILDING HEIGHT:	APPROX. 29'
TOTAL PARKING SPACES:	4 (1) 1 VAN ACCESSIBLE SPACE ONSITE 4 OFF-STREET PARKING SPACES 8 TOTAL SPACES (8 REQUIRED)
TOTAL BICYCLE PARKING:	2 SPACES
FIRE DISTRICT:	CLACKAMAS FIRE
GARBAGE	OREGON CITY
WATER DISTRICT:	CLACKAMAS
SEWER DISTRICT:	WCB

GENERAL SITE PLAN NOTES:

SITE FURNISHINGS SHOWN AS TABLES & SIMILAR FURNISHINGS SHALL BE CONSTRUCTED IN 20% SUSTAINABLE MANUFACTURED MATERIALS, SUCH AS NORBAMS STRAWBOARD (SUNCO, INC.) COMPRISED WOOD & RECYCLED CONSUMER MATERIALS, EXCLUDING PLASTICS. THE INTENT OF THIS STANDARD CAN ALSO BE ADDRESSED THROUGH THE USE OF LOCALLY SOURCED MATERIALS, ORIGINATING WITHIN 500 MILES OF THE SITE.

A MIN. OF 20% RECYCLED CONTENT PAVEMENT OR PAVEMENT BASE,SUCH AS CONCRETE CRUSHERS FOR BASE MATERIALS OR SLAG FURNACE SLAG ADDITIVES OR ASPHALT WILL BE USED FOR HARDSCAPE ELEMENTS SUCH AS STREETS, SIDEWALKS, PATHS, PARKING AREAS & COURTYARDS SHALL BE PROVIDED

REFERENCE LANDSCAPE PLANS FOR LANDSCAPE PLANTING DETAILS

REFERENCE CIVIL SHEETS FOR R.O.W. IMPROVEMENTS, PERVIOUS PAVEMENT DETAILS, STORM WATER MANAGEMENT, ETC.

PROVIDE A 1 LEVEL CEMENT CONCRETE PAD MIN. 4" THICK @ GROUND ELEVATION. THE PAD SHALL BE DESIGNED TO DISCHARGE SURFACE WATER NAMELY TO PREVENT STANDING WATER TO DRAIN @ GARBAGE ENCLOSURE

THE VEHICULAR APPROACH AREA & STAGING AREA SHALL NOT HAVE A PERCENT OF GRADE EXCEEDING 3% SLOPED IN ANY DIRECTION

PROVIDE A CLEAR STAGING AREA IN FRONT OF THE ENCLOSURE W/ A MIN. LENGTH & WIDTH TO ALLOW FOR A 3' PERIMETER AROUND ALL SIDES OF THE CONTAINER WHEN BEING SERVICED OUTSIDE OF THE ENCLOSURE

A MIN OF 2' INCLUDING PAD AREA, SHALL BE PROVIDED IN FRONT OF EACH CONTAINER, FOR MANEUVERABILITY IN DEPOSITING SOLID WASTE OR RECYCLABLE MATERIALS

PROVIDE A "NO PARKING" SIGN THAT SHALL BE PAINTED TO ON THE PAVEMENT IN FRONT OF THE GARBAGE AREA TO PROVIDE SAFE & UNOBSTRUCTED ACCESS FOR SERVICING CONTAINERS

GARBAGE & RECYCLING ENCLOSURE GATES SHALL SWING FREE OF OBSTRUCTIONS & HAVE IRIS TRAMPERS IN THE OPEN & CLOSED POSITIONS. THE GATE SWING SHOULD CREST TO A MIN. OF 120 DEGREES

OFF STREET PARKING SHALL BE COMPLETED PRIOR TO ISSUANCE OF CERT. OF OCC. & PROVIDED FOR EMPLOYEES & VISITORS. NO STORAGE OF NON-OPERABLE VEHICLES OR OF MATERIALS PERMITTED

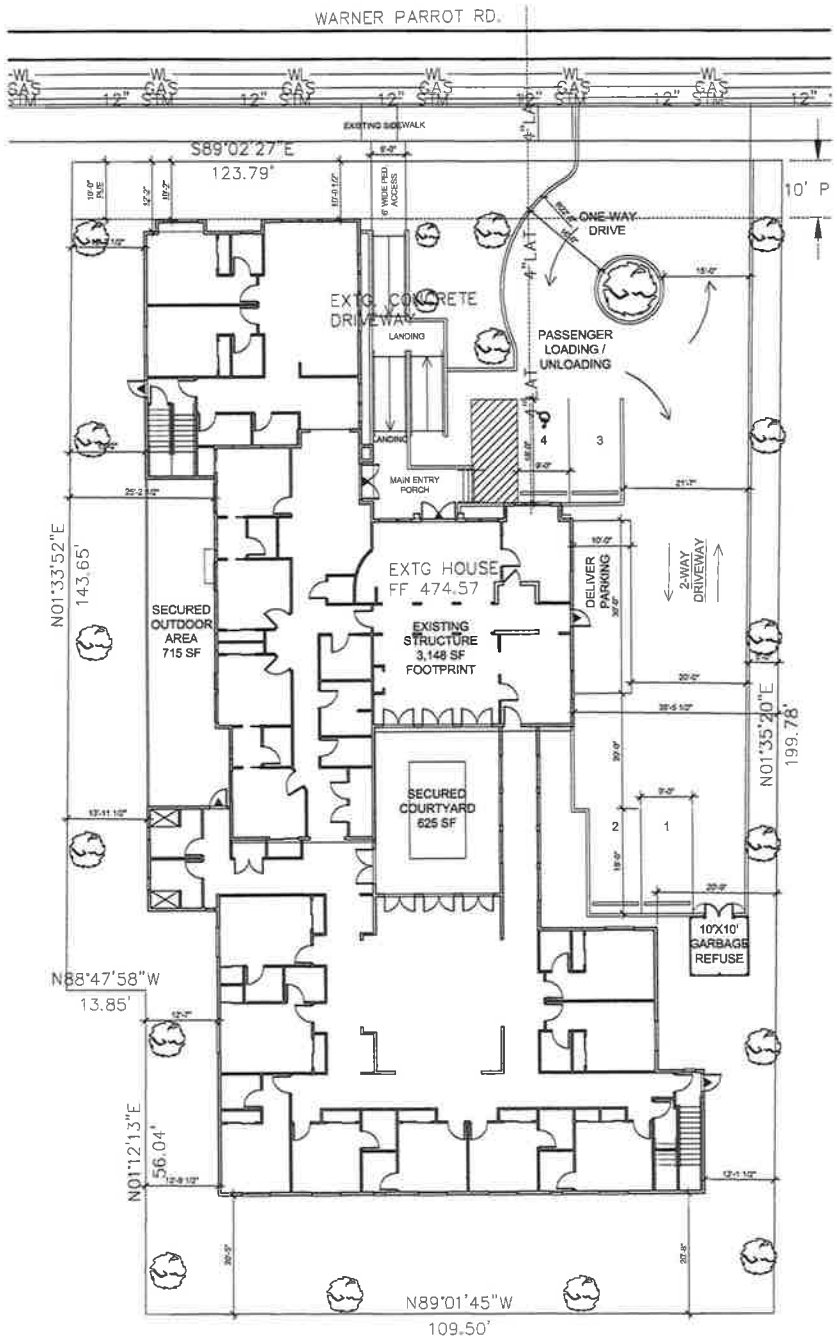
CHANGE TO INCLUDE ALL OUTDOOR FURNITURE SHOWN ON SITE PLAN

ALL PEDESTRIAN WALKWAYS, BUILDING ENTRANCES AND EXITS AND OUTDOOR USE AREAS TO HAVE LIGHTING PROVIDING A MIN. OF 5 FOOT CANDLE ILLUMINATION TYP.

A A0.1 PROPOSED SITE PLAN

SCALE: 3/32"=1'-0"

NORTH



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REGISTERED ARCHITECT
John R MacKusson
PORTLAND, OREGON
STATE OF OREGON
EXPIRES: 12-31-19

ASTERIA CARE
182 Warner Parrott Rd.
Oregon City, Oregon 97045
30 Bed RCF + Memory Care

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PERMIT SET

1

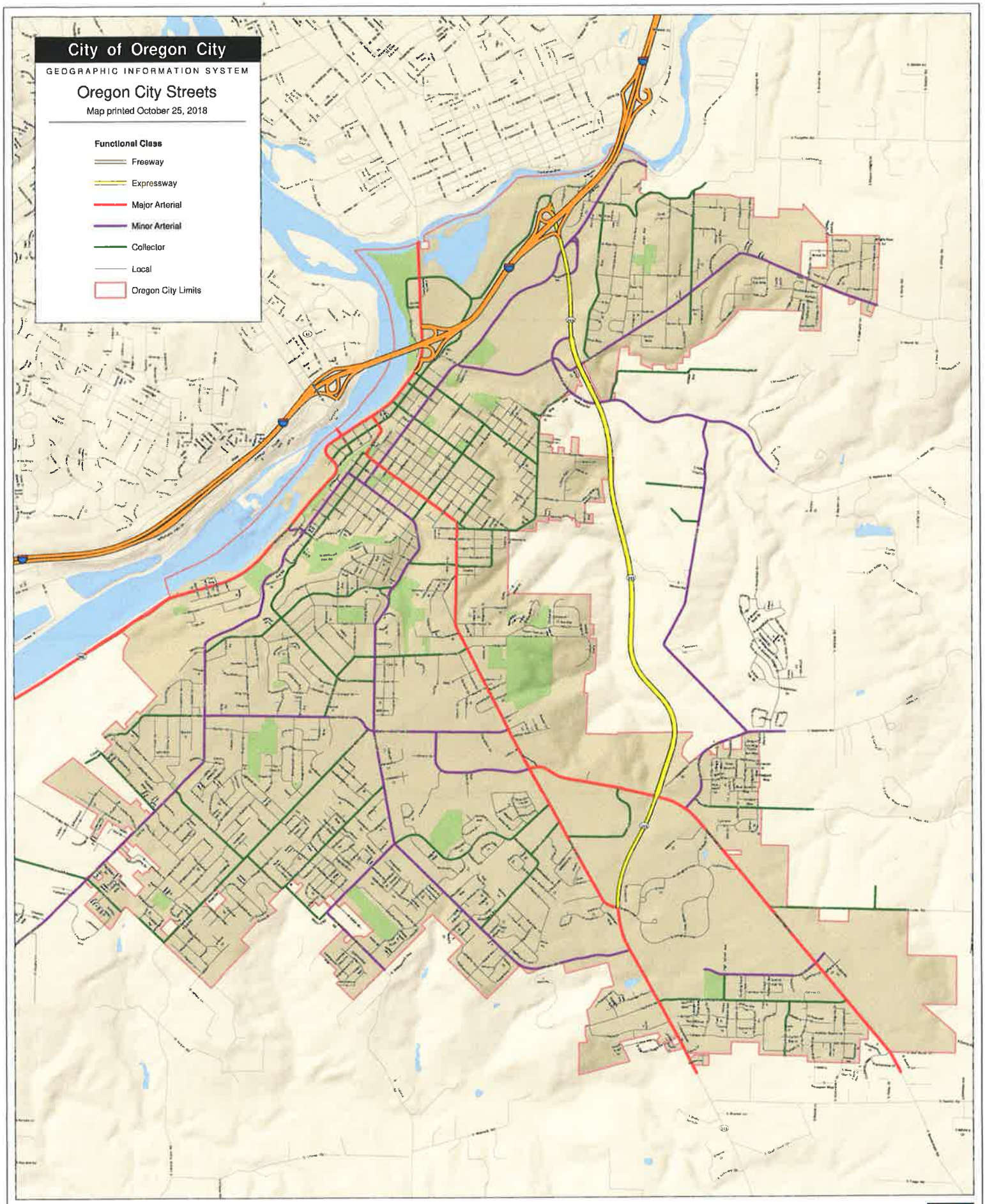
PROPOSED SITE PLAN

REVISED:

DATED: 10/7/2019

DRAWN BY:

SHEET: A0.1



The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, or surveying purposes. Notification of any errors is appreciated.

Please recycle with colored office grade paper.

N W E S

0 0.5 1 2 Miles

0 5,000 10,000 Feet

City of Oregon City
P.O. Box 3040
625 Center St
Oregon City, OR 97045
503-657-0891 phone
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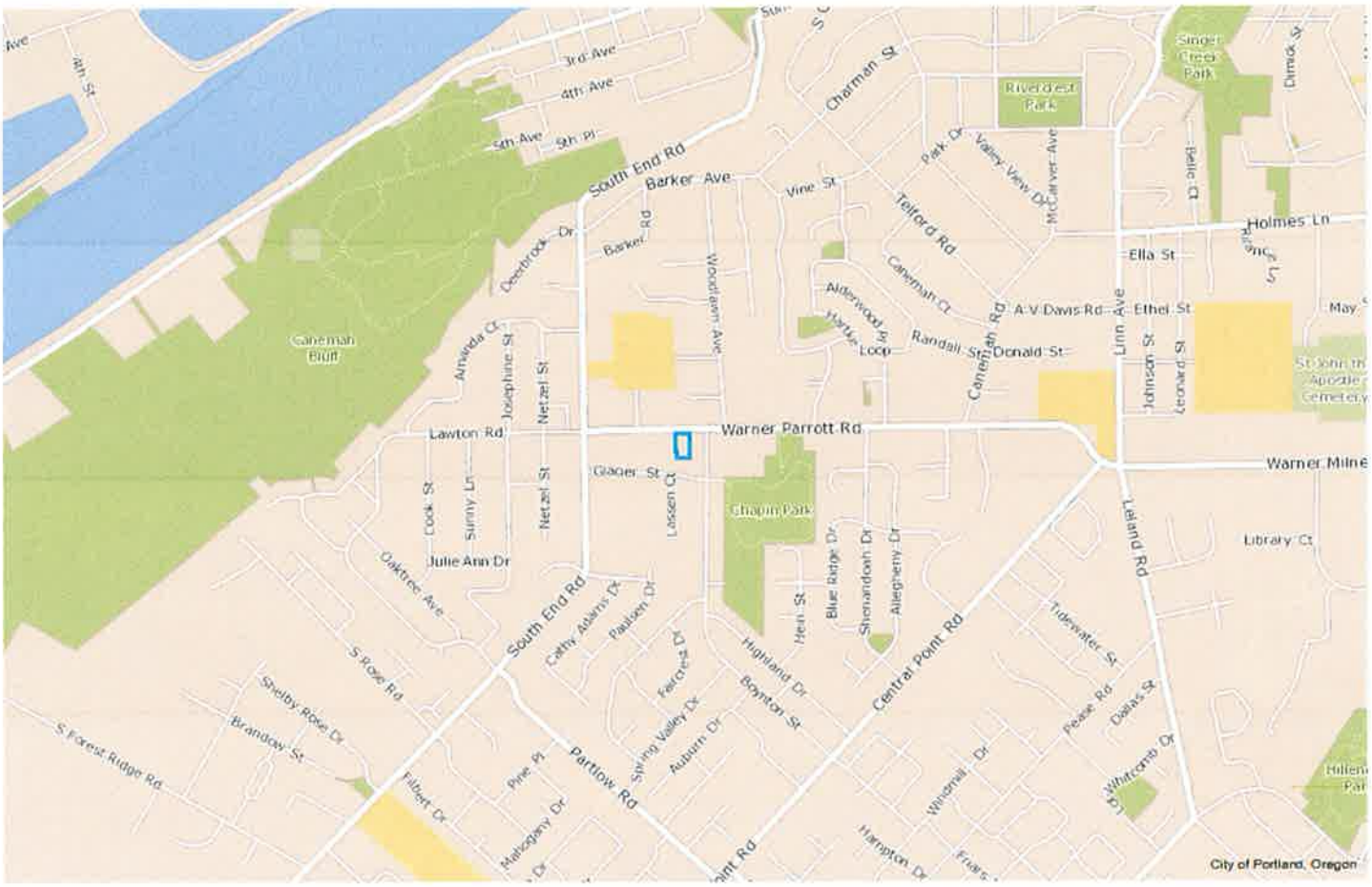
OREGON CITY

Plot date: October 25, 2018
Map name: Streets - Functional Classes - 36x48P.mxd
Plot name: Streets - Functional Classes - 36x48P - 20181025.pdf

Snapshot



SITE

Elmar Dr
King Rd
Warner Parrott Rd
Boynton St
Glacier St
Boynton St
City of Portland, Orego

SITE

Search...

Query Map | Find Features | Measure | Draw | Tool Labels ✕

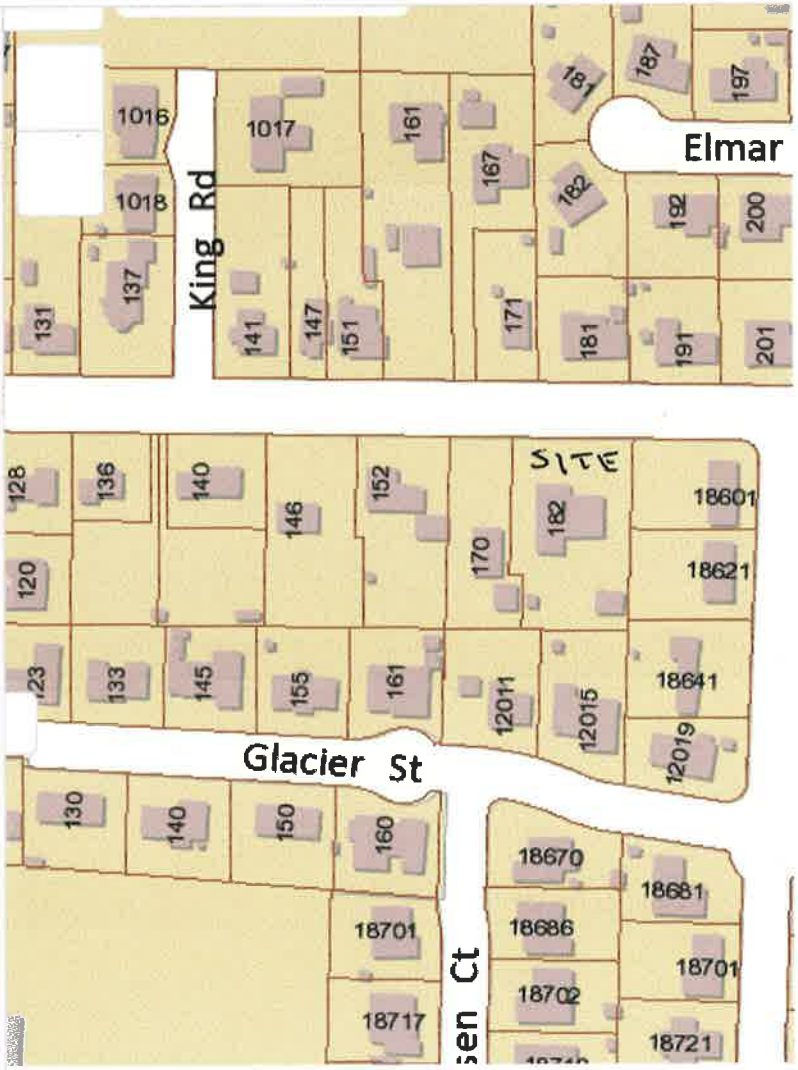
Report | Print | Tools | Share

Pan | Zoom In | Zoom Out | Initial View | Previous | Next | Point

Navigation Tools | Query Tools

Filter Layers... Filter

- [x] Address Numbers
- [ ] Address Pts
- [x] Street Names
- [ ] Streams
- [ ] Contours (2ft)
- [ ] Contours (10ft)
- [ ] Building Outlines
- [x] Taxlots
- [x] Taxlots (Outside UGB)
- [x] Transportation
- [ ] Transportation - PMUF
- [ ] Transportation Planning



Layers

0 100 200ft

Trip Generation Summary

Alternative: Alternative 1
Phase:
Project: 1

Open Date: 1/17/2020
Analysis Date: 1/17/2020

ITE	Land Use	Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
254	ASSISTLIVE 1		39	39	78		4	2	6		3	5	8
	30 Beds												
Unadjusted Volume			39	39	78		4	2	6		3	5	8
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			39	39	78		4	2	6		3	5	8

Total Weekday Average Daily Trips Internal Capture = 0 Percent
Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent
Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

Table 4 - Minimum Public Intersection Spacing Standards

	Distance in Feet between Streets of Various Classifications									
	Between Minor Arterial and Minor Arterial	Between Minor Arterial and Collector	Between Minor Arterial and Neighbor hood Collector	Between Minor Arterial and Local Street	Between Collector Street and Collector Street	Between Collector Street and Neighbor hood Collector	Between Collector and Local Street	Between Neighbor hood Collector and Local Street	Between two adjacent Local Streets	Figure Number
Measured along a Minor Arterial Street	1320	800	600	300	600	300	150	150	150	1
Measured along a Collector Street	800	800	600	300	600	300	150	150	150	2
Measured along a Neighborhood Collector Street	800	600	300	300	300	150	150	150	150	3
Measured along a Local Street	600	600	300	300	300	150	150	150	150	4

Source: City of Oregon City Draft Design Standards.

Crash Analysis and Safety Review Addendum Ro January 23, 2020 Transportation Analysis Letter (TAL) Submitted to the City of Oregon City For Asteria Memory Care Facility at 182 Warner Parrott Road

Date: February 4, 2020

TO: John Replinger, PE, City of Oregon City

From: Gary Spanovich, Charbonneau Engineering

Copy: Frank Charbonneau, PE

CRASH ANALYSIS

Accident data for the three year period between 2015 and 2017 for Warner Parrott Road from Linn Avenue to South End Road, this can be found in the attachments from ODOT.

There were no accidents reported in the immediate vicinity of the site (182 Warner Parrott Road).

The following were the closest intersections with traffic accidents.

- TO THE WEST – To the west the nearest accident location was at King Road & Warner Parrott; In 2016 there were two accidents, one was a driver error and the second was a rear end, failed to avoid driver ahead; the intersection is 450 feet to the east from the proposed site.
- TO THE EAST – To the east the nearest accident was at Birchwood Drive & Warner Parrott; in 2015 a driver was following too close and caused a rear end accident; this intersection is 1200 feet to the east from the proposed site.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Crashes on Warner-Parrott Rd between South End Rd & Linn Ave **Including ending Intersections**
January 1, 2015 through December 31, 2017

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2017														
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2017 TOTAL	0	0	1	1	0	0	0	1	0	1	0	1	0	0
YEAR: 2016														
BACKING	0	1	0	1	0	1	0	1	0	1	0	0	1	0
REAR-END	0	1	1	2	0	1	0	1	1	1	1	0	0	0
SIDESWIPE - OVERTAKING	0	1	1	2	0	1	0	1	1	2	0	0	0	1
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	1	0	1	0	0
2016 TOTAL	0	4	2	6	0	4	0	3	3	5	1	1	1	1
YEAR: 2015														
REAR-END	0	1	0	1	0	2	0	1	0	1	0	0	0	0
2015 TOTAL	0	1	0	1	0	2	0	1	0	1	0	0	0	0
FINAL TOTAL	0	5	3	8	0	6	0	5	3	7	1	2	1	1

Disclaimers: *Effective 2016,* ***collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants.*** *Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.*

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CITY STREET LOCATIONS BY COUNTY - DRIVER BEHAVIOR FORMAT

Crashes on Warner-Parrott Rd between South End Rd & Linn Ave **Including ending Intersections**
January 1, 2015 through December 31, 2017

CLACKAMAS COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP/OWN #1	#2	PEOPLE KILL	INJ	ALC	SPED
05511	11/26/2016	7A	SA	Oregon City	CANEMAH RD AT WARNER-PARROTT RD	TURN		02	028	WET	2	011	011	0	1	N	N
01429	04/14/2017	1P	FR	Oregon City	SHENANDOAH DR AT WARNER-PARROTT RD	TURN		02		DRY	2	010	010	0	0	N	N
03831	09/19/2015	2P	SA	Oregon City	WARNER-PARROTT RD 100 FT W OF BIRCHWOOD DR	REAR		07	026,043	DRY	2	011	011	0	2	N	N
00958	02/28/2016	8P	SU	Oregon City	WARNER-PARROTT RD 75 FT W OF CANEMAH RD	REAR		29		WET	2	010	010	0	0	N	N
05610	12/02/2016	7A	FR	Oregon City	WARNER-PARROTT RD 100 FT W OF KING RD	SS-O		10		WET	2	010	010	0	0	N	N
04153	09/09/2016	12P	FR	Oregon City	WARNER-PARROTT RD 140 FT W OF KING RD	REAR		29	026	DRY	2	011	011	0	1	N	N
04264	09/16/2016	4P	FR	Oregon City	WARNER-PARROTT RD 100 FT W OF LELAND RD	BACK		10	011	DRY	2	011	011	0	1	N	N
02436	05/31/2016	3P	TU	Oregon City	WARNER-PARROTT RD 70 FT W OF LINN AVE	SS-O		13	045	DRY	2	011	011	0	1	N	N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
00	PDO	Not collected for PDO Crashes
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description	Code Termination Date
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level	
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)	
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way	
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher	
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal	
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling	
06	IMP-OVER	IMPROPER PASSING	Improper overtaking	
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely	
08	IMP-TURN	IMPROPER TURN	Made improper turn	
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved	12/31/2002
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving	
11	MECH-DEF	MECH DEFECT	Mechanical defect	
12	OTHER	OTHER	Other (not improper driving)	
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes	
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device	
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road	
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy	
17	ILLNESS	PHYSICAL ILLNESS	Physical illness	
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway	
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing	
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked	
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism	
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes	
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted	
25	TIREFAIL	TIRE FAILURE	Tire Failure	
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle	
27	INATTENT	INATTENTION	Inattention	
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention	
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead	
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed	
31	RACING	SPEED RACING	Speed Racing (per PAR)	
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)	
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)	
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)	
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)	
40	VIEW OBS	VIEW OBSCURED	View obscured	
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder	
51	FAIL LN	F MAINT LANE	Failed to maintain lane	12/31/2015
52	OFF RD	RAN OFF RD	Ran off road	12/31/2015

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	LTRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	LTRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes

ERR CODES

Code	Short Description	Medium Description	Long Description
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELSS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.

EVENT CODES

Code	Short Description	Medium Description	Long Description
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location

EVENT CODES

Code	Short Description	Medium Description	Long Description
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)

Geotechnical Investigation

182 Warner Parrott Road
Oregon City, Oregon

Prepared for:
Waterstone Investments
3 December 2019

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SUPPORTING DATA

Figure 1 Site Location
Figure 2 Tax lot Map
Figure 3 Testing Locations
Laboratory data and Soil logs

1.0 PROJECT AND SITE DESCRIPTIONS

Rapid Soil Solutions Inc (RSS) has prepared this geotechnical report, as requested, for the proposed remodel and addition to the existing structure located at the street address of 192 Warner Parrott Road in Oregon City, Oregon (97045). The site is located in the 'South End' neighborhood of Oregon City, OR. It is positioned on the southern side of Warner Parrott Road roughly 800 feet east of South End Road and 3,900 feet west of its intersection with Leland Road. The site is positioned within a residential neighborhood surrounded on all sides by single family dwellings. East of the site the adjacent lots are assigned the street addresses of 18601 and 18621 Boynton Street. West o f the site the adjacent dwelling is assigned the street address of 170 Warner Parrott Road.

The site can be found in the northwest quarter of the southwest quarter of Section 06, Township 3-South, Range 2-East (W.M.) in Clackamas County and can be distinguished by the lot number 1502. The state tax lot identification number is 32E06CB01502. The modern property dimensions were established by Partition Plat Number 2005-043, where the lot was designated 'parcel 1'. The latitude and longitude of the site are 45.337004 and -122.619628 (45°20'13.2"N, 122°37'10.7"W). The site can be found in the northwestern quarter of the Oregon City 7.5-minute quadrangle (SE ¼ of the Oregon City 15' Quad).

RSS understands that the proposed additions will add square footage along the southern, western, and northern ends of the existing structure. RSS understands that the detached garage in the southeastern corner of the parcel will be demolished as part of the remodel. RSS understands that the existing structure is an adult care facility; RSS additionally understands that the proposed future use is consistent with the existing use of the site.

2.0 SITE CONDITIONS

2.1 Surface Conditions

The subject site is situated within a residential neighborhood within the incorporated area of Oregon City. The site is situated within the original boundary of the city, incorporated in 1844 as the first incorporated city established west of the Rocky Mountains. The site is part of the upland area of the city, in a suburban neighborhood. The local zoning is R-10 within a Low-Density Residential district of the City's comprehensive plan. The site is surrounded on all sides by single-family residential dwellings. The site is half a block west of Chapin Park, 400 feet south of King Elementary School, and 340 feet northeast of the Oregon Christian Church. The subject site and surrounding parcels are generally occupied by dwellings surrounded by short-cropped grass lawns and scattered trees.

General Site Conditions

The subject site currently contains a 6,003 square foot structure originally constructed in 2005. A detached garage is positioned in the southeastern corner of the site. RSS understands that the existing structure is utilized as an adult care facility. Roughly half of the front yard area is occupied by a stamped concrete driveway; this driveway extends along the eastern edge of the structure to the detached garage. The non-developed portions of the parcel

contain a short-cropped grass, a number of small trees are scattered along the western margin of the subject site.

Warner Parrott Road in front of the subject site is an undivided, two-lane road with bike lanes and street parking on the southern side. The road contains curbs and sidewalks on both sides.

Historic Site Conditions

Historic aerial imagery dating back to 1952 was referenced as part of this investigation. These indicated that the land including and surrounding the subjected site was agricultural in 1952. An orchard was positioned to the east of the site, and the subject parcel appears to be bisected by an access road to some agricultural buildings. The 1960 and 1970 images appear to depict relatively consistent conditions on the subject site. Many of the trees on the parcel were removed in the decades and the orchard east of the site was converted to fields. Residential development along Warner Parrott Road appeared to slowly progress around and after the 1960s. By 1970, a row of single-family dwellings are present on the northern side of Warner Parrott Road.

By 1981, the subject site is still part of a moderately large agricultural parcel, surrounded on most sides by single-family residential development. This pocket of land was partitioned and developed between 1994 and 2000; the northern end of the property, containing the original farm house appears to have been left intact. The subject site occupied the eastern side yard of the farmhouse, which appears to still be standing at 170 Warner Parrott Road. The subject site was utilized as a side-yard/vegetable garden until 2005.

Construction of the easing structure can be observed in the image collected in 07/2005. The sit fence and disturbed soils extend up to 25 feet from the edge of the structure. In 2007 and 2008, the front yard area appears to have been mulched, displaying a dark brown coloration. By 2010, both the front and rear yard contained short cropped grasses. No major changed appear to have occurred on site since the existing structures and driveway were completed in 2005.

Slopes

Regionally the subject site is positioned within on the informally named, Oregon City Plateau. This region forms a low-relief, upland surface that extends southwards from Oregon City. This area is capped by a basaltic flow from the latest Pliocene, creating a platform of loess erodible materials. Along the edges of the plateau, incised streams cut steep sided drainages into the underlaying sedimentary rock. The slopes at the subject site are low-relief, consistent with the low-relief nature of the upland platform. The nearest slope break is 0.4 miles northwest of the subject site, at the crest of a northwest-falling landslide above the Willamette River.

Two-foot contours of the subject site, presented by Metro Map and by Oregon City Maps Online, indicate that there is roughly 4-6 feet of elevation change across the subject site. The average slope is about 2-3%. The slopes are descending gently towards the northeast.

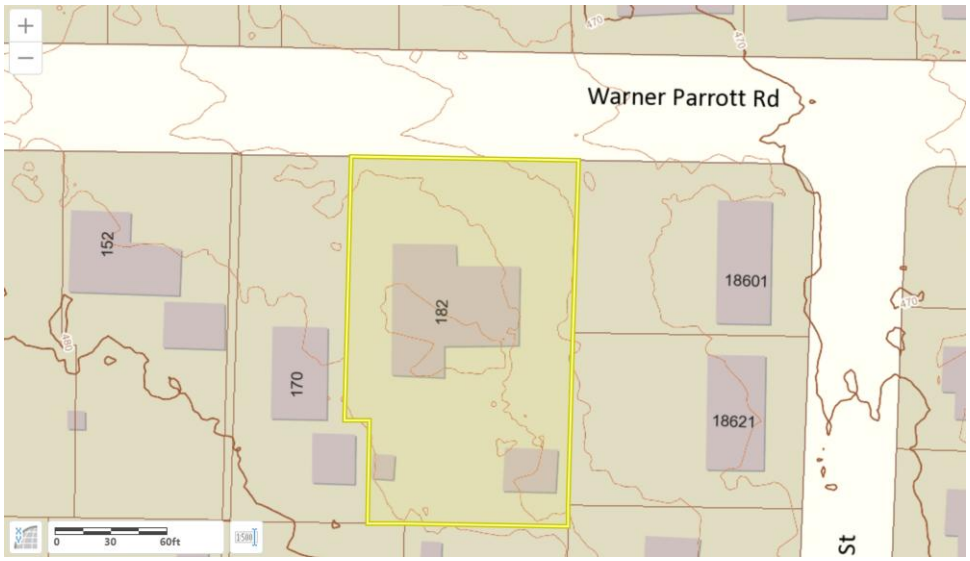


Figure 1: Two-foot contours at the subject site. Oregon City Maps Online.

2.2 Regional Geology

Current geologic literature classifies the slopes underlying the subject site as a flow of the Pliocene-Pleistocene Boring volcanic field. Madin (2009) classifies the flows underlaying the subject site as Basalt of Canemah, a flow unit mapped capping the majority of the local upland surface. The site is generally tucked within the forearc basin of the Cascadia Subdivision system, near the northern/northwestern end of an area informally called the Oregon City Plateau.

Geologic History

The site is tucked between the northern edge of the Northern Willamette Valley and the southern edge of the Portland Basin. These basins are part of the Willamette Lowland in Oregon and among of several topographic and structural depressions that collectively constitute the Puget-Willamette forearc trough of the Cascadia subduction system. The topographic and structural basins generally have low topographic relief, except where dissected by modern rivers and creeks. Structural features in the underlying bedrock (faulting and folding) primarily control the surrounding uplands. The basin formed due to tectonic compressional stress that both intimated and produced prolonged enlargement. They contain a thick accumulation of material preserving a complex record of deposition and erosion (aggradation and incision) within the basins that were emplaced concurrent with basin development. These basin-fill sediments form a thick section, generally divided into a lower mudstone (Sandy River Mudstone) and an upper conglomerate (Troutdale Formation).

The northern eastern edge of the Northern Willamette Valley and Portland Basin are dotted with dozens of young extinct volcanoes known as the Boring volcanic field. These Boring eruptive events formed isolated hills and hill clusters that rise up to 200 meters above the surrounding landscape. Many of the hills are monogenetic volcanoes erupted west of the Cascade arc axis beginning in latest Pliocene time. Boring centers consist of cinder cones and associated lava flows, small shields and lava cones. In the Oregon City area, the flows from a

set of vents southeast of the subject site created a slightly less erodible platform, informally named the Oregon City Plateau. Along the edge of the plateau, where rivers, creeks and streams have incised through the cap formed by the boring volcanic flow, the morphology typically displayed a sharp drop into the underlying sedimentary rock. These steep sided canyons include those containing the Willamette River, Clackamas River, Abernethy Creek, and their tributaries. These areas are prone towards landslides. The nearest slope break to the subject site is 0.4 miles to the north.

The elevation of the plateau ranges from about 120 to 210 meters in elevation. Structurally, the local region consists of a largely flat-lying sequence of volcanic and sedimentary rocks cut by two major and several minor N to NW trending faults.

Site Geology

The geology at the site is mapped as part of the Boring Volcanic field. These flows are typically light-grey to grey colored basalt and basaltic andesite flows that erupted from a series of local vents. These cones are comprised of interstratified cinders and lava. The lava flows typically display block to columnar jointing and, if preserved, vesicular flow tops. Typical eruptive events were brief, during which the volcano built up a cinder cone, which may have then filled with a lava lake that eventually broke out of the crater and flowed across the surrounding landscape. The Boring cinders and lavas weather very rapidly in the wet Portland climate. Cinder cones become masses of red and yellow clay, and lava flows decompose into large rounded core-stones surrounded by sticky red clay. It is noted that flows are often poorly exposed due to deep weathering and thick mantles of loess.

Madin (2009: GMS-119) further classifies the flows at the subject site the flows as the Basalt of Canemah. The flow or flows of dark gray medium-grained, olivine basalt classified as part of this unit, underlies much of the center of the Oregon City 7.5-minute quadrangle. This basalt is typically massive with jointing restricted to well-developed to crude columns 0.6 to 1.5 meters across. Weathering is observed to extend to depths of 3 to 6 meters. In many excavations observed by Madin, all that remained of the highly weathered flows were scattered large rounded corestones within a matrix of red clay. Where observed, intact weathered basalt is typically soft and grey, white or pink with abundant red clay coatings on joint faces.

The weathered top of the basalt of Canemah is locally overlain by massive red-brown to brown sandy silty clay. The material is apparently sedimentary in origin, comprising a matrix of red-brown to brown clay with variable amounts of heterogenous lithic sand, silt, fine lithic and feldspathic sand and rare angular quartz sand. This unit is patchy and appears to never exceed 1-3 meters. The source of this deposit may include airfall tephra from later Boring eruptions, windblown sediments and/or an alluvial component form the earliest drainages established of the surface of the basalt.

2.3 Field Exploration and Subsurface Conditions

2.3.1 Field Explorations

RSS conducted field explorations of the subject on November 19th, 2019. RSS traversed all exterior areas of the subject site and viewed adjacent parcels from the site and Warner Parrott Road. The conditions observed on site are consistent with the mapped information presented above.

The slopes on the subject site are very low and are smooth. Some grading was likely conducted when the house was constructed.

No surface water, springs or pockets of unusual vegetation were observed on the interior areas of the subject site. No substantial grade changes are present on the subject site. No indications of active instability such as tension cracks, sunken grades, rotated blocks, scarps or other suspicious morphological features were observed.

The soils on the subject site, as mapped by the USDA National Resource Conservation Service Web Soil, are classified as Bornstedt silt loam (0-8% slopes) and Jory stony silt loam (3-8% slopes).
The Bornstedt silt loam forms on hillslopes and terraces from mixed old alluvium. It is classified as moderately well drained with a water table often found at depths of 24 to 36 inches. The typical profile is comprised of silt loam (H1L 0"-8"), silty clay loam (H2: 8"-33"), and silty clay (H3: 33"-71").
The Jory stony silt loam forms on hillslopes from colluvium. It is classified as well drained with a water table generally found at depths greater than 80 inches. The typical profile is comprised of stony silt loam (H1: 0"-8") and stony silty clay (H2: 8"-48", H3: 48"-60").

2.3.2 Subsurface Conditions

A total of three (3) shallow hand auger borings were attempted at the subject site. RSS conducted these borings to variable depths, ranging from 2' bgs to 4' bgs. All three found some surficial fill/disturbed materials, likely from the construction of the dwelling in 2005. All three coring contained very stiff, fine grained, silty clays of a brown coloration with an orange to orange-red hue. Moisture content ranged from 15.6 percent to 18.9 percent.

A Geologist in Training (GIT) observed the borings and logged the subsurface materials. Samples were transported to the lab for further testing in sealed plastic bags. The soil descriptions were reviewed by a professional engineer. The logs were created using the Unified Soil Classification and Visual Manual Procedure (ASTM-D 2488). No groundwater was encountered during this investigation.

2.3.3 Groundwater
Groundwater was not encountered.

3.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

3.1 Foundation Design

The building foundations may be installed on either engineered fill or firm native sub-grade that is found at a depth of about **2 feet**. This depth may be locally variable and should be confirmed by a geotechnical engineer or their representative at the time of construction. ***Please allow 24hours notice to call for foundation inspections.***

Continuous wall and isolated spread footings should be at least 16 and 24 inches wide, respectively. The bottom of exterior footings should be at least 16 inches below the lowest adjacent exterior grade. The bottom of interior footings should be at least 12 inches below the base of the floor slab.

Footings placed on firm native sub-grade CLAY should be designed for an allowable bearing capacity of *1,500 pounds per square foot* (**psf**). The recommended allowable bearing pressure can be doubled for short-term loads such as those resulting from wind or seismic forces. If a greater bearing capacity is needed then when over excavating the fill soils replace with rock for 2,500psf.

Based on our analysis the total post-construction settlement is calculated to be less than 1 inch, with differential settlement of less than 0.5 inch over a 50-foot span for maximum column, perimeter footing loads of less than 100 kips and 6.0 kips per linear foot.

Lateral loads on footings can be resisted by passive earth pressure on the sides of the structures and by friction at the base of the footings. An allowable lateral bearing pressure of 150 *pounds per cubic foot* (**psf/f**) below grade may be used. Adjacent floor slabs, pavements or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

If construction is undertaken during periods of rain, then I recommend a 2-inch (or greater) layer of compacted, crushed rock be placed over the native soil. The clayey soil is moisture sensitive. Meaning when dry it is firm and non-yielding but exposed to season rains it will lose its strength and need to be excavated and replaced with rock. See section 4.1.2 for wet weather conditions.

3.2 Retaining Walls and Embedded Walls

Default lateral soil load for the design of basement and retaining walls supporting level backfill shall be 35 psf/ft for laterally unrestrained retaining walls and 60 psf/ft for laterally restrained retaining walls.

For embedded building walls, a superimposed seismic lateral force should be calculated based on a dynamic force of $5H^2$ pounds per lineal foot of wall, where H is the height of the wall in feet and applied at 1/3 H from the base of the wall. The wall footings should be designed in accordance with the guidelines provided in the "Foundation Design" section of this report. These design parameters have been provided assuming that back-of-wall drains will be installed to prevent buildup of hydrostatic pressures behind all walls.

The backfill material placed behind the walls and extending a horizontal distance equal to at least half of the height of the retaining wall should consist of granular retaining wall backfill as specified in the "Structural Fill" section of this report. The wall backfill should be compacted to a minimum of 95 percent of the maximum dry density, as determined by ASTM D698. However, backfill located within a horizontal distance of 3 feet from the retaining walls should only be compacted to approximately 92 percent of the maximum dry density, as determined by ASTM D698. Backfill placed within 3 feet of the wall should be compacted in lifts less than 6 inches thick using hand-operated tamping equipment (e.g., jumping jack or vibratory plate compactors). If flat work (e.g., sidewalks or pavements) will be placed atop the wall backfill, we recommend that the upper 2 feet of material be compacted to 95 percent of the maximum dry density, as determined by ASTM D698.

A minimum 12-inch-wide zone of drain rock, extending from the base of the wall to within 6 inches of finished grade, should be placed against the back of all retaining walls. Perforated collector pipes should be embedded at the base of the drain rock. The drain rock should meet the requirements provided in the "Structural Fill" section of this report. The perforated collector pipes should discharge at an appropriate location away from the base of the wall. The discharge pipe(s) should not be tied directly into storm water drain systems, unless measures are taken to prevent backflow into the wall's drainage system. Settlements of up to 1 percent of the wall height commonly occur immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures.

Engineering values summary

Bearing capacity soil	1,500psf
Bearing capacity rock	2,500psf
Coefficient of friction soil	0.30
Coefficient of friction rock	0.45
Active pressure	35pcf
Passive pressure	300pcf

A safety factor of 1.5 is included in the above values.

3.3 Seismic Design Criteria

We understand that the seismic design criteria for this project is based on the 2015 IBC, Section 1615 and the USGS web site using a Latitude of 45.337004 and a Longitude of -122.619628, soil site class D.

	Short Period	1 Second
Maximum Credible Earthquake Spectral Acceleration	S_S = 0.987 g	S_1 = 0.423 g
Adjusted Spectral Acceleration	S_{MS} = 1.091 g	S_{M1} = 0.667 g
Design Spectral Response Acceleration Perimeters	S_{DS} = 0.727 g	S_{D1}= 0.445 g

3.4 Geohazard Review

The Oregon HazVu: Statewide Geohazard Viewer and Metro Map were reviewed on 22 November 2019 to investigated mapped geological hazards.

This review indicates that the subject site is situated outside the 100-year floodplain, as mapped by FEMA.

The expected earthquake-shaking hazard is classified as 'very strong'. The mapped earthquake liquefaction hazard at the subject site is not classified. The mapped geology (basaltic bedrock) is not susceptible to liquefaction during severe shaking events.

Numerous faults cut through the local region. DOGAMI classifies some of these as active. The nearest fault mapped as active by DOGAMI is the Bolton Fault, extending east-southeast off the Oswego Fault, roughly 1.5 miles northeast of the subject site.
There are no landslides mapped on or adjacent to the subject site. The edges of the Oregon City Plateau are rimmed by landslides. The subject site not situated near the edge of the plateau.

4.0 CONSTRUCTION RECOMMENDATIONS

4.1 Site Preparation

On this site only disturb the area in which can be covered with rock during the day. The moisture sensitive clay soil when exposed to wet weather becomes soft and yielding. See wet weather conditions below.

4.1.1 Proof Rolling

Following stripping and prior to placing aggregate base course, pavement the exposed sub-grade should be evaluated by proof rolling. The sub-grade should be proof rolled to identify soft, loose, or unsuitable areas. Please give 24-hour notice to observe the proof rolling. Soft or loose zones identified during the field evaluation should be compacted to an unyielding condition or be excavated and replaced with structural fill, as discussed in the *Structural Fill* section of this report.

4.1.2 Wet Weather Conditions

The near-surface soils will be difficult during or after extended wet periods or when the moisture content of the surface soil is more than a few percentage points above optimum. Soils that have been disturbed during site preparation activities, or soft or loose zones identified during probing or proof rolling, should be removed and replaced with compacted structural fill. Track-mounted excavating

equipment will be required during wet weather. The imported granular material should be placed in one lift over the prepared, undisturbed sub-grade and compacted using a smooth drum, non-vibratory roller. Additionally, a geo-textile fabric should be placed as a barrier between the sub-grade and imported granular material in areas of repeated traffic.

4.2 Excavation

Subsurface conditions of accessible cleared areas of the project site show predominately CLAY to the depth explored (4.0 feet). Excavations in the soils may be readily accomplished with conventional earthwork equipment with a smooth bucket (no teeth).

4.3 Structural Fills

Fills should be placed over sub-grade prepared in compliance with Section 4.1 of this report. Material used, as structural fill should be free of organic matter or other unsuitable materials and should meet specifications provided in OSSC, depending upon the application. A discussion of these materials is in the following sections.

4.3.1 Native Soils

Laboratory testing indicates that the moisture content of the near-surface is greater than the optimum moisture content of the soil required for satisfactory compaction. This is depending on the weather conditions at the time of excavation. See section 4.3.2 for imported granular fill.

4.3.2 Imported Granular Fill

The imported granular material must be reasonably well graded to between coarse and fine material and have less than 5% by weight passing the US Standard No.200 Sieve. Imported granular material should be placed in lifts 8 to12 inches and be compacted to at least 95% of the maximum dry density, as determined by ASTM D 698. Where imported granular material is placed over wet or soft soil sub-grades, we recommend that a geo-textile serve as a barrier between the sub-grade and imported granular material.

4.4 Drainage Considerations

The Contractor shall be made responsible for temporary drainage of surface water and groundwater as necessary to prevent standing water and/or erosion at the working surface. We recommend removing only the foliage necessary for construction to help minimize erosion. Slope the ground surface around the structures to create a minimum gradient of 2% away from the building foundations for a distance of at least 5 feet. Surface water should be directed away from all buildings into drainage swales or into a storm drainage system. Foundation house drains are required.

5.0 CONSTRUCTION OBSERVATIONS

Satisfactory pavement and earthwork performance depends on the quality of construction. Sufficient monitoring of the activities of the contractor is a key part of determining that the work is completed in accordance with the construction drawings and specifications. I recommend that a geotechnical engineer observe general excavation, stripping, fill placement, and sub-grades in addition to base. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions requires experience. Therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of the addressee, and their architects and engineers for aiding in the design and construction of the proposed development. It is the addressee's responsibility to provide this report to the appropriate design professionals, building officials, and contractors to ensure correct implementation of the recommendations.

The opinions, comments and conclusions presented in this report were based upon information derived from our literature review, field investigation, and laboratory testing. Conditions between, or beyond, our exploratory borings may vary from those encountered. Unanticipated soil conditions and seasonal soil moisture variations are commonly encountered and cannot be fully determined by merely taking soil samples or soil borings. Such variations may result in changes to our recommendations and may require that additional expenditures be made to attain a properly constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

If there is a substantial lapse of time between the submission of this report and the start of work at the site; if conditions have changed due to natural causes or construction operations at, or adjacent to, the site; or, if the basic project scheme is significantly modified from that assumed, it is recommended this report be reviewed to determine the applicability of the conclusions and recommendations.

The work has been conducted in general conformance with the standard of care in the field of geotechnical engineering currently in practice in the Pacific Northwest for projects of this nature and magnitude. No warranty, express or implied, exists on the information presented in this report. By utilizing the design recommendations within this report, the addressee acknowledges and accepts the risks and limitations of development at the site, as outlined within the report.

APPENDIX

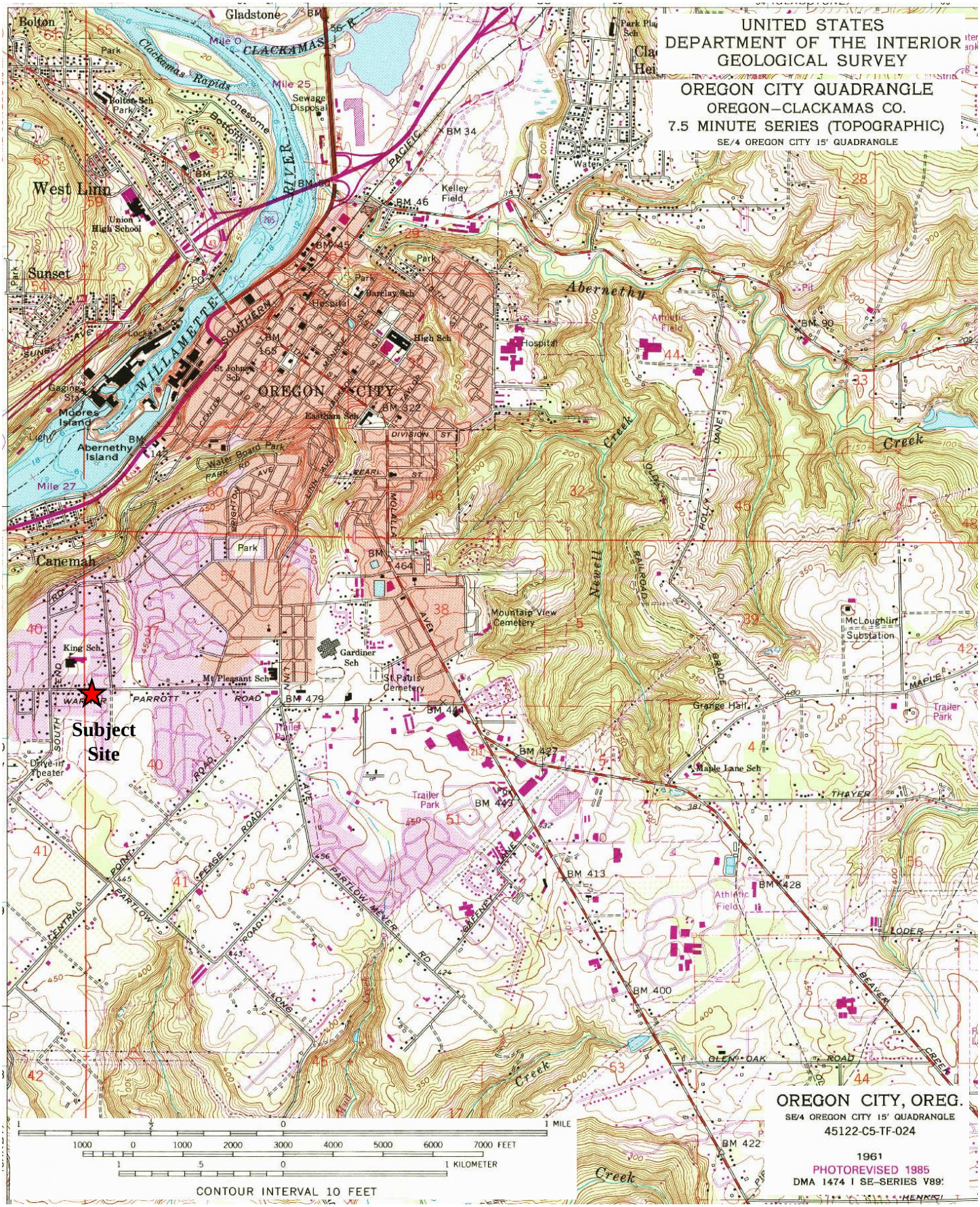


Figure 1: Subject site location on the northwest quarter of the Oregon City 7.5-minute quadrangle.

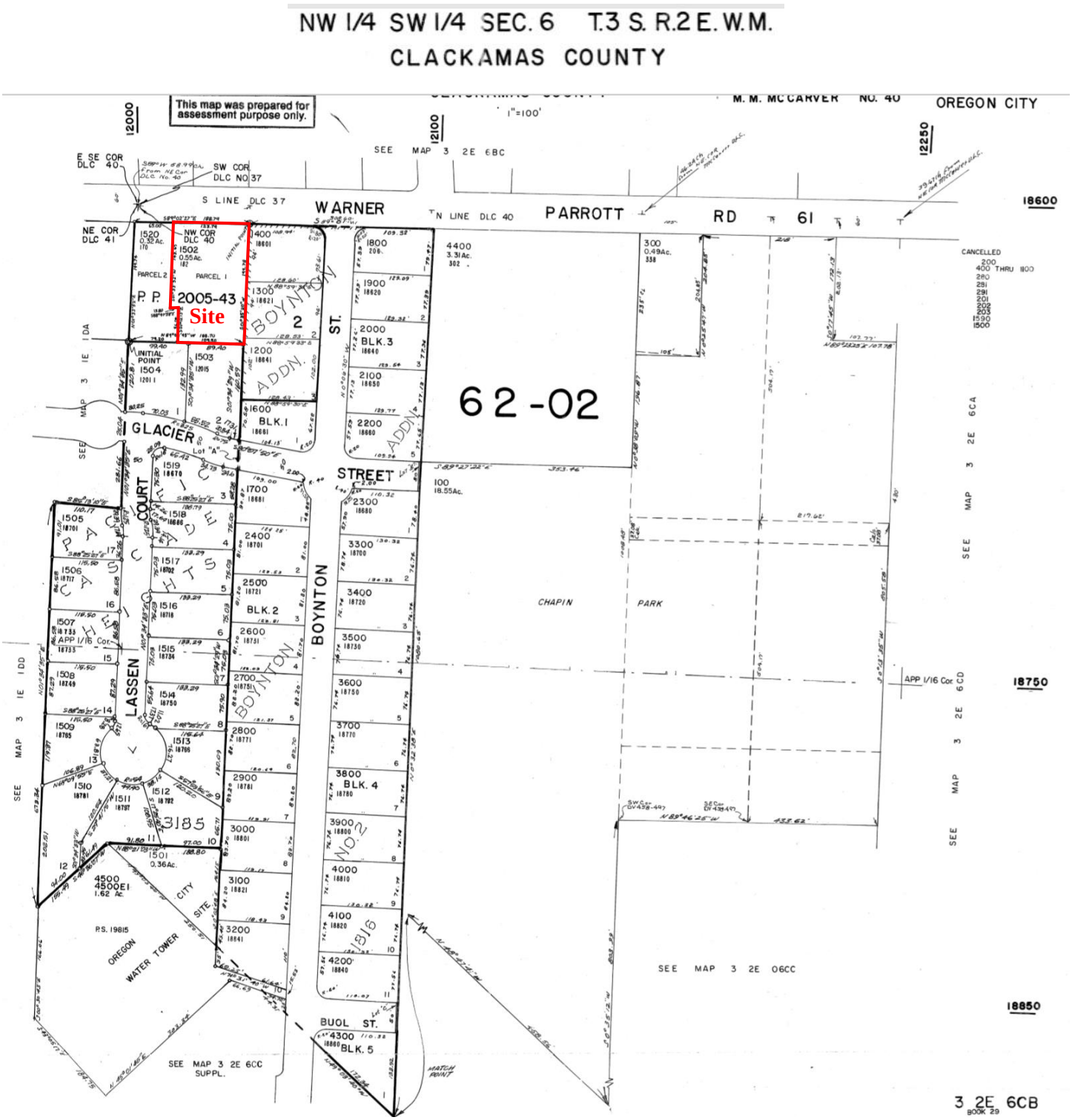


Figure 2: Subject site location on the Clackamas County Assessor's Map

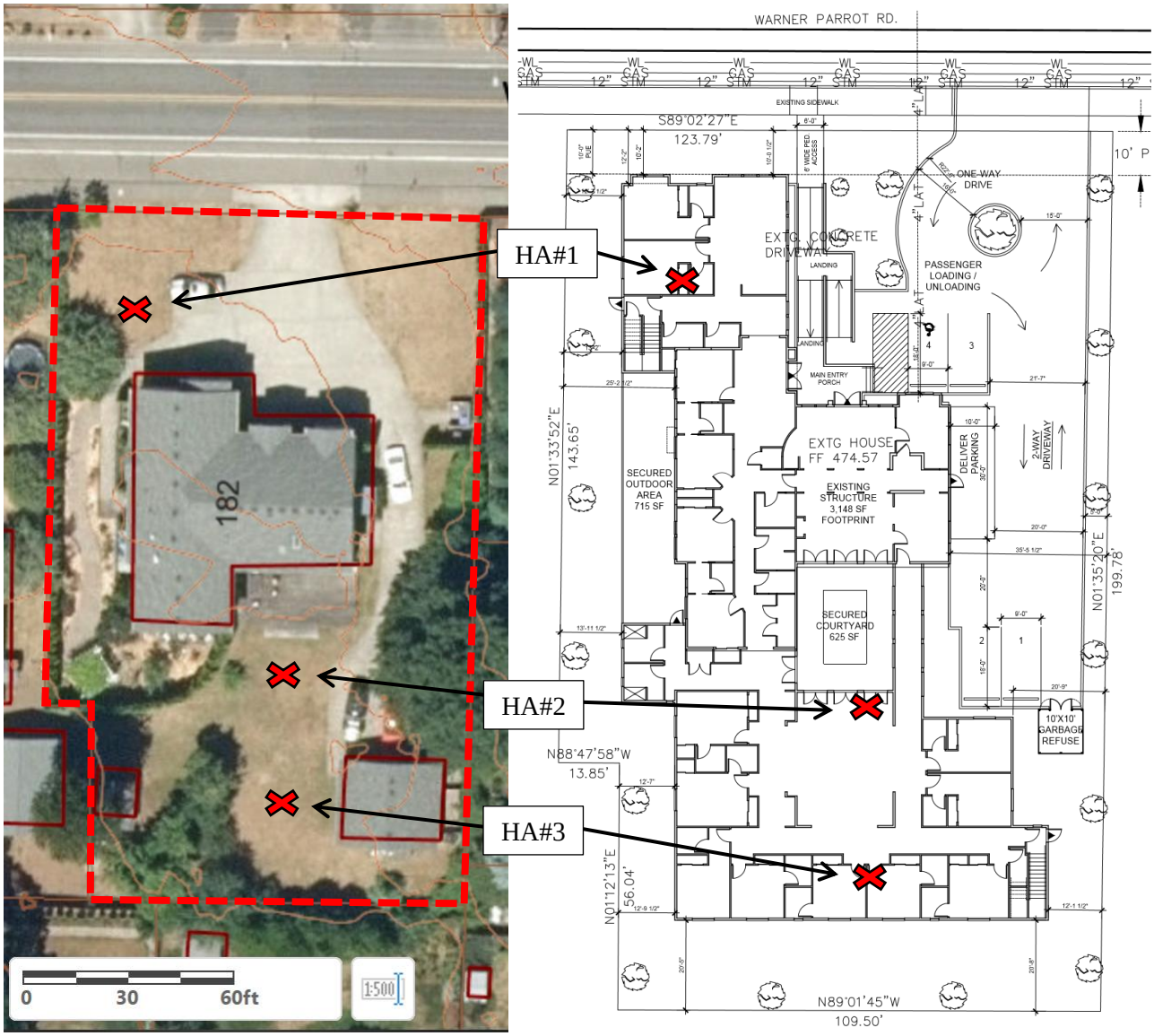


Figure 3: Approximate boring locations on a 2018 aerial image (left) and site plan (right)

Lab Results

Project Name: 182 Warner Parrott Road, Oregon City Sample Date 11/19/2019

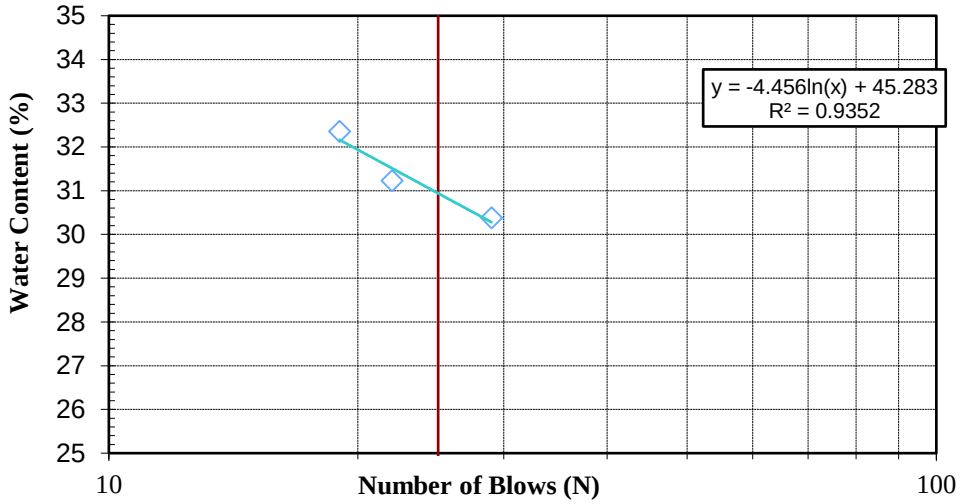
Moisture

	Sample number	HA#1	HA#2	HA#3		
1	Date and time in oven	11/19/19 12:15 PM	11/19/19 12:15 PM	11/19/19 12:15 PM		
2	Date and time out of oven	11/20/19 11:45 AM	11/20/19 11:45 AM	11/20/19 11:45 AM		
3	Depth (ft)	2	4	2.3		
4	Tare No.	1	2	3		
5	Tare Mass	233	233	234		
6	Tare plus sample moist	1073	1138	1166		
7	Tare plus sample dry	942	1016	1018		
8	Mass of water (g)	131	122	148		
9	Mass of soil (g)	709	783	784		
10	Water Content (%)	18.5	15.6	18.9		

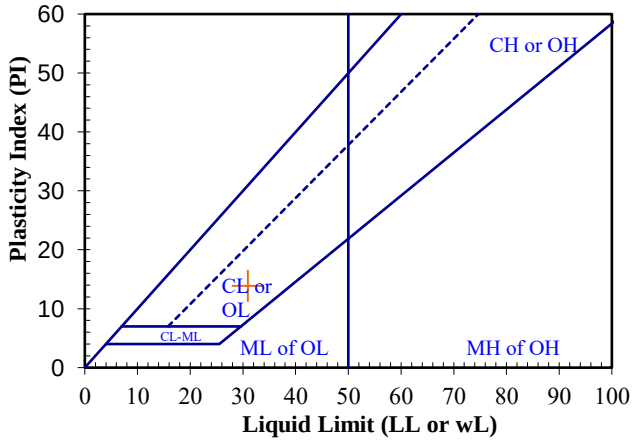
Atterberg Limit Test

Sample Number: HA#1 Depth: 2 feet

		Liquid Limit			Plastic Limit	
1	Tare No.	D#1.1	D#1.2	D#1.3	R#1.1	R#1.2
2	Tare Mass (g)	39.08	39.48	40.15	39.38	40.14
3	Tare Plus Wet Soil (g)	76.35	83.86	81.78	50.16	52.12
4	Tare Plus Dry Soil (g)	67.24	73.30	72.08	48.59	50.37
5	Mass of Water (g)	9.11	10.56	9.70	1.57	1.75
6	Mass of Soil (g)	28.16	33.82	31.93	9.21	10.23
7	Water Content (%)	32.35	31.22	30.38	17.05	17.11
8	No. Blows	19	22	29		



Liquid Limit (%) **30.9**
Plastic Limit (%) **17.1**
Plasticity Index (%) **13.9**
USCS Classification of fines: CL



Rapid Soil Solutions INC

HA#1

Surface Elevation:
Boring Date: 19 Nov 2019
Boring Location: Oregon City, OR
Drilling Method: Hand Auger

Depth	Remarks	Moisture (%)	Dry Density	Blow Counts	Sample Type	Water Table		
0						GWT not encountered	FL	FILL and top soil. Damp, medium stiff, medium dark brown, gravelly SILT to gravely CLAY with some fine organics. Gravels rounded, medium.
1							TP	Damp, medium stiff, medium dark brown, clayey SILT to silty CLAY with some fine orgnaics. Old subsoil horizon.
2	LL=31, PI=14	18.5					CL	Damp-dry, very stiff, orange hued light brown, fine grained, CLAY to silty CLAY.
3								Boring completed at depth of 2 feet.
4								
5								
6								
7								

LOG OF BORING

RAPID SOIL SOLUTIONS	**182 Warner Parrott Road**	**Plate 1**

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\182 Warner Parrott Road Geotech 19Nov19\182 Warner Parrott Rd Logs.log Date: 11/22/2019

HA#2

Surface Elevation:
Boring Date: 19 Nov 2019
Boring Location: Oregon City, OR
Drilling Method: Hand Auger

Depth	Remarks	Moisture (%)	Dry Density	Blow Counts	Sample Type	Water Table		
0						GWT not encountered	FL	FILL and top soil. Damp, soft, medium rich brown, clayey SILT to silty CLAY with some fine organics.
1								
2							CL	Damp-dry, stiff, orange hued light brown, fine grained, CLAY to silty CLAY.
3							CL	Dry, very stiff, orange-brown to reddish-orange brown, fine grained, CLAY to silty CLAY with trace, small, subrounded, spherical, gravels.
4		15.6						Boring completed at depth of 4 feet.
5								
6								
7								

LOG OF BORING

RAPID SOIL SOLUTIONS	**182 Warner Parrott Road**	**Plate 2**

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\182 Warner Parrott Road Geotech 19Nov19\182 Warner Parrott Rd Logs.log Date: 11/22/2019

HA#3

Surface Elevation:
Boring Date: 19 Nov 2019
Boring Location: Oregon City, OR
Drilling Method: Hand Auger

Depth	Remarks	Moisture (%)	Dry Density	Blow Counts	Sample Type	Water Table		
0						GWT not encountered	TP	FILL and top soil. Damp, soft, medium rich brown, clayey SILT to silty CLAY with some fine organics.
1								
2		18.9					CL	Damp-dry, very stiff, orangeish light brown, fine grained, CLAY to silty CLAY.
3								Boring completed at depth of 2.3 feet.
4								
5								
6								
7								

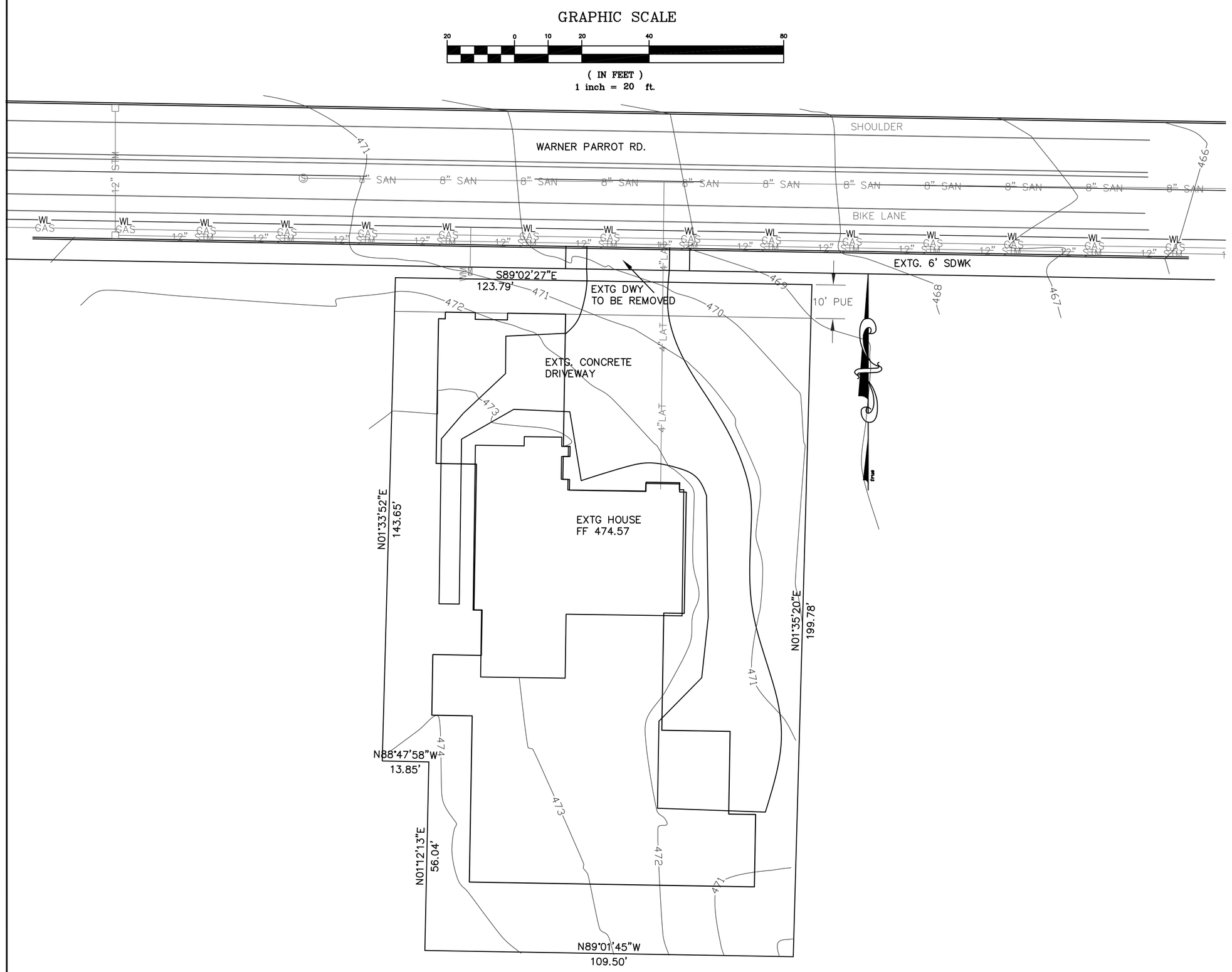
LOG OF BORING

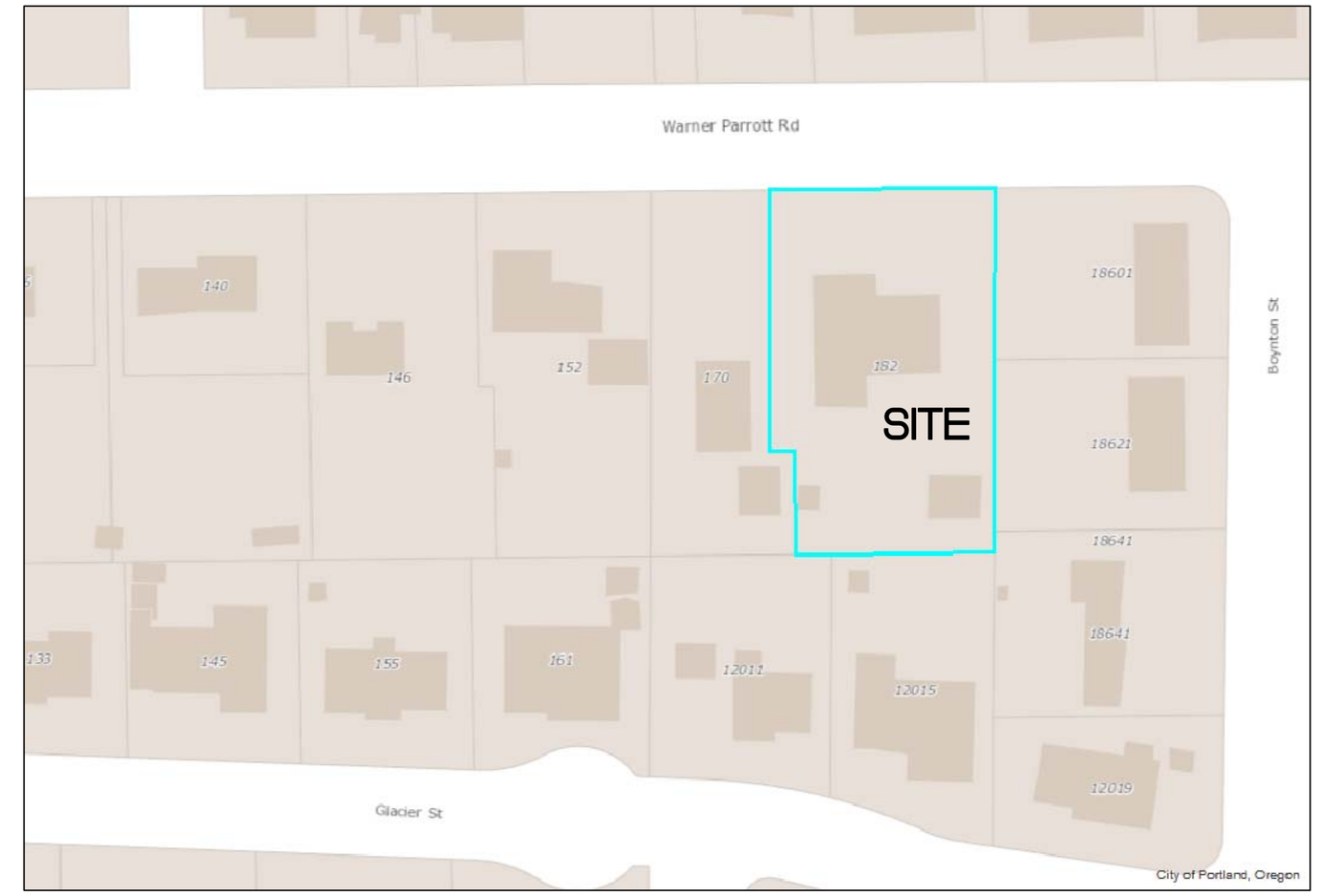
RAPID SOIL SOLUTIONS

182 Warner Parrott Road

Plate 3

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Users\Owner\Documents\In Progress Files\182 Warner Parrott Road Geotech 19Nov19\182 Warner Parrott Rd Logs.log Date: 11/22/2019





VICINITY MAP N.T.S

TABLE OF CONTAINS::

E1 EXISTING SITE TOPOGRAPHY AND COVER SHEET
E2 PROPOSED GRADING AND UTILITY PLAN

DATE	REVISION	BY

DESIGNED: RSG
DRAWN: RSG
CHECKED: RSG
APPROVED:

SHEET E1 OF E2

REGISTERED PROFESSIONAL ENGINEER
OREGON
PRELIMINARY
RICHARD STEFAN
EXPIRES 6/30/21

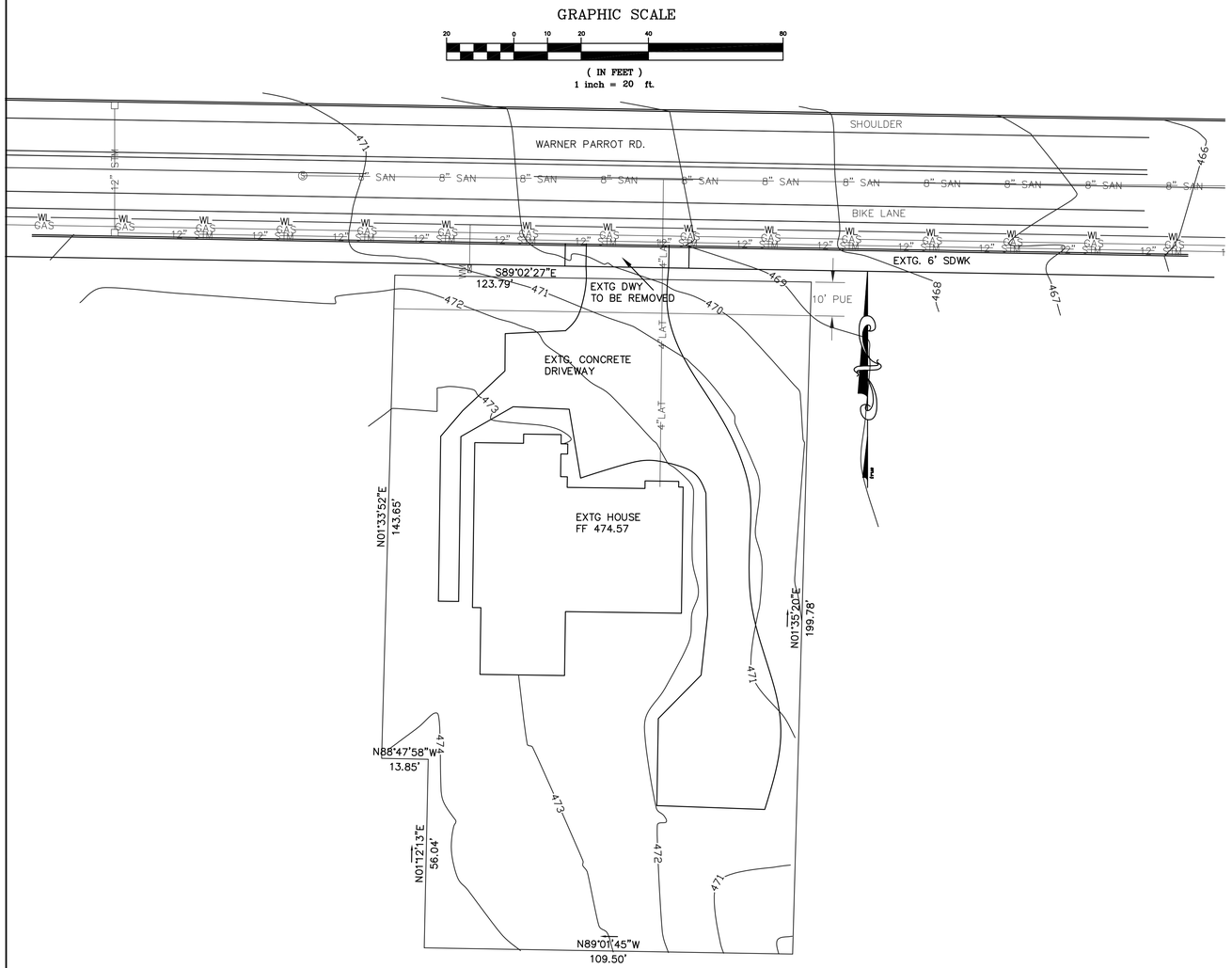
SCALE VERT. 1"=2' HORZ. 1"=20'
DATE: 10-2019
CASE FILE:

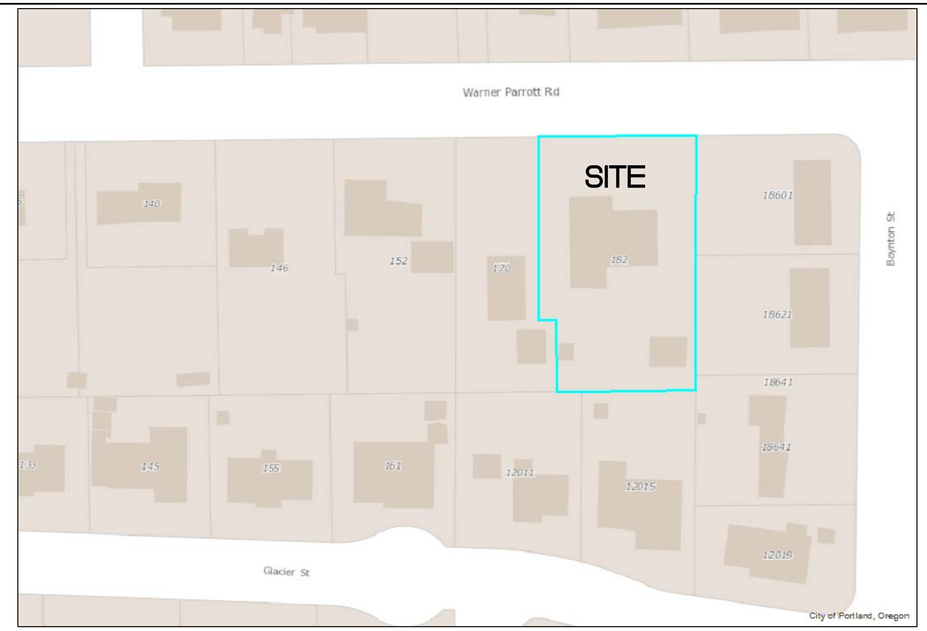
LEGAL		
SW 1/4 OF	TWP.	RANGE
SECTION 6	3S	2 EAST

PROJECT NAME: DONOVAN – MEMORY CARE
EXISTING SITE TOPOGRAPHY AND COVER SHEET

CLIENT: CONTACT NAME EDDIE RADULESCU
503-679-2493

RSG ENGINEERING, CO.
CIVIL ENGINEERING / CONSTRUCTION MANAGEMENT
16802 NE 152ND AVE, BRUSH PRAIRIE, WA 98606
PH (503) 380-6179, FAX (360) 891-7945
E-MAIL: RSGENG@COMCAST.NET





VICINITY MAP N.T.S

TABLE OF CONTAINS::

E1 EXISTING CONDITIONS AND VICINITY MAP
E2 PROPOSED GRADING AND UTILITY PLAN (PROPOSED CONDITIONS)

DATE	REVISION	BY

DESIGNED: RSG
DRAWN: RSG
CHECKED: RSG
APPROVED:

SHEET E1 OF E2

REGISTERED PROFESSIONAL ENGINEER
OREGON
PRELIMINARY
RICHARD STEFAN
EXPIRES 6/30/21

SCALE VERT. 1"=2' HORZ. 1"=20'
DATE: 10-2019
CASE FILE:

LEGAL		
SW 1/4 OF	TWP.	RANGE
SECTION 6	3S	2 EAST

PROJECT NAME: DONOVAN – MEMORY CARE
EXISTING CONDITIONS AND VICINITY MAP

CLIENT: CONTACT NAME EDDIE RADULESCU
503-679-2493

RSG ENGINEERING, CO.
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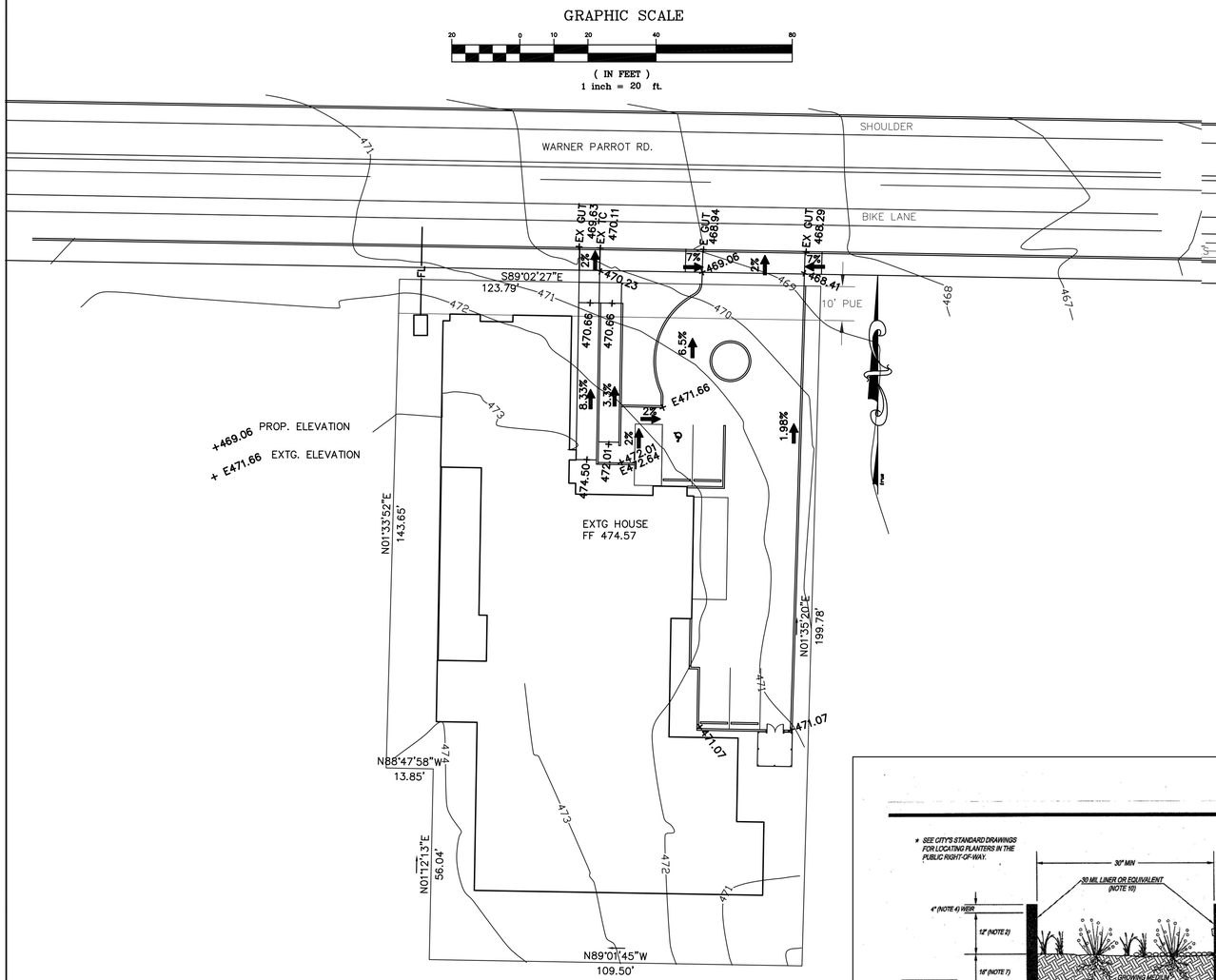
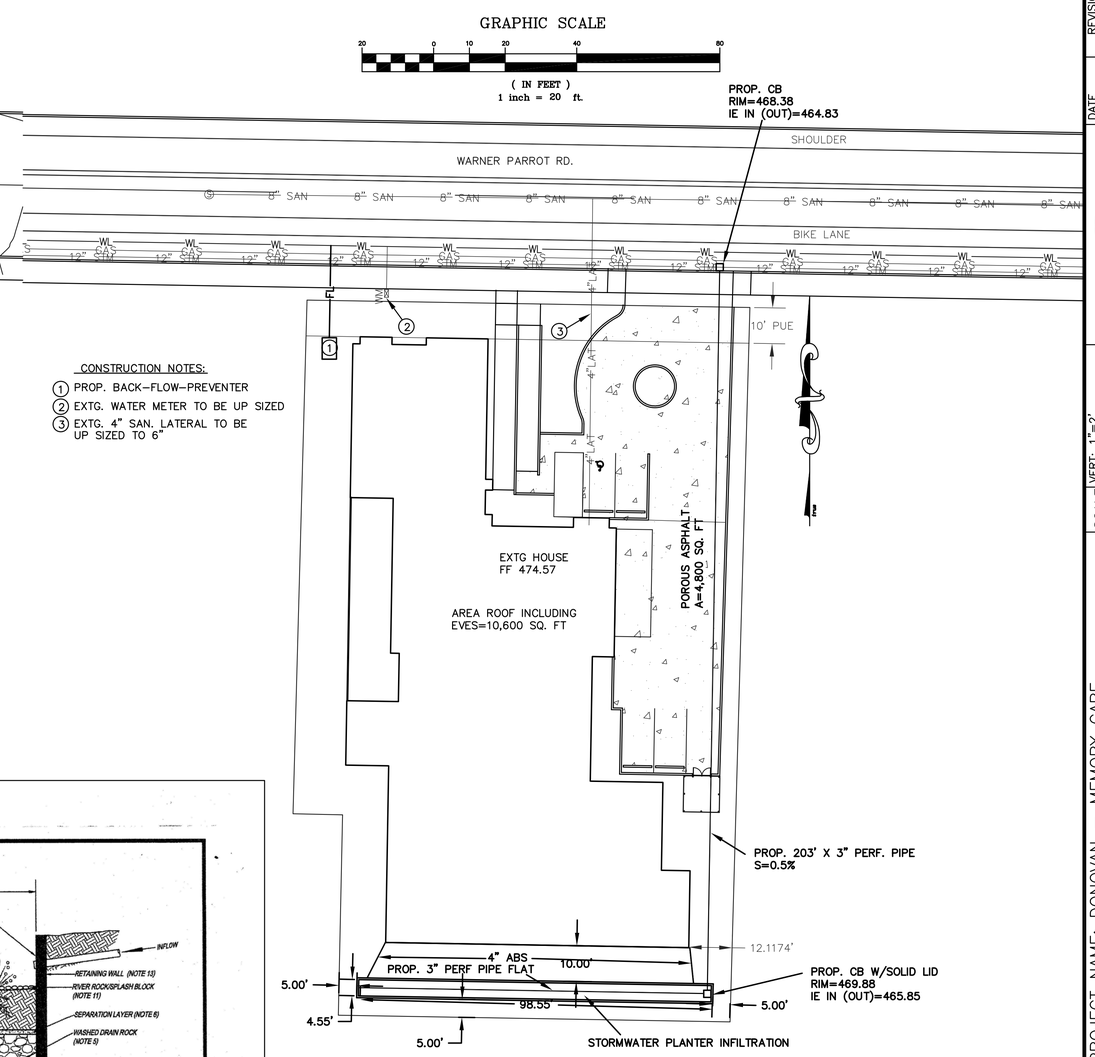
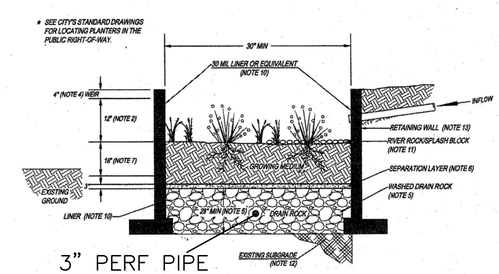


GRADING PLAN



UTILITY PLAN



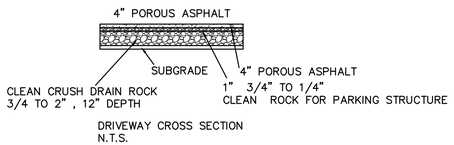
3" PERF PIPE

GENERAL NOTES:

1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION.
2. **DIMENSIONS:**
   -WIDTH: 30" MINIMUM
   -DEPTH OF PLANTER (FROM TOP OF GROWING MEDIUM TO OVERFLOW WEIR ELEVATION): 12"
   -SLOPE OF PLANTER: 0.5% OR LESS
3. **SETBACKS:**
   -PLANTERS MUST BE MINIMUM OF 5 FEET FROM PROPERTY LINE.
4. **OVERFLOW:**
   -WEIR ELEVATION MUST ALLOW FOR 4" OF FREEBOARD, MINIMUM.
   -SIZE OVERFLOW WEIR FOR THE 100 YEAR DESIGN STORM. IDENTIFY EMERGENCY OVERFLOW ROUTE ON THE STORMWATER MANAGEMENT PLAN.
5. **DRAIN ROCK:**
   -SIZE: 1 1/2" - 3/4" WASHED
   -DEPTH: 28" MINIMUM
6. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
7. **GROWING MEDIUM:**
   -DEPTH: 18" MIMIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
   -FACILITY SURFACE AREA MAY BE REDUCED BY 20% WHEN GROWING MEDIA DEPTH IS INCREASED TO 30" OR MORE.
8. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
9. **PLANTER WALLS:**
   -MATERIALS SHALL BE STONE, BRICK, CONCRETE OR OTHER DURABLE MATERIAL.
   -CONCRETE, BRICK, OR STONE WALLS SHALL BE INCUDED ON FOUNDATION PLANS.
   -INSTALL INVERTED CURB AS NEEDED BETWEEN PLANTERS AND ROAD SUBGRADE.
   -WALL HEIGHTS GREATER THAN 24" ABOVE GRADE REQUIRE HANDRAIL.
10. **WATERPROOF LINER:**
    -LINER SHALL BE 30 MIL PVC OR EQUIVALENT.
    -A WATERPROOF LINER IS NOT REQUIRED IF THE WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL.
11. **INSTALL RIVER ROCK** SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" - 3".
12. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY THE CITY.
13. **SUBMIT RETAINING WALL DESIGN** IN ACCORDANCE WITH APPLICABLE STRUCTURAL CODES FOR REVIEW AND APPROVAL.

Stormwater Planter - Infiltration
Figure C-2

OREGON CITY
STORMWATER AND GRADING DESIGN STANDARDS



DRIVEWAY CROSS SECTION
N.T.S.

DATE	REVISION	BY

DESIGNED: RSG
DRAWN: RSG
CHECKED: RSG
APPROVED:

SHEET E2 OF E2

REGISTERED PROFESSIONAL ENGINEER 19492 OREGON NOV. 12, 1987 RICHARD STEFAN PRELIMINARY EXPIRES 6/30/21

SCALE VERT. 1"=2' HORIZ. 1"=20'
DATE: 10-2019
CASE FILE:

LEGAL		
SW 1/4 OF	TWP.	RANGE
SECTION 6	3S	2 EAST

PROJECT NAME: DONOVAN – MEMORY CARE
PROPOSED GRADING AND UTILITY PLAN

CLIENT: CONTACT NAME EDDIE RADULESCU
503-679-2493

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E-MAIL: RSGENG@COMCAST.NET

STORMWATER NARRATIVE FOR 182 WARNER PARROT RD.

We are proposing to do an addition to the existing house. Will be handicap accessibility, and the existing parking lot will be enlarge.

DOWN STREAM ANALISIS

N/A

I'm proposing to infiltrate all the stormwater (roof and driveway) on site, improving the existing. because the extg. parking lot is drain toward the street.

INFILTRATION TEST WAS PROVIDED BY RAPID SOIL SOLUTION see attached.

SEASON GROUND DEPTH ELEVATION

Best on USGI Map, the depth of ground water is 92.136 feet, giving us enough clearance for the drywells.

BMP

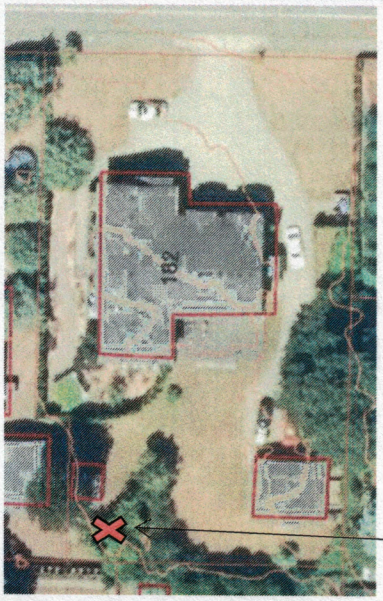
For the roof, I'm proposing 5 drywells, and for parking lot, porous asphalt.

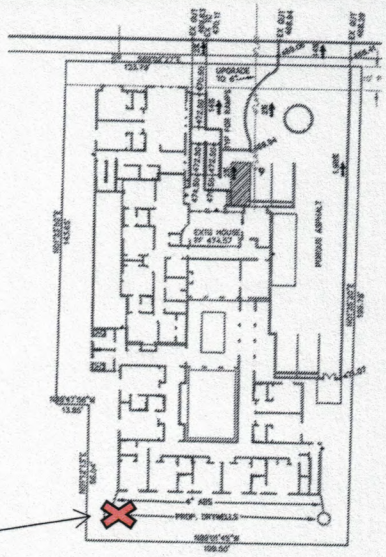
See attached .

REGISTERED PROFESSIONAL ENGINEER
19492
OREGON
NOV. 12, 1997
RICHARD STEFAN GEORGESSU

Exp 6/30/21

Rapid Soil Solutions Infiltration Test Results





HA#1

Preliminary Information			
Location:	182 Warner Parrott Road Oregon City, OR 97045	**Performed By:** **(Supervised by Mia Mahedy, PE, GE)**	Rachel Gipe, GIT
Date & Time:	10 December 2019, 9 AM	**Instrument Used:**	4" Hand Auger
Weather:	Rain, 45 degrees	**Depth:**	8'

HA#1

Soil Profile Detail

Depth (ft)	Description
0'-2'	Fill and top soil. Damp, soft, medium rich brown, clayey SILT to silty CLAY with some fine organics.
2'-3'	Damp-dry, stiff, orange hued light brown, fine grained, CLAY to silty CLAY.
3'-5'	Dry, grey stiff, orange-brown to reddish-orange brown, fine grained, CLAY to silty CLAY with trace to some small, sub-rounded, spherical, gravels.
5'-8'	Bedded weathered bedrock (soft to extremely soft rock, grey to purple-grey, medium-fine textured, intensely weathered basalt) and CLAY (red, purple and orange, very stiff, fine grained, high plasticity). Bedding roughly 1' thick.

RSS applied one gallon of water to the boring at 9:50 AM. A total head of 13" was achieved in the uncased boring. After a four-hour presoak, only 1.5" of water infiltrated.

Time	Measurement (inches)	Level Refilled To (inches)	Rate (inches/hour)
9:50 AM	13"		
1:50 PM	11.5"		0.375"
Site Infiltration Rate (inches/hour)			**< 0.375**

HOUSE

********** S.C.S. TYPE-1A DISTRIBUTION **********

********* 25-YEAR 24-HOUR STORM **** 4.00" TOTAL PRECIP. *********

AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
	A	CN	A	CN	
.24	.0	86.0	.24	98.0	5.0

PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)
.25	7.67	3280

SUMMARY OF INPUT ITEMS

1) TYPE OF FACILITY: GRAVEL TRENCH/BED

2) STORAGE DEPTH(ft): 1.00

3) VERTICAL PERMEABILITY(min/in): 333.00

4) PRIMARY DESIGN HYDROGRAPH FILENAME: donvh

5) PRIMARY RELEASE RATE(cfs): .00

6) NUMBER OF TEST HYDROGRAPHS: 1

TEST HYD 1 FILENAME: donvh TARGET RELEASE(cfs): .00

7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.25	.00	.00	1.00	**1550**

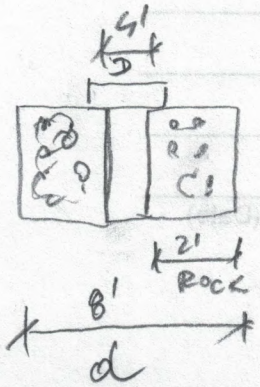
ROOF

$A_{ROOF1} = 10{,}600\ SF = \underline{\underline{0.24\ AC}}$

INFILTRATION TEST $= 0.37$ in/HR $=$ TAKE 0.18 in/HR

$\frac{60}{0.185} = 333$ MIN/INCH

WE HAVE TO DETAIN 1,550 cu ft of STORMWATER



$V_{DRYWELL/FT} = \frac{\pi D^2}{4} \times 1 = 12.56$ cu ft/ft

$V_{ROCK/FT} = \left(\frac{\pi d^2}{4} - \frac{\pi D^2}{4}\right) \times 1 \times 0.25 =$ → VOLUME OF VOIDS

$= (50.26 - 12.56) \times 0.25 = 9.42$ cu ft/ft

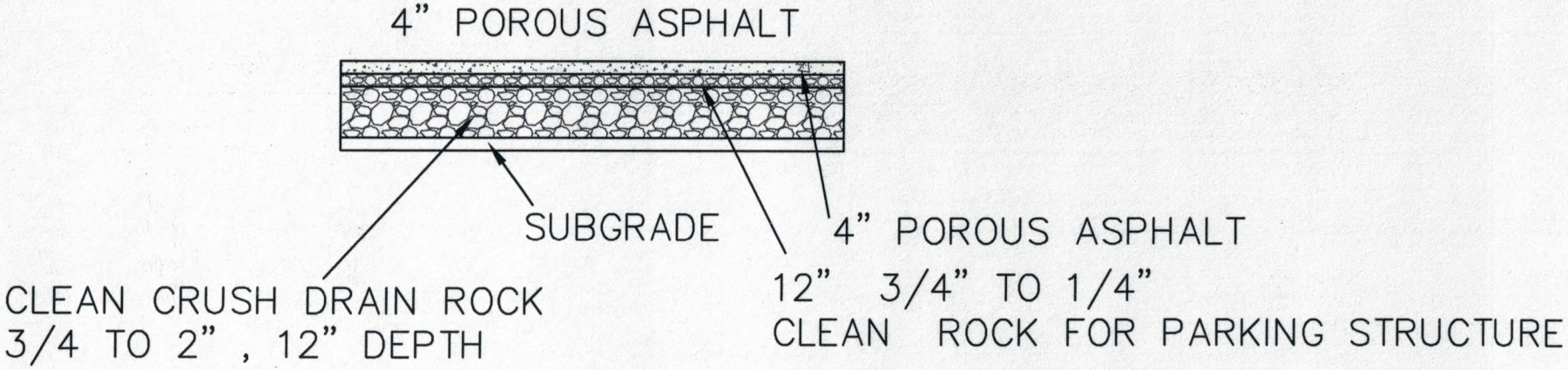
$\underline{\underline{V_{TOT}}} = 12.56 + 9.42 = \underline{\underline{21.98\ \text{cu ft/ft}}}$

WE HAVE TO STOR $\frac{1{,}550\ \text{cu ft}}{21.98\ \text{cu ft/ft}} = \underline{70.5\ ft}$

$\boxed{\text{TAKE 5 DRYWELLS / 14.5 ft DEED}}$

$5 \times 14.5 = 72.5\ ft > 70.5\ ft$ NEED IT!

OK.



DRIVEWAY CROSS SECTION
N.T.S.

DRIVEWAY

********** S.C.S. TYPE-1A DISTRIBUTION **********

********* 25-YEAR 24-HOUR STORM **** 4.00" TOTAL PRECIP. *********

AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
	A	CN	A	CN	
.11	.0	86.0	.11	98.0	5.0

PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)
.12	7.67	1503

SUMMARY OF INPUT ITEMS

1) TYPE OF FACILITY: GRAVEL TRENCH/BED

2) STORAGE DEPTH(ft): 1.00

3) VERTICAL PERMEABILITY(min/in): 333.00

4) PRIMARY DESIGN HYDROGRAPH FILENAME: DONVD

5) PRIMARY RELEASE RATE(cfs): .00

6) NUMBER OF TEST HYDROGRAPHS: 1

TEST HYD 1 FILENAME: DONVD TARGET RELEASE(cfs): .00

7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.12	.00	.00	1.00	**712**

DRIVEWAY

A = 4,800 S.F = 0.11 AC

WE NEED TO STOR: 712 cu ft OF STORMWATER

4800 SF x 1' ROCK x 0.25 VOL. OF VOIDS = 1200 cu ft

1200 cu ft VOL OF VOIDS > 712 cu ft NEED IT!

OK

STORMWATER NARRATIVE FOR 182 WARNER PARROT RD.

We are proposing to do an addition to the existing house. Will be handicap accessibility, and the existing parking lot will be enlarged.

DOWN STREAM ANALISIS

N/A

I'm proposing to infiltrate all the stormwater (roof and driveway) on site, improving the existing. because the extg. parking lot is drain toward the street.

INFILTRATION TEST

On 4/12/2020, I dug a hole, using a mechanical ager, 4 feet deep and 6" diameter, filling with water. Also, I found a digging, about 8 feet deep, done by others. I observed a consistence of the ground, brown clay with cobbles. On 2/13/20, I start the percolation test, and I found 2.16 inch/hr. In my calculations, I used 1 inch/hr, and infiltrate all the 25 yr storm event (exceeding the standards).

Having a 1 foot freeboard, in my professional opinion, the soil is suitable for infiltration without overflow.

SEASON GROUND DEPTH ELEVATION

Best on USGI Map, the depth of ground water is 92.136 feet, giving us enough clearance for the stormwater planter.

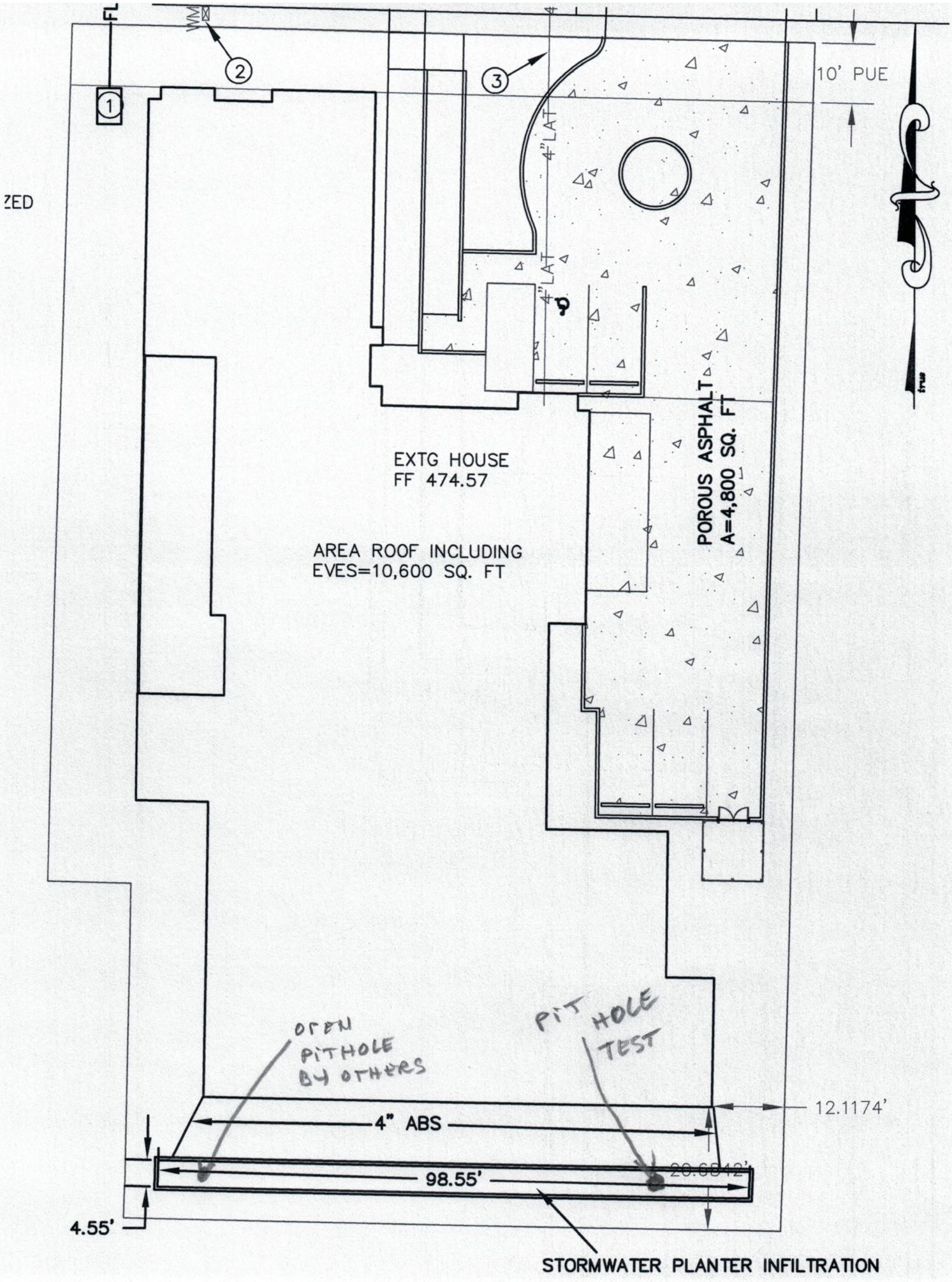
BMP

For the roof, I'm proposing stormwater planter infiltration, and for parking lot, porous asphalt.

See attached.

REGISTERED PROFESSIONAL ENGINEER
19492
OREGON
NOV. 12, 1987
RICHARD STEFAN GEORGESCU

6/30/21


10' PUE
4" LAT
4" LAT
EXTG HOUSE
FF 474.57
AREA ROOF INCLUDING
EVES=10,600 SQ. FT
POROUS ASPHALT
A=4,800 SQ. FT
OPEN
PITHOLE
BY OTHERS
PIT HOLE
TEST
12.1174'
4" ABS
98.55'
20.6842'
4.55'
STORMWATER PLANTER INFILTRATION

Infiltration Test Data Table		
Location: 182 WARNER PARROT	Date: 4/13/20	Test Hole Number: 1
Depth to bottom of hole: 4 FT	Diameter of hole: 6"	Test Method: OPEN PIT
Tester's Name: RICHARD S. GEORGESCU P.E		
Tester's Company: RSG ENGINEERING CO	Tester's Contact Number: 503-380-6179	

Depth, feet	Soil Texture
0- 0.5'	TOP SOIL
0.5' - 8'	BROWN CLAY W/ COBBLES

Time	Time interval, minutes	Measurement, feet	Drop in water level, feet	Percolation rate, inches per hour	Remarks
NOON	—	3.5'	—	—	FILL W/6" WATER
12:10	10	3.55'	0.05	3.6	
12:20	10	3.60'	0.05	3.6	
12:30	10	3.64'	0.04	2.88	
12:40	10	3.68'	0.04	2.88	
12:50	10	3.71'	0.03	2.16	
1PM	10	3.74'	0.03	2.16	
1:10	—	3.5'	—	—	FILL W/6" WATER
1:20	10	3.53'	0.03	2.16	
1:30	10	3.56'	0.03	2.16	

FOR THE NEXT HOUR STABILIZED @ 2.16 in/HR

TAKE 2 in/HR / 2 = 1 in/HR = 60 MIN/INCH

HOUSE

```
---------------------------------------------------------------------
******************** S.C.S. TYPE-1A DISTRIBUTION ********************
*********  25-YEAR  24-HOUR STORM  ****  4.00" TOTAL PRECIP. *********

---------------------------------------------------------------------
ENTER: A(PERV), CN(PERV), A(IMPERV), CN(IMPERV), TC FOR BASIN NO.  1
0,86,.24,98,5

DATA PRINT-OUT:

  AREA(ACRES)    PERVIOUS    IMPERVIOUS   TC(MINUTES)
                 A     CN     A     CN
        .24      .0    86.0   .24  98.0        5.0

  PEAK-Q(CFS)   T-PEAK(HRS)    VOL(CU-FT)
       .25          7.67           3280


SUMMARY OF INPUT ITEMS


1) TYPE OF FACILITY:   GRAVEL TRENCH/BED
2) STORAGE DEPTH(ft):   1.00
3) VERTICAL PERMEABILITY(min/in):  60.00

4) PRIMARY DESIGN HYDROGRAPH FILENAME:   DONH
5) PRIMARY RELEASE RATE(cfs):    .00

6) NUMBER OF TEST HYDROGRAPHS:  1
   TEST HYD 1 FILENAME:   DONH              TARGET RELEASE(cfs):    .00

7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in):  0,  1.00,  12


PERFORMANCE:   INFLOW   TARGET-OUTFLOW   ACTUAL-OUTFLOW   PK-STAGE    STORAGE
 DESIGN HYD:     .25          .00              .00          1.00        611
 TEST HYD 1:     .25          .00              .00           .90        610
```

PARKING

********** S.C.S. TYPE-1A DISTRIBUTION **********
********* 25-YEAR 24-HOUR STORM **** 4.00" TOTAL PRECIP. *********

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS A	PERVIOUS CN	IMPERVIOUS A	IMPERVIOUS CN	TC(MINUTES)
.11	.0	86.0	.11	98.0	5.0

PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)
.12	7.67	1503

SUMMARY OF INPUT ITEMS

1) TYPE OF FACILITY: GRAVEL TRENCH/BED
2) STORAGE DEPTH(ft): 1.00
3) VERTICAL PERMEABILITY(min/in): 60.00

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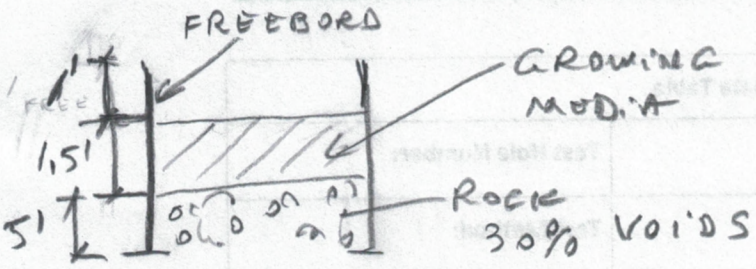
TEST HYD 1 FILENAME: DONP TARGET RELEASE(cfs): .00

7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.12	.00	.00	1.00	274
TEST HYD 1:	.12	.00	.00	.90	270

HOUSE

WE HAVE TO STOR 611 cu ft of STORMWATER



STORM PLANTER

$V_{STORAGE}$ = 5' DEEP × 98.5' LONG × 4.5' WIDE × 0.3 VOL VOIDS

= 665 cu ft > 611 cu ft NEED

OK!

PARKING

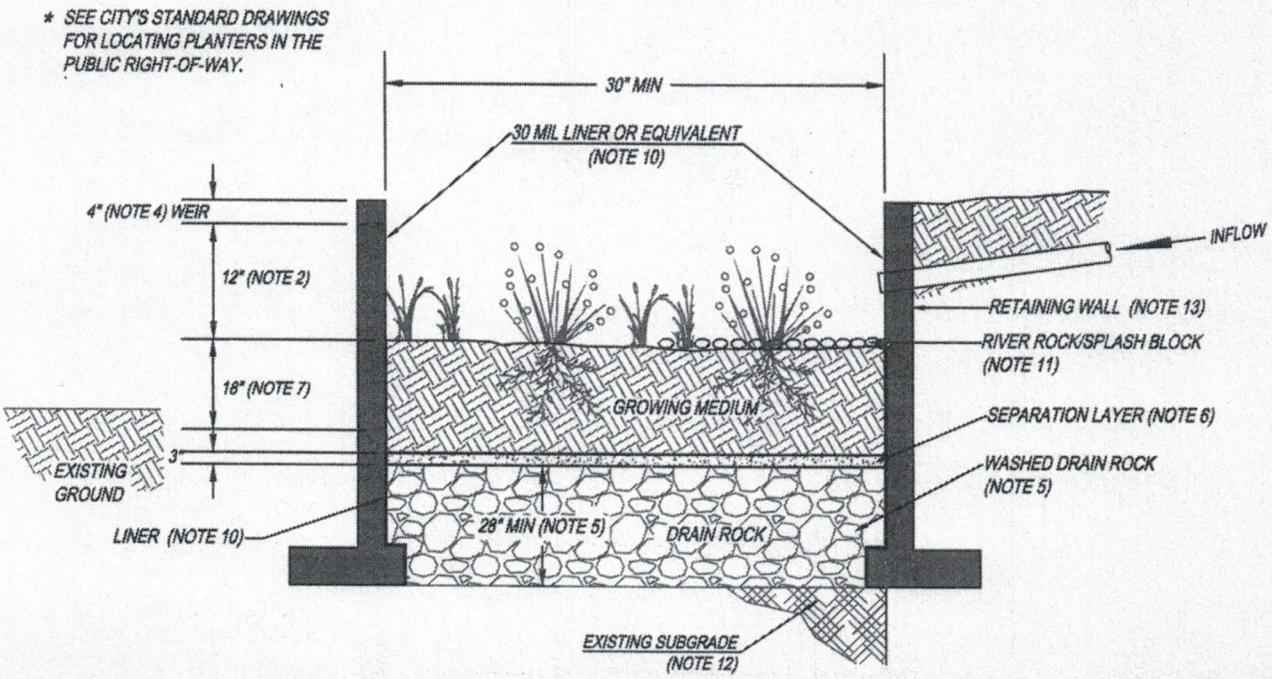
WE HAVE TO STOR 274 cu ft OF STORMWATER

A POROUS ASPHALT = 4,800 SQ. ft

$V_{STORAGE}$ = 4,800 S.F × 1' DEEP ROCK × 0.3 VOL VOIDS =

= 1,440 cu ft > 274 cu ft NEED

OK!



GENERAL NOTES:

1. **PROVIDE PROTECTION** FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED INFILTRATION AREAS PRIOR TO, DURING AND AFTER CONSTRUCTION.
2. **DIMENSIONS:**
   -WIDTH: 30" MINIMUM
   -DEPTH OF PLANTER (FROM TOP OF GROWING MEDIUM TO OVERFLOW WEIR ELEVATION): 12"
   -SLOPE OF PLANTER: 0.5% OR LESS
3. **SETBACKS:**
   -PLANTERS MUST BE MINIMUM OF 5 FEET FROM PROPERTY LINE.
4. **OVERFLOW:**
   -WEIR ELEVATION MUST ALLOW FOR 4" OF FREEBOARD, MINIMUM.
   -SIZE OVERFLOW WEIR FOR THE 100 YEAR DESIGN STORM. IDENTIFY EMERGENCY OVERFLOW ROUTE ON THE STORMWATER MANAGEMENT PLAN.
5. **DRAIN ROCK:**
   -SIZE: 1 1/2" - 3/4" WASHED
   -DEPTH: 28" MINIMUM
6. **SEPARATION** BETWEEN DRAIN ROCK AND GROWING MEDIUM: SHALL BE A 3" LAYER OF 3/4" - 1/4" OPEN GRADED AGGREGATE.
7. **GROWING MEDIUM:**
   -DEPTH: 18" MIMIMUM
   -SEE APPENDIX A FOR SPECIFICATION OR USE SAND/LOAM/COMPOST 3-WAY MIX.
   -FACILITY SURFACE AREA MAY BE REDUCED BY 20% WHEN GROWING MEDIA DEPTH IS INCREASED TO 30" OR MORE.
8. **VEGETATION:** FOLLOW LANDSCAPE PLANS OR REFER TO PLANTING REQUIREMENTS IN APPENDIX A.
9. **PLANTER WALLS:**
   -MATERIALS SHALL BE STONE, BRICK, CONCRETE OR OTHER DURABLE MATERIAL.
   -CONCRETE, BRICK, OR STONE WALLS SHALL BE INCLUDED ON FOUNDATION PLANS.
   -INSTALL INVERTED CURB AS NEEDED BETWEEN PLANTERS AND ROAD SUBGRADE.
   -WALL HEIGHTS GREATER THAN 24" ABOVE GRADE REQUIRE HANDRAIL.
10. **WATERPROOF LINER:**
    -LINER SHALL BE 30 MIL PVC OR EQUIVALENT.
    -A WATERPROOF LINER IS NOT REQUIRED IF THE WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL.
11. **INSTALL RIVER ROCK** SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" - 3".
12. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY THE CITY.
13. **SUBMIT RETAINING WALL DESIGN** IN ACCORDANCE WITH APPLICABLE STRUCTURAL CODES FOR REVIEW AND APPROVAL.

Stormwater Planter - Infiltration
Figure C-2

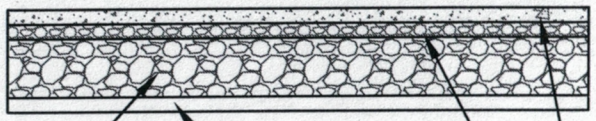
OREGON CITY
STORMWATER AND GRADING DESIGN STANDARDS

Stormwater Planters
Operations & Maintenance Plan

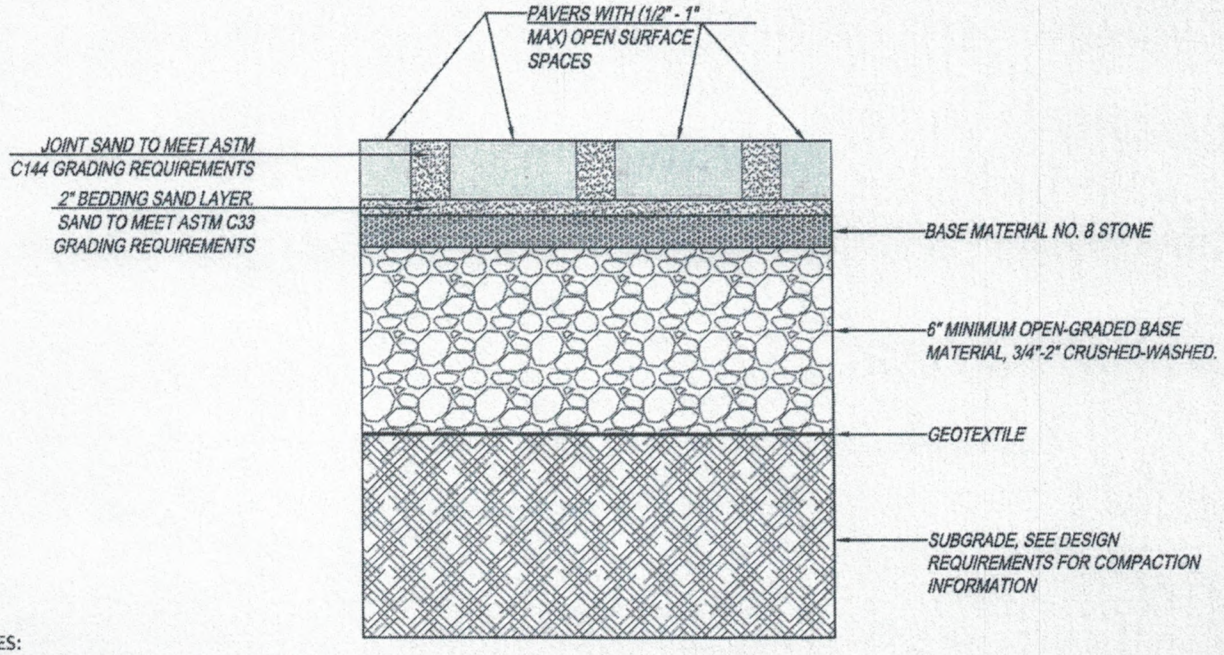
What to Look For	What to Do
Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains and curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 to 10 inch deep rock check dams at design intervals.
Vegetation	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 slopes/banks with plantings from Appendix A.
Ponding	-Rake, till, or amend to restore infiltration rate.

Annual Maintenance Schedule:

Summer. Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.
Fall. Replant exposed soil and replace dead plants. Remove sediment and plant debris.
Winter. Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.
Spring. Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.
All seasons. Weed as necessary. Clean scuppers or curb inlets as needed.
Maintenance Records: Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.
Access: Maintain ingress/egress to design standards.
Infiltration/Flow Control: All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.
Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.
Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.



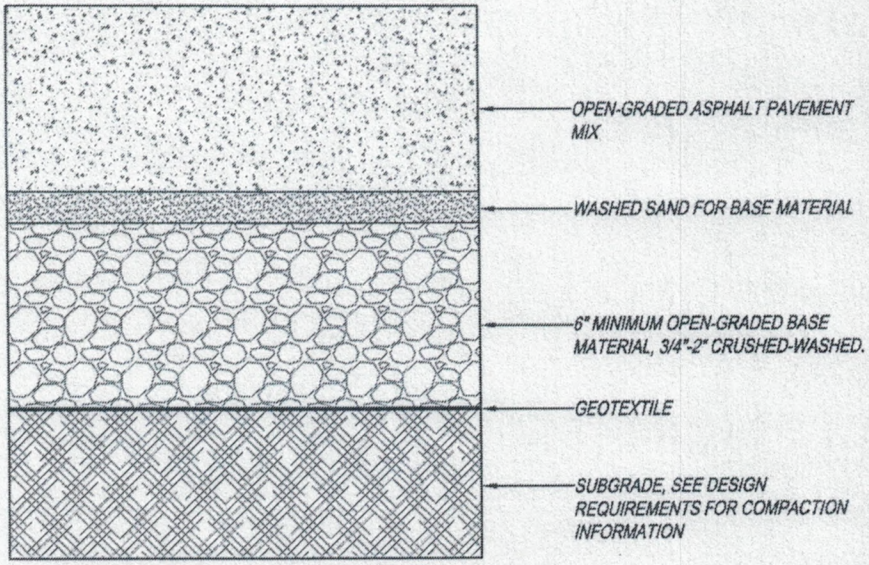
DRIVEWAY CROSS SECTION
N.T.S.



PERVIOUS CONCRETE BLOCK OR "PAVER" SYSTEMS

NOTES:

1. THE DESIGN ENGINEER SHALL SUBMIT PERVIOUS PAVEMENT DESIGN AND SPECIFICATIONS IN CONFORMANCE WITH INDUSTRY STANDARDS.
2. PAVERS AVERAGE COMPRESSIVE STRENGTH OF 8,000 PSI. NO INDIVIDUAL UNIT LESS THAN 7,200 PSI. MINIMUM 80 MM THICKNESS.
3. BANDED BY CONCRETE EDGE RESTRAINTS.
4. MANHOLE COLLARS PER CITY STANDARD DETAIL.



PERVIOUS (OPEN GRADED) CONCRETE SYSTEMS

Pervious Pavement
Figure C-16

OREGON CITY
STORMWATER AND GRADING DESIGN STANDARDS

Pervious Pavement
Operations & Maintenance Plan

Pervious pavement is a permeable pavement surface with an underlying stone reservoir that temporarily stores surface runoff before infiltrating into the subsoil or being collected in underlying drain pipes and being discharged off-site. There are many types of pervious pavement including plastic rings planted with grass, stone or concrete blocks with pore spaces backfilled with gravel or sand, porous asphalt, and porous concrete. Pervious pavement accepts only precipitation, not stormwater runoff. The following items shall be inspected and maintained as stated:

What to Look For	What to Do
Structural Components, including surface materials, shall evenly infiltrate stormwater.	
Clogged surface	-Vacuum sweep at least twice a year. -Powerwash annually or as needed. Do not use surfactants.
Cracked or moving edge restraints	-Repair per manufacturer's recommendations.
Cracked or loose pavement	-Repair per manufacturer's recommendations.
Vegetation includes surface cover and nearby plantings.	
Large Shrubs and Trees	-Sweep leaf litter and sediment to prevent surface clogging and ponding. -Prevent large root systems from damaging pavement. -Manually remove weeds. Remove all plant debris.
Filter Medium	
Aggregate loss in pavers from settling and from power washing.	-Replace paver pore space with aggregate from original design.

Maintenance Schedule:

Summer. Make necessary structural repairs.
Fall. Vacuum sweep.
Winter. Monitor infiltration rates.
Spring. Power wash with proper disposal. Vacuum sweep.
All Seasons: Weed as necessary.
Maintenance Records: Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.
Access: Maintain ingress/egress to design standards.
Infiltration/Flow Control: All facilities shall not retain standing water during dry weather. Record time/date, weather, and site conditions when ponding occurs.
Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.
Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.

STORMWATER NARRATIVE FOR 182 WARNER PARROT RD.

We are proposing to do an addition to the existing house. Will be handicap accessibility, and the existing parking lot will be enlarged.

DOWN STREAM ANALISIS

I'm proposing an overflow pipe (3" perforated pipe) from the site (under stormwater planter and porous asphalt) and connected with the existing 12" storm pipe in street, via a new catch basin. Best of my calculation and design, the overflow pipe will be constructive, not expected any flow for 25 yr storm event.

From the proposed catch basin, the existing 12" storm pipe, in approx 200 feet, connect with an extg. manhole situated at the intersection of Warner Parrot Rd. and Boynton St. From there, the storm pipe oversize to 15" and in approx 200 feet, connect another extg. manhole situated at the intersection Warner Parrot Rd and Woodlawn Ave. From there, in approx 575 feet, the extg. 15" storm pipe connect an extg. catch basin, goes North under the extg. street and discharge.

No flooding were observed or reported. Because on our overflow pipe is not expected any flow, will be any impact on the extg. storm pipe.

INFILTRATION TEST

On 4/12/2020, I dug a hole, using a mechanical ager, 4 feet deep and 6" diameter, filling with water. Also, I found a digging, about 8 feet deep, done by others. I observed a consistence of the ground, brown clay with cobbles. On 2/13/20, I start the percolation test, and I found 2.16 inch/hr. In my calculations, I used 1 inch/hr, and infiltrate all the 25 yr storm event (exceeding the standards).

Having a 1 foot freeboard, in my professional opinion, the soil is suitable for infiltration.

SEASON GROUND DEPTH ELEVATION

Best on USGI Map, the depth of ground water is 92.136 feet, giving us enough clearance for the stormwater planter.

BMP

For the roof, I'm proposing stormwater planter infiltration, and for parking lot, porous asphalt, both systems having an 3" perforated pipe overflow.

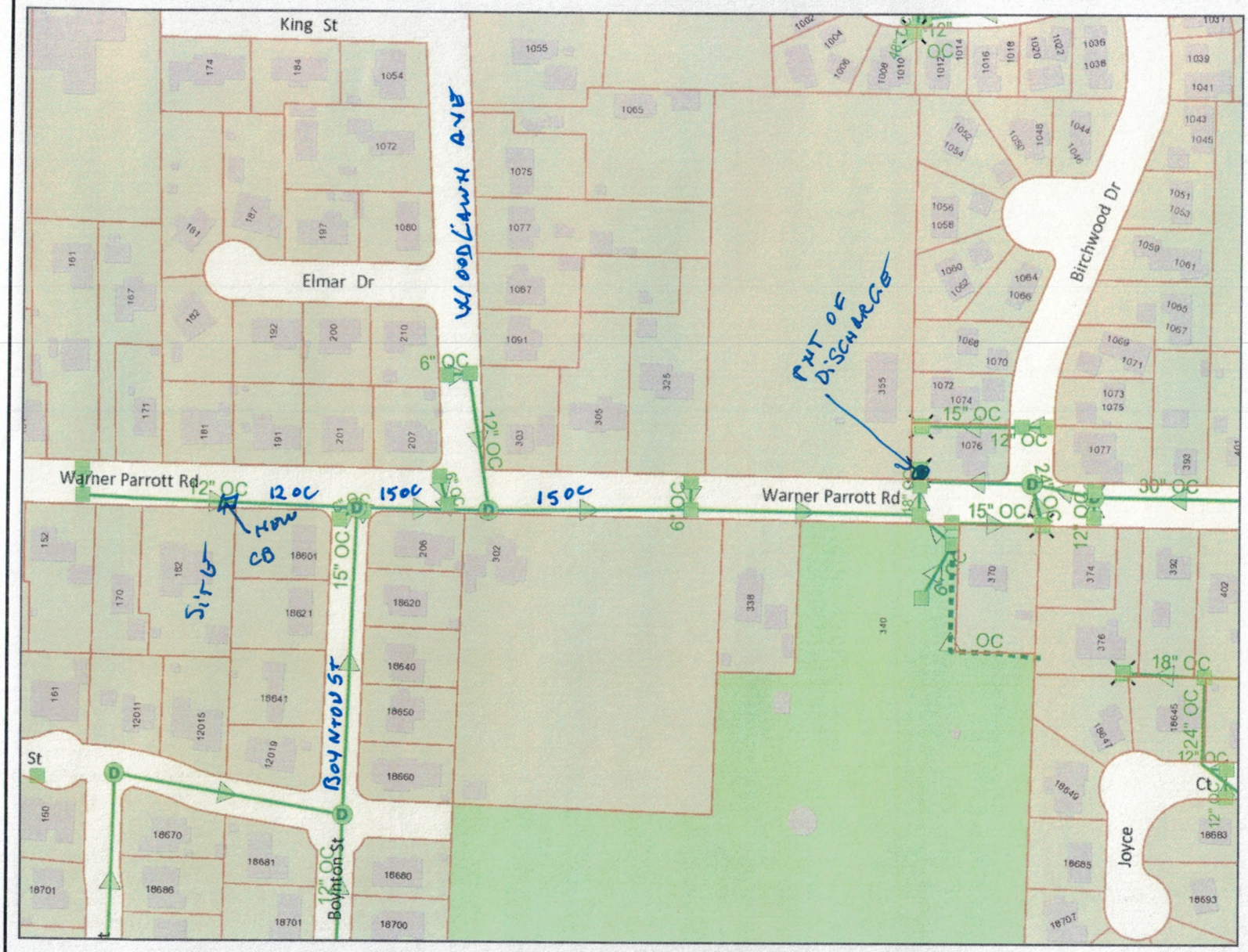
See attached.

REGISTERED PROFESSIONAL ENGINEER
19492
OREGON
NOV. 12, 1997
RICHARD STEFAN GEORGESCU

Exp 6/30/21

Oregon City GIS Map

Downstream



Legend

- Street Names
- Taxlots
- Taxlots Outside UGB
- Unimproved ROW
- Project Locations
- Storm Structures (City Owned)
  - Manhole
  - Inlet
  - Outlet
- Storm Conduits (City Owned)
  - Pipe
  - Culvert
  - Ditch
  - Detention Tank
- Flow Arrows
- Storm Ponds
  - Pond
  - Swale
  - Man-Made Wetland

Notes

Overview Map

The City of Oregon City makes no representations, express or implied, as to the accuracy, completeness and timeliness of the information displayed. This map is not suitable for legal, engineering, surveying or navigation purposes. Notification of any errors is appreciated.

Map created 5/6/2020

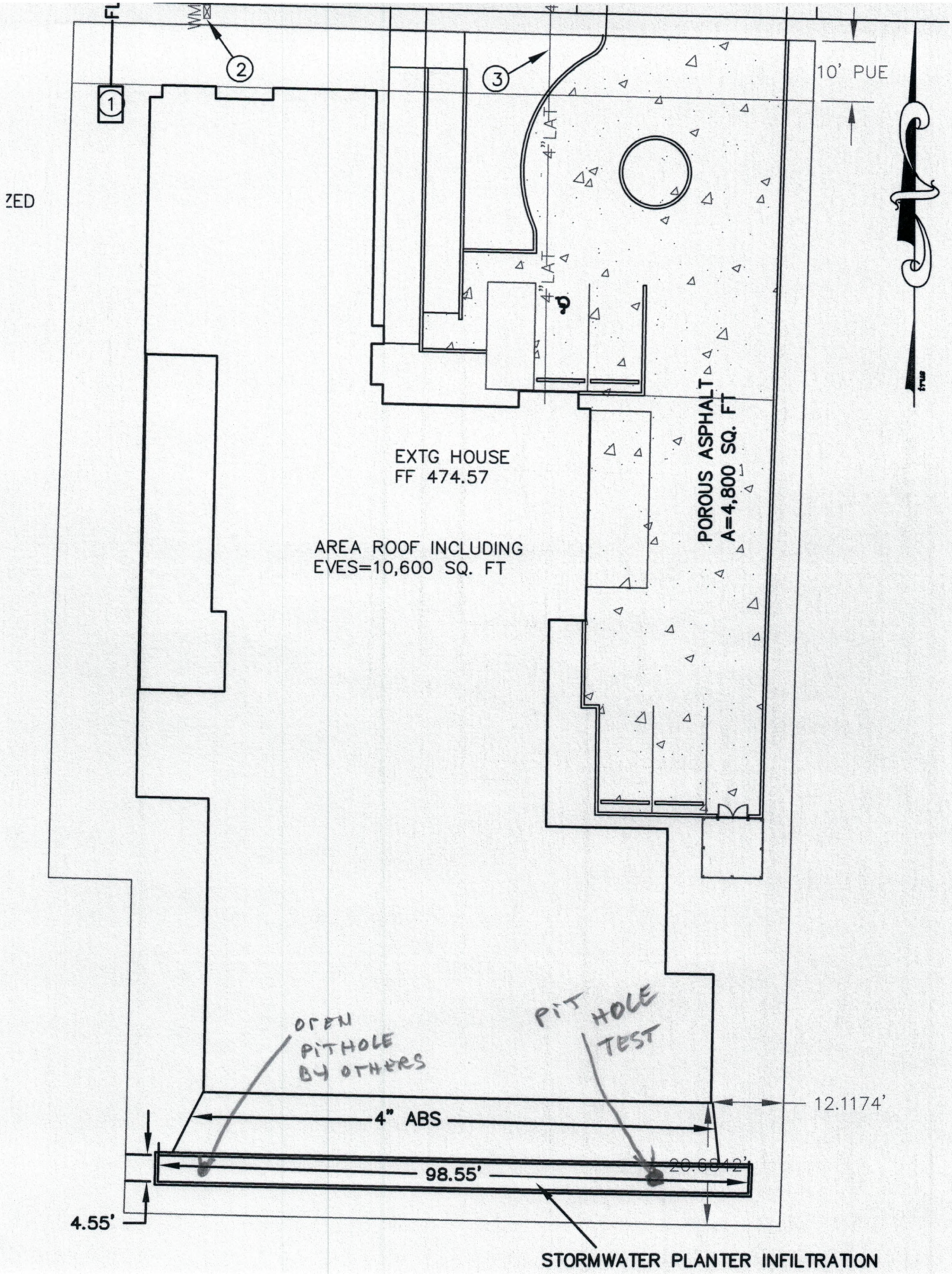
N

0 200 400 Feet

1: 2,400

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
(503) 657-0891
www.orcity.org

OREGON CITY


10' PUE
4"LAT
4"LAT
EXTG HOUSE
FF 474.57
AREA ROOF INCLUDING
EVES=10,600 SQ. FT
POROUS ASPHALT
A=4,800 SQ. FT
OPEN
PITHOLE
BY OTHERS
PIT HOLE
TEST
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2) STORAGE DEPTH(ft): 1.00
3) VERTICAL PERMEABILITY(min/in): 60.00

4) PRIMARY DESIGN HYDROGRAPH FILENAME: DONH
5) PRIMARY RELEASE RATE(cfs): .00

6) NUMBER OF TEST HYDROGRAPHS: 1
   TEST HYD 1 FILENAME: DONH TARGET RELEASE(cfs): .00

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PARKING

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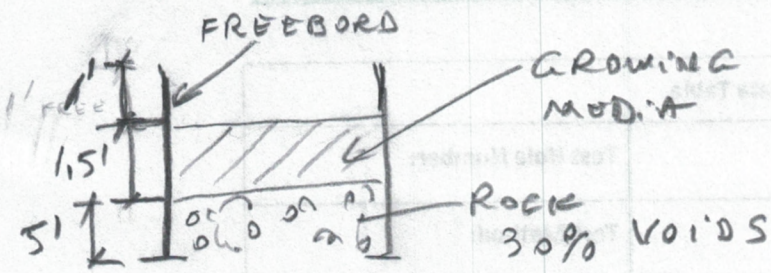

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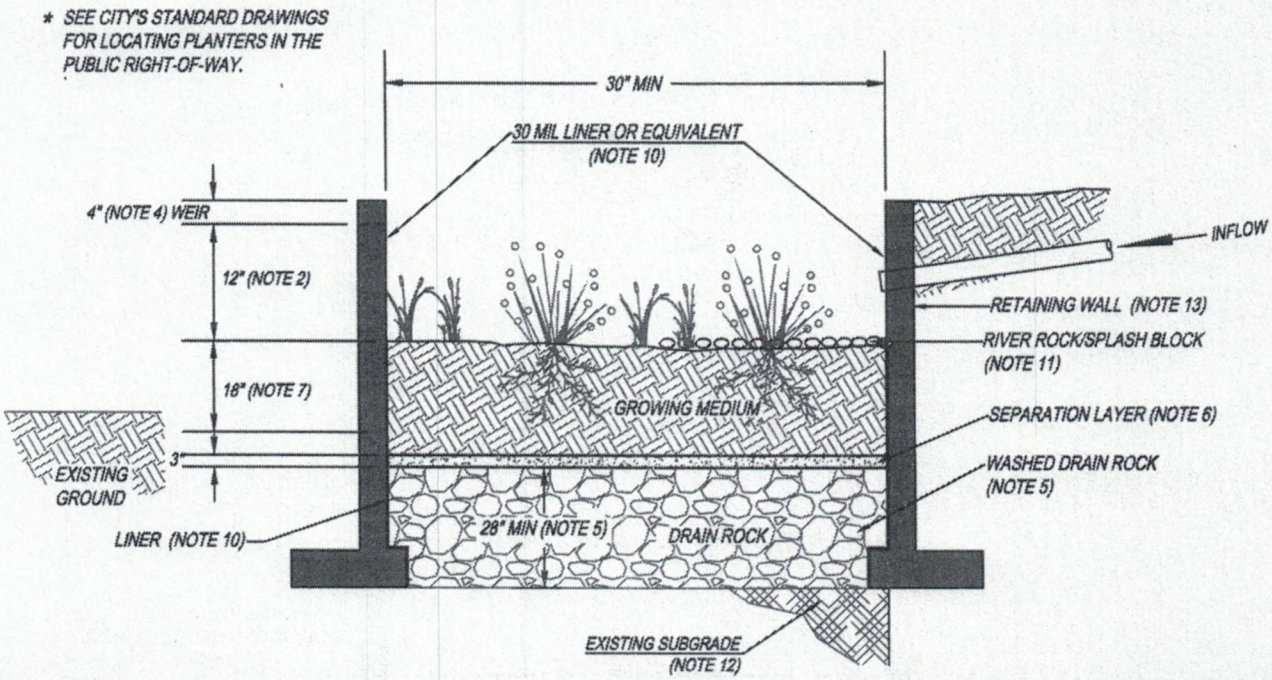

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    -LINER SHALL BE 30 MIL PVC OR EQUIVALENT.
    -A WATERPROOF LINER IS NOT REQUIRED IF THE WALL MATERIAL IS WATERPROOF REINFORCED CONCRETE OR APPROVED EQUAL.
11. **INSTALL RIVER ROCK** SPLASH PAD TO TRANSITION FROM INLET TO GROWING MEDIUM. SIZE OF ROCK SHALL BE 1" - 3".
12. **SEASONAL HIGH GROUNDWATER SEPARATION:**
    -SEPARATION DISTANCE AS REQUIRED BY THE CITY.
13. **SUBMIT RETAINING WALL DESIGN** IN ACCORDANCE WITH APPLICABLE STRUCTURAL CODES FOR REVIEW AND APPROVAL.

Stormwater Planter - Infiltration
Figure C-2

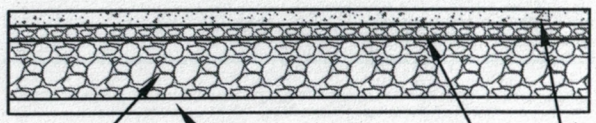
OREGON CITY
STORMWATER AND GRADING DESIGN STANDARDS

Stormwater Planters
Operations & Maintenance Plan

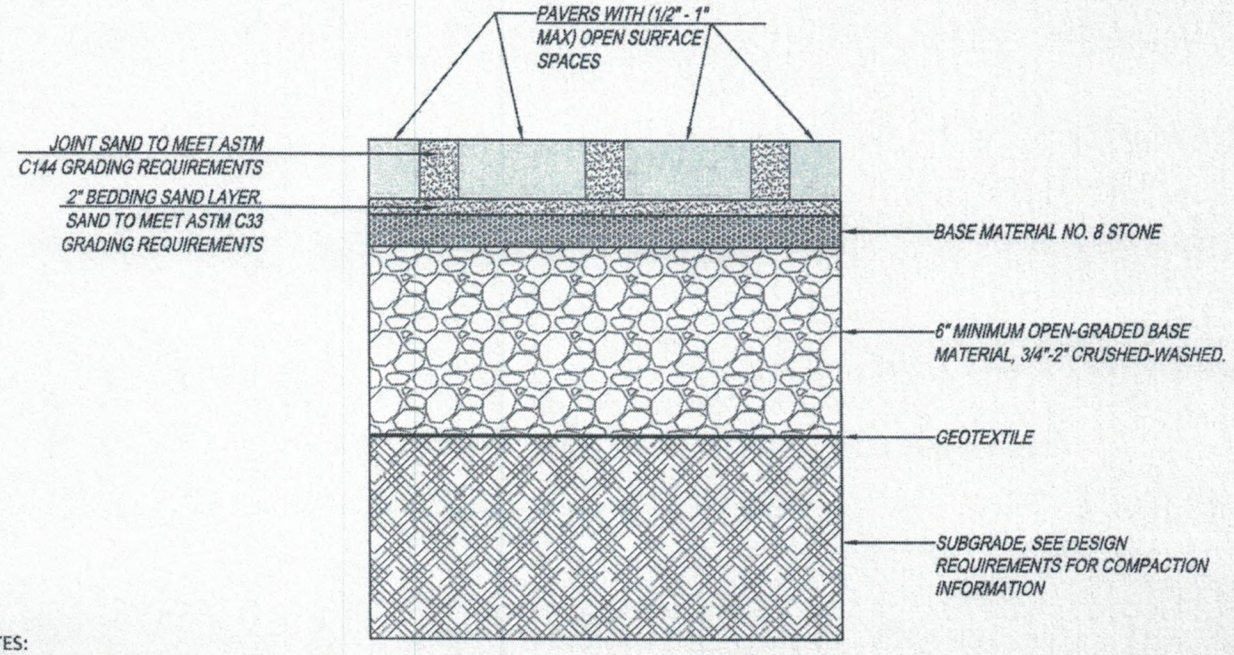
What to Look For	What to Do
Structural Components, including inlets and outlets/overflows, shall freely convey stormwater.	
Clogged inlets or outlets	-Remove sediment and debris from catch basins, trench drains and curb inlets and pipes to maintain at least 50% conveyance capacity at all times.
Cracked Drain Pipes	-Repair/seal cracks. Replace when repair is insufficient.
Check Dams	-Maintain 4 to 10 inch deep rock check dams at design intervals.
Vegetation	
Dead or strained vegetation	-Replant per original planting plan, or substitute from Appendix A. -Irrigate as needed. Mulch banks annually. DO NOT apply fertilizers, herbicides, or pesticides.
Tall Grass and Vegetation	-Cut back grass and prune overgrowth 1-2 times per year. Remove cuttings.
Weeds	-Manually remove weeds. Remove all plant debris.
Growing/Filter Medium, including soil and gravels, shall sustain healthy plant cover and infiltrate within 72 hours.	
Gullies	-Fill, lightly compact, and plant vegetation to disperse flow.
Erosion	-Replace splash blocks or inlet gravel/rock.
Slope Slippage	-Stabilize 3:1 slopes/banks with plantings from Appendix A.
Ponding	-Rake, till, or amend to restore infiltration rate.

Annual Maintenance Schedule:

Summer. Make any structural repairs. Improve filter medium as needed. Clear drain. Irrigate as needed.
Fall. Replant exposed soil and replace dead plants. Remove sediment and plant debris.
Winter. Monitor infiltration/flow-through rates. Clear inlets and outlets/overflows to maintain conveyance.
Spring. Remove sediment and plant debris. Replant exposed soil and replace dead plants. Mulch.
All seasons. Weed as necessary. Clean scuppers or curb inlets as needed.
Maintenance Records: Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.
Access: Maintain ingress/egress to design standards.
Infiltration/Flow Control: All facilities shall drain within 72 hours. Record time/date, weather, and site conditions when ponding occurs.
Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.
Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.



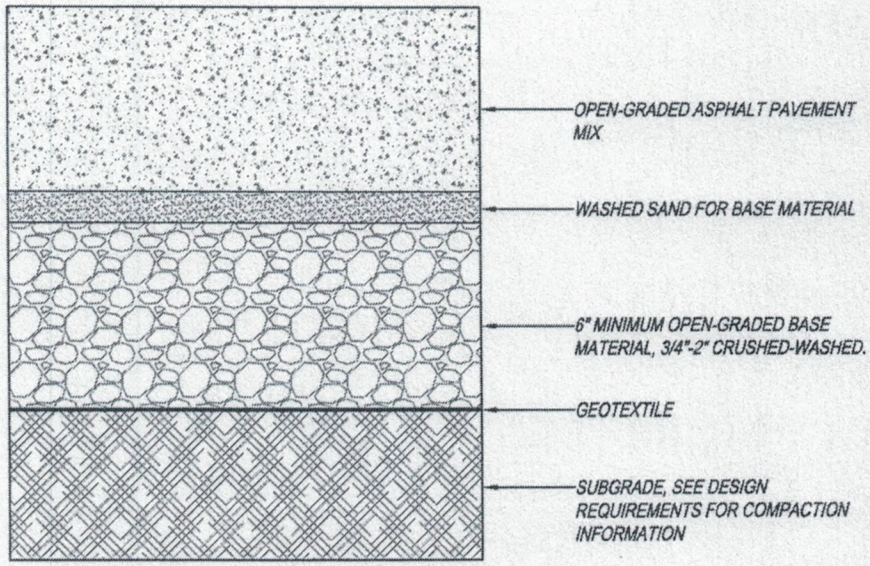
DRIVEWAY CROSS SECTION
N.T.S.



PERVIOUS CONCRETE BLOCK OR "PAVER" SYSTEMS

NOTES:

1. THE DESIGN ENGINEER SHALL SUBMIT PERVIOUS PAVEMENT DESIGN AND SPECIFICATIONS IN CONFORMANCE WITH INDUSTRY STANDARDS.
2. PAVERS AVERAGE COMPRESSIVE STRENGTH OF 8,000 PSI. NO INDIVIDUAL UNIT LESS THAN 7,200 PSI. MINIMUM 80 MM THICKNESS.
3. BANDED BY CONCRETE EDGE RESTRAINTS.
4. MANHOLE COLLARS PER CITY STANDARD DETAIL.



PERVIOUS (OPEN GRADED) CONCRETE SYSTEMS

Pervious Pavement
Figure C-16

OREGON CITY
STORMWATER AND GRADING DESIGN STANDARDS

Pervious Pavement
Operations & Maintenance Plan

Pervious pavement is a permeable pavement surface with an underlying stone reservoir that temporarily stores surface runoff before infiltrating into the subsoil or being collected in underlying drain pipes and being discharged off-site. There are many types of pervious pavement including plastic rings planted with grass, stone or concrete blocks with pore spaces backfilled with gravel or sand, porous asphalt, and porous concrete. Pervious pavement accepts only precipitation, not stormwater runoff. The following items shall be inspected and maintained as stated:

What to Look For	What to Do
Structural Components, including surface materials, shall evenly infiltrate stormwater.	
Clogged surface	-Vacuum sweep at least twice a year. -Powerwash annually or as needed. Do not use surfactants.
Cracked or moving edge restraints	-Repair per manufacturer's recommendations.
Cracked or loose pavement	-Repair per manufacturer's recommendations.
Vegetation includes surface cover and nearby plantings.	
Large Shrubs and Trees	-Sweep leaf litter and sediment to prevent surface clogging and ponding. -Prevent large root systems from damaging pavement. -Manually remove weeds. Remove all plant debris.
Filter Medium	
Aggregate loss in pavers from settling and from power washing.	-Replace paver pore space with aggregate from original design.

Maintenance Schedule:

Summer. Make necessary structural repairs.
Fall. Vacuum sweep.
Winter. Monitor infiltration rates.
Spring. Power wash with proper disposal. Vacuum sweep.
All Seasons: Weed as necessary.
Maintenance Records: Record date, description, and contractor (if applicable) for all structural repairs, landscape maintenance, and facility cleanout activities. Keep work orders and invoices on file and make available upon request of the inspector.
Access: Maintain ingress/egress to design standards.
Infiltration/Flow Control: All facilities shall not retain standing water during dry weather. Record time/date, weather, and site conditions when ponding occurs.
Pollution Prevention: All sites shall implement best management practices to prevent hazardous or solid wastes or excessive oil and sediment from contaminating stormwater. Contact emergency response agencies for immediate assistance responding to spills. Record time/date, weather, and site conditions if site activities contaminate stormwater.
Vectors (Mosquitoes & Rodents): Stormwater facilities shall not harbor mosquito larvae or rats that pose a threat to public health or that undermine the facility structure. Monitor standing water for small wiggling sticks perpendicular to the water's surface. Note holes/burrows in and around facilities. Call Clackamas County Vector Control for immediate assistance to eradicate vectors. Record time/date, weather, and site conditions when vector activity observed.