City of Newberg

Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240 ▪ Fax 503-537-1272 ▪ www.newbergoregon.gov

NOTICE OF DECISION
Friendsview Residential Care Facility Phase 1– Type 2 Design Review – File # DR221-0001

May 26, 2021

LRS Architects, Inc.
Attn: Cynthia Schuster
720 NW Davis St., Suite 300
Portland, Oregon 97209

Cc: All who submitted comments including Doug Bartlett

Dear Ms. Schuster,

The Newberg Community Development Director has approved the land use application referenced as File # DR221-0001 for the Friendsview Residential Care Facility (RCF) Phase 1 located at 1301 E Fulton Street. This decision is subject to the conditions of approval listed in the attached Exhibit "B" to the staff report. The decision will become effective on June 10, 2021 unless an appeal is filed.

You may appeal this decision to the Newberg Planning Commission within 14 calendar days of this decision in accordance with Newberg Development Code 15.100.170. All appeals must be in writing on a form provided by the Planning Division. Anyone wishing to appeal must submit the written appeal form together with the required fee of $550.20 to the Planning Division within 14 days of the date of this decision. **The deadline for filing an appeal is 4:30 pm on June 9, 2021.** At the conclusion of the appeal period, please remove all notices from the site.

Design review approval is only valid for one year from the effective date above. If building or construction permits are not issued within this time period, then design review approval becomes null and void and no construction may take place. If design review approval on your project is approaching its expiration date, contact the Planning Division regarding extension opportunities. It is the applicant's responsibility to request an extension.

Please note that final building plans submitted for building permit review must comply with the attached conditions of approval. You must comply with all conditions required through the design review process before final occupancy will be granted. If you have any questions; please contact me at 503-537-1215 or by email at keith.leonard@newbergoregon.gov.

Sincerely,

Keith Leonard, AICP
Associate Planner
City of Newberg

DECISION AND FINDINGS
Friendsview Residential Care Facility Phase 1– Type 2 Design Review – File # DR221-0001

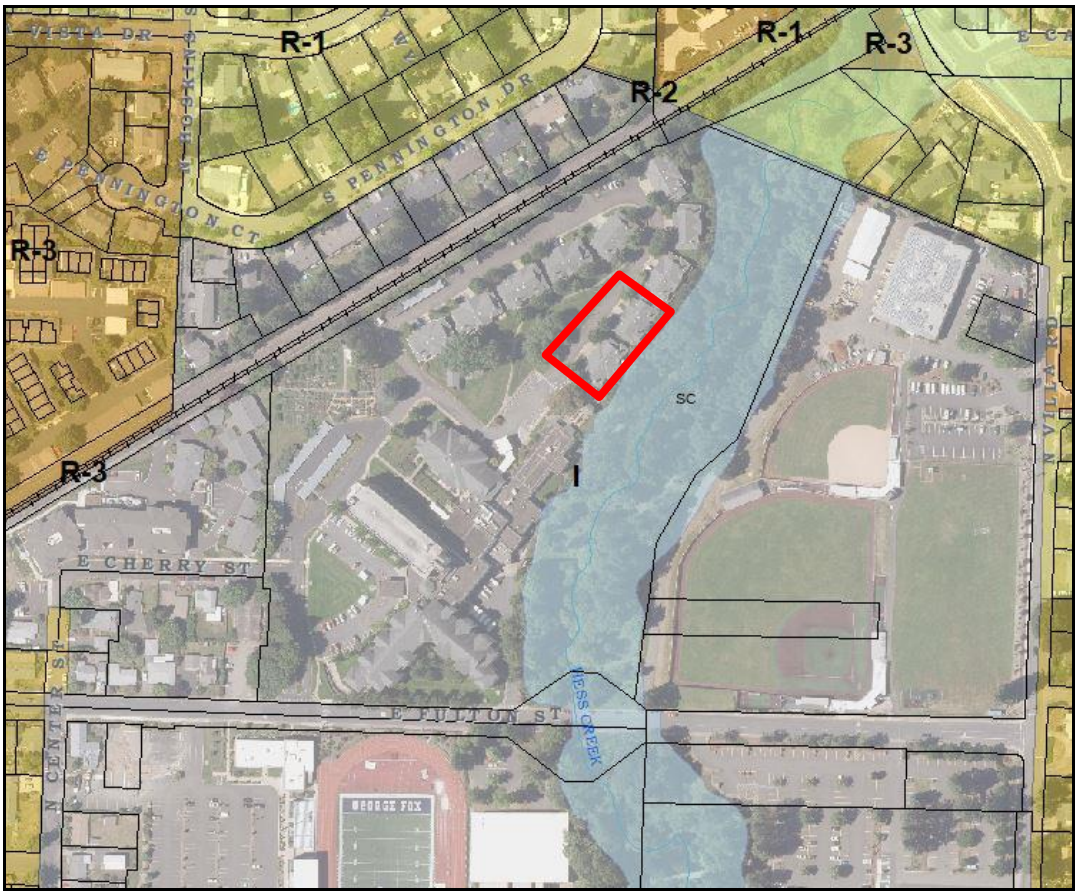
FILE NO:	DR221-0001
REQUEST:	Residential Care Facility with 79 patient units in a 4 story building of 73,000 square feet
LOCATION:	1301 E Fulton Street
TAX LOT:	R3217CB 00200
APPLICANT:	Friendsview Manor, Inc.
ZONE:	I (Institutional)
PLAN DISTRICT:	PQ **(**Public/Quasi-Public)
OVERLAYS:	SC (Stream Corridor), Airport Overlay (Airport Inner Horizontal Surface)

CONTENTS

Section I: Application Information

DESCRIPTION OF APPLICATION: Friendsview Manor, Inc. has submitted an application for a Type II Site Design Review for a Residential Care Facility (RCF). The proposed use of this building will be a Residential Care Facility (RCF) for group care of patients. The applicant is proposing the construction of a four story building of approximately 73,000 square feet with 79 patient rooms. The maximum height of the building will be approximately 59 feet as measured at the peak of the roof. The applicant will construct 31 new parking spaces and utilize shared parking areas within the larger Friendsview campus. Phase 1 of the RCF will involve the demolition of one duplex and relocation of a second duplex. Phase 1 of the RCF is the next phase for the Friendsview Manor campus. The applicant applied and received approval for MISC121-0008, which approved connections to existing stormwater and wastewater sewer lines within the Stream Corridor Overlay Subdistrict. Temporary construction disturbance caused by installation of these utility lines will be restored with native plant materials, which is intended to restore the site to its pre-construction condition.

SITE INFORMATION:



1. Location: The development site is located at 1301 E Fulton Street north of Hess Creek and is part of the larger Friendsview Manor campus. George Fox University (GFU) is located to the south of the site across E Fulton Street.

2. Parcel area: According to the City of Newberg's Geographic Information System (GIS) the subject property's total land area is approximately 16.4 acres. Approximately 5 acres of the total land area is within the Hess Creek SC overlay subdistrict. The applicant has

stated that the RCF development site where the RCF building will be constructed is approximately 1.7 acres and located outside the SC.

3. Proposed building total floor area: 73,000 square feet

4. Topography and Natural Features: The development site is mostly flat. The Hess Creek Stream Corridor is located east of the development site, which slopes steeply downward to Hess Creek.

5. Current Land Use: Friendsview retirement and extended care facilities

6. Adjacent Land Uses: The development site is within the interior of the larger Friendsview campus.
   a. North: Friendsview Duplexes
   b. East: Stream Corridor
   c. South: Friendsview Facilities
   d. West: Parking, Friendsview Manor facilities

7. Access and Transportation: This development has frontage along E Fulton Street, which is classified as a Major Collector roadway. The RCF will take access from E Fulton Street, a public street, via an existing driveway.

8. Utilities:

   a. Wastewater: The applicant's preliminary plans illustrate an existing private wastewater line that runs through the east side of the development site along Hess Creek. The City's GIS illustrates there is a 12-inch wastewater trunk line running parallel to Hess Creek within the subject property.
   b. Water: The City's GIS illustrates an existing 8-inch water line looping through the site.
   c. Stormwater: The applicant's preliminary plans illustrate an existing private stormwater line that runs through the east side of the development site adjacent to Hess Creek.
   d. Overhead Lines: There are existing overhead utility lines along E Fulton Street, All utilities on the E Fulton Street frontage will be required to be placed underground as part of this development. Existing overhead utilities are required to be placed underground when relocated or for an addition or remodel requiring a Type II design review. See NMC 15.430.010 for exception provisions.

B. PROCESS: The Design Review request is a Type II application and follows the procedures in Newberg Development Code 15.100.030. Following a 14 day public comment period, the Community Development Director will make a decision on the application based on the criteria listed in the attached findings located in Section II of this decision. The Director's decision is final unless appealed. Important dates related to this application are as follows:

1. 02/21/21: The Community Development Director deemed the application complete.

2. 02/24/21: The applicant mailed notice to the property owners within 500 feet of the site.

3. 02/25/21: The applicant posted notice on the site.

4. 03/11/21: The 14-day public comment period ended.

5. 05/26/21: The Community Development Director issued a decision on the application.

C. AGENCY COMMENTS: The application was routed to several public agencies for review and comment. Comments and recommendations from city departments have been incorporated into the findings and conditions of approval. As of the writing of this report, the city received the following agency comment:

1. **Tualatin Valley Fire and Rescue (TVF&R)**: The comments are included in the findings and conditions (Attachment 2).

D. PUBLIC COMMENTS: As of the writing of this report, the city received one written comment, which is summarized below. The full comments are included in Attachment 3.

Doug Bartlett – Mr. Bartlett's is in favor of the development but questioned how 79 living units only need 39 parking spaces. He asked if the number of spaces match the existing parking needs for similar living accommodations at Friendsview. Does the number of parking spaces meet NMC requirements?

Staff Response: The applicant stated that the total off-street parking requirements will be met by joint use of Friendsview parking lots including the Friendsview Manor lot and the University Village lot to the west of the development site. NMC 15.440.030 requires one (1) parking space for every 3 beds for group care facilities. There are 79 patient units with one bed in each unit. The applicant is required to provide 27 parking spaces for 79 beds. The applicant is proposing construction of 31 new parking spaces with the construction of the RCF building. Additionally, the applicant is utilizing NMC 15.440.050 Common Facilities for Mixed Uses, which allows joint use of parking facilities within 400 feet of the building requiring parking. The RCF and the larger Friendsview campus has offices, residential dwellings and various treatment facilities for long-term care of their residents. The applicant's narrative states that there are 407 total units that will share the Friendsview off-street parking facilities including the proposed 79 units for the proposed RCF. There will be a total of 444 parking spaces provided by the Friendsview Manor and University Village parking lots and 31 parking spaces that will be constructed with the RCF building. The applicant's narrative states that there will be no substantial conflicts by utilizing joint parking.

E. Analysis:

Undergrounding Utility Analysis: The applicant has made a formal request through Attorney John Bridges for an exception to constructing all utilities underground based on criteria in NMC 15.430.010. The request specified the following justifications including 1) the cost of undergrounding the utility is extraordinarily expensive; 2) there are physical factors that make undergrounding extraordinarily difficult; and 3) existing utility facilities in the area are primarily overhead and are unlikely to be changed (Attachment 4). The specific area described as being costly and problematic is in the area east of the existing Friendsview service driveway.

1. The cost of undergrounding the utility is extraordinarily expensive.

Summary of Applicant Representatives' Statement: LRS Architects (LRS) provided a cost estimate of $429,916, which equates to approximately 125% the cost to underground utilities in other areas.

City Staff's Response: Staff agree that undergrounding of the utilities east of the existing service drive underneath the stream bed would be expensive. However, there may be enough room just north of E Fulton Street within the right-of-way. The applicant has been asked to provide a more thorough analysis (see conditions of approval).

2. There are physical factors that make undergrounding utilities extraordinarily difficult.

Summary of Applicant Representatives' Statement: The Hess Creek Stream Corridor (SC) is east and southeast of the development site. The top of bank of the SC steeply slopes downward towards Hess Creek. There subject property drops approximately 120 feet from top of the SC bank to the Hess Creek stream bed. Additional land use reviews and processes would be required by the NMC. Contractors would have to use directional drilling approximately 70 feet down in Hess Creek then laterally 250 feet to run utilities under the existing wastewater main without disrupting wastewater service. Once the utilities are under Hess Creek then they would connect to an existing George Fox University (GFU) power poles which would requiring an easement to be granted to Friendsview to utilize these poles.

City Staff's Response: The process to underground utilities described by the applicant to underground the utilities underneath the stream bed and the existing physical factors associated with the Hess Creek SC area would be difficult. The applicant did not provide enough supporting information to justify why directional drilling and placement of the utilities in the area adjacent to the existing sidewalk along E Fulton Street could not be utilized for undergrounding the utilities.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

Summary of Applicant Representatives' Statement: The existing utilities parallel E Fulton Street and N Villa Road are located on GFU property and above ground. The applicant states that there is no plan by GFU to underground existing above ground utilities and it is unlikely that the existing above-ground utilities will be undergrounded in the future.

City Staffs' Response: Staff did not determine the legitimacy of the applicant's statement regarding GFU "no current/or proposed plan to alter the area in such a way as to trigger the undergrounding of these utilities along their property. It is unlikely that the existing above-ground utilities will ever be changed". The applicant did not provide documentation from GFU substantiating the aforementioned statement made by the applicant's representative. It is true that GFU has overhead power lines in vicinity of the RCF development site.

The applicant's submitted land-use application acknowledges that the proposed project requires a Type II design review and is therefore proposing to underground all utilities adjacent to and serving the site. The applicant has made a formal request to not underground utilities in the area east of the Friendsview service driveway. Because the extent of the undergrounding of overhead utilities is not fully described and the applicant has not provided detailed information or a concept cross section sketch for clearly illustrating why the conduits needed for utility undergrounding east of the service drive

would be installed beneath the creek and an existing wastewater line, rather than being installed by directional drilling at or near the standard depth for franchise utilities along the top of the slope adjacent to the sidewalk (see photo's below). A condition of approval has been drafted to address undergrounding of utilities.

Section II: Findings –File DR221-0001
Friendsview RCF Phase 1

A. Design Review; Criteria That Apply - Newberg Development Code 15.220.050(B):

1. Design compatibility. The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not be limited to, building architecture, materials, colors, roof design, landscape design, and signage.

Finding: The proposed RCF building will be a 4-story, 73,000 square foot building at a height of 59 feet above grade. The Friendsview Residenftial Care Facility (RCF) will have 79 units and associated support facilities. Elevations match the architectural theme of surrounding facilities and the overall campus themes of Friendsview facilities and George Fox University. Specific building designs include a pitched gable and hipped roof. The primary façade construction material will consist of a brick base on the exterior of the first floor and cementitious lap and panel siding along the upper floors of the building. Colors will be earth tone brown and tan colors that will blend well with the surrounding buildings. A landscape plan illustrates general compliance with the requirements of NMC 15.420 or conditions of approval have been applied in order to meet landscaping requirements. The applicant has stated that signage will be submitted as part of a separate application. This criterion is met.

2. Parking and On-Site Circulation. Parking areas shall meet the requirements of NMC 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in NMC 15.440.010. Provisions shall be made to provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.

Finding: NMC 15.440.010 is discussed below in greater detail. The majority of the shared parking and on-site circulation is existing. The applicant is proposing an additional 31 parking spaces with the construction of the RCF building. A total of 444 parking spaces will be available for Friendsview University Village, Manor and RCF. Exhibit A of the applicant's submittal illustrates on-site parking and circulation patterns that demonstrate efficient and adequate on-site circulation without using E Fulton Street as part of the parking lot circulation pattern. The existing site access to E Fulton Street will remain and serve as the main public access for the RCF. This criterion is met.

15.440.010 Required off-street parking.

A. Off-street parking shall be provided on the development site for all R-1, C-1, M-1, M-2 and M-3 zones. In all other zones, the required parking shall be on the development site or within 400 feet of the development site which the parking is required to serve. All required parking must be under the same ownership as the development site served except through special covenant agreements as approved by the city attorney, which bind the parking to the development site.

Finding: The applicant is proposing off-street parking spaces within 400 feet of the development site. All parking will be under the ownership of the property owner Friendsview. This criterion is met.

E. All commercial, office, or industrial developments that have more than 20 off-street parking spaces and that have designated employee parking must provide at least one preferential carpool/vanpool parking space. The preferential carpool/vanpool parking space(s) must be located close to a building entrance.

Finding: The applicant did not address this NMC requirement. The RCF is not considered a commercial or industrial use. The plan sheets for the RCF illustrate various uses including studio units, centralized kitchen facilities, trash facilities and a mail room but no office use appears to be planned within the RCF building. This criterion is not applicable.

F. Maximum Number of Off-Street Automobile Parking Spaces. The maximum number of off-street automobile parking spaces allowed per site equals the minimum number of required spaces, pursuant to NMC 15.440.030, multiplied by a factor of:

2. One and one-half spaces for uses fronting no street with adjacent on-street parking

Finding: The on-street parking that is currently located along E Fulton Street will be removed and a 5 foot wide bike lane is required per the City's 2007 ADA/Pedestrian/Bike Route Improvement Plan. The NMC requires 1 parking space for every 3 beds for nursing homes, homes for the aged, group care homes, asylums, etc. The RCF will have 79 units with one bed in each unit, which requires a minimum of 27 parking spaces, therefore the maximum number of parking spaces required is 40. The applicant is proposing 31 additional off-street parking spaces. This criterion is met.

NMC 15.220.050(B) Criteria for design review (Type II process), continued.

3. Setbacks and General Requirements. The proposal shall comply with NMC 15.415.010 through 15.415.060 dealing with height restrictions and public access; and NMC 15.405.010 through 15.405.040 and NMC 15.410.010 through 15.410.070 dealing with setbacks, coverage, vision clearance, and yard requirements.

Finding: As shown below, the applicant has demonstrated compliance with height restrictions, public access, setbacks, dimensional requirements and vision clearance requirements. Institutionally zoned property is not subject to lot and parking coverage restrictions. These criteria are met.

15.415.020 Building height limitation.

D. Institutional. The maximum height of any building or structure will be 75 feet except as follows:

1. Within 50 feet of an interior property line abutting a C-1, R-1, R-2 or R-P district, no main building may exceed 30 feet.

2. Within 50 feet of an interior property line abutting an R-3 district, no main building may exceed 45 feet.

3. Within 100 feet of a property line abutting a public street or railroad right-of-way, or within 100 feet of property lines abutting parcels with an R-1, R-2, R-3, R-P, C-1, C-2, C-3, M-1, M-2, or M-3 zoning designation, no main building may exceed 50 feet in height.

4. To utilize the maximum permitted height standard, at least 80 percent of the building's ground coverage must be beyond the setback area designated in subsection (D)(3) of this section. The maximum encroachment may not exceed 25 feet.

Finding: The applicant did not state in their narrative the actual height of the building but referred to plan sheet A5. Plan sheet A5 does not have a graphic scale or the proposed height noted on the plans so a ruler was used to measure the height of the RCF building. As measured by staff the proposed RCF building will be approximately 59 feet in height at the peak of the roof, well under the maximum height of 75 feet. The applicant did not state the distance of the RCF building to the nearest property line. The City's GIS was used to estimate a distance of approximately 340 feet to the closest residentially zoned property (R-1) to the north. All other zoning districts listed in NMC 15.415.020(D) are located further away than the R-1 zoned property to the north of the development site. This criterion is met because the proposed building will not exceed the maximum height of 75 feet and is positioned approximately 340 feet from the closest applicable property line.

> ***E. Alternative Building Height Standard. As an alternative to the building height standards above, any project may elect to use the following standard (see Figure 24 in Appendix A). To meet this standard:***
>
> ***1. Each point on the building must be no more than 20 feet higher than the ground level at all points on the property lines, plus one vertical foot for each horizontal foot of distance from that property line; and***
>
> ***2. Each point on the building must be no more than 20 feet higher than the ground level at a point directly north on a property line, plus one vertical foot for each two horizontal feet of distance between those points. This second limit does not apply if the property directly to the north is a right-of-way, parking lot, protected natural resource, or similar unbuildable property.***

Finding: The applicant is not requesting an alternative building height calculation. This criterion is not applicable.

> ***F. Buildings within the airport overlay subdistrict are subject to the height limits of that subdistrict.***

Finding: The subject property is located in the airport inner horizontal surface of the Airport Overlay district but not within the airport approach safety zone or the displaced threshold approach surface zone so FAA Form 7460-1 or an ODA letter of determination will not be required. With the RCF building being approximately 59 feet in height and over 4,600 straight line feet from the closes point of a Sportsman's Airpark runway, the proposed development will not be a hazard for planes landing and taking off. This criterion is met.

> ***15.415.030 Building height exemptions.***
>
> ***Roof structures and architectural features for the housing of elevators, stairways, tanks, ventilating fans and similar equipment required to operate and maintain the building, fire or parapet walls, skylights, towers, flagpoles, chimneys, smokestacks, wireless masts, TV antennas, steeples and similar structures may be erected above the height limits prescribed in this code; provided, that no roof structure, feature or any other device above the prescribed height limit shall be allowed or used for the purpose of providing additional floor space. Further, no roof structure or architectural feature under this exemption shall be erected more than 18 feet above the height of the main building, whether such structure is attached to it or freestanding, nor shall any such structure or feature exceed the height limits of the airport overlay subdistrict.***

Finding: The applicant is not requesting a building height exemption nor is one needed. This criterion is not applicable.

15.415.040 Public access required.
No building or structure shall be erected or altered except on a lot fronting or abutting on a public street or having access to a public street over a private street or easement of record approved in accordance with provisions contained in this code. New private streets may not be created to provide access except as allowed under NMC 15.332.020(B)(24), 15.336.020(B)(8), and in the M-4 zone. Existing private streets may not be used for access for new dwelling units, except as allowed under NMC 15.405.030. No building or structure shall be erected or altered without provisions for access roadways as required in the Oregon Fire Code, as adopted by the city.

Finding: The development site abuts and has direct access to E Fulton Street. No new private streets are being proposed. This criterion is met.

15.415.050 Rules and exceptions governing single-family attached dwellings.
In all residential districts, single-family attached dwelling units may be permitted, provided:

Finding: This application is not requesting approval for single-family attached dwellings. These criteria are not applicable.

15.415.060 Home occupation.
Home occupations shall be processed as a Type I procedure. Home occupation uses shall comply with the following standards:

Finding: The applicant is not requesting a home occupation so these criteria are not applicable.

15.405.010 Lot area – Lot areas per dwelling unit.
A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:
5. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.

Finding: The subject property is zoned Institutional. The RCF development site is approximately 1.7 acres of a 16.4 acre tax lot. The minimum lot size in the Institutional zoned property is 5 acres. This criterion is met.

B. Lot or Development Site Area per Dwelling Unit.

Finding: The applicant is not constructing dwelling units with separate cooking facilities. This criterion is not applicable.

15.405.020 Lot area exceptions.

Finding: This section of the NMC is not applicable to this design review application and the applicant has not requested any lot area exceptions.

15.405.030 Lot dimensions and frontage.

A. Width. Widths of lots shall conform to the standards of this code.
B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one-half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.
C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.
D. Frontage.
1. No lot or development site shall have less than the following lot frontage standards:
a. Each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at least 25 feet wide. No new private streets, as defined in NMC 15.05.030, shall be created to provide frontage or access except as allowed by NMC 15.240.020(L)(2).
b. Each lot in R-2 zone shall have a minimum width of 25 feet at the front building line and R-3 zone shall have a minimum width of 30 feet at the front building line.
c. Each lot in R-1 zone shall have a minimum width of 35 feet at the front building line and AI or RP shall have a minimum width of 50 feet at the front building line.
d. Each lot in an AR zone shall have a minimum width of 45 feet at the front building line.
2. The above standards apply with the following exceptions:
a. Legally created lots of record in existence prior to the effective date of the ordinance codified in this code.
b. Lots or development sites which, as a process of their creation, were approved with sub-standard widths in accordance with provisions of this code.
c. Existing private streets may not be used for new dwelling units, except private streets that were created prior to March 1, 1999, including paving to fire access roads standards and installation of necessary utilities, and private streets allowed in the airport residential and airport industrial districts.

Finding: The applicant is not proposing to create any new lots. The subject property has over 500 feet of frontage on E Fulton Street. The dimensions of the existing lot conforms to NMC 15.405.030. These criteria are met.

15.405.040 Lot coverage and parking coverage requirements.
C. All other districts and uses not listed in subsection (B) of this section shall not be limited as to lot coverage and parking coverage except as otherwise required by this code.

Finding: The subject site is zoned I (Institutional). Lot and parking coverage regulations only apply to R-1, R-2, R-3, AR and RP zoned property. These criteria are not applicable.

15.410.010 General yard regulations.
A. No yard or open space provided around any building for the purpose of complying with the provisions of this code shall be considered as providing a yard or open space for any other building.
B. No yard or open space on adjoining property shall be considered as providing required yard or open space for another lot or development site under the provisions of this code.

C. No front yards provided around any building for the purpose of complying with the regulations of this code shall be used for public or private parking areas or garages, or other accessory buildings, except as specifically provided elsewhere in this code.

D. When the common property line separating two or more contiguous lots is covered by a building or a permitted group of buildings with respect to such common property line or lines does not fully conform to the required yard spaces on each side of such common property line or lines, such lots shall constitute a single development site and the yards as required by this code shall then not apply to such common property lines.

Finding: The applicant's narrative and plan set indicate that no yards or open space of adjoining properties have been used for complying with the provisions of this code for providing a required yard or open space for the proposed building. The subject property's front yard is not being used for public or private parking areas or garages and no accessory buildings are proposed. The proposed building will be located on a single development site and will not cross property lines. These criteria are met.

15.410.020 Front yard setback.

D. Institutional and Community Facility. All lots or development sites in the I and CF district shall have a front yard of 25 feet. Outdoor activity facilities, such as pools, basketball courts, tennis courts, or baseball diamonds, including any accessory structures and uses, are not permitted within the required setback.

Finding: The RCF building will be constructed over 600 feet from E Fulton Street, well outside of the minimum front yard setback of 25 feet. This criterion is met.

15.410.060 Vision clearance setback.

The following vision clearance standards shall apply in all zones (see Appendix A, Figure 9).

A. At the intersection of two streets, including private streets, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 50 feet in length.

B. At the intersection of a private drive and a street, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 25 feet in length.

C. Vision clearance triangles shall be kept free of all visual obstructions from two and one-half feet to nine feet above the curb line. Where curbs are absent, the edge of the asphalt or future curb location shall be used as a guide, whichever provides the greatest amount of vision clearance.

D. There is no vision clearance requirement within the commercial zoning district(s) located within the riverfront (RF) overlay subdistrict.

Finding: The RCF building will be accessed from the existing driveway on E Fulton Street. The entryway to the Friendsview campus has existing landscaping. The RCF building will be located in the interior of the larger tax lot and does not have any direct private or public street frontage near the development site. These criteria are not applicable to the proposed RCF building.

NMC 15.220.050(B) Criteria for design review (Type II process), continued.

4. Landscaping Requirements. The proposal shall comply with NMC 15.420.010 dealing with landscape requirements and landscape screening.

Finding: As illustrated in the applicant's narrative and landscaping plans, both the proposed landscaping for the RCF development site and entire tax lot exceed the minimum 15% site landscaping requirement. The applicant's narrative states that approximately 18,207 square feet or 23.2% of the RCF development site will be landscaped. Conditions of approval are required to be met for individual and shared outdoor recreation areas and, although the applicant's narrative discussed the required shade trees within landscape parking lot islands, there were no shade trees illustrated within the landscape islands on the landscape plans. This criterion will be met with the adherence to landscaping conditions of approval outlined later in this report (see NMC 15.420).

15.420.010 Required minimum standards.

A. Private and Shared Outdoor Recreation Areas in Residential Developments.

1. Private Areas. Each ground-level living unit in a residential development subject to a design review plan approval shall have an accessible outdoor private space of not less than 48 square feet in area. The area shall be enclosed, screened or otherwise designed to provide increased privacy for unit residents, their guests and neighbors.

2. Individual and Shared Areas. Usable outdoor recreation space shall be provided for the individual and/or shared use of residents and their guests in any duplex or multifamily residential development, as follows:

a. One- or two-bedroom units: 200 square feet per unit.

b. Three- or more bedroom units: 300 square feet per unit.

c. Storage areas are required in residential developments. Convenient areas shall be provided in residential developments for the storage of articles such as bicycles, barbecues, luggage, outdoor furniture, and the like. These shall be entirely enclosed.

Finding: The applicant is proposing 79 one bedroom units group care facility which is not considered a residential development such as apartments. However, the applicant's plans illustrate 48,337 square feet or 10% of the total lot area having shared outdoor recreational areas or outdoor space consisting of pathways and setting areas. These criteria are not applicable.

B. Required Landscaped Area. The following landscape requirements are established for all developments except single-family dwellings:

1. A minimum of 15 percent of the lot area shall be landscaped; provided, however, that computation of this minimum may include areas landscaped under subsection (B)(3) of this section. Development in the C-3 (central business district) zoning district and M-4 (large lot industrial) zoning district is exempt from the 15 percent landscape area requirement of this section. Additional landscaping requirements in the C-4 district are described in NMC 15.352.040(K). In the AI airport industrial district, only a five percent landscaping standard is required with the goal of "softening" the buildings and making the development "green" with plants, where possible. The existence of the runway, taxiway, and approach open areas already provide generally for the 15 percent requirement. Developments in the AI airport industrial district with a public street frontage shall have said minimum landscaping between the front property line and the front of the building.

2. All areas subject to the final design review plan and not otherwise improved shall be landscaped.

Finding: The applicant's site plan sheet A1 illustrates approximately 141,423 square feet or 29% of the subject property, including both existing and proposed landscaping, being landscaped. The applicant's

narrative states that approximately 18,207 square feet or 23.2% of the RCF development site area will be landscaped. NMC 15.420.010(B(1) pertains to "lot area" landscaping. The applicant has provided sufficient information illustrating that the subject property or "lot area" and development site landscaping will exceed the 15% requirement. However, there are some deficiencies such as trees not being placed in parking lot landscape islands on the landscape plans. These deficiencies are discussed in other section of these findings. This criterion is met because the applicant has demonstrated compliance with the minimum of 15% of the lot area being landscaped.

3. The following landscape requirements shall apply to the parking and loading areas:
a. A parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space.

Finding: The applicant is proposing 31 parking spaces. The plan set illustrates that at least 25 square feet or 775 square feet of defined landscaped area will be provided for each of the spaces within the parking lot. This criterion is met.

b. A parking, loading area, or drive aisle which runs adjacent to a property line shall be separate from any lot line adjacent to a street by a landscaped strip at least 10 feet in interior width or the width of the required yard, whichever is greater, and any other lot line by a landscaped strip of at least five feet in interior width. See subsections (B)(3)(c) and (d) of this section for material to plant within landscape strips.

Finding: The closest property line is 315 feet to the east with a stream corridor separating the development site from the abutting GFU baseball field. This criterion is met because the development site and associated parking, loading and drive aisles are existing and located within the interior of the larger Friendsview campus and the existing landscape strips meet NMC requirements.

c. A landscaped strip separating a parking area, loading area, or drive aisle from a street shall contain street trees spaced as appropriate to the species, not to exceed 50 feet apart on average, and a combination of shrubs and ground cover, or lawn. This landscaping shall provide partial screening of these areas from the street.

Finding: This criterion is not applicable because the development site and associated parking, loading and drive aisles are located within the interior of the larger Friendsview campus. The existing landscaping throughout the larger subject property is sufficient. The proposed RCF building development site does not directly abut E Fulton Street.

d. A landscaped strip separating a parking area, loading area, or drive aisle from an interior lot line shall contain any combination of trees, shrubs, ground cover or lawn. Plant material shall be selected from at least two different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and shrubs).

Finding: This criterion is not applicable because the development site and associated parking, loading and drive aisles are located within the interior of the larger Friendsview campus and not located near an interior property line.

e. Landscaping in a parking or loading area shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area.

Finding: The applicant's plan set illustrate that landscaping in the parking and/or loading area will be provided and uniformly distributed. This criterion is met.

f. Landscaping areas in a parking lot, service drive or loading area shall have an interior width of not less than five feet.

Finding: The applicant's narrative and plan set illustrate that the service drive for Phase 1 of the RCF will have landscaping strips and other landscaped areas with interior widths of at least 5 feet. This criterion is met.

g. All multifamily, institutional, commercial, or industrial parking areas, service drives, or loading zones which abut a residential district shall be enclosed with a 75 percent opaque, site-obscuring fence, wall or evergreen hedge along and immediately adjacent to any interior property line which abuts the residential district. Landscape plantings must be large enough to provide the required minimum screening requirement within 12 months after initial installation. Adequate provisions shall be maintained to protect walls, fences or plant materials from being damaged by vehicles using said parking areas.

Finding: The RCF development site does not abut a residential district therefore a site obscuring fence, wall or evergreen hedge is not required. This criterion is not applicable.

h. An island of landscaped area shall be located to separate blocks of parking spaces. At a minimum, one deciduous shade tree per seven parking spaces shall be planted to create a partial tree canopy over and around the parking area. No more than seven parking spaces may be grouped together without an island separation unless otherwise approved by the director based on the following alternative standards:

i. Provision of a continuous landscaped strip, with a five-foot minimum width, which runs perpendicular to the row of parking spaces (see Appendix A, Figure 13).

ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average, within areas proposed for back-to-back parking (see Appendix A, Figure 14).

Finding: The applicant's narrative states that the requirement for "one deciduous shade tree per seven parking spaces to create a partial tree canopy over and around the parking area is satisfied as shown on the required Landscaping Plans (Exhibit A) and no more than seven spaces are grouped together". However, the Landscaping Plans, specifically L4 Site Planting Plan, does not illustrate one deciduous shade tree planted in the parking lot landscape islands. With the building permit submittal, the applicant shall provide a narrative and landscape planting plan that clearly illustrates compliance with NMC 15.420.010 (B)(3)(h) and said landscaping must be installed prior to a certificate of occupancy being issued because the narrative and landscape plans did not clearly illustrate compliance with this section of the NMC. This criterion will be met with the adherence to the aforementioned condition of approval.

4. Trees, Shrubs and Ground Covers. The species of street trees required under this section shall conform to those authorized by the city council through resolution. The director shall have the responsibility for preparing and updating the street tree species list which shall be adopted in resolution form by the city council.

a. Arterial and minor arterial street trees shall have spacing of approximately 50 feet on center. These trees shall have a minimum two-inch caliper tree trunk or stalk at a measurement of two feet up from the base and shall be balled and burlapped or boxed.

b. Collector and local street trees shall be spaced approximately 35 to 40 feet on center. These trees shall have a minimum of a one and one-half or one and three-fourths inch tree trunk or stalk and shall be balled and burlapped or boxed.

Finding: The applicant's narrative and plan set illustrate that street trees are appropriately spaced along E Fulton Street and not within vision clearance areas. This criterion is met.

c. Accent Trees. Accent trees are trees such as flowering cherry, flowering plum, crab-apple, Hawthorne and the like. These trees shall have a minimum one and one-half inch caliper tree trunk or stalk and shall be at least eight to 10 feet in height. These trees may be planted bare root or balled and burlapped. The spacing of these trees should be approximately 25 to 30 feet on center.

Finding: The applicant's narrative and landscape plans illustrate that accent trees will have a minimum trunk diameter of 1.5 inches and eight feet in height with the trees spaced apart no further than approximately 25 to 30 feet from the center of the tree. This criterion is met.

d. All broad-leafed evergreen shrubs and deciduous shrubs shall have a minimum height of 12 to 15 inches and shall be balled and burlapped or come from a two-gallon can. Gallon-can size shrubs will not be allowed except in ground covers. Larger sizes of shrubs may be required in special areas and locations as specified by the design review board. Spacing of these shrubs shall be typical for the variety, three to eight feet, and shall be identified on the landscape planting plan.

Finding: The applicant's narrative and plan set illustrate that a minimum height of 12 to 15 inches in 2-gallon containers will be used for shrub plantings. The applicant further states that the shrubs will be grouped and spaced typically for the variety, three to eight feet and shall be identified on the landscape planting plan. This criterion is met.

e. Ground Cover Plant Material. Ground cover plant material such as greening juniper, cotoneaster, minor Bowles, English ivy, hypericum and the like shall be one of the following sizes in specified spacing for that size:

Gallon cans	***3 feet on center***
4'' containers	***2 feet on center***
2-1/4'' containers	***18'' on center***
Rooted cuttings	***12'' on center***

Finding: The criteria for NMC 15.420.010(B)(4) pertains to street trees. There are street trees already planted along E Fulton Street (major collector) frontage at approximately 50 feet on center. The RCF development site does not have abutting street frontage. These criteria are not applicable to the construction of the RCF building.

The applicant's narrative states and landscape plans illustrate that all ground cover plant material will be planted in groupings and distances appropriate to the species and all planting size will meet or exceed NMC requirements. This criterion is met.

> ***5. Automatic, underground irrigation systems shall be provided for all areas required to be planted by this section. The director shall retain the flexibility to allow a combination of irrigated and nonirrigated areas. Landscaping material used within nonirrigated areas must consist of drought- resistant varieties. Provision must be made for alternative irrigation during the first year after initial installation to provide sufficient moisture for plant establishment.***
> ***6. Required landscaping shall be continuously maintained.***

Finding: The applicant's Landscape Plan Sheet L6 and narrative illustrate that an underground irrigation system will be utilized and that the landscaping shall be continuously maintained during construction and for 90 days following substantial completion of the installation. Thereafter, the applicant's narrative states that the owner will continuously maintain the landscape as shown within the Landscaping Plans (Exhibit A). This criterion is met.

> ***7. Maximum height of tree species shall be considered when planting under overhead utility lines.***
> ***8. Landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) will apply to development proposals unless the institution has addressed the requirements and standards by an approved site development master plan. With an approved site development master plan, the landscape requirements will be reviewed through an administrative Type I review process.***

Finding: The applicant's narrative states that "the maximum height of proposed tree species will not interfere with overhead power lines. No landscaping master plan is associated with the construction of Phase 1 of the Friendsview RCF. The applicant has illustrated compliance with NMC 15.420.010(B)(7). As stated above in subsection (B)(3), the applicant meets landscaping requirements and standards for parking and loading areas either outright or by adherence to the conditions of approval. These criteria are met.

> ***C. Installation of Landscaping. All landscaping required by these provisions shall be installed prior to the issuance of occupancy permits, unless security equal to 110 percent of the cost of the landscaping as determined by the director is filed with the city, insuring such installation within six months of occupancy. A security – cash, certified check, time certificates of deposit, assignment of a savings account, bond or such other assurance of completion as shall meet with the approval of the city attorney – shall satisfy the security requirements. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the director, the security may be used by the city to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the city shall be returned to the applicant.***

Finding: The applicant's narrative states that the "proposed landscaping will be installed prior to occupancy". This criterion will be checked for compliance prior to issuance of occupancy permit(s) unless the applicant choses to provide a landscape security equal to 110 percent the cost of the landscaping, as determined by the director, in compliance with this section of the NMC.

NMC 15.220.050(B) Criteria for design review (Type II process), continued.

> ***5. Signs. Signs shall comply with NMC 15.435.010 et seq. dealing with signs.***

Finding: The applicant is not proposing new signage with this application. This criterion is not applicable.

> ***6. Manufactured Home, Mobile Home and RV Parks. Manufactured home, mobile home, and recreational vehicle parks shall also comply with the standards listed in NMC 15.445.050 et seq. in addition to the other criteria listed in this section.***

Finding: The application is not proposing a manufactured home, mobile home, or RV park. This criterion is not applicable.

> ***7. Zoning District Compliance. The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in NMC 15.304.010 through 15.328.040. Through this site review process, the director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the director shall make a finding that the use shall not have any different or more detrimental effects upon the adjoining neighborhood area than those specifically listed.***

Finding: The site is zoned I (Institutional). The proposed RCF is considered to be a group care facility and is permitted within the I zoning district. This criterion is met.

> ***8. Subdistrict Compliance. Properties located within subdistricts shall comply with the provisions of those subdistricts located in NMC 15.340.010 through 15.348.060.***

Finding: The Stream Corridor overlay subdistrict applies to the eastern portion of the subject property but the proposed building and related improvements are not within the overlay. The site is also within the Airport Overlay (Airport Inner Horizontal Surface) but not within the more restrictive airport approach safety zone or the displaced threshold approach surface zone, therefore NMC 15.340.010 through 15.348.060 are not applicable.

> ***9. Alternative Circulation, Roadway Frontage Improvements and Utility Improvements. Where applicable, new developments shall provide for access for vehicles and pedestrians to adjacent properties which are currently developed or will be developed in the future. This may be accomplished through the provision of local public streets or private access and utility easements. At the time of development of a parcel, provisions shall be made to develop the adjacent street frontage in accordance with city street standards and the standards contained in the transportation plan. At the discretion of the city, these improvements may be deferred through use of a deferred improvement agreement or other form of security.***

Finding: The RCF building will be constructed in the interior of the Friendsview campus. The RCF will be served by existing utilities with some utilities requiring relocation outside of the development site. Vehicular access to the site will be through an existing driveway on E Fulton Street. There will be frontage improvements along E Fulton Street including replacement of the existing sidewalk with a 6-foot wide curbside sidewalk. The existing curb cut will be removed and replaced with a full height curb. The easternmost service driveway will be re-constructed with a commercial driveway approach meeting ADA standards. The applicant has stated that they will dedicate an additional 5-feet to the existing 50-foot right-of-way. An encroachment easement will be requested for the existing vehicular ramp accessing the Friendsview Creekside facility. This ramp will encroach approximately 2 feet into the proposed 5-foot dedicated right-of-way. The applicant also stated that PGE utilities along E Fulton Street will be placed underground up to the edge of the conservation zone. The lines will be terminated at that point with a pole. The applicant has made a formal request for an exception to the requirement to underground utilities in the area east of the Friendsview service driveway. New street light poles will be engineered and provided per the City standards. Vehicle and pedestrian circulation are discussed in greater detail in NMC 15.440. Utilities are discussed in greater detail in NMC 15.505. Placement of overhead utilities are discussed in the analysis section of this report and later in this report in the discussion pertaining to NMC 15.430.010 and noted condition of approval. This criterion will be met with the adherence to the condition of approval noted in the section of this report pertaining to NMC 15.430-010.

10. Traffic Study Improvements. If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the director.

Finding: The applicant's narrative includes a Traffic Impact Analysis Memorandum. According to the Traffic Impact Analysis, the development is a 79 bed residential care facility with a "Continuing Care Retirement Community 255" designation. The development results in a net increase of 8 PM peak hour trips. 8 new PM peak hour trips is below the City's threshold of 40 trips per PM peak hour, and thus does not require the applicant to perform a traffic study. This requirement is met.

15.220.060 Additional requirements for multi-unit residential projects.

The purpose of this section is to ensure that residential projects containing three or more units meet minimum standards for good design, provide a healthy and attractive environment for those who live there, and are compatible with surrounding development. As part of the site design review process, an applicant for a new multi-unit residential project must demonstrate that some of the following site and building design elements, each of which has a point value, have been incorporated into the design of the project. At least 14 points are required for attached single-family projects of any size and smaller multifamily projects with six or fewer units and at least 20 points are required for multifamily projects with seven or more units. For more information and illustrations of each element, refer to the Newberg Residential Development Design Guidelines (July 1997).

Finding: The table below summarizes the building and site design requirement listed in NMC Section 15.220.060 (A) and (B). The applicant's narrative and plan set provides responses demonstrating how the proposed building design and site design standards are being met by attaining 35 points where 20 points are required. This section of the NMC is met.

Design Review – Friendsview RCF Phase 1	***Possible Points***	***Points***
Site Design Elements		

Consolidate green space	***3***	***3***
Preserve existing natural features	***3***	***3***
Use front setback to build a street edge	***3***	
Place parking lots on sides or back of projects	***3***	***3***
Create "outdoor rooms"	***2***	***2***
Provide good quality landscaping	***2***	***2***
Landscape at edges of parking lots	***2***	***2***
Use street trees and vegetative screens	***1***	
Use site furnishings to enhance open space	***1***	***1***
Keep fences "neighborly"	***1***	
Use entry accents	***1***	***1***
Use appropriate outdoor lighting	***1***	***1***
Building Design Elements		
Orient buildings toward the street	***3***	
Respect the scale and patterns of nearby buildings	***3***	***3***
Break up large building planes into bays	***3***	***3***
Provide variation in repeated units	***3***	
Building materials: ***a) wood or wood-like siding*** ***b) shingles on roof or upper portions*** ***c) brick at base of walls or chimneys*** ***d) wood or wood-like sash windows*** ***e) wood or wood-like trim***	***1 each***	***5***
Incorporate historical architectural elements	***2***	
Keep car shelters accessory to building	***2***	***2***
Provide a front porch at every main entry	***2***	***2***
Use slope roofs at a pitch of 3:12 or steeper	***2***	***2***
Total (a minimum score of 20 is required)		***35 (exceeds minimum)***

Landscaping, continued.

15.420.020 Landscaping and amenities in public rights-of-way.
The following standards are intended to create attractive streetscapes and inviting pedestrian spaces. A review body may require any of the following landscaping and amenities to be placed in abutting public rights-of-way as part of multifamily, commercial, industrial, or institutional design reviews, or for subdivisions and planned unit developments. In addition, any entity improving existing rights-of-way should consider including these elements in the project. A decision to include any amenity shall be based on comprehensive plan guidelines, pedestrian volumes in the area, and the nature of surrounding development.

Finding: Landscaping and amenities in the public right-of-way are already in place and the RCF development site does not have direct public street frontage. These criteria are not applicable.

Exterior Lighting

15.425.020 Applicability and exemptions.
A. Applicability. Outdoor lighting shall be required for safety and personal security in areas of assembly, parking, and traverse, as part of multifamily residential, commercial, industrial, public, recreational and institutional uses. The applicant for any Type I or Type II development permit shall submit, as part of the site plan, evidence that the proposed outdoor lighting plan will comply with this section. This information shall contain but not be limited to the following:
1. The location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture.
2. Additional information the director may determine is necessary, including but not limited to illuminance level profiles, hours of business operation, and percentage of site dedicated to parking and access.
3. If any portion of the site is used after dark for outdoor parking, assembly or traverse, an illumination plan for these areas is required. The plan must address safety and personal security.

Finding: The applicant has provided an exterior lighting photometric plan sheet, E103, as part of their plan set. The applicant has selected appropriate locations, heights, makes, models, lamp type, wattage and appropriate lighting cutoffs for the development site. Because the lighting plans provided for review do not provide construction level detail, finalized lighting details and drawings must be submitted with the building permit and will be reviewed for compliance with NMC 15.425.020(A) as part of the building permit review process. These criteria are met.

B. Exemptions. The following uses shall be exempt from the provisions of this section:
1. Public street and airport lighting.
2. Circus, fair, carnival, or outdoor governmentally sponsored event or festival lighting.
3. Construction or emergency lighting, provided such lighting is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.
4. Temporary Lighting. In addition to the lighting otherwise permitted in this code, a lot may contain temporary lighting during events as listed below:

a. Grand Opening Event. A grand opening is an event of up to 30 days in duration within 30 days of issuance of a certificate of occupancy for a new or remodeled structure, or within 30 days of change of business or ownership. No lot may have more than one grand opening event per calendar year. The applicant shall notify the city in writing of the beginning and ending dates prior to the grand opening event.

b. Other Events. A lot may have two other events per calendar year. The events may not be more than eight consecutive days in duration, nor less than 30 days apart.

5. Lighting activated by motion sensor devices.

6. Nonconforming lighting in place as of September 5, 2000. Replacement of nonconforming lighting is subject to the requirements of NMC 15.205.010 through 15.205.100.

7. Light Trespass onto Industrial Properties. The lighting trespass standards of NMC 15.425.040 do not apply where the light trespass would be onto an industrially zoned property.

Finding: The applicant has not proposed any lighting exemptions nor are any required. These criteria are not applicable.

15.430.010 Underground utility installation.

A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.

B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.

C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:

1. The cost of undergrounding the utility is extraordinarily expensive.

2. There are physical factors that make undergrounding extraordinarily difficult.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

Finding: The applicant's submitted land-use application acknowledges that the proposed project requires a Type II design review and is therefore proposing to underground all utilities adjacent to and serving the site. The applicant has made a formal request for an exception to the requirement to underground utilities in the area east of the Friendsview service driveway. Because the extent of the undergrounding of overhead utilities is not fully described and the applicant has not provided detailed information or a concept cross section sketch for clearly illustrating why the conduits requiring utility undergrounding east of the service drive would be installed beneath the creek and an existing wastewater line, rather than being installed by directional drilling at or near the standard depth for franchise utilities along the top of the slope adjacent to the sidewalk, the applicant will be required to underground overhead utilities adjacent to the subject property along the entire E Fulton Street property frontage. Undergrounding of overhead utilities must include undergrounding to the next adjacent pole outside of the project area boundary, which could require some "off-site" work. If information is provided with the building permit submittal such as a cross section sketch for the conduit installation east of the service drive by directional drilling at or near the standard depth for franchise utilities along

the top of the slope adjacent to the sidewalk illustrates that 1) the conduit cover or separation between the conduits and the wastewater line does not meet industry standards; or 2) that the integrity of the slope would not be maintained then undergrounding of utilities east of the service drive will not be required.

The criterion will be met if the aforementioned condition of approval is adhered to.

15.440 Off-Street Parking, Bicycle Parking, and Private Walkways, continued.

15.440.020 Parking area and service drive design.

A. All public or private parking areas, parking spaces, or garages shall be designed, laid out and constructed in accordance with the minimum standards as set forth in NMC 15.440.070.

B. Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwellings on a single lot, shall be served by a service drive so that no backward movement or other maneuvering of a vehicle within a street, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety in traffic access and egress and maximum safety of pedestrian and vehicular traffic on the site, but in no case shall two-way and one-way service drives be less than 20 feet and 12 feet, respectively. Service drives shall be improved in accordance with the minimum standards as set forth in NMC 15.440.060.

Finding: The applicant is proposing groups of more than three parking spaces that will be accessed by service drives. No backing or other maneuvering movements onto a public street will be required. Service drive widths were not clearly illustrated in the plan set or described in the narrative. The applicant shall provide a clearly dimensioned site plan with the building permit submittal that illustrates all services drives comply with NMC 15.440.070 and all related improvements must be completed or bonded for prior to a certificate of occupancy being issued because sufficient information to determine compliance with these requirements was not provided with the design review application. This criterion will be met with the adherence to the aforementioned condition of approval.

C. Gates. A private drive or private street serving as primary access to more than one dwelling unit shall not be gated to limit access, except as approved by variance.

Finding: No gates are proposed for the private drives within the Friendsview campus that would restrict access to the RCF building. This criterion is not applicable.

15.440.030 Parking spaces required.

Use	Minimum Parking Spaces Required
Nursing homes, homes for the aged, group care homes, asylums, etc.	1 for each 3 beds

Finding: The subject property is zoned I (Institutional) and according to NMC 15.440.030 “nursing homes, homes for the aged, group care homes, asylums, etc.” require 1 parking space per three beds. The applicant is proposing 31 parking spaces for 79 patient units that have one bed per unit. The minimum parking requirements for the proposed RCF building is 27 parking spaces. This criterion is met.

15.440.050 Common facilities for mixed uses.

A. In the case of mixed uses, the total requirements for off-street parking spaces shall be the sum of the requirements for the various uses. Off-street parking facilities for one use shall not be considered as providing parking facilities for any other use except as provided below.

B. Joint Uses of Parking Facilities. The director may, upon application, authorize the joint use of parking facilities required by said uses and any other parking facility; provided, that:

1. The applicant shows that there is no substantial conflict in the principal operating hours of the building or use for which the joint use of parking facilities is proposed.

2. The parking facility for which joint use is proposed is no further than 400 feet from the building or use required to have provided parking.

3. The parties concerned in the joint use of off-street parking facilities shall evidence agreement for such joint use by a legal instrument approved by the city attorney as to form and content. Such instrument, when approved as conforming to the provisions of the ordinance, shall be recorded in the office of the county recorder and copies of the instrument filed with the director.

Finding: The applicant also discusses utilizing NMC 15.440.050 Common Facilities for Mixed Uses, which allows joint use of parking facilities within 400 feet of the building requiring parking. The larger Friendsview campus has mix of office, residential, various treatment facilities for long-term care of their residents and patients and is considered mixed-use. The applicant's narrative states that there are 407 total units sharing the Friendsview off-street parking facilities including the proposed 79 RCF units or beds. There will be a total of 444 parking spaces provided by the Friendsview Manor and University Village parking lots. The applicant's narrative states that there will be no substantial conflicts by utilizing joint parking and Friendsview staff will utilize the shared parking areas. The joint parking area is within 400 feet of the development site. Friendsview Manor, LLC owns the entire Friendsview campus where the RCF will be constructed. With the applicant providing 31 new parking spaces for the RCF, the shared parking will be additional parking beyond the 27 parking spaces required by NMC 15.440.030. These criteria are met.

15.440.060 Parking area and service drive improvements.

All public or private parking areas, outdoor vehicle sales areas, and service drives shall be improved according to the following:

A. All parking areas and service drives shall have surfacing of asphaltic concrete or Portland cement concrete or other hard surfacing such as brick or concrete pavers. Other durable and dust-free surfacing materials may be approved by the director for infrequently used parking areas. All parking areas and service drives shall be graded so as not to drain stormwater over the public sidewalk or onto any abutting public or private property.

Finding: The applicant's narrative states that the proposed parking area and service drive will be surfaced with asphaltic concrete. The applicant has provided supporting information that illustrates the parking areas and service drives will be graded so as not to drain stormwater over public sidewalks or onto any abutting public or private property. This criterion is met.

B. All parking areas shall be designed not to encroach on public streets, alleys, and other rights-of-way. Parking areas shall not be placed in the area between the curb and sidewalk or, if there is no sidewalk, in the public right-of-way between the curb and the property

line. The director may issue a permit for exceptions for unusual circumstances where the design maintains safety and aesthetics.

Finding: The applicant's narrative and plan set illustrate that the proposed parking area is designed to be wholly contained within the property boundaries; therefore, the parking areas will not encroach on public streets, alleys, or other rights-of-way. No parking areas have been proposed between the curb and sidewalk. This criterion is met.

C. All parking areas, except those required in conjunction with a single-family or two-family dwelling, shall provide a substantial bumper which will prevent cars from encroachment on abutting private and public property.

Finding: The RCF development site is not abutting any private or public property. Therefore vehicles parking for the RCF will not encroach onto abutting private or public property. This criterion is met.

D. All parking areas, including service drives, except those required in conjunction with single-family or two-family dwellings, shall be screened in accordance with NMC 15.420.010(B).

Finding: The applicant has provided narrative responses and plan sheets that illustrate compliance with NMC 15.420.010(B). This criterion is met.

E. Any lights provided to illuminate any public or private parking area or vehicle sales area shall be so arranged as to reflect the light away from any abutting or adjacent residential district.

Finding: The applicant has proposed lighting for the RCF parking area. The parking that will be utilized by the RCF will be from existing or reconfigured parking lots that have existing lighting. The 31 new proposed parking spaces are located in the interior of the Friendsview campus and is already illuminated so abutting or adjacent residential properties will not be affected by the parking lot lighting. This criterion is met.

F. All service drives and parking spaces shall be substantially marked and comply with NMC 15.440.070.

Finding: The applicant has provided a plan set and narrative that indicate all service drives and parking spaces will be substantially marked in compliance with NMC 15.440.070. This criterion is met.

G. Parking areas for residential uses shall not be located in a required front yard, except as follows:

1. Attached or detached single-family or two-family: parking is authorized in a front yard on a service drive which provides access to an improved parking area outside the front yard.

2. Three- or four-family: parking is authorized in a front yard on a service drive which is adjacent to a door at least seven feet wide intended and used for entrance of a vehicle (see Appendix A, Figure 12).

Finding: The applicant is not proposing parking within the required front yard and the proposed development does not involve single-, two-, three- or four family residential development. These criteria do not apply.

> ***H. A reduction in size of the parking stall may be allowed for up to a maximum of 30 percent of the total number of spaces to allow for compact cars. For high turnover uses, such as convenience stores or fast-food restaurants, at the discretion of the director, all stalls will be required to be full-sized.***

Finding: The applicant is not requesting any compact parking spaces. This criterion is not applicable.

> ***I. Affordable housing projects may use a tandem parking design, subject to approval of the community development director.***

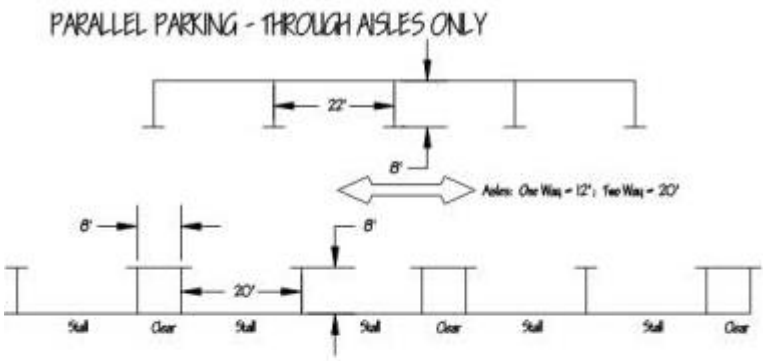
Finding: The proposed project is not an affordable housing project, therefore, this criterion does not apply.

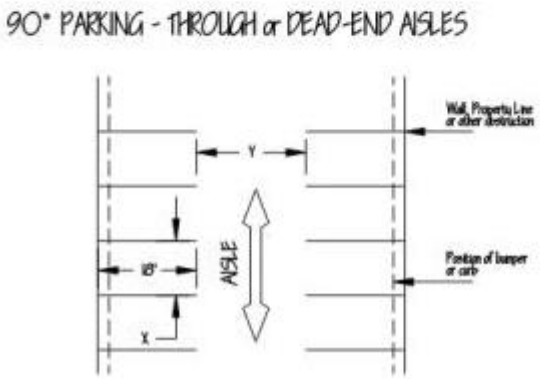
> ***J. Portions of off-street parking areas may be developed or redeveloped for transit-related facilities and uses such as transit shelters or park-and-ride lots, subject to meeting all other applicable standards, including retaining the required minimum number of parking spaces.***

Finding: Transit facilities are not proposed with this application nor are any required. This criterion is not applicable.

15.440.070 Parking tables and diagrams.

Diagram 2





Notes:

1. Bumpers must be installed where paved areas abut street right-of-way (except at driveways).
2. No stalls shall be such that cars must back over the property line to enter or leave stall.
3. Stalls must be clearly marked and the markings must be maintained in good condition.
4. The sketches show typical situations to illustrate the required standards. For further information or advice, contact the community development department at 537-1210.

Finding: The applicant is not proposing angle or compact parking spaces within the parking area. The applicant's narrative is proposing parking spaces that meet required stall dimensions of 9 feet in width and at least 18 feet in depth. The applicant's plan set did not illustrate the width of the service drive. In the applicant's narrative response states that parking aisles will have a minimum width of 24 feet. The applicant's narrative goes on to state that "no paved areas will abut a street right-of-way. No stalls will be located near a property line. Parking spaces will be clearly marked, and the markings maintained in good condition." Staff generally concur with the applicant's finding. The statements from the applicant indicate a willingness to comply with NMC 15.440.070. However, a previous condition of approval requiring confirmation of the service aisle width is necessary because the plan sheets do not definitively illustrate drive aisle dimensions. These criteria are met with the adherence to the conditions of approval.

Bicycle Parking

15.440.100 Facility requirements.
Bicycle parking facilities shall be provided for the uses shown in the following table. Fractional space requirements shall be rounded up to the next whole number.

Use	*Minimum Number of Bicycle Parking Spaces Required*
New commercial, industrial, office, and institutional developments, including additions that total 4,000 square feet or more	*One bicycle parking space for every 10,000 square feet of gross floor area. In C-4 districts, two bicycle parking spaces, or one per 5,000 square feet of building area, must be provided, whichever is greater*

Finding: Institutional uses require one bicycle parking space for every 10,000 square feet of gross floor area. The applicant is proposing a gross floor area of 73,000 square feet. Therefore, 7 bicycle parking spaces are required. The applicant is proposing 8 new bicycle parking spaces. This criterion is met.

15.440.110 Design.

A. Bicycle parking facilities shall consist of one or more of the following:
1. A firmly secured loop, bar, rack, or similar facility that accommodates locking the bicycle frame and both wheels using a cable or U-shaped lock.
2. An enclosed locker.
3. A designated area within the ground floor of a building, garage, or storage area. Such area shall be clearly designated for bicycle parking.
4. Other facility designs approved by the director.

Finding: Sheet A1 illustrates the location of the bicycle parking and design that meets NMC 15.440.110. This criterion is met.

B. All bicycle parking spaces shall be at least six feet long and two and one-half feet wide. Spaces shall not obstruct pedestrian travel.

Finding: The applicant's plan sheet A2 and narrative illustrate that the bicycle parking spaces will meet the dimensional requirements of this section of the NMC. This criterion is met.

C. All spaces shall be located within 50 feet of a building entrance of the development.

Finding: The applicant's plan sheets indicate that all bicycle parking will be within 50 feet of the building entrances. This criterion is met.

D. Required bicycle parking facilities may be located in the public right-of-way adjacent to a development subject to approval of the authority responsible for maintenance of that right-of-way.

Finding: This criterion is not applicable because no bike parking is proposed within the right-of-way.

Private Walkways

15.440.130 Where required.

Private walkways shall be constructed as part of any development requiring Type II design review, including mobile home parks. In addition, they may be required as part of conditional use permits or planned unit developments. In the airport industrial (AI) district and residential (AR) district, on-site walks are not required in aircraft operations areas, such as parking aprons, taxiways, and runways.

15.440.140 Private walkway design.

A. All required private walkways shall meet the applicable building code and Americans with Disabilities Act requirements.

Finding: The applicant's narrative states that all walkways will meet the applicable building code and ADA requirements for access. Because the plans submitted for design review are not construction level detail, the applicant shall submit plans with the building permit application that illustrate sufficient detail to determine if all private walkways comply with NMC 15.440.140. This criterion will be met with the adherence to the aforementioned conditions of approval.

B. Required private walkways shall be a minimum of four feet wide.

Finding: The applicant's narrative states and plan set illustrate that all private walkways will be a minimum of four feet in width. This criterion is met.

C. Required private walkways shall be constructed of portland cement concrete or brick.

Finding: The proposed private walkways are identified as being constructed of concrete. This requirement is met.

D. Crosswalks crossing service drives shall, at a minimum, be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

Finding: The applicant's narrative and plan sheets illustrate that the walkways will be clearly marked with a contrasting construction material. This criterion is met.

E. At a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other.

Finding: The applicant's narrative and plan sheets illustrate private walkways will connect to the main pedestrian building entrance. The Friendsview campus has existing sidewalk connections to E Fulton Street. The proposed sidewalks will connect to the existing Friendsview campus pedestrian circulation system. This criterion is met.

F. The review body may require on-site walks to connect to development on adjoining sites.

Finding: As illustrated in the applicant's narrative and plan set, the Friendsview RCF proposed construction provides on-site walks for pedestrian circulation around the development site and connects with the larger Friendsview campus that then connects to the public sidewalk along E Fulton Street. This criterion is met.

G. The review body may modify these requirements where, in its opinion, the development provides adequate on-site pedestrian circulation, or where lot dimensions, existing building layout, or topography preclude compliance with these standards.

Finding: The review body has not identified any necessary modifications nor are any required. This criterion is met.

15.505.020 Applicability.

The provision and utilization of public facilities and services within the City of Newberg shall apply to all land developments in accordance with this chapter. No development shall be approved unless the following improvements are provided for prior to occupancy or operation, unless future provision is assured in accordance with NMC 15.505.030(E).
A. Public Works Design and Construction Standards. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall comply with the requirements of the most recently adopted Newberg public works design and construction standards.
B. Street Improvements. All projects subject to a Type II design review, partition, or subdivision approval must construct street improvements necessary to serve the development.

Finding: The narrative describes and preliminary plans illustrate that the applicant is proposing to re-construct an existing driveway on E Fulton Street. The applicant is also showing the installation of new public sidewalks on E Fulton Street, and removal of existing curb cuts on E Fulton Street. These criteria will be met if all improvements necessary to serve the development meet City standards and are completed, see conditions of approval in Section 15.505.030.

C. Water. All developments, lots, and parcels within the City of Newberg shall be served by the municipal water system as specified in Chapter 13.15 NMC.

Finding: The narrative describes and preliminary plans illustrate installation of a 6-inch fire line off of an existing water line in E Fulton Street and a new proposed fire hydrant to serve the development. The narrative describes and preliminary plans also illustrate that a portion of the existing 8-inch water main within the site will be relocated outside the construction limits of the new building. This criterion will be met if all water improvements necessary to service the development meet City standards and are completed, see conditions of approval in Section 15.505.040(D).

D. Wastewater. All developments, lots, and parcels within the City of Newberg shall be served by the municipal wastewater system as specified in Chapter 13.10 NMC.

Finding: The preliminary plans illustrate installation of new wastewater facilities to serve the development including a grease-interceptor. This criteria will be met if all wastewater improvements necessary to service the development meet City standards and are completed, see conditions of approval in Section 15.505.040(E).

E. Stormwater. All developments, lots, and parcels within the City of Newberg shall manage stormwater runoff as specified in Chapters 13.20 and 13.25 NMC.

Finding: The preliminary plans illustrate installation of new stormwater facilities to serve the development. A connection to an existing stormwater line along Hess Creek is also illustrated. Proposed

facilities include a combination of Low Impact Development Approach (LIDA) flow through planters, underground chambers and storm filter structures. This criterion will be met if all stormwater improvements necessary to service the development meet City standards and are completed, see conditions of approval in Section 15.505.050.

F. Utility Easements. Utility easements shall be provided as necessary and required by the review body to provide needed facilities for present or future development of the area.

Finding: This criterion will be met if all easements necessary to service the development meet City standards and are completed, see conditions of approval in Section 15.505.040(F).

G. City Approval of Public Improvements Required. No building permit may be issued until all required public facility improvements are in place and approved by the director, or are otherwise bonded for in a manner approved by the review authority, in conformance with the provisions of this code and the Newberg Public Works Design and Construction Standards.

15.505.030 Street standards.
E. Improvements to Existing Streets.
1. All projects subject to partition, subdivision, or Type II design review approval shall dedicate right-of-way sufficient to improve the street to the width specified in subsection (G) of this section.

Finding: E Fulton Street is classified as a major collector roadway. Per the Transportation System Plan and Public Works Design and Construction Standards, major collector roadways require a minimum of 60-feet of right-of-way and are comprised of the following:

- 1-foot from back of walk to right-of-way
- 5-foot sidewalk
- 5.5-foot planter
- 0.5-foot curb
- 6-foot bike lane
- 12-foot travel lane
- 12-foot travel lane
- 6-foot bike lane
- 0.5-foot curb
- 5.5-foot planter
- 5-foot sidewalk
- 1-foot from back of walk to right-of-way

The applicant's plans illustrate the current right-of-way width of E Fulton Street as approximately 50-feet. Because the applicant has not clearly noted the additional right-of-way that needs to be dedicated on the north side of the E Fulton Street centerline, the applicant shall dedicate additional right-of-way along the north side of the E Fulton Street centerline to account for a total of 30-feet of dedicated right-of-way to the City of Newberg on the north side of E Fulton Street prior to the certificate of occupancy being issued.

The applicant has noted that an existing vehicular ramp that accesses the existing Creekside facility will encroach approximately 2-feet into the required right-of-way dedication and that an encroachment easement will be requested for this ramp. Because the applicant has not yet submitted a request for an

encroachment easement, the applicant will be required to obtain an encroachment easement for the existing vehicular ramp structure that accesses the existing Friendsview Creekside facility prior to certificate of occupancy being issued. This criterion will be met if the aforementioned condition of approval is adhered to.

> ***2. All projects subject to partition, subdivision, or Type II design review approval must construct a minimum of a three-quarter street improvement to all existing streets adjacent to, within, or necessary to serve the development. The director may waive or modify this requirement where the applicant demonstrates that the condition of existing streets to serve the development meets city standards and is in satisfactory condition to handle the projected traffic loads from the development. Where a development has frontage on both sides of an existing street, full street improvements are required.***

Finding: Frontage improvements along E Fulton Street do not match the City's cross-section for a major collector roadway per the Transportation System Plan. A major collector roadway require a minimum of 60-feet of right-of-way and are comprised of the following:

- 1-foot from back of walk to right-of-way
- 5-foot sidewalk
- 5.5-foot planter
- 0.5-foot curb
- 6-foot bike lane
- 12-foot travel lane
- 12-foot travel lane
- 6-foot bike lane
- 0.5-foot curb
- 5.5-foot planter
- 5-foot sidewalk
- 1-foot from back of walk to right-of-way

The existing curb-to-curb width along E Fulton Street is approximately 34-feet, and the required curb-to-curb width is 36-feet. In addition, the centerline of the roadway does not match the centerline of the existing curb-to-curb street width and is askew. Due to irregularities with the roadway curb-to-curb cross-section, the roadway centerline location, and existing development, along the property frontage, the applicant will not be required to relocate the curb along their property frontage based on conversations that occurred with the Community Development Director and City Engineering during pre-application meetings.

The applicant's narrative states and preliminary plans illustrate replacement of the existing 4-foot wide sidewalk between the western existing driveway and the easterly driveway with a 6-foot wide curbside sidewalk. The easterly portion of the existing sidewalk, west of the easterly service driveway, is curbside while the westerly portion of the existing sidewalk, east of the westerly driveway, is set back with a narrow planter strip. It is unclear from the applicant's submittal if existing trees along the property frontage on E Fulton Street between the easterly and westerly driveways are street trees. However, the trees along the E Fulton Street frontage between the two driveways are mature and provide shade for the sidewalk and surrounding area and there would not be enough room to locate additional trees underneath the mature trees along the E Fulton Road

Because the applicant's plans are preliminary and do not provide construction level detail, the applicant shall submit construction drawings as part of the Public Improvement Permit that include installation of a 6-foot Type 'B' sidewalk along the property frontage west of the easterly driveway where the existing sidewalk is curbside. Unless the existing trees along the property frontage between the easterly and westerly driveways are street trees and will remain, the applicant will be required to install a 5-foot Type 'A' sidewalk with a minimum 5-feet wide planter strip in the area where the existing 4-foot wide sidewalk is set back from the curb. The applicant will also be required to remove existing curb cuts with full height curb and replace any curb sections in disrepair or that do not meet city standards. All sidewalk and curb improvements must be completed prior to the certificate of occupancy being issued. The criterion will be met if the aforementioned condition of approval is adhered to.

> ***3. In lieu of the street improvement requirements outlined in NMC 15.505.040(B), the review authority may elect to accept from the applicant monies to be placed in a fund dedicated to the future reconstruction of the subject street(s). The amount of money deposited with the city shall be 100 percent of the estimated cost of the required street improvements (including any associated utility improvements), and 10 percent of the estimated cost for inflation. Cost estimates used for this purpose shall be based on preliminary design of the constructed street provided by the applicant's engineer and shall be approved by the director.***

Finding: The applicant's property is not located on a street scheduled for near-term future reconstruction and therefore a fee in lieu for improvements is not applicable. This criterion does not apply.

> ***F. Improvements Relating to Impacts. Improvements required as a condition of development approval shall be roughly proportional to the impact of the development on public facilities and services. The review body must make findings in the development approval that indicate how the required improvements are roughly proportional to the impact. Development may not occur until required transportation facilities are in place or guaranteed, in conformance with the provisions of this code. If required transportation facilities cannot be put in place or be guaranteed, then the review body shall deny the requested land use application.***

Finding: There are no improvements relating to impacts identified as part of this proposed development nor are any required. This criterion does not apply.

> ***G. Street Width and Design Standards.***
>
> ***1. Design Standards. All streets shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.***

Table 15.505.030(G) Street Design Standards

Type of Street	*Right-of-Way Width*	*Curb-to-Curb Pavement Width*	*Motor Vehicle Travel Lanes*	*Median Type*	*Striped Bike Lane (Both Sides)*	*On-Street Parking*
Arterial Streets						
Expressway**	***ODOT***	***ODOT***	***ODOT***	***ODOT***	***ODOT***	***ODOT***
Major arterial	***95 – 100 feet***	***74 feet***	***4 lanes***	***TWLTL or median****	***Yes***	***No****
Minor arterial	***69 – 80 feet***	***48 feet***	***2 lanes***	***TWLTL or median****	***Yes***	***No****
Collectors						
Major	***57 – 80 feet***	***36 feet***	***2 lanes***	***None****	***Yes***	***No****
Minor	***61 – 65 feet***	***40 feet***	***2 lanes***	***None****	***Yes****	***Yes****
Local Streets						
Local residential	***54 – 60 feet***	***32 feet***	***2 lanes***	***None***	***No***	***Yes***
Limited residential, parking both sides	***44 – 50 feet***	***28 feet***	***2 lanes***	***None***	***No***	***Yes***
Limited residential, parking one side	***40 – 46 feet***	***26 feet***	***2 lanes***	***None***	***No***	***One side***
Local commercial/ industrial	***55 – 65 feet***	***34 feet***	***2 lanes***	***None****	***No****	***Yes****

**** May be modified with approval of the director. Modification will change overall curb-to-curb and right-of-way width. Where a center turn lane is not required, a landscaped median shall be provided instead, with turning pockets as necessary to preserve roadway functions.***

***** All standards shall be per ODOT expressway standards.***

2. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet.

Finding: The existing curb-to-curb cross-section for E Fulton Street is adequate and the applicant's development is not proposing any modifications. E Fulton Street is a major collector roadway and 12-foot travel lanes are being provided. This requirement is met.

3. Bike Lanes. Striped bike lanes shall be a minimum of six feet wide. Bike lanes shall be provided where shown in the Newberg transportation system plan.

Finding: The curb-to-curb cross-section for E Fulton Street is existing and the applicant's development is not proposing any modifications. E Fulton Street is a major collector roadway but the existing curb-to curb cross-section is only 34-feet in comparison to the required 36-feet, which would be needed to meet the City's standard 6-foot marked bike lane. Currently, this section of E Fulton Street is marked with sharrows, which encourage on-street biking. However, the City's 2007 ADA/Pedestrian/Bike Route Improvement Plan specifically calls for bike lanes along the east-west connector of Illinois Street/Vermillion Street/Fulton Street/Haworth Avenue. The State of Oregon's 2012 ODOT Highway Design Manual, Chapter 13 Pedestrian and Bicycle, does allow for 5-foot wide bike lanes in constrained areas. Because the applicant's plans do not show pavement markings on E Fulton Street, the applicant will be required to remove sharrow lane markings along the property frontage, and install a 5-foot wide bike lane along the property frontage to be consistent with the City of Newberg 2015 Transportation System Plan and the 2007 ADA/Pedestrian/Bike Route Improvement Plan and related documents. This criterion will be met if the aforementioned condition of approval is adhered to.

4. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide.

Finding: The functional classification of E Fulton Street is a major collector roadway which does not allow for on-street parking due to the required bike lane. This requirement is met.

5. Center Turn Lanes. Where a center turn lane is provided, it shall be a minimum of 12 feet wide.

Finding: The functional classification of E Fulton Street is a major collector roadway which does not include a center turn lane. This requirement is not applicable.

6. Limited Residential Streets. Limited residential streets shall be allowed only at the discretion of the review authority, and only in consideration of the following factors:

a. The requirements of the fire chief shall be followed.

b. The estimated traffic volume on the street is low, and in no case more than 600 average daily trips.

c. Use for through streets or looped streets is preferred over cul-de-sac streets.

d. Use for short blocks (under 400 feet) is preferred over longer blocks.

e. The total number of residences or other uses accessing the street in that block is small, and in no case more than 30 residences.

f. On-street parking usage is limited, such as by providing ample off-street parking, or by staggering driveways so there are few areas where parking is allowable on both sides.

Finding: There are no limited residential streets proposed as part of this project. These criteria do not apply.

7. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

Finding: The applicant's narrative states, and preliminary plans illustrate, replacement of the existing 4-foot wide sidewalk between the western existing driveway and the easterly service driveway with a 6-foot wide curbside sidewalk. The easterly portion of the existing sidewalk, west of the easterly

driveway, is curbside while the westerly portion of the existing sidewalk, east of the westerly driveway, is set back with a narrow planter strip. It is unclear if existing trees along the property frontage between the easterly and westerly driveways are street trees but they function as street trees by providing shade to the sidewalk and surrounding area.

Because the applicant's plans are preliminary and do not provide construction level detail, the applicant shall submit construction drawings as part of the Public Improvement Permit that include installation of a 6-foot Type 'B' sidewalk along the property frontage west of the easterly driveway where the existing sidewalk is curbside. Unless the existing trees along the property frontage between the easterly and westerly driveways are street trees and will remain, the applicant will be required to install a 5-foot Type 'A' sidewalk with a minimum 5-feet wide planter strip in the area where the existing 4-foot wide sidewalk is set back from the curb. The applicant will also be required to remove existing curb cuts with full height curb and replace any curb sections in disrepair or not meeting the city's standards. All sidewalk and curb improvements must be completed prior to the certificate of occupancy being issued.

The applicant did not provide sufficient detail to determine the conditions of the sidewalks along the subject property, if any of the existing sidewalk along the existing property frontage on E Fulton Street east of the westerly driveway is in poor condition and does not meet current ADA requirements, those sidewalk panels are required to be repaired and/or replaced to meet current city standards prior to the certificate of occupancy being issued. This criterion will be met if the aforementioned conditions of approval is adhered to.

> ***8. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020.***
>
> ***a. Additional reinforcement is done to the sidewalk section at corners.***
>
> ***b. Sidewalk width is six feet.***

Finding: The applicant's narrative states, and preliminary plans illustrate, replacement of the existing 4-foot wide sidewalk between the western existing driveway and the easterly service driveway with a 6-foot wide curbside sidewalk. The easterly portion of the existing sidewalk, west of the easterly driveway, is curbside while the westerly portion of the existing sidewalk, east of the westerly driveway, is set back with a narrow planter strip. It is unclear if existing trees along the property frontage between the easterly and westerly driveways are street trees but they function as street trees by providing shade to the sidewalk and the surrounding area.

Because the applicant's plans are preliminary and do not provide construction level detail, the applicant shall submit construction drawings as part of the Public Improvement Permit that include installation of a 6-foot Type 'B' sidewalk along the property frontage west of the easterly driveway where the existing sidewalk is curbside. Unless the existing trees along the property frontage between the easterly and westerly driveways are street trees and will remain, the applicant will be required to install a 5-foot Type 'A' sidewalk with a minimum 5-feet wide planter strip in the area where the existing 4-foot wide sidewalk is set back from the curb. The applicant will also be required to remove existing curb cuts with full height curb and replace any curb sections in disrepair or not meeting the city's standards. All sidewalk and curb improvements must be completed prior to the certificate of occupancy being issued.

The applicant did not provide sufficient detail to determine the conditions of the sidewalks along the subject property, if any of the existing sidewalk along the existing property frontage on E Fulton Street east of the westerly driveway is in poor condition and does not meet current ADA requirements, those

sidewalk panels are required to be repaired and/or replaced to meet current city standards prior to the certificate of occupancy being issued.

This criterion will be met if the aforementioned conditions of approval is adhered to.

> ***9. Slope Easements. Slope easements shall be provided adjacent to the street where required to maintain the stability of the street.***

Finding: The applicant is not proposing a slope easement nor is one required. This criterion does not apply.

> ***10. Intersections and Street Design. The street design standards in the Newberg public works design and construction standards shall apply to all public streets, alleys, bike facilities, and sidewalks in the city.***

Finding: The applicant is not proposing any modifications to existing street intersections that do not meet or have been conditioned to meet the City's Public Works Design and Construction Standards. This criterion does not apply.

> ***11. The planning commission may approve modifications to street standards for the purpose of ingress or egress to a minimum of three and a maximum of six lots through a conditional use permit.***

Finding: The applicant is not proposing a conditional use permit. This criterion does not apply.

> ***H. Modification of Street Right-of-Way and Improvement Width. The director, pursuant to the Type II review procedures of Chapter 15.220 NMC, may allow modification to the public street standards of subsection (G) of this section, when the criteria in both subsections (H)(1) and (2) of this section are satisfied:***
>
> ***1. The modification is necessary to provide design flexibility in instances where:***
>
> ***a. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or***
>
> ***b. Lot shape or configuration precludes accessing a proposed development with a street which meets the full standards of this section; or***
>
> ***c. A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or***
>
> ***d. A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.***
>
> ***2. Modification of the standards of this section shall only be approved if the director finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.***

Finding: The applicant is not proposing modifications to the street right-of-way or improvement width nor are any required. These criteria do not apply.

> ***I. Temporary Turnarounds. Where a street will be extended as part of a future phase of a development, or as part of development of an abutting property, the street may be terminated with a temporary turnaround in lieu of a standard street connection or circular cul-de-sac bulb. The director and fire chief shall approve the temporary turnaround. It***

shall have an all-weather surface, and may include a hammerhead-type turnaround meeting fire apparatus access road standards, a paved or graveled circular turnaround, or a paved or graveled temporary access road. For streets extending less than 150 feet and/or with no significant access, the director may approve the street without a temporary turnaround. Easements or right-of-way may be required as necessary to preserve access to the turnaround.

Finding: The applicant is not proposing a temporary turnaround nor is one needed. This criterion does not apply.

J. Topography. The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of this code.

Finding: The applicant is not proposing new streets. This criterion does not apply.

K. Future Extension of Streets. All new streets required for a subdivision, partition, or a project requiring site design review shall be constructed to be "to and through": through the development and to the edges of the project site to serve adjacent properties for future development.

Finding: There are no possible future street extensions being requested nor are any required. This criterion does not apply.

L. Cul-de-Sacs.

1. Cul-de-sacs shall only be permitted when one or more of the circumstances listed in this section exist. When cul-de-sacs are justified, public walkway connections shall be provided wherever practical to connect with another street, walkway, school, or similar destination.

a. Physical or topographic conditions make a street connection impracticable. These conditions include but are not limited to controlled access streets, railroads, steep slopes, wetlands, or water bodies where a connection could not be reasonably made.

b. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future, considering the potential for redevelopment.

c. Where streets or accessways would violate provisions of leases, easements, or similar restrictions.

d. Where the streets or accessways abut the urban growth boundary and rural resource land in farm or forest use, except where the adjoining land is designated as an urban reserve area.

2. Cul-de-sacs shall be no more than 400 feet long (measured from the centerline of the intersection to the radius point of the bulb).

3. Cul-de-sacs shall not serve more than 18 single-family dwellings.

Each cul-de-sac shall have a circular end with a minimum diameter of 96 feet, curb-to-curb, within a 109-foot minimum diameter right-of-way. For residential uses, a 35-foot radius may be allowed if the street has no parking, a mountable curb, curbside sidewalks, and sprinkler systems in every building along the street.

Finding: The applicant is not proposing a cul-de-sac nor is one required. These criteria do not apply.

M. Street Names and Street Signs. Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for new streets not in alignment with existing streets are subject to approval by the director and the fire chief and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city. It shall be the responsibility of the land divider to provide street signs.

Finding: The applicant is not proposing any new streets or street name signs nor are any required. This criterion does not apply.

N. Platting Standards for Alleys.

1. An alley may be required to be dedicated and constructed to provide adequate access for a development, as deemed necessary by the director.

2. The right-of-way width and paving design for alleys shall be not less than 20 feet wide. Slope easements shall be dedicated in accordance with specifications adopted by the city council under NMC 15.505.010 et seq.

3. Where two alleys intersect, 10-foot corner cut-offs shall be provided.

4. Unless otherwise approved by the city engineer where topographical conditions will not reasonably permit, grades shall not exceed 12 percent on alleys, and centerline radii on curves shall be not less than 100 feet.

5. All provisions and requirements with respect to streets identified in this code shall apply to alleys the same in all respects as if the word "street" or "streets" therein appeared as the word "alley" or "alleys" respectively.

Finding: The applicant is not proposing alleys. These criteria do not apply.

O. Platting Standards for Blocks.

1. Purpose. Streets and walkways can provide convenient travel within a neighborhood and can serve to connect people and land uses. Large, uninterrupted blocks can serve as a barrier to travel, especially walking and biking. Large blocks also can divide rather than unite neighborhoods. To promote connected neighborhoods and to shorten travel distances, the following minimum standards for block lengths are established.

2. Maximum Block Length and Perimeter. The maximum length and perimeters of blocks in the zones listed below shall be according to the following table. The review body for a subdivision, partition, conditional use permit, or a Type II design review may require installation of streets or walkways as necessary to meet the standards below.

Zone(s)	*Maximum Block Length*	*Maximum Block Perimeter*
R-1	*800 feet*	*2,000 feet*
R-2, R-3, RP, I	*1,200 feet*	*3,000 feet*

3. Exceptions.

a. If a public walkway is installed mid-block, the maximum block length and perimeter may be increased by 25 percent.

b. Where a proposed street divides a block, one of the resulting blocks may exceed the maximum block length and perimeter standards provided the average block length and perimeter of the two resulting blocks do not exceed these standards.
c. Blocks in excess of the above standards are allowed where access controlled streets, street access spacing standards, railroads, steep slopes, wetlands, water bodies, preexisting development, ownership patterns or similar circumstances restrict street and walkway location and design. In these cases, block length and perimeter shall be as small as practical. Where a street cannot be provided because of these circumstances but a public walkway is still feasible, a public walkway shall be provided.
d. Institutional campuses located in an R-1 zone may apply the standards for the institutional zone.
e. Where a block is in more than one zone, the standards of the majority of land in the proposed block shall apply.
f. Where a local street plan, concept master site development plan, or specific plan has been approved for an area, the block standards shall follow those approved in the plan. In approving such a plan, the review body shall follow the block standards listed above to the extent appropriate for the plan area.

Finding: The applicant is not proposing blocks. These criteria are not applicable.

Q. Traffic Calming.
1. The following roadway design features may be required in new street construction where traffic calming needs are anticipated:
a. Serpentine alignment.
b. Curb extensions.
c. Traffic diverters/circles.
d. Raised medians and landscaping.
e. Other methods shown effective through engineering studies.
2. Traffic-calming measures such as speed humps should be applied to mitigate traffic operations and/or safety problems on existing streets. They should not be applied with new street constructions.

Finding: The applicant is not proposing traffic calming devices nor are any required. These criteria do not apply.

P. Private Streets. New private streets, as defined in NMC 15.05.030, shall not be created, except as allowed by NMC 15.240.020(L)(2).

Finding: The applicant is not proposing private streets. This criterion is not applicable.

R. Vehicular Access Standards.
1. Purpose. The purpose of these standards is to manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency. They help to maintain an adequate level of service consistent with the functional classification of the street. Major roadways, including arterials and collectors, serve as the primary system for moving people and goods within and through the city. Access is limited and managed on these roads to promote efficient through movement. Local streets and alleys provide access to individual properties. Access is managed on these roads to maintain safe maneuvering of vehicles in and out of properties and to allow safe through movements. If vehicular access and

circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.

2. Access Spacing Standards. Public street intersection and driveway spacing shall follow the standards in Table 15.505.R below. The Oregon Department of Transportation (ODOT) has jurisdiction of some roadways within the Newberg city limits, and ODOT access standards will apply on those roadways.

Table 15.505.R. Access Spacing Standards

Roadway Functional Classification	*Area[1]*	*Minimum Public Street Intersection Spacing (Feet)[2]*	*Driveway Setback from Intersecting Street[3]*
Expressway	*All*	*Refer to ODOT Access Spacing Standards*	*NA*
Major arterial	*Urban* *CBD*	*Refer to ODOT Access Spacing Standards*	
Minor arterial	*Urban* *CBD*	*500* *200*	*150* *100*
Major collector	*All*	*400*	*150*
Minor collector	*All*	*300*	*100*

[1] "Urban" refers to intersections inside the city urban growth boundary outside the central business district (C-3 zone). "CBD" refers to intersections within the central business district (C-3 zone). "All" refers to all intersections within the Newberg urban growth boundary.

[2] Measured centerline to centerline.

[3] The setback is based on the higher classification of the intersecting streets. Measured from the curb line of the intersecting street to the beginning of the driveway, excluding flares. If the driveway setback listed above would preclude a lot from having at least one driveway, including shared driveways or driveways on adjoining streets, one driveway is allowed as far from the intersection as possible.

Finding: The subject property has frontage on E Fulton Street (major collector). Access is from an existing driveway. This requirement is met.

S. Public Walkways.

1. Projects subject to Type II design review, partition, or subdivision approval may be required to provide public walkways where necessary for public safety and convenience, or where necessary to meet the standards of this code. Public walkways are meant to connect cul-de-sacs to adjacent areas, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans, or to provide access to schools, parks or other community destinations or public areas. Where practical, public walkway easements and locations may also be used to accommodate public utilities.

2. Public walkways shall be located within a public access easement that is a minimum of 15 feet in width.

3. A walk strip, not less than 10 feet in width, shall be paved in the center of all public walkway easements. Such paving shall conform to specifications in the Newberg public works design and construction standards.4. Public walkways shall be designed to meet the Americans with Disabilities Act requirements.
5. Public walkways connecting one right-of-way to another shall be designed to provide as short and straight of a route as practical.
6. The developer of the public walkway may be required to provide a homeowners' association or similar entity to maintain the public walkway and associated improvements.
7. Lighting may be required for public walkways in excess of 250 feet in length.
8. The review body may modify these requirements where it finds that topographic, preexisting development, or similar constraints exist.

Finding: The applicant is not proposing public walkways nor are any required. These criteria are not applicable.

3. Properties with Multiple Frontages. Where a property has frontage on more than one street, access shall be limited to the street with the lesser classification.

Finding: The applicant's property has frontage on E Fulton Street which is a public street. All street access is from private service drives within the Friendsview campus. This criterion is met.

4. Driveways. More than one driveway is permitted on a lot accessed from either a minor collector or local street as long as there is at least 40 feet of lot frontage separating each driveway approach. More than one driveway is permitted on a lot accessed from a major collector as long as there is at least 100 feet of lot frontage separating each driveway approach.

Finding: The applicant is not proposing new driveways. The two existing driveways are separated by more than 100-feet. The applicant has noted that the existing easterly service driveway will be re-constructed with a commercial driveway approach meeting ADA standards. This criterion does not apply.

5. Alley Access. Where a property has frontage on an alley and the only other frontages are on collector or arterial streets, access shall be taken from the alley only. The review body may allow creation of an alley for access to lots that do not otherwise have frontage on a public street provided all of the following are met:
a. The review body finds that creating a public street frontage is not feasible.
b. The alley access is for no more than six dwellings and no more than six lots.
c. The alley has through access to streets on both ends.
d. One additional parking space over those otherwise required is provided for each dwelling. Where feasible, this shall be provided as a public use parking space adjacent to the alley.

Finding: The applicant is not proposing alley access. These criteria do not apply.

6. Closure of Existing Accesses. Existing accesses that are not used as part of development or redevelopment of a property shall be closed and replaced with curbing, sidewalks, and landscaping, as appropriate.

Finding: The applicant has noted that existing curb cuts will be removed and replaced with a full height curb and gutter. Because the applicant's plans are preliminary and do not provide construction level detail, the applicant will be required to obtain a Public Improvement Permit prior to completing work to close existing accesses. This criterion will be met if the aforementioned condition of approval is adhered to.

7. Shared Driveways.

a. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided as appropriate. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).

b. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

c. No more than four lots may access one shared driveway.

d. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.

e. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.

Finding: The applicant is not proposing shared driveways. These criteria do not apply.

8. Frontage Streets and Alleys. The review body for a partition, subdivision, or design review may require construction of a frontage street to provide access to properties fronting an arterial or collector street.

Finding: The applicant is not proposing frontage streets or alleys. This criterion does not apply.

9. ODOT or Yamhill County Right-of-Way. Where a property abuts an ODOT or Yamhill County right-of-way, the applicant for any development project shall obtain an access permit from ODOT or Yamhill County.

Finding: The RCF development site does not abut an ODOT or Yamhill County right-of-way. This criterion does not apply.

10. Exceptions. The director may allow exceptions to the access standards above in any of the following circumstances:

a. Where existing and planned future development patterns or physical constraints, such as topography, parcel configuration, and similar conditions, prevent access in accordance with the above standards.

b. Where the proposal is to relocate an existing access for existing development, where the relocated access is closer to conformance with the standards above and does not increase the type or volume of access.

c. Where the proposed access results in safer access, less congestion, a better level of service, and more functional circulation, both on street and on site, than access otherwise allowed under these standards.

11. Where an exception is approved, the access shall be as safe and functional as practical in the particular circumstance. The director may require that the applicant submit a traffic study by a registered engineer to show the proposed access meets these criteria.

Finding: The applicant is not proposing any exceptions to required access standards nor are any required. This criterion is not applicable.

T. Street Trees. Street trees shall be provided for all projects subject to Type II design review, partition, or subdivision. Street trees shall be installed in accordance with the provisions of NMC 15.420.010(B)(4).

Finding: There are 8 mature trees located along the E Fulton Street frontage between the two driveways on the north side of the curbside sidewalk but it is unclear if these are street trees or trees that have been planted on the subject property. These existing mature trees function as street trees by providing shade to the sidewalk and surrounding area along the E Fulton Street frontage. The applicant has stated the trees are in good health. With these mature trees functioning as street trees they should remain in place. If street trees were required they would have to be planted underneath the existing mature trees. This criterion is met.

U. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility as approved by the city. Upon the city's acceptance of the public improvements associated with the development, the street lighting system, exclusive of utility-owned service lines, shall be and become property of the city unless otherwise designated by the city through agreement with a private utility.

Finding: The applicant's narrative states that new street light poles will be engineered and provided per the City standards. Because it's unclear if the applicant understands the extent of street lighting requirements, therefore, with the Public Improvement Permit submittal the applicant will be required to illustrate via a lighting analysis that proposed PGE Option A street lighting along the property frontage is compliant with the City's Public Works Design and Construction Standards.

Street lighting meeting City standards is required at the following locations:

- Street lighting will be required on the north side of E Fulton Street along the entire property frontage.

The criterion will be met if the aforementioned condition of approval is adhered to.

V. Transit Improvements. Development proposals for sites that include or are adjacent to existing or planned transit facilities, as shown in the Newberg transportation system plan or adopted local or regional transit plan, shall be required to provide any of the following, as applicable and required by the review authority:

1. Reasonably direct pedestrian connections between the transit facility and building entrances of the site. For the purpose of this section, "reasonably direct" means a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for users.

2. A transit passenger landing pad accessible to disabled persons.

3. An easement of dedication for a passenger shelter or bench if such facility is in an adopted plan.

4. Lighting at the transit facility.

Finding: The applicant is not proposing transit improvements and the site is not adjacent to existing or planned transit facilities. These criteria do not apply.

15.505.040 Public utility standards.

A. Purpose. The purpose of this section is to provide adequate services and facilities appropriate to the scale and type of development.

B. Applicability. This section applies to all development where installation, extension or improvement of water, wastewater, or private utilities is required to serve the development or use of the subject property.

C. General Standards.

1. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall conform to the Newberg public works design and construction standards and require a public improvements permit.

2. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbances of soil and site. Installation of all proposed public and private utilities shall be coordinated by the developer and be approved by the city to ensure the orderly extension of such utilities within public right-of-way and easements.

D. Standards for Water Improvements. All development that has a need for water service shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary wastewater and stormwater facilities, as applicable.

1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping stations which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

2. Specific location, size and capacity of such facilities will be subject to the approval of the director with reference to the applicable water master plan. All water facilities shall conform with city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected. Installation costs shall remain entirely the developer's responsibility.

3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties, which, in the judgment of the city, cannot be feasibly served otherwise.

4. Design, construction and material standards shall be as specified by the director for the construction of such public water facilities in the city.

Finding The applicant's narrative and preliminary plans illustrate that the proposed project will received city water via a connection to the existing 8-inch public water line that loops through the property. The narrative also states that fire flow testing has been completed for the site. The preliminary plans illustrate:

- A new public water main connection near the easterly driveway on E Fulton Street to serve a new onsite fire hydrant. The proposed water line is shown within a new 15-wide public water easement.
- Relocation of a portion of the existing 8-inch public water line that loops through the property. A new 15-foot wide public water easement is illustrated for the existing and relocated portions of the public water main within the site.
- New fire hydrants served from the existing public water line that loops through the property.
- A water service connection with a new water meter, domestic double check valve and irrigation connection.
- A separate fire sprinkler service connection with a double check detector assembly.

Because construction plans have not yet been submitted, the applicant will be required to submit construction plans and obtain a Public Improvement Permit to install the new public water main to serve the new onsite fire hydrant off of E Fulton Street, reroute the indicated portion of the existing onsite public water main, install the domestic service lateral, fire service lateral, and fire hydrants pursuant to the requirements of the City's Public Works Design and Construction Standards. The applicant will also be required to abandon and cap all existing water service laterals at the main as part of removing existing buildings. System development charge credits will be calculated at the time of the Public Improvement Permit/Building Permit application review. Results of the noted fire flow testing are to be submitted with the Public Improvement Permit application.

These criteria will be met if the aforementioned condition of approval is adhered to.

.E. Standards for Wastewater Improvements. All development that has a need for wastewater services shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary water services and stormwater facilities, as applicable.

1. All septic tank systems and on-site sewage systems are prohibited. Existing septic systems must be abandoned or removed in accordance with Yamhill County standards.

2. All properties shall be provided with gravity service to the city wastewater system, except for lots that have unique topographic or other natural features that make gravity wastewater extension impractical as determined by the director. Where gravity service is impractical, the developer shall provide all necessary pumps/lift stations and other improvements, as determined by the director.

3. All developments shall be required to be linked to existing wastewater collection facilities adequately sized to serve their intended area by the construction of wastewater lines which connect to existing adequately sized wastewater facilities. All

necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.
4. Specific location, size and capacity of wastewater facilities will be subject to the approval of the director with reference to the applicable wastewater master plan. All wastewater facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. Installation costs shall remain entirely the developer's responsibility.
5. Temporary wastewater service facilities, including pumping stations, will be permitted only if the director approves the temporary facilities, and the developer provides for all facilities that are necessary for transition to permanent facilities.
6. The design of the wastewater facilities shall take into account provisions for the future extension beyond the development to serve upstream properties, which, in the judgment of the city, cannot be feasibly
7. Design, construction and material standards shall be as specified by the director for the construction of such wastewater facilities in the city.

Finding: The applicant narrative and preliminary plans illustrate that the proposed project will connect to an existing onsite private wastewater system. This existing private wastewater system is shown connecting to the existing public main parallel to Hess Creek at an existing manhole. The applicant stated that they also plan to install a grease interceptor since the proposed building will have a kitchen facility. The applicant also provided a preliminary sewer evaluation memo that includes the existing public wastewater main directly downstream of the project site. Because the applicant has not yet submitted construction plans, the applicant will be required to install a grease interceptor pursuant to the requirements of the City's Public Works Design and Construction Standards and provide the sewer evaluation memo with permit applications. System development charge credits will be calculated at the time of the Public Improvement Permit or Building Permit application.

These criteria will be met if the aforementioned condition of approval is adhered to.

F. Easements. Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city and designated on the final plat of all subdivisions and partitions. Minimum required easement width and locations are as provided in the Newberg public works design and construction standards. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16.]

Finding: The applicant has submitted preliminary plans and a narrative which do not sufficiently illustrate all required utility easements deemed necessary. The applicant's narrative and preliminary plans illustrate new 15-foot wide public water easements for existing and proposed segments of the public water mains within the site. The applicant has noted that trees will not be within the public water easements. The preliminary plan sheets show trees adjacent to the water line within segments of the easement. However, additional utility easements will be required based on the submitted plans. Because the applicant has not illustrated or recorded all necessary utility easements, with the building permit application the applicant will be required to submit a final plan that includes necessary utility easements meeting the specifications and standards of the City's Public Works Design and Construction Standards, but not necessarily limited to:

1. 10-foot wide public utility easement along the north side of E Fulton Street for the length of the property frontage.
2. 15-foot wide public water easements for existing and proposed segments of the public water mains within the site and provided plans showing that trees will not be installed within this easement.

The criterion will be met if the aforementioned condition of approval is adhered to.

15.505.050 Stormwater system standards.

> ***B. Applicability. The provisions of this section apply to all developments subject to site development review or land division review and to the reconstruction or expansion of such developments that increases the flow or changes the point of discharge to the city stormwater system. Additionally, the provisions of this section shall apply to all drainage facilities that impact any public storm drain system, public right-of-way or public easement, including but not limited to off-street parking and loading areas.***
> ***C. General Requirement. All stormwater runoff shall be conveyed to a public storm wastewater or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property. The developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.***
> ***D. Plan for Stormwater and Erosion Control. No construction of any facilities in a development included in subsection (B) of this section shall be permitted until an engineer registered in the State of Oregon prepares a stormwater report and erosion control plan for the project. This plan shall contain at a minimum:***
>
> ***1. The methods to be used to minimize the amount of runoff, sedimentation, and pollution created from the development both during and after construction.***
> ***2. Plans for the construction of stormwater facilities and any other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the stormwater plans.***
> ***3. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included in the stormwater report and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed based upon the design criteria outlined in the public works design and construction standards for the city.***

Finding: The applicant's plans and preliminary stormwater report illustrate that stormwater will be treated and detained by installing two private stormwater facilities and connecting to the existing private stormwater line on the east side of the development. Because the applicant did not discuss the need for an erosion and sedimentation control permit to construct the proposed development and because the site size exceeds 1-acre, the applicant will be required to obtain a DEQ 1200-C permit prior to the City issuing the Public Improvement Permit.

The criterion will be met if the aforementioned condition of approval is adhered to.

> ***E. Development Standards. Development subject to this section shall be planned, designed, constructed, and maintained in compliance with the Newberg public works design and construction standards.***

Finding: The applicant's plans and preliminary stormwater report illustrate that stormwater will be treated and detained by installing private stormwater facilities and connecting to the existing private stormwater line on the east side of the development. The proposed private stormwater facilities consist of a combination of Low Impact Development Approach (LIDA) flow through planters, stormfilter structures and an underground detention chamber system. Upon initial review it appears that the City's standards can be met, a final stormwater report will be required with the submittal of the Public Improvement Permit and will be reviewed for compliance with city standards at that time. Because the applicant has not submitted a final stormwater report or construction plans, the applicant must submit a final stormwater report and construction plans meeting the City's Public Works Design and Construction Standards and NMC 13.25 Stormwater Management requirements and obtain a Public Improvement Permit. Utility designs and alignments will be reviewed as part of the Public Improvement Permit. Additional stormwater facilities beyond illustrated on the preliminary plans might be required. The Building Department will also need to review and approve the location of the proposed facilities due to their proximity to the proposed building. Prior to a certificate of occupancy being issues a private stormwater maintenance agreement with the city must be recorded for the private stormwater facilities located on the property. Prior to utility work taking place near or within the Hess Creek stream corridor the applicant must provide compliance letters from state/federal agencies to verify if additional state/federal permitting is, or is not, required for work to connect to existing utilities along Hess Creek.

The criterion will be met if the aforementioned condition of approval is adhered to.

CONCLUSION: Based on the above findings, the project meets the criteria required within the Newberg Development Code, subject to completion of the attached conditions of approval.

Section III: Conditions of Approval –File DR221-0001
Friendsview RCF Phase 1

A. THE FOLLOWING MUST BE COMPLETED BEFORE THE CITY WILL ISSUE A BUILDING PERMIT:

1. **Building Permit Submittal:** Submit a building permit application and two (2) complete working drawing sets of the proposed project. Show all the features of the plan approved through design review, including the following:

    a. ADA accessible route
    b. Existing and finish grade elevations
    c. Grading plan
    d. O.S.S.C. Chapter 11 (ADA) requirements relating to access from the public way, parking spaces and signage
    e. On-site walks
    f. Parking lot design, including ADA compliant spaces
    g. Structural details
    h. Utility plan
    i. Bicycle parking
    j. Landscaping plan
    k. Required permits
    l. Lighting plan

2. **Conditions of Approval:** Either write or otherwise permanently affix the conditions of approval contained within this report onto the first page of the plans submitted for building permit review.

3. **Landscaping:**

    a. With the building permit submittal, the applicant shall provide a narrative and landscape planting plan that clearly illustrates compliance with NMC 15.420.010 (B)(3)(h) and said landscaping must be installed prior to a certificate of occupancy being issued.

4. **Lighting:**

    a. Finalized lighting details and drawings must be submitted with the building permit and will be reviewed for compliance with NMC 15.425.020(A) as part of the building permit review process.

5. **Utilities:**

    a. The applicant will be required to underground overhead utilities adjacent to the subject property along the entire E Fulton Street property frontage. Undergrounding of overhead utilities must include undergrounding to the next adjacent pole outside of the project area boundary, which could require some "off-site" work. If information is provided with the building permit submittal such as a cross section sketch for the conduit installation east of the service drive by

directional drilling at or near the standard depth for franchise utilities along the top of the slope adjacent to the sidewalk illustrates that 1) the conduit cover or separation between the conduits and the wastewater line does not meet industry standards; or 2) that the integrity of the slope would not be maintained then undergrounding of utilities east of the service drive will not be required.

6. **Service Drives:**

   a. The applicant shall provide a clearly dimensioned site plan with the building permit submittal that illustrates all services drives comply with NMC 15.440.070 and all related improvements must be completed or bonded for prior to a certificate of occupancy being issued.

7. **Walkways:**

   a. The applicant shall submit plans with the building permit application that illustrate sufficient detail to determine if all private walkways comply with NMC 15.440.140.

8. **Right-of-Way:**

   a. The applicant shall dedicate additional right-of-way along the north side of the E Fulton Street centerline to account for a total of 30-feet of dedicated right-of-way to the City of Newberg on the north side of E Fulton Street prior to the certificate of occupancy being issued.

9. **Easements:**

   a. The applicant will be required to obtain an encroachment easement for the existing vehicular ramp structure that accesses the existing Friendsview Creekside facility prior to the certificate of occupancy being issued.

   b. with the building permit application the applicant will be required to submit a final plan that includes necessary utility easements meeting the specifications and standards of the City's Public Works Design and Construction Standards, but not necessarily limited to:

      i. 10-foot wide public utility easement along the north side of E Fulton Street for the length of the property frontage.

      ii. 15-foot wide public water easements for existing and proposed segments of the public water mains within the site and provided plans showing that trees will not be installed within this ease

10. **Roads, Sidewalks Bike lanes and Driveways:**

    a. The applicant shall submit construction drawings as part of the Public Improvement Permit that include installation of a 6-foot Type 'B' sidewalk along the property frontage west of the easterly driveway where the existing sidewalk is curbside. Unless the existing trees along the property frontage between the

easterly and westerly driveways are street trees and will remain, the applicant will be required to install a 5-foot Type 'A' sidewalk with a minimum 5-feet wide planter strip in the area where the existing 4-foot wide sidewalk is set back from the curb. The applicant will also be required to remove existing curb cuts with full height curb and replace any curb sections in disrepair or that do not meet the city standards. All sidewalk and curb improvements must be completed prior to the certificate of occupancy being issued.

b. The applicant will be required to remove sharrow lane markings along the property frontage, and install a 5-foot wide bike lane along the property frontage to be consistent with the City of Newberg 2015 Transportation System Plan and the 2007 ADA/Pedestrian/Bike Route Improvement Plan and related documents.

c. If any of the existing sidewalk along the existing property frontage on E Fulton Street east of the westerly driveway is in poor condition and does not meet current ADA requirements, those sidewalk panels are required to be repaired and/or replaced to meet current city standards prior to the certificate of occupancy being issued.

11. **Permits:**

a. The applicant will be required to obtain a Public Improvement Permit prior to completing work to close existing accesses.

b. The applicant will be required to obtain a DEQ 1200-C permit prior to the City issuing the Public Improvement Permit.

12. **Street Lighting:**

a. With the Public Improvement Permit submittal the applicant will be required to illustrate via a lighting analysis that proposed PGE Option A street lighting along the property frontage is compliant with the City's Public Works Design and Construction Standards. Street lighting meeting City standards is required at the following locations:

i. Street lighting will be required on the north side of E Fulton Street along the entire property frontage.

13. **Water:**

a. The applicant will be required to submit construction plans and obtain a Public Improvement Permit to install the new public water main to serve the new onsite fire hydrant off of E Fulton Street, reroute the indicated portion of the existing onsite public water main, install the domestic service lateral, fire service lateral, and fire hydrants pursuant to the requirements of the City's Public Works Design and Construction Standards. The applicant will also be required to abandon and cap all existing water service laterals at the main as part of removing existing buildings. System development charge credits will be calculated at the time of the Public Improvement Permit/Building Permit application review. Results of the

noted fire flow testing are to be submitted with the Public Improvement Permit application.

14. **Wastewater:**

    a. The applicant will be required to install a grease interceptor pursuant to the requirements of the City's Public Works Design and Construction Standards and provide the sewer evaluation memo with permit applications. System development charge credits will be calculated at the time of the Public Improvement Permit or Building Permit application.

15. **Stormwater:**

    a. The applicant must submit a final stormwater report and construction plans meeting the City's Public Works Design and Construction Standards and NMC 13.25 Stormwater Management requirements and obtain a Public Improvement Permit. Utility designs and alignments will be reviewed as part of the Public Improvement Permit. Additional stormwater facilities beyond illustrated on the preliminary plans might be required. The Building Department will also need to review and approve the location of the proposed facilities due to their proximity to the proposed building. Prior to a certificate of occupancy being issues a private stormwater maintenance agreement with the city must be recorded for the private stormwater facilities located on the property. Prior to utility work taking place near or within the Hess Creek stream corridor the applicant must provide compliance letters from state/federal agencies to verify if additional state/federal permitting is, or is not, required for work to connect to existing utilities along Hess Creek.

16. **Engineering Department: Construction Plans must be submitted for review and approval for all infrastructure per the requirements below.**

    a. **General Requirements for engineering permit:**
    The Public Works Design & Construction Standards require that the applicant submit engineered construction plans for review and approval of all utilities, public street improvements, and any new public streets being constructed. Please note that additional Engineering Department plan review application and fees apply for review of plans. Submit any required easements for review and approval, and record approved easements. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved and all necessary permits have been obtained.

B. DEVELOPMENT NOTES

1. A DEQ 1200-C permit will be required before a grading permit can be issued for all sites greater than one acre.
2. Systems development charges (SDCs) will be collected when building permits are issued. For questions regarding SDCs please contact the Engineering Division.
3. Please contact the City of Newberg Building Division 503-537-1240 with any questions pertaining to building permit requirements.

4. A Certificate of Occupancy will not be issued until all Public Improvement Permit requirements have been approved.

Attachment 1: Application

FRIENDSVIEW RCF PHASE 1

Type II Site Design Review – City of Newberg

DATE

12.29.2020

APPLICATION

Type II Review Criteria

SITE LOCATION

1301 Fulton Street
Newberg, Oregon located northeast of Manor Campus

YAMHILL COUNTY ASSESSOR'S MAP:

3217CB
Tax Lot 01700-02000

SITE SIZE

16.4 +\- Acre Campus
1.7 +\- Acres for RCP Phase 1

LAND-USE DISTRICT

Institutional (I)

SUBMITTED TO

City of Newburg
414 E 1st Street
Newberg, OR 97132

OWNER

Friendsview Manor, Inc
1301 Fulton Street
Newberg, OR 97132

APPLICANT

Cynthia Schuster
LRS Architects, Inc
720 NW Davis Street, Suite 300
Portland, OR 97209

Friendsview RCF Phase 1

Type II Site Design Review – City of Newberg

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Friendsview RCF Phase 1

Type II Site Design Review – City of Newberg

August 2020

Summary

Friendsview Manor, Inc. is submitting applications for a Type II Site Design Review for a continuing care community. The proposed project is a single building of 73,000 +\-square feet, four stories, 79 patient units, and onsite parking. The proposed use of this building will be a Residential Care Facility (RCF), a type of group care building. Phase 1 will involve the demolition of one duplex and a relocation of a duplex. The proposed construction will be oriented internally to the northwest. Phase 1 RCF is the next phase to the Friendsview Manor Campus. A Master Plan (DR2-15-009) was approved for a concept of the entire project on February 26, 2016. The Concept Master Plan approval is valid for up to 10 years.

An application is required for this RCF building:

- A Site Plan Type II Design Review

The Applicant (Friendsview Manor, Inc.) requests Site Design Review approval of Friendsview Retirement Community Phase 1 (RCF) listed above. Below are the relevant City of Newberg Municipal Code (NMC) requirements and a description of how this request will meet the applicable criteria. These applications include the City forms, written materials, and preliminary plans necessary for City staff to review and determine compliance with the applicable approval criteria. The evidence is substantial and supports the City's approval of the application.

Site Description

The proposed project area is located northeast of the existing Manor Tower and north of the Hess creek. The overall site is 11.24 +\- acres (excluding the stream corridor area). The disturbed area for this proposed area of scope is 1.7+\- Acres. The existing campus topography slopes up towards the north east towards the duplexes. George Fox University is located to the south of the site across Fulton Street.

I. Applicable Review Criteria

NEWBERG MUNICIPAL CODE - Title 15 DEVELOPMENT CODE

CHAPTER 15.100 LAND USE PROCESSES AND PROCEDURES

Article I. Procedure Types and Determination of Proper Procedures

15.100.030 Type II procedure.

A. Type II development actions shall be decided by the director.

B. Type II actions include, but are not limited to:

1. Site design review.

Response: The Applicant is proposing a Residential Care Facility (RCF) Phase 1 to expand the existing Friendsview Manor Campus. This would trigger a Site Design Review and is, therefore, a Type II procedure. It is understood that the Type II procedure requirements listed in this section apply to this application.

C. The applicant shall provide notice pursuant to the requirements of NMC 15.100.200 et seq.

Article IV. Notice

15.100.200 Compliance required.

Notice on all Type I through Type IV actions, including appeals, shall be conducted in accordance with this article.

15.100.210 Mailed Notice

Mailed notice shall be provided as follows:

B. Type II and Type III Actions. The applicant shall provide public notice to:

1. The owner of the site for which the application is made; and

2. Owners of property within 500 feet of the entire site for which the application is made. The list shall be compiled from the most recent property tax assessment roll. For purposes of review, this requirement shall be deemed met when the applicant can provide an affidavit or other certification that such notice was deposited in the mail or personally delivered.

3. To the owner of a public use airport, subject to the provisions of ORS 215.416 or 227.175.

C. The director may request that the applicant provide notice to people other than those required in this section if the director believes they are affected or otherwise represent an interest that may be affected by the proposed development. This includes, but is not limited to, neighborhood associations, other governmental agencies, or other parties the director believes may be affected by the decision.

D. The director shall provide the applicant with the following information regarding the mailing of notice:

1. The latest date by which the notice must be mailed;

2. An affidavit of mailing (to be signed and returned) certifying that the notice was mailed, acknowledging that a failure to mail the notice in a timely manner constitutes an agreement by the applicant to defer the 120-day process limit and acknowledging that failure to mail will result in the automatic postponement of a decision on the application; and

3. A sample notice.

Response: The Applicant will provide notice to the site owner, property owners within 500 feet of the entire site, and to public use airport operators within 5,000 feet of the site per ORS 215.416 and NMC 15.100.200. No other individuals or agencies requiring special notice have been identified. A mailing list and an affidavit of mailing will be submitted to the City when they are completed. A sample notice for approval has been included with this application. These criteria are met or will be met when applicable.

E. The notice of a Type II and Type III development application shall be reasonably calculated to give actual notice and shall:

1. Set forth the street address or other easily understood geographical reference to the subject property;

2. List, by commonly used citation, the applicable criteria for the decision;

3. Include the name and phone number of a local government contact person, the telephone number where additional information may be obtained and where information may be examined;

4. Explain the nature of the application and the proposed use or uses which could be authorized;

5. State that a copy of the application, all documents and evidence relied upon by the applicant and applicable criteria are available for inspection at no cost and will be provided at a reasonable cost.

F. Prior to mailing or posting any notice required by this code, the applicant shall submit a copy of the notice to the director.

G. The applicant shall mail the notice for Type II actions at least 14 days before a decision is rendered. The applicant shall file with the director an affidavit of mailing as identified in subsection (D) of this section within two business days after notice is mailed.

Response: The sample notice and mailing list are attached to this application as Exhibit E. Following the director's approval, the notices will be mailed to property owners and posted on the site. These criteria are met or will be met at a later date.

15.100.220 Additional notice procedures of Type II development applications.

In addition to the requirements of NMC 15.100.210, mailed notice for development actions shall also contain the following:

A. Provide a 14-day period from the date of mailing for the submission of written comments prior to the decision;

B. State that issues that may provide a basis for appeal must be raised in writing during the comment period;

C. State that issues must be raised with sufficient specificity to enable the local government to respond to the issue;

D. State the place, date and time that comments are due;

E. State that notice of the decision, including an explanation of appeal rights, will be provided to any person who submits comments under

F. Briefly summarize the local decision-making process.

15.100.260 Procedure for posted notice for Type II and III procedures.

A. Posted Notice Required. Posted notice is required for all Type II and III procedures. The notice shall be posted on the subject property by the applicant.

B. Notice Information Provided by City. The director shall provide the applicant with the following information regarding the posting of notice:

1. The number of notices required;

2. The latest date by which the notice must be posted;

3. An affidavit of posting (to be signed and returned) certifying that the notice was posted on site, acknowledging that a failure to post the notice in a timely manner constitutes an agreement by the applicant to defer the 120-day process limit and acknowledging that failure to post will result in the automatic postponement of a decision on the application; and

4. A sample notice.

C. Submission of Notice. Prior to posting any notice required by this section, the applicant shall submit a copy of the notice to the director for review.

D. Size, Number and Location Requirements. A waterproof notice which measures a minimum of two feet by three feet shall be placed on each frontage of the site. If a frontage is over 600 feet long, a notice is required for each 600 feet, or fraction of 600 feet. If possible, notices shall be posted within 10 feet of a street lot line and shall be visible to pedestrians and motorists in clear view from a public right-of-way. Notices shall not be posted in a public right-of-way or on trees.

E. Contents of Notice. The posted notice shall only contain the following information: planning action number, brief description of the proposal, phone number and address for contact at the Newberg planning and building department.

F. Standards and Timing, Type II Actions. The applicant shall post the notice at least 14 days before a decision is rendered. The applicant shall file with the director an affidavit of posting as identified in subsection (B) of this section within two business days after notice is posted.

H. Removal of Notice. The applicant shall not remove the notice before the final decision. All posted notice shall be removed by the applicant within 10 days following the date of the final decision on the request.

I. Failure to Post Notice. The failure of the posted notice to remain on the property shall not invalidate the proceedings. Failure by the applicant to post a notice and affirm that the posting was completed in conformance with the code shall result in:

1. Postponement of a decision until the mailing requirements have been met; or

2. Postponement of the hearing to the next regularly scheduled meeting or to such other meeting as may be available for the hearing; or

3. The entire process being invalidated; or

4. Denial of the application.

Response: Exhibit E includes draft notice materials which meet the requirements of this section. The posted notice requirements for Type II procedures listed in this section apply to this application. As stated above, the Applicant will provide notice as required, including the required affidavit. The criteria are or will be met upon completion.

Division 15.200 Land Use Applications

CHAPTER 15.220 SITE DESIGN REVIEW

15.220.020 Site design review applicability.

A. Applicability of Requirements. Site design review shall be required prior to issuance of building permits or commencement of work for all improvements noted below. Site design review permits shall be processed as either Type I or Type II, as noted below.

2. Type II.

a. Any new development or remodel which is not specifically identified within subsection (A)(1) of this section.

Response: The proposed new institutional construction is greater than 1,000 square feet and is otherwise not listed as a Type I review; therefore, a Type II Site Design Review is required.

B. Development in Accord with Plans. Construction, site development, and landscaping shall be carried out in substantial accord with the plans, drawings, sketches, and other documents approved as part of a final decision on a site design review.

C. Site Design Review Time Limit. An approved site design review plan intended to be constructed in a single phase shall be valid for one year from the date of the notice of final decision. A building permit must be acquired within this time period or the design review approval shall terminate. The director under a Type I procedure may grant an extension for up to six months if the applicant files a request in writing prior to the expiration of the approval and demonstrates compliance with the following:

1. The land use designation of the property has not been changed since the initial design review approval; and

2. The applicable standards in this code which applied to the project have not changed.

Response: The Site Design Review time limits, as stated above for a Type II procedure, are applicable to this application. The Applicant will conduct all construction in accordance with the applicable codes and requirements. These criteria are met.

D. Phased Design Review Approval. If a site plan is approved to be constructed in phases, completion of each phase shall extend the expiration of the original design review approval by 12 months from the date of its expiration. Prior to the expiration of each phase, the applicant may apply for an extension to the phase which is about to expire through subsection (C) of this section. The extension of a phase under subsection (C) of this section shall also extend any subsequent phases. The total number of extensions shall not extend the original design review approval more than five years from its original approval date. An applicant with a project containing two or more phases may elect to submit a master site development plan, with the following options:

1. The applicant may provide all of the detailed information for a Type II site design review approval, per the requirements of NMC 15.220.030(B), for all phases of the project. Once the master site development plan is approved:

a. Each subsequent phase of development is permitted outright upon a showing that the proposed phase is being constructed in substantial compliance with the approved plan. This review of substantial compliance will be undertaken by means of a Type I procedure. A phase of development will be considered to be within substantial compliance if the actual characteristics of the project, e.g., total gross square feet of development, employees, vehicle trips, parking spaces, are within five percent of those projected in the approved master site development plan; providing, that the project still is in compliance with all applicable development standards in effect at the time of the approval, or existing applicable development standards, if these are less stringent than the standards in effect at the time of approval. In lieu of minor modifications by the five percent rule established above, the applicant may request minor adjustments through the administrative adjustment provisions in NMC 15.210.010 et seq.

b. If at the time of construction, a subsequent phase of development is not in substantial compliance with the approved plan as defined above, the proposed changes will be subject to review by means of a Type II procedure, including any necessary variances to the applicable development standards in effect at the time of the new application. Those aspects of the phase which do not vary from the approved plan will be reviewed under the provisions of subsection (D)(1)(a) of this section, and not subject to the review required in this subsection.

2. Institutions and other large developments that anticipate significant development over time, but cannot provide detailed information about future projects or phases of development in advance, can develop a concept master site development plan which addresses generic site

*development and design elements including but not limited to general architectural standards and materials, landscaping standards and materials, on-site vehicular and pedestrian circulation, institutional sign program, and baseline traffic and parking studies and improvement programs. The applicant will be required to undergo Type II site design review, per the requirements of NMC 15.220.030(B), for each project or phase of development at the time of construction, including demonstration of substantial compliance with the generic development and design elements contained within the approved concept master site development plan. The more detailed and comprehensive the generic elements in the concept master site development plan are, the more reduced is the scope of discretionary review at the time of actual construction of a project or phase of development. For purposes of this subsection, "**substantial compliance**" will be defined as noted in subsection (D)(1)(a) of this section.*

3. An applicant that submits a concept master site development plan which meets the requirements of subsection (D)(2) of this section may at the same time submit a master site development plan for one or more of the initial phases contained in the concept master site development plan, which are described in sufficient detail to receive complete design review approval in advance, under the provisions of subsection (D)(1) of this section. The concept master site development plan and master site development plan will be filed as separate applications but reviewed concurrently.

4. The approval(s) granted in this section shall be in effect as follows:

a. Once a master site development plan has been approved, completion of each phase shall extend the expiration of the original site design review approval by 12 months from the date of its expiration. Prior to the expiration of each phase, the applicant may apply for an extension to the phase which is about to expire through subsection (C) of this section. The extension of a phase under subsection (C) of this section shall also extend to any subsequent phases. The total number of extensions shall not extend the original site design review approval by more than five years from its original approval date.

b. Institutions submitting a concept master site development plan shall be held to the same requirement provided in subsection (D)(2)(a) of this section, unless the plan specifically includes an expiration date. In no case shall a concept master site development plan cover a period exceeding 10 years.

Response: This application seeks approval for Phase 1 of four planned phases of the Friendsview Retirement Community expansion. A Friendsview Concept Master Plan was approved on February 26, 2016. This application for an institutional building is in accordance with that Master Plan and these requirements. Application for Site Design Review for Phase 1 of the project is submitted in accordance with NMC 15.220.020 (D)(2) above. The criteria, where applicable, are met.

15.220.030 Site design review requirements.

B. Type II. The following information is required to be submitted with all Type II applications for site design review:

1. Site Development Plan. A site development plan shall be to scale and shall indicate the following as appropriate to the nature of the use:

a. Access to site from adjacent right-of-way, streets and arterials;

b. Parking and circulation areas;

c. Location and design of buildings and signs;

d. Orientation of windows and doors;

e. Entrances and exits;

f. Private and shared outdoor recreation spaces;

g. Pedestrian circulation;

h. Outdoor play areas;

i. Service areas for uses such as mail delivery, trash disposal, above-ground utilities, loading and delivery;

j. Areas to be landscaped;

k. Exterior lighting;

l. Special provisions for handicapped persons;

m. Other site elements and spaces which will assist in the evaluation of site development;

n. Proposed grading, slopes, and proposed drainage;

o. Location and access to utilities including hydrant locations; and

p. Streets, driveways, and sidewalks.

2. Site Analysis Diagram. A site analysis diagram shall be to scale and shall indicate the following characteristics on the site and within 100 feet of the site:

a. Relationship of adjacent lands;

b. Location of species of trees greater than four inches in diameter at four feet above ground level;

c. Existing and proposed topography;

d. Natural drainage and proposed drainage and grading;

e. Natural features and structures having a visual or other significant relationship with the site.

3. Architectural Drawings. Architectural drawings shall be prepared which identify floor plans and elevations.

4. Landscape Plan. The landscape plan shall indicate:

a. The size, species and approximate locations of plant materials to be retained or placed on the site together with a statement which indicates the mature size and canopy shape of all plant materials;

b. Proposed site contouring; and

c. A calculation of the percentage of the site to be landscaped.

5. Special Needs for Handicapped. Where appropriate, the design review plan shall indicate compliance with handicapped accessibility requirements including, but not limited to, the location of handicapped parking spaces, the location of accessible routes from the entrance to the public way, and ramps for wheelchairs.

6. Existing Features and Natural Landscape. The plans shall indicate existing landscaping and existing grades. Existing trees or other features intended to be preserved or removed shall be indicated on the plans.

7. Drives, Parking and Circulation. Proposed vehicular and pedestrian circulation, parking spaces, parking aisles, and the location and number of access points shall be indicated on the plans. Dimensions shall be provided on the plans for parking aisles, back-up areas, and other items as appropriate.

8. Drainage. The direction and location of on- and off-site drainage shall be indicated on the plans. This shall include, but not be limited to, site drainage, parking lot drainage, size and location of storm drain lines, and any retention or detention facilities necessary for the project.

9. Buffering and Screening. Buffering and screening of areas, structures and facilities for storage, machinery and equipment, services (mail, refuse, utility wires, and the like), loading and parking and similar accessory areas and structures shall be shown on the plans.

10. Signs and Graphics. The location, colors, materials, and lighting of all exterior signs, graphics or other informational or directional features shall be shown on the plans.

11. Exterior Lighting. Exterior lighting within the design review plan shall be indicated on the plans. The direction of the lighting, size and type of fixtures, and an indication of the amount of lighting shall be shown on the plans.

12. Trash and Refuse Storage. All trash or refuse storage areas, along with appropriate screening, shall be indicated on the plans. Refuse storage areas must be constructed of brick, concrete block or other similar products as approved by the director.

13. Roadways and Utilities. The proposed plans shall indicate any public improvements that will be constructed as part of the project, including, but not limited to, roadway and utility improvements.

Response: The Applicant has submitted preliminary development plans (Exhibit A) which include the information required by NMC 15.220.030, B (1) – (13), including scaled Site Development, Architectural, Landscaping, Parking, Lighting, and other plans and civil construction drawings with the required details listed. All Service areas for trash disposal, loading and delivery at the proposed

RCF will be provided by the existing campus service area at the south side of the main building (The Manor). Any signage plans will be submitted under separate application. These criteria are met.

> *14. Traffic Study. A traffic study shall be submitted for any project that generates in excess of 40 trips per p.m. peak hour. This requirement may be waived by the director when a determination is made that a previous traffic study adequately addresses the proposal and/or when off-site and frontage improvements have already been completed which adequately mitigate any traffic impacts and/or the proposed use is not in a location which is adjacent to an intersection which is functioning at a poor level of service. A traffic study may be required by the director for projects below 40 trips per p.m. peak hour where the use is located immediately adjacent to an intersection functioning at a poor level of service. The traffic study shall be conducted according to the City of Newberg design standards.*

Response: Attached as required is a Traffic Impact Analysis update memo (Exhibit F) which meets the listed requirements and studies the impact the development may have on surrounding traffic corridors. The original Traffic Impact Analysis was created in 2015 using figures from the Institute of Transportation Engineers (ITE) Trip Generation Manual 8th Edition. The ITE Trip Generation Handbook, Trip Generation Rates – 10th Edition indicates that this type of building (Category ITE 255 – "Continuing Care Retirement Community – Attached"), with 79 units, is estimated to generate an overall increase of 8 trips in the PM peak hour which is less than the 40-trip trigger for a traffic study therefore a Traffic Impact Analysis is not warranted. This memo, prepared by a registered engineer, is attached as Exhibit F. This criterion is met.

15.220.050 Criteria for Design Review (Type II process)

> *B. Type II. The following criteria are required to be met in order to approve a Type II design review request:*
>
> > *1. Design Compatibility. The proposed design review request incorporates an architectural design which is compatible with and/or superior to existing or proposed uses and structures in the surrounding area. This shall include, but not be limited to, building architecture, materials, colors, roof design, landscape design, and signage.*

Response: The proposed building is similar or superior to and is therefore compatible with surrounding structures on the Friendsview campus. The building will be four stories in height, with pitched gable and hipped roofs. Building materials will be similar to the surrounding structures with primary elements of the building being constructed with a brick base on the exterior of the first floor and cementitious lap and panel siding along the upper floors of the building. Signage will be submitted as part of a separate land use application. Architectural, lighting, and landscape design for the Phase 1 building is compliant with City requirements and preliminary plans for approval are attached (Exhibit A). These criteria are met.

> > *2. Parking and On-Site Circulation. Parking areas shall meet the requirements of NMC 15.440.010. Parking studies may be required to determine if adequate parking and circulation are provided for uses not specifically identified in NMC 15.440.010. Provisions shall be made to*

provide efficient and adequate on-site circulation without using the public streets as part of the parking lot circulation pattern. Parking areas shall be designed so that vehicles can efficiently enter and exit the public streets with a minimum impact on the functioning of the public street.

Response: RFC Phase 1 will provide 79 units within a continuing care retirement community. Group living requires 1 parking stall per 3 beds per 15.348.060 (D). The RCF 79 units will be studios and 1 bed units. This will require at least 27 parking spaces; 31 parking spaces will be provided. The parking plans attached as part of Exhibit A demonstrate that the project provides adequate on-site parking and circulation for residents and does not use public streets as part of a parking lot circulation pattern. Because of the proposed layout of the parking lot under the Phase 1 building, vehicles can efficiently enter and exit the campus from public streets with a minimum impact on the functioning of the public street. These criteria have been satisfied.

3. Setbacks and General Requirements. The proposal shall comply with NMC 15.415.010 through 15.415.060 dealing with height restrictions and public access; and NMC 15.405.010 through 15.405.040 and 15.410.010 through 15.410.070 dealing with setbacks, coverage, vision clearance, and yard requirements.

Response: The Institutional zone requires a 25-foot front setback, 10-foot interior setback, and a 25-foot setback from properties zoned residential. The zone does not have a lot coverage limit. These requirements have been met. The maximum height within the zone is 75 feet. Within 50 feet of an interior property line abutting the R-2 district, that height is limited to 30 feet. The building height is less than the maximum height of the district and the building is not within 50 feet of an interior property line abutting an R-2 district. Within 100 feet of a property line abutting a public street or railroad right-of-way, that maximum height is reduced to 50 feet. The proposed building is more than 100 feet away from a public street or railroad right-of-way. The proposed Phase 1 building meets the 10-foot interior setback. The building also meets the 25-foot setback from residential zoning. These criteria are met.

4. Landscaping Requirements. The proposal shall comply with NMC 15.420.010 dealing with landscape requirements and landscape screening.

Response: The landscape plan complies with NMC 15.420.010. That section is reviewed in its entirety later within this report. The criterion is met.

5. Signs. Signs shall comply with NMC 15.435.010 et seq. dealing with signs.

Response: This criterion is not applicable. Signs are not proposed as part of this application.

7. Zoning District Compliance. The proposed use shall be listed as a permitted or conditionally permitted use in the zoning district in which it is located as found in NMC 15.305.010 through 15.336.020. Through this site review process, the director may make a determination that a use is determined to be similar to those listed in the applicable zoning district, if it is not already specifically listed. In this case, the director shall make a finding that the use shall not have any

different or more detrimental effects upon the adjoining neighborhood area than those specifically listed.

8. Subdistrict Compliance. Properties located within subdistricts shall comply with the provisions of those subdistricts located in NMC 15.340.010 through 15.348.060.

Response: The site for Phase 1 is located within the Institutional district. The proposed use for the building is as Residential Care Facility. This use is permitted within the Institutional district as Group Living with a maximum of 10 residents per housing units. Each unit is limited to a studio or 1-bedroom unit. There is no applicable subdistrict for the site. These provisions have been satisfied.

9. Alternative Circulation, Roadway Frontage Improvements and Utility Improvements. Where applicable, new developments shall provide for access for vehicles and pedestrians to adjacent properties which are currently developed or will be developed in the future. This may be accomplished through the provision of local public streets or private access and utility easements. At the time of development of a parcel, provisions shall be made to develop the adjacent street frontage in accordance with city street standards and the standards contained in the transportation plan. At the discretion of the city, these improvements may be deferred through use of a deferred improvement agreement or other form of security.

Response: The RCF Phase 1 will be served by a number of existing utilities within Fulton Street and the surrounding former rights-of-way.
Water: There is an existing 6-inch water line within Fulton Street that loops through the property under former E Cherry Street and former N Center Street. There is also an existing 8-inch water line that loops through the northern side of the property serving the duplexes and a portion of the main Manor building. A portion of this 8-inch line will be relocated outside the construction limits of the new Residential Care Facility building. A new connection to the water main in Fulton Street will be needed to serve a new fire hydrant to be located east of the existing Manor building. This fire hydrant will be served by a new 6-in water line within a new 15-foot public water line easement...
Sewer: There is an existing 10-12-inch sewer line east of Hess Creek and a 6-inch line within the former E Cherry Street and Friendsview Manor driveway. There is also an existing 8-inch line that loops through the northern side of the property serving the duplexes and portion of the main Manor building. A portion of this 8-inch line will be relocated outside the construction limits of the new Residential Care Facility building. Re-connection to the existing sewer line will be made at the North East corner of the existing Manor Building. .
Stormwater: An existing storm system (pipe sizes vary from 6-inch to 15-inch) loops through the northern side of the property serving the duplexes and a portion of the main Manor building, portion of the storm network discharges into an existing detention only pond. The stormwater design utilizes a combination of Low Impact Development Approach (LIDA) flow through planters, an underground chamber system, and storm filter structures to meet city water quality and quantity criteria and requirements. Additional information is included in the attached stormwater report.

Street/Frontage Improvements: Access to the proposed structure and adjacent duplexes will remain substantially the same. The access drive in front of the Manor building will be shifted north to allow for the construction of the new parking and building layout.
Frontage improvements along Fulton Street consist of replacing the existing sidewalk with a new 6-foot wide curb tight sidewalk. Existing curb cuts will be removed, and a full height curb will be installed. The existing easterly driveway will be re-constructed with a commercial driveway approach meeting ADA standards. Lastly, a 5-foot dedication is being provided where the existing right-of-way is 50-foot wide as required in the pre-application meeting notes, to meet current road classification standards. These requirements are satisfied.

> *10. Traffic Study Improvements. If a traffic study is required, improvements identified in the traffic study shall be implemented as required by the director.*

Response: The Applicant has provided a memo to address the current unit count and the build-out of the Concept Master Plan. Per Exhibit F, no traffic improvements are required. This criterion is met.

DIVISION 15.300 ZONING DISTRICTS

Chapter 15.302 DISTRICTS AND THEIR AMENDMENT

15.302.010 Establishment and designation of use districts and subdistricts. In order to classify, regulate, restrict and segregate the uses of lands and buildings, to regulate and restrict the height and size of buildings, to regulate the area of yards and other open spaces about buildings, and to regulate the density of population, the following classes of use districts and subdistricts are established:

> *A. Use Districts.*
>
> > *10. I institutional district.*

15.302.032 Purposes of each zoning district.

> *O. I Institutional District. The I institutional district is intended to support and promote institutional uses. The district provides for the establishment and growth of large institutional campuses as well as accessory and compatible uses. The institutional district is intended to be consistent with the public/quasi-public (PQ) designation of the comprehensive plan.*

Response: The subject property is located within the Institutional district. This application is for a 79-unit RCF building, a type of group care home. This use is permitted and consistent with surrounding uses in the Institutional district and within the Public/Quasi-Public Comprehensive Plan designation. The criteria are met.

CHAPTER 15.303 USE CATEGORIES

15.303.315 Group care building category.

A. Characteristics. The group care facility category includes licensed facilities that provide residential care alone or in conjunction with treatment or training or a combination thereof for 16 or more individuals who need not be related. Staff persons required to meet licensing requirements shall not be counted in the number of facility residents, and need not be related to each other or to any resident of the residential facility.

B. Accessory Uses. Personal service uses, recreational facilities, dining facilities, or retail sales for use of tenants, employees, or tenant visitors.

C. Examples. Nursing homes, continuing care retirement facilities, addiction treatment centers, sanitariums.

D. Exclusions. Residential care homes, residential care facilities, and prisons are separate use categories. Assisted living facilities are classified as multiple-family dwellings.

Response: The proposed use is a type of group care building, a permitted use within the Institutional district. These criteria are met.

CHAPTER 15.305 ZONING USE TABLE

15.305.020 Zoning use table – Use districts.

Newberg Development Code – Zoning Use Table

Chapter 15.305 ZONING USE TABLE

#	Use	R-1	R-2	R-3	R-4	RP	C-1	C-2	C-3	C-4	M-1	M-2	M-3	M-4-I	M-4-C	CF	I	AR	AI	Notes and Special Use Standards
315	Group care facility (16+ people)	C	C	C		C		C									P			

Response: The Applicant has proposed a type of group care facility. Per the Zoning Use Table and NMC 15.305.020, group care facilities are permitted within the Institutional district. This criterion is met.

CHAPTER 15.348 INSTITUTIONAL OVERLAY (IO) SUBDISTRICT

15.348.010 Purpose.

A. The institutional overlay (IO) subdistrict is intended to provide for the orderly development and expansion of George Fox University, Providence Newberg Hospital, and Friendsview Manor operating within the City of Newberg. The IO subdistrict is designed to incorporate specific regulations and standards that will support the expansion of the institutional uses, while protecting the existing uses of non-institutionally owned property within the subdistrict until such time as the property may be acquired by the institution with the consent of the property owners. The IO subdistrict focuses primarily on development regulations and processes. Also, the IO subdistrict will provide a process for conversion of

lands in the IO subdistrict to the institutional district as contiguous lands are purchased by the institution. The IO subdistrict may be applied to any existing zoning designation. Permitted uses include those permitted by the underlying zoning district and other institutional uses specifically allowed within the IO subdistrict that are compatible with the uses in the underlying zoning. The IO subdistrict is intended to be consistent with the public/quasi-public designation of the comprehensive plan.

B. In addition, the purpose of the subdistrict is to:

1. Preserve and enhance the character of the areas surrounding the institutions, especially residential areas.

2. Provide a process to enhance communication among the institution, neighborhood residents, and city officials concerning institutional change and expansion plans. [Ord. 2451, 12-2-96. Code 2001 § 151.520.]

15.348.030 Permitted buildings and uses.

A. All uses permitted in the underlying primary district.

B. Uses that are directly related to the objectives of the institution and that are owned or operated by the institution that are not already permitted within the district, and may be subject to special conditions and standards including:

1. Group living facilities with a maximum of 10 residents per housing unit.

2. Office and administrative facilities subject to special conditions (NMC 15.348.050(A)).

3. Retail sales and services subject to special conditions (NMC 15.348.050(B)).

C. Where uses in the IO subdistrict and the underlying zone conflict, the IO subdistrict prevails. [Ord. 2451, 12-2-96. Code 2001 § 151.522.]

15.348.060 Development standards.

A. Height. The maximum height for all uses will be 45 feet.

B. Setbacks.

1. A minimum 15-foot building setback for all boundary lines of the property will be required for all schools, churches, public and semi-public buildings and other institutional uses in residential districts. IO designated property is not subject to the setback standards identified within NMC 15.410.040.

2. Parking in setbacks will be permitted per NMC 15.420.010(B)(3)(b).

3. No variances are required where existing buildings or site improvements are converted to institutional uses and do not meet these standards.

C. Lot Coverage. Combined maximum lot and parking coverage shall be 80 percent for R-2, R-3 and RP districts.

D. Parking.

1. Group living: one space per three beds (can be reduced by 50 percent if within 400 feet of an institution parking lot).

2. Office: one space per 400 square feet minimum (can be reduced by 50 percent if within 400 feet of an institution parking lot).

Response: The proposed building is located internally to the campus and will not impact the existing uses of non-institutionally. These criteria are met.

F. Signs. Exemption to the sign requirements of NMC 15.435.010 et seq. include the following: One sign with a maximum size of six square feet may be mounted on a building or erected freestanding on the property and does not require a sign permit; provided, that it meets the vision clearance requirements of NMC 15.410.060 and that it is less than five feet tall. [Ord. 2451, 12-2-96. Code 2001 § 151.525.]

Response: This criterion is not applicable. Signs are not proposed as part of this application.

DIVISION 15.400 DEVELOPMENT STANDARDS

Chapter 15.405 LOT REQUIREMENTS

15.405.010 Lot area – Lot areas per dwelling unit.

A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:

5. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.

Response: The proposed site is 16.4+\- acres in size and is already included within the Institutional district. The site is part of the Friendsview campus. This criterion is met.

15.405.030 LOT DIMENSIONS AND FRONTAGE.

A. Width. Widths of lots shall conform to the standards of this code.

B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.

C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.

D. Frontage.

1. *No lot or development site shall have less than the following lot frontage standards:*

    a. *Each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at least 25 feet wide. No new private streets, as defined in NMC 15.05.030, shall be created to provide frontage or access except as allowed by NMC 15.240.020(L)(2).*

2. *The above standards apply with the following exceptions:*

    a. *Legally created lots of record in existence prior to the effective date of the ordinance codified in this code.*

    b. *Lots or development sites which, as a process of their creation, were approved with sub-standard widths in accordance with provisions of this code.*

    c. *Existing private streets may not be used for new dwelling units, except private streets that were created prior to March 1, 1999, including paving to fire access roads standards and installation of necessary utilities, and private streets allowed in the airport residential and airport industrial districts.*

Response: The lot dimensions and frontage of the site conform to the standards for the Institutional district as outlined within the Newberg Municipal Code.

15.405.040 LOT COVERAGE AND PARKING COVERAGE REQUIREMENTS.

A. Purpose. The lot coverage and parking coverage requirements below are intended to:

1. *Limit the amount of impervious surface and storm drain runoff on residential lots.*
2. *Provide open space and recreational space on the same lot for occupants of that lot.*
3. *Limit the bulk of residential development to that appropriate in the applicable zone.*

C. All other districts and uses not listed in subsection (B) of this section shall not be limited as to lot coverage and parking coverage except as otherwise required by this code.

Response: The proposed project conforms to the Institutional zoning district requirements for lot coverage and parking coverage. These criteria are satisfied.

Chapter 15.410 YARD SETBACK REQUIREMENTS

15.410.010 GENERAL YARD REGULATIONS.

A. No yard or open space provided around any building for the purpose of complying with the provisions of this code shall be considered as providing a yard or open space for any other building.

B. No yard or open space on adjoining property shall be considered as providing required yard or open space for another lot or development site under the provisions of this code.

C. No front yards provided around any building for the purpose of complying with the regulations of this code shall be used for public or private parking areas or garages, or other accessory buildings, except as specifically provided elsewhere in this code.

D. When the common property line separating two or more contiguous lots is covered by a building or a permitted group of buildings with respect to such common property line or lines does not fully conform to the required yard spaces on each side of such common property line or lines, such lots shall constitute a single development site and the yards as required by this code shall then not apply to such common property lines.

Response: As part of the Friendsview Retirement Community campus, the proposed building does not count any yards or open space of adjoining properties or buildings. Parking has not been proposed within any yard or open space. The proposed building is composed of a single development site. These criteria have been satisfied.

15.410.020 FRONT YARD SETBACK.

D. Institutional and Community Building. All lots or development sites in the I and CF district shall have a front yard of 25 feet. Outdoor activity facilities, such as pools, basketball courts, tennis courts, or baseball diamonds, including any accessory structures and uses, are not permitted within the required setback.

Response: The proposed building provides a 25-foot setback for the front of the building as it is located internally to the campus and not along a street. No prohibited facilities or structures have been proposed within the required front setback. These criteria are met.

15.410.030 INTERIOR YARD SETBACK.

D. Institutional and Community Building. All lots or development sites in the I and CF district shall have interior yards of not less than 10 feet, except outdoor activity facilities, such as pools, basketball courts, tennis courts, or baseball diamonds, including any accessory structures and uses, shall have an interior yard setback of 25 feet when abutting a residential district.

Response: This site provides greater than the required 10-foot setback amount from all side and rear lot lines. The Applicant also does not propose any of the listed accessory structures or facilities within any setback areas adjacent to a residential district. These provisions have been met.

15.410.040 SETBACK AND YARD RESTRICTIONS AS TO SCHOOLS, CHURCHES, PUBLIC *BUILDINGS.*

A. Building Setback. No buildings shall be erected, used or maintained for a school, church or public or semi-public building or use, institution or similar use under the regulations of this code unless such building is removed at least 25 feet from every boundary line of any property included in any residential district.

B. Required Yard. No required front or interior yard of the lot on which such building or use is located shall be used for play or parking purposes.

Response: The setbacks for the RCF Phase 1 exceeds the required setbacks. No play or parking purposes have been proposed within any required yard area. These criteria are satisfied.

15.410.060 VISION CLEARANCE SETBACK.

The following vision clearance standards shall apply in all zones (see Appendix A, Figure 9).

A. At the intersection of two streets, including private streets, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 50 feet in length.

B. At the intersection of a private drive and a street, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 25 feet in length.

C. Vision clearance triangles shall be kept free of all visual obstructions from two and one-half feet to nine feet above the curb line. Where curbs are absent, the edge of the asphalt or future curb location shall be used as a guide, whichever provides the greatest amount of vision clearance.

Response: The proposed building is internal and will not impact the existing vision clearance setback.

CHAPTER 15.415 BUILDING AND SITE DESIGN STANDARDS

15.415.020 Building height limitation.

D. Institutional. The maximum height of any building or structure will be 75 feet except as follows:

1. Within 50 feet of an interior property line abutting a C-1, R1,R-2 or R-P district, no main building may exceed 30 feet.

3. Within 100 feet of a property line abutting a public street or railroad right-of-way, or within 100 feet of property lines abutting parcels with an R-1, R-2, R-3, R-P, C-1, C-2, C-3, M1,M-2, or M-3 zoning designation, no main building may exceed 50 feet in height.

4. To utilize the maximum permitted height standard, at least 80 percent of the building's ground coverage must be beyond the setback area designated in subsection (D)(3) of this section. The maximum encroachment may not exceed 25 feet.

Response: The proposed building is under 75 feet tall as shown on the attached plans (Sheet A5 – Exhibit A).These requirements are met.

15.415.040 PUBLIC ACCESS REQUIRED.

No building or structure shall be erected or altered except on a lot fronting or abutting on a public street or having access to a public street over a private street or easement of record approved in accordance with provisions contained in this code. New private streets may not be created to provide access except as allowed under NMC

15.332.020(B)(24), 15.336.020(B)(8), and in the M-4 zone. Existing private streets may not be used for access for new dwelling units, except as allowed under NMC 15.405.030. No building or structure shall be erected or altered without provisions for access roadways as required in the Oregon Fire Code, as adopted by the city.

Response: The Friendsview Retirement Campus is abutting an existing public street. These criteria are satisfied.

CHAPTER 15.420 LANDSCAPING AND OUTDOOR AREAS

15.420.010 Required minimum standards.

B. Required Landscaped Area. The following landscape requirements are established for all developments except single-family dwellings:

1. A minimum of 15 percent of the lot area shall be landscaped; provided, however, that computation of this minimum may include areas landscaped under subsection (B)(3) of this section. Development in the C-3 (central business district) zoning district and M-4 (large lot industrial) zoning district is exempt from the 15 percent landscape area requirement of this section. Additional landscaping requirements in the C4district are described in NMC 15.352.040(K). In the AI airport industrial district, only a five percent landscaping standard is required with the goal of "softening" the buildings and making the development "green" with plants, where possible. The existence of the runway, taxiway, and approach open areas already provide generally for the 15 percent requirement. Developments in the AI airport industrial district with a public street frontage shall have said minimum landscaping between the front property line and the front of the building.

2. All areas subject to the final design review plan and not otherwise improved shall be landscaped.

Response: Approximately 18,207 square feet, or ±23.2 percent of the site area is proposed to be landscaped, greater than the minimum 15 percent in the above criteria. All areas of the site not covered by a structure or other hard-surface improvement are proposed to be covered by landscaping. These criteria are satisfied.

3. The following landscape requirements shall apply to the parking and loading areas:

a. A parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space.

b. A parking, loading area, or drive aisle which runs adjacent to a property line shall be separate from any lot line adjacent to a street by a landscaped strip at least 10 feet in interior width or the width of the required yard, whichever is greater, and any other lot line by a landscaped strip of at least five feet in interior width. See subsections (B)(3)(c) and (d) of this section for material to plant within landscape strips.

c. A landscaped strip separating a parking area, loading area, or drive aisle from a street shall contain street trees spaced as appropriate to the species, not to exceed 50 feet

apart on average, and a combination of shrubs and ground cover, or lawn. This landscaping shall provide partial screening of these areas from the street.

d. A landscaped strip separating a parking area, loading area, or drive aisle from an interior lot line shall contain any combination of trees, shrubs, ground cover or lawn. Plant material shall be selected from at least two different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and shrubs).

e. Landscaping in a parking or loading area shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area.

f. Landscaping areas in a parking lot, service drive or loading area shall have an interior width of not less than five feet.

g. All multifamily, institutional, commercial, or industrial parking areas, service drives, or loading zones which abut a residential district shall be enclosed with a 75 percent opaque, site-obscuring fence, wall or evergreen hedge along and immediately adjacent to any interior property line which abuts the residential district. Landscape plantings must be large enough to provide the required minimum screening requirement within 12 months after initial installation. Adequate provisions shall be maintained to protect walls, fences or plant materials from being damaged by vehicles using said parking areas.

h. An island of landscaped area shall be located to separate blocks of parking spaces. At a minimum, one deciduous shade tree per seven parking spaces shall be planted to create a partial tree canopy over and around the parking area. No more than seven parking spaces may be grouped together without an island separation unless otherwise approved by the director based on the following alternative standards:

i. Provision of a continuous landscaped strip, with a five-foot minimum width, which runs perpendicular to the row of parking spaces (see Appendix A, Figure 13).

ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average, within areas proposed for back-to back parking (see Appendix A, Figure 14).

Response: The RCF Phase 1 service drives are proposed to be buffered with a minimum of 5 feet of landscaping. Plantings within this area will not abut a residential district and therefore do not need to feature a sight-obscuring fence or screening plantings. The requirement of one deciduous shade tree per seven parking spaces to create a partial tree canopy over and around the parking area is satisfied as shown on the required Landscaping Plans (Exhibit A) and no more than seven spaces are grouped together. The above provisions are satisfied.

4. Trees, Shrubs and Ground Covers. The species of street trees required under this section shall conform to those authorized by the city council through resolution. The director shall have the

responsibility for preparing and updating the street tree species list which shall be adopted in resolution form by the city council.

a. Arterial and minor arterial street trees shall have spacing of approximately 50 feet on center. These trees shall have a minimum two-inch caliper tree trunk or stalk at a measurement of two feet up from the base and shall be balled and burlapped or boxed.

b. Collector and local street trees shall be spaced approximately 35 to 40 feet on center. These trees shall have a minimum of a one and one-half or one and three-fourths inch tree trunk or stalk and shall be balled and burlapped or boxed.

Response: No street trees are proposed as the project scope does not encompass right-of-way areas requiring street tree plantings.

c. Accent Trees. Accent trees are trees such as flowering cherry, flowering plum, crab-apple, Hawthorne and the like. These trees shall have a minimum one and one-half inch caliper tree trunk or stalk and shall be at least eight to 10 feet in height. These trees may be planted bare root or balled and burlapped. The spacing of these trees should be approximately 25 to 30 feet on center.

Response: Instances of accent trees on the property, as designated on the Landscaping Plans (Exhibit A), will meet the minimum trunk diameter of 1½ inches and eight feet in height. The trees will be spaced no further than approximately ±25 to 30 feet apart, on-center. These provisions are satisfied.

d. All broad-leafed evergreen shrubs and deciduous shrubs shall have a minimum height of 12 to 15 inches and shall be balled and burlapped or come from a two-gallon can. Gallon-can size shrubs will not be allowed except in ground covers. Larger sizes of shrubs may be required in special areas and locations as specified by the design review board. Spacing of these shrubs shall be typical for the variety, three to eight feet, and shall be identified on the landscape planting plan.

Response: All shrub plantings shown on the Landscaping Plans (Exhibit A) have a minimum height of 12 to 15 inches and will come from at least a 2-gallon container. Plantings are proposed to be grouped and spaced such that minimum densities are satisfied or exceeded. These criteria are met.

e. Ground Cover Plant Material. Ground cover plant material such as greening juniper, cotoneaster, minor Bowles, English ivy, hypericum and the like shall be one of the following sizes in specified spacing for that size:

Gallon cans 3 feet on center

4" containers 2 feet on center

2-1/4" containers 18" on center

Rooted cuttings 12" on center

Response: Ground cover for RCF Phase 1 is shown on the required Landscaping Plans (Exhibit A). The landscaping is shown to be planted in groupings and distances appropriate to the species and planting size and will satisfy or exceed the minimum container size and planting density required.

> *5. Automatic, underground irrigation systems shall be provided for all areas required to be planted by this section. The director shall retain the flexibility to allow a combination of irrigated and nonirrigated areas. Landscaping material used within nonirrigated areas must consist of drought- resistant varieties. Provision must be made for alternative irrigation during the first year after initial installation to provide sufficient moisture for plant establishment.*
>
> *6. Required landscaping shall be continuously maintained.*

Response: All proposed plantings within the proposed area of disturbance will be irrigated by an underground installed system. Required landscaping shall be continuously maintained during construction and for 90 days following substantial completion of the installation. Thereafter, the owner will continuously maintain the landscape as shown within the Landscaping Plans (Exhibit A). These provisions are met.

> *7. Maximum height of tree species shall be considered when planting under overhead utility lines.*
>
> *8. Landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) will apply to development proposals unless the institution has addressed the requirements and standards by an approved site development master plan. With an approved site development master plan, the landscape requirements will be reviewed through an administrative Type I review process.*

Response: The maximum height of proposed tree species will not interfere with overhead power lines. Parking and loading areas will feature landscaping within islands or along parking aisles per subsection (B)(3) of this section.

> *C. Installation of Landscaping. All landscaping required by these provisions shall be installed prior to the issuance of occupancy permits, unless security equal to 110 percent of the cost of the landscaping as determined by the director is filed with the city, insuring such installation within six months of occupancy. A security – cash, certified check, time certificates of deposit, assignment of a savings account, bond or such other assurance of completion as shall meet with the approval of the city attorney – shall satisfy the security requirements. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the director, the security may be used by the city to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the city shall be returned to the applicant.*

Response: Proposed landscaping will be installed prior to occupancy. These criteria are or will be met.

15.420.020 LANDSCAPING AND AMENITIES IN PUBLIC RIGHTS-OF-WAY.

The following standards are intended to create attractive streetscapes and inviting pedestrian spaces. A review body may require any of the following landscaping and amenities to be placed in abutting public rights-of-way as part of multifamily, commercial, industrial, or institutional design reviews, or for subdivisions and planned unit developments. In addition, any entity improving existing rights-of way should consider including these elements in the project. A decision to include any amenity shall be based on comprehensive

plan guidelines, pedestrian volumes in the area, and the nature of surrounding development.

A. Pedestrian Space Landscaping. Pedestrian spaces shall include all sidewalks and medians used for pedestrian refuge. Spaces near sidewalks shall provide plant material for cooling and dust control, and street furniture for comfort and safety, such as benches, waste receptacles and pedestrian-scale lighting. These spaces should be designed for short-term as well as long-term use. Elements of pedestrian spaces shall not obstruct sightlines and shall adhere to any other required city safety measures. Medians used for pedestrian refuge shall be designed for short-term use only with plant material for cooling and dust control, and pedestrian-scale lighting. The design of these spaces shall facilitate safe pedestrian crossing with lighting and accent paving to delineate a safe crossing zone visually clear to motorists and pedestrians alike.

Response: The RCF Phase 1 project will include well-landscaped pedestrian spaces which do not obstruct sightlines or create safety issues. This landscaping will facilitate safe pedestrian crossing of the building's parking driveway. These provisions are met.

1. Street trees planted in pedestrian spaces shall be planted according to NMC 15.420.010(B)(4).

Response: No street trees have been proposed as no work is proposed in the existing right-of-way.

2. Pedestrian spaces shall have low (two and one-half feet) shrubs and ground covers for safety purposes, enhancing visibility and discouraging criminal activity.

a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms, and at maturity maintain growth within the planting area (refer to plant material matrix below).

b. Plant placement shall also adhere to clear sight line requirements as well as any other relevant city safety measures.

Response: This requirement does not apply as no work is proposed in the existing right-of-way.

3. Pedestrian-scale lighting shall be installed along sidewalks and in medians used for pedestrian refuge.

a. Pole lights as well as bollard lighting may be specified; however, the amount and type of pedestrian activity during evening hours, e.g., transit stops, nighttime service districts, shall ultimately determine the type of fixture chosen.

b. Luminaire styles shall match the area/district theme of existing luminaires and shall not conflict with existing building or roadway lights causing glare.

c. Lighting heights and styles shall be chosen to prevent glare and to designate a clear and safe path and limit opportunities for vandalism (see Appendix A, Figure 17, Typical Pedestrian Space Layouts).

d. Lighting shall be placed near the curb to provide maximum illumination for spaces furthest from building illumination. Spacing shall correspond to that of the street trees to prevent tree foliage from blocking light.

Response: Lighting has been chosen to be appropriate to the site. Luminaire styles will be in keeping with the established styles of the surrounding campus and will not cause glare or conflict with existing building or roadway lighting. Lighting heights have been carefully designed to prevent glare and light trespass while also maximizing on-site lighting for safety and security. The proposed lighting meets these provisions of Newberg Municipal Code.

4. Street furniture such as benches and waste receptacles shall be provided for spaces near sidewalks only.

a. Furniture should be sited in areas with the heaviest pedestrian activity, such as downtown, shopping districts, and shopping centers.

b. Benches should be arranged to facilitate conversation between individuals with L-shaped arrangements and should face the area focal point, such as shops, fountains, plazas, and should divert attention away from nearby traffic.

5. Paving and curb cuts shall facilitate safe pedestrian crossing and meet all ADA requirements for accessibility.

Response: This requirement does not apply as no work is proposed in the existing right-of-way.

B. Planting Strip Landscaping. All planting strips shall be landscaped. Planting strips provide a physical and psychological buffer for pedestrians from traffic with plant material that reduces heat and dust, creating a more comfortable pedestrian environment. Planting strips shall have different arrangements and combinations of plant materials according to the frequency of on-street parking (see Appendix A, Figures 18 and 19).

1. Planting strips which do not have adjacent parking shall have a combination of ground covers, low (two and one-half feet) shrubs and trees. Planting strips adjacent to frequently used on-street parking, as defined by city staff, shall only have trees protected by tree grates, and planting strips adjacent to infrequently used on-street parking shall be planted with ground cover as well as trees (see Appendix A, Figures 18 and 19, Typical Planting Strip Layouts). District themes or corridor themes linking individual districts should be followed utilizing a unifying plant characteristic, e.g.,

bloom color, habit, or fall color. When specifying thematic plant material, monocultures should be avoided, particularly those species susceptible to disease.

Response: No planting strip landscaping has been proposed as no work is proposed in the existing right-of-way.

3. Shrubs and ground covers shall be provided in planting strips without adjacent parking with low (two and one-half feet) planting masses to enhance visibility, discourage criminal activity, and provide a physical as well as psychological buffer from passing traffic.

a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms and at maturity maintain growth within the planting area.

b. Ground cover able to endure infrequent foot traffic shall be used in combination with street trees for planting strips with adjacent occasional parking (refer to plant material matrix below).

c. All plant placement shall adhere to clear sight line requirements as well as any other relevant city safety measures.

Response: No planting strip landscaping has been proposed as no work is proposed in the existing right-of-way.

C. Maintenance. All landscapes shall be maintained for the duration of the planting to encourage health of plant material as well as public health and safety. All street trees and shrubs shall be pruned to maintain health and structure of the plant material for public safety purposes.

Response: Following planting, all proposed landscaping will be maintained to encourage plant health and protect public health and safety. This criterion is and will be met.

CHAPTER 15.425 EXTERIOR LIGHTING

15.425.010 Purpose.

The purpose of this chapter is to regulate the placement, orientation, distribution patterns, and fixture types of on-site outdoor lighting. The intent of this section is to provide minimum lighting standards that promote safety, utility, and security, prevent glare on public roadways, and protect the privacy of residents.

15.425.020 Applicability and exemptions.

A. Applicability. Outdoor lighting shall be required for safety and personal security in areas of assembly, parking, and traverse, as part of multifamily residential, commercial, industrial, public, recreational and institutional uses. The applicant for any Type I or Type II development permit shall submit, as part of the site plan, evidence that the proposed outdoor lighting plan will comply with this section. This information shall contain but not be limited to the following:

1. The location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture.

2. Additional information the director may determine is necessary, including but not limited to illuminance level profiles, hours of business operation, and percentage of site dedicated to parking and access.

3. If any portion of the site is used after dark for outdoor parking, assembly or traverse, an illumination plan for these areas is required. The plan must address safety and personal security.

Response: The E103, Site Plan – Photometrics, has been provided as part of Exhibit A. The location, heights, makes, models, lamp type, wattage, and cutoff angle are provided. These criteria are met.

B. Exemptions. The following uses shall be exempt from the provisions of this section:

1. Public street and airport lighting.

2. Circus, fair, carnival, or outdoor governmentally sponsored event or festival lighting.

3. Construction or emergency lighting, provided such lighting is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.

4. Temporary Lighting. In addition to the lighting otherwise permitted in this code, a lot may contain temporary lighting during events as listed below:

a. Grand Opening Event. A grand opening is an event of up to 30 days in duration within 30 days of issuance of a certificate of occupancy for a new or remodeled structure, or within 30 days of change of business or ownership. No lot may have more than one grand opening event per calendar year. The applicant shall notify the city in writing of the beginning and ending dates prior to the grand opening event.

b. Other Events. A lot may have two other events per calendar year. The events may not be more than eight consecutive days in duration, nor less than 30 days apart.

5. Lighting activated by motion sensor devices.

6. Nonconforming lighting in place as of September 5, 2000. Replacement of nonconforming lighting is subject to the requirements of NMC 15.205.010 through 15.205.100.

7. Light Trespass onto Industrial Properties. The lighting trespass standards of NMC 15.425.040 do not apply where the light trespass would be onto an industrially zoned property.

Response: The listed exemptions do not apply to the proposed lighting for the site. These provisions do not apply.

15.425.030 ALTERNATIVE MATERIALS AND METHODS OF CONSTRUCTION, INSTALLATION, OR *OPERATION.*

The provisions of this section are not intended to prevent the use of any design, material, or methods of installation or operation not specifically prescribed by this section, provided any such alternate has been approved

by the director. Alternatives must be an approximate equivalent to the applicable specific requirement of this section and must comply with all other applicable standards in this section.

Response: Because LED luminaires are not listed within the Table of Shielding Requirements, this section is applicable. The luminaires proposed will be full-cutoff luminaires, meaning that no direct up light will be emitted above the horizontal. This requirement is satisfied.

15.425.040 REQUIREMENTS.

A. General Requirements – All Zoning Districts.

1. Low-level light fixtures include exterior lights which are installed between ground level and six feet tall. Low-level light fixtures are considered nonintrusive and are unrestricted by this code.

Response: The main walkway in front of the building is illuminated by proposed LED bollards (designated on the plan as Type SG). These luminaires are 42-inches in height. Due to the height of the bollard, these low-level luminaires are considered nonintrusive and are unrestricted by this code.

2. Medium-level light fixtures include exterior lights which are installed between six feet and 15 feet above ground level. Medium-level light fixtures must either comply with the shielding requirements of subsection (B) of this section, or the applicant shall show that light trespass from a property has been designed not to exceed one-half foot-candle at the property line.

Response: The majority of the proposed luminaires on-site will be pedestrian height, LED pole mounted luminaires (designated on the plan as Type SA). These luminaires are mount on an 8-foot pole and are used to illuminate the walkways and parking areas to the north, east and west of the building. The proposed luminaires comply with shielding requirements and light trespass restrictions at the property line.

3. High-level light fixtures include exterior lights which are installed 15 feet or more above ground level. High-level light fixtures must comply with the shielding requirements of subsection (B) of this section, and light trespass from a property may not exceed one-half foot-candle at the property line.

Response: The attached Exterior Site Lighting Plan (Exhibit A) demonstrates that luminaires mounted on the building or recessed in canopies and pole mounted luminaires around the building will not cause light trespass at nearby property lines.

B. Table of Shielding Requirements.

Fixture Lamp Type (Shielded)

Low/high pressure sodium, mercury vapor, metal halide and fluorescent over 50 watts (Fully)

Incandescent over 160 watts (Fully)

Incandescent 160 watts or less (None)

Fossil fuel (None)

Any light source of 50 watts or less (None)

Other sources (As approved by NMC 15.425.030)

Note: "Incandescent" includes tungsten-halogen (quartz) lamps.

Response: The selected luminaire types are not listed within the Table of Shielding Requirements and are, therefore, subject to the standards of NMC 15.425.030.

Chapter 15.430 UNDERGROUND UTILITY INSTALLATION

15.430.010 UNDERGROUND UTILITY INSTALLATION.

A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.

B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.

C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:

1. *The cost of undergrounding the utility is extraordinarily expensive.*
2. *There are physical factors that make undergrounding extraordinarily difficult.*
3. *Existing utility facilities in the area are primarily overhead and are unlikely to be changed.*

Response: See section 15.220.050(B)9 above for full summary of utilities.

CHAPTER 15.440 OFF-STREET PARKING, BICYCLE PARKING, AND PRIVATE WALKWAYS

Article I. Off-Street Parking Requirements

15.440.010 Required off-street parking.

A. Off-street parking shall be provided on the development site for all R-1, C-1, M-1, M-2 and M-3 zones. In all other zones, except the C-3 zoning district where an in-lieu-fee is paid for required parking, the required parking shall be on the development site or within 400 feet of the development site which the parking is required to serve. All required parking must be under the same ownership as the development site served

except through special covenant agreements as approved by the city attorney, which bind the parking to the development site.

Response: The proposed project is within the Institutional (I) zoning district. As such, no in-lieu-fee is required for the project's parking. The parking area is provided in front the proposed building; therefore, the parking will be under the same ownership as the development site.

D. All commercial, office, or industrial developments that have more than 20 off-street parking spaces and that have designated employee parking must provide at least one preferential carpool/vanpool parking space. The preferential carpool/vanpool parking space(s) must be located close to a building entrance. Penalty: See NMC 15.05.120.

Response: The RCF parking area is not proposed to provide designated employee parking. These criteria are not applicable.

15.440.020 PARKING AREA AND SERVICE DRIVE DESIGN.

A. All public or private parking areas, parking spaces, or garages shall be designed, laid out and constructed in accordance with the minimum standards as set forth in NMC 15.440.070.

Response: All parking areas and spaces have been designed, laid out, and will be constructed in accordance with the minimum standards of NMC 15.440.070. Those provisions are addressed later within this report. This requirement is satisfied.

B. Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwellings on a single lot, shall be served by a service drive so that no backward movement or other maneuvering of a vehicle within a street, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety in traffic access and egress and maximum safety of pedestrian and vehicular traffic on the site, but in no case shall two-way and one-way service drives be less than 20 feet and 12 feet, respectively. Service drives shall be improved in accordance with the minimum standards as set forth in NMC 15.440.060.

Response: The proposed parking area is provided internally. No backing or other maneuvering movements on a public street will be needed. The service drive to be utilized is existing and will remain as-is. These criteria are satisfied.

C. Gates. A private drive or private street serving as primary access to more than one dwelling unit shall not be gated to limit access, except as approved by variance. Penalty: See NMC 15.05.120.

Response: Although private, no gates have been proposed for the driveways. This provision does not apply.

15.440.030 PARKING SPACES REQUIRED.

Use Minimum Parking Spaces Required Institutional Type Group living community not including nursing care 1 space per living unit

Chapter 15.440 OFF-STREET PARKING, BICYCLE PARKING, AND PRIVATE WALKWAYS

Use	Minimum Parking Spaces Required
Nursing homes, homes for the aged, group care homes, asylums, etc.	1 for each 3 beds

Response: The proposed parking will provide 31 parking spaces for 79 patient units. This criterion is met.

15.440.050 COMMON FACILITIES FOR MIXED USES.

A. In the case of mixed uses, the total requirements for off-street parking spaces shall be the sum of the requirements for the various uses. Off-street parking facilities for one use shall not be considered as providing parking facilities for any other use except as provided below.

B. Joint Uses of Parking Facilities. The director may, upon application, authorize the joint use of parking facilities required by said uses and any other parking facility; provided, that:

1. The applicant shows that there is no substantial conflict in the principal operating hours of the building or use for which the joint use of parking facilities is proposed.

2. The parking facility for which joint use is proposed is no further than 400 feet from the building or use required to have provided parking.

3. The parties concerned in the joint use of off-street parking facilities shall evidence agreement for such joint use by a legal instrument approved by the city attorney as to form and content. Such instrument, when approved as conforming to the provisions of the ordinance, shall be recorded in the office of the county recorder and copies of the instrument filed with the director.

Response: The total required off-street parking will be met by using Joint Use shared parking between the Friendsview Retirement Community lots (The Manor lot and the adjacent University Village lot to the west). The total sum of units between the two lots are 407 units. Zoning requires 1 stall per unit. The total parking requirement for both lots are 407 parking stalls. The provided parking stalls between the two lots is 444 parking stalls. The shared parking will be for the staff which will not create any substantial conflict. The residents and guests parking will be adjacent to the building they serve. The two lots share a lot line and therefore are within the 400 feet of the communities they serve. Both lots are part of the Friendsview Retirement Community and will not require an agreement between parties. This criterion is met.

15.440.060 PARKING AREA AND SERVICE DRIVE IMPROVEMENTS.

All public or private parking areas, outdoor vehicle sales areas, and service drives shall be improved according to the following:

A. All parking areas and service drives shall have surfacing of asphaltic concrete or Portland cement concrete or other hard surfacing such as brick or concrete pavers. Other durable and dust-free surfacing materials may be approved by the director for infrequently used parking areas. All parking areas and service drives shall be graded so as not to drain stormwater over the public sidewalk or onto any abutting public or private property.

Response: The proposed parking area and service drive will be surfaced with asphaltic concrete. See storm summary above for drainage. These provisions are satisfied.

B. All parking areas shall be designed not to encroach on public streets, alleys, and other rights-of-way. Parking areas shall not be placed in the area between the curb and sidewalk or, if there is no sidewalk, in the public right-of-way between the curb and the property line. The director may issue a permit for exceptions for unusual circumstances where the design maintains safety and aesthetics.

Response: The parking area is designed to be wholly contained within the property boundaries; therefore, the parking areas will not encroach on public streets, alleys, or other rights-of-way. No parking areas have been proposed between the curb and sidewalk or between the public right-of-way. These criteria are met.

C. All parking areas, except those required in conjunction with a single family or two-family dwelling, shall provide a substantial bumper which will prevent cars from encroachment on abutting private and public property.

Response: No encroachment is proposed on abutting private and public properties. This requirement is met.

D. All parking areas, including service drives, except those required in conjunction with single-family or two-family dwellings, shall be screened in accordance with NMC 15.420.010(B).

Response: The parking area will not be visible from any adjacent rights-of-way or properties, therefore, screening the parking area in accordance with NMC 15.420.010(B). This provision is satisfied.

E. Any lights provided to illuminate any public or private parking area or vehicle sales area shall be so arranged as to reflect the light away from any abutting or adjacent residential district.

Response: Lighting illuminating the parking area will not be visible from any abutting or adjacent residential district. This criterion is met.

F. All service drives and parking spaces shall be substantially marked and comply with NMC 15.440.070.

Response: The service drive and all parking spaces and loading areas will be substantially marked and visible to comply with NMC 15.440.070 as outlined below. This criterion is satisfied.

G. Parking areas for residential uses shall not be located in a required front yard, except as follows:

1. Attached or detached single-family or two-family: parking is authorized in a front yard on a service drive which provides access to an improved parking area outside the front yard.

2. Three- or four-family: parking is authorized in a front yard on a service drive which is adjacent to a door at least seven feet wide intended and used for entrance of a vehicle (see Appendix A, Figure 12).

Response: The proposed parking is not located within a required front yard. This criterion is met.

H. A reduction in size of the parking stall may be allowed for up to a maximum of 30 percent of the total number of spaces to allow for compact cars. For high turnover uses, such as convenience stores or fast-food restaurants, at the discretion of the director, all stalls will be required to be full-sized. Penalty: See NMC 15.05.120.

Response: No reduced-size parking stalls have been proposed. This provision is not applicable.

15.440.070 PARKING TABLES AND DIAGRAMS.

The following tables provide the minimum dimensions of public or private parking areas:

Table of Dimensions (In Feet)

Stall Width with Corresponding Aisle Width						
Stall Width = X	9	9.5	10	10.5	11	12
Aisle Width = Y	24	24	22	22	20	20

Diagram 3

Notes:

1. Bumpers must be installed where paved areas abut street right-of-way (except at driveways).

2. No stalls shall be such that cars must back over the property line to enter or leave stall.

3. Stalls must be clearly marked and the markings must be maintained in good condition.

4. The sketches show typical situations to illustrate the required standards. For further information or advice, contact the community development department at 537-1210.

Response: No angle nor compact parking spaces have been proposed within the parking area. The parking spaces provided meet the required dimensions for stalls of 9 feet in width and between 18 feet in depth. Parking aisles are 24 feet minimum in width. No paved areas will abut a street right-of-way. No stalls will be located near a property line. Parking spaces will be clearly marked, and the markings maintained in good condition. These requirements are satisfied.

Article II. Bicycle Parking

15.440.090 PURPOSE.

Cycling is a healthy activity for travel and recreation. In addition, by maximizing bicycle travel, the community can reduce negative effects of automobile travel, such as congestion and pollution. To maximize bicycle travel, developments must provide effective support facilities. At a minimum, developments need to provide a secure place for employees, customers, and residents to park their bicycles.

Response: The required bicycle parking will be provided per Newberg Municipal Code requirements. These facilities will allow bicycle parking for employees, residents, and visitors to the Friendsview campus.

15.440.100 FACILITY REQUIREMENTS.

Bicycle parking facilities shall be provided for the uses shown in the following table. Fractional space requirements shall be rounded up to the next whole number.

Use (Minimum Number of Bicycle Parking Spaces Required)

New commercial, industrial, office, and institutional developments, including additions that total 4,000 square feet or more (One bicycle parking space for every 10,000 square feet of gross floor area. In C-4 districts, two bicycle parking spaces, or one per 5,000 square feet of building area, must be provided, whichever is greater)

Response: For this institutional use within the Institutional zoning district, one bicycle parking space is required for every 10,000 square feet of gross floor area. The project proposes providing 8 new bicycle parking spaces for staff and visitors.

15.440.110 DESIGN.

A. Bicycle parking facilities shall consist of one or more of the following:

1. A firmly secured loop, bar, rack, or similar building that accommodates locking the bicycle frame and both wheels using a cable or U-shaped lock.

2. An enclosed locker.

3. A designated area within the ground floor of a building, garage, or storage area. Such area shall be clearly designated for bicycle parking.

4. Other building designs approved by the director.

B. All bicycle parking spaces shall be at least six feet long and two and one-half feet wide. Spaces shall not obstruct pedestrian travel.

C. All spaces shall be located within 50 feet of a building entrance of the development.

D. Required bicycle parking facilities may be located in the public right-of-way adjacent to a development subject to approval of the authority responsible for maintenance of that right-of-way.

Response: Attached development plans (Exhibit A) demonstrate that bicycle parking is provided within 50 feet of the main entry. The provided spaces will be 6 feet long by 2½ feet in width and not obstruct pedestrian travel. No bicycle parking facilities are proposed within a public right-of-way. These criteria are satisfied.

Article III. Private Walkways

15.440.120 PURPOSE.

Sidewalks and private walkways are part of the city's transportation system. Requiring their construction is part of the city's plan to encourage multimodal travel and to reduce reliance on the automobile. Considerable funds have and will be expended to install sidewalks along the streets in the city. Yet there is little point to this expense if it is not possible for people to walk from the sidewalk to the developments along each side. The following requirements are intended to provide safe and convenient paths for employees, customers, and residents to walk from public sidewalks to development entrances, and to walk between buildings on larger sites.

15.440.130 Where required.

Private walkways shall be constructed as part of any development requiring Type II design review, including mobile home parks. In addition, they may be required as part of conditional use permits or planned unit developments. In the airport industrial (AI) district and residential (AR) district, on-site walks are not required in aircraft operations areas, such as parking aprons, taxiways, and runways.

15.440.140 Private walkway design.

A. All required private walkways shall meet the applicable building code and Americans with Disabilities Act requirements.

B. Required private walkways shall be a minimum of four feet wide.

C. Required private walkways shall be constructed of portland cement concrete or brick.

D. Crosswalks crossing service drives shall, at a minimum, be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

E. At a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other.

F. The review body may require on-site walks to connect to development on adjoining sites.

G. The review body may modify these requirements where, in its opinion, the development provides adequate on-site pedestrian circulation, or where lot dimensions, existing building layout, or topography preclude compliance with these standards.

Response: The proposed RCF building will feature private walkways. Private walkways are provided on the north and west of the project, adjoining sidewalks throughout the campus. These private

walkways lead to building entrances on the northern portions of the building. The walkways proposed will meet the applicable building code and ADA requirements for access, be a minimum of 4 feet in width, be constructed of concrete cement, be clearly marked with a contrasting construction material, and connect each building entrance with a public street and sidewalk. These provisions are met.

Division 15.500 PUBLIC IMPROVEMENT STANDARDS

CHAPTER 15.505 PUBLIC IMPROVEMENTS STANDARDS

15.505.020 Applicability.

The provision and utilization of public facilities and services within the City of Newberg shall apply to all land developments in accordance with this chapter. No development shall be approved unless the following improvements are provided for prior to occupancy or operation, unless future provision is assured in accordance with NMC 15.505.030(E).

A. Public Works Design and Construction Standards. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall comply with the requirements of the most recently adopted Newberg public works design and construction standards.

B. Street Improvements. All projects subject to a Type II design review, partition, or subdivision approval must construct street improvements necessary to serve the development.

C. Water. All developments, lots, and parcels within the City of Newberg shall be served by the municipal water system as specified in Chapter 13.15 NMC.

D. Wastewater. All developments, lots, and parcels within the City of Newberg shall be served by the municipal wastewater system as specified in Chapter 13.10 NMC.

E. Stormwater. All developments, lots, and parcels within the City of Newberg shall manage stormwater runoff as specified in Chapters 13.20 and 13.25 NMC.

F. Utility Easements. Utility easements shall be provided as necessary and required by the review body to provide needed facilities for present or future development of the area.

G. City Approval of Public Improvements Required. No building permit may be issued until all required public building improvements are in place and approved by the director, or are otherwise bonded for in a manner approved by the review authority, in conformance with the provisions of this code and the Newberg Public Works Design and Construction Standards.

Response: All needed utilities are available for the project and ready for connection. These utilities are currently located within public rights-of-way or easements as required by previous approvals. Any connection to or needed public improvements will meet all applicable City standards. These criteria are satisfied.

15.505.030 STREET STANDARDS.

A. Purpose. The purpose of this section is to:

1. Provide for safe, efficient, and convenient multi-modal transportation within the City of Newberg.

2. Provide adequate access to all proposed and anticipated developments in the City of Newberg. For purposes of this section, "adequate access" means direct routes of travel between destinations; such destinations may include residential neighborhoods, parks, schools, shopping areas, and employment centers.

3. Provide adequate area in all public rights-of-way for sidewalks, wastewater and water lines, stormwater facilities, natural gas lines, power lines, and other utilities commonly and appropriately placed in such rights-of-way. For purposes of this section, "adequate area" means space sufficient to provide all required public services to standards defined in this code and in the Newberg public works design and construction standards.

B. Applicability. The provisions of this section apply to:

1. The creation, dedication, and/or construction of all public streets, bike facilities, or pedestrian facilities in all subdivisions, partitions, or other developments in the City of Newberg.

2. The extension or widening of existing public street rights-of-way, easements, or street improvements including those which may be proposed by an individual or the city, or which may be required by the city in association with other development approvals.

3. The construction or modification of any utilities, pedestrian facilities, or bike facilities in public rights-of-way or easements.

4. The designation of planter strips. Street trees are required subject to Chapter 15.420 NMC.

5. Developments outside the city that tie into or take access from city streets.

E. Improvements to Existing Streets.

1. All projects subject to partition, subdivision, or Type II design review approval shall dedicate right-of-way sufficient to improve the street to the width specified in subsection (G) of this section.

2. All projects subject to partition, subdivision, or Type II design review approval must construct a minimum of a three-quarter street improvement to all existing streets adjacent to, within, or necessary to serve the development. The director may waive or modify this requirement where the applicant demonstrates that the condition of existing streets to serve the development meets city standards and is in satisfactory condition to handle the projected traffic loads from the development. Where a development has frontage on both sides of an existing street, full street improvements are required.

3. In lieu of the street improvement requirements outlined in NMC 15.505.040(B), the review authority may elect to accept from the applicant monies to be placed in a fund dedicated to the future reconstruction of the subject street(s). The amount of money deposited with the city shall

be 100 percent of the estimated cost of the required street improvements (including any associated utility improvements), and 10 used for this purpose shall be based on preliminary design of the constructed street provided by the applicant's engineer and shall be approved by the director.

F. Improvements Relating to Impacts. Improvements required as a condition of development approval shall be roughly proportional to the impact of the development on public facilities and services. The review body must make findings in the development approval that indicate how the required improvements are roughly proportional to the impact. Development may not occur until required transportation facilities are in place or guaranteed, in conformance with the provisions of this code. If required transportation facilities cannot be put in place or be guaranteed, then the review body shall deny the requested land use application.

G. Street Width and Design Standards.

1. Design Standards. All streets shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.

2. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet.

3. Bike Lanes. Striped bike lanes shall be a minimum of six feet wide. Bike lanes shall be provided where shown in the Newberg transportation system plan.

4. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide.

5. Center Turn Lanes. Where a center turn lane is provided, it shall be a minimum of 12 feet wide.

7. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

8. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided:

a. Additional reinforcement is done to the sidewalk section at corners.

b. Sidewalk width is six feet.

9. Slope Easements. Slope easements shall be provided adjacent to the street where required to maintain the stability of the street.

10. Intersections and Street Design. The street design standards in the Newberg public works design and construction standards shall apply to all public streets, alleys, bike facilities, and sidewalks in the city.

R. Vehicular Access Standards.

1. Purpose. The purpose of these standards is to manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency. They help to maintain an adequate level of service consistent with the functional classification of the street. Major roadways, including arterials and collectors, serve as the primary system for moving people and goods within and through the city. Access is limited and managed on these roads to promote efficient through movement. Local streets and alleys provide access to individual properties. Access is managed on these roads to maintain safe maneuvering of vehicles in and out of properties and to allow safe through movements. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.

2. Access Spacing Standards. Public street intersection and driveway spacing shall follow the standards in Table 15.505.R below. The Oregon Department of Transportation (ODOT) has jurisdiction of some roadways within the Newberg city limits, and ODOT access standards will apply on those roadways. Table 15.505.R. Access Spacing Standards Roadway

3. Properties with Multiple Frontages. Where a property has frontage on more than one street, access shall be limited to the street with the lesser classification.

4. Driveways. More than one driveway is permitted on a lot accessed from either a minor collector or local street as long as there is at least 40 feet of lot frontage separating each driveway approach. More than one driveway is permitted on a lot accessed from a major collector as long as there is at least 100 feet of lot frontage separating each driveway approach.

T. Street Trees. Street trees shall be provided for all projects subject to Type II design review, partition, or subdivision. Street trees shall be installed in accordance with the provisions of NMC 15.420.010(B)(4).

U. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility as approved by the city. Upon the city's acceptance of the public improvements associated with the development, the street lighting system, exclusive of utility-owned service lines, shall be and become property of the city unless otherwise designated by the city through agreement with a private utility.

Response: The project proposed does not involve Right-of-way improvements. These sections of the Newberg Municipal Code do not apply.

15.505.040 PUBLIC UTILITY STANDARDS.

A. Purpose. The purpose of this section is to provide adequate services and facilities appropriate to the scale and type of development.

B. Applicability. This section applies to all development where installation, extension or improvement of water, wastewater, or private utilities is required to serve the development or use of the subject property.

C. General Standards.

1. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall conform to the Newberg public works design and construction standards and require a public improvements permit.

2. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbances of soil and site. Installation of all proposed public and private utilities shall be coordinated by the developer and be approved by the city to ensure the orderly extension of such utilities within public right-of-way and easements.

Response: Proposed utility plans have been discussed with City staff and submitted for review as part of this application. All applicable standards have been met.

D. Standards for Water Improvements. All development that has a need for water service shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary wastewater and stormwater facilities, as applicable.

1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping stations which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

2. Specific location, size and capacity of such facilities will be subject to the approval of the director with reference to the applicable water master plan. All water facilities shall conform with city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected. Installation costs shall remain entirely the developer's responsibility.

3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties, which, in the judgment of the city, cannot be feasibly served otherwise.

4. Design, construction and material standards shall be as specified by the director for the construction of such public water facilities in the city.

Response: The proposed project will obtain water via a connection to the existing 8-inch public water line already looped through the property. Fire flow testing has been completed for the site. Three fire hydrant connections, a 6-inch fire sprinkler connection, and a separate 4-inch domestic water service connection are proposed to serve the development. These improvements will meet the City of Newberg's standards upon their completion.

E. Standards for Wastewater Improvements. All development that has a need for wastewater services shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary water services and stormwater facilities, as applicable.

1. All septic tank systems and on-site sewage systems are prohibited. Existing septic systems must be abandoned or removed in accordance with Yamhill County standards.

2. All properties shall be provided with gravity service to the city wastewater system, except for lots that have unique topographic or other natural features that make gravity wastewater extension impractical as determined by the director. Where gravity service is impractical, the developer shall provide all necessary pumps/lift stations and other improvements, as determined by the director.

3. All developments shall be required to be linked to existing wastewater collection facilities adequately sized to serve their intended area by the construction of wastewater lines which connect to existing adequately sized wastewater facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

4. Specific location, size and capacity of wastewater facilities will be subject to the approval of the director with reference to the applicable wastewater master plan. All wastewater facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. Installation costs shall remain entirely the developer's responsibility.

5. Temporary wastewater service facilities, including pumping stations, will be permitted only if the director approves the temporary facilities, and the developer provides for all facilities that are necessary for transition to permanent facilities.

6. The design of the wastewater facilities shall take into account provisions for the future extension beyond the development to serve upstream properties, which, in the judgment of the city, cannot be feasibly served otherwise.

7. Design, construction and material standards shall be as specified by the director for the construction of such wastewater facilities in the city.

Response: The proposed project will connect to an existing 8-inch sanitary main at the northeast corner of the site. As the project includes a kitchen facility, a grease-interceptor is included prior to connection to the sanitary sewer main line. A number of sanitary services which were previously connected to single-family residences will be abandoned or relocated. These provisions are or will be satisfied upon completion of construction.

F. Easements. Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city and designated on the final plat of all subdivisions and partitions. Minimum required

easement width and locations are as provided in the Newberg public works design and construction standards.

Response: No easements are needed as part of this application. Necessary easements on the site have been established through previous land use actions. This criterion does not apply.

15.505.050 STORMWATER SYSTEM STANDARDS.

A. Purpose. The purpose of this section is to provide for the drainage of surface water from all development; to minimize erosion; and to reduce degradation of water quality due to sediments and pollutants in stormwater runoff.

B. Applicability. The provisions of this section apply to all developments subject to site development review or land division review and to the reconstruction or expansion of such developments that increases the flow or changes the point of discharge to the city stormwater system. Additionally, the provisions of this section shall apply to all drainage facilities that impact any public storm drain system, public right-of-way or public easement, including but not limited to off-street parking and loading areas.

Response: The project will require connection to stormwater utilities. There is an existing 15-inch stormwater line east of the existing Manor Building. Connections to this line will be made at the southeast corner of the proposed building. These criteria are met.

C. General Requirement. All stormwater runoff shall be conveyed to a public storm wastewater or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property. The developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.

D. Plan for Stormwater and Erosion Control. No construction of any facilities in a development included in subsection (B) of this section shall be permitted until an engineer registered in the State of Oregon prepares a stormwater report and erosion control plan for the project. This plan shall contain at a minimum:

1. The methods to be used to minimize the amount of runoff, sedimentation, and pollution created from the development both during and after construction.

2. Plans for the construction of stormwater facilities and any other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the stormwater plans.

3. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included in the stormwater report and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed based upon the design criteria outlined in the public works design and construction standards for the city.

E. Development Standards. Development subject to this section shall be planned, designed, constructed, and maintained in compliance with the Newberg public works design and construction standards.

Response: The City of Newberg Public Works Design and Construction Standards requires that all net new impervious area created must be treated and detained. Thus, two stormwater treatment planters along with an underground chamber system, and storm filter structure are proposed. The new system will manage the stormwater runoff created by the adjacent access road, the new building, and the existing structures upstream of it. Vegetated storm planters are located along the northern and eastern sides of the building, while the chamber system is located within the access road. A Preliminary Stormwater Report is attached to this application. Plans depicting stormwater facilities, site grading, and erosion control are attached to this application as well. These documents and calculations were prepared by an engineer registered within the State of Oregon. The facilities have been planned and designed in accordance with City of Newberg standards. The constructed facilities will also be maintained in accordance with the City's standards. These provisions have been or will be met upon completion of construction.

IV. Conclusion

The required findings have been made, and this written narrative and accompanying documentation demonstrate that the application is consistent with the applicable provisions of the City of Newberg Development Code. The evidence in the record is substantial and supports approval of the application. Therefore, the Applicant respectfully requests that the City approve these applications for Site Design Review

FRIENDSVIEW RCF PHASE 1

Exhibit A: Development Plans

RESIDENTIAL CARE FACILITY - PHASE I -EXHIBIT A

A0 - TYPE II SITE PLAN REVIEW

OWNER

FRIENDSVIEW RETIREMENT COMMUNITY
1301 EAST FULTON STREET
NEWBERG, OREGON 97132

CONTACT PERSON:
TODD ENGLE, EXEC DIRECTOR
tengle@friendsview.org
www.friendsview.org
t: 503-538-3144
f:

PLANNING

CITY OF NEWBERG
414 E FIRST STREET
P.O. BOX 970

CONTACT PERSON:
DOUG RUX, COMMUNITY DEV DIR
doug.rux@newbergoregon.gov
www.newbergoregon.gov
t: 503.537.1212
f:

ARCHITECT

LRS ARCHITECTS
720 NW DAVIS, Ste 300
PORTLAND, OR 97209

CONTACT PERSON:
KELSY LAUGHNAN
klaughnan@lrsarchitects.com
www.lrsarchitects.com
t: 503-221-1121
f: 503.221.2077

TVF&R

CITY OF NEWBERG

CONTACT PERSON:
TY DARBY, DEPUTY FIRE MARSHAL
ty.darby@tvfr.com
www.newbergoregon.gov
t: 503-537-1240
f:

CIVIL

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OR 97062

CONTACT PERSON:
CHUCK GREGORY
chuckg@aks-eng.com
www.aks-eng.com
t: 503-563-6151
f: 503-563-6152

GEOTECHNICAL

GEODESIGN, INC
703 BROADWAY ST, SUITE 650
VANCOUVER, WA 98660

CONTACT PERSON:
NICK PAVEGLIO
npaveglio@geodesigninc.com
www.geodesignibc.com
t: 360-693-8416
f: 360-393-8426

LANDSCAPE

SHAPIRO DIDWAY LLC
1204 SE WATER AVE. STE 11
PORTLAND, OR 97214

CONTACT PERSON:
NATE OTANI
nate@shapiro-la.com
www.shapirodidway.com
t: 503.232.0520
f:

PROJECT SUMMARY

STREET ADDRESS: 1301 FULTON ST, NEWBERG, OR 97132

PROJECT DESCRIPTION: NEW 4 STORY RESIDENTIAL CARE FACILITY BUILDING INCLUDING **79 LIVING UNITS**. 4 STORIES TYPE III-A CONSTRUCTION. 72,480 TOTAL GSF

PROPOSED BUILDING AREA:

Level	Area
LEVEL 1	17570 SF
LEVEL 2	18340 SF
LEVEL 3	18340 SF
LEVEL 4	18240 SF
Grand total	72480 SF

ZONING INFORMATION

ZONE: INSTITUTIONAL (I)
COMPREHENSIVE PLAN: PUBLIC/QUASI-PUBLIC (PQ)

LOADING & UNLOADING: BEHIND EXISTING MANOR BUILDING, SEE SITE PLAN

TRASH / RECYCLING AREA: BEHIND EXISTING MANOR BUILDING, SEE SITE PLAN

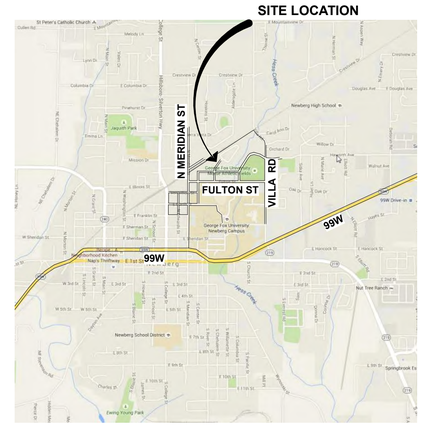
FLOOR AREA RATIOS & HEIGHT LIMITATIONS: 75' MAX HEIGHT

BICYCLE PARKING: 8 NEW SPACES, SEE SITE PLAN

VEHICLE PARKING: SEE SITE PLAN

DRAWING INDEX

SITE LOCATION



VICINITY MAP

N
TRUE

LRS ARCHITECTS

219081 | RESIDENTIAL CARE FACILITY- PHASE I
01/06/21

Friendsview

MANOR REDEVELOPMENT PHASE 1

A1 - TYPE II SITE PLAN REVIEW

LAND USE PROCESSES - FRC PHASE I - (RCF)

SITE DATA:

OVERALL SITE AREA:	(11.24 ACRES)	489,759 SF*
SITE DISTURBANCE AREA:	(2.0 +\-)	87,120 SF*

(*EXCLUDING THE STREAM CORRIDOR)

SITE DATA: (TOTAL CAMPUS)		**PROVIDED**	**REQUIRED**
LOT COVERAGE:	(151,915 SF)	31%	NONE
LANDSCAPE %:	(141,243 SF)	29%	15%
OUTDOOR AREA:	(48,337 SF)	10%	NONE

OVERALL CAMPUS PARKING		**PROVIDED**	**REQUIRED**
TOTAL CAMPUS	**407 UNITS**	**444 STALLS**	**407 STALLS**

BASED ON ZONING USE "CONTINUING CARE RETIREMENT COMMUNITY REQUIRING 1 SPACE PER UNIT.

FRIENDSVIEW RETIREMENT LOT (265 UNITS)
UNIVERSITY VILLAGE LOT (142 UNITS)

EXISTING CAMPUS BICYCLE PARKING

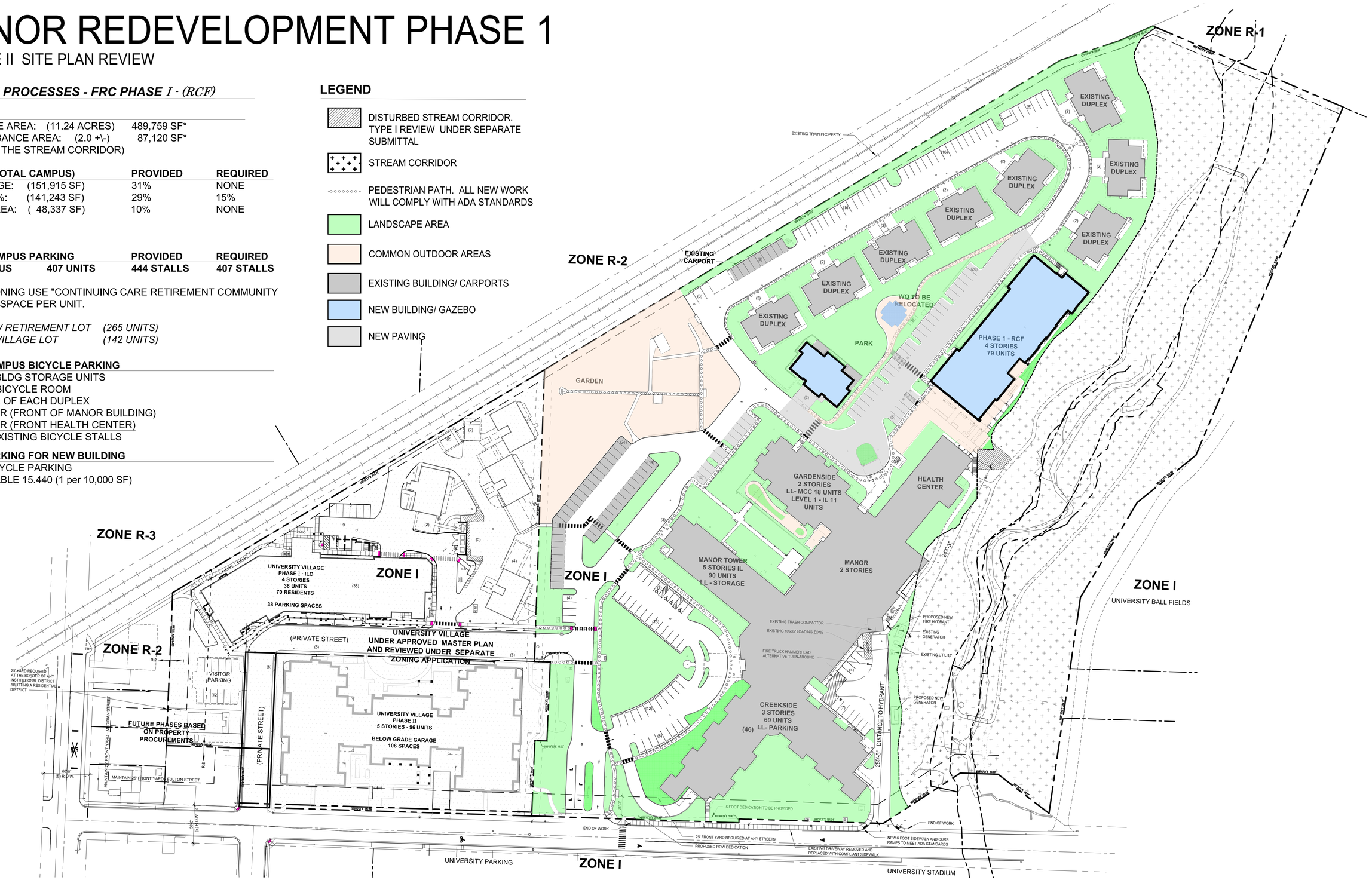
10 = MANOR BLDG STORAGE UNITS
10 = MANOR BICYCLE ROOM
18 = GARAGE OF EACH DUPLEX
4 = OUTDOOR (FRONT OF MANOR BUILDING)
6 = OUTDOOR (FRONT HEALTH CENTER)
48 = TOTAL EXISTING BICYCLE STALLS

BICYCLE PARKING FOR NEW BUILDING

8 = NEW BICYCLE PARKING
BASED ON TABLE 15.440 (1 per 10,000 SF)

LEGEND

- DISTURBED STREAM CORRIDOR. TYPE I REVIEW UNDER SEPARATE SUBMITTAL
- STREAM CORRIDOR
- PEDESTRIAN PATH. ALL NEW WORK WILL COMPLY WITH ADA STANDARDS
- LANDSCAPE AREA
- COMMON OUTDOOR AREAS
- EXISTING BUILDING/ CARPORTS
- NEW BUILDING/ GAZEBO
- NEW PAVING

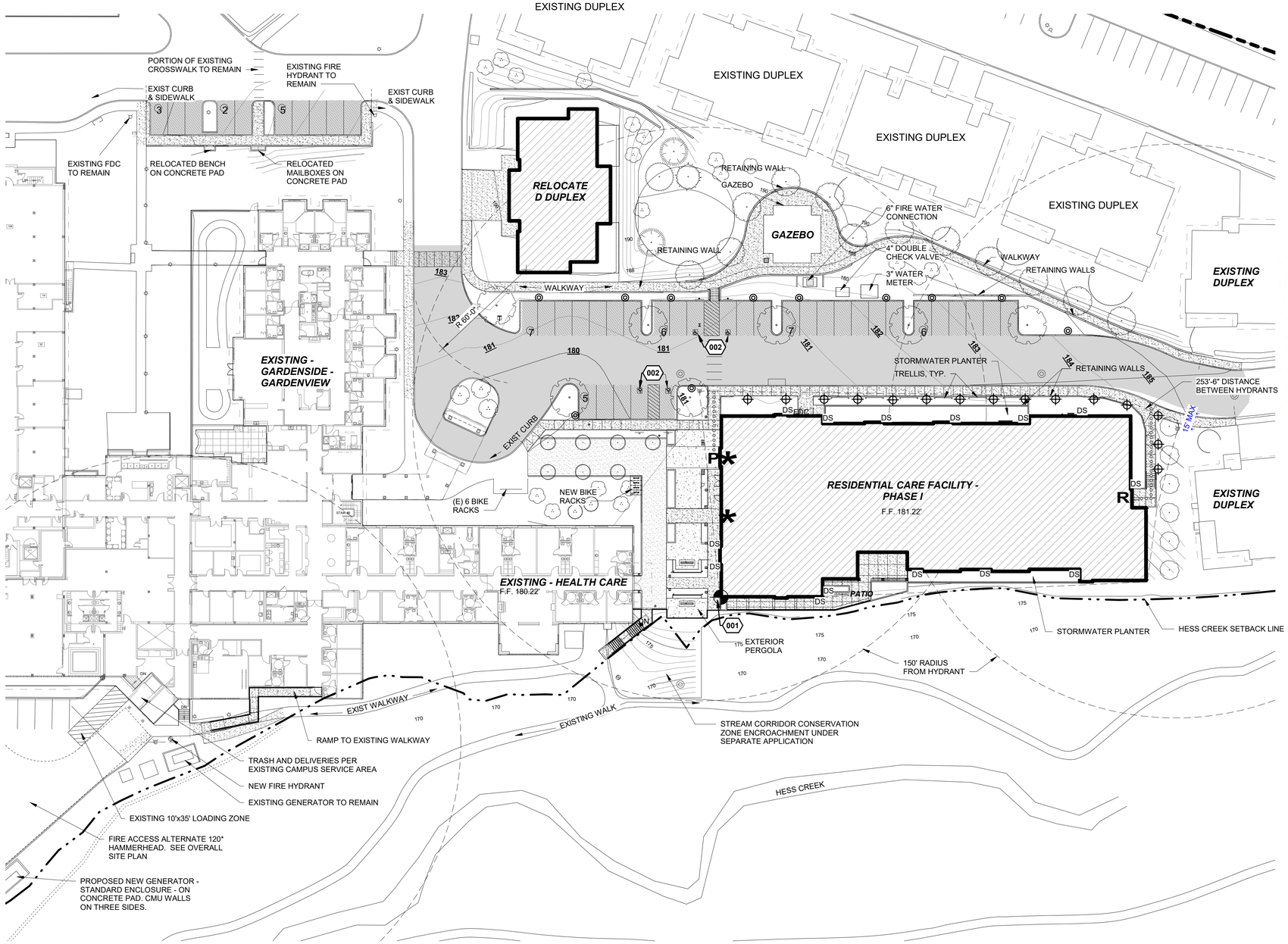


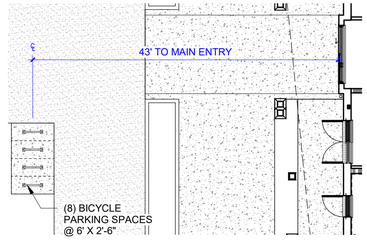
LRS ARCHITECTS 219081 | 01.05.2020

Friendsview RETIREMENT COMMUNITY

LUR - ENLARGED SITE PLAN

A2 - TYPE II SITE PLAN REVIEW

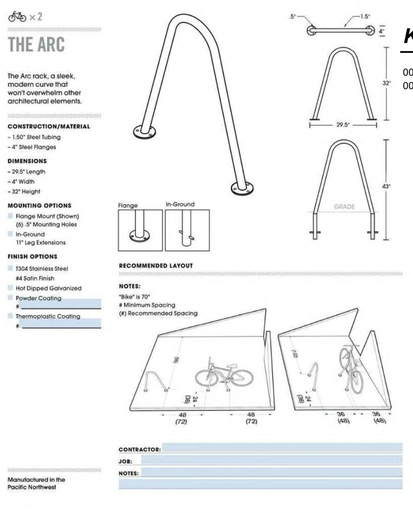




2. BICYCLE PARKING PLAN

A2 - TYPE II TO SCALE
SITE PLAN REVIEW

HUNTCO SITE FURNISHINGS — Bike racks, lockers, benches and architectural site furnishings since 1980. Tradition & Innovation
phone 503.224.8700 · fax 503.274.2055 · email Sales@Huntco.com · web Huntco.com · twitter @HuntcoSupply · mail P.O. Box 10385 Portland, Or. 97296-0385



GENERAL NOTES

A. SITE INFORMATION IS BASED ON OWNERS SURVEY (EXISTING CONDITION PLANS) DATED **11/05/2020** BY **AKS.**
B. ALL SURVEY INFORMATION INDICATING ALL EXISTING CONDITIONS ARE SHOWN FOR REFERENCE ONLY.
C. SEE A100i FOR STANDARD ACCESSIBILITY REQUIREMENTS.
D. ALL PARKING SPACE DIMENSIONS ARE TO ASPHALT SIDE OF CURB. PARKING SPACES ARE 9'-0" OC UNO.
E. STREET, PARKING, DRIVE CUTS, AND/ OR PUBLIC RIGHT OF WAY INFORMATION ARE SHOWN FOR REFERENCE ONLY. SEE CIVIL DRAWINGS FOR DETAILED INFORMATION.
F. DIMENSIONS SHOWN ON THIS PLAN ARE FOR GENERAL LAYOUT OF THE BUILDINGS AND SITE ELEMENTS.
G. REFER TO THE LEGAL SURVEY (PROVIDED BY OTHERS) FOR PROPERTY LINE DIMENSIONS AND EXACT LOCATIONS OF EXISTING SITE ELEMENTS.
H. SEE CIVIL FOR TYPICAL DIMENSIONS UNO.
I. TYPICAL CURB RADIUS IS 3'-0" AT ASPHALT SIDE OF CURB UNO.
J. FINISHED FLOOR ELEVATION 0-0" ARCHITECTURAL = 181.22' CIVIL.

KEYNOTES

001 BUILDING START POINT AT GRIDS A AND 6
002 ACCESSIBLE PARKING STALL. SEE SHEET A901.

LEGEND

- SITE EASEMENTS
- SITE SETBACKS
- SITE PROPERTY BOUNDARY
- PROPOSED BUILDING
- EXISTING BUILDING
- NEW ASPHALT PAVING
- PROPOSED CONCRETE SIDEWALK
- EXISTING CONCRETE SIDEWALK
- PROPOSED UNIT PAVERS
- SITE EGRESS PATH TO RIGHT OF WAY
- * ENTRY/EXIT ACCESS TO ACCESSIBLE MEANS OF EGRESS
- R RESTRICTED ENTRY NOT ON ACCESSIBLE ROUTE
- P PUBLIC ENTRY ON ACCESSIBLE ROUTE
- EXISTING SITE LIGHTING
- SITE POLE LIGHTING
- BOLLARD LIGHTING
- NO. OF PARKING SPACES IN GROUP
- TRAFFIC ARROW
- FIRE HYDRANT
- EXISTING FIRE HYDRANT
- FDC FIRE DEPARTMENT CONNECTION
- 123' - 0" SPOT GRADE ELEVATION
- F.F. 123' FINISH FLOOR ELEVATION
- DS DOWN SPOUT

0 15' 30' 60'

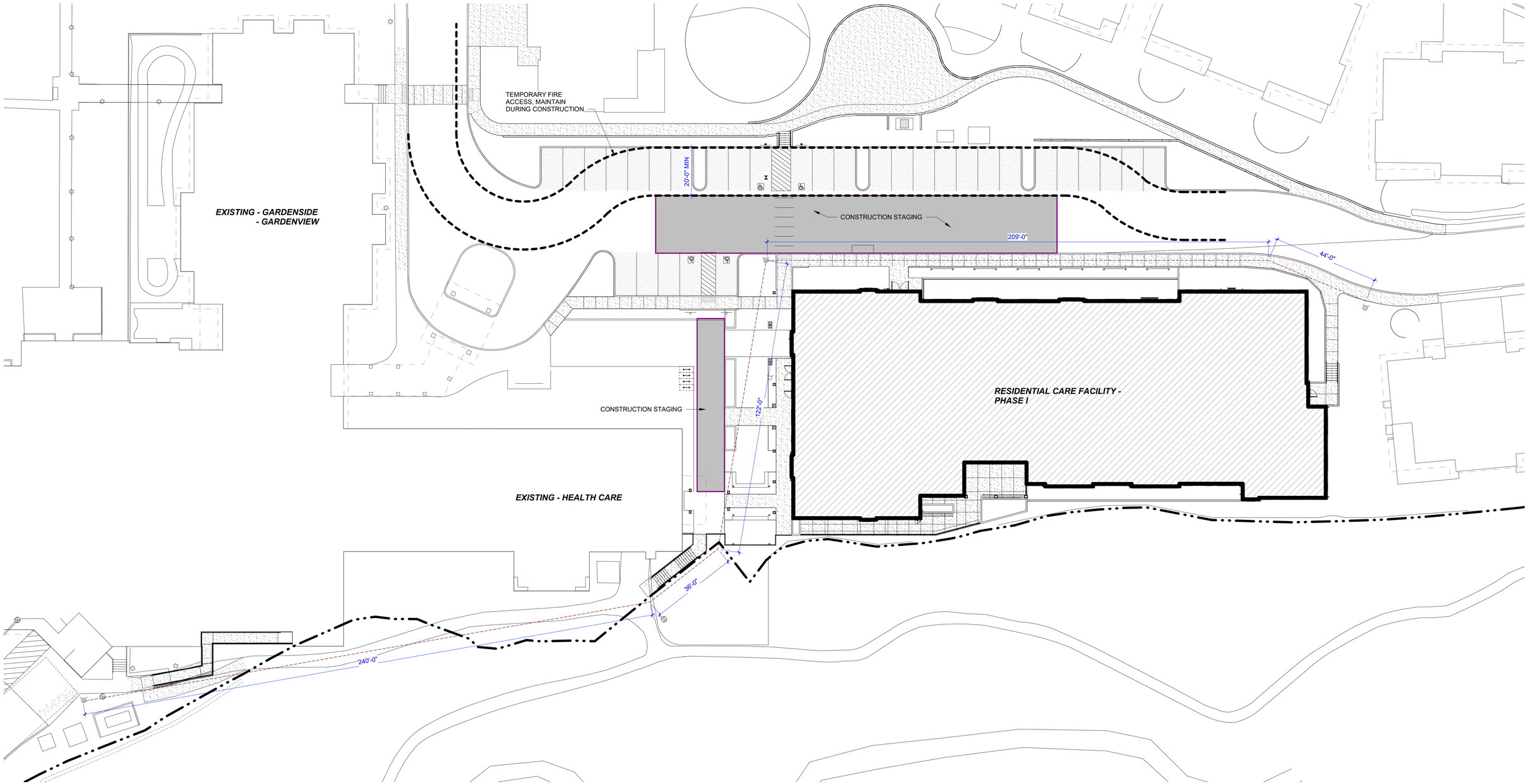
Plan North · True North

LRS ARCHITECTS

Friendsview

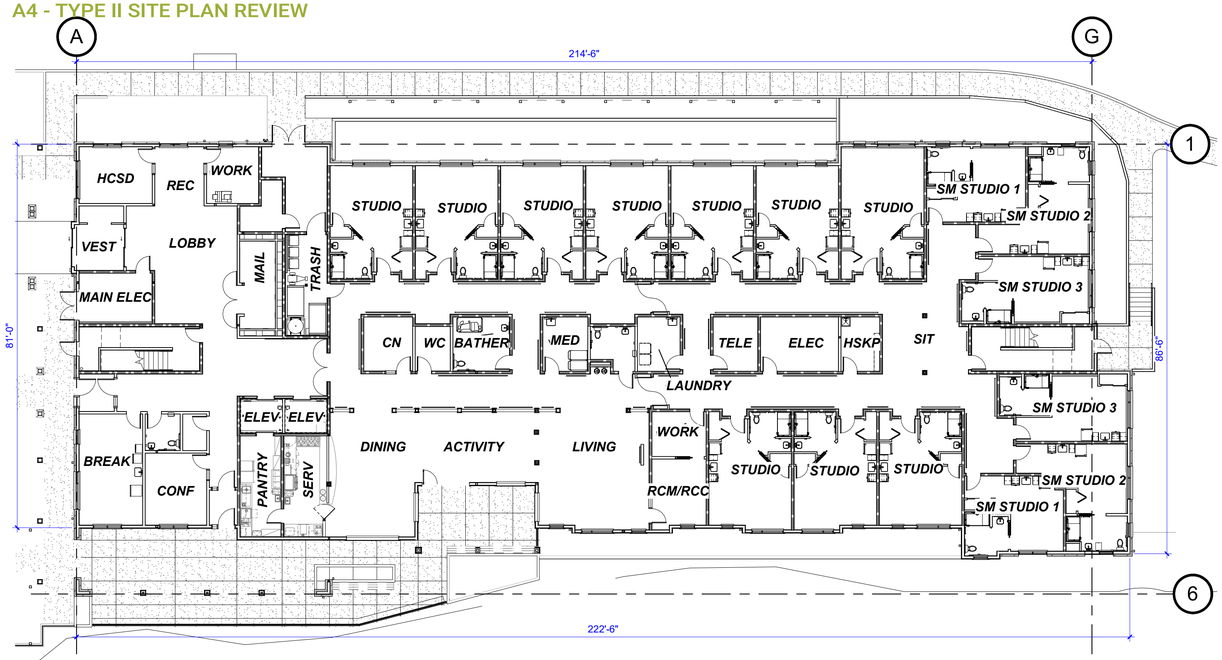
PH I - TEMPORARY FIRE ACCESS PLAN DURING CONSTRUCTION

A3 - TYPE II SITE PLAN REVIEW



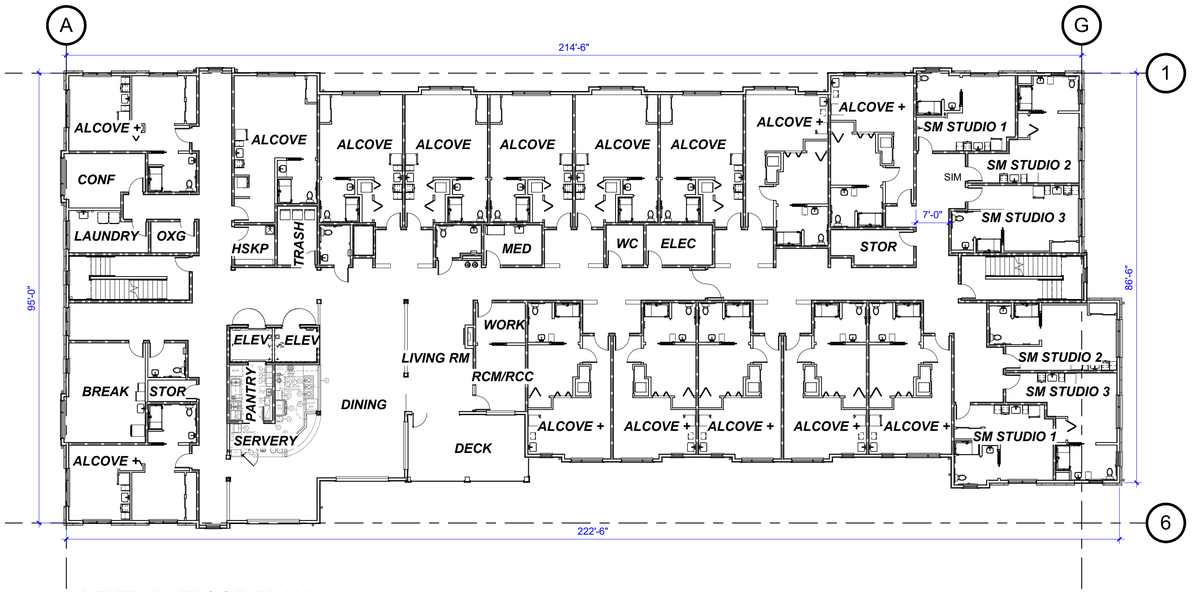
LUR - FLOOR PLANS

A4 - TYPE II SITE PLAN REVIEW



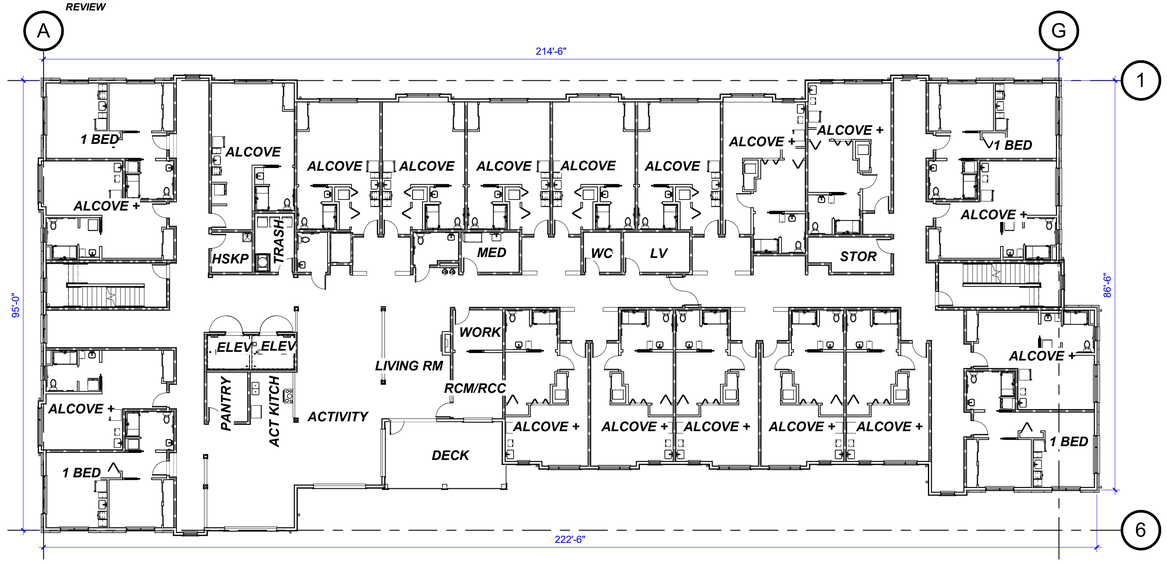
LEVEL 1 - FLOOR PLAN

A4 - TYPE IIALE: 1/16" = 1'-0"
SITE PLAN
REVIEW



LEVEL 2 - FLOOR PLAN

A4 - TYPE IIALE: 1/16" = 1'-0"
SITE PLAN
REVIEW



LEVEL 3 - FLOOR PLAN

A4 - TYPE IIALE: 1/16" = 1'-0"
SITE PLAN
REVIEW

LEVEL 4 - FLOOR PLAN

A4 - TYPE IIALE: 1/16" = 1'-0"
SITE PLAN
REVIEW

LUR - ELEVATIONS

A5 - TYPE II SITE PLAN REVIEW

OVERALL EAST ELEVATION

A5 - TYPE IA/LE: 3/32" = 1'-0"
SITE PLAN
REVIEW

OVERALL WEST ELEVATION

A5 - TYPE IA/LE: 3/32" = 1'-0"
SITE PLAN
REVIEW

OVERALL NORTH ELEVATION

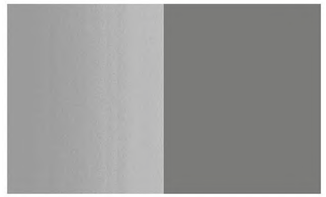
A5 - TYPE IA/LE: 3/32" = 1'-0"
SITE PLAN
REVIEW

OVERALL SOUTH ELEVATION

A5 - TYPE IA/LE: 3/32" = 1'-0"
SITE PLAN
REVIEW

LUR - MATERIAL TEMPLATE

A6 - TYPE II SITE PLAN REVIEW



1. FIBER CEMENT FASCIA
TEXTURE: SMOOTH
COLOR: SHERWIN WILLIAMS: SW 2849, WESTCHESTER GREY

2. FIBER CEMENT SIDING SYSTEM
STYLE: 7-1/4" LAP SIDING
TEXTURE: RUSTIC / SELECT CEDAR MILL
COLOR: BENJAMIN MOORE: HC-81, MANCHESTER TAN

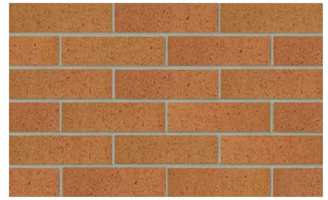
3. FIBER CEMENT SIDING SYSTEM
STYLE: 7-1/4" LAP SIDING
TEXTURE: RUSTIC / SELECT CEDAR MILL
COLOR: BENJAMIN MOORE: HC-105, ROCKPORT GRAY

4. FIBER CEMENT SIDING SYSTEM
STYLE: 2" BOARD AND BATTEN
TEXTURE: SMOOTH / SELECT CEDAR MILL
COLOR: BENJAMIN MOORE: HC-81, MACHESTER TAN

5. FIBER CEMENT SIDING SYSTEM
STYLE: PANEL
TEXTURE: SMOOTH / SELECT CEDAR MILL
COLOR: BENJAMIN MOORE: HC-81, MACHESTER TAN

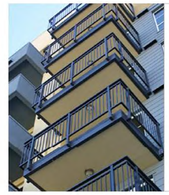
6. COMPOSITION SHINGLE ROOFING SYSTEM
MANUFACTURER: CERTAINTEED
COLOR: BLACK WALNUT

7. STANDING METAL SEAM ROOFING SYSTEM
FINISH: DURATECH 5000, WEATHERED COPPER



8. BRICK
STYLE: NORMAN, 3-1/2" x 2-1/2" x 11-1/2"
TEXTURE: VELOUR
COLOR: PACIFIC CLAY PRODUCTS, INC., "ROYAL SALTILLO"

9. ALUMINUM STOREFRONT SYSTEM
FINISH: CLEAR ANODIZED

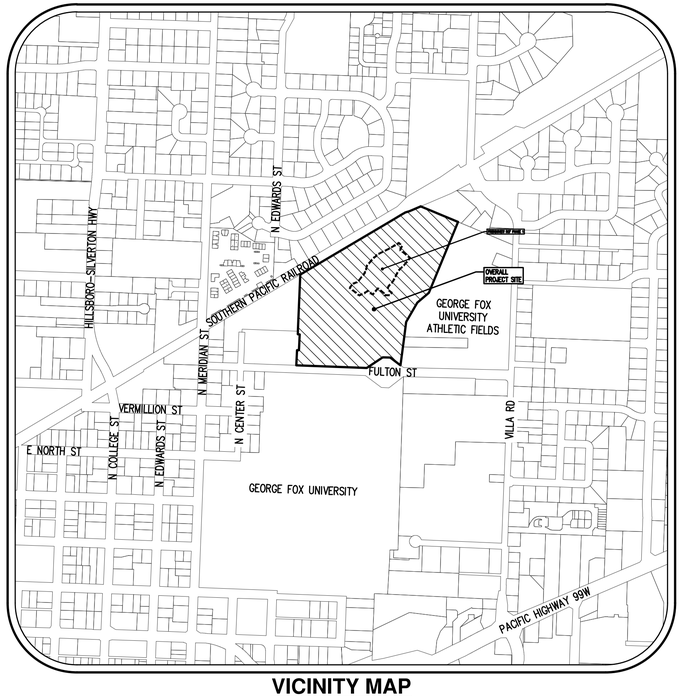


10. ALUMINUM RAILING SYSTEM
FINISH: PRE-FINISHED, BLACK ANODIZED

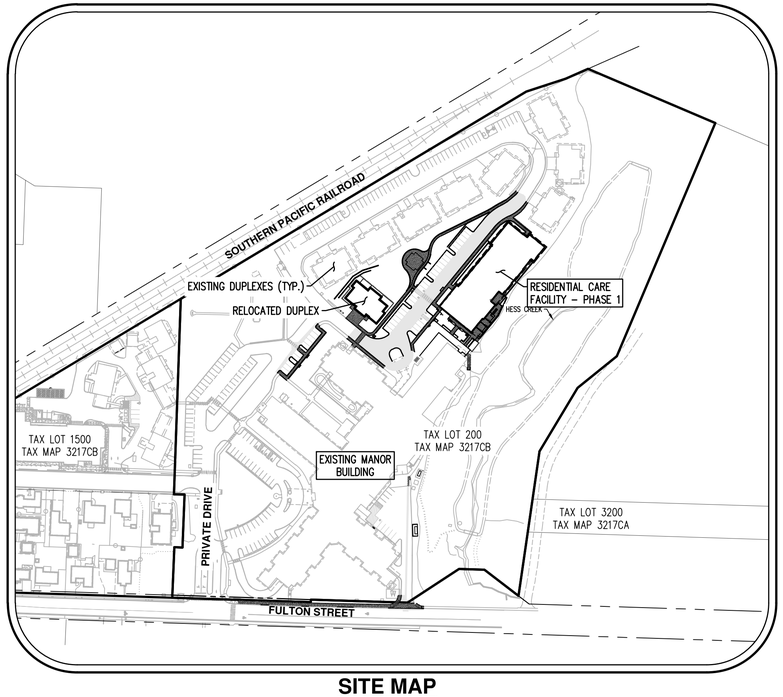
FRIENDSVIEW
RESIDENTIAL CARE FACILITY - PHASE 1

100% DESIGN REVIEW SET

LAND USE CASE FILE NUMBER:_____



VICINITY MAP
N.T.S.



SITE MAP
1" = 150'

LEGEND

	EXISTING	PROPOSED		EXISTING	PROPOSED
DECIDUOUS TREE			STORM DRAIN CLEAN OUT		
CONIFEROUS TREE			STORM DRAIN CATCH BASIN		
FIRE HYDRANT			STORM DRAIN AREA DRAIN		
WATER BLOWOFF			STORM DRAIN MANHOLE		
WATER METER			GAS METER		
WATER VALVE			GAS VALVE		
DOUBLE CHECK VALVE			GUY WIRE ANCHOR		
AIR RELEASE VALVE			UTILITY POLE		
SANITARY SEWER CLEAN OUT			POWER VAULT	P	P
SANITARY SEWER MANHOLE			POWER JUNCTION BOX		
SIGN			POWER PEDESTAL		
STREET LIGHT			COMMUNICATIONS VAULT	C	C
MAILBOX	MB	MB	COMMUNICATIONS JUNCTION BOX		
			COMMUNICATIONS RISER		

	EXISTING	PROPOSED
RIGHT-OF-WAY LINE		
BOUNDARY LINE		
PROPERTY LINE		
CENTERLINE		
DITCH		
CURB		
EDGE OF PAVEMENT		
EASEMENT		
FENCE LINE		
GRAVEL EDGE		
POWER LINE	PWR	PWR
OVERHEAD WIRE	OHW	OHW
COMMUNICATIONS LINE	COM	COM
FIBER OPTIC LINE	CFO	CFO
GAS LINE	GAS	GAS
STORM DRAIN LINE	STM	STM
SANITARY SEWER LINE	SAN	SAN
WATER LINE	WAT	WAT

PROJECT TEAM

OWNER
FRIENDSVIEW RETIREMENT COMMUNITY
1301 FULTON STREET
NEWBERG, OR 97132
CONTACT: DAVE HAMPTON

ARCHITECT
LRS ARCHITECTS
720 NW DAVIS, SUITE 300
PORTLAND, OR 97209
CONTACT: KELSY LAUGHNAN

CIVIL ENGINEER/SURVEYOR
AKS ENGINEERING & FORESTRY, LLC.
12965 SW HERMAN ROAD SUITE 100
TUALATIN, OR 97062
CONTACT: CHUCK GREGORY, PE | ASSOCIATE
PHONE: 503.563.6151

ATTENTION EXCAVATORS:
OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS BUT NOT MORE THAN TEN BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

SHEET INDEX

AREA SUMMARY
SUBJECT PROPERTY AREA = ±16.4 ACRES
RCF PHASE 1 DISTURBANCE AREA = ±2.0 ACRES

PROJECT PURPOSE
THE PROPOSED PROJECT WILL CONSIST OF THE DEMOLITION OF TWO EXISTING DUPLEXES AND THE CONSTRUCTION OF A SENIOR CARE FACILITY WITH ASSOCIATED PARKING IMPROVEMENTS. THE SITE IMPROVEMENTS WILL INCLUDE THE CONSTRUCTION OF UNDERGROUND UTILITIES AND STORMWATER FACILITIES.

VERTICAL DATUM
ELEVATIONS ARE BASED ON CITY OF NEWBERG BENCHMARK NO. 89. ELEVATION = 202.05 FEET (NAVD 88).

EXISTING LAND USE
THE SUBJECT PROPERTY IS CURRENTLY DEVELOPED WITH EXISTING BUILDINGS (FRIENDSVIEW MANOR) OWNED BY FRIENDSVIEW RETIREMENT COMMUNITY AND IT IS LOCATED WITHIN THE CITY'S INSTITUTIONAL (I) ZONING DISTRICT.

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1999
CHARLES EDWARD GREGORY
RENEWS: JUNE 30, 2021
PRELIMINARY NOT FOR CONSTRUCTION

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

N

SCALE: 1"=60 FEET

60 0 12 30 60

ORIGINAL PAGE SIZE: 22" x 34"

SHEET C016

SHEET C017

SHEET C013

SHEET C014

SHEET C015

SHEET C012

SHEET C011

SOUTHERN PACIFIC RAILROAD

N71°44'00"E 82.00' N66°08'51"E 48.55'

N66°54'00"W 273.87'

TAX LOT 2706
TAX MAP 3217CA

TAX LOT 2800
TAX MAP 3217CA

N59°02'57"E 797.42'

S22°54'20"W 500.88'

S59°02'57"W 574.72'

N01°59'15"E 387.00'

S51°08'12"W 100.00'

S30°51'23"W 146.45'

TAX LOT 1500
TAX MAP 3217CB

TAX LOT 200
TAX MAP 3217CB

CHERRY STREET (VACATED)

TAX LOT 3200
TAX MAP 3217CA

S08°17'09"W 289.21'

N88°08'35"W 21.08'

N02°23'47"E 104.87'

N88°10'31"W 50.00'

N52°30'11"W 85.17'

N02°23'59"E 202.68'

TAX LOT 1100
TAX MAP 3217CB

TAX LOT 1200
TAX MAP 3217CB

TAX LOT 1300
TAX MAP 3217CB

TAX LOT 1400
TAX MAP 3217CB

TAX LOT 1000
TAX MAP 3217CB

N88°10'31"W 100.04'

S88°09'50"E 16.00'

N02°24'50"E 78.00'

N02°28'12"E 99.93'

PRIVATE DRIVE

S56°50'09"W 122.06'

N88°10'31"W 387.84'

N88°10'31"W 274.50'

S01°49'29"W 5.00'

N88°10'31"W 191.34'

N MERIDIAN STREET

CENTER STREET (VACATED)

FULTON STREET

25' 25' 25' 25' 25' 30'

LRS ARCHITECTS

219081|C010 – EXISTING CONDITIONS PLAN

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 9, 2007
DEREK WHITE
70652LS
RENEWS: 6/30/22

PRELIMINARY NOT FOR CONSTRUCTION

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

Friendsview RETIREMENT COMMUNITY

SHEET C013

SHEET C012

TAX LOT 1500
TAX MAP 3217CB

TAX LOT 200
TAX MAP 3217CB

TAX LOT 1000
TAX MAP 3217CB

CHERRY STREET (VACATED)

CENTER STREET (VACATED)

FULTON STREET

PRIVATE DRIVE

CHERRY STREET
VACATED PER VACATION ORDINANCE NO. 2015-2791

CENTER STREET
VACATED PER VACATION ORDINANCE NO. 2019-2854

PROPERTY UNDER SEPARATE DESIGN REVIEW

CHAINLINK FENCE

FILM VOL. 163, PAGE 1407
UTILITY EASEMENT NOW VACATED

FILM VOL. 163, PAGE 1407
1407 VACATE CENTER STREET

SIDEWALK EASEMENT RECORDED AS DOC. NO. 201612165

15' PUBLIC WATER EASEMENT PER DOC. NO. 201612163

10' PUE EASEMENT PER DOC 201612166,
10' PGE UTILITY EASEMENT PER DOC 201612169
& PGE SERVICE EASEMENT PER DOC. 201612170

EX SAN MH
RIM:197.83
IE IN: 193.97 (6"S)
IE OUT: 193.82 (6"E)

EX SAN CO
RIM: 199.14
IE BEND: 195.84±

EX SAN CO
RIM: 198.78
IE BEND: 195.80
1" IRON

EX STM CO
RIM: 197.83
IE BEND: 194.25

EX SAN MH
RIM: 198.67
IE IN: 193.87 (6"N)
IE OUT: 193.80 (6"S)

10' GAS ESMT PER DOC. NO. 201612168

EX SAN CO
RIM: 199.28
IE BEND: 195.03

EXISTING HOUSE

ASPHALT

WOOD FENCE

BRICK PAVER PATIO

SHED

EXISTING HOUSE

GARAGE

EXISTING HOUSE

5.00' PUBLIC SIDEWALK AND UNDERGROUND UTILITIES EASEMENT PER INSTRUMENT NO. 199900137

EX STM MH
RIM:196.91
IE IN: 194.00 (6"W)
IE OUT: 193.3 (6"E)
SUMP: 191.69

EX SAN CO
RIM: 197.82
IE BEND: 198±

EX STM MH
RIM:196.65
IE IN: 193.71 (6"W)
IE OUT: 193.07 (6"E)
65303

EX SAN CO
RIM: 197.52
IE BEND: 198±

BUILDING

SANITARY SEWER EASEMENT PER DOC 201612164

STAIRS

25' EMERGENCY AND UTILITY VEHICLE ACCESS EASEMENT, PER DOC. NO. 201612167

EX SAN MH
RIM: 195.85
IE IN: 191.37 (6"W)
IE OUT: 191.33 (6"S)

STM AD
RIM: 195.80
IE OUT: 194.4 (6"E)
SUMP: 194.30

STM CI
RIM: 195.81
IE IN: 193.5 (4"N)
IE OUT: 193.50 (8"SE)

EX STM AD
RIM = 195.66
IE OUT: 192.89 (8"SW)
SUMP: 191.62

ABANDONED IN PLACE (PER AS-BUILTS)

EX STM MH
RIM = 195.86
IE IN: 192.75 (8"N)
IE IN: 192.79 (8"W)
IE OUT: 192.20 (8"S)

BENCH

16' UTILITY EASEMENT PER FILM VOL. 22, PAGE 603

20' UTILITY EASEMENT PER INSTRUMENT NO. 199900136

SHRUBS

DECK

DOC. NO. 199900136 STORM & SANITARY SEWER EASEMENT

TREE DRIP LINE

6.00' POWER LINE EASEMENT PER INSTR. NO. 199811356

EX SAN MH
RIM: 194.24
IE IN: 189.39 (4"S)
IE IN: 189.40 (6"N)
IE IN: 189.39 (6"W)
IE OUT: 189.34 (6"E)

EX STM MH
RIM: 194.01
IE IN: 189.87 (8"N)
IE OUT: 189.66 (8"E)

N02°23'59"E 202.68'

N88°10'31"W 100.04'

N02°24'50"E 78.00'

N88°10'31"W 387.84'

N88°08'35"W 21.08'

N02°23'47"E 104.87'

S88°09'50"E 16.00'

N02°28'12"E 99.93'

SIDEWALK EASEMENT PER DOC. NO. 201701883 TERMINATES BEFORE NORTH PROPERTY LINE OF DOC. NO. 200909211 (TAX LOT 1000)

15' SANITARY SEWER EASEMENT PER DOC. NO. 202022274

PUBLIC UTILITY EASEMENT PER DOC. NO. 202000276 & PGE UTILITY EASEMENT PER DOC. NO. 202000278

36.76' ACCESS EASEMENT PER EXHIBIT "C" OF INSTRUMENT NO. 202000277

EMERGENCY VEHICLE AND UTILITY VEHICLE ACCESS EASEMENT PER INSTRUMENT NO. 202000274

SIDEWALK EASEMENT PER DOC. NO. 201701882

10.00' GAS LINE EASEMENT PER DOC. NO. 202000275

15' WATERLINE EASEMENT PER INSTRUMENT NO. 202000274

SANITARY SEWER LINE EASEMENT PER INSTRUMENT NO. 202000274

SEWER LINE TERMINATES PER LOCATES

65000 65001 65002 65004 65005 65006 65007 65008 65009 65010

100530 100531 100532 100533 100556 100686 100693 100777

11336 11337 11344 11345 11346 11347 11348 11421 11422 11423 11455 11486 11487 11488

SCALE: 1"=20 FEET

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JANUARY 9, 2007
JACK WHITE
70652LS
RENEWS: 6/30/22

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SHEET C014

SHEET C011

AIR VENT

IE BEND: 187±

WATER CONTROL VALVE

CONC RETAINING WALL

40051

40027

40025

40026

WATER PRESSURE RELIEF VALVE ASSEMBLY

BUILDING ENTRANCE OVERHANG

FLAGPOLE

PER AS-BUILTS

BENCH

8" PVC

6" PVC

10" PVC

EXISTING BUILDING

GREASE TRAP

STAIRCASE WITH HANDRAILS

LOADING DOCK FF ELEVATION 181.24

EX SAN CO
RIM: 177.61
IE BEND: 165.76±

POWER GENERATOR

CONCRETE WALL

36233

36234

36060

36059

36157

36153

36058

36056

36057

EX STM MH
RIM: 167.95
IE IN: 165.28 (15"W)
IE IN: 165.27 (14"SW)
IE IN: 165.26 (14"N)
IE OUT: 165.25 (15"E)

TREE DRIP LINE

FEMA FLOODWAY (TYPICAL) SEE NOTE 17, PAGE 8

EX 6" CMP CULVERT
IE: 152.22

EX 15" CONC CULVERT
IE: 152.32

EX SAN MH
RIM: 156.89
IE IN: 143.64 (12"N)
IE OUT: 143.53 (12"S)

36239

36209

36336

36329

36333

36328

36327

36326

36334

36335

36337

50483

50480

50479

50481

50474

50476

50473

50472

50468

50470

50467

50466

50471

50465

36192

36178

36168

ASPHALT PATH

FEMA FLOODWAY (TYPICAL) SEE NOTE 16, PAGE 8

12" CONC

EX 12" DI CULVERT
IE: 151.81

EX 12" DI CULVERT
IE: 149.57

S08°17'09"W 289.21'

EX 15" PVC CULVERT
IE: 149.44

POSSIBLE LOCATION FOR SAN MH PER AS-BUILT

STONE FIREPLACE

PLOT 12

PICNIC TABLE

BRIDGE

EX 6" CULVERT
IE: 153.98

EX 6" CULVERT
IE: 151.56

8" CMP

EX 6" CULVERT
IE: 150.35

EX 8" CONC CULVERT
IE: 147.23

20.00'

SANITARY SEWER EASEMENT PER FILM VOLUME 120, PAGE 1513 & VOLUME 120, PAGE 1510

PLOT 10

PLOT 11

EX 8" CONC CULVERT
IE: 146.89

N88°10'31"W 50.00'

EX SAN MH
RIM: 148.38
IE IN: 136.50 (12"N)
IE IN: 136.48 (8"NW)
IE OUT: 136.45 (12"S)

STREAM CORRIDOR (PER NEWBERG GIS)

FEMA FLOODPLAIN (TYPICAL) SEE NOTE 16, PAGE 8

FEMA FLOODWAY (TYPICAL) SEE NOTE 16, PAGE 8

WETLAND D

TREE DRIP LINE

12" CONC

OHWM OF TRIBUTARY TO HESS CREEK

N52°30'11"W 85.17'

S56°50'00"W 122.06'

EX 84" CMP CULVERT
IE: 150.13

15" CMP

STAIRWELL

POSSIBLE LOCATION OF SAN CLEANOUT PER AS-BUILT (SSCO#1STA: 0+00.00)

EX STM CO
RIM: 177.10

SANITARY LINE PER AS-BUILT

14" HDPE

6" PVC

EX 4" PVC CULVERT
IE: 182.06

EX 6" PVC CULVERT
IE: 178.44

EX 6" PVC CULVERT
IE: 178.42

EX 12" PVC CULVERT
IE: 178.44

EX STM CO
RIM: 179.60

END OF WATER LOCATES

12" PVC

S01°49'29"W 5.00'

N88°10'31"W 191.34'

N88°10'31"W 274.50'

END OF WATER LOCATES

WATER VALVE

FULTON STREET

30'

25'

25'

WATER VALVE

END OF WATER LOCATES

END OF WATER LOCATES

FIRE HYDRANT

WATER VALVE

N

SCALE: 1"=20 FEET

20 0 8 12 16 20

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JANUARY 9, 2007
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SCALE: 1"= 20 FEET

20 0 8 12 16 20

SHEET C014

SHEET C011

DITCH

COMMUNITY GARDEN

OVERHEAD PARKING COVER

EX 3" PVC CULVERT IE: 198.66

EXTRUDED CURB

ASPHALT

CARPORT

PATIO/BALCONY

BUILDING

PLANTER

STAIRS

10872

10923

10874

S59°02'57"W 574.72'

DITCH

CHAINLINK FENCE

N01°59'15"E 387.00'

ST AD
RIM ELEV: 196.70
IE IN: 195.57 (4"NW)
IE OUT: 195.51 (4"E)
SUMP: 195.00

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LRS ARCHITECTS

219081|C013 – EXISTING CONDITIONS PLAN

SHEET C016

SHEET C013

SHEET C015

SHEET C012

N

SCALE: 1"=20 FEET

20 0 8 12 16 20

EXISTING HOUSE

TRASH ENCLOSURE

ROCK WALL

EX STM AD RIM: 186.21 IE OUT: 184.74 (4"SE) SUMP: 182.57

4" PERF PIPE FROM WATER TRENCH; WYE'S INTO 15" STORM; PER AS-BUILTS

EX STM CO RIM: 184.51 IE BEND: 176.36±

EX STM CO RIM: 182.23 IE BEND: 177±

PARKING STOP (TYPICAL)

ROCK WALL

ASPHALT RAMP

STAIRCASE WITH HANDRAILS

EX SAN CO RIM: 179.68 IE BEND: 173.94±

EX STM CO RIM: 180.64 IE BEND: 175.54±

OUTSIDE (CONC PAD) FF=181.17

EX STM AD RIM: 180.46 IE OUT: 179.61 (4"NE) SUMP: 179.36

EX STM CO RIM: 181.48 IE BEND: 178.78±

BENCH

EX STM DRYWELL MH RIM: 185.47 SUMP: 180.47

EX STM CO RIM: 181.20

EX STM AD RIM: 180.10 IE OUT: 179.25 (4"NE) SUMP: 179.00

FDC

BOLLARD LIGHTS ON PATHWAY (TYP.)

END LOCATES

OVERHEAD PARKING COVER

PER AS-BUILTS

BENCH

OVERHEAD BRIDGE

METAL FENCE ON CONC RET. WALL

EX STM AD RIM: 180.07 IE OUT: 179.28 (6"NE) SUMP: 179.14

EX STM AD RIM: 188.78 IE OUT: 187.94 (6"NE) SUMP: 187.74

EX STM CO RIM: 191.53 IE BEND: 183±

EX STM AD RIM: 180.55 IE OUT: 179.63 (6"NW) SUMP: 179.50

CONC RETAINING WALL

STAIRCASE WITH HANDRAILS

BOLLARDS

BUILDING OVERHANG

AC UNITS

BRICK WALL

40105

EX STM AD RIM: 181.15 IE OUT: 180.30 (6"NE) SUMP: 180.10

ABANDONED PER AS-BUILTS

AIR VENT

EX STM CO RIM: 190.39 IE BEND: 187±

15" PVC STORMLINE POTENTIALLY ABANDONED IN PLACE (PER AS-BUILTS)

EX 15" PVC CULVERT IE: 173.12

EX STM DI TOP GRATE: 174.73 BOT. GRATE: 173.43 IE OUT: 172.47(6"S) SUMP: FULL OF DEBRIS

EX STM AD RIM: 177.00 IE IN: 172.40 (6"N) IE OUT: 172.25 (15"SE) SUMP: 171.15

EX SAN CO RIM: 180.23 IE BEND: 168.96±

EX STM AD RIM: 179.68 IE OUT: 178.28 (4"NE) SUMP: 176.04

EX STM CO RIM: 178.44 IE BEND: 174.14±

EX STM AD RIM: 178.42 IE OUT: 176.98 (4"NW) SUMP: 172.08

EX SAN CO RIM: 179.13 IE BEND: 171.43±

PLANTER BOX

FRENCH DRAIN

METAL FENCE ON CONC WALL

TRELLIS

GAZEBO

CONC RETAINING WALL

EX STM CO RIM: 180.95

INTERIOR (CARPET) FF=181.29

BUILDING OVERHANG

STREAM CORRIDOR (PER NEWBERG GIS)

ASPHALT PATH

BIKE RACK

WATER TANK

EX SAN CO RIM: 180.42 IE BEND: 175.34±

EX STM CO RIM: 174.22 IE BEND: 166.97±

APPROXIMATE BUILDING COLUMNS

FF=181.22

INTERIOR (CARPET) FF=181.25

FF=181.22

STAIRCASE WITH HANDRAILS PER AS-BUILTS

EX SAN CO RIM: 167.54 IE BEND: 167±

POTENTIAL SAN CLEANOUT PER AS-BUILT (SSCO#3 STA: 2+35.29)

OHWM OF HESS CREEK

SANITARY LATERALS PER AS-BUILTS (TYP.)

EX SAN CO RIM: 183.96 IE BEND: 181.36±

EXISTING HOUSE

WATER SERVICES PER AS-BUILTS (TYP.)

EX SAN CO RIM: 182.34 IE BEND: 169.64±

EXISTING HOUSE

EX STM MH RIM: 180.63 IE IN: 173.42 (15"SW) IE IN: 176.56 (6"NE) IE OUT: 173.39 (15"NW)

BFF GARAGE =182.25

EX STM CO RIM: 181.02 IE BEND: 172.52±

4" PERF PIPE FROM WATER TRENCH; WYE'S INTO 15" STORM; PER AS-BUILTS

EX SAN CO RIM: 177.16 IE BEND: 168.51±

PLANTER BOX

FRENCH DRAIN

METAL FENCE ON CONC WALL

EX STM CO RIM: 177.01 IE BEND: 170.81±

STORM LINE PER AS-BUILTS

WETLAND A

EX STM CO RIM: 173.96 IE BEND: 167.76±

POSSIBLE LOCATION OF SAN CLEANOUT PER AS-BUILT (SSCO#5 STA: 3+70.51)

EX 6" CPP CULVERT IE: 149.46

STREAM CORRIDOR (PER NEWBERG GIS)

MAIN ROADWAY (TYPICAL) SEE NOTE 12, PAGE 8

PLOT 1

PLOT 2

PLOT 3

PLOT 4

PLOT 5

PLOT 7

PLOT 6

SANITARY SEWER LINE PER AS-BUILT

POSSIBLE LOCATION OF SAN CLEANOUT PER AS-BUILT (SSCO#4 STA: 3+03.73)

FEMA FLOODPLAIN (TYPICAL) SEE NOTE 17, PAGE 8

FEMA FLOODWAY (TYPICAL) SEE NOTE 17, PAGE 8

EX 10" CPP CULVERT IE: 156.28

EX 12" PVC CULVERT IE: 152.44

EX 15" CONC

TREE DRIP

STREAM CORRIDOR (PER NEWBERG GIS)

35119 35873 35874 35875 35876 35877 35878 35879 35884 35885 35886 35900 35901 40336 40388 40390 40429 40430 40432 40433 40440 40522 40524 40526 40527 40528 40529 40531 40533 40535 40537 40538 40540 40544 40569 40620 40627 40628 36005 36006 36007 36018 36019 36054 36055 36100 36111 36112 36247 36257 36258 36262 36263 36276 36281 36282 36301 36303 36305 36324 36325 36326 36330 36331 36332 36527

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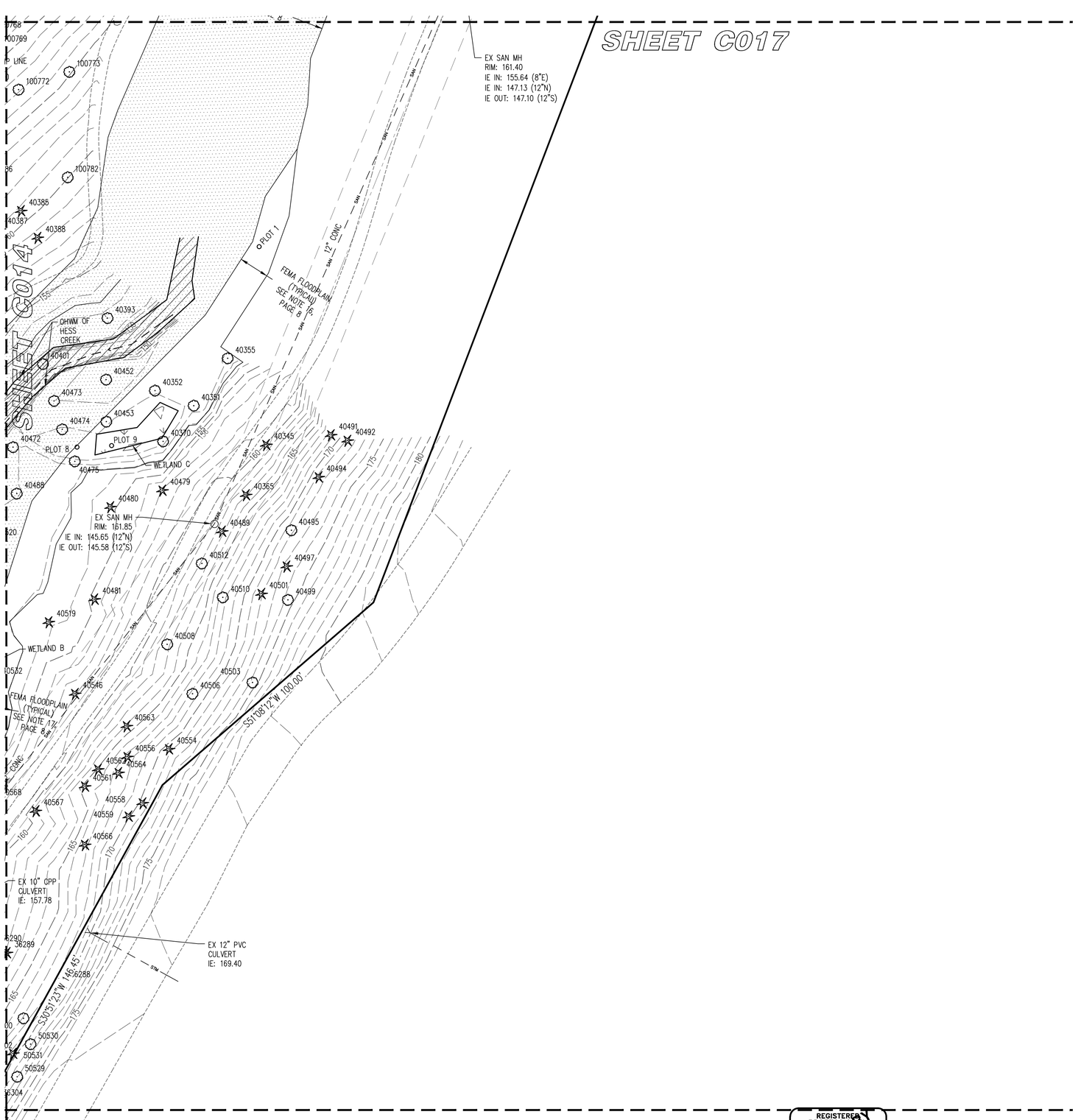
SHEET C017



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SCALE: 1"=20 FEET

20 0 8 12 16 20

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LRS ARCHITECTS

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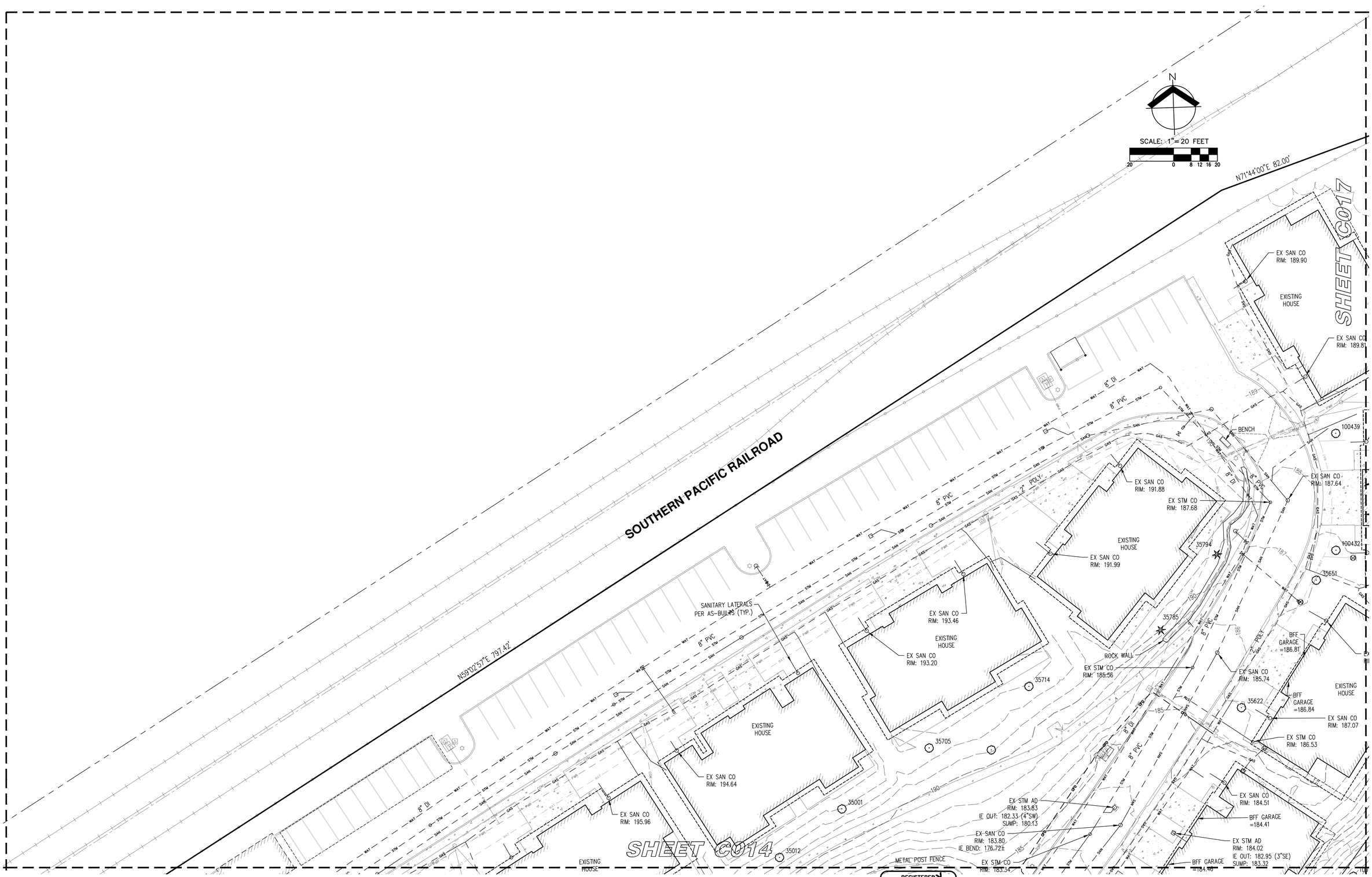

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ARCHITECTS

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JANUARY 9, 2007
NICK WHITE
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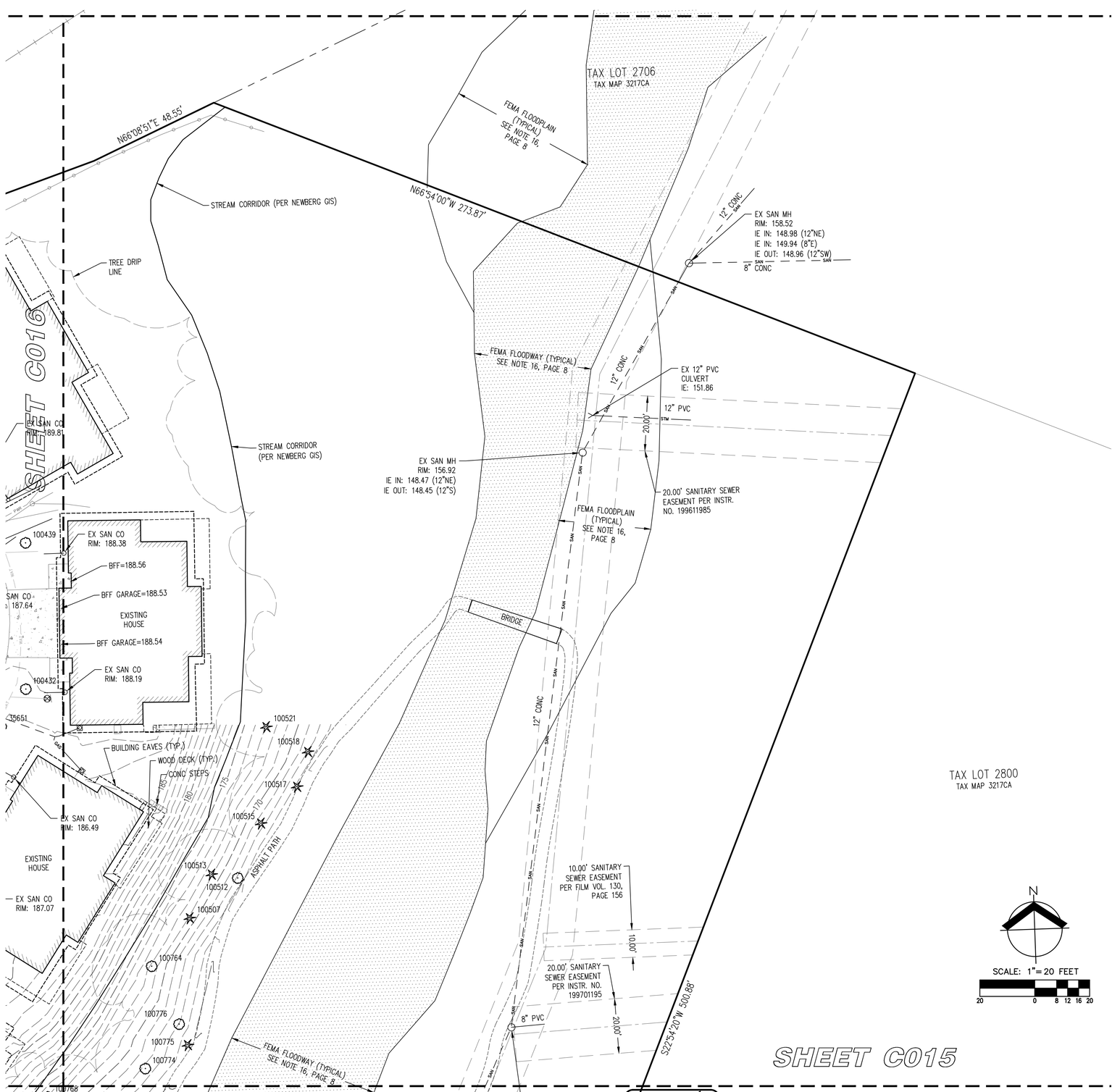

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LRS ARCHITECTS

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TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10872	DECIDUOUS	15
10874	DECIDUOUS	11
10923	DECIDUOUS	12
11336	DECIDUOUS	6
11337	DECIDUOUS	7
11344	CONIFEROUS	61
11345	CONIFEROUS	26
11346	CONIFEROUS	26
11347	CONIFEROUS	19
11348	DECIDUOUS	17
11421	CONIFEROUS	21
11422	DECIDUOUS	14
11423	DECIDUOUS	16
11455	DECIDUOUS	5, 5, 8
11486	DECIDUOUS	30
11487	CONIFEROUS	30
11488	DECIDUOUS	40
35001	DECIDUOUS	13
35012	DECIDUOUS	14
35095	DECIDUOUS	34
35119	DECIDUOUS	26
35499	DECIDUOUS	11, 12, 15
35517	CONIFEROUS	14
35520	CONIFEROUS	15
35542	DECIDUOUS	13
35543	DECIDUOUS	12
35622	DECIDUOUS	9
35651	DECIDUOUS	11
35705	DECIDUOUS	10
35713	DECIDUOUS	7
35714	DECIDUOUS	12

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
35785	CONIFEROUS	16
35794	CONIFEROUS	18
35805	DECIDUOUS	15
35806	DECIDUOUS	6
35807	DECIDUOUS	6, 6
35808	DECIDUOUS	7
35809	DECIDUOUS	6, 6
35810	DECIDUOUS	7
35811	DECIDUOUS	6
35812	DECIDUOUS	8
35813	DECIDUOUS	6
35814	DECIDUOUS	7
35815	DECIDUOUS	12
35816	DECIDUOUS	6, 6, 7, 7, 8
35817	DECIDUOUS	7, 7
35818	DECIDUOUS	6
35873	DECIDUOUS	8
35874	DECIDUOUS	7
35875	CONIFEROUS	14
35876	CONIFEROUS	13
35877	CONIFEROUS	12
35878	DECIDUOUS	8
35879	DECIDUOUS	8
35884	DECIDUOUS	16
35885	DECIDUOUS	10, 20
35886	DECIDUOUS	15
35900	DECIDUOUS	30
35901	DECIDUOUS	6
36005	CONIFEROUS	55
36006	CONIFEROUS	46
36007	DECIDUOUS	8

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
36013	DECIDUOUS	18
36018	DECIDUOUS	18
36019	DECIDUOUS	21
36054	DECIDUOUS	18
36055	DECIDUOUS	25
36056	DECIDUOUS	9
36057	CONIFEROUS	26
36058	CONIFEROUS	22
36059	DECIDUOUS	14
36060	DECIDUOUS	21
36100	DECIDUOUS	17
36111	DECIDUOUS	9, 9
36112	DECIDUOUS	19
36153	DECIDUOUS	16
36157	DECIDUOUS	18
36168	DECIDUOUS	9, 14
36178	DECIDUOUS	8, 9, 11
36192	DECIDUOUS	8, 9, 9, 10, 10, 10
36209	DECIDUOUS	20
36233	DECIDUOUS	12
36234	DECIDUOUS	28
36239	DECIDUOUS	14
36247	DECIDUOUS	19
36257	DECIDUOUS	14
36258	DECIDUOUS	14
36262	CONIFEROUS	8
36263	CONIFEROUS	8
36276	DECIDUOUS	16
36281	DECIDUOUS	19
36282	DECIDUOUS	22
36288	CONIFEROUS	22

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
36289	CONIFEROUS	11
36290	CONIFEROUS	8
36300	DECIDUOUS	19
36301	CONIFEROUS	9
36302	DECIDUOUS	15
36303	CONIFEROUS	9
36304	DECIDUOUS	7
36305	CONIFEROUS	24
36324	DECIDUOUS	15
36325	DECIDUOUS	6
36326	DECIDUOUS	11
36327	CONIFEROUS	16
36328	CONIFEROUS	6, 23
36329	CONIFEROUS	25
36330	CONIFEROUS	6
36331	DECIDUOUS	7
36332	DECIDUOUS	7
36333	CONIFEROUS	7
36334	DECIDUOUS	15
36335	DECIDUOUS	16
36336	DECIDUOUS	10
36337	DECIDUOUS	15
40025	DECIDUOUS	9
40026	DECIDUOUS	9
40027	DECIDUOUS	10
40051	CONIFEROUS	10
40105	DECIDUOUS	11
40345	CONIFEROUS	28
40351	DECIDUOUS	13
40352	DECIDUOUS	11
40355	DECIDUOUS	16

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
40365	CONIFEROUS	34
40370	DECIDUOUS	15
40385	CONIFEROUS	9
40386	DECIDUOUS	11
40387	CONIFEROUS	10
40388	CONIFEROUS	8
40389	CONIFEROUS	10
40390	CONIFEROUS	9
40393	DECIDUOUS	11
40401	DECIDUOUS	8
40429	DECIDUOUS	14
40430	DECIDUOUS	14
40432	DECIDUOUS	14
40433	DECIDUOUS	7, 8
40440	DECIDUOUS	7
40452	DECIDUOUS	29
40453	DECIDUOUS	13
40472	DECIDUOUS	30
40473	DECIDUOUS	26
40474	DECIDUOUS	11
40475	DECIDUOUS	16
40479	CONIFEROUS	11
40480	CONIFEROUS	8
40481	CONIFEROUS	17
40487	DECIDUOUS	21
40488	DECIDUOUS	8
40489	CONIFEROUS	11
40491	CONIFEROUS	12
40492	CONIFEROUS	15
40494	CONIFEROUS	13
40495	DECIDUOUS	10

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
40497	CONIFEROUS	18
40499	DECIDUOUS	11
40501	CONIFEROUS	11
40503	DECIDUOUS	21
40506	DECIDUOUS	26
40508	DECIDUOUS	13
40510	DECIDUOUS	22
40512	DECIDUOUS	8
40519	CONIFEROUS	7
40520	DECIDUOUS	13
40522	CONIFEROUS	21
40524	CONIFEROUS	18
40526	DECIDUOUS	19
40527	DECIDUOUS	17
40528	DECIDUOUS	15
40529	DECIDUOUS	15
40531	DECIDUOUS	19
40532	DECIDUOUS	23
40533	DECIDUOUS	16
40535	DECIDUOUS	16
40537	DECIDUOUS	18
40538	DECIDUOUS	17
40540	DECIDUOUS	27
40544	DECIDUOUS	21
40546	CONIFEROUS	6
40554	CONIFEROUS	12
40556	CONIFEROUS	11
40558	CONIFEROUS	13
40559	CONIFEROUS	10
40561	CONIFEROUS	9
40562	CONIFEROUS	8

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
40563	CONIFEROUS	12
40564	CONIFEROUS	10
40566	CONIFEROUS	9
40567	CONIFEROUS	9
40568	CONIFEROUS	8
40569	CONIFEROUS	12
40620	CONIFEROUS	7, 8, 10
40627	DECIDUOUS	8
40628	DECIDUOUS	7
40657	DECIDUOUS	13
50465	CONIFEROUS	26
50466	CONIFEROUS	18
50467	CONIFEROUS	8
50468	CONIFEROUS	24
50470	CONIFEROUS	31
50471	CONIFEROUS	18
50472	CONIFEROUS	17
50473	CONIFEROUS	18
50474	CONIFEROUS	22
50476	DECIDUOUS	6, 8, 11
50479	CONIFEROUS	18
50480	CONIFEROUS	36
50481	CONIFEROUS	29
50483	DECIDUOUS	10, 11
50522	DECIDUOUS	8
50523	CONIFEROUS	11
50524	DECIDUOUS	6, 6, 7
50525	DECIDUOUS	15
50526	CONIFEROUS	8
50527	DECIDUOUS	10
50528	DECIDUOUS	9

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
50529	DECIDUOUS	8, 9
50530	DECIDUOUS	11
50531	CONIFEROUS	7
65000	DECIDUOUS	8
65001	DECIDUOUS	10
65002	DECIDUOUS	6, 8
65003	DECIDUOUS	6
65004	DECIDUOUS	6
65005	DECIDUOUS	5, 6
65006	DECIDUOUS	4, 4, 7
65007	DECIDUOUS	8, 8 , 9
65008	DECIDUOUS	8, 8, 9
65009	DECIDUOUS	6, 6, 6
65010	DECIDUOUS	4, 5
70308	DECIDUOUS	10
70311	DECIDUOUS	14
100432	DECIDUOUS	7,9,10
100439	DECIDUOUS	9
100507	CONIFEROUS	16
100512	DECIDUOUS	17
100513	CONIFEROUS	22
100515	CONIFEROUS	15
100517	CONIFEROUS	16
100518	CONIFEROUS	26
100521	CONIFEROUS	24
100529	DECIDUOUS	9
100530	CONIFEROUS	12
100531	CONIFEROUS	17
100532	CONIFEROUS	18
100533	DECIDUOUS	28
100556	DECIDUOUS	6, 6, 6, 7, 8

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
100686	CONIFEROUS	38
100693	CONIFEROUS	24
100764	DECIDUOUS	20
100768	DECIDUOUS	12
100769	DECIDUOUS	9
100770	DECIDUOUS	13
100771	DECIDUOUS	12
100772	DECIDUOUS	7
100773	DECIDUOUS	33
100774	DECIDUOUS	14
100775	CONIFEROUS	13, 16
100776	DECIDUOUS	14
100777	DECIDUOUS	38
100782	DECIDUOUS	14
100784	CONIFEROUS	17

LEGEND

EXISTING

DECIDUOUS TREE	
CONIFEROUS TREE	
FIRE HYDRANT	
WATER BLOWOFF	
WATER METER	
WATER VALVE	
DOUBLE CHECK VALVE	
AIR RELEASE VALVE	
SANITARY SEWER CLEAN OUT	
SANITARY SEWER MANHOLE	
SIGN	
STREET LIGHT	
MAILBOX	MB

EXISTING

STORM SEWER CLEAN OUT	
STORM SEWER CATCH BASIN	
STORM SEWER AREA DRAIN	
STORM SEWER MANHOLE	
GAS METER	
GAS VALVE	
GUY WIRE ANCHOR	
UTILITY POLE	
POWER VAULT	P
POWER JUNCTION BOX	
POWER PEDESTAL	
COMMUNICATIONS VAULT	C
COMMUNICATIONS JUNCTION BOX	
COMMUNICATIONS RISER	

EXISTING

RIGHT-OF-WAY LINE	
BOUNDARY LINE	
PROPERTY LINE	
CENTERLINE	
DITCH	
CURB	
EDGE OF PAVEMENT	
EASEMENT	
FENCE LINE	
GRAVEL EDGE	
POWER LINE	PWR
OVERHEAD WIRE	OHW
COMMUNICATIONS LINE	COM
FIBER OPTIC LINE	CFO
GAS LINE	GAS
STORM SEWER LINE	STM
SANITARY SEWER LINE	SAN
WATER LINE	WAT

NOTES:

1. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PROVIDED PER UTILITY LOCATE TICKET NUMBERS 20094370, 20094348, 20094362, 20094336, 20094321, 20094317, 20094346,20094337,20094344, 20094373, 20094375, 20094342, 20094307, 20094316, 20094313, 20094312, 20094310. IN ADDITION TO PRIVATE LOCATING SERVICES PROVIDED BY PACIFIC NORTHWEST LOCATING LLC. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.
2. FIELD WORK WAS CONDUCTED APRIL 17TH – MAY 8TH, 2020.
3. VERTICAL DATUM: ELEVATIONS ARE BASED ON CITY OF NEWBERG BENCHMARK NO. 89 WITH A NAVD 88 ELEVATION OF 202.05 FEET.
4. THIS IS NOT A BOUNDARY SURVEY TO BE RECORDED WITH THE COUNTY. BOUNDARIES MAY BE PRELIMINARY AND SHOULD BE CONFIRMED WITH THE STAMPING SURVEYOR PRIOR TO RELYING ON FOR DETAILED DESIGN OR CONSTRUCTION.
5. BUILDING FOOTPRINTS ARE MEASURED TO SIDING UNLESS NOTED OTHERWISE. CONTACT SURVEYOR WITH QUESTIONS REGARDING BUILDING TIES.
6. CONTOUR INTERVAL IS 1 FOOT.
7. TREES WITH 6 INCH DIAMETER AND GREATER WERE FIELD TIED. TREE DIAMETERS WERE MEASURED UTILIZING A DIAMETER TAPE AT BREAST HEIGHT. TREE INFORMATION IS SUBJECT TO CHANGE UPON ARBORIST INSPECTION.
8. PROPERTY IS AFFECTED BY A RECORDED EASEMENT AS OF DECEMBER 14, 1959 AS FILM VOLUME 8, PAGE 673. GRANTED TO PORTLAND GENERAL ELECTRIC AND AFFECTS RIGHT-OF-WAY. THIS EASEMENT IS NOT ABLE TO BE MAPPED.
9. PROPERTY IS AFFECTED BY AN EASEMENT RECORDED ON SEPTEMBER 26, 2003 AS INSTRUMENT NO. 200324771. GRANTED TO TCI CABLEVISION OF OREGON. THIS IS A BLANKET STATEMENT EASEMENT AND IS NOT ABLE TO BE MAPPED.
10. THE PROPERTY INDICATES AN EXCEPTION IN TITLE REGARDING THE VACATION OF CHERRY STREET, WHICH RESERVES THE RIGHT FOR UTILITIES AS PREVIOUSLY SET FORTH IN ORDINANCE NO. 2015-2791, RECORDED ON AUGUST 05, 2016 AS INSTRUMENT NO. 2016.12162.
11. THE PROPERTY IS AFFECTED BY A BLANKET EASEMENT RECORDED ON JUNE 05, 2017 AS INSTRUMENT NO. 201709016, IN FAVOR OF COMCAST OF OREGON II, INC. THIS AFFECTS PARCELS 11, 12, 13, 14, 15 AND 27
12. THE PROPERTY IS AFFECTED BY A GENERAL STORMWATER FACILITIES AGREEMENT BETWEEN THE CITY OF NEWBERG AND FRIENDSVIEW MANOR. DOCUMENT RECORDED ON APRIL 05, 2018 AS INSTRUMENT NO. 201804796 AFFECTS PARCELS 11, 12, 13, 14, 15 AND 27.
13. THE PROPERTY INDICATES AN EXCEPTION IN TITLE REGARDING THE VACATION OF NORTH CENTER STREET, WHICH RESERVES THE RIGHT FOR UTILITIES RECORDED ON JANUARY 08, 2020 AS INSTRUMENT NO. 202000274.
14. THE PROPERTY INDICATES AN EXCEPTION IN TITLE REGARDING A PGE SERVICE EASEMENT RECORDED FEBRUARY 3, 2017 AS INSTRUMENT NO. 201613179. NOTE THIS EXCEPTION IS UNABLE TO BE MAPPED.
15. WETLAND BOUNDARIES SHOWN WERE DELINEATED BY AKS ENGINEERING AND FORESTRY, LLC. ON 5/5/2020 AND WERE SURVEYED BY AKS ON 5/7/2020.
16. NON-SURVEYED AREAS ARE SHOWN WITH FEMA FLOOD MAP OVERLAY OF FLOODWAY AND FLOODPLAIN PER FIRM MAP NUMBER 41071C0237D DATED MARCH 2, 2010.
17. SURVEYED AREAS HAVE THE FLOODWAY PER OVERLAY WITH FLOODPLAINS PER SURVEY DATA TO REFLECT TRUE FLOODPLAIN LIMITS PER FIRM MAP NUMBER 41071C0237D DATED MARCH 2, 2010
18. STREAM CORRIDOR BOUNDARY IS REFERENCED PER CITY OF NEWBERG GIS.

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 9, 2007
MARK WHITE
70652LS
RENEWS: 6/30/22

PRELIMINARY NOT FOR CONSTRUCTION

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

Friendsview RETIREMENT COMMUNITY

LRS ARCHITECTS

219081|C019 – EXISTING CONDITIONS PLAN WITH AERIAL

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 5, 2007
DEREK WHITE
70652LS
RENEWS: 6/30/22

PRELIMINARY NOT FOR CONSTRUCTION

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Friendsview RETIREMENT COMMUNITY

(#) KEYED DEMOLITION NOTES:

1. EXISTING DUPLEX TO BE REMOVED, COORDINATE WITH FRIENDSVIEW FOR RELOCATION
2. EXISTING CONCRETE DRIVEWAY TO BE REMOVED
3. EXISTING CONCRETE SIDEWALK TO BE REMOVED
4. EXISTING ASPHALT TO BE REMOVED
5. EXISTING CURB TO BE REMOVED
6. EXISTING DECIDUOUS TREE TO BE REMOVED
7. EXISTING CONIFEROUS TREE TO BE REMOVED
8. SAWCUT LINE
9. EXISTING SPEED BUMP TO BE REMOVED
10. EXISTING CHAIN LINK FENCE TO BE REMOVED, SEE NOTE 1 THIS SHEET
11. EXISTING STREET SIGN TO BE REMOVED, SEE NOTE 1 THIS SHEET
12. EXISTING PLAZA STRUCTURE TO BE REMOVED, SEE NOTE 1 THIS SHEET
13. EXISTING STREET LIGHT TO BE REMOVED, SEE NOTE 1 THIS SHEET
14. EXISTING FIRE HYDRANT TO BE REMOVED, SEE NOTE 1 THIS SHEET
15. EXISTING RETAINING WALL TO BE REMOVED
16. EXISTING BUMPER STOP TO BE REMOVED, SEE NOTE 1 THIS SHEET
17. EXISTING COMMUNICATION LINE/STRUCTURE TO BE REMOVED, SEE NOTE 1 THIS SHEET
18. EXISTING NATURAL GAS STRUCTURE TO BE REMOVED, SEE NOTE 1 THIS SHEET
19. EXISTING STORM LINE/STRUCTURE TO BE REMOVED
20. EXISTING SANITARY LINE/STRUCTURE TO BE REMOVED
21. EXISTING WATER LINE/STRUCTURE TO BE REMOVED
22. EXISTING DETENTION POND TO BE DECOMMISSIONED AND FILLED
23. EXISTING BENCH TO BE REMOVED AND SALVAGED FOR REINSTALLATION
24. EXISTING MAILBOX TO BE REMOVED, SEE NOTE 1 THIS SHEET
25. EXISTING POWER LINE/STRUCTURE TO BE REMOVED, SEE NOTE 1 THIS SHEET
26. EXISTING GAZEBO STRUCTURE TO BE REMOVED, SEE NOTE 1 THIS SHEET
27. REMOVE TOP STEP OF STAIRS

(P) PROTECT AT ALL TIMES DURING DEMO AND CONSTRUCTION, ANY DAMAGE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE

NOTE:

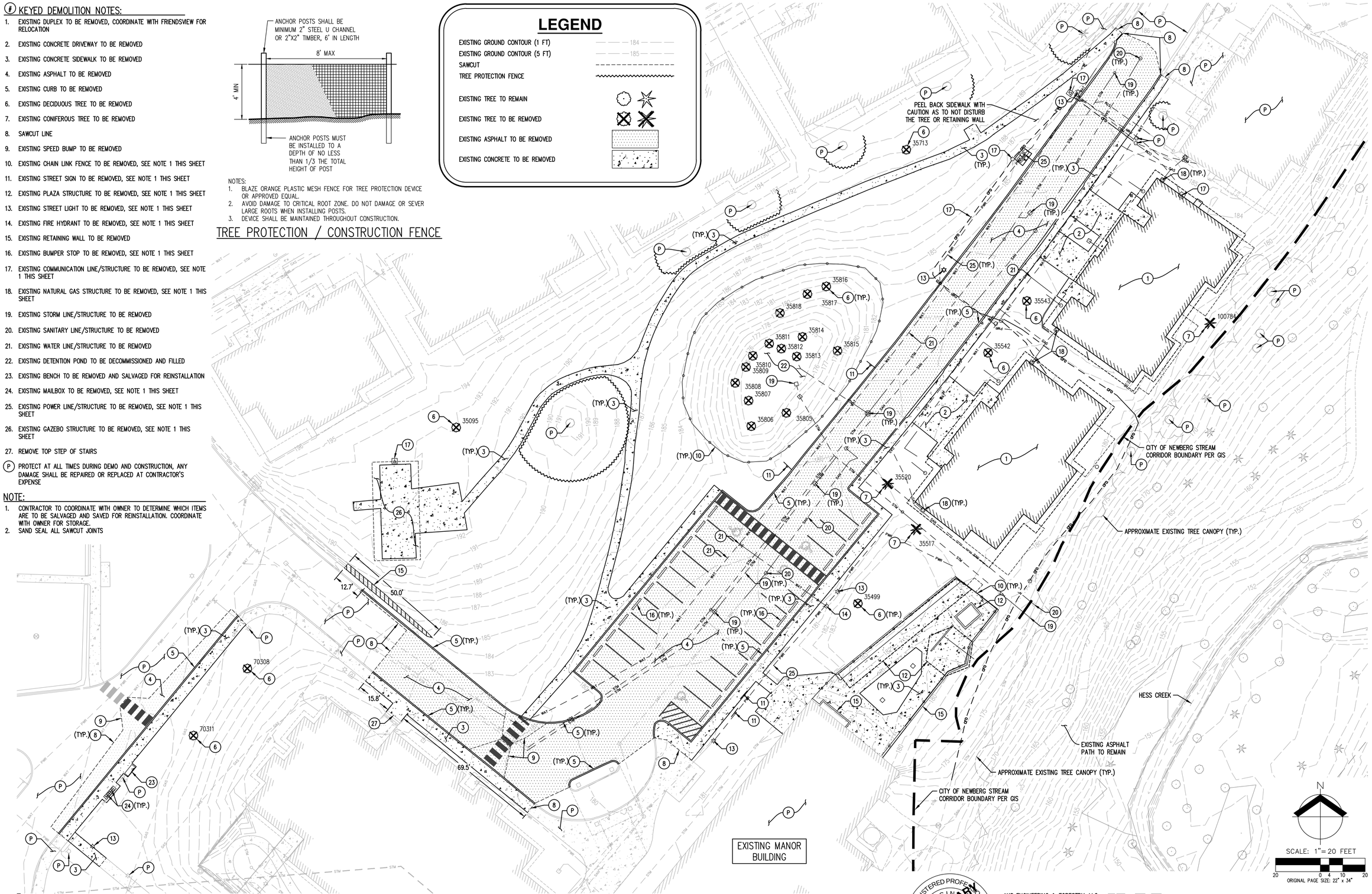
1. CONTRACTOR TO COORDINATE WITH OWNER TO DETERMINE WHICH ITEMS ARE TO BE SALVAGED AND SAVED FOR REINSTALLATION. COORDINATE WITH OWNER FOR STORAGE.
2. SAND SEAL ALL SAWCUT JOINTS

NOTES:
1. BLAZE ORANGE PLASTIC MESH FENCE FOR TREE PROTECTION DEVICE OR APPROVED EQUAL.
2. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
3. DEVICE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION / CONSTRUCTION FENCE

LEGEND

- EXISTING GROUND CONTOUR (1 FT) — 184
- EXISTING GROUND CONTOUR (5 FT) — 185
- SAWCUT
- TREE PROTECTION FENCE
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- EXISTING ASPHALT TO BE REMOVED
- EXISTING CONCRETE TO BE REMOVED



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SCALE: 1"=20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

LRS ARCHITECTS

219081IC030 – PRELIMINARY DEMOLITION PLAN

REGISTERED PROFESSIONAL ENGINEER — OREGON — JANUARY 14, 1999 — CHARLES EDWARD GREGORY

PRELIMINARY NOT FOR CONSTRUCTION

RENEWS: JUNE 30, 2021

AKS ENGINEERING & FORESTRY, LLC
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AKS

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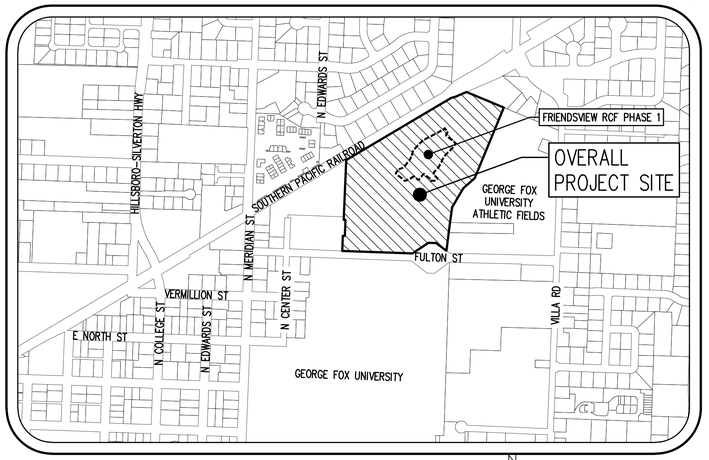
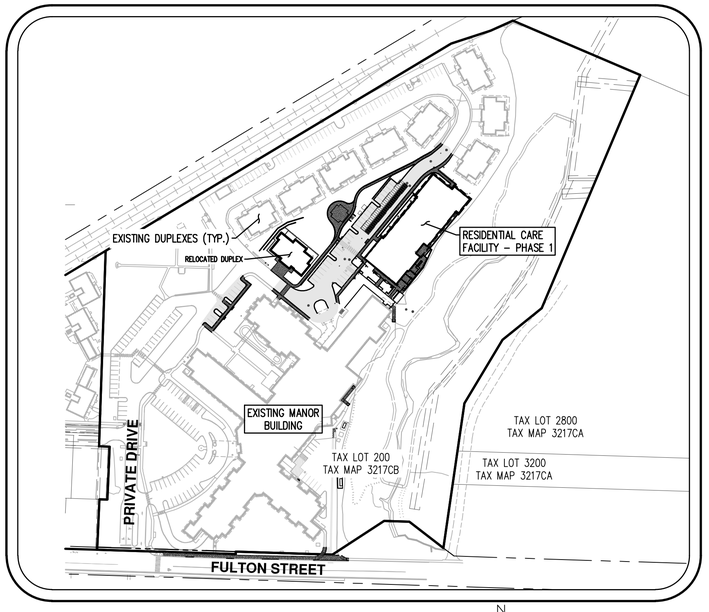
Friendsview RETIREMENT COMMUNITY

FRIENDSVIEW RESIDENTIAL CARE FACILITY - PHASE 1

1200C EROSION AND SEDIMENT CONTROL PLAN



VICINITY MAP
N.T.S.



SITE MAP
1"=150'

SHEET INDEX

1200C EROSION AND SEDIMENT CONTROL PLANS

APPLICANT/OWNER

FRIENDSVIEW RETIREMENT COMMUNITY
CONTACT: TIM TOWERS
1301 FULTON STREET
NEWBERG, OREGON 97132

CIVIL ENGINEERING/ SURVEYING FIRM

AKS ENGINEERING & FORESTRY, LLC.
CONTACT: CHUCK GREGORY, PE | ASSOCIATE
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OREGON 97062
PH: (503) 563-6151
EMAIL: CHUCKG@AKS-ENG.COM

PROJECT LOCATION:

LOCATED ON THE NORTH SIDE OF FULTON STREET AND SOUTH OF THE SOUTHERN PACIFIC RAILROAD IN NEWBERG, OREGON 97132.
LAT: 45.3078278 N
LONG: 122.9657028 W

PROPERTY DESCRIPTION:

TAX LOT 200 (WASHINGTON COUNTY ASSESSOR'S MAP 3217CB) LOCATED IN THE SOUTHWEST 1/4 OF SECTION 17, TOWNSHIP 2 WEST, RANGE 3 WEST, WILLAMETTE MERIDIAN, WASHINGTON COUNTY, OREGON.

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS

* THE EXISTING SITE IS CURRENTLY DEVELOPED WITH EXISTING BUILDINGS OWNED BY FRIENDSVIEW RETIREMENT COMMUNITY

DEVELOPED CONDITIONS

* SENIOR CARE FACILITY WITH ASSOCIATED PARKING IMPROVEMENTS, UNDERGROUND UTILITIES, AND STORMWATER FACILITIES

NATURE OF CONSTRUCTION ACTIVITY AND TIMETABLE FOR MAJOR ACTIVITIES

* CLEARING (----)
* GRADING [EXCAVATION AND FILL] (-----)
* INSTALLATION OF UTILITIES (-----)
* FINAL STABILIZATION (-----)

TOTAL SITE AREA = 16.4 ACRES

TOTAL DISTURBED AREA = ±88,200 SF = ±2.0 ACRES

SITE SOIL CLASSIFICATION:

2300A – ALOHA SILT LOAM: (HYDROLOGIC SOIL GROUP "C"/"D")
2310C – WOODBURN SILT LOAM: (HYDROLOGIC SOIL GROUP "C")
2310F – WOODBURN SILT LOAM: (HYDROLOGIC SOIL GROUP "C")

RECEIVING WATER BODIES:

HESS CREEK

PERMITTEE'S SITE INSPECTOR: TRAVIS DAVENPORT
COMPANY/AGENCY: AKS ENGINEERING & FORESTRY
PHONE: (503) 563-6151
E-MAIL: DAVENPORTT@AKS-ENG.COM
CESCL#: CPESC #2019-20
DESCRIPTION OF EXPERIENCE:
THREE YEARS INSPECTING EROSION AND SEDIMENT CONTROLS

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ's GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP's WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THIS PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

INITIAL

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. HOLD A PRE-CONSTRUCTION MEETING OF PROJECT CONSTRUCTION PERSONNEL THAT INCLUDES THE INSPECTOR TO DISCUSS EROSION AND SEDIMENT CONTROL MEASURES AND CONSTRUCTION LIMITS. (SCHEDULE A.8.C.I.(3))
2. ALL INSPECTIONS MUST BE MADE IN ACCORDANCE WITH DEQ 1200-C PERMIT REQUIREMENTS. (SCHEDULE A.12.B AND SCHEDULE B.1)
3. INSPECTION LOGS MUST BE KEPT IN ACCORDANCE WITH DEQ'S 1200-C PERMIT REQUIREMENTS. (SCHEDULE B.1.C AND B.2)
4. RETAIN A COPY OF THE ESCP AND ALL REVISIONS ON SITE AND MAKE IT AVAILABLE ON REQUEST TO DEQ, AGENT, OR THE LOCAL MUNICIPALITY. DURING INACTIVE PERIODS OF GREATER THAN SEVEN (7) CONSECUTIVE CALENDAR DAYS, THE ABOVE RECORDS MUST BE RETAINED BY THE PERMIT REGISTRANT BUT DO NOT NEED TO BE AT THE CONSTRUCTION SITE. (SCHEDULE B.2.C)
5. PERMIT REGISTRANTS MUST IMPLEMENT THE ESCP. FAILURE TO IMPLEMENT ANY OF THE CONTROL MEASURES OR PRACTICES DESCRIBED IN THE ESCP IS A VIOLATION OF THE PERMIT. (SCHEDULE A 8.A)
6. THE ESCP MUST BE ACCURATE AND REFLECT SITE CONDITIONS. UPDATE THE ESCP AS NEEDED TO REPRESENT ACTUAL BMPS BEING USED ONSITE. (SCHEDULE A.12.C.I)
7. SUBMISSION OF ALL ESCP REVISIONS IS NOT REQUIRED. SUBMITTAL OF THE ESCP REVISIONS IS ONLY UNDER SPECIFIC CONDITIONS. SUBMIT ALL NECESSARY REVISION TO DEQ OR AGENT WITHIN 10 DAYS. (SCHEDULE A.12.C.IV. AND V)
8. PHASE CLEARING AND GRADING TO THE MAXIMUM EXTENT PRACTICAL TO PREVENT EXPOSED INACTIVE AREAS FROM BECOMING A SOURCE OF EROSION. (SCHEDULE A.7.A.III)
9. IDENTIFY, MARK, AND PROTECT (BY CONSTRUCTION FENCING OR OTHER MEANS) CRITICAL RIPARIAN AREAS AND VEGETATION INCLUDING IMPORTANT TREES AND ASSOCIATED ROOTING ZONES, AND VEGETATION AREAS TO BE PRESERVED. IDENTIFY, MARK, AND PROTECT VEGETATIVE BUFFER ZONES BETWEEN THE SITE AND SENSITIVE AREAS (E.G., WETLANDS), AND OTHER AREAS TO BE PRESERVED, ESPECIALLY IN PERIMETER AREAS. (SCHEDULE A.8.C.I.(1) AND (2))
10. PRESERVE EXISTING VEGETATION WHEN PRACTICAL AND RE-VEGETATE OPEN AREAS. RE-VEGETATE OPEN AREAS WHEN PRACTICABLE BEFORE AND AFTER GRADING OR CONSTRUCTION. IDENTIFY THE TYPE OF VEGETATIVE SEED MIX USED. (SCHEDULE A.7.A.V)
11. MAINTAIN AND DELINEATE ANY EXISTING NATURAL BUFFER WITHIN THE 50-FEET OF WATERS OF THE STATE. (SCHEDULE A.7.B.I. AND (2(A)(B))
12. INSTALL PERIMETER SEDIMENT CONTROL, INCLUDING STORM DRAIN INLET PROTECTION AS WELL AS ALL SEDIMENT BASINS, TRAPS, AND BARRIERS PRIOR TO LAND DISTURBANCE. (SCHEDULE A.8.C.I.(5))
13. CONTROL BOTH PEAK FLOW RATES AND TOTAL STORMWATER VOLUME, TO MINIMIZE EROSION AT OUTLETS AND DOWNSTREAM CHANNELS AND STREAMBANKS. (SCHEDULE A.7.C)
14. CONTROL SEDIMENT AS NEEDED ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL STORM DRAIN INLETS AT ALL TIMES DURING CONSTRUCTION, BOTH INTERNALLY AND AT THE SITE BOUNDARY. (SCHEDULE A.7.D.I)
15. ESTABLISH CONCRETE TRUCK AND OTHER CONCRETE EQUIPMENT WASHOUT AREAS BEFORE BEGINNING CONCRETE WORK. (SCHEDULE A.8.C.I.(6))
16. APPLY TEMPORARY AND/OR PERMANENT SOIL STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS AS GRADING PROGRESSES. TEMPORARY OR PERMANENT STABILIZATIONS MEASURES ARE NOT REQUIRED FOR AREAS THAT ARE INTENDED TO BE LEFT UNVEGETATED, SUCH AS DIRT ACCESS ROADS OR UTILITY POLE PADS.(SCHEDULE A.8.C.II.(3))
17. ESTABLISH MATERIAL AND WASTE STORAGE AREAS, AND OTHER NON-STORMWATER CONTROLS. (SCHEDULE A.8.C.I.(7))
18. PREVENT TRACKING OF SEDIMENT ONTO PUBLIC OR PRIVATE ROADS USING BMPS SUCH AS: CONSTRUCTION ENTRANCE, GRAVELED (OR PAVED) EXITS AND PARKING AREAS, GRAVEL ALL UNPAVED ROADS LOCATED ONSITE, OR USE AN EXIT TIRE WASH. THESE BMPS MUST BE IN PLACE PRIOR TO LAND-DISTURBING ACTIVITIES. (SCHEDULE A 7.D.II AND A.8.C.I(4))
19. WHEN TRUCKING SATURATED SOILS FROM THE SITE, EITHER USE WATER-TIGHT TRUCKS OR DRAIN LOADS ON SITE. (SCHEDULE A.7.D.II.(5))
20. CONTROL PROHIBITED DISCHARGES FROM LEAVING THE CONSTRUCTION SITE, I.E., CONCRETE WASH-OUT, WASTEWATER FROM CLEANOUT OF STUCCO, PAINT, FUELS, OILS (SOAP AND SOLVENTS), AND CURING COMPOUNDS. (SCHEDULE A.6)
21. USE BMPS TO PREVENT OR MINIMIZE STORMWATER EXPOSURE TO POLLUTANTS FROM SPILLS; VEHICLE AND EQUIPMENT FUELING, MAINTENANCE, AND STORAGE; OTHER CLEANING AND MAINTENANCE ACTIVITIES; AND WASTE HANDLING ACTIVITIES. THESE POLLUTANTS INCLUDE FUEL, HYDRAULIC FLUID, AND OTHER OILS FROM VEHICLES AND MACHINERY, AS WELL AS DEBRIS, FERTILIZER, PESTICIDES AND HERBICIDES, PAINTS, SOLVENTS, CURING COMPOUNDS AND ADHESIVES FROM CONSTRUCTION OPERATIONS. (SCHEDULE A.7.E.I.(2))
22. IMPLEMENT THE FOLLOWING BMPS WHEN APPLICABLE: WRITTEN SPILL PREVENTION AND RESPONSE PROCEDURES, EMPLOYEE TRAINING ON SPILL PREVENTION AND PROPER DISPOSAL PROCEDURES, SPILL KITS IN ALL VEHICLES, REGULAR MAINTENANCE SCHEDULE FOR VEHICLES AND MACHINERY, MATERIAL DELIVERY AND STORAGE CONTROLS, TRAINING AND SIGNAGE, AND COVERED STORAGE AREAS FOR WASTE AND SUPPLIES. (SCHEDULE A. 7.E.III.)
23. USE WATER, SOIL-BINDING AGENT OR OTHER DUST CONTROL TECHNIQUE AS NEEDED TO AVOID WIND-BLOWN SOIL. (SCHEDULE A 7.A.IV)
24. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS TO MINIMIZE NUTRIENT RELEASES TO SURFACE WATERS. EXERCISE CAUTION WHEN USING TIME-RELEASE FERTILIZERS WITHIN ANY WATERWAY RIPARIAN ZONE. (SCHEDULE A.9.B.III)
25. IF AN ACTIVE TREATMENT SYSTEM (FOR EXAMPLE, ELECTRO-COAGULATION, FLOCCULATION, FILTRATION, ETC.) FOR SEDIMENT OR OTHER POLLUTANT REMOVAL IS EMPLOYED, SUBMIT AN OPERATION AND MAINTENANCE PLAN (INCLUDING SYSTEM SCHEMATIC, LOCATION OF SYSTEM, LOCATION OF INLET, LOCATION OF DISCHARGE, DISCHARGE DISPERSION DEVICE DESIGN, AND A SAMPLING PLAN AND FREQUENCY) BEFORE OPERATING THE TREATMENT SYSTEM. OBTAIN PLAN APPROVAL BEFORE OPERATING THE TREATMENT SYSTEM. OPERATE AND MAINTAIN THE TREATMENT SYSTEM ACCORDING TO MANUFACTURER'S SPECIFICATIONS. (SCHEDULE A.9.D)
26. TEMPORARILY STABILIZE SOILS AT THE END OF THE SHIFT BEFORE HOLIDAYS AND WEEKENDS, IF NEEDED. THE REGISTRANT IS RESPONSIBLE FOR ENSURING THAT SOILS ARE STABLE DURING RAIN EVENTS AT ALL TIMES OF THE YEAR. (SCHEDULE A 7.A.II)
27. AS NEEDED BASED ON WEATHER CONDITIONS, AT THE END OF EACH WORKDAY SOIL STOCKPILES MUST BE STABILIZED OR COVERED, OR OTHER BMPS MUST BE IMPLEMENTED TO PREVENT DISCHARGES TO SURFACE WATERS OR CONVEYANCE SYSTEMS LEADING TO SURFACE WATERS. (SCHEDULE A 7.E.II.(2))
28. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND BARE GROUND ACTIVITIES DURING WET WEATHER. (SCHEDULE A.7.A.I)
29. SEDIMENT FENCE: REMOVE TRAPPED SEDIMENT BEFORE IT REACHES ONE THIRD OF THE ABOVE GROUND FENCE HEIGHT AND BEFORE FENCE REMOVAL. (SCHEDULE A.9.C.I)
30. OTHER SEDIMENT BARRIERS (SUCH AS BIOBAGS): REMOVE SEDIMENT BEFORE IT REACHES TWO INCHES DEPTH ABOVE GROUND HEIGHT AND BEFORE BMP REMOVAL. (SCHEDULE A.9.C.II)
31. CATCH BASINS: CLEAN BEFORE RETENTION CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT. SEDIMENT BASINS AND SEDIMENT TRAPS: REMOVE TRAPPED SEDIMENTS BEFORE DESIGN CAPACITY HAS BEEN REDUCED BY FIFTY PERCENT AND AT COMPLETION OF PROJECT. (SCHEDULE A.9.C.III& IV)
32. WITHIN 24 HOURS, SIGNIFICANT SEDIMENT THAT HAS LEFT THE CONSTRUCTION SITE, MUST BE REMEDIATED. INVESTIGATE THE CAUSE OF THE SEDIMENT RELEASE AND IMPLEMENT STEPS TO PREVENT A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN-UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DIVISION OF STATE LANDS REQUIRED TIMEFRAME. (SCHEDULE A.9.B.I)
33. THE INTENTIONAL WASHING OF SEDIMENT INTO STORM SEWERS OR DRAINAGE WAYS MUST NOT OCCUR. VACUUMING OR DRY SWEEPING AND MATERIAL PICKUP MUST BE USED TO CLEANUP RELEASED SEDIMENTS. (SCHEDULE A.9.B.II)
34. THE ENTIRE SITE MUST BE TEMPORARILY STABILIZED USING VEGETATION OR A HEAVY MULCH LAYER, TEMPORARY SEEDING, OR OTHER METHOD SHOULD ALL CONSTRUCTION ACTIVITIES CEASE FOR 30 DAYS OR MORE. (SCHEDULE A.7.F.I)
35. PROVIDE TEMPORARY STABILIZATION FOR THAT PORTION OF THE SITE WHERE CONSTRUCTION ACTIVITIES CEASE FOR 14 DAYS OR MORE WITH A COVERING OF BLOWN STRAW AND A TACKIFIER, LOOSE STRAW, OR AN ADEQUATE COVERING OF COMPOST MULCH UNTIL WORK RESUMES ON THAT PORTION OF THE SITE. (SCHEDULE A.7.F.II)
36. DO NOT REMOVE TEMPORARY SEDIMENT CONTROL PRACTICES UNTIL PERMANENT VEGETATION OR OTHER COVER OF EXPOSED AREAS IS ESTABLISHED. ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, ALL TEMPORARY EROSION CONTROLS AND RETAINED SOILS MUST BE REMOVED AND DISPOSED OF PROPERLY, UNLESS DOING SO CONFLICTS WITH LOCAL REQUIREMENTS. (SCHEDULE A.8.C.III(1) AND D.3.C.II, III, AND IV)

1200C PERMIT NUMBER:_____

BMP MATRIX FOR CONSTRUCTION PHASES					
REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S					
CONTRACTOR TO NOTIFY LISTED ENGINEER AND INSPECTOR PRIOR TO INSTALLING ESC MEASURES					
	CLEARING	MASS GRADING	UTILITY INSTALLATION	STREET AND SITE CONSTRUCTION	FINAL STABILIZATION
EROSION PREVENTION					
PRESERVE NATURAL VEGETATION	x	x	x	x	x
GROUND COVER		x	x	x	x
HYDRAULIC APPLICATIONS					
PLASTIC SHEETING	x	x	x	x	
MATTING					
STRAW/MULCH COVER		x	x	x	x
ROCK OVER					
DUST CONTROL	x	x	x	x	
TEMPORARY/PERMANENT SEEDING		x	x	x	x
BUFFER ZONE					
OTHER:					
SEDIMENT CONTROL					
SEDIMENT FENCE (PERIMETER)	x	x	x	x	
SEDIMENT FENCE (INTERIOR)					
STRAW WATTLES	x	x	x	x	
FILTER BERM					
INLET PROTECTION	x	x	x	x	x
DEWATERING					
SEDIMENT TRAP					
NATURAL BUFFER ENCROACHMENT					
COMPOST SOCK/ BERM					
RUN OFF CONTROL					
CONSTRUCTION ENTRANCE	x	x	x	x	
PIPE SLOPE DRAIN					
OUTLET PROTECTION					
SURFACE ROUGHENING					
CHECK DAMS					
OTHER:					
POLLUTION PREVENTION					
PROPER SIGNAGE	x	x	x	x	x
HAZARDOUS WASTE MANAGEMENT	x	x	x	x	x
SPILL KIT ON-SITE	x	x	x	x	x
CONCRETE WASHOUT AREA		x	x	x	
OTHER:					
* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE					
** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.					

NOTE: THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THIS PLAN.
AKS ENGINEERING AND FORESTRY, LLC SHALL BE RETAINED TO PERFORM EROSION CONTROL INSPECTION SERVICES OR THE OWNER MUST TRANSFER THE 1200C PERMIT INSPECTION DESIGNATION WITH OREGON DEQ PRIOR TO BEGINNING CONSTRUCTION.

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOW MELT, IS OCCURRING. AT LEAST ONCE EVERY FOURTEEN (14), REGARDLESS OF WHETHER STORMWATER RUNOFF IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY, RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

ATTENTION EXCAVATORS:

OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS BUT NOT MORE THAN TEN BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION. CALL 503-246-6699.

811 Know what's **below.** **Call** before you dig.

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1999 — EDWARD GREGORY
PRELIMINARY NOT FOR CONSTRUCTION
RENEWS: JUNE 30, 2021

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Friendsview RETIREMENT COMMUNITY

LRS ARCHITECTS

KEYED EROSION CONTROL NOTES:

1. INSTALL INLET PROTECTION PER CITY OF NEWBERG DETAIL 605
2. INSTALL ORANGE SEDIMENT FENCE PER CITY OF NEWBERG DETAIL 602. SEDIMENT FENCE SHALL SERVE AS TREE PROTECTION FENCING.
3. INSTALL STRAW WATTLE PER CITY OF NEWBERG DETAIL 611
4. LOCATION OF TREE PROTECTION FENCE DURING DEMOLITION. TREE PROTECTION FENCE TO BE ADJUSTED TO THE LOCATION SHOWN ON THE PLANS FOLLOWING DEMOLITION OF SIDEWALK, STRUCTURES, ETC.
5. CONSTRUCT GRAVEL CONSTRUCTION ENTRANCE PER CITY OF NEWBERG DETAIL 601

5A. USE EXISTING ASPHALT ENTRANCE AS CONSTRUCTION ENTRANCE. IF TRACKING BECOMES AN ISSUE THEN CONTRACTOR TO USE ADDITIONAL BMP MEASURES. CONTRACTOR TO RESTORE PAVEMENT AND CURBING TO EQUAL OR BETTER CONDITION. CONTRACTOR TO ENSURE ACCESS IS NOT INTERRUPTED THROUGHOUT CONSTRUCTION.

NOTES:

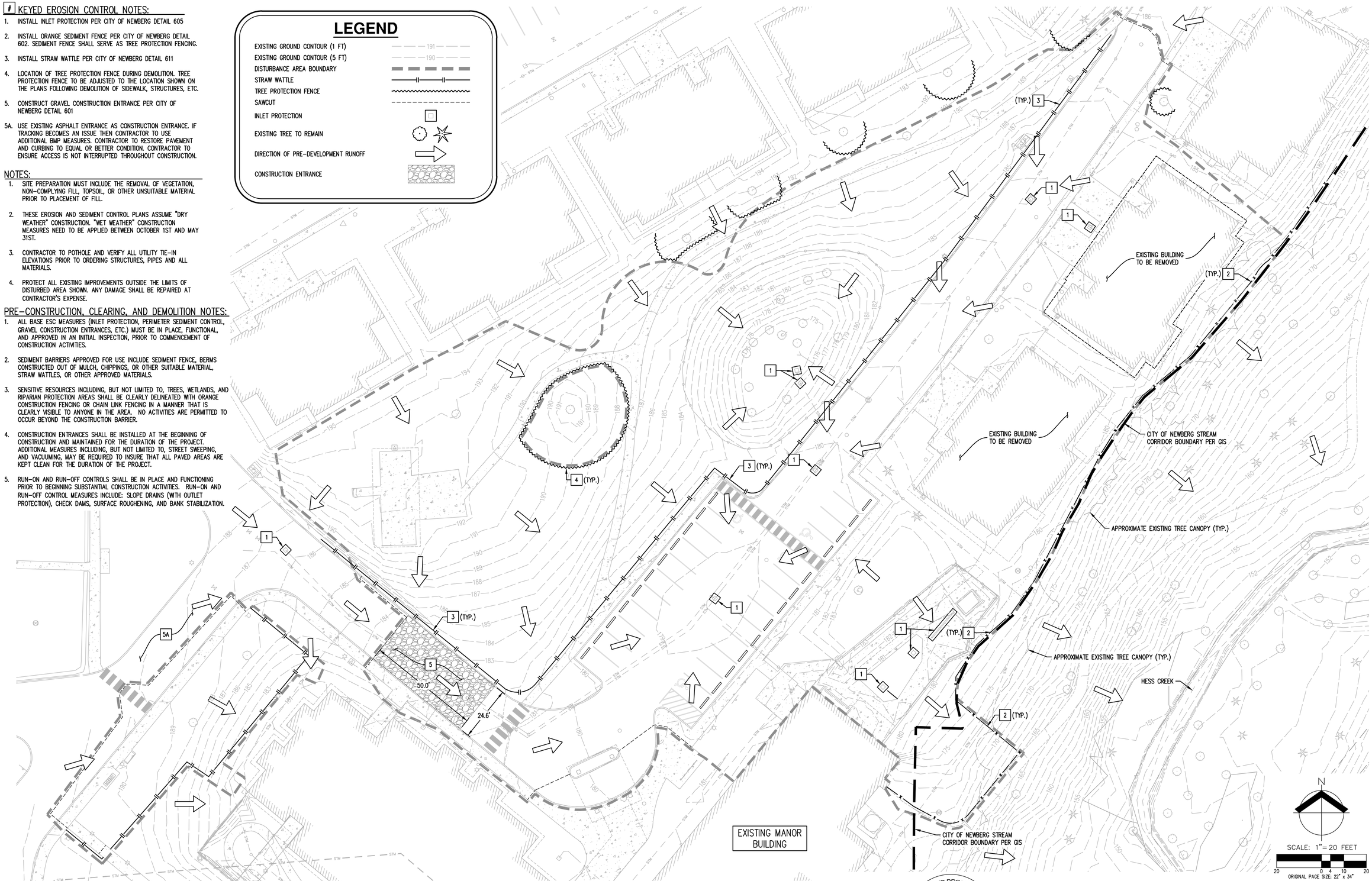
1. SITE PREPARATION MUST INCLUDE THE REMOVAL OF VEGETATION, NON-COMPLYING FILL, TOPSOIL, OR OTHER UNSUITABLE MATERIAL PRIOR TO PLACEMENT OF FILL.
2. THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1ST AND MAY 31ST.
3. CONTRACTOR TO POTHOLE AND VERIFY ALL UTILITY TIE-IN ELEVATIONS PRIOR TO ORDERING STRUCTURES, PIPES AND ALL MATERIALS.
4. PROTECT ALL EXISTING IMPROVEMENTS OUTSIDE THE LIMITS OF DISTURBED AREA SHOWN. ANY DAMAGE SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.

LEGEND

- EXISTING GROUND CONTOUR (1 FT)
- EXISTING GROUND CONTOUR (5 FT)
- DISTURBANCE AREA BOUNDARY
- STRAW WATTLE
- TREE PROTECTION FENCE
- SAWCUT
- INLET PROTECTION
- EXISTING TREE TO REMAIN
- DIRECTION OF PRE-DEVELOPMENT RUNOFF
- CONSTRUCTION ENTRANCE



LRS ARCHITECTS

219081IC051 – CLEARING & DEMOLITION ESC PLAN

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1999 — CHARLES EDWARD GREGORY

PRELIMINARY NOT FOR CONSTRUCTION

RENEWS: JUNE 30, 2021

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GRADING, BUILDING/SITE AND UTILITY EROSION AND SEDIMENT CONSTRUCTION NOTES:

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES, UNLESS OTHERWISE AUTHORIZED:
   A. VEGETATED CORRIDOR AREAS REQUIRE NATIVE SEED MIXES. SEE RESTORATION PLAN FOR APPROPRIATE SEED MIX.
   B. DWARF GRASS MIX (MIN. 100 LB./AC.)
      1. DWARF PERENNIAL RYEGRASS (80% BY WEIGHT)
      2. CREEPING RED FESCUE (20% BY WEIGHT)
   C. STANDARD HEIGHT GRASS MIX (MIN. 100LB./AC.)
      1. ANNUAL RYEGRASS (40% BY WEIGHT)
      2. TURF-TYPE FESCUE (60% BY WEIGHT)
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR
7. MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
8. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
9. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
10. ACTIVE INLETS TO STORMWATER SYSTEMS SHALL BE PROTECTED THROUGH THE USE OF APPROVED INLET PROTECTION MEASURES. ALL INLET PROTECTION MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED AS NEEDED.
11. SATURATED MATERIALS THAT ARE HAULED OFF-SITE MUST BE TRANSPORTED IN WATER-TIGHT TRUCKS TO ELIMINATE SPILLAGE OF SEDIMENT AND SEDIMENT-LADEN WATER.
12. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
13. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORMWATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
14. AVOID PAVING IN WET WEATHER WHEN PAVING CHEMICALS CAN RUN-OFF INTO THE STORMWATER SYSTEM.
15. USE BMPs SUCH AS CHECK-DAMS, BERMS, AND INLET PROTECTION TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.
16. COVER CATCH BASINS, MANHOLES, AND OTHER DISCHARGE POINTS WHEN APPLYING SEAL COAT, TACK COAT, ETC. TO PREVENT INTRODUCING THESE MATERIALS TO THE STORMWATER SYSTEM.
17. PROJECT SITE AND DISTURBED AREAS TO BE PROPERLY MAINTAINED TO MINIMIZE DUST GENERATION.

LEGEND

- EXISTING GROUND CONTOUR (1 FT) — 181
- EXISTING GROUND CONTOUR (5 FT) — 180
- FINISHED GRADE CONTOUR (1 FT) — 184
- FINISHED GRADE CONTOUR (5 FT) — 185
- DISTURBANCE AREA BOUNDARY
- SEDIMENT FENCE
- TREE PROTECTION FENCE
- AC SAWCUT
- INLET PROTECTION
- CONCRETE WASHOUT
- EXISTING TREE TO REMAIN
- DIRECTION OF PRE-DEVELOPMENT RUNOFF
- DIRECTION OF POST-DEVELOPMENT RUNOFF
- CONSTRUCTION ENTRANCE
- SLOPE MATTING
- STAGING AND STOCKPILE EXTENTS

NOTE:

THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. "WET WEATHER" CONSTRUCTION MEASURES NEED TO BE APPLIED BETWEEN OCTOBER 1ST AND MAY 31ST.

ESC KEYED NOTES:

1. MAINTAIN INLET PROTECTION PER CITY OF NEWBERG DETAIL 605/C053
2. INSTALL SLOPE MATTING PER DETAIL 610/C053
3. MAINTAIN SEDIMENT FENCE PER CITY OF NEWBERG DETAIL 602/C053
4. LOCATION OF TREE PROTECTION FENCE AFTER DEMOLITION IS COMPLETE (PRIOR TO GRADING OR ANY OTHER CONSTRUCTION ACTIVITIES), SEE TREE PROTECTION FENCE DETAIL ON SHEET C030
5. INSTALL GRAVEL CONSTRUCTION ENTRANCE PER CITY OF NEWBERG DETAIL 601/C053

5A. USE EXISTING ASPHALT ENTRANCE AS CONSTRUCTION ENTRANCE. IF TRACKING BECOMES AN ISSUE THEN CONTRACTOR TO USE ADDITIONAL BMP MEASURES. CONTRACTOR TO RESTORE PAVEMENT AND CURBING TO EQUAL OR BETTER CONDITION. CONTRACTOR TO ENSURE ACCESS IS NOT INTERRUPTED THROUGHOUT CONSTRUCTION.

6. INSTALL INLET PROTECTION PER CITY OF NEWBERG DETAIL 605/C053
7. STAGING AND STOCKPILE AREA WITH PLASTIC SHEETING PER DETAIL 1/C053
8. INSTALL CONCRETE WASHOUT PER CITY OF NEWBERG DETAIL 607/C053
9. INSTALL BIO-BAG PROTECTION AT OUTFALL SIMILAR TO CITY OF NEWBERG DETAIL 605/C053

FILL EXISTING POND (TYP.)

RESIDENTIAL CARE FACILITY - PHASE 1 FFE: 181.22

PHASE 2

EXISTING MANOR BUILDING

CITY OF NEWBERG STREAM CORRIDOR BOUNDARY PER GIS

HESS CREEK

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION

1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
3. LONG TERM SLOPE STABILIZATION MEASURES "INCLUDING MATTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
4. THE STORMWATER FACILITY SHALL BE CONSTRUCTED AND LANDSCAPED PRIOR TO THE STORMWATER SYSTEM FUNCTIONING AND SITE PAVING.
5. INLET PROTECTION SHALL BE IN-PLACE IMMEDIATELY FOLLOWING PAVING ACTIVITIES.

N

SCALE: 1" = 20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

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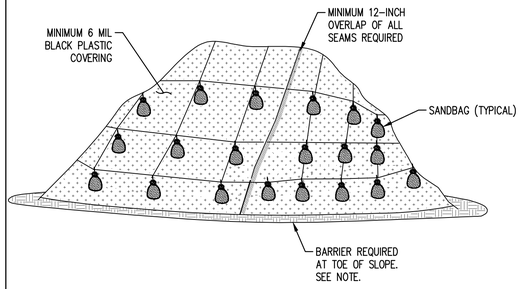
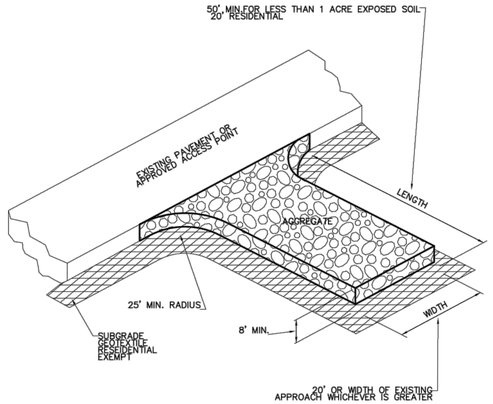


NOTES:

1. COVERING MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10' GRID SPACING IN ALL DIRECTIONS.
2. BARRIER SHALL CONSIST OF SOIL BERM, SILT FENCE, STRAW WATTLE, GRASS LINED DITCH, SANDBAGS, OR OTHER APPROVED MATERIAL.
3. STOCKPILE(S) MUST BE LOCATED IN AREAS THAT WILL NOT IMPOUND OR BLOCK STORMWATER RUNOFF.
4. ALL SEAMS SHALL BE TAPED OR WEIGHTED DOWN FOR FULL LENGTH.
5. PLASTIC SHEETING REQUIRED FOR ALL TEMPORARY STOCKPILED MATERIAL.

PLASTIC SHEETING
NTS

1



NOTES:

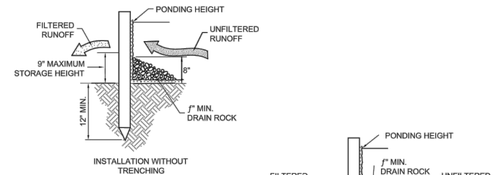
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-RIGH-OF WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT-LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS
   SINGLE FAMILY AND DUPLEX
   20' LONG BY 20' WIDE, 8" DEEP OF 3/4 " MINUS CLEAN ROCK.
   COMMERCIAL
   50' LONG BY 20' WIDE, 3-6" DEEP CLEAN ROCK.
   GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

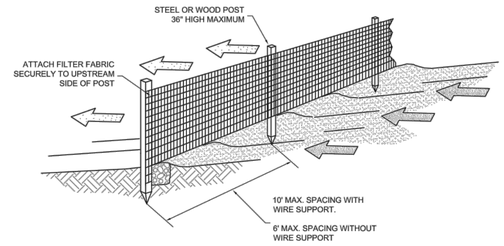
City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

CONSTRUCTION ENTRANCE

SCALE: N.T.S
DATE: May 2007
APPROVED BY: D. Danicic
STANDARD DRAWING 601





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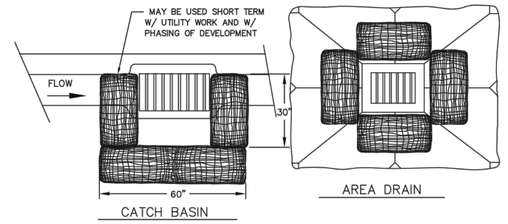
FAX: 503-537-1277

REVISIONS:

SILT FENCE

SCALE: N.T.S.
DATE: MAY 2007
APPROVED BY: D. DANICIC
STANDARD DRAWING 602



NOTES:

1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPES.
2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
3. WHEN USING 30" BIO-BAGS TO PROTECT A CATCH BASIN YOU MUST HAVE 4 BAGS AND THEY SHALL BE OVERLAPPED BY 6".

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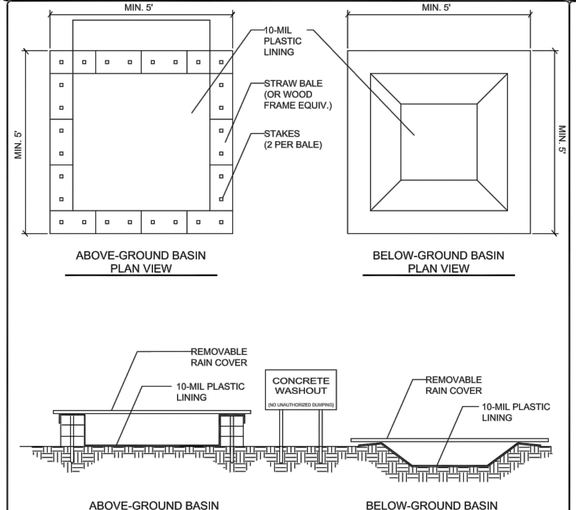
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:
12/10/2013

INLET PROTECTION

SCALE: N.T.S.
DATE: 04/04/2009
APPROVED BY: PAUL CHIU
STANDARD DRAWING 605



NOTES:

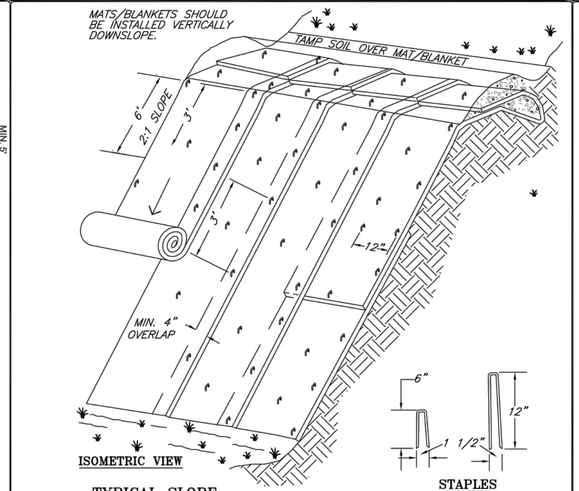
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. "CONCRETE WASHOUT" SIGN TO BE LOCATED ADJACENT TO WASHOUT FACILITY.
3. REMOVABLE RAIN COVER REQUIRED DURING WET WEATHER SEASON.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:
NA

CONCRETE WASTE MANAGEMENT

SCALE: N.T.S
DATE: 01/10/2014
APPROVED BY:
STANDARD DRAWING 607



TYPICAL SLOPE SOIL STABILIZATION

NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. STAKING OR STAPLING LAYOUT PER MANUFACTURERS SPECIFICATIONS.

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PUBLIC WORKS ENGINEERING DIVISION
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REVISIONS:
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MATTING-SLOPE INSTALLATION

SCALE: N.T.S
DATE: 01/10/2014
APPROVED BY:
STANDARD DRAWING 610

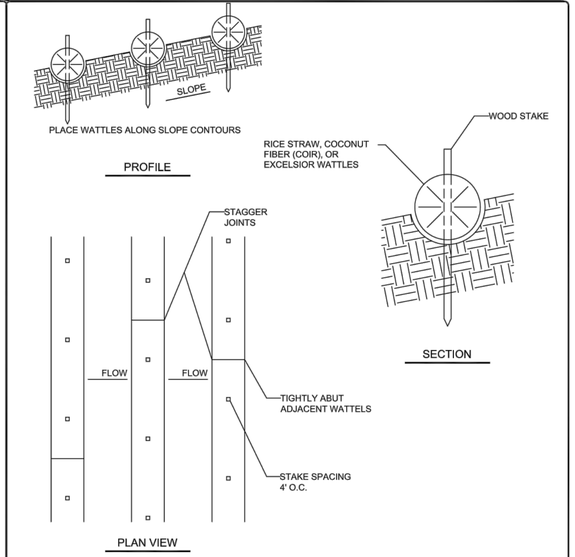

TABLE 3-12 BARRIER SPACING FOR GENERAL APPLICATION

% SLOPE	SLOPE	MAX SPACING ON SLOPE
<10%	<10:1	300 ft
10-15%	10:1 to 7.5:1	150 ft
15-20%	7.5:1 to 5:1	100 ft
20-30%	5:1 to 3.5:1	50 ft
30-50%	3.5:1 to 2:1	25 ft

NOTES:

1. STAKING SPECIFICATIONS:
   A. 1"x2" WOODEN STAKES.
   B. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES ON STEEP SLOPES OR HIGHLY EROSIVE SOILS.
2. SPACING IN ACCORDANCE WITH TABLE 3-12.

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PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:
NA

WATTLES/STRAW BALE

SCALE: N.T.S
DATE: 01/10/2014
APPROVED BY:
STANDARD DRAWING 611

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1999
EDWARD GREGORY
PRELIMINARY NOT FOR CONSTRUCTION
RENEWS: JUNE 30, 2021

AKS ENGINEERING & FORESTRY, LLC
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LEGEND

FINISHED FLOOR ELEVATION	FFE: 100.00
SIDEWALK ELEVATION	SW: 100.00
TOP OF CURB ELEVATION	TC: 100.00
EDGE OF ASPHALT ELEVATION	AC: 100.00
RIM ELEVATION	RIM: 100.00
FINISHED GRADE AT TOP OF WALL	TW: 100.00
FINISHED GRADE ELEVATION	FG: 100.00
EXISTING GRADE ELEVATION	(EG: 100.00)
EXISTING GRADE CONTOUR (1FT)	191
EXISTING GRADE CONTOUR (5FT)	190
FINISHED GRADE CONTOUR (1FT)	184
FINISHED GRADE CONTOUR (5FT)	185

RELOCATED DUPLEX
FFE: 185.13

RESIDENTIAL CARE
FACILITY – PHASE 1
FFE: 181.22

EXISTING MANOR
BUILDING

PHASE 2

FILL EXISTING
POND (TYP.)

FILL WALL

EXPOSED FOUNDATION

ADA RAMP

CONNECT TO EXISTING
RETAINING WALL
(TW: ±188.9)

MATCH EXISTING

PLANTER WALL (FG+29"): 181.65
PLANTER OVERFLOW (FG+6"): 179.72
FG (FFE–24"): 179.22
UNDERDRAIN (FG–30"): 176.72

PLANTER WALL (FG+21"): 181.00
PLANTER OVERFLOW (FG+6"): 179.72
FG (FFE–24"): 179.22
UNDERDRAIN (FG–30"): 176.72

CITY OF NEWBERG STREAM
CORRIDOR BOUNDARY PER GIS

HESS CREEK

N

SCALE: 1" = 20 FEET
20 0 4 10 20
ORIGINAL PAGE SIZE: 22" x 34"

lrs ARCHITECTS

219081|C070 – PRELIMINARY GRADING PLAN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1999
EDWARD GREGORY

PRELIMINARY
NOT FOR
CONSTRUCTION

RENEWS: JUNE 30, 2021

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LEGEND

- HEAVY-DUTY AC PAVEMENT
- LIGHT-DUTY AC PAVEMENT
- SLURRY COAT AC PAVEMENT
- NEW CONCRETE SIDEWALK
- EXISTING CONCRETE SIDEWALK

KEYED SITE NOTES:

1. NEW CONCRETE SIDEWALK
2. NEW STANDARD TYPE-C CURB
3. NEW LIGHT-DUTY AC PAVEMENT
4. NEW HEAVY-DUTY AC PAVEMENT
5. NEW ADA PARKING STALL
6. NEW ADA RAMP
7. NEW RETAINING WALL
7A. REUSE SALVAGED BOULDER WALL
8. NEW CONCRETE STAIRS WITH HANDRAILS
9. NEW PARKING STRIPE
10. NEW CROSSWALK STRIPE
10A. NEW CONCRETE CROSSWALK
11. NEW LANDSCAPE PAVERS AND PLAZA AREA, SEE LANDSCAPE PLANS
12. NEW CONCRETE TERRACE
13. SLURRY COAT EXISTING AC PAVEMENT
14. NEW CONCRETE DRIVEWAY
15. RELOCATED EXISTING DUPLEX
16. NEW GAZEBO
17. RELOCATED EXISTING MAILBOXES
18. RELOCATED EXISTING BENCH

RESIDENTIAL CARE FACILITY – PHASE 1
FFE: 181.22

CITY OF NEWBERG STREAM CORRIDOR BOUNDARY PER GIS

PHASE 2

EXISTING MANOR BUILDING

HESS CREEK

CITY OF NEWBERG STREAM CORRIDOR BOUNDARY PER GIS

N

SCALE: 1"=20 FEET
20 0 4 10 20
ORIGINAL PAGE SIZE: 22" x 34"

LRS ARCHITECTS

219081IC100 – PRELIMINARY SITE PLAN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1999
CHARLES EDWARD GREGORY

PRELIMINARY NOT FOR CONSTRUCTION

RENEWS: JUNE 30, 2021

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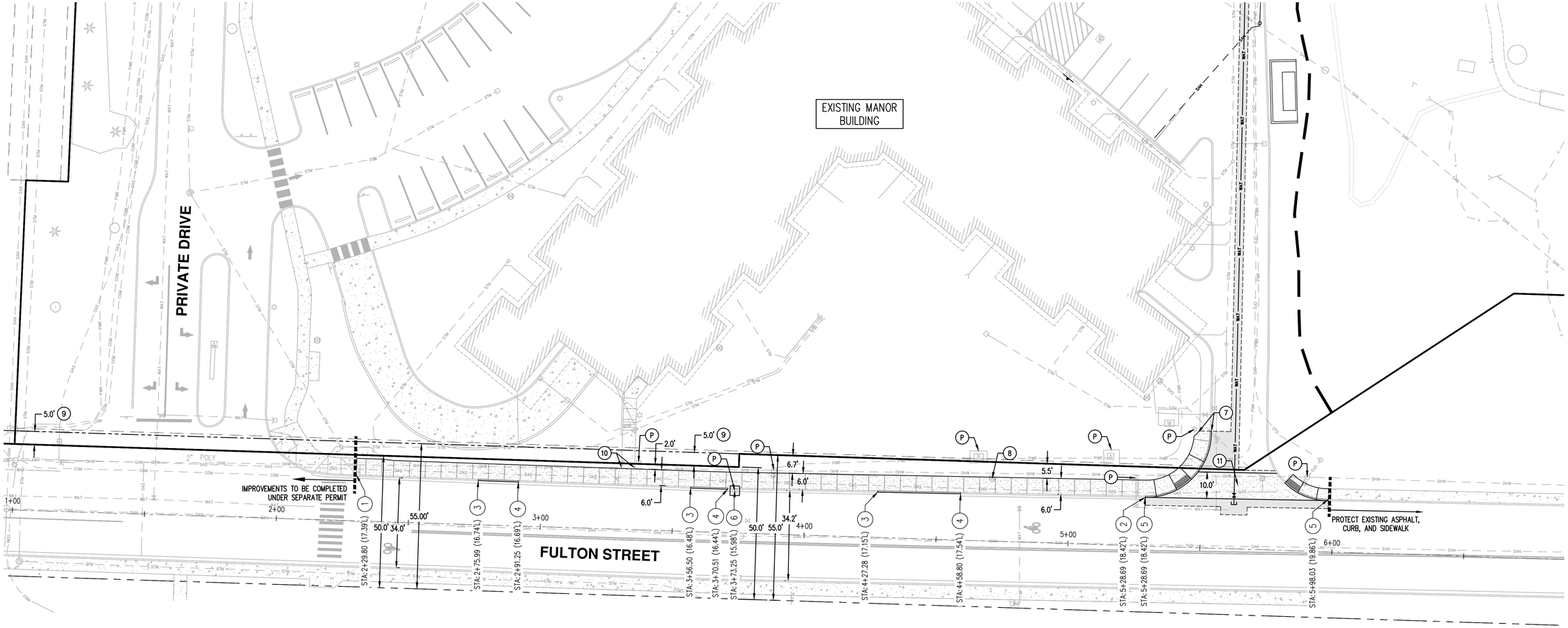

(#) FULTON STREET KEYED NOTES:

1. BEGIN SIDEWALK IMPROVEMENTS. SAWCUT AT BACK OF CURB, REMOVE SIDEWALK AND REPLACE WITH 6.0' WIDE CURB TIGHT SIDEWALK
2. END SIDEWALK IMPROVEMENTS
3. BEGIN CURB IMPROVEMENTS. SAWCUT AT FACE OF CURB, REMOVE EXISTING CURB DROP AND REPLACE WITH STANDARD CURB AND GUTTER
4. END CURB IMPROVEMENTS
5. SAWCUT 3.0' FROM FACE OF CURB, REMOVE AND REPLACE EXISTING CURB RETURN WITH NEW ADA-COMPLIANT RETURN
6. INSTALL INLET PROTECTION
7. END IMPROVEMENTS, TAPER SIDEWALK TO MATCH EXISTING
8. RELOCATE EXISTING IRRIGATION VALVE OUTSIDE OF SIDEWALK
9. 5.0' RIGHT-OF-WAY DEDICATION
10. RECONNECT CONCRETE PATHWAY TO SIDEWALK
11. CONSTRUCT NEW PRIVATE DRIVEWAY ENTRANCE WITH 10' WIDE CONCRETE PEDESTRIAN CROSSING

(P) PROTECT AT ALL TIMES DURING CONSTRUCTION, ANY DAMAGE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE

NOTE:

1. PER CITY PREAPPLICATION MEETING NOTES, APPLICANT WILL BE REQUIRED TO REPAIR/REPLACE ANY SIDEWALK ALONG THE PROPERTY FRONTAGE THAT DOES NOT MEET CURRENT ADA STANDARDS.

N

SCALE: 1" = 20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 14, 1999
RICHARD EDWARD GREGORY
RENEWS: JUNE 30, 2021

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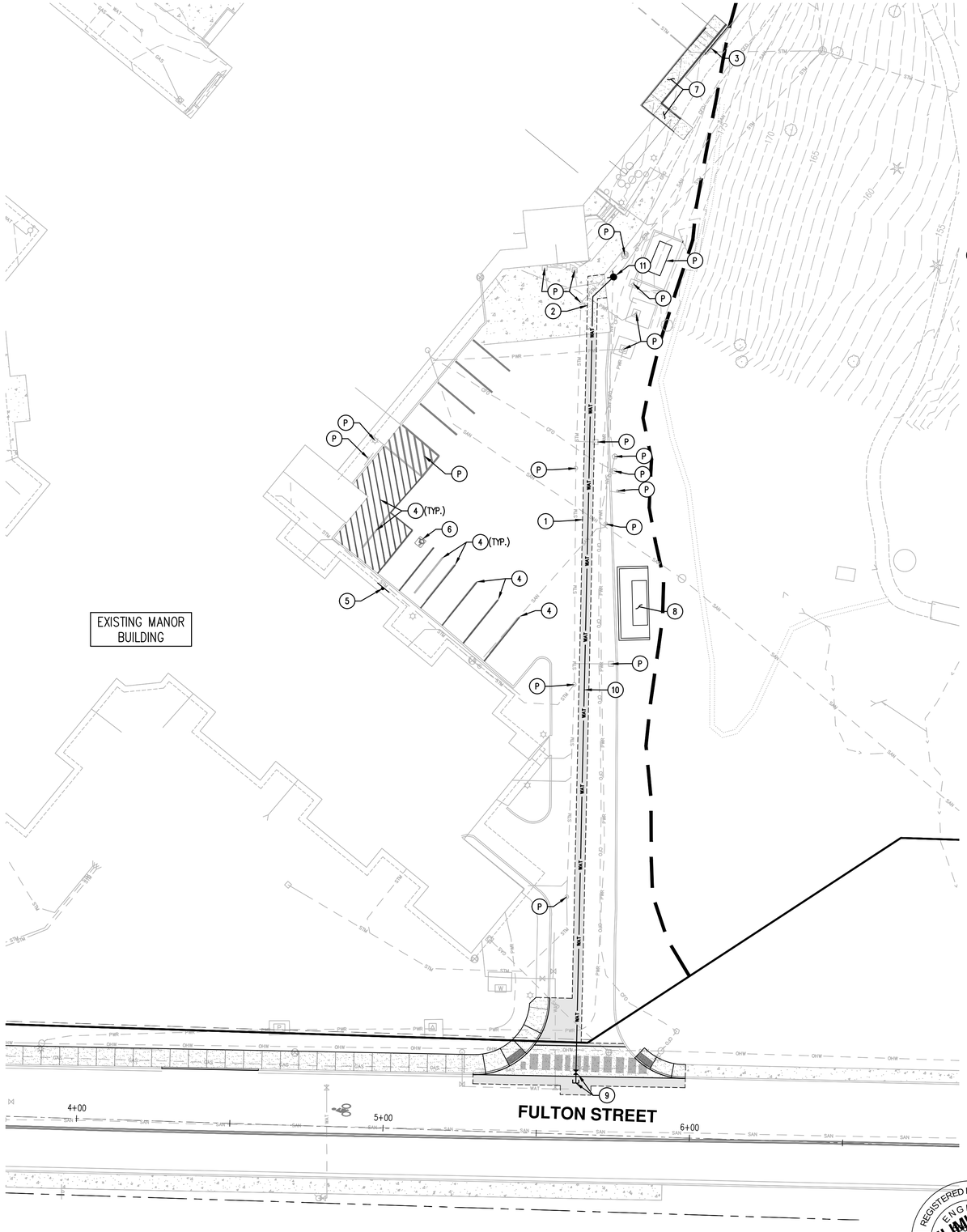

KEYED NOTES:

1. SAWCUT EXISTING ASPHALT FOR FIRE HYDRANT SERVICE INSTALLATION
2. SAWCUT EXISTING CONCRETE FOR FIRE HYDRANT SERVICE INSTALLATION
3. EXISTING STAIRS TO BE REMOVED
4. REMOVE EXISTING PARKING STRIPING AND RESTRIPE PARKING SPOTS FOR LOADING ZONE
5. NEW ADA PARKING SIGN
6. NEW ADA PARKING STRIPING
7. NEW ADA RAMP
8. NEW POWER GENERATOR
9. CONNECT TO EXISTING 6" WATER MAIN. CONTRACTOR TO POTHOLE AND VERIFY LOCATION OF EXISTING WATER MAIN. CONTACT ENGINEER WITH ANY DISCREPANCIES.
10. NEW 6" DI FIRE HYDRANT SERVICE
11. NEW FIRE HYDRANT

(P) PROTECT AT ALL TIMES DURING DEMOLITION AND CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED OR REPLACED AT CONTRACTOR'S EXPENSE

N

SCALE: 1" = 20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

LRS ARCHITECTS

219081|C160 – PRELIMINARY DEMOLITION, SITE, & WATER PLAN

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 14, 1999 — EDWARD GREGORY

PRELIMINARY NOT FOR CONSTRUCTION

RENEWS: JUNE 30, 2021

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ⓐ KEYED STORM NOTES:

1. CONNECT TO EXISTING 14" DI STORM MAIN, INSTALL NEW STORM MANHOLE
   ESTIMATED RIM: ±173.7 (SET TO FG)
   ESTIMATED IE: ±167.6
1A. INSTALL 60" FLOW CONTROL MANHOLE WITH 24" DECORATE LID
2. NEW STORM LINE
3. NEW STORM MANHOLE
4. NEW TRENCH DRAIN
5. ESTIMATED FOOTPRINT OF UNDERGROUND DETENTION FACILITY
   (54 MC-4500 CHAMBERS WITH END CAPS, 2 ROWS)
6. NEW FLOW-THROUGH PLANTER FACILITY PER CITY OF NEWBERG DETAIL NO. 452
   FG: 179.22
   BOTTOM AREA: ±875 SF
7. NEW FLOW-THROUGH PLANTER FACILITY PER CITY OF NEWBERG DETAIL NO. 452
   FG: 179.22
   BOTTOM AREA: ±475 SF
8. NEW CATCH BASIN
9. NEW STORM CLEANOUT
10. NEW WATER QUALITY CATCH BASIN (2 CARTRIDGES)
11. CONNECTION TO BUILDING PERIMETER DRAIN WITH RECTORSEAL CLEAN CHECK BACKWATER VALVE
12. ROOF DRAIN COLLECTOR PIPE
13. NEW FRENCH DRAIN
14. NEW AREA DRAIN
15. CONNECT TO EXISTING 6" STORM LINE WITH NEW STORM CLEANOUT
    ESTIMATED IE: ±181.8
16. CONNECT TO EXISTING 10" STORM LINE WITH NEW STORM CLEANOUT
    ESTIMATED IE: ±178
17. INTERCEPT EXISTING STORM LATERAL FOR EXISTING DUPLEX TO REMAIN
18. CONNECT TO EXISTING 10" STORM LINE WITH NEW STORM CLEANOUT
    ESTIMATED IE: ±177
19. NEW STORMWATER OUTFALL
20. CONNECTION TO BUILDING ROOF DRAIN
21. FUTURE PHASE 2 STORM CONNECTION

RESIDENTIAL CARE FACILITY – PHASE 1
FFE: 181.22

PHASE 2

EXISTING MANOR BUILDING

CITY OF NEWBERG STREAM CORRIDOR BOUNDARY PER GIS

HESS CREEK

EX STM AD
RIM: 186.21
IE OUT: 184.74 (4"SE)
SUMP: 182.57

4" PERF PIPE FROM WATER TRENCH; WYE'S INTO 15" STORM; PER AS-BUILTS

EX STM CO
RIM: 184.51
IE BEND: 176.36±

EX STM CO
RIM: 182.23
IE BEND: 177±

EX STM AD
RIM: 180.46
IE OUT: 179.61 (4"NE)
SUMP: 179.36

EX STM CO
RIM: 181.48
IE BEND: 178.78±

EX STM DRYWELL MH
RIM: 185.47
SUMP: 180.47

EX STM CO
RIM: 181.20

EX STM AD
RIM: 180.10
IE OUT: 179.25 (4"NE)

EX STM CO
RIM: 180.64
IE BEND: 176.54±

EX STM CO
RIM: 180.95

EX STM CO
RIM: 174.22
IE BEND: 166.97±

EX STM CO
RIM: 186.53

EX STM CO
RIM: 173.97
IE BEND: 170.61±
STORM LINE PER AS-BUILTS

EX STM CO
RIM: 173.96
IE BEND: 167.76±

EX 8" CPP CULVERT
IE: 149.46

N

SCALE: 1"=20 FEET
20 0 4 10 20
ORIGINAL PAGE SIZE: 22" x 34"

LRS ARCHITECTS

219081|C200 – PRELIMINARY STORMWATER DRAINAGE PLAN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JANUARY 14, 1999
CHARLES EDWARD GREGORY
RENEWS: JUNE 30, 2021

PRELIMINARY NOT FOR CONSTRUCTION

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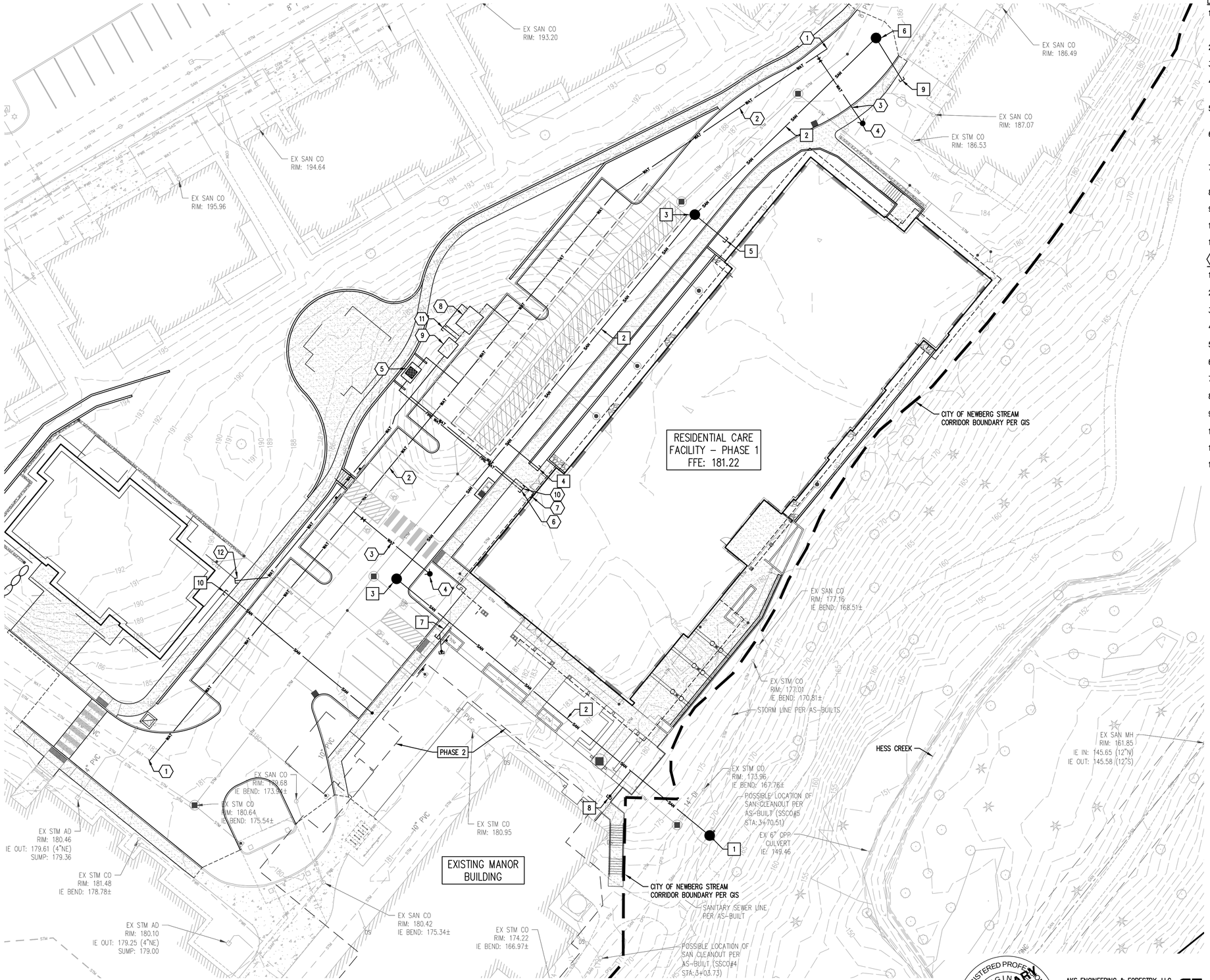

KEYED SANITARY NOTES:

1. CONNECT TO EXISTING 8" PVC SANITARY MAIN PER AS-BUILT
   ESTIMATED RIM: ±169.5 (SET 18" ABOVE FG)
   ESTIMATED IE: ±168.1
2. NEW SANITARY LINE
3. NEW SANITARY MANHOLE
4. 6" SANITARY BUILDING CONNECTION
   IE (6"): ±177.2
5. 6" SANITARY BUILDING CONNECTION
   IE (6"): ±176.7
6. CONNECT TO EXISTING SANITARY LINE WITH NEW SANITARY MANHOLE
   ESTIMATED IE: ±179.3
7. RECONNECT EXISTING SANITARY SERVICE AND PROVIDE NEW CONNECTION STUB FOR PHASE 2 IMPROVEMENTS
8. PHASE 2 SANITARY SEWER CONNECTION STUB
9. RECONNECT TO EXISTING SANITARY SERVICE
10. RELOCATED DUPLEX SANITARY BUILDING CONNECTION
11. NEW SANITARY CLEANOUT

KEYED WATER NOTES:

1. CONNECT TO EXISTING 8" DI WATER MAIN
2. RELOCATED 8" DI WATER MAIN WITH ALL RESTRAINED JOINTS
3. NEW 6" DI FIRE HYDRANT SERVICE
4. NEW FIRE HYDRANT
5. NEW 6" FIRE DOUBLE CHECK DETECTOR ASSEMBLY
6. 6" FIRE WATER BUILDING CONNECTION
7. NEW BUILDING-MOUNTED FDC
8. NEW 3" DOMESTIC WATER METER
9. NEW 4" DOMESTIC DOUBLE CHECK VALVE
10. 4" DOMESTIC WATER BUILDING CONNECTION
11. IRRIGATION POINT OF CONNECTION
12. RELOCATED DUPLEX DOMESTIC WATER BUILDING CONNECTION

N

SCALE: 1" = 20 FEET

20 0 4 10 20

ORIGINAL PAGE SIZE: 22" x 34"

LRS ARCHITECTS

219081 IC300 – PRELIMINARY WATER & SANITARY SEWER PLAN

REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1999
CHARLES EDWARD GREGORY

PRELIMINARY
NOT FOR
CONSTRUCTION

RENEWS: JUNE 30, 2021

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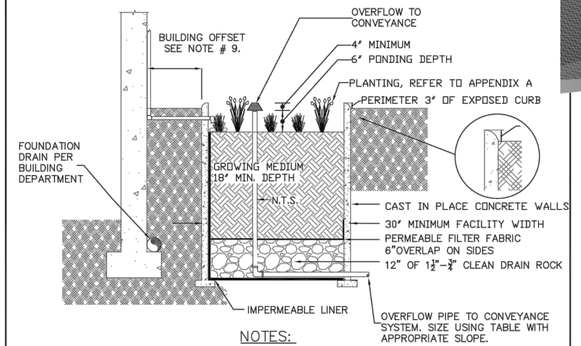
PRIVATE/ PUBLIC WATER QUALITY & QUANTITY TREATMENT



OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
822	3
1,880	4
3,340	6

OVERFLOW PIPE SIZE (1/4 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
1,160	3
2,650	4
4,720	6

NOTES:

1. MAXIMUM SLOPE OF PLANTER 0.5%.
2. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM PIPING TO FACILITY THROUGH WALL CORE HOLES, MAINTAIN MAXIMUM DISTANCE FROM THE OVERFLOW PIPE AS POSSIBLE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN PLUMBING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTRANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. PERMEABLE FILTER FABRIC REQUIRED BETWEEN LAYERS.
7. IMPERMEABLE LINER REQUIRED AT FACILITY BOTTOM AND ON WALLS ADJACENT TO STRUCTURES (AS SHOWN).
8. "PARTIAL" INFILTRATION FACILITIES ARE ENCOURAGED. IMPERMEABLE LINER LOCATED AT FACILITY BOTTOM, MAY BE REMOVED FOR "PARTIAL" INFILTRATION, APPROVAL BY DESIGN PROFESSIONAL AND BUILDING DEPARTMENT REQUIRED.
9. BUILDING OFFSET REQUIRED ONLY WHEN INFILTRATING, 10 FT MINIMUM.
10. MUST BE LOCATED A MINIMUM OF 3 FT FROM ADJACENT PROPERTY LINE.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

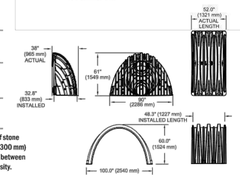
FLOW THROUGH PLANTER

SCALE: N.T.S.
DATE: MARCH 2014
APPROVED BY: JAY H.
STANDARD DRAWING: 452

StormTech ADS

MC-4500 CHAMBER

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots, thus maximizing land usage for private (commercial) and public applications. StormTech chambers can also be used in conjunction with Green Infrastructure, thus enhancing the performance and extending the service life of these practices.



STORMTECH MC-4500 CHAMBER
(not to scale)

Nominal Chamber Specifications

Size (L x W x H)
52" x 100" x 60"
1321 mm x 2540 mm x 1524 mm

Chamber Storage
106.5 ft³ (3.01 m³)

Min. Installed Storage*
162.6 ft³ (4.60 m³)

Weight
Nominal 125 lbs (56.7 kg)

Shipping
7 chambers/pallet
5 end caps/pallet
11 pallets/truck

*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below chambers, 9" (230 mm) of stone between chambers/end caps and 40% stone porosity.

STORMTECH MC-4500 END CAP
(not to scale)

Nominal End Cap Specifications

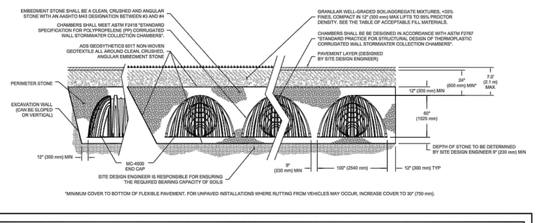
Size (L x W x H)
38" x 90" x 61"
965 mm x 2286 mm x 1549 mm

End Cap Storage
39.5 ft³ (1.12 m³)

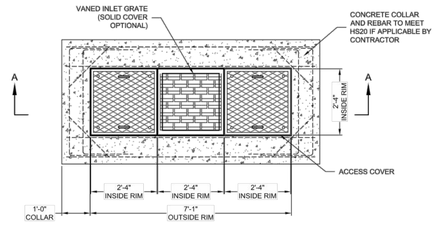
Min. Installed Storage*
115.3 ft³ (3.26 m³)

Weight
Nominal 90.0 lbs (40.8 kg)

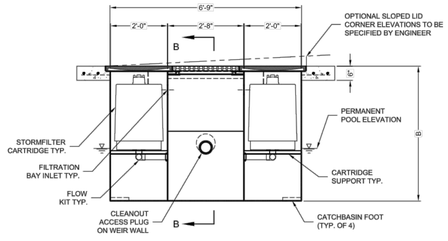
*Assumes a minimum of 12" (300 mm) of stone above, 9" (230 mm) of stone below, 12" (300 mm) of stone perimeter, 9" (230 mm) of stone between chambers/end caps and 40% stone porosity.



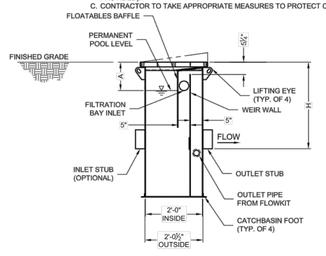
*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 30" (750 mm).



PLAN VIEW



SECTION A-A



SECTION B-B

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 2 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF TWO CARTRIDGES. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL.
PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (H)	3.05'			2.3'			3.3'		
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.79	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-9"			3'-9"			4'-9"		

* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

GENERAL NOTES

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. WWW.CONTECHES.COM
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

INSTALLATION NOTES

A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

2-CARTRIDGE DEEP CATCHBASIN STORMFILTER DATA

STRUCTURE ID		XXX
WATER QUALITY FLOW RATE (cfs)		X.XX
PEAK FLOW RATE (<1.8 cfs)		X.XX
RETURN PERIOD OF PEAK FLOW (yrs)		XXX
CARTRIDGE FLOW RATE (gpm)		XX
MEDIA TYPE (PERLITE, ZPG, PSORB)		XXXXX
RIM ELEVATION		XXX.XX'
PIPE DATA:	I.E.	DIAMETER
INLET STUB	XXX.XX'	XX"
OUTLET STUB	XXX.XX'	XX"

CONFIGURATIONS

OUTLET
INLET
INLET

SLOPED LID	YES/NO
SOLID COVER	YES/NO

NOTES/SPECIAL REQUIREMENTS:

The Stormwater Management StormFilter

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-526-3999 513-645-7000 513-645-7993 FAX

2 CARTRIDGE CATCHBASIN
STORMFILTER
STANDARD DETAIL

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REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 14, 1999
EDWARD GREGORY
RENEWS: JUNE 30, 2021

PRELIMINARY NOT FOR CONSTRUCTION

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LRS ARCHITECTS

219081 IC500 – DETAILS

MANOR REDEVELOPMENT PHASE 1

L1 - EXISTING TREE INVENTORY AND PROTECTION PLAN

MAINTENANCE NOTES FOR EXISTING TREES

A. WASH OFF FOLIAGE WHICH BECOMES SOILED DURING CONSTRUCTION.
B. WATER TREES AND OTHER VEGETATION WHICH ARE TO REMAIN AS NECESSARY TO MAINTAIN THEIR HEATH DURING THE COURSE OF THE WORK. RATE AND FREQUENCY OF APPLICATION TO BE DETERMINED BY PROJECT ARBORIST.
C. ALL PRUNING SHALL BE PERFORMED BY A CURRENT ARBORIST LICENSED WITHIN THE STATE/COUNTY/CITY WHERE THE WORK IS TO BE COMPLETED.

EXISTING VEGETATION PROTECTION AND REMOVAL WITHIN PROJECT LIMIT OF WORK

A. CLEAR AND GRUB ALL INVASIVE VEGETATION. ALL OTHER SHRUBS, TREE SAPLINGS/VOLUNTEERS, AND GROUNDCOVERS TO BE CLEARED AND GRUBBED UNLESS OTHERWISE NOTED IN PLANS. TREES TO BE PROTECTED AND REMOVED AS INDICATED IN THE EXISTING VEGETATION AND TREE INVENTORY PLAN.

SITE VEGETATION NOTES

SEE CIVIL FOR SOIL PROTECTION AND LIMIT OF GRADING.

A. ALL LANDSCAPE AREAS TO BE REPAIRED AS NEEDED DUE TO CONSTRUCTION ACTIVITIES.
INCLUDING BUT NOT LIMITED TO:
- SOIL COMPACTION FROM EQUIPMENT TRAFFIC OR MATERIAL STORAGE
- REPAIR NECESSARY TO FEATHER IN NEW FINISHED GRADE WITH EXISTING GRADE
- LIMIT OF WORK BOUNDARY AND/OR ROOT PROTECTION FENCING REMOVAL OR INSTALLATION
- GRUBBING AND REMOVAL OF NON-NATIVE PLANT SPECIES
- INSTALLATION OR RE-VAMP WORK REQUIRED TO COMPLETE SITE WIDE IRRIGATION SYSTEM EXPANSION

B. TEMPORARY IRRIGATION TO BE PROVIDED AT ALL AREAS WHERE EXISTING LANDSCAPING IS REPLACED DUE TO CONSTRUCTION ACTIVITIES. THIS IRRIGATION SHALL BE MAINTAINED UNTIL PLANTINGS ARE FULLY ESTABLISHED. ALL TEMPORARY SURFACE IRRIGATION SYSTEMS SHALL BE REMOVED BY CONTRACTOR AFTER LANDSCAPING HAS BEEN ESTABLISHED AND CAN SURVIVE WITHOUT IRRIGATION.

TREE PROTECTION NOTES

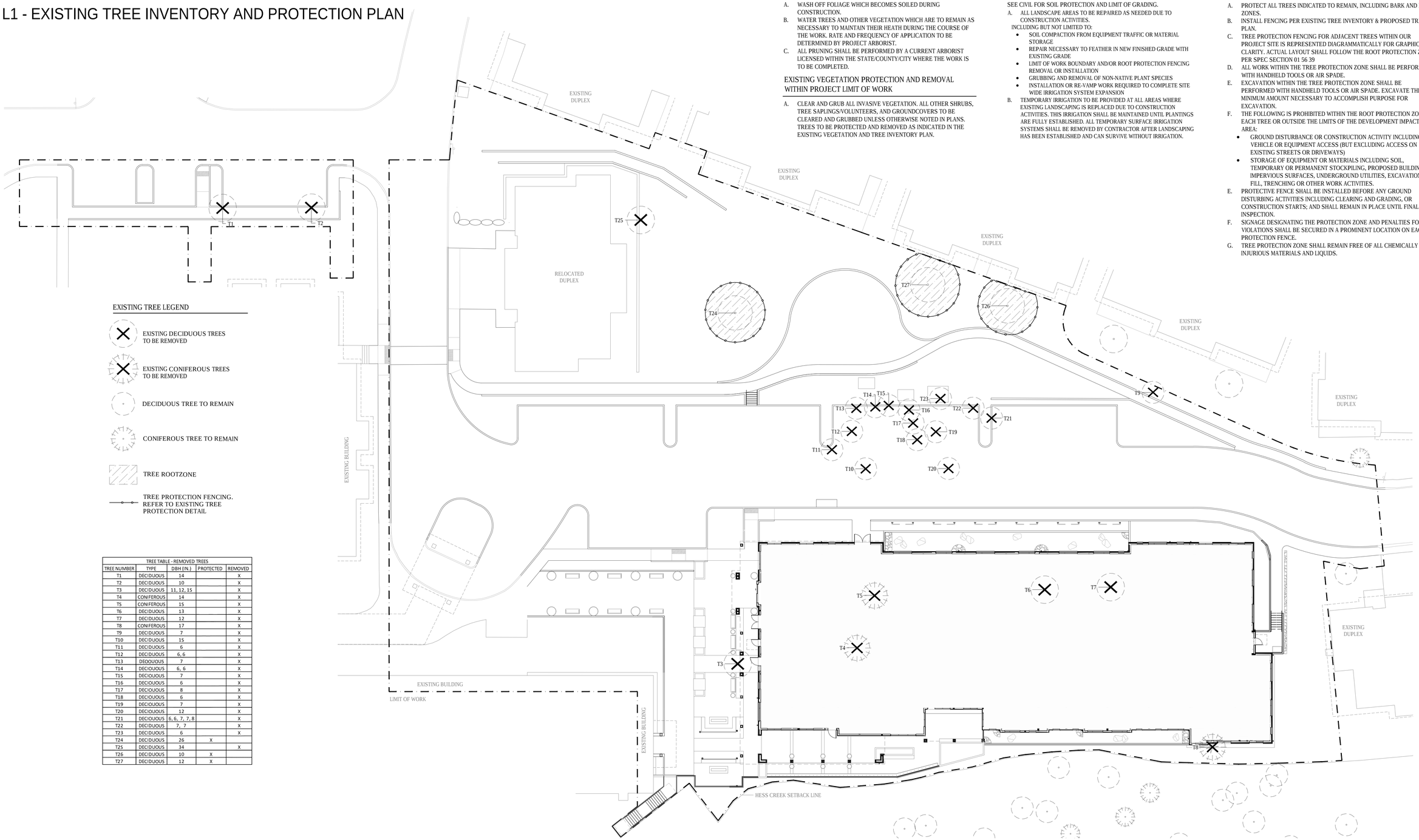
A. PROTECT ALL TREES INDICATED TO REMAIN, INCLUDING BARK AND ROOT ZONES.
B. INSTALL FENCING PER EXISTING TREE INVENTORY & PROPOSED TREE PLAN.
C. TREE PROTECTION FENCING FOR ADJACENT TREES WITHIN OUR PROJECT SITE IS REPRESENTED DIAGRAMMATICALLY FOR GRAPHIC CLARITY. ACTUAL LAYOUT SHALL FOLLOW THE ROOT PROTECTION ZONE PER SPEC SECTION 01 56 39
D. ALL WORK WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED WITH HANDHELD TOOLS OR AIR SPADE.
E. EXCAVATION WITHIN THE TREE PROTECTION ZONE SHALL BE PERFORMED WITH HANDHELD TOOLS OR AIR SPADE. EXCAVATE THE MINIMUM AMOUNT NECESSARY TO ACCOMPLISH PURPOSE FOR EXCAVATION.
F. THE FOLLOWING IS PROHIBITED WITHIN THE ROOT PROTECTION ZONE OF EACH TREE OR OUTSIDE THE LIMITS OF THE DEVELOPMENT IMPACT AREA:
- GROUND DISTURBANCE OR CONSTRUCTION ACTIVITY INCLUDING VEHICLE OR EQUIPMENT ACCESS (BUT EXCLUDING ACCESS ON EXISTING STREETS OR DRIVEWAYS)
- STORAGE OF EQUIPMENT OR MATERIALS INCLUDING SOIL, TEMPORARY OR PERMANENT STOCKPILING, PROPOSED BUILDINGS, IMPERVIOUS SURFACES, UNDERGROUND UTILITIES, EXCAVATION OR FILL, TRENCHING OR OTHER WORK ACTIVITIES.

E. PROTECTIVE FENCE SHALL BE INSTALLED BEFORE ANY GROUND DISTURBING ACTIVITIES INCLUDING CLEARING AND GRADING, OR CONSTRUCTION STARTS; AND SHALL REMAIN IN PLACE UNTIL FINAL INSPECTION.
F. SIGNAGE DESIGNATING THE PROTECTION ZONE AND PENALTIES FOR VIOLATIONS SHALL BE SECURED IN A PROMINENT LOCATION ON EACH PROTECTION FENCE.
G. TREE PROTECTION ZONE SHALL REMAIN FREE OF ALL CHEMICALLY INJURIOUS MATERIALS AND LIQUIDS.

EXISTING TREE LEGEND

- EXISTING DECIDUOUS TREES TO BE REMOVED
- EXISTING CONIFEROUS TREES TO BE REMOVED
- DECIDUOUS TREE TO REMAIN
- CONIFEROUS TREE TO REMAIN
- TREE ROOTZONE
- TREE PROTECTION FENCING. REFER TO EXISTING TREE PROTECTION DETAIL

TREE TABLE - REMOVED TREES				
TREE NUMBER	TYPE	DBH (IN.)	PROTECTED	REMOVED
T1	DECIDUOUS	14		X
T2	DECIDUOUS	10		X
T3	DECIDUOUS	11, 12, 15		X
T4	CONIFEROUS	14		X
T5	CONIFEROUS	15		X
T6	DECIDUOUS	13		X
T7	DECIDUOUS	12		X
T8	CONIFEROUS	17		X
T9	DECIDUOUS	7		X
T10	DECIDUOUS	15		X
T11	DECIDUOUS	6		X
T12	DECIDUOUS	6, 6		X
T13	DEOOUOUS	7		X
T14	DECIOUOUS	6, 6		X
T15	DECIOUOUS	7		X
T16	DECIOUOUS	6		X
T17	DECIOUOUS	8		X
T18	DECIOUOUS	6		X
T19	DECIOUOUS	7		X
T20	DECIOUOUS	12		X
T21	DECIOUOUS	6, 6, 7, 7, 8		X
T22	DECIDUOUS	7, 7		X
T23	DECIDUOUS	6		X
T24	DECIDUOUS	26	X	
T25	DECIDUOUS	34		X
T26	DECIDUOUS	10	X	
T27	DECIDUOUS	12	X	



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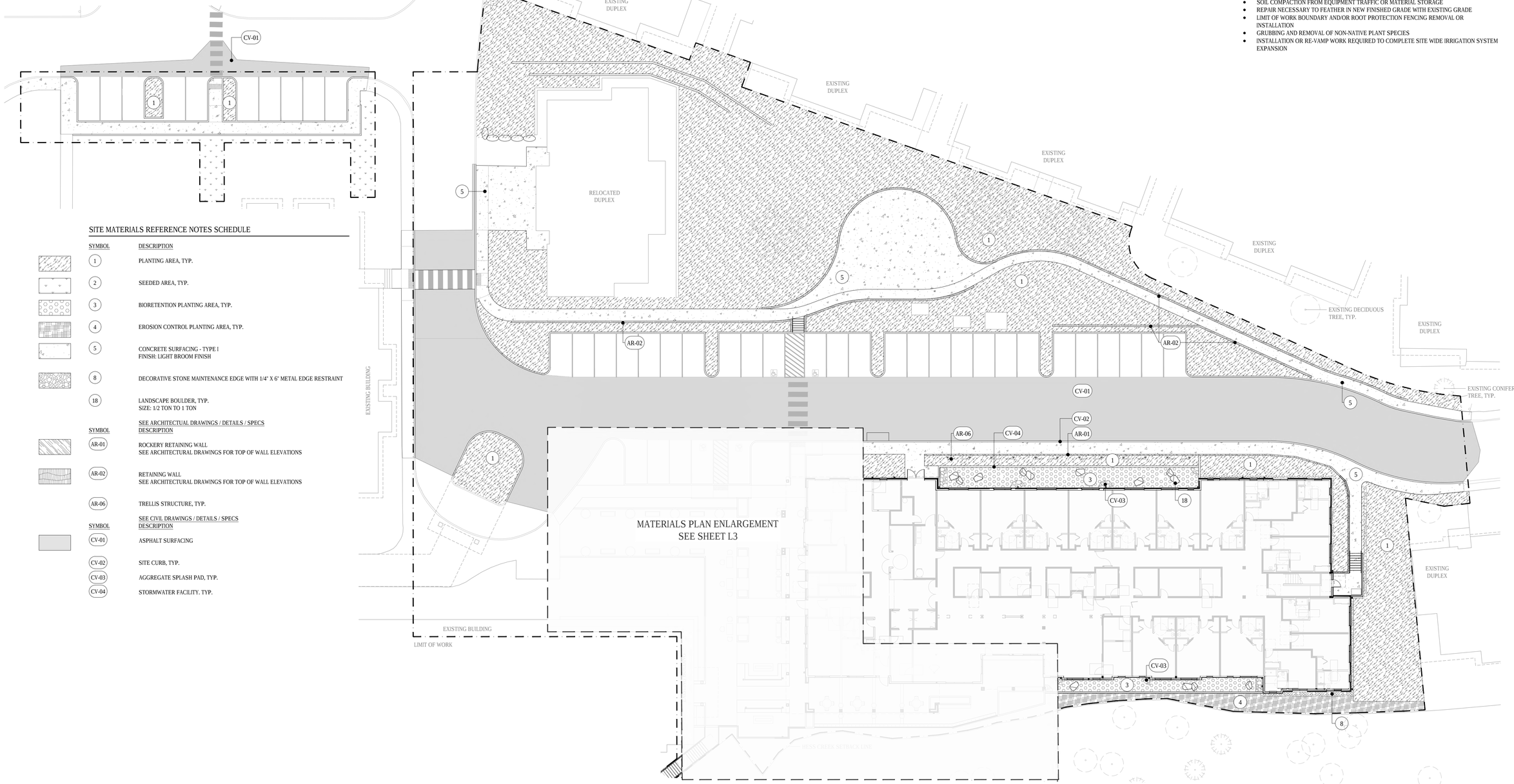
MANOR REDEVELOPMENT PHASE 1

L2 - MATERIALS PLAN

GENERAL SITE NOTES:

A. REFERENCE CIVIL AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL SITE WORK INFORMATION.
B. PLANTING AREAS SHALL HAVE A COMPLETE UNDERGROUND AUTOMATIC IRRIGATION SYSTEM WITH FULL HEAD TO HEAD COVERAGE UNLESS NOTED OTHERWISE.
C. ALL PLANTING AREAS WITH EXPOSED SOIL SHALL RECEIVE A MULCH LAYER AT DEPTH INDICATED IN PROJECT SPECIFICATIONS UNLESS NOTED OTHERWISE.
D. NOTIFY LANDSCAPE ARCHITECT OF ANY FIELD CHANGES TO THE SITE PLANS WHICH MAY REQUIRE ADJUSTMENT OF DESIGN.
E. ALL LANDSCAPE AREAS TO BE REPAIRED AS NEEDED DUE TO CONSTRUCTION ACTIVITIES. INCLUDES:
- SOIL COMPACTION FROM EQUIPMENT TRAFFIC OR MATERIAL STORAGE
- REPAIR NECESSARY TO FEATHER IN NEW FINISHED GRADE WITH EXISTING GRADE
- LIMIT OF WORK BOUNDARY AND/OR ROOT PROTECTION FENCING REMOVAL OR INSTALLATION
- GRUBBING AND REMOVAL OF NON-NATIVE PLANT SPECIES
- INSTALLATION OR RE-VAMP WORK REQUIRED TO COMPLETE SITE WIDE IRRIGATION SYSTEM EXPANSION



SITE MATERIALS REFERENCE NOTES SCHEDULE

SYMBOL		DESCRIPTION
	1	PLANTING AREA, TYP.
	2	SEEDED AREA, TYP.
	3	BIORETENTION PLANTING AREA, TYP.
	4	EROSION CONTROL PLANTING AREA, TYP.
	5	CONCRETE SURFACING - TYPE I FINISH: LIGHT BROOM FINISH
	8	DECORATIVE STONE MAINTENANCE EDGE WITH 1/4" X 6" METAL EDGE RESTRAINT
	18	LANDSCAPE BOULDER, TYP. SIZE: 1/2 TON TO 1 TON

SYMBOL	SEE ARCHITECTUAL DRAWINGS / DETAILS / SPECS DESCRIPTION
AR-01	ROCKERY RETAINING WALL SEE ARCHITECTURAL DRAWINGS FOR TOP OF WALL ELEVATIONS
AR-02	RETAINING WALL SEE ARCHITECTURAL DRAWINGS FOR TOP OF WALL ELEVATIONS
AR-06	TRELLIS STRUCTURE, TYP.

SYMBOL	SEE CIVIL DRAWINGS / DETAILS / SPECS DESCRIPTION
CV-01	ASPHALT SURFACING
CV-02	SITE CURB, TYP.
CV-03	AGGREGATE SPLASH PAD, TYP.
CV-04	STORMWATER FACILITY. TYP.

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219081 | L2 - MATERIALS PLAN
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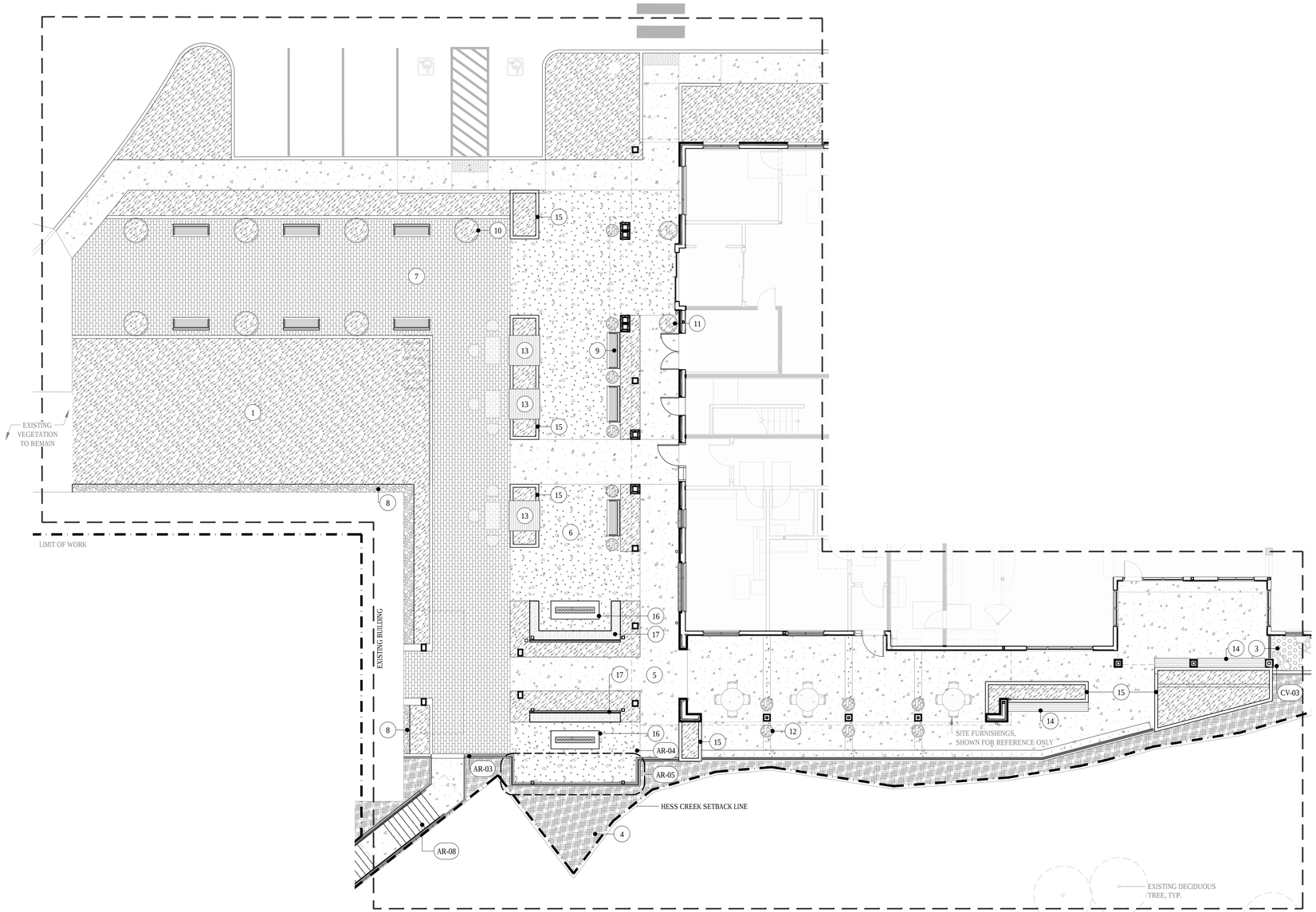
MANOR REDEVELOPMENT PHASE 1

L3 - MATERIALS PLAN ENLARGEMENT



MATERIALS ENLARGEMENT REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1	PLANTING AREA, TYP.
3	BIORETENTION PLANTING AREA, TYP.
4	EROSION CONTROL PLANTING AREA, TYP.
5	CONCRETE SURFACING - TYPE I FINISH: LIGHT BROOM FINISH
6	CONCRETE SURFACING - TYPE II FINISH: TOPCAST 50
7	UNIT PAVERS INSTALLATION: UNIT BOND PATTERN: RUNNIG BOND
8	DECORATIVE STONE MAINTENANCE EDGE WITH 1/4" X 6" METAL EDGE RESTRAINT

SYMBOL	DESCRIPTION
9	BENCH MANUFACTURER: LANDSCAPE FORMS OR APPROVED EQUAL MODEL: 72" GRETCHEN BENCH OR APPROVED EQUAL
10	DECORATIVE PLANTER TYPE I, TYP. MANUFACTURER: TOURNESOL OR APPROVED EQUAL MODEL: DCS-4800 MATERIAL / FINISH: TBD
11	DECORATIVE PLANTER TYPE II, TYP. MANUFACTURER: TOURNESOL OR APPROVED EQUAL MODEL: DCS-3600 MATERIAL / FINISH: TBD
12	DECORATIVE PLANTER TYPE III, TYP. MANUFACTURER: TOURNESOL OR APPROVED EQUAL MODEL: DCS-2400 MATERIAL / FINISH: TBD
13	BUILT-IN BENCH TYPE I
14	BUILT-IN BENCH TYPE II
15	RAISED CONCRETE PLANTER
16	FIRE TABLE MANUFACTURER: PALOFORM OR APPROVED EQUAL MODEL: MODIFIED ROBATA DIMENSIONS: 36"W X 96"L X 18"T MATERIAL: STEEL FINISH TBD
17	CONCRETE SEATWALL WITH INTEGRATED HEATING

SYMBOL	SEE ARCHITECTUAL DRAWINGS / DETAILS / SPECS DESCRIPTION
AR-03	GUARDRAIL, TYP.
AR-04	AR-04 OVERHEAD STRUCTURE WITH WEATHERPROOF TOP COVER BASIS OF DESIGN: TRELLIS WITH PLEXI-GLASS ROOF
AR-05	CANTILEVER CONCRETE VIEWING PLATFORM
AR-08	STAIRS AND RAILING

SYMBOL	SEE CIVIL DRAWINGS / DETAILS / SPECS DESCRIPTION
CV-03	AGGREGATE SPLASH PAD, TYP.

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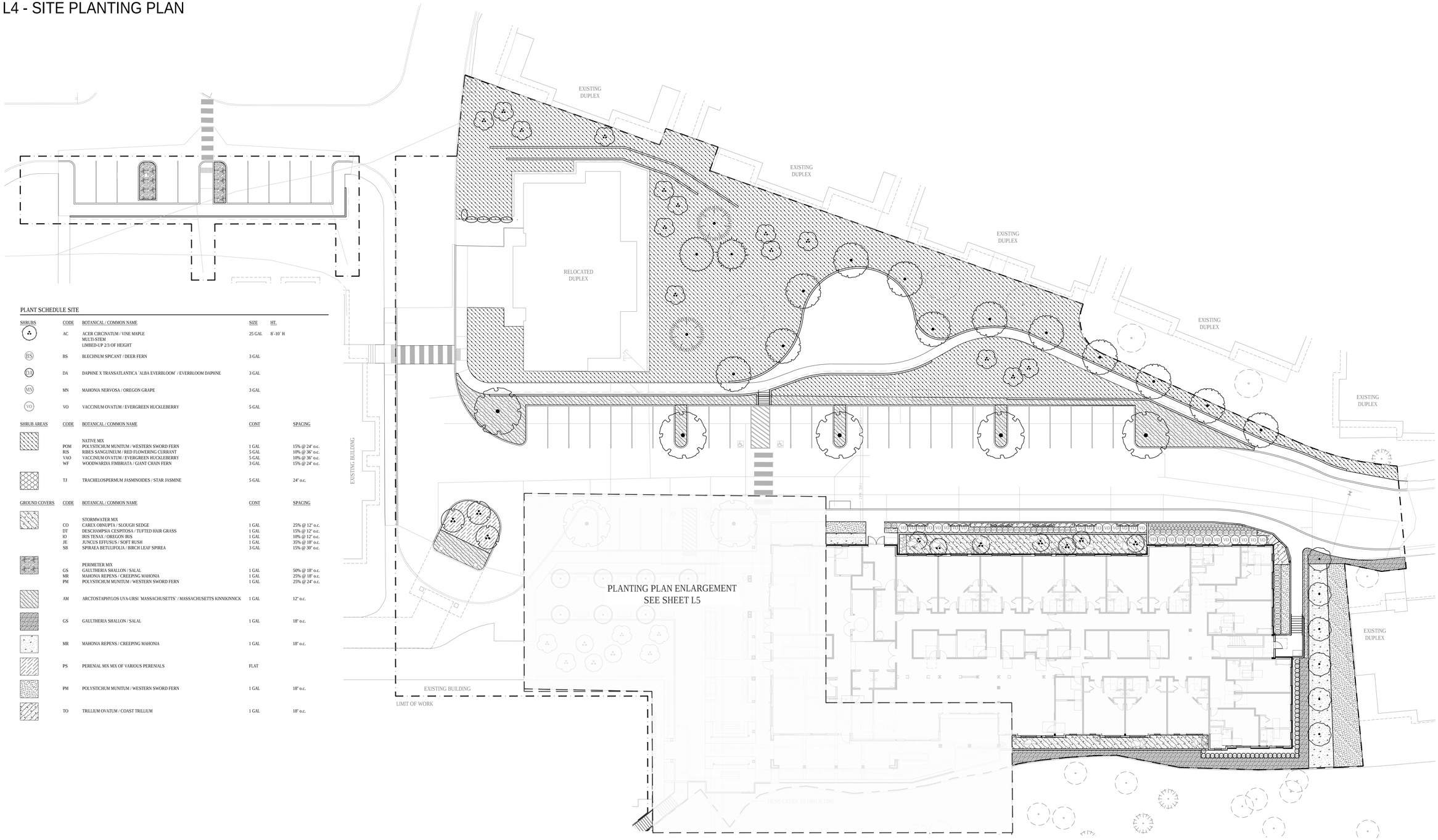
MANOR REDEVELOPMENT PHASE 1

L4 - SITE PLANTING PLAN



PLANT SCHEDULE SITE

SHRUBS	CODE	BOTANICAL / COMMON NAME	SIZE	HT.
	AC	ACER CIRCINATUM / VINE MAPLE MULTI-STEM LIMBED-UP 2/3 OF HEIGHT	25 GAL	8'-10' H
BS	BS	BLECHNUM SPICANT / DEER FERN	3 GAL	
DA	DA	DAPHNE X TRANSATLANTICA `ALBA EVERBLOOM` / EVERBLOOM DAPHNE	3 GAL	
MN	MN	MAHONIA NERVOSA / OREGON GRAPE	3 GAL	
VO	VO	VACCINUM OVATUM / EVERGREEN HUCKLEBERRY	5 GAL	

SHRUB AREAS	CODE	BOTANICAL / COMMON NAME	CONT	SPACING
		NATIVE MIX		
	POM	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL	15% @ 24" o.c.
	RIS	RIBES SANGUINEUM / RED FLOWERING CURRANT	5 GAL	10% @ 36" o.c.
	VAO	VACCINUM OVATUM / EVERGREEN HUCKLEBERRY	5 GAL	10% @ 36" o.c.
	WF	WOODWARDIA FIMBRIATA / GIANT CHAIN FERN	3 GAL	15% @ 24" o.c.
	TJ	TRACHELOSPERMUM JASMINOIDES / STAR JASMINE	5 GAL	24" o.c.

GROUND COVERS	CODE	BOTANICAL / COMMON NAME	CONT	SPACING
		STORMWATER MIX		
	CO	CAREX OBNUPTA / SLOUGH SEDGE	1 GAL	25% @ 12" o.c.
	DT	DESCHAMPSIA CESPITOSA / TUFTED HAIR GRASS	1 GAL	15% @ 12" o.c.
	IO	IRIS TENAX / OREGON IRIS	1 GAL	10% @ 12" o.c.
	JE	JUNCUS EFFUSUS / SOFT RUSH	1 GAL	35% @ 18" o.c.
	SB	SPIRAEA BETULIFOLIA / BIRCH LEAF SPIREA	3 GAL	15% @ 30" o.c.
		PERIMETER MIX		
	GS	GAULTHERIA SHALLON / SALAL	1 GAL	50% @ 18" o.c.
	MR	MAHONIA REPENS / CREEPING MAHONIA	1 GAL	25% @ 18" o.c.
	PM	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL	25% @ 24" o.c.
	AM	ARCTOSTAPHYLOS UVA-URSI `MASSACHUSETTS` / MASSACHUSETTS KINNIKINNICK	1 GAL	12" o.c.
	GS	GAULTHERIA SHALLON / SALAL	1 GAL	18" o.c.
	MR	MAHONIA REPENS / CREEPING MAHONIA	1 GAL	18" o.c.
	PS	PERENIAL MIX MIX OF VARIOUS PERENIALS	FLAT	
	PM	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL	18" o.c.
	TO	TRILLIUM OVATUM / COAST TRILLIUM	1 GAL	18" o.c.

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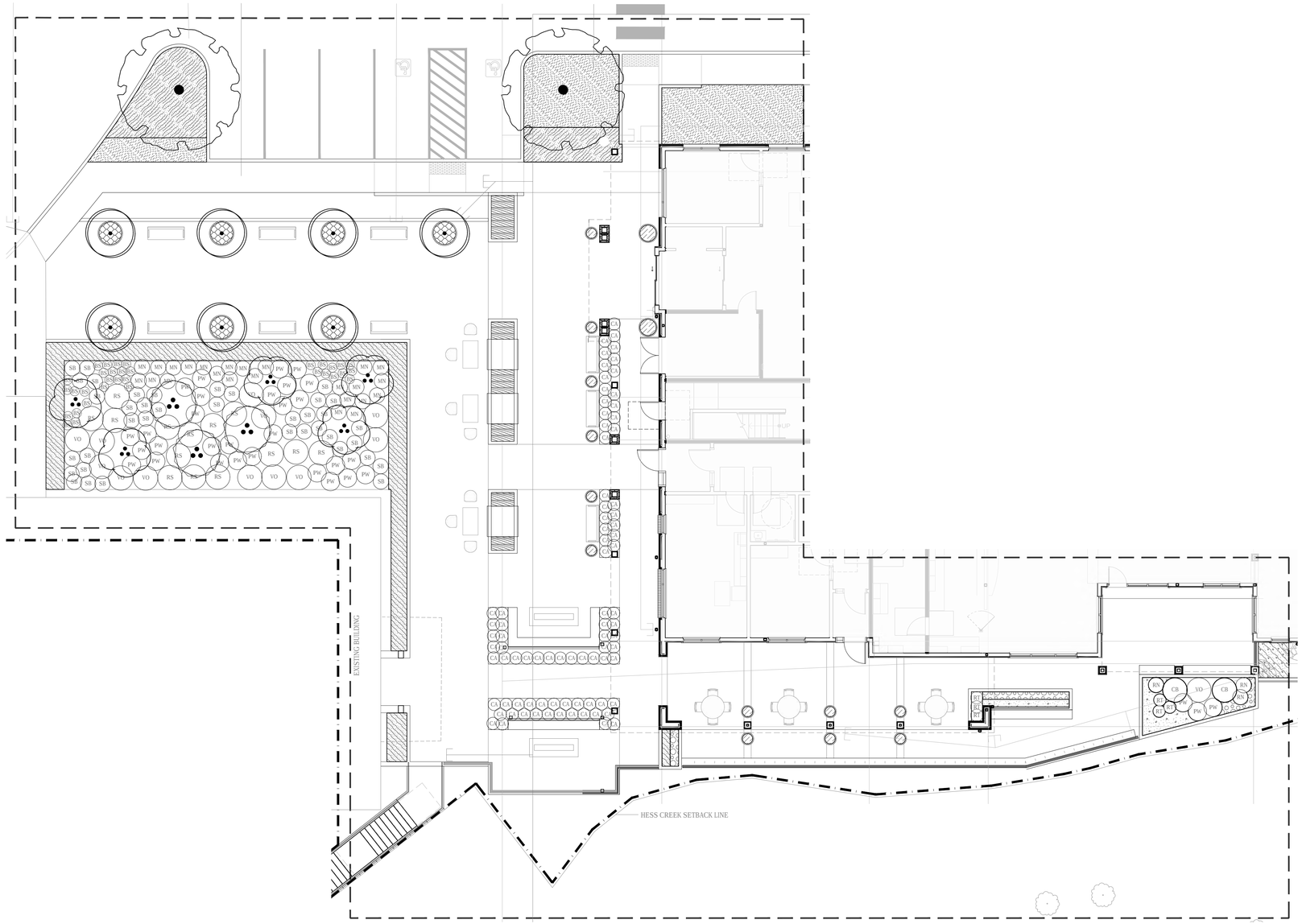
MANOR REDEVELOPMENT PHASE 1

L5 - PLANTING PLAN ENLARGEMENT



PLANT SCHEDULE ENLARGEMENT

TREES	CODE	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AP	ACER PALMATUM `SEIRYU` / SEIRYU JAPANESE MAPLE	25 GAL	2" CAL	8-10` H
	AS	AMELANCHIER ALNIFOLIA / SERVICEBERRY	25 GAL	MULTI-TRUNK	8-10` H
	ZS	ZELKOVA SERRATA `GREEN VASE` / GREEN VASE SAWLEAF ZELKOVA	B & B	2.5" CAL	12-15` H

SHRUBS	CODE	BOTANICAL / COMMON NAME	SIZE	HT.
	AC	ACER CIRCINATUM / VINE MAPLE MULTI-STEM LIMBED-UP 2/3 OF HEIGHT	25 GAL	8`-10` H
BS	BS	BLECHNUM SPICANT / DEER FERN	3 GAL	
CA	CA	CALAMAGROSTIS X ACUTIFLORA `KARL FOERSTER` / KARL FOERSTER FEATHER REED GRASS	3 GAL	
CB	CB	CEANOTHUS THYRSIFLORUS `BIXBY BRIDGE` / BIXBY BRIDGE BLUE BLOSSOM	5 GAL	
MN	MN	MAHONIA NERVOSA / OREGON GRAPE	3 GAL	
PW	PW	PHILADELPHUS LEWISII / WILD MOCKORANGE	5 GAL	
RS	RS	RIBES SANGUINEUM / RED FLOWERING CURRANT	5 GAL	
RN	RN	ROSA NUTKANA / NOOTKA ROSE	5 GAL	
RT	RT	RUBUS PARVIFLORUS / THIMBLEBERRY	3 GAL	
SB	SB	SPIRAEA BETULIFOLIA / BIRCH LEAF SPIREA	3 GAL	
VO	VO	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY	5 GAL	

SHRUB AREAS	CODE	BOTANICAL / COMMON NAME	CONT	SPACING
	TJ	TRACHELOSPERMUM JASMINOIDES / STAR JASMINE	5 GAL	24" o.c.

GROUND COVERS	CODE	BOTANICAL / COMMON NAME	CONT	SPACING
	AM	ARCTOSTAPHYLOS UVA-URSI `MASSACHUSETTS` / MASSACHUSETTS KINNIKINNICK	1 GAL	12" o.c.
	FC	FRAGARIA CHILOENSIS / BEACH STRAWBERRY	1 GAL	12" o.c.
	MR	MAHONIA REPENS / CREEPING MAHONIA	1 GAL	18" o.c.
	PH	PENNISETUM ALOPECUROIDES `HAMELN` / HAMELN FOUNTAIN GRASS	1 GAL	18" o.c.
	PS	PERENIAL MIX MIX OF VARIOUS PERENIALS	FLAT	
	PM	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	1 GAL	18" o.c.

1 PLANTING PLAN ENLARGEMENT

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MANOR REDEVELOPMENT PHASE 1

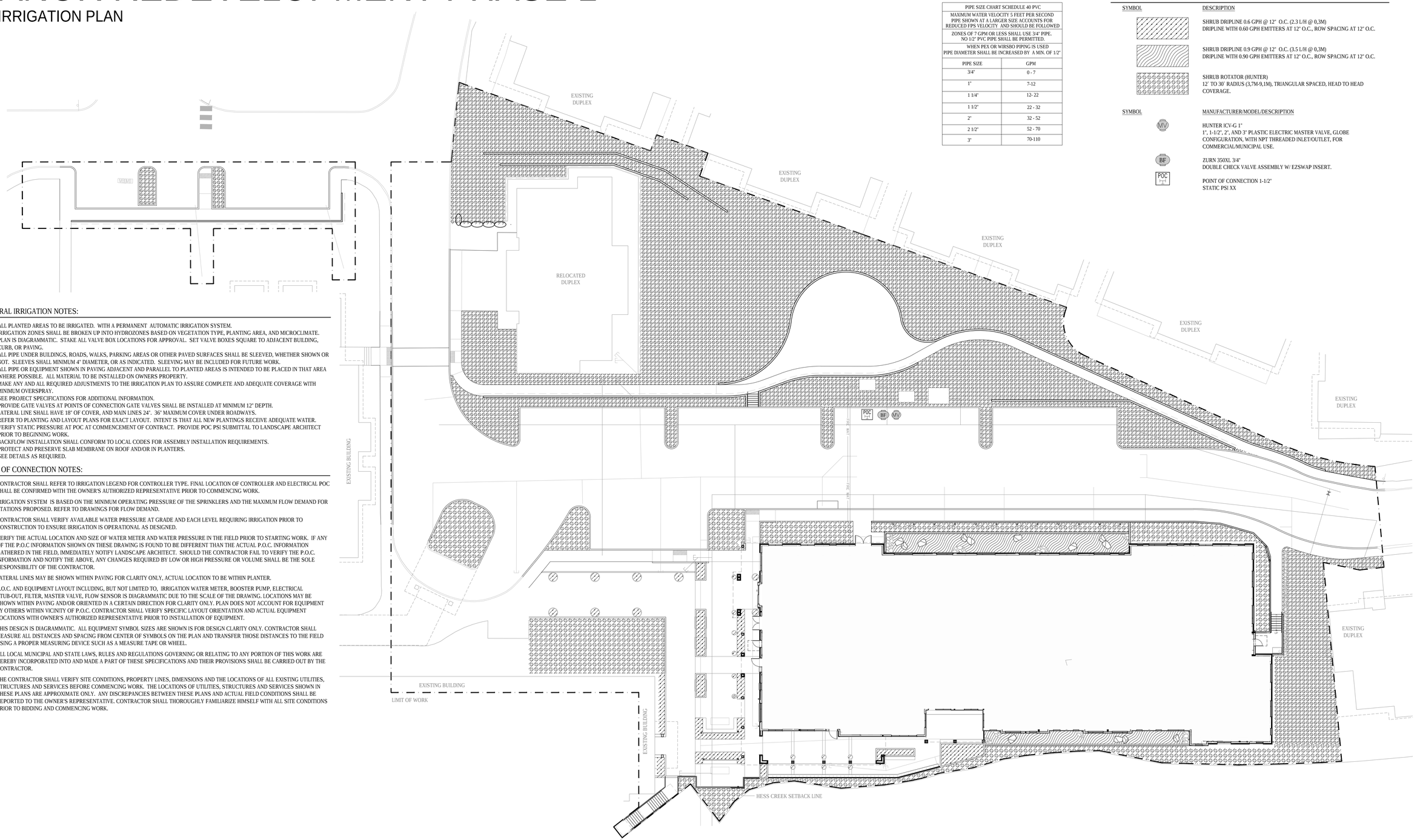
L6 - IRRIGATION PLAN

PIPE SIZE CHART SCHEDULE 40 PVC	
MAXIMUM WATER VELOCITY 5 FEET PER SECOND PIPE SHOWN AT A LARGER SIZE ACCOUNTS FOR REDUCED FPS VELOCITY AND SHOULD BE FOLLOWED	
ZONES OF 7 GPM OR LESS SHALL USE 3/4" PIPE. NO 1/2" PVC PIPE SHALL BE PERMITTED.	
WHEN PEX OR WIRSBO PIPING IS USED PIPE DIAMETER SHALL BE INCREASED BY A MIN. OF 1/2"	
PIPE SIZE	GPM
3/4"	0 - 7
1"	7-12
1 1/4"	12- 22
1 1/2"	22 - 32
2"	32 - 52
2 1/2"	52 - 70
3"	70-110

IRRIGATION SCHEDULE

SYMBOL	DESCRIPTION
	SHRUB DRIPLINE 0.6 GPH @ 12" O.C. (2.3 L/H @ 0,3M) DRIPLINE WITH 0.60 GPH EMITTERS AT 12" O.C., ROW SPACING AT 12" O.C.
	SHRUB DRIPLINE 0.9 GPH @ 12" O.C. (3.5 L/H @ 0,3M) DRIPLINE WITH 0.90 GPH EMITTERS AT 12" O.C., ROW SPACING AT 12" O.C.
	SHRUB ROTATOR (HUNTER) 12' TO 30' RADIUS (3,7M-9,1M), TRIANGULAR SPACED, HEAD TO HEAD COVERAGE.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
MV	HUNTER ICV-G 1" 1", 1-1/2", 2", AND 3" PLASTIC ELECTRIC MASTER VALVE, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.
BF	ZURN 350XL 3/4" DOUBLE CHECK VALVE ASSEMBLY W/ EZSWAP INSERT.
POC	POINT OF CONNECTION 1-1/2" STATIC PSI XX



GENERAL IRRIGATION NOTES:

A. ALL PLANTED AREAS TO BE IRRIGATED. WITH A PERMANENT AUTOMATIC IRRIGATION SYSTEM.
B. IRRIGATION ZONES SHALL BE BROKEN UP INTO HYDROZONES BASED ON VEGETATION TYPE, PLANTING AREA, AND MICROCLIMATE.
C. PLAN IS DIAGRAMMATIC. STAKE ALL VALVE BOX LOCATIONS FOR APPROVAL. SET VALVE BOXES SQUARE TO ADJACENT BUILDING, CURB, OR PAVING.
D. ALL PIPE UNDER BUILDINGS, ROADS, WALKS, PARKING AREAS OR OTHER PAVED SURFACES SHALL BE SLEEVED, WHETHER SHOWN OR NOT. SLEEVES SHALL MINIMUM 4" DIAMETER, OR AS INDICATED. SLEEVING MAY BE INCLUDED FOR FUTURE WORK.
E. ALL PIPE OR EQUIPMENT SHOWN IN PAVING ADJACENT AND PARALLEL TO PLANTED AREAS IS INTENDED TO BE PLACED IN THAT AREA WHERE POSSIBLE. ALL MATERIAL TO BE INSTALLED ON OWNERS PROPERTY.
F. MAKE ANY AND ALL REQUIRED ADJUSTMENTS TO THE IRRIGATION PLAN TO ASSURE COMPLETE AND ADEQUATE COVERAGE WITH MINIMUM OVERSPRAY.
G. SEE PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.
H. PROVIDE GATE VALVES AT POINTS OF CONNECTION GATE VALVES SHALL BE INSTALLED AT MINIMUM 12" DEPTH.
I. LATERAL LINE SHALL HAVE 18" OF COVER, AND MAIN LINES 24". 36" MAXIMUM COVER UNDER ROADWAYS.
J. REFER TO PLANTING AND LAYOUT PLANS FOR EXACT LAYOUT. INTENT IS THAT ALL NEW PLANTINGS RECEIVE ADEQUATE WATER.
K. VERIFY STATIC PRESSURE AT POC AT COMMENCEMENT OF CONTRACT. PROVIDE POC PSI SUBMITTAL TO LANDSCAPE ARCHITECT PRIOR TO BEGINNING WORK.
L. BACKFLOW INSTALLATION SHALL CONFORM TO LOCAL CODES FOR ASSEMBLY INSTALLATION REQUIREMENTS.
M. PROTECT AND PRESERVE SLAB MEMBRANE ON ROOF AND/OR IN PLANTERS.
N. SEE DETAILS AS REQUIRED.

POINT OF CONNECTION NOTES:

A. CONTRACTOR SHALL REFER TO IRRIGATION LEGEND FOR CONTROLLER TYPE, FINAL LOCATION OF CONTROLLER AND ELECTRICAL POC SHALL BE CONFIRMED WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO COMMENCING WORK.

B. IRRIGATION SYSTEM IS BASED ON THE MINIMUM OPERATING PRESSURE OF THE SPRINKLERS AND THE MAXIMUM FLOW DEMAND FOR STATIONS PROPOSED. REFER TO DRAWINGS FOR FLOW DEMAND.

C. CONTRACTOR SHALL VERIFY AVAILABLE WATER PRESSURE AT GRADE AND EACH LEVEL REQUIRING IRRIGATION PRIOR TO CONSTRUCTION TO ENSURE IRRIGATION IS OPERATIONAL AS DESIGNED.

D. VERIFY THE ACTUAL LOCATION AND SIZE OF WATER METER AND WATER PRESSURE IN THE FIELD PRIOR TO STARTING WORK. IF ANY OF THE P.O.C INFORMATION SHOWN ON THESE DRAWING IS FOUND TO BE DIFFERENT THAN THE ACTUAL P.O.C. INFORMATION GATHERED IN THE FIELD, IMMEDIATELY NOTIFY LANDSCAPE ARCHITECT. SHOULD THE CONTRACTOR FAIL TO VERIFY THE P.O.C. INFORMATION AND NOTIFY THE ABOVE, ANY CHANGES REQUIRED BY LOW OR HIGH PRESSURE OR VOLUME SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

E. LATERAL LINES MAY BE SHOWN WITHIN PAVING FOR CLARITY ONLY, ACTUAL LOCATION TO BE WITHIN PLANTER.

F. P.O.C. AND EQUIPMENT LAYOUT INCLUDING, BUT NOT LIMITED TO, IRRIGATION WATER METER, BOOSTER PUMP, ELECTRICAL STUB-OUT, FILTER, MASTER VALVE, FLOW SENSOR IS DIAGRAMMATIC DUE TO THE SCALE OF THE DRAWING. LOCATIONS MAY BE SHOWN WITHIN PAVING AND/OR ORIENTED IN A CERTAIN DIRECTION FOR CLARITY ONLY. PLAN DOES NOT ACCOUNT FOR EQUIPMENT BY OTHERS WITHIN VICINITY OF P.O.C. CONTRACTOR SHALL VERIFY SPECIFIC LAYOUT ORIENTATION AND ACTUAL EQUIPMENT LOCATIONS WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION OF EQUIPMENT.

G. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SYMBOL SIZES ARE SHOWN IS FOR DESIGN CLARITY ONLY. CONTRACTOR SHALL MEASURE ALL DISTANCES AND SPACING FROM CENTER OF SYMBOLS ON THE PLAN AND TRANSFER THOSE DISTANCES TO THE FIELD USING A PROPER MEASURING DEVICE SUCH AS A MEASURE TAPE OR WHEEL.

H. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.

I. THE CONTRACTOR SHALL VERIFY SITE CONDITIONS, PROPERTY LINES, DIMENSIONS AND THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH ALL SITE CONDITIONS PRIOR TO BIDDING AND COMMENCING WORK.

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t. 503.232.0520
www.shapirodidway.com

0 20 40 80 feet
SCALE: 1" = 20'

Plan North True North

Friendsview RETIREMENT COMMUNITY

MANOR REDEVELOPMENT PHASE 1

L7 - PLANTING DETAILS

PLANTING NOTES:

DO NOT WILLFULLY PROCEED WITH PLANTING OPERATIONS WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN THE DURING DESIGN PROCESS. BRING SUCH CONDITIONS IMMEDIATELY TO ATTENTION OF OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. ASSUME FULL RESPONSIBILITY FOR COSTS INCURRED AND REQUIRED MODIFICATIONS DUE TO LACK OF PROVIDING SUCH NOTIFI CATION.

ENSURE THAT FINISH GRADE ELEVATIONS OF PLANTING AREAS ARE SET AT THE PROPER ELEVATIONS RELATIVE TO PAVING FINISH SURFACE ELEVATIONS, UTILITY COVERS AND CURBS. SHRUBS PLANTING AREAS AT 2" BELOW AND LAWN 1" BELOW ADJACENT GRADE. NOTIFY OWNER OF ANY DISCREPANCIES.

ASSURE POSITIVE DRAINAGE IN ALL PLANTING AREAS TO DRAIN AWAY FROM BUILDING, 2% MINIMUM.

PLANT MATERIAL, I.E. TREES, SHRUBS VINES, ESPALIERS AND GROUNDCOVERS, MUST BE APPROVED BY OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION. PLANT MATERIAL INSTALLED WITHOUT OWNER'S AUTHORIZED REPRESENTATIVE'S APPROVAL MAY BE SUBJECT TO REMOVAL AND REPLACEMENT WITH RELATED COSTS BORNE BY CONTRACTOR.

FINAL LOCATIONS OF PLANT MATERIALS ARE SUBJECT TO APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION. PERFORM THE FOLLOWING BEFORE BEGINNING PLANTING PIT EXCAVATION:

A. SHRUBS - PLACE ACTUAL PLANT CONTAINERS ON-SITE IN "FINAL" LOCATIONS.
B. TREES - CHALK OR STAKE CENTER OF TREE.

PLANTING SHALL NOT BE PERFORMED UNTIL PRE-PLANTING SOIL AMENDMENTS ARE COMPLETE AND APPROVED BY THE OWNER'S REPRESENATIVE.

IF CONFLICTS ARISE BETWEEN ACTUAL SIZE OF PLANTING AREAS ON-SITE AND THOSE AREAS INDICATED ON DRAWINGS, CONTACT OWNER'S AUTHORIZED REPRESENTATIVE FOR RESOLUTION. FAILURE TO MAKE SUCH CONFLICTS KNOWN TO OWNER'S AUTHORIZED REPRESENTATIVE IN A TIMELY FASHION MAY RESULT IN CONTRACTOR'S LIABILITY TO RELOCATE PLANT MATERIALS OR AT WORST CASE, BECOME UNABLE TO CHARGE OWNER FOR PLANT MATERIAL ALREADY PLANTED.

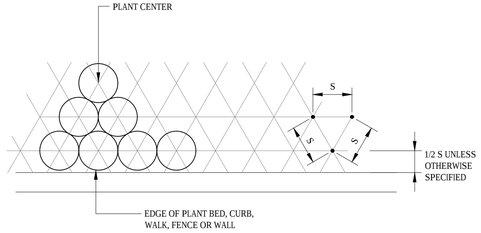
SHRUB AND GROUNDCOVER AREAS TO RECIEVE A 2-INCH DEEP LAYER MULCH TO BE SUBMITTED FOR APPROVAL FROM LANDSCAPE ARCHITECT.

AN AUTOMATIC IRRIGATION SYSTEM IS TO BE INSTALLED WITHIN ALL PLANTING AREAS PROVIDING HEAD TO HEAD COVERAGE.

PROVIDE ROOT CONTROL BARRIERS FOR ALL TREES PLANTED WITHIN 5' OF A HARDSCAPE EDGE SUCH AS PAVING, WALLS, STEPS, ETC. REFER TO PLANTING DETAILS FOR ADDITIONAL INFORMATION.

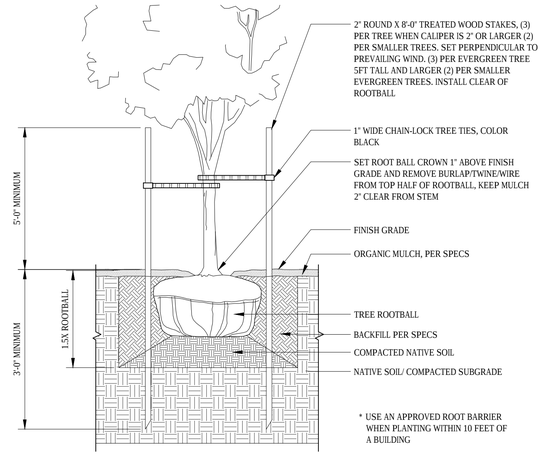
INSTALL PLANT MATERIAL WITH ITS BEST SIDE FACING PREDOMINATE VIEW OF PUBLIC.

PROVIDE THE PROPER SETBACK BETWEEN UTILITIES AND TREES - CONTACT CITY INSPECTOR FOR REQUIRED SETBACKS IN THE CASE THAT THE DRAWINGS ARE NOT CLEAR.



NOTE:
- S = SPACING ON CENTER (O.C.) AS SHOWN ON PLANS
- PROVIDE EQUIDISTANT TRIANGULATED SPACING AS SHOWN

3 GROUNDCOVER SPACING
1/2" = 1'-0" 329333.83-01



5 TREE PLANTING ON GRADE
NTS P-CO-20039-01

TREE BACKFILL AMENDED AS FOLLOWS:
- 3 PARTS OF EXISTING TOPSOIL
- 1 PART COMPOST
- AS SPECIFIED SEE CHART

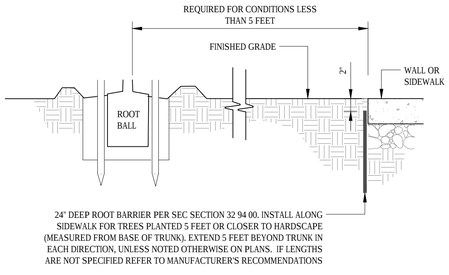
CALIPER SIZE	PERMAMATRIX POUNDS REQUIRED (DRY)
1.0"	5.00
1.5"	7.50
2.0"	10.00
2.5"	20.00
3.0"	30.00
3.5"	50.00

SHRUB, GRASSES AND GROUNDCOVER BACKFILL AMENDED AS FOLLOWS:
- 3 PARTS OF EXISTING TOPSOIL
- 1 PART COMPOST
- AS SPECIFIED SEE CHART

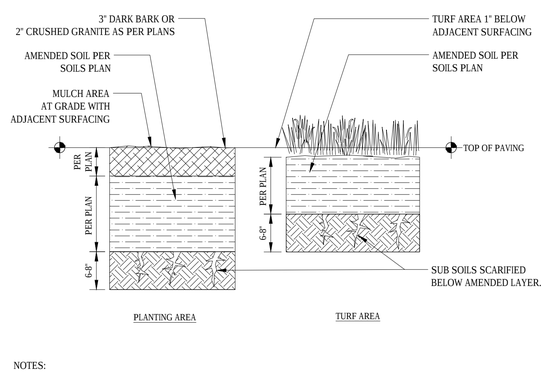
CONTAINER SIZE	PERMAMATRIX POUNDS REQUIRED (DRY)
PLUG	.05
4-INCH	.20
1 GAL.	.50
2 GAL.	.75
3 GAL.	1.25
6 GAL.	1.50
15 GAL.	5.00

PERMAMATRIX AVAILABLE LOCALLY FROM SUNMARK ENVIRONMENTAL 503.241.7333

1 PLANTING BACKFILL SOIL AMENDMENT SCHEDULE
1" = 1'-0" P-CO-20039-03

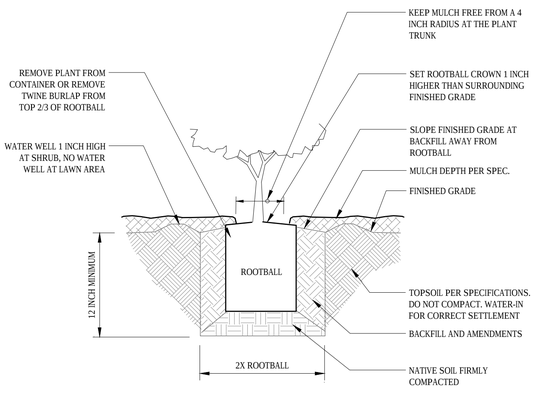


4 TREE ROOT BARRIER
1" = 1'-0" P-CO-20039-04



NOTES:
1. ALL SOIL AREAS DISTURBED OR COMPACTED DURING CONSTRUCTION AND NOT COVERED BY BUILDINGS SHALL BE AMENDED AS DESCRIBED.
2. SUBSOIL NOT TO BE DISTURBED BENEATH DRIPLINES OF PROTECTED EXISTING TREES ON SITE OR FROM ADJACENT PROPERTY.
3. DO NOT DISTURB COMPACTED SOILS ADJACENT TO STRUCTURAL FOOTINGS OR WALLS. CONTACT PROJECT CIVIL ENGINEER OR STRUCTURAL ENGINEER FOR RECOMMENDED SETBACKS PRIOR TO SITE WORK.

6 SOIL AMENDMENT AND DEPTH
1 1/2" = 1'-0" P-CO-20039-09



NOTE: CHECK ROOTBALL FOR PRESENCE OF ROOT FLARE AT BASE OF TRUNK. REMOVE EXCESS SOIL OVER ROOT FLARE AND ADJUST DEPTH OF PLANTING HOLE TO ACCOMODATE REDUCED ROOTBALL DEPTH IF NEEDED. ROOT FLARE MUST BE VISIBLE ABOVE MULCH/SOIL/ROOTBALL.

2 SHRUB PLANTING
1" = 1'-0" 329333-01

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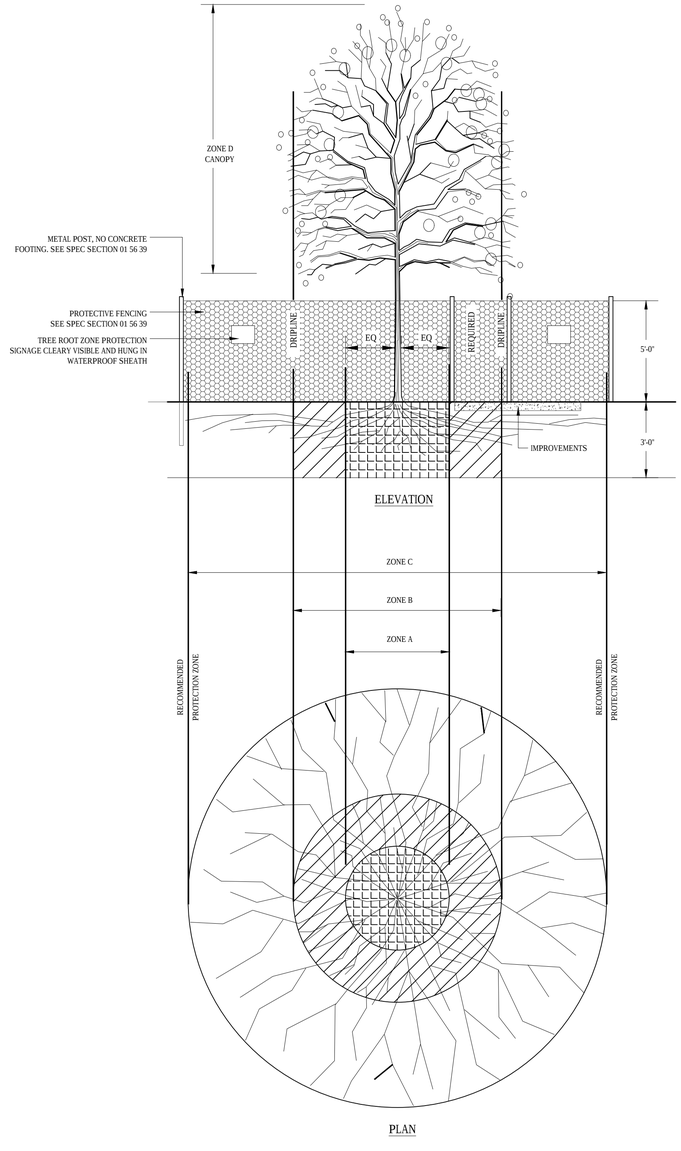
MANOR REDEVELOPMENT PHASE 1

L8 - PLANTING DETAILS



1 EXISTING TREE PROTECTION

3/8" = 1'-0"

TREE PROTECTION NOTES

- OWNER SHALL RETAIN A CERTIFIED ARBORIST. ALL REFERENCES WITHIN THIS DOCUMENT REFER TO THE OWNER'S CERTIFIED ARBORIST.
- ALL TREES WILL NEED TO BE EVALUATED AND TAGGED FOR PRESERVATION OR DEMOLITION BY THE OWNER'S CERTIFIED ARBORIST.
- THE PROJECT ARCHITECT AND OWNER'S CERTIFIED ARBORIST SHALL BE NOTIFIED IF ANY DISCREPANCIES ARE FOUND WITH THE TREES IDENTIFIED ON THIS PLAN AND ACTUAL CONDITIONS.

FENCING PROTECTION ZONE

ALL ZONES

1. PROTECTIVE FENCING SHALL BE PROVIDED AND MAINTAINED AT THE DRIP LINE OF EACH TREE OR GROUP OF TREES AT THE DRIP LINE. ORANGE OR GREEN PVC WEB FENCING MAY BE USED ONLY AS APPROVED BY THE CITY AND OWNER. ZONE C FENCING BEYOND THE DRIP LINE IS NOT REQUIRED BUT IS RECOMMENDED WHERE POSSIBLE.
2. THE APPROVAL OF THE OWNER'S CERTIFIED ARBORIST IS REQUIRED FOR USE/ACCESS WITHIN ZONES.
3. SURFACE PROTECTION MEASURES REQUIRED SUCH AS WOOD PLANKING OR STEEL PLATES UNDER BACKHOE STABILIZERS PLACED ANYWHERE WITHIN ZONES.
4. BARK MULCH REQUIRED AT 6"-8" DEPTH KEPT 12 INCHES CLEAR OF TRUNK.
5. NO MATERIALS, EQUIPMENT, SPOIL, OR WASTE OR WASHOUT / WASTEWATER I.E. CEMENT MAY BE DEPOSITED, STORED, OR PARKED WITHIN THE TREE PROTECTION ZONE C AT ALL TIMES.
6. PROVIDING SEASONAL WATERING AS NEEDED TO MAINTAIN HEALTH AND VIGOR OF PLANTS TO REMAIN. THIS INCLUDES PROVIDING WATER SUPPLY, PIPING AND HOSES, AND APPLICATION MATERIALS AND THE LABOR REQUIRED TO PROVIDE PROPER WATER APPLICATION.

TRENCHING / EXCAVATION

ZONE A (CRITICAL ROOT ZONE)
[(CRZ) IS DETERMINED BY TRUNK DIAMETER MEASURED AT CHEST HEIGHT (DBH) AND CRZ IS EQUAL TO 1-FOOT RADIUS FOR EVERY 1" DIAMETER OF TREE.]

1. NO DISTURBANCE ALLOWED WITHOUT SITE-SPECIFIC INSPECTION AND APPROVAL OF METHODS TO MINIMIZE ROOT DAMAGE
2. SEVERANCE OF ROOTS LARGER THAN 2 INCHES IN DIAMETER REQUIRES THE OWNER'S CERTIFIED ARBORIST APPROVAL.
3. TUNNELLING REQUIRED TO INSTALL LINES 3 FEET BELOW GRADE OR DEEPER
4. ALL NON-PAVED SURFACES IN ZONE SUBJECT TO IMPACT (COMPACTION) BY CONSTRUCTION ACTIVITIES SHALL BE PROTECTED WITH THE ABOVE STATED OPTIONS FOR SURFACE PROTECTION MEASURES.

ZONE B (DRIPLINE)
[DEFINED AS MAXIMUM WIDTH OF BRANCH EXTENSION ON TREE]

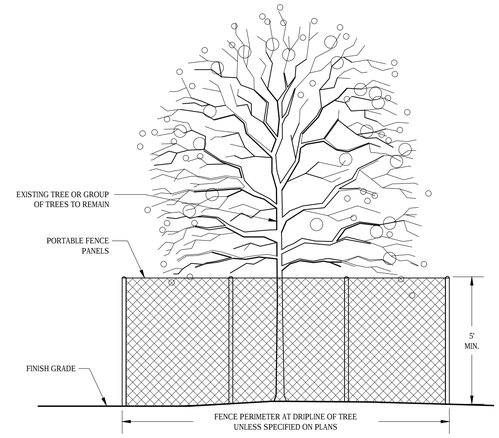
1. OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO THE OWNER'S CERTIFIED ARBORIST APPROVAL.
2. MAINTAIN 2/3 OR MORE OF ZONE IN UNDISTURBED CONDITION.
3. WHEN TRENCHING FOR UTILITIES WITHIN ZONE B, HAND DIG OR TUNNEL AROUND ROOTS WHENEVER POSSIBLE. CUT ALL ROOTS CLEANLY WITH SHARP PRUNERS OR SAWS. IF ROOTS OVER 2" DIA. ARE ENCOUNTERED, NOTIFY OWNER'S AUTHORIZED REPRESENTATIVE. FOR INSPECTION AND APPROVAL PRIOR TO PROCEEDING. ROOT PRUNE AND REMEDY ONLY AS DIRECTED BY THE OWNER'S CERTIFIED ARBORIST .
4. AIR OR WATER-SPADING, OR BORING MAY BE REQUIRED BY IN ZONE A OR ZONE B IF CONDITIONS WARRANT.
5. FOR INSTALLATION OF SILT FENCING, DO NOT TRENCH IN ZONE A OR ZONE B; INSTEAD SECURE TOE OF FENCING WITH DRAIN ROCK OR SUITABLE SOIL AND MONITOR/MAINTAIN FENCING AS NECESSARY TO PREVENT EROSION.
4. ALL NON-PAVED SURFACES IN ZONE SUBJECT TO IMPACT (COMPACTION) BY CONSTRUCTION ACTIVITIES SHALL BE PROTECTED WITH THE ABOVE STATED OPTIONS FOR SURFACE PROTECTION MEASURES.

ZONE C (ABSORBING ROOT ZONE)
[(ARZ) IS DETERMINED BY TRUNK DIAMETER MEASURED AT CHEST HEIGHT (DBH) AND ARZ IS EQUAL TO 2-FOOT RADIUS FOR EVERY 1" DIAMETER OF TREE.]

1. OPERATION OF HEAVY EQUIPMENT AND OR STOCKPILING OF MATERIALS SUBJECT TO OWNER'S AUTHORIZED REPRESENTATIVE APPROVAL.
2. TRENCHING WITH HEAVY EQUIPMENT ALLOWED AS FOLLOWS:
   - MINIMIZE TRENCH WIDTH
   - MAINTAIN 2/3 OR MORE OF ZONE IN UNDISTURBED CONDITION
   - OR AS SPECIFIED BY THE OWNER'S CERTIFIED ARBORIST
3. ALL NON-PAVED SURFACES IN ZONE SUBJECT TO IMPACT (COMPACTION) BY CONSTRUCTION ACTIVITIES SHALL BE PROTECTED WITH THE ABOVE STATED OPTIONS FOR SURFACE PROTECTION MEASURES.

ZONE D (CANOPY)

1. OVERHEAD BRANCHING LIKELY TO BE DAMAGED BY EQUIPMENT OPERATION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S CERTIFIED ARBORIST. OVERHEAD PREVENTIVE MEASURES (PRUNING OR TIE-BACK OF BRANCHES) AS APPROVED BY THE OWNER'S CERTIFIED ARBORIST SHALL BE PROPERLY EXECUTED BEFORE COMMENCEMENT OF THE CONSTRUCTION ACTIVITIES.
2. WASH OFF FOLIAGE WHICH BECOMES SOILED DURING CONSTRUCTION.



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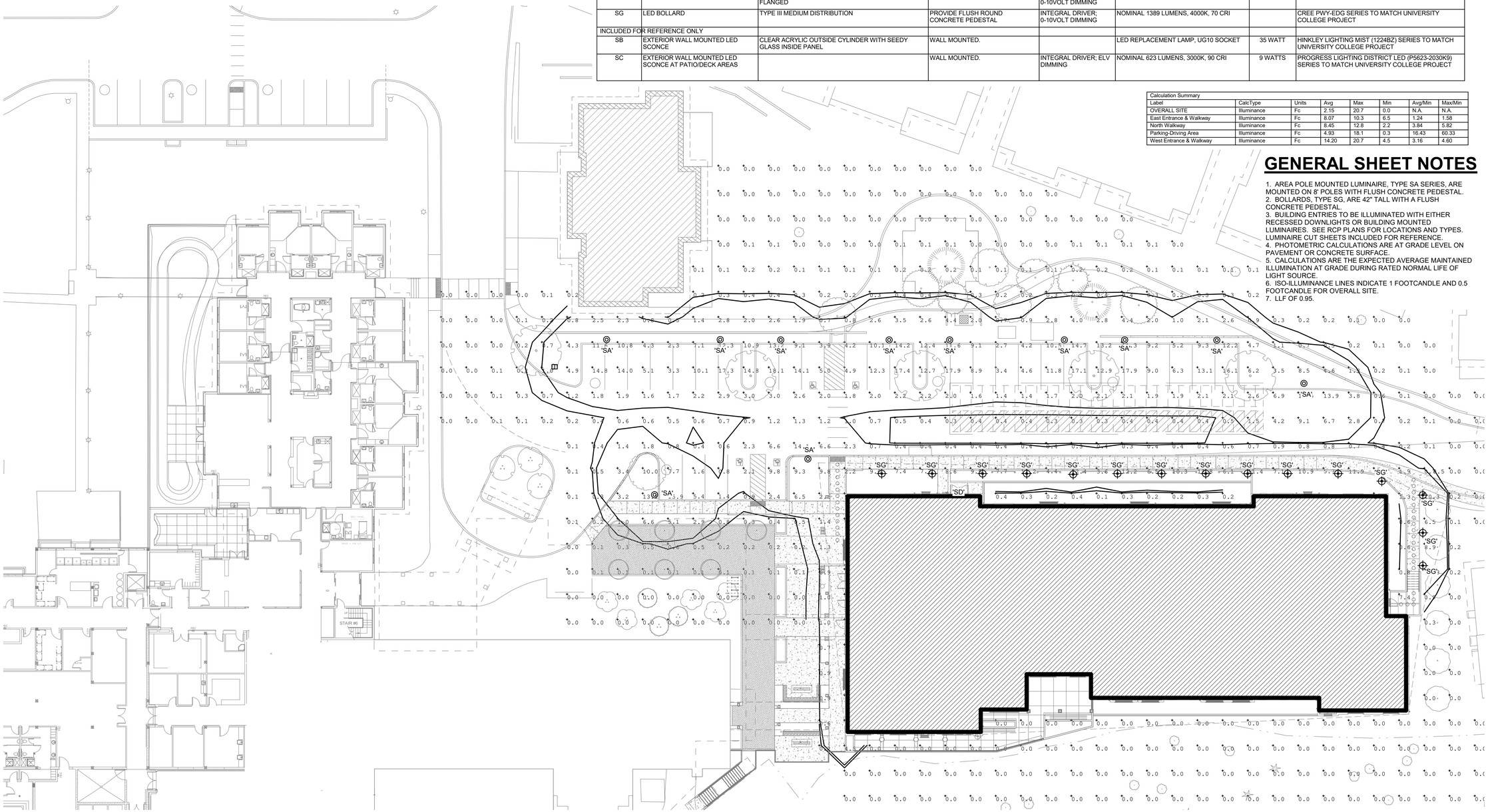
SITE PLAN - PHOTOMETRICS

E103

LAND USE LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	DISTRIBUTION	MOUNTING	POWER SUPPLY	LIGHT SOURCE	WATTAGE	MFG/CATALOG #
SA	SITE AREA LED POST TOP LUMINAIRE	TYPE III MEDIUM DISTRIBUTION WITH PARTIAL BLS	8-FOOT HIGH, STRAIGHT STEEL ROUND POLE. PROVIDE FLUSH ROUND CONCRETE PEDESTAL	INTEGRAL DRIVER; 0-10V DIMMING	NOMINAL 8750 LUMENS, 4000K, 70 CRI	101 WATTS	CREE THE EDGE ROUND SERIES TO MATCH UNIVERSITY COLLEGE PROJECT
SD	EXTEIROR LED WALL MOUNTED LUMINAIRE	20 DEGREE FORWARD THROW	WALL MOUNTED.	INTEGRAL DRIVER; 0-10V DIMMING	NOMINAL 2050 LUMENS, 3000K, 85 CRI	27 WATTS	WAC LIGHTING HAWK (WP-LED2) SERIES TO MATCH UNIVERSITY COLLEGE PROJECT
SF	RECESSED LED DOWNLIGHT	OPEN REFLECTOR, MEDIUM DISTRIBTION, SELF FLANGED	RECESSED IN CEILING.	INTEGRAL DRIVER; 0-10VOLT DIMMING	NOMINAL 1500 LUMENS, 3500K, 80 CRI	14 WATTS	HE WILLIAMS 4DR SERIES
SG	LED BOLLARD	TYPE III MEDIUM DISTRIBUTION	PROVIDE FLUSH ROUND CONCRETE PEDESTAL	INTEGRAL DRIVER; 0-10VOLT DIMMING	NOMINAL 1389 LUMENS, 4000K, 70 CRI		CREE PWY-EDG SERIES TO MATCH UNIVERSITY COLLEGE PROJECT
INCLUDED FOR REFERENCE ONLY							
SB	EXTERIOR WALL MOUNTED LED SCONCE	CLEAR ACRYLIC OUTSIDE CYLINDER WITH SEEDY GLASS INSIDE PANEL	WALL MOUNTED.		LED REPLACEMENT LAMP, UG10 SOCKET	35 WATT	HINKLEY LIGHTING MIST (1224BZ) SERIES TO MATCH UNIVERSITY COLLEGE PROJECT
SC	EXTERIOR WALL MOUNTED LED SCONCE AT PATIO/DECK AREAS		WALL MOUNTED.	INTEGRAL DRIVER; ELV DIMMING	NOMINAL 623 LUMENS, 3000K, 90 CRI	9 WATTS	PROGRESS LIGHTING DISTRICT LED (P5623-2030K9) SERIES TO MATCH UNIVERSITY COLLEGE PROJECT

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
OVERALL SITE	Illuminance	Fc	2.15	20.7	0.0	N.A.	N.A.
East Entrance & Walkway	Illuminance	Fc	8.07	10.3	6.5	1.24	1.58
North Walkway	Illuminance	Fc	8.45	12.8	2.2	3.84	5.82
Parking-Driving Area	Illuminance	Fc	4.93	18.1	0.3	16.43	60.33
West Entrance & Walkway	Illuminance	Fc	14.20	20.7	4.5	3.16	4.60



GENERAL SHEET NOTES

1. AREA POLE MOUNTED LUMINAIRE, TYPE SA SERIES, ARE MOUNTED ON 8' POLES WITH FLUSH CONCRETE PEDESTAL.
2. BOLLARDS, TYPE SG, ARE 42" TALL WITH A FLUSH CONCRETE PEDESTAL.
3. BUILDING ENTRIES TO BE ILLUMINATED WITH EITHER RECESSED DOWNLIGHTS OR BUILDING MOUNTED LUMINAIRES. SEE RCP PLANS FOR LOCATIONS AND TYPES. LUMINAIRE CUT SHEETS INCLUDED FOR REFERENCE.
4. PHOTOMETRIC CALCULATIONS ARE AT GRADE LEVEL ON PAVEMENT OR CONCRETE SURFACE.
5. CALCULATIONS ARE THE EXPECTED AVERAGE MAINTAINED ILLUMINATION AT GRADE DURING RATED NORMAL LIFE OF LIGHT SOURCE.
6. ISO-ILLUMINANCE LINES INDICATE 1 FOOTCANDLE AND 0.5 FOOTCANDLE FOR OVERALL SITE.
7. LLF OF 0.95.

INTERFACE ENGINEERING

PROJECT 2020-0287
CONTACT Deborah Raines
100 SW Main Street, Suite 1600
Portland, OR 97204
TEL 503.382.2266
www.interfaceengineering.com

FRIENDSVIEW RCF PHASE 1

Exhibit B: City of Newberg Type II Site Design Review Application Form

TYPE II APPLICATION (LAND USE) -- 2020

File #: _____

TYPES – PLEASE CHECK ONE:

- [x] **Design review**
- [ ] **Tentative Plan for Partition**
- [ ] **Tentative Plan for Subdivision**
- [ ] **Type II Major Modification**
- [ ] **Variance** _____
- [ ] **Other: (Explain)** _____

APPLICANT INFORMATION:

APPLICANT: LRS Architects, Inc - Cynthia Schuster

ADDRESS: 720 NW Davis Street Suite 300

EMAIL ADDRESS: cschuster@lrsarchitects.com

PHONE: 503-221-1121 MOBILE: _____ FAX: _____

OWNER (if different from above): Friendsview Retirement Community - Dave Hampton PHONE: Please contact Applicant

ADDRESS: 1301 Fulton St., Newberg, OR 97132

ENGINEER/SURVEYOR: AKS Engineering & Forestry - Steve Roper, PE PHONE: 503-563-6151

ADDRESS: 12965 SW Herman Road, Suite 100, Tualatin, OR 97062

GENERAL INFORMATION:

PROJECT NAME: Friendsview RCF PROJECT LOCATION: 1301 Fulton St., Newberg, OR 97132

PROJECT VALUATION: _____

PROJECT DESCRIPTION/USE: 4 story Resident Care Facility internal to an existing retirement community.

MAP/TAX LOT NO. (i.e.3200AB-400): 3217CB, Lot 200 ZONE: I SITE SIZE: 1.7 AC SQ. FT. ☐ ACRE ☑

COMP PLAN DESIGNATION: PQ (Public-Quasi Public) TOPOGRAPHY: Site slopes southeast to stream

CURRENT USE: Retirement Community

SURROUNDING USES:

NORTH: Railroad, then Single family residence (R-2) SOUTH: George Fox University (I)

EAST: George Fox University (I) WEST: Friendsview University Village (I)

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: ☑ Fees ☑ Public Notice Information ☑ Current Title Report ☑ Written Criteria Response ☑ Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Applicant Signature _____ Date

Cynthia Schuster

Print Name

Dave Hampton 12/23/2020

Owner Signature Date

Dave Hampton, CFO

Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

FRIENDSVIEW RCF PHASE 1

Exhibit C: Yamhill County Assessor's Map

3 2 17CB

ASSESSMENT & TAX
CARTOGRAPHY

N.W.1/4 S.W.1/4 SEC.17 T.3S. R.2W. W.M.
YAMHILL COUNTY OREGON
1" = 100'

PALOMINO CT.
BARCLAY
VISTA
ST.
SIERRA
HOSKINS ST
COLLEGE PARK
PENNINGTON DR.
MERIDIAN ST
PACIFIC RAILROAD CO.
SOUTHERN P
SWEET PEA ESTATES
FRIENDSVIEW MANOR
ADD
29.0
200
16.49 AC
500
2.78 AC
1500
1.54 AC
1100
1200
1300
1400
1000
1600
2600
CENTER
CLEMENSONS DEDICATION
FULTON ST
FULTON ST
IC RR

CANCELLED TAXLOTS:

2601	1001
2100	90000
400	
300	
290	
113	
91101	
91102	
91201	
91202	
92103	
92104	
92203	
92204	
93105	
93106	
93205	
93206	
1700	
1800	
1900	
2000	
2200	
2300	
2400	
2500	
600	
700	
800	
900	

DATE PRINTED: 12/14/2018

3 2 17CB

FRIENDSVIEW RCF PHASE 1

Exhibit D: Ownership Information & Title Reports

First American

First American Title Insurance Company

775 NE Evans Street
McMinnville, OR 97128
Phn - (503)376-7363
Fax - (866)800-7294

YAMHILL COUNTY TITLE UNIT
FAX (866)800-7294

Title Officer: Clayton Carter
(503)376-7363
ctcarter@firstam.com

2nd Supplemental
LOT BOOK SERVICE

Friendsview Manor
1301 E. Fulton Street
Newberg, OR 97132

Order No.: 1039-3470486
January 04, 2021

Attn: Dave Hampton
Phone No.: (503)554-7522 - Fax No.:
Email:

Re:

Fee: $750.00

We have searched our Tract Indices as to the following described property:

The land referred to in this report is described in Exhibit A attached hereto.

and as of December 30, 2020 at 8:00 a.m.

We find that the last deed of record runs to

Friendsview Manor, Inc. (as to Parcels 1-28, 32)
Friendsview Manor, Inc., an Oregon non-profit public benefit corporation (as to Parcel 29)
Friendsview Manor, an Oregon nonprofit corporation (as to Parcel 30)
Friendsview Manor, an Oregon non-profit corporation (as to Parcel 31)
Friendsview Manor, Inc., an Oregon non-profit corporation (as to Parcel 33)

We find the following apparent encumbrances within ten (10) years prior to the effective date hereof:

1. City liens, if any, of the City of Newberg.

2. Taxes for the current fiscal year are reduced by reason of Veterans Exemption. If the exempt status is terminated under the statute prior to July 1, said property will be taxed at 100% of the assessed value.
(Affects Parcels 1-10)

3. The rights of the public in and to that portion of the premises herein described lying within the limits of streets, roads and highways.

4. Easement, including terms and provisions contained therein:
   Recording Information: December 14, 1959 as Film Volume 8, Page 673, Deed and Mortgage Records
   In Favor of: Portland General Electric Company, a corporation of Oregon, its successors and assigns
   For: right-of-way
   (Affects Parcel 5)

5. Easement, including terms and provisions contained therein:
   Recording Information: May 14, 1962 in Film Volume 22, Page 603, Deed and Mortgage Records
   In Favor of: the City of Newberg, a municipal corporation of Yamhill County, State of Oregon

   (Affects Parcel 18)

6. Easement, including terms and provisions contained therein:
   Recording Information: June 07, 1977 in Film Volume 120, Page 1510, Deed and Mortgage Records
   In Favor of: City of Newberg, Oregon, a municipal corporation

   (Affects Parcel 30 and 33)

7. Easement, including terms and provisions contained therein:
   Recording Information: June 07, 1977 as Film Volume 120, Page 1513, Deed and Mortgage Records
   In Favor of: the City of Newberg, Oregon

   (Affects Parcels 1, 4, 5 and 10)

8. An easement reserved in a deed, including the terms and provisions thereof;
   Recorded: June 20, 1977
   Recording Information: Film Volume 121, Page 093, Deed and Mortgage Records
   From: Martha Stevahn
   To: Raymond T. Mattson and Elda L. Mattson, husband and wife

   (Affects Parcel 30)

9. Easement, including terms and provisions contained therein:
   Recording Information: September 20, 1977 in Film Volume 123, Page 752, Deed and Mortgage Records
   In Favor of: the City of Newberg, Oregon

   (Affects Parcel 30 32, 33)

10. Easement, including terms and provisions contained therein:
    Recording Information: June 14, 1978 in Film Volume 130, Page 156, Deed and Mortgage Records
    In Favor of: George Fox College

(Affects Parcel 4)

11. Reservation of utilities in vacated street area and the right to maintain the same as set forth in Ordinance No. 2062, a copy of which was
Recorded August 27, 1981, Film Volume 163, Page 1407, Deed and Mortgage Records.
(Affects Parcel 13)

12. Restrictive Covenant to Waive Remonstrance, pertaining to street improvements including the terms and provisions thereof
Recorded: December 28, 1989 in Film Volume 239, Page 0801, Deed and Mortgage Records
(Affects Parcel 30, 32, 33)

13. Roadway Easement and Maintenance Agreement and the terms and conditions thereof:
First Party: Lorrin M. White
Recording Information: November 16, 1990 in Film Volume 249, Page 1579, Deed and Mortgage Records

(Affects Parcel 30, 32, 33)

14. Easement as shown on the recorded plat/partition 90-50
For: Open space

(Affects Parcel 30, 32, 33)

15. Easement, including terms and provisions contained therein:
Recording Information: January 14, 1994 in Film Volume 301, Page 1605, Deed and Mortgage Records
In Favor of: Portland General Electric ("PGE")
For: underground distribution

16. Easement, including terms and provisions contained therein:
Recording Information: July 22, 1996 as Instrument No. 199611985, Deed and Mortgage Records
In Favor of: George Fox University
For: storm and sanitary sewers
(Affects Parcels 1, 4 and 10)

17. Easement, including terms and provisions contained therein:
Recording Information: January 23, 1997 as Instrument No. 199701195, Deed and Mortgage Records
In Favor of: George Fox University
For: sanitary sewer line
(Affects Parcel 4)

18. Easement, including terms and provisions contained therein:
Recording Information: June 17, 1998, Instrument No. 199811356, Deed and Mortgage Records
In Favor of: Portland General Electric Company("PGE"), an Oregon corporation

(Affects Parcels 1, 6, 7, 8 and 9)

19. Easement, including terms and provisions contained therein:
Recording Information: January 05, 1999, Instrument No. 199900136, Deed and Mortgage Records
In Favor of: City of Newberg, a municipal corporation
For: storm sewer and sanitary sewer lines
(Affects Parcel 18)

20. Easement, including terms and provisions contained therein:
Recording Information: January 05, 1999, Instrument No. 199900137, Deed and Mortgage Records
In Favor of: City of Newberg, a municipal corporation
For: public sidewalk and underground utilities
(Affects Parcels 17, 18, and 19)

21. Easement, including terms and provisions contained therein:
Recording Information: September 26, 2003 as Instrument No. 200324771, Deed and Mortgage Records
In Favor of: TCI Cablevision of Oregon

(Affects Parcels 1-10)

22. A Contract of Payment in Lieu of Completion of Public Improvements and the terms and conditions thereof:
Vendor/Seller: Friendsview Manor
Vendee/Purchaser: City of Newberg, an Oregon municipal corporation
Recorded: November 01, 2004
Recording Information: Instrument No. 200422239, Deed and Mortgage Records

(Affects Parcels 1-9)

23. Easement, including terms and provisions contained therein:
Recording Information: April 04, 2008, Instrument No. 20080589, Deed and Mortgage Records
In Favor of: Comcast of Oregon II, Inc.

(Affects Parcels 1-9)

24. Easement, including terms and provisions contained therein:
Recording Information: August 06, 2015, Instrument No. 201512372, Deed and Mortgage Records
In Favor of: Comcast of Oregon II, Inc.

The above described document does not contain a sufficient legal description to clearly identify the subject property. We are basing the affected parcels only upon the tax assessor map as of the date of this report.
(Affects Parcels 1-9)

25. Declaration of Deed Restriction recorded September 23, 2015 as Instrument No. 201515118, Deed and Mortgage Records.
(Affects Parcels 17-26)

26. Declaration of Deed Restriction recorded September 23, 2015 as Instrument No. 201515119, Deed and Mortgage Records.
(Affects Parcels 11-16 and 27)

27. Reservation of utilities in vacated Cherry Street area and the right to maintain the same as set forth in Ordinance No. 2015-2791, a copy of which was
Recorded August 05, 2016 as Instrument No. 201612162, Deed and Mortgage Records.
(Affects Parcels 11-13, 17-22 and 27)

28. Public Water Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612163, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 11, 12, 13, 14 and 27)

29. Public Sanitary Sewer Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612164, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 11, 12, 13, 14, 17, 18, 19, 20, 21, 22 and 27)

30. Public Sidewalk Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612165, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 14, 15, 16 and 31)

31. Public Utilities Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612166, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 11, 12, 13, 22 and 27)

32. Emergency and Utility Vehicle Access Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612167, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 11, 12, 13, 14, 17, 18, 19, 20, 21, 22 and 27)

33. Gas Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612168, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 14, 17, 18, 19, 20, 21 and 22)

34. PGE Utility Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612169, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 11, 12, 13, 14, 22 and 27)

35. PGE Service Easement, including terms and provisions contained therein:
Recording Information: August 05, 2016 as Instrument No. 201612170, Deed and Mortgage Records
In Favor of: Portland General Electric Company

(Affects Parcels 11, 12, 13, 22 and 27)

36. PGE Service Easement, including terms and provisions contained therein:
Recording Information: August 23, 2016 as Instrument No. 201613179, Deed and Mortgage Records
In Favor of: Portland General Electric Company

37. Public Sidewalk Easement, including terms and provisions contained therein:
Recording Information: February 03, 2017 as Instrument No. 201701883, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 14, 15 and 16)

38. Easement, including terms and provisions contained therein:
Recording Information: June 05, 2017 as Instrument No. 201709016, Deed and Mortgage Records
In Favor of: Comcast of Oregon II, Inc.

(Affects Parcels 11, 12, 13 and 14)

39. Agreement to Maintain Private Stormwater Facilities and the terms and conditions thereof:
Between: the City of Newberg, a municipal corporation of the State of Oregon
And: Friendsview Manor
Recording Information: April 05, 2018 as Instrument No. 201804796, Deed and Mortgage Records

(Affects Parcels 11, 12, 13, 14, 15 and 27)

40. Reservation of utilities in vacated North Center Street area and the right to maintain the same as set forth in Ordinance No. 2019-2854, a copy of which was
Recorded January 07, 2020 as Instrument No. 202000265, Deed and Mortgage Records.

41. Access and Utility Easement, including terms and provisions contained therein:
Recording Information: January 08, 2020 as Instrument No. 202000274, Deed and Mortgage Records
In Favor of: the City of Newberg, a municipal corporation

(Affects Parcels 14, 15, 16, 22, 28, 29 and 31)

42. Utility Easement, including terms and provisions contained therein:
Recording Information: January 08, 2020 as Instrument No. 202000275, Deed and Mortgage Records
In Favor of: NW Natural Gas Company

(Affects Parcels 14, 15, 16 and 31)

43. Utility Easement, including terms and provisions contained therein:
Recording Information: January 08, 2020 as Instrument No. 202000276, Deed and Mortgage Records
In Favor of: Frontier Communications Northwest, Inc.

(Affects Parcels 22, 28 and 29)

44. Access, Parking and Utility Easement, including terms and provisions contained therein:
Recording Information: January 08, 2020 as Instrument No. 202000277, Deed and Mortgage Records
In Favor of: Helen R. Cadd, trustee under the Cadd Living Trust, dated May 18, 1995

(Affects Parcels 28 and 31)

45. PGE Utility Easement, including terms and provisions contained therein:
Recording Information: January 08, 2020 as Instrument No. 202000278, Deed and Mortgage Records
In Favor of: Portland General Electric Company, an Oregon corporation

(Affects Parcels 22, 28 and 29)

46. Deed of Trust and the terms and conditions thereof.
Grantor/Trustor: Friendsview Manor, dba Friendsview Retirement Community, an Oregon nonprofit corporation
Grantee/Beneficiary: U.S. Bank National Association, a national banking association
Trustee: First American Title Insurance Company of Oregon
Amount: $42,140,000.00
Dated: August 01, 2016
Recorded: August 04, 2016
Recording Information: Instrument No. 201612003, Deed and Mortgage Records

Modification and/or amendment by instrument:
Recording Information: December 16, 2020 as Instrument No. 202022742, Deed and Mortgage Records

(Affects this and other property)
(Affects Parcels 1 through 27)

47. Unrecorded leases or periodic tenancies, if any.

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $142,719.95
Map No.: R3217CB-00200
Property ID: 35152

Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $84,035.44
Map No.: R3217CB-00500
Property ID: 35232
Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $22,486.26
Map No.: R3217CB-01500
Property ID: 35394
Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $3,238.94
Map No.: R3217CB-01600
Property ID: 35410
Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $1,804.25
Map No.: R3217CB-02600
Property ID: 35624
Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $780.46
Map No.: R3217CA-02706
Property ID: 482509
Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $4,005.18
Map No.: R3217CA-02704
Property ID: 482503
Tax Code No.: 29.0

NOTE: Taxes for the year 2020-2021 PAID IN FULL
Tax Amount: $4,071.50
Map No.: R3217CA-02705
Property ID: 482506
Tax Code No.: 29.0

We have also searched our General Index for Judgments and State and Federal Liens against the Grantee(s) named above and find:

NONE

NOTE: Supplemental to bring current, reflect 2020-21 taxes not yet payable. 2nd Supplemental to bring current; reflect 2020-21 taxes paid in full; modification of TD; add addtional property as Parcel 32 and 33

We find the following unpaid taxes and city liens:

THIS IS NOT a title report since no examination has been made of the title to the above described property. Our search for apparent encumbrances was limited to our Tract Indices, and therefore above listings do not include additional matters which might have been disclosed by an examination of the record title. We assume no liability in connection with this Lot Book Service and will not be responsible for errors or omissions therein. The charge for this service will not include supplemental reports, rechecks or other services.

Exhibit "A"

Real property in the County of YAMHILL, State of Oregon, described as follows:

PARCEL 1:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET, 348 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF SAID FULTON STREET IN THE CITY OF NEWBERG IN YAMHILL COUNTY, OREGON, SAID POINT BEING ALSO ON THE WEST LINE OF TRACT PLATTED AS HAZEL DELL; THENCE NORTH ALONG THE WEST LINE OF SAID HAZEL DELL 205 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING NORTH ALONG THE WEST LINE OF SAID HAZEL DELL 387.29 FEET, MORE OR LESS, TO THE SOUTHERLY LINE OF THE SOUTHERN PACIFIC RAILROAD RIGHT OF WAY; THENCE NORTH 57°19'23.8" EAST ALONG THE SOUTHERLY LINE OF SAID RIGHT OF WAY 797.42 FEET; THENCE NORTH 70°00'26" EAST ALONG THE SOUTHERLY LINE OF SAID RIGHT OF WAY 82 FEET; THENCE NORTH 64°25'17.3" EAST ALONG THE SOUTHERLY LINE OF SAID RIGHT OF WAY 38.50 FEET; THENCE SOUTH 69°45'03.2" EAST 197.97 FEET; THENCE SOUTH 24°50'01.0" WEST 1103.79 FEET, MORE OR LESS, TO THE NORTH LINE OF SAID FULTON STREET; THENCE WEST ALONG THE NORTH LINE OF SAID FULTON STREET 233.37 FEET TO THE SOUTHEAST CORNER OF TRACT CONVEYED TO LOU C. MERRIAM AND WIFE BY DEED RECORDED MAY 3, 1944 IN BOOK 124, PAGE 356, DEED RECORDS; THENCE NORTH ALONG THE EAST LINE OF SAID MERRIAM TRACT 300 FEET; THENCE WEST 50 FEET TO THE EAST LINE OF TRACT CONVEYED TO CHARLES C. HAWORTH AND WIFE BY DEED RECORDED OCTOBER 13, 1948 IN BOOK 150, PAGE 691, DEED RECORDS; THENCE NORTH ALONG THE EAST LINE OF SAID HAWORTH TRACT 140 FEET TO THE NORTHEAST CORNER OF SAID HAWORTH, TRACT; THENCE WEST ALONG THE NORTH LINE OF SAID HAWORTH TRACT 99 FEET; THENCE SOUTH ALONG THE WEST LINE OF SAID HAWORTH TRACT 235 FEET TO THE NORTHEAST CORNER OF TRACT CONVEYED TO ROY P. CLARK AND WIFE BY DEED RECORDED MAY 6, 1947 IN BOOK 142, PAGE 466, DEED RECORDS; THENCE WEST ALONG THE NORTH LINE OF SAID CLARK TRACT 126.07 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE CITY OF NEWBERG, A MUNICIPAL CORPORATION, BY DEED RECORDED FEBRUARY 21, 1968 IN FILM VOLUME 66, PAGE 80 DEED AND MORTGAGE RECORDS.

PARCEL 2:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET, 573.07 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF SAID FULTON STREET IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; THENCE NORTH 205 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 235 FEET; THENCE WEST 99 FEET; THENCE SOUTH 235 FEET; THENCE EAST 99 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL 3:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET, 623.07 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF SAID FULTON STREET IN THE CITY OF NEWBERG IN YAMHILL COUNTY, OREGON; THENCE NORTH 205 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 95 FEET; THENCE WEST 50 FEET TO THE EAST LINE OF TRACT CONVEYED TO CHARLES C. HAWORTH AND BERTHA M. HAWORTH, BY DEED RECORDED OCTOBER 13, 1948 IN BOOK 150, PAGE 691, DEED RECORDS OF YAMHILL COUNTY, OREGON; THENCE SOUTH ALONG THE EAST LINE OF SAID HAWORTH TRACT, 95 FEET; THENCE EAST 50 FEET TO THE POINT OF BEGINNING.

PARCEL 4:

BEING A PORTION OF THE EAST PART OF THE DANIEL C. DESKINS DONATION LAND CLAIM NO. 54 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, SAID PORTION BEING DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF A CERTAIN TRACT OF LAND CONVEYED TO FRIENDSVIEW MANOR BY DEED RECORDED AUGUST 14, 1959 IN FILM VOLUME 6, PAGE 856, DEED AND MORTGAGE RECORDS, SAID POINT BEING SOUTH 984.7 FEET AND WEST 819.8 FEET FROM THE NORTHEAST CORNER OF SAID DESKINS DONATION LAND CLAIM; THENCE NORTH ALONG THE EAST LINE OF SAID FRIENDSVIEW MANOR TRACT; NORTH 24°50' EAST A DISTANCE OF 776.35 FEET TO THE SOUTHWEST CORNER OF A CERTAIN TRACT OF LAND CONVEYED TO GLADYS A. GREER BY DEED RECORDED APRIL 9, 1953 IN BOOK 169, PAGE 373, DEED RECORDS; THENCE SOUTH 69°45' EAST 87.30 FEET ALONG THE SOUTH LINE OF SAID GREER TRACT TO A POINT; THENCE SOUTH 21°22' WEST 560.90 FEET ALONG A FENCE TO THE NORTH LINE OF A CERTAIN TRACT OF LAND CONVEYED TO V.E. POOLE AND ALICE B. POOLE BY DEED RECORDED MARCH 2, 1942 IN BOOK 119, PAGE 311, DEED RECORDS; THENCE WEST 88.84 FEET TO THE NORTHWEST CORNER OF SAID POOLE TRACT; THENCE SOUTH 00°20' WEST 152.00 FEET ALONG THE WEST LINE OF SAID POOLE TRACT TO A POINT; THENCE WEST 113.88 FEET TO THE NORTHWEST CORNER OF A CERTAIN TRACT OF LAND CONVEYED BY MINNIE B. OWEN BY DEED RECORDED JULY 11, 1960 IN FILM VOLUME 11, PAGE 798, DEED AND MORTGAGE RECORDS, SAID POINT BEING THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO GEORGE FOX COLLEGE BY DEED RECORDED APRIL 28, 1995 IN INSTRUMENT NO. 199505215, DEED AND MORTGAGE RECORDS.

PARCEL 5:

PART OF THE DANIEL C. DESKINS DONATION LAND CLAIM NO. 54 IN TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT SOUTH 00°20' WEST 1038.60 FEET AND WEST 709.50 FEET FROM THE NORTHEAST CORNER OF SAID CLAIM, SAID POINT BEING ALSO THE NORTHWEST CORNER OF BLOCK 2 OF BENSONS ADDITION TO NEWBERG IN YAMHILL COUNTY, OREGON; THENCE SOUTH 00°20' WEST PARALLEL TO THE EAST LINE OF SAID CLAIM 177.23 FEET; THENCE WEST 215.52 FEET TO AN IRON PIPE SET FOR THE INITIAL POINT OF THE PLAT OF HAZEL DELL; THENCE NORTH 24°50' EAST ALONG THE EAST LINE OF SAID HAZEL DELL 267.66 FEET, MORE OR LESS, TO A POINT THAT IS NORTH 00°20' EAST 66 FEET AND WEST 104.79 FEET FROM THE POINT OF BEGINNING; THENCE EAST 104.79 FEET; THENCE SOUTH 00°20' WEST 66 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO CITY OF NEWBERG, A MUNICIPAL CORPORATION, BY DEED RECORDED FEBRUARY 21, 1968 IN FILM VOLUME 66, PAGE 180, DEED AND MORTGAGE RECORDS.

ALSO EXCEPTING THEREFROM THAT PORTION CONVEYED TO GEORGE FOX COLLEGE BY DEED RECORDED APRIL 28, 1995 IN INSTRUMENT NO. 199505215, DEED AND MORTGAGE RECORDS.

PARCEL 6:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET 348 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF SAID FULTON STREET, IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON, SAID POINT OF BEGINNING ALSO BEING THE SOUTHEAST CORNER OF THAT CERTAIN TRACT OF LAND CONVEYED TO HARLAN T. JONES AND WIFE BY DEED RECORDED FEBRUARY 19, 1942 IN BOOK 119, PAGE 267, DEED RECORDS; THENCE NORTH PARALLEL WITH THE EAST LINE OF SAID EAST STREET ALONG THE WEST LINE OF A TRACT PLATTED AS HAZEL DELL, NOW VACATED, 205 FEET TO THE SOUTHERLY BOUNDARY LINE OF THAT CERTAIN TRACT OF LAND CONVEYED TO FRIENDSVIEW MANOR, AN OREGON CORPORATION, BY DEED

RECORDED AUGUST 14, 1959 IN FILM VOLUME 6, PAGE 856, DEED AND MORTGAGE RECORDS; THENCE EAST ALONG SAID SOUTHERLY BOUNDARY LINE 66.07 FEET TO THE NORTHWEST CORNER OF A CERTAIN TRACT OF LAND CONVEYED TO AMOS G. JONES BY DEED RECORDED APRIL 4, 1952 IN BOOK 165, PAGE 193, DEED RECORDS; THENCE SOUTH ALONG THE WEST LINE OF SAID AMOS G. JONES TRACT, SAID LINE BEING PARALLEL WITH THE EAST LINE OR SAID EAST STREET 205 FEET TO THE NORTH LINE OF SAID FULTON STREET; THENCE WEST ALONG THE NORTH LINE OF SAID FULTON STREET 66.07 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION OF SAID PREMISES CONVEYED BY ROY P. CLARK AND WIFE TO FRANK L. HILL AND WIFE BY DEED RECORDED JUNE 11, 1947 IN BOOK 143, PAGE 246, DEED RECORDS, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 348 FEET EAST AND 100 FEET NORTH OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF FULTON STREET IN THE CITY OF NEWBERG, IN YAMHILL COUNTY, OREGON; THENCE NORTH 105 FEET PARALLEL WITH THE EAST LINE AT EAST STREET TO THE SOUTH LINE OF SAID CHERRY STREET; THENCE EAST FOLLOWING THE SOUTH LINE OF SAID CHERRY STREET 16 FEET; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID EAST STREET 105 FEET; AND THENCE WEST 16 FEET TO THE POINT OF BEGINNING.

PARCEL 7:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET, 623.07 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF NORTH CENTER STREET, FORMERLY KNOWN AS EAST STREET WITH THE NORTH LINE OR SAID FULTON STREET IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; THENCE NORTH 205 FEET; THENCE WEST 50 FEET TO THE EAST LINE OF TRACT CONVEYED TO CHARLES C. HAWORTH AND BERTHA M. HAWORTH BY DEED RECORDED OCTOBER 13, 1948 IN BOOK 150, PAGE 691, DEED RECORDS OF YAMHILL COUNTY, OREGON; THENCE SOUTH ALONG THE EAST LINE OF SAID HAWORTH TRACT 205 FEET; THENCE EAST 50 FEET TO THE POINT OF BEGINNING.

PARCEL 8:

BEGINNING ON THE NORTH LINE OF FULTON STREET 573.07 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF NORTH CENTER STREET (FORMERLY EAST STREET) WITH THE NORTH LINE OF FULTON STREET IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; THENCE NORTH 205 FEET; THENCE WEST 99 FEET; THENCE SOUTH 205 FEET; THENCE EAST 99 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL 9:

THE EAST 60 FEET OF THE FOLLOWING DESCRIBED REAL PROPERTY, TO-WIT: BEGINNING AT THE NORTH LINE OF FULTON STREET, 348 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF SAID FULTON STREET IN THE CITY OF NEWBERG IN YAMHILL COUNTY, OREGON; THENCE NORTH PARALLEL WITH THE EAST LINE OF SAID EAST STREET, 205 FEET TO THE SOUTH LINE OF SAID CHERRY STREET; THENCE EAST FOLLOWING THE SOUTH LINE OF SAID CHERRY STREET, 126.07 FEET; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID EAST STREET 205 FEET TO THE NORTH LINE OF SAID FULTON STREET AND THENCE WEST FOLLOWING THE NORTH LINE OF SAID FULTON STREET, 135.07 FEET TO THE POINT OF BEGINNING.

PARCEL 10:

TRACT A:
PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM NO. 54 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN, YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT SOUTH 00°20'00" WEST 1038.60 FEET AND WEST 709.50 FEET FROM THE NORTHEAST CORNER OF SAID CLAIM NO. 54, A POINT ON THE EAST LINE OF A CERTAIN TRACT OF LAND CONVEYED TO FRIENDSVIEW MANOR BY DEED RECORDED AUGUST 14, 1959 IN BOOK 11, PAGE 1698, DEED RECORDS, SAID POINT ALSO BEING A 5/8" IRON ROD FROM THE NORTHWEST CORNER OF BLOCK 2 OF BENSONS ADDITION TO NEWBERG, IN YAMHILL COUNTY, OREGON; THENCE NORTH 00°20'00" EAST 66.18 FEET TO A 5/8 IRON ROD; THENCE SOUTH 88°37'29" EAST 8.97 FEET, TO THE SOUTHWEST CORNER OF A CERTAIN TRACT OF LAND CONVEYED TO GEORGE FOX COLLEGE BY DEED RECORDED MARCH 5, 1965 IN BOOK 43, PAGE 711, DEED RECORDS, SAID POINT BEING A 5/8" IRON ROD; THENCE NORTH 00°38'15" EAST 100.00 FEET ALONG THE WEST LINE OR SAID TRACT CONVEYED TO GEORGE FOX COLLEGE TO A 5/8" IRON ROD, SAID POINT BEING THE POINT OF BEGINNING; THENCE NORTH 00°38'15" EAST 52.14 FEET TO A 5/8" IRON ROD, SAID POINT BEING THE NORTHWEST CORNER OF SAID TRACT CONVEYED TO GEORGE FOX COLLEGE; THENCE SOUTH 89°57'08" EAST 28.41 FEET ALONG THE NORTH LINE OF SAID TRACT, TO A 5/8" IRON ROD; THENCE SOUTH 29°05'30" WEST 59.64 FEET TO THE POINT OF BEGINNING.

TRACT B:
PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM #54 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:
COMMENCING SOUTH 00°19'59" WEST 349.33 FEET AND NORTH 69°45'03" WEST 210.00 FEET FROM THE NORTHEAST CORNER OF SAID CLAIM #54; THENCE NORTH 69°45'03" WEST 190.90 FEET TO A 5/8" IRON ROD ON THE SOUTHERLY LINE OF PARTITION PLAT NO. 90-50, SAID POINT BEING THE POINT OF BEGINNING; THENCE NORTH 69°45'03" WEST 80.68 FEET TO A 5/8" IRON ROD FOUND ON THE SOUTHERLY LINE OF PARTITION PLAT NO. 90-50; THENCE SOUTH 23°33'42" WEST 94.31 FEET TO A 5/8" IRON ROD; THENCE SOUTH 71°23'23" EAST 86.45 FEET TO A 5/8" IRON ROD FOUND FOR THE NORTHEAST CORNER OF A CERTAIN TRACT OF LAND CONVEYED TO FRIENDSVIEW MANOR BY DEED RECORDED JANUARY 30, 1962, IN DEED BOOK 20, PAGE 928, DEED RECORDS; THENCE NORTH 20°04'19" EAST 91.68 FEET TO THE POINT OF BEGINNING.

PARCEL 11:

A PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM NO. 54 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 245 FEET NORTH AND 140 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET WITH THE NORTH LINE OF FULTON STREET IN THE CITY OF NEWBERG; THENCE EAST 100 FEET; THENCE NORTH PARALLEL TO THE WEST LINE OF HAZEL DELL TO THE SOUTHERLY BOUNDARY OF THE SOUTHERN PACIFIC RAILROAD RIGHT OF WAY; THENCE SOUTH 57°08' WEST ALONG THE SOUTHERLY LINE OF SAID RIGHT OF WAY TO THE MOST NORTHERLY CORNER OF A TRACT CONVEYED BY JOHN ILLIG TO EDWARD H. BENFORD BY DEED RECORDED SEPTEMBER 27, 1884 IN BOOK 90, PAGE 625, DEED RECORDS; THENCE SOUTH 205.34 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 12:

TRACT A:
BEING A PART OF THE DONATION LAND CLAIM OF DANIEL D. DESKINS, CLAIM NO. 54, NOTIFICATION NO. 1475 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE EAST LINE OF CENTER STREET, 245 FEET NORTH OF THE NORTH LINE OF FULTON STREET AS PLATTED AND DEDICATED BY CHRISTINE CLEMENSON AND J.C. CLEMENSON, HER HUSBAND, IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON, AND RUNNING THENCE EAST 90 FEET TO A POINT WHICH MARKED THE BEGINNING POINT OF THE TRACT HEREIN CONVEYED; THENCE NORTH TO THE SOUTHERN PACIFIC RAILROAD RIGHT OF WAY ALONG A LINE PARALLEL WITH AND 90 FEET EAST OF THE EAST LINE OF CENTER STREET; THENCE IN A NORTHEASTERLY DIRECTION ALONG SAID RIGHT OF WAY TO A POINT IN THE EAST LINE OF A TRACT OF LAND CONVEYED BY JOHN ILLIG TO EMILY BINFORD AND EDWARD M. BINFORD, BY DEED DATED JUNE 30, 1924, RECORDED SEPTEMBER 27, 1924, IN BOOK 90, PAGE 625, DEED RECORDS OF YAMHILL COUNTY, OREGON; THENCE SOUTH ABOUT 210 FEET TO THE SOUTHEAST CORNER OF THE LATTER DESCRIBED TRACT; THENCE WEST 50 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

TRACT B:
BEING A PART OF THE DONATION LAND CLAIM OF DANIEL D. DESKINS, CLAIM NO. 54, NOTIFICATION NO. 1475 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT A POINT ON THE EAST LINE OF NORTH CENTER STREET (FORMERLY EAST STREET) 245 FEET NORTH OF THE NORTH LINE OF FULTON STREET AS PLATTED AND DEDICATED BY CHRISTINE CLEMENSON AND J.C. CLEMENSON, HER HUSBAND, IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON, AND RUNNING THENCE EAST 82 FEET TO THE TRUE PLACE OF BEGINNING; THENCE EAST 8 FEET; THENCE NORTH PARALLEL WITH THE EAST LINE OF SAID NORTH CENTER STREET TO THE SOUTH LINE OF THE SOUTHERN PACIFIC RAILROAD RIGHT OF WAY; THENCE SOUTHWESTERLY ALONG THE SOUTH LINE OF SAID RIGHT OF WAY TO A POINT DIRECTLY NORTH OF THE TRUE POINT OF BEGINNING; THENCE SOUTH PARALLEL WITH THE EAST LINE OF SAID NORTH CENTER STREET TO THE TRUE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF CHERRY STREET VACATED BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 13:

TRACT A:
BEING A PART OF THE DONATION LAND CLAIM OF DANIEL D. DESKINS, CLAIM NO. 54, NOTIFICATION NO. 1475, IN TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN, IN YAMHILL COUNTY, OREGON, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT ON THE EAST LINE OF NORTH CENTER STREET (FORMERLY EAST STREET) 245 FEET NORTH OF THE NORTH LINE OF FULTON STREET AS PLATTED AND DEDICATED BY CHRISTINE CLEMENSON AND J.C. CLEMENSON, HER HUSBAND, IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; AND RUNNING THENCE EAST 82 FEET; THENCE NORTH PARALLEL WITH THE EAST LINE OF NORTH CENTER STREET (FORMERLY EAST STREET) TO THE SOUTH LINE OF THE SOUTHERN PACIFIC RAILROAD RIGHT OF WAY; THENCE SOUTHWESTERLY ALONG THE SOUTH LINE OF SAID RIGHT OF WAY TO THE EAST LINE OF NORTH CENTER STREET (FORMERLY EAST STREET); THENCE SOUTH ALONG THE EAST LINE OF NORTH CENTER STREET (FORMERLY EAST STREET); 120 FEET, MORE OR LESS, TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF THE VACATED CENTER STREET INURING THERETO BY VACATION ORDINANCE NO. 2062 RECORDED ON AUGUST 27, 1981 IN FILM VOLUME 163, PAGE 1407, YAMHILL COUNTY RECORDS.

TOGETHER WITH THAT PORTION OF CHERRY STREET VACATED BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

TRACT B:
THE WEST 1/2 OF THAT CERTAIN VACATED STREET AS PER VACATION ORDINANCE NO. 2062 DATED AUGUST 3, 1981, CITY OF NEWBERG, YAMHILL COUNTY, OREGON, AND AS RECORDED AUGUST 27, 1981 IN FILM VOLUME 163, PAGE 1407-1408, DEED RECORDS OF YAMHILL COUNTY, OREGON.

TOGETHER WITH THAT PORTION OF CHERRY STREET VACATED BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 14:

BEING A PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM AND PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING ON THE WEST LINE OF EAST STREET AND 100 FEET NORTH OF THE NORTH LINE OF FULTON STREET IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; AND RUNNING THENCE WEST 100 FEET; THENCE NORTH TO THE SOUTH LINE OF SOUTHERN PACIFIC RAILROAD RIGHT OF WAY; THENCE EASTERLY ALONG SAID RAILROAD RIGHT OF WAY TO THE WEST LINE OF SAID EAST STREET; THENCE SOUTH ALONG THE WEST LINE OF SAID EAST STREET TO THE PLACE OF BEGINNING. EXCEPTING THEREFROM THE SOUTH 103 FEET AS CONVEYED TO LEANDER A. CROCKETT ET UX BY DEED RECORDED FEBRUARY 24, 1951, IN BOOK 160, PAGE 678, DEED RECORDS.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

PARCEL 15:

BEING A PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE NORTH 75 FEET OF THE FOLLOWING DESCRIBED TRACT OF LAND, TO WIT:

BEGINNING AT A POINT ON THE WEST LINE OF EAST STREET, NOW NORTH CENTER STREET, AND 100 FEET NORTH OF THE NORTH LINE OF FULTON STREET, IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; AND RUNNING THENCE WEST 100 FEET; THENCE NORTH 103 FEET; THENCE EAST 100 FEET TO THE WEST LINE OF SAID EAST STREET; THENCE SOUTH ALONG THE WEST LINE OF SAID EAST STREET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

PARCEL 16:

BEGINNING AT A POINT ON THE WEST LINE OF EAST STREET (NOW NORTH CENTER STREET) IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON, SAID POINT BEING 128 FEET NORTH OF THE NORTH LINE OF FULTON STREET, SAID POINT

ALSO BEING THE SOUTHEAST CORNER OF THAT CERTAIN TRACT OF LAND CONVEYED TO IVAN L ADAMS, ET UX, BY DEED RECORDED JULY 2, 1976 IN FILM VOLUME 113, PAGE 419, DEED AND MORTGAGE RECORDS; THENCE WEST ALONG THE SOUTH LINE OF SAID ADAMS TRACT 100 FEET; THENCE SOUTH 50 FEET; THENCE EAST 100 FEET TO THE WEST LINE OF SAID NORTH CENTER STREET; THENCE NORTH 50 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

PARCEL 17:

BEGINNING AT POINT 290 FEET EAST OF THE INTERSECTION OF THE SOUTH LINE OF CHERRY STREET WITH THE EAST LINE OF EAST STREET (NOW NORTH CENTER STREET) IN THE CITY OF NEWBERG, YAMHILL COUNTY, OREGON; THENCE EAST ALONG THE SOUTH LINE OF CHERRY STREET AND THE SAME EXTENDED A DISTANCE OF 73 FEET, MORE OR LESS, TO THE NORTHEAST CORNER OF THAT CERTAIN TRACT CONVEYED TO FRANK L. HILL AND BELVA E. HILL BY DEED RECORDED IN BOOK 143, PAGE 246, DEED RECORDS; THENCE SOUTH ALONG THE EAST LINE OF THE HILL TRACT, 105 FEET TO THE SOUTHEAST CORNER THEREOF; THENCE WEST 72 FEET, MORE OR LESS, TO THE SOUTHWEST CORNER OF THAT CERTAIN TRACT CONVEYED TO FRANK AND BELVA E. HILL BY DEED RECORDED IN BOOK 108, PAGE 232, DEED RECORDS; THENCE NORTH ALONG THE WEST LINE OF THE HILL TRACT, 105 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 18:

BEGINNING AT A POINT ON THE SOUTH LINE OF CHERRY STREET IN THE CITY OF NEWBERG, IN YAMHILL COUNTY, OREGON, SAID POINT BEING SOUTH 0°34' WEST 20 FEET AND NORTH 89°59' EAST 310 FEET FROM THE INTERSECTION OF THE CENTER LINES OF CHERRY STREET AND CENTER STREET IN SAID CITY OF NEWBERG; THENCE SOUTH 00°34' WEST 105 FEET; THENCE SOUTH 89°59' WEST 5 FEET; THENCE NORTH 00°34' EAST 105 FEET; THENCE NORTH 89°59' EAST 5 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 19:

BEGINNING AT A POINT ON THE SOUTH LINE OF CHERRY STREET IN THE CITY OF NEWBERG, IN YAMHILL COUNTY, OREGON, SAID POINT BEING SOUTH 00°34' WEST 20 FEET AND NORTH 89°59' EAST 240 FEET FROM THE INTERSECTION OF THE CENTER LINES OF CHERRY AND CENTER STREETS IN SAID CITY OF NEWBERG; THENCE SOUTH 00°34' WEST 105 FEET; THENCE NORTH 89°59' EAST 70 FEET; THENCE NORTH 00°34' EAST 105 FEET; THENCE SOUTH 89°59' WEST 70 FEET TO THE PLACE OF BEGINNING.

EXCEPTING THEREFROM THE EAST 5 FEET.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 20:

BEGINNING AT A POINT ON THE SOUTH LINE OF CHERRY STREET N THE CITY OF NEWBERG IN YAMHILL COUNTY, OREGON, SAID POINT BEING SOUTH 00°34' WEST 20 FEET AND NORTH 89°59' EAST 175 FEET FROM THE INTERSECTION OF THE CENTER LINE OF CHERRY AND CENTER STREETS IN SAID CITY OF NEWBERG; THENCE NORTH 89°59' EAST ALONG THE SOUTH LINE OF CHERRY STREET, 65 FEET; THENCE SOUTH 00°34' WEST 105 FEET; THENCE SOUTH 89°59' WEST 65 FEET; THENCE NORTH 00°34' EAST 105 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 21:

BEGINNING AT A POINT ON THE SOUTH LINE OF CHERRY STREET IN THE CITY OF NEWBERG, IN YAMHILL COUNTY, OREGON, SAID POINT BEING SOUTH 00°34' WEST 20 FEET AND NORTH 89°59 EAST 175 FEET FROM THE INTERSECTION OF THE CENTERLINES OF CHERRY AND CENTER STREETS IN SAID CITY OF NEWBERG; THENCE SOUTH 00°34' WEST 105 FEET; THENCE SOUTH 89°59 WEST 65 FEET; THENCE NORTH 001°34' EAST 105 FEET; THENCE NORTH 89°59' EAST 65 FEET TO THE PLACE OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 22:

BEGINNING AT A POINT 1069.45 FEET SOUTH AND 1769.57 FEET WEST FROM THE NORTHEAST CORNER OF THE DANIEL D. DESKINS DONATION LAND CLAIM NO. 54 IN TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, SAID BEGINNING POINT ALSO BEING NORTH 00°34' EAST 181.0 FEET FROM THE CENTER OF FULTON STREET IN THE CITY OF NEWBERG; THENCE NORTH 00°34' EAST 49.0 FEET TO AN IRON PIPE; THENCE NORTH 89°59' EAST 90 FEET TO AN IRON PIPE; THENCE SOUTH 00°34' WEST 49.0 FEET TO AN IRON PIPE; THENCE SOUTH 89°59' WEST 90.0 FEET TO AN IRON PIPE AT THE POINT OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CHERRY STREET, INURRING THERETO, BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

PARCEL 23:

A PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM NO. 54 IN TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET, 282 FEET EAST OF THE EAST LINE OF EAST STREET IN NEWBERG, YAMHILL COUNTY, OREGON; THENCE EAST 66 FEET ALONG THE NORTH LINE OF FULTON STREET; THENCE NORTH 100 FEET; THENCE WEST 66 FEET; THENCE SOUTH 100 FEET TO THE PLACE OF BEGINNING.

PARCEL 24:

PART OF THE DANIEL D. DESKINS DONATION LAND CLAIM NO. 54 IN TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET 200 FEET EAST OF THE EAST LINE OF EAST STREET IN NEWBERG; THENCE EAST 82 FEET; THENCE NORTH 100 FEET; THENCE WEST 82 FEET; THENCE SOUTH 100 FEET TO THE PLACE OF BEGINNING.

PARCEL 25:

A TRACT OF LAND LOCATED IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET AND 136 FEET EAST OF THE EAST LINE OF CENTER STREET; THENCE NORTH 100 FEET; THENCE EAST 64 FEET; THENCE SOUTH 100 FEET; THENCE WEST 64 FEET TO THE POINT OF BEGINNING.

PARCEL 26:

A TRACT OF LAND LOCATED IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF FULTON STREET AND 72 FEET EAST OF THE EAST LINE OF CENTER STREET; THENCE NORTH 100 FEET; THENCE EAST 64 FEET; THENCE SOUTH 100 FEET. THENCE WEST 64 FEET TO THE POINT OF BEGINNING.

PARCEL 27:

BEGINNING AT THE INTITIAL POINT OF FRIENDSVIEW VILLAGE CONDOMINIUM, NOW TERMINATED, SAID INTITIAL POINT BEING NORTH 06° 11' 56 EAST 1495.71 FEET FROM THE SOUTHWEST CORNER OF SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST, OF THE WILLAMETTE MERIDIAN, YAMHILL COUNTY, OREGON, SAID POINT ALSO BEING THE SOUTHEAST CORNER OF THAT TRACT CONVEYED TO WILLIAM L SALTER AND WIFE BY DEED RECORDED JULY 16, 1959 IN FILM VOLUME 6, PAGE 310, DEED AND MORTGAGE RECORDS, WHICH POINT IS 245 FEET NORTH AND 240 FEET EAST OF THE INTERSECTION OF THE EAST LINE OF EAST STREET (NOW CENTER STREET) WITH THE NORTH LINE OF FULTON STREET IN THE CITY OF NEWBERG; THENCE NORTH 0° 15' 48" EAST ALONG THE EAST LINE OF SAID SALTER TRACT 278.25 FEET TO THE SOUTHERLY LINE OF THE SOUTHERN PACIFIC RAILROAD RIGHT OF WAY; THENCE NORTH 57° 08' 48" EAST ALONG SAID SOUTHERLY RIGHT OF WAY LINE 129.74 FEET TO A POINT ON THE WEST LINE OF THAT TRACT PLATTED AS HAZELDELL; THENCE SOUTH 0° 15' WEST ALONG SAID WEST LINE 348.60 FEET TO A POINT ON THE NORTH LINE OF CHERRY STREET; THENCE SOUTH 89° 59' WEST ALONG SAID NORTH LINE 108.75 FEET TO THE POINT OF BEGINNING.

TOGETHER WITH THAT PORTION OF CHERRY STREET VACATED BY ORDINANCE NO. 2015-2791 AND RECORDED AUGUST 5, 2016 AS INSTRUMENT NO. 201612162, DEED AND MORTGAGE RECORDS.

PARCEL 28:

PART OF THE D. D. DESKINS DONATION LAND CLAIM #54 IN TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING 25 FEET NORTH OF THE SOUTHWEST CORNER OF LAND CONVEYED TO JOHN ILLIG BY DEED RECORDED SEPTEMBER 24, 1904 IN BOOK 47, PAGE 002, DEED RECORDS; THENCE NORTH ALONG THE WEST LINE OF SAID TRACT 100 FEET; THENCE EAST PARALLEL WITH THE SOUTH LINE OF SAID TRACT 80 FEET; THENCE SOUTH PARALLEL WITH THE WEST LINE OF SAID TRACT 100 FEET;

THENCE WEST 80 FEET TO THE PLACE OF BEGINNING.

SAVE AND EXCEPT THAT PORTION CONVEYED TO CHESTER E. HANVILLE AND DORIS T. HANVILLE IN DEED RECORDED JULY 22, 1965 IN FILM VOLUME 46, PAGE 834; AND THAT PORTION CONVEYED TO MAURICE G. CHANDLER AND ELLOUISE CHANDLER IN DEED RECORDED JUNE 14, 1972 IN FILM VOLUME 89, PAGE 1928.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

PARCEL 29:

TRACT A:

BEGINNING AT AN IRON PIPE SET 1125.45 FEET SOUTH AND 1770.12 FEET WEST FROM THE NORTHEAST CORNER OF THE DANIEL D. DESKINS DONATION LAND CLAIM NO. 54 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, SAID BEGINNING POINT ALSO BEING NORTH 00°34' EAST 125.0 FEET FROM THE CENTER OF FULTON STREET, CITY OF NEWBERG; THENCE NORTH 00°34' EAST 56 FEET TO AN IRON PIPE; THENCE NORTH 89°59' EAST 90 FEET TO AN IRON PIPE; THENCE SOUTH 00°34' WEST, 56 FEET TO AN IRON PIPE; THENCE SOUTH 89°59' WEST, 90 FEET TO THE POINT OF BEGINNING.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

TRACT B:

A TRACT OF LAND IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE NORTH 24 FEET OF THE FOLLOWING DESCRIBED TRACT OF LAND:

PART OF THE D.D. DESKINS DONATION LAND CLAIM NO. 54 IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST OF THE WILLAMETTE MERIDIAN IN YAMHILL COUNTY, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING 25 FEET NORTH OF THE SOUTHWEST CORNER OF LAND CONVEYED TO JOHN ILLIG BY DEED RECORDED SEPTEMBER 24, 1904 IN BOOK 47, PAGE 2, DEED RECORDS; THENCE NORTH ALONG THE WEST LINE OF SAID TRACT, 100 FEET; THENCE EAST PARALLEL WITH THE SOUTH LINE OF SAID TRACT, 80 FEET; THENCE SOUTH PARALLEL WITH THE WEST LINE OF SAID TRACT, 100 FEET; THENCE WEST 80 FEET TO THE PLACE OF BEGINNING.

SAVE AND EXCEPTING THEREFROM THE EASTERLY 8 FEET THEREOF CONVEYED TO CHESTER E. HANVILLE AND DORIS T. HANVILLE, HUSBAND AND WIFE, BY DEED RECORDED JULY 22, 1965 IN FILM VOLUME 46, PAGE 834, DEED AND MORTGAGE RECORDS.

TOGETHER WITH THAT PORTION OF VACATED CENTER STREET (FORMERLY EAST STREET), INURRING THERETO, BY ORDINANCE 2019-2854 AND RECORDED JANUARY 7, 2020, AS INSTRUMENT NO. 202000265, DEED AND MORTGAGE RECORDS.

PARCEL 30:

PARCEL 3 OF PARTITION PLAT 1990-50, RECORDED NOVEMBER 16, 1990 IN FILM 3, PAGE 56 AND 57,

YAMHILL COUNTY RECORDS, AND FURTHER DESCRIBED AS FOLLOWS:

A TRACT OF LAND IN SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST, YAMHILL COUNTY, OREGON, BEING PART OF THAT TRACT OF LAND DESCRIBED TO LORRIN WHITE IN DEED OF TRUST RECORDED IN FILM VOLUME 122, PAGE 872, YAMHILL COUNTY, DEED RECORDS, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF THE D.D. DESKINS DONATION LAND CLAIM; THENCE SOUTH 00° 20' WEST 349.33 FEET ALONG THE EAST LINE OF SAID CLAIM TO THE SOUTHEAST CORNER OF THE MARTHA STEVAHN TRACT; THENCE NORTH 69° 45' WEST 198.13 FEET ALONG THE SOUTH LINE OF SAID, STEVAHN TRACT TO THE SOUTHEAST CORNER OF SAID WHITE TRACT; THENCE CONTINUING NORTH 69° 45' WEST 126.64 FEET TO AN IRON ROD ON THE SOUTH LINE OF SAID WHITE TRACT; THENCE NORTH 38° 57' EAST 107.84 FEET TO AN IRON ROD; THENCE NORTH 34° 45' 02" WEST 60.30 FEET TO AN IRON ROD AND THE TRUE POINT OF BEGINNING; THENCE NORTH 51° 44' 07" WEST, 168.82 FEET TO AN IRON ROD AT AN ANGLE POINT IN THE NORTH LINE OF SAID WHITE TRACT; THENCE SOUTH 59° 58' 10" WEST 40.00 FEET TO AN ANGLE POINT IN SAID NORTH LINE; THENCE SOUTH 64° 25' 20" WEST 220.50 FEET TO THE MOST WESTERLY CORNER OF SAID WHITE TRACT; THENCE SOUTH 69° 45' EAST 289.58 FEET ALONG THE SOUTH LINE OF SAID WHITE TRACT; THENCE NORTH 40° 24' 08" EAST 145.65 FEET TO THE TRUE POINT OF BEGINNING.

TOGETHER WITH AN EASEMENT DESCRIBED IN FILM VOLUME 249, PAGE 1579, DEED AND MORTGAGE RECORDS, AND ALSO SHOWN ON PARTITION PLAT 90-50 RECORDED NOVEMBER 16, 1990.

PARCEL 31:

A TRACT OF LAND LOCATED IN THE SOUTHWEST ONE-QUARTER OF SECTION 17, TOWNSHIP 3 SOUTH, RANGE 2 WEST, WILLAMETTE MERIDIAN, CITY OF NEWBERG, YAMHILL COUNTY, OREGON, AND THE CENTERLINE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

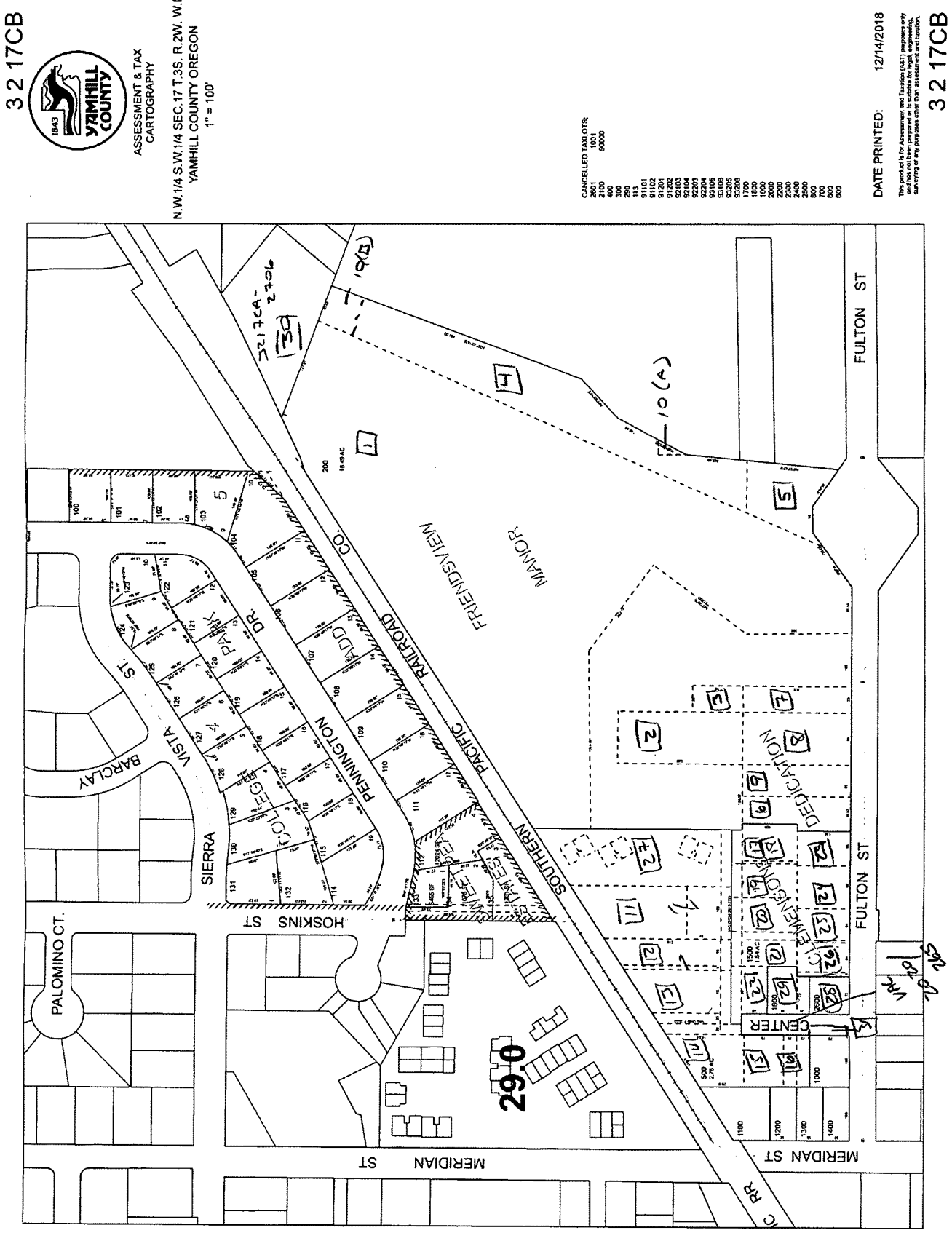
COMMENCING AT THE NORTHEASTERLY CORNER OF THE PLAT OF "FRIENDSVIEW VILLAGE CONDOMINIUM"; THENCE ALONG THE EASTERLY LINE OF SAID PLAT AND THE SOUTHERLY EXTENSION THEROF, SOUTH 01° 56' 13" WEST 591.79 FEET TO THE NORTH RIGHT-OF-WAY LINE OF FULTON STREET (25.00 FEET FROM CENTERLINE); THENCE ALONG SAID NORTH RIGHT-OF-WAY LINE NORTH 88° 10' 31" WEST 364.86 FEET TO THE CENTERLINE OF CENTER STREET VACATION ORDINANCE NO. 2019-2854, AND THE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID NORTH RIGHT-OF-WAY LINE, NORTH 88° 10' 31" WEST 20.00 FEET TO WEST LINE OF SAID CENTER STREET VACATION; THENCE ALONG SAID WEST LINE, NORTH 02° 24' 50" EAST 78.08 FEET TO THE NORTHEAST CORNER OF DOCUMENT NUMBER 200909211; THENCE ALONG THE EASTERLY EXTENSION OF THE NORTH LINE OF SAID DEED, SOUTH 88° 10' 50" EAST 20.00 FEET TO SAID CENTERLINE; THENCE ALONG SAID CENTERLINE, SOUTH 02° 24' 50" WEST 78.09 FEET TO THE POINT OF BEGINNING.

PARCEL 32:

PARCEL 1 OF PARTITION PLAT 1990-50, RECORDED NOVEMBER 16, 1990 IN FILM 3, PAGE 56 AND 57, YAMHILL COUNTY PLAT RECORDS, STATE OF OREGON.

PARCEL 33:

PARCEL 2 OF PARTITION PLAT 1990-50, RECORDED NOVEMBER 16, 1990 IN FILM 3, PAGE 56 AND 57, YAMHILL COUNTY PLAT RECORDS, STATE OF OREGON.


3 2 17CB
YAMHILL COUNTY
1843
ASSESSMENT & TAX
CARTOGRAPHY
N.W.1/4 S.W.1/4 SEC.17 T.3S. R.2W. W.M.
YAMHILL COUNTY OREGON
1" = 100'
CANCELLED TAXLOTS:
2601
2100
400
300
290
113
91101
91102
91201
91202
92103
92104
92203
92204
93105
93106
93205
93206
1700
1800
1900
2000
2100
2200
2300
2400
2500
600
700
800
900
DATE PRINTED: 12/14/2018
This product is for Assessment and Taxation (A&T) purposes only and has not been prepared or is suitable for legal, engineering, surveying or any purposes other than assessment and taxation.
3 2 17CB
FULTON ST
FRIENDSVIEW MANOR
SOUTHERN PACIFIC RAILROAD CO.
PENNINGTON DR
SIERRA ST
BARCLAY
VISTA
PALOMINO CT.
HOSKINS ST
MERIDIAN ST
CENTER
DEDICATION
29.0

FRIENDSVIEW RCF PHASE 1

Exhibit E: Sample Public Notice & Mailing Information

City of Newberg
Community Development Department
P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240. Fax 503-537-1272 www.newbergoregon.gov

WE WANT YOUR COMMENTS ON A PROPOSED NEW DEVELOPMENT IN YOUR NEIGHBORHOOD

A property owner in your neighborhood submitted an application to the City of Newberg to construct a new resident care facility on the existing Friendsview Retirement Community. You are invited to take part in the City's review of this project by sending in your written comments. For more details about giving comments, please see the back of this sheet.

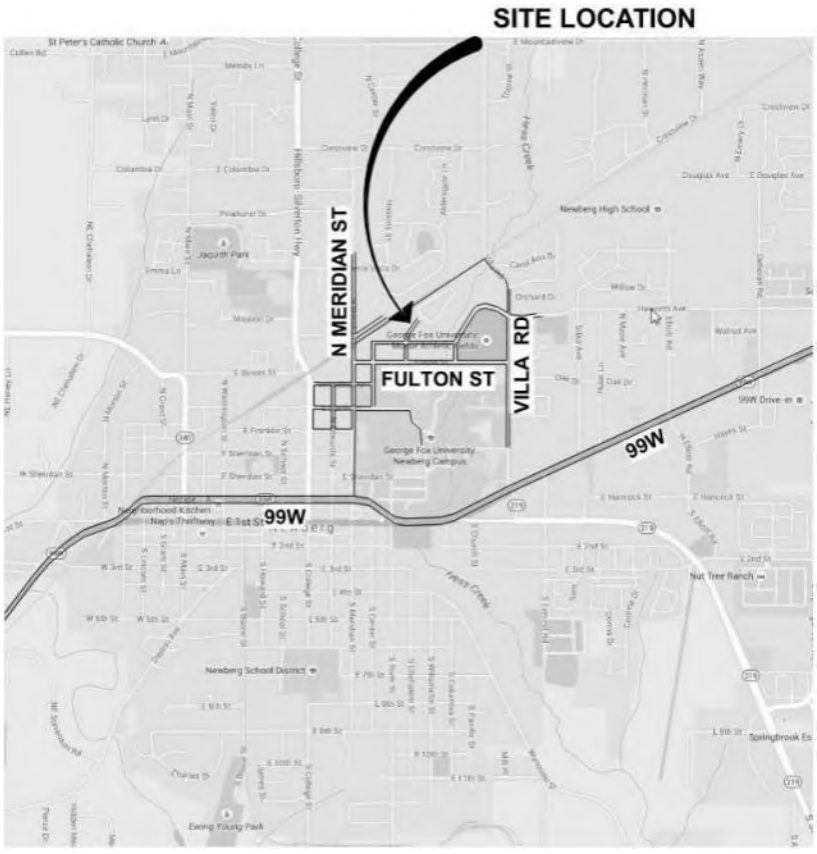
The development would include a proposed 4-story RCF building roughly 73,000 square feet in size and 79 patient rooms. It will also include 31 parking spaces for the facility.

APPLICANT: ***LRS Architects, Inc – Cynthia Schuster***
TELEPHONE: ***503-221-1121***

PROPERTY OWNER: ***Friendsview Retirement Community***

LOCATION: ***1301 Fulton St., Newberg, OR 97132***

TAX LOT NUMBER: ***Yamhill County Tax Map and Lot Number (3217CB, Lot 200)***



We are mailing you information about this project because you own land within 500 feet of the proposed new project. We invite you to send any written comments for or against the proposal within 14 days from the date this notice is mailed.

If you mail your comments to the City, please put the following information on the outside of the envelope:

Written Comments: File No.XX **(City staff will give you the file number for your project at the time of application)**
City of Newberg
Community Development Department
PO Box 970
Newberg, OR 97132

You can look over all the information about this project or drop comments off at Newberg City Hall, 414 E. First Street. You can also buy copies of the information for a cost of 25 cents a page. If you have any questions about the project, you can call the Newberg Planning Division at 503-537-1240.

All written comments must be turned in by 4:30 p.m. on ***enter date two weeks from date you mailed notice*****.** Any issue which might be raised in an appeal of this case to the Land Use Board of Appeals (LUBA) must be submitted to the City in writing before this date. You must include enough detail to enable the decision maker an opportunity to respond. The applicable criteria used to make a decision on this application for design review approval are found in Newberg Development Code 15.220.050(B).

The Community Development Director will make a decision at the end of a 14-day comment period. If you send in written comments about this project, you will be sent information about any decision made by the City relating to this project.

Date Mailed: ***Date notice is mailed***

Land Use Notice

FILE # XXXXXXX

PROPOSAL: New Resident Care Community for Friendsview Retirement Community.

FOR FURTHER INFORMATION, CONTACT:

City of Newberg
Community Development Department
414 E First Street
Phone: 503-537-1240

FRIENDSVIEW RCF PHASE 1

Exhibit F: Traffic Impact Analysis Update Memo

December 16, 2020

Dave Hampton
Friendsview Manor Inc
1001 E Fulton St
Newberg, OR 97132

Re: Traffic Study for New RCF Building

Mr Hampton,

The purpose of this letter is to determine if the proposed residential care facility triggers the need for a traffic study as defined in the Newberg development code. The following code section addressed traffic studies:

> ***15.220.030.B***
>
> ***14. Traffic Study.*** *A traffic study shall be submitted for any project that generates in excess of 40 trips per p.m. peak hour. This requirement may be waived by the director when a determination is made that a previous traffic study adequately addresses the proposal and/or when off-site and frontage improvements have already been completed which adequately mitigate any traffic impacts and/or the proposed use is not in a location which is adjacent to an intersection which is functioning at a poor level of service. A traffic study may be required by the director for projects below 40 trips per p.m. peak hour where the use is located immediately adjacent to an intersection functioning at a poor level of service. The traffic study shall be conducted according to the City of Newberg design standards. [Ord. 2619, 5-16-05; Ord. 2451, 12-2-96. Code 2001 § 151.192.]*

The proposed project is to build a four-story residential care facility with a total of 79 beds. The footprint of the new structure will result in the relocation of 29 existing healthcare beds into the new RCF and demolition of one duplex unit. In the 10th Edition of the ITE Trip Generation Manual, the healthcare beds fall within the Continuing Care Retirement Community classification, ITE Code 255 with an average trip rate per unit for the PM peak hour of 0.20 trips. The duplex, considered two single family units, falls in ITE Code 210 with an average trip rate per unit for the PM peak hour of 1trip.

Land Use	ITE Code	Units	Trip Rate	PM Total
Existing Bed to be relocated	255	29	0.2	(5.8)
Duplex Demo	210	2	1	(2)
New RCF	255	79	0.2	15.8
		NET NEW TRIPS		8

Based on my assessment, the proposed 79-unit residential care facility project will result in an overall increase of 8 trips in the PM peak hour which is less that the 40 trip trigger for a traffic study. Therefore this project does not trigger the requirement for a traffic study.

Sincerely,

Daniel Danicic, P.E.
ddanicic@atepinc.com
Cell 503-476-7702

EXPIRES 12/31/21

FRIENDSVIEW RCF PHASE 1

Exhibit G: Preliminary Storm Report

Friendsview
Residential Care Facility – Phase I
Newberg, Oregon

Preliminary Stormwater Report

Date: December 17, 2020

Client: LRS Architects
720 NW Davis Street, Suite 300
Portland, OR 97209

Engineering Contact: Chuck Gregory, PE | Associate
(503) 563-6151 | chuckg@aks-eng.com

Prepared By: Austin Cole, EI

Engineering Firm: AKS Engineering & Forestry, LLC
12965 SW Herman Road
Suite 100
Tualatin, OR 97062

AKS Job Number: 3199-01

AKS ENGINEERING & FORESTRY

www.aks-eng.com

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Tables

Figures

Appendices

Appendix D: TR-55 Runoff Curve Numbers
Appendix E: Operations and Maintenance Plan
Appendix F: Geotechnical Engineering Report

Preliminary Stormwater Report
FRIENDSVIEW RESIDENTIAL CARE FACILITY – PHASE 1
NEWBERG, OREGON

1.0 Purpose of Report

The purpose of this report is to analyze the effects the proposed development will have on the existing stormwater conveyance system; document the criteria, methodology, and informational sources used to design the proposed stormwater system; and present the results of the preliminary hydraulic analysis.

2.0 Project Location/Description

The proposed development is located north of Fulton Street, and south of the Southern Pacific Railroad in Newberg, Oregon, encompassing 16.4 acres (Tax Lot 200, Yamhill County Tax Map 3S2W17).

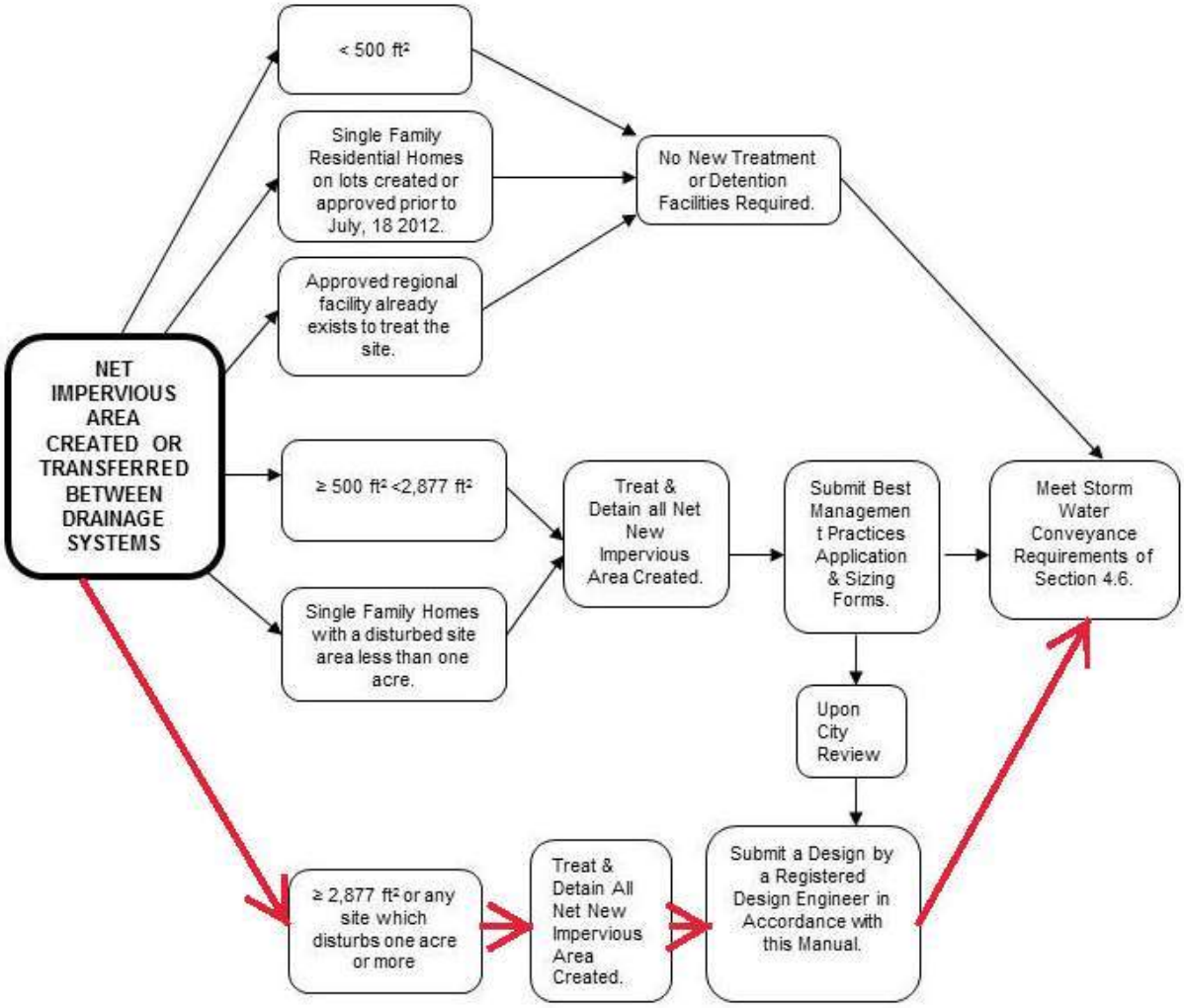
The proposed project is a multi-phased development. The first phase will include the removal and relocation of existing duplex buildings and the construction of a residential care facility, reconstructed parking lot areas, drive aisles, curbs, sidewalks, landscaping, associated underground utilities, and stormwater facilities. The second phase will consist of an expansion to the existing Friendsview Manor Building, parking spaces, sidewalks, and accompanying utilities which will occur at a future date.

Stormwater management is provided through a combination of low impact development approach (LIDA) facilities and underground detention chambers. All stormwater detention facilities will be designed with outlet structures to release the post-developed site peak flow at or below pre-developed rates. Most of the existing upstream system will be treated using a StormFilter cartridge catch basin.

3.0 Regulatory Design Criteria

Stormwater design criteria is dictated by the City of Newberg *Public Works Design and Construction Standards (August 2015)*. Per Figure 4.4, the proposed development will create more than 2,877 square feet of impervious area and will therefore be required to provide treatment and detention for all net new impervious area.

Figure 4.4 Storm water Quality & Quantity Design Flow Chart



3.1. Stormwater Quantity

Per City of Newberg's *Public Works Design and Construction Standards (August 2015),* it is required that the post-development runoff rates from the site do not exceed the pre-development runoff rates.

4.7.1.III Water Quantity Facility Design & Control Standards

Stormwater quantity on-site detention facilities shall be designed to capture runoff so the post-development runoff rates from the site do not exceed the pre-development runoff rates from the site, based on 24-hour storm events ranging from ½ of the 2-year return storm to the 25-year return storm. Specifically, the ½ of the 2, 2, 10, and 25-year post-development runoff rates will not exceed their respective ½ of the 2, 2, 10, and 25-year pre-development runoff rates…

Per City of Newberg standards, the proposed development will provide stormwater quantity management with LIDA facilities to the maximum extent practicable and underground detention chambers. The proposed conveyance system and stormwater management facilities will be designed to detain the post-developed runoff rates from the site, so that they do not exceed the pre-developed rates.

3.2. Stormwater Quality

Per City of Newberg's *Public Works Design and Construction Standards (August 2015),* it is required that stormwater quality facilities be designed based on the following:

> *4.8.5 Water Quality Storm*
>
> *The storm defines both volume and rate of runoff. The stormwater quality only facilities shall be designed for a dry weather storm event totaling 1.0 inches of precipitation falling in 24 hours with an average storm return period of 96 hours using Figure 4-3, rainfall distribution.*

Stormwater quality management for this project will be met using flow-through planter facilities to the maximum extent practicable and a StormFilter catch basin. All facilities have been designed per City of Newberg Standards and checked using the HydroCAD 10.0 computer software.

4.0 Design Methodology

The Santa Barbara Urban Hydrograph (SBUH) Method was used to analyze stormwater runoff from the site. This method utilizes the SCS Type 1A 24-hour design storm. HydroCAD 10.0 computer software was used to model the hydrology and stormwater facility hydraulics. Runoff Curve Numbers (CN), which are representative of existing and developed cover conditions and time of concentration (Tc) values were developed in accordance with the U.S. Department of Agriculture (USDA) – Natural Resource Conservation Service's (NRCS) Technical Release 55 and are included in Appendix D.

5.0 Design Parameters

5.1. Design Storms

Per City of Newberg requirements, Table 5-1 defines the rainfall intensities and durations that were utilized in the analysis of the existing and proposed stormwater facilities.

Table 5-1: Rainfall Intensities

Recurrence Interval (Years)	Total Precipitation Depth (Inches)
Water Quality	1.00
½ of 2	1.25
2	2.50
10	3.50
25	4.00

5.2. Pre-Developed Site Conditions

5.2.1. Site Topography

The subject site includes Hess Creek and the surrounding canyon to the east of the development. The canyon generally slopes at approximately a 2:1 slope, with a high point of approximately 180 feet and a low point of approximately 152 feet. Existing grades in the proposed development area generally vary from approximately 1 to 30 percent, with a high point of approximately 198 feet in the northwest corner of the site. The low point of the proposed development is approximately 175 feet near the west bank of the Hess Creek Canyon. The site generally slopes from northwest to southeast.

5.2.2. Land Use

The existing site is currently developed with existing buildings owned by Friendsview Retirement Community and is located within the City of Newberg's Institutional (I) zoning district.

5.3. Soil Type

The soil beneath the project site and associated drainage basins is classified as Aloha Silt Loam and Woodburn Silt Loam per the USDA Soil Survey for Yamhill County. Table 5-2 outlines the Hydrologic Soil Group rating for each soil type.

Table 5-2: Hydrologic Soil Groupings

NRCS Map Unit Identification	NRCS Soil Classification	Hydrologic Soil Group Rating
2300A	Aloha Silt Loam	C/D
2310C	Woodburn Silt Loam	C
2310F	Woodburn Silt Loam	C

Further information on this soil type is included in the NRCS Soil Resource Report located in Appendix C of this report.

5.4. Post-Developed Site Conditions

5.4.1. Site Topography

The on-site slopes will be modified with cuts and fills to accommodate the relocation of a portion of the private drive aisle and parking, the relocation of an existing duplex, the demolition of an existing duplex, and the construction of a multi-unit building and various stormwater facilities. The eastern portion of the site will remain unchanged and continue to drain to Hess Creek. The western and northern portions of the site will not be impacted by the proposed development.

5.4.2. Land Use

The post-developed site will consist of duplexes, a multi-unit building with associated streets, sidewalks, a concrete driveway, and underground utilities.

5.4.3. Post-Developed Site Parameters

Refer to Appendix A for HydroCAD reports that include each parameter (e.g. impervious/pervious areas, time of concentration, etc.) used to model and analyze the site hydrology.

5.4.4. Description of Off-Site Contributing Basins

There are no major off-site contributory basins draining onto the subject site.

6.0 Stormwater Analyses

6.1. Stormwater Conduit Sizing and Inlet Spacing

The proposed on-site catch basins and inlet structures will be spaced per City of Newberg requirements to properly convey stormwater runoff. The proposed storm pipes will be sized using Manning's equation to convey the peak flows from the 25-year storm event. All stormwater will be collected and conveyed to the existing private storm main located east of the Friendsview Manor building.

6.2. Existing Stormwater Facilities

The existing storm system is currently conveyed to a detention pond located approximately in the middle of the subject site (see Figure 2, Pre-Developed Basin Map for further detail). Following a topographic survey and visual inspections, AKS staff have determined that the existing pond does not meet current City of Newberg water quality standards for the following reasons:

A. Permanent Ponding Depth: The bottom of the existing pond currently sits level to or higher than the pond's outlet structure. Per City of Newberg standards, the minimum ponding depth for an

extended dry basin is 0.4 feet. This lack of ponding depth prevents sediment from settling out of the stormwater conveyed to the pond.

B. Inlet and Outlet Locations: The existing pipe discharging into the pond is directly adjacent to the pond's outlet structure. This allows for direct flow between structures without treatment, thereby resulting in a short circuiting of the flow.

C. Non-standard Orifice: The existing outlet structure has a non-standard 6-inch turn-down pipe that conveys runoff to the overflow structure and out of the pond via a 15-inch storm line. A pond of this size and for a basin of this scale would typically utilize a 1-to-2-inch orifice to provide a drawdown time of 48 hours per City of Newberg standards. This would better allow for stormwater ponding which would allow sediment to settle out of the stormwater. A system with an orifice larger than approximately 1 to 2 inches would not provide the required draw down time.

While the pond does not meet current City standards for water quality, it does provide detention for the upstream system. However, due to the relocation of the existing access road, the pond will be decommissioned and filled as part of this project. As such, proposed facilities will need to provide capacity for detention to compensate for the removed pond facility. Because the existing pond does not currently treat the existing runoff, proposed facilities will not need to provide treatment due to the removal of the facility. The pond facility has been modeled in HydroCAD per survey data in order to analyze the pre-developed rates. Refer to Appendix A for calculations and contributing basins for the existing pond facility.

6.3. Proposed Stormwater Quality Control Facilities

6.3.1. Water Quality Treatment

Per Figure 4.4 of the City of Newberg Design standards, any site which disturbs more than 2,877 square feet or more than one acre must treat and detain all net new impervious area created. Table 6-1 details the existing, new, and net new impervious area created within the project limits. For additional information, refer to Figure 4 for basin maps detailing the impervious areas on site.

Table 6-1: Net New Impervious Area Summary

Pre-Development Impervious Area (square feet)	Post-Development Impervious Area (square feet)	Net New Impervious Area Requiring Treatment (square feet)	Total Treated Area (square feet)	Excess Treated Area (square feet)
146,000	172,640	26,640	34,960*	8,320

*Note: Approximately 14,175 square feet will be collected and treated by the StormFilter catch basin (see Table 6-2). The remaining area will be treated by LIDA flow-through planters.

6.3.2. Flow-Through Planter Facilities

LIDA flow-through planter facilities will be constructed on the west and east faces of the new building to collect and treat runoff from the roof of the new building and the surrounding plaza areas. The planters will be designed per City standards and analyzed in HydroCAD to provide water quality treatment for this new impervious area. Water quality flow will be routed through the growing medium and drain rock sections to the bottom of the facility. Also, the planters have been designed with outlet structures to maintain a minimum of 4-inches of freeboard during the 25-year storm event. Refer to Appendix A for the calculations for the water quality treatment through the planter.

6.3.3. Water Quality Structures

A portion of the proposed development's net new impervious area, as shown in the Post-Developed Basin Map, will be treated using a water quality catch basin. Flow will then be conveyed to the underground detention system. This area consists of the relocated drive aisle, new parking areas, and new sidewalks.

Refer to Figures 2 and 3 for basin maps detailing the contributing catchment area for the subject site. Refer to Table 6-2 and Appendix B for calculations and additional information regarding the sizing requirements of the water quality structure.

Table 6-2: Water Quality Structure Sizing

Structure ID	Collected Impervious Area (square feet)	Water Quality Flow (cfs)	Cartridge Flow Rate (27-inch Cartridge) (cfs)	Number of Cartridges Required
CB1	14,360	0.07	0.05	2

A portion of the project site will be situated at grades and elevations that will not allow stormwater runoff to be directed and discharged into the proposed water quality structure or LIDA facilities. Stormwater runoff from the proposed public improvements and repairs will continue to be collected and conveyed by the existing stormwater conveyance system in Fulton Street. If the net new impervious area created is less than 500 square feet, water quality treatment is not required. Additionally, a portion of the new improvements located south of the new building will be unable to be treated. This area is offset by the treatment that will be provided for existing impervious areas that were previously untreated by the existing pond.

6.4. Proposed Stormwater Quantity Control Facilities

Per Section 6.2 of this report, the existing pond to be removed currently provides detention for the upstream system. To offset the loss of the existing pond and to satisfy stormwater quantity requirements, a combination of an underground detention system and LIDA flow-through planters have been designed to release the post-developed peak flow at or below the pre-developed rate release from the existing pond. The detention facilities have been designed to collect and detain runoff from the existing upstream system that currently drains to the existing pond. Refer to Appendix A for calculations and contributing basins for the stormwater quantity control facility.

Table 6-3 outlines the pre-development and post-development flow rate comparisons.

Table 6-3: Water Quantity Flow Summary

Recurrence Interval	Peak Pre-Development Flow Exiting the Pond (cfs)	Peak Post-Development Flow (cfs)	Peak Flow Difference (cfs)
½ of 2	0.89	0.56	-0.33*
2	1.78	0.94	-0.84*
10	2.42	1.97	-0.45*
25	3.49	2.88	-0.61*

*Note: Additional detention capacity will be used by future development phases.

6.5. Downstream Analysis

The downstream system has been evaluated and it has been determined that this development will have no detrimental impacts to the downstream system. The onsite stormwater facility is designed so that post-development runoff rates will be less than or equal to the pre-development rates.

The conveyance system leaving the site has been analyzed from the proposed development site to the outfall at Hess Creek, approximately 250 feet downstream. It has been determined that the existing stormwater conveyance system meets the City's capacity requirements (Design Standards Manual Section 4.5.7) to convey the detained flows from the proposed development.

AKS staff completed a visual investigation on 09/02/2020 of the existing conveyance system and outfall downstream of the proposed development. The existing outfall is in good condition with no signs of overflow or erosion.

Figure 1: Vicinity Map

LRS ARCHITECTS
720 NW Davis 503.221.1121
Suite 300 503 221.2077
Portland OR 97209 www.lrsarchitects.com

PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

ENGINEERING · SURVEYING · NATURAL RESOURCES
FORESTRY · PLANNING · LANDSCAPE ARCHITECTURE

LRS PROJECT NUMBER: *219081*
AKS PROJECT NUMBER: *3199-01*

RESIDENTIAL CARE FACILITY- PHASE I

1301 Fulton St
Newberg,OR 97132

Friendsview RETIREMENT COMMUNITY

SHEET TITLE:

VICINITY MAP

DRAWN BY:

SHEET:

FIG 1

90% DESIGN DEVELOPMENT
12/17/2020

Figure 2: Pre-Developed Basin Map

LRS ARCHITECTS
720 NW Davis 503.221.1121
Suite 300 503 221.2077
Portland OR 97209 www.lrsarchitects.com

PRELIMINARY NOT FOR CONSTRUCTION

CONSULTANT:

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
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WWW.AKS-ENG.COM

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LRS PROJECT NUMBER: *219081*
AKS PROJECT NUMBER: *3199-01*

RESIDENTIAL CARE FACILITY- PHASE I

1301 Fulton St
Newberg,OR 97132

Friendsview RETIREMENT COMMUNITY

SHEET TITLE:

PRE-DEVELOPED BASIN MAP

DRAWN BY:

SHEET:

FIG 2

100% DESIGN DEVELOPMENT
1/15/21

Figure 3: Post-Developed Basin Map

LEGEND:

1ES: EXISTING IMPERVIOUS AREA TO REMAIN UNDISTURBED (±106,000 SF)

NEW IMPERVIOUS AREA (±66,640 SF TOTAL)
- P1A: PHASE 1 ROOF – NORTH (±11,760 SF)
- P1B: PHASE 1 ROOF – SOUTHWEST (±7,030 SF)
- P1C: PHASE 1 ROOF – SOUTHEAST (±1,890 SF)
- P1D: PHASE 1 ENCLOSED YARD (±820 SF)
- P1E: PHASE 1 PARKING – NORTH (±14,360 SF)
- P1F: PHASE 1 PARKING – SOUTH (±16,170 SF)
- P1G: PHASE 1 RELOCATED DUPLEX ROOF (±4,970 SF)
- P1H: PHASE 1 PARKING – WEST (±3,790 SF)
- P1J: UN-DETAINED FLOWS (±500 SF)
- PH2: PHASE 2 ROOF (±5,350 SF)

PREDEVELOPMENT FLOW ARROW

POST-DEVELOPMENT FLOW ARROW

STORMWATER PIPE FLOW DIRECTION

BASIN EXTENTS (±245,000 SF)

N

SCALE: 1" = 40 FEET

40 0 8 20 40

ORIGINAL PAGE SIZE: 22" x 34"

LRS ARCHITECTS
720 NW Davis 503.221.1121
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Friendsview RETIREMENT COMMUNITY

SHEET TITLE:

POST-DEVELOPED BASIN MAP

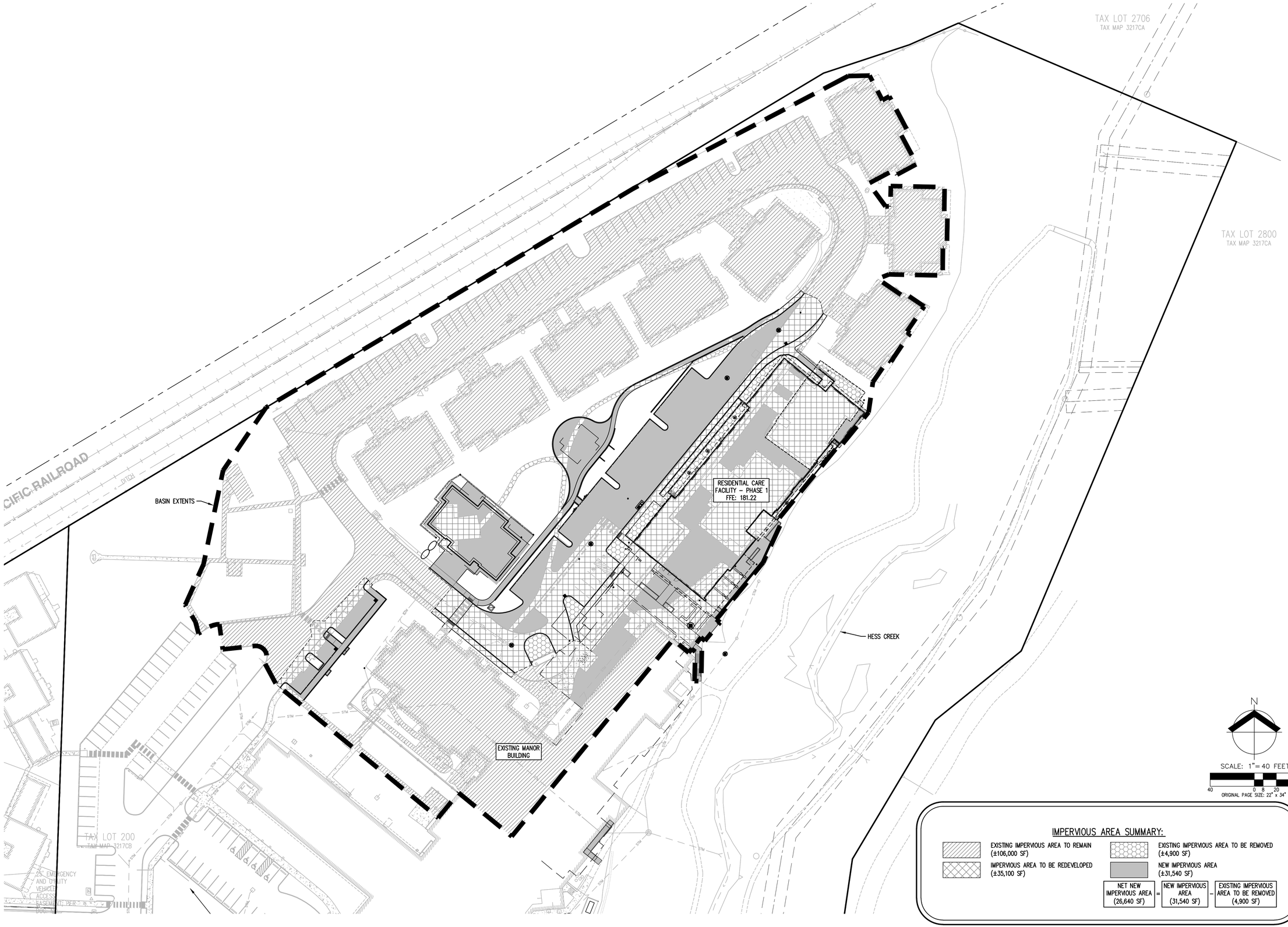
DRAWN BY:

SHEET:

FIG 3

100% DESIGN DEVELOPMENT
1/15/21

Figure 4: Impervious Area Basin Map



IMPERVIOUS AREA SUMMARY:

EXISTING IMPERVIOUS AREA TO REMAIN (±106,000 SF)	EXISTING IMPERVIOUS AREA TO BE REMOVED (±4,900 SF)
IMPERVIOUS AREA TO BE REDEVELOPED (±35,100 SF)	NEW IMPERVIOUS AREA (±31,540 SF)

NET NEW IMPERVIOUS AREA (26,640 SF) = NEW IMPERVIOUS AREA (31,540 SF) – EXISTING IMPERVIOUS AREA TO BE REMOVED (4,900 SF)

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RESIDENTIAL CARE FACILITY- PHASE I

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SHEET TITLE:

IMPERVIOUS AREA BASIN MAP

DRAWN BY:

SHEET:

FIG 4

100% DESIGN DEVELOPMENT
1/15/21

Figure 5: Stormwater As-Built Plan

STORM DRAINAGE PLAN

FRIENDSVIEW MANOR

SHEET 3 OF 6

PROJECT: FRIENDSVIEW MANOR
NO.: 626-002
TYPE: CONSTRUCTION

NO.	DATE	REVISION	BY
△	6/27/02	CLIENT/ARCH REVISIONS	JMJ
△	7/12/02	CITY REVISIONS	MWL

DESIGNED BY RAL DATE
DRAWN BY ELT DATE
REVIEWED BY MWL DATE
PROJECT NO. 626-002 REF. 626028AGE
SCALE HORZ 1"=60'
VERT 1"=4'
6656TRACMAP

VALID THROUGH 6-30-02

ALPHA ENGINEERING INC.
PLANNING · DEVELOPMENT SERVICES · SURVEYING
OFFICE 503-452-8003 · FAX 503-452-8043
PLAZA WEST · SUITE 220 · 9000 SW OAK · PORTLAND,OR 97223

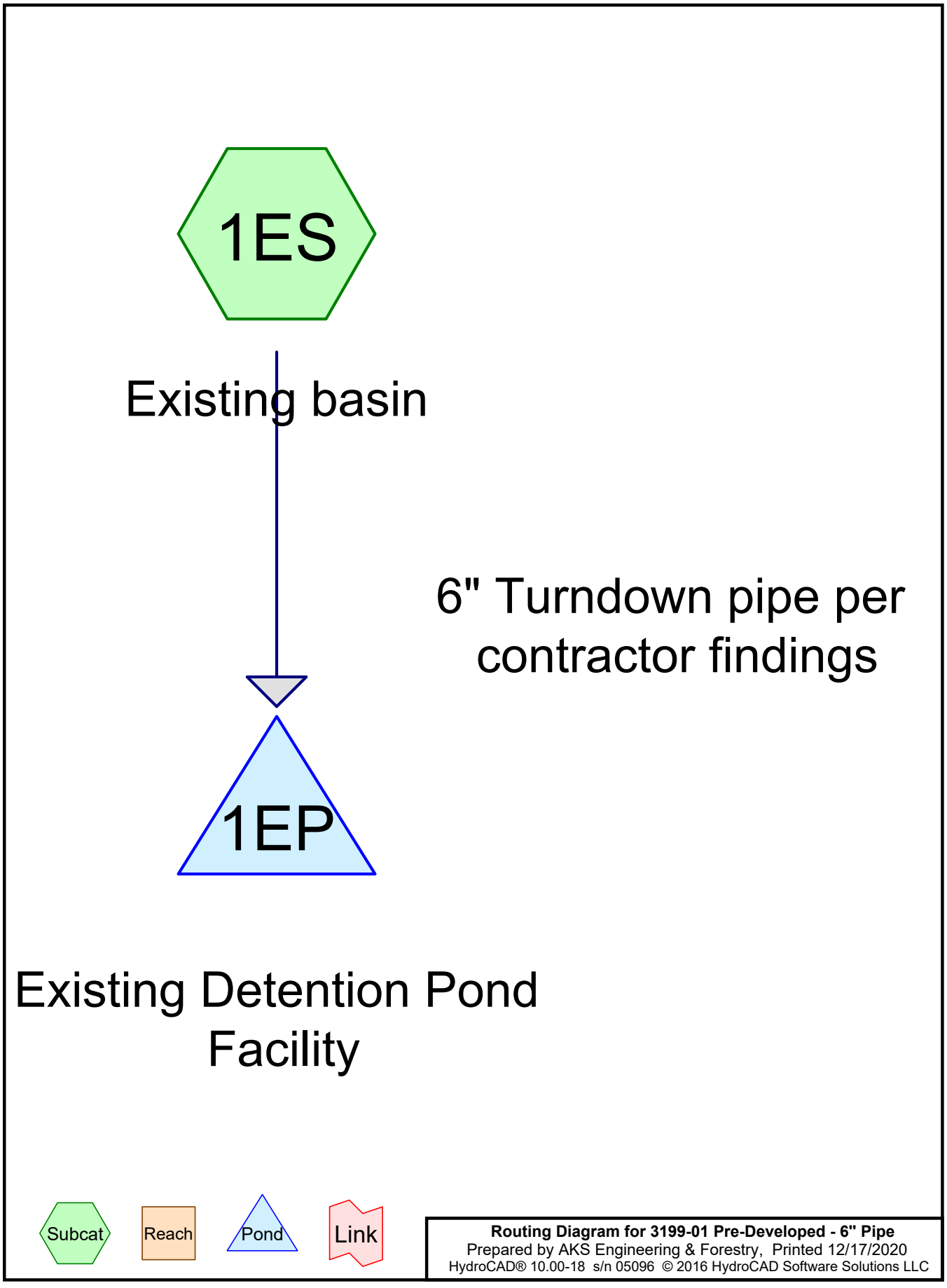
NOTES:
1. ALL STORM DRAINAGE IS PRIVATE. PERMIT REQUIRED THROUGH BUILDING DEPARTMENT.
2. ENGINEER MUST CERTIFY IN WRITING THAT THAT THE DETENTION PONDS INCLUDING PIPING & STRUCTURES ARE CONSTRUCTED ACCORDING TO PLANS AND APPROVED DESIGN.
3. LAY STORM SEWER PIPE WITH LASER.
4. CONSTRUCTION BELOW CONTOUR ELEVATION 172 SHALL BE PERFORMED AND AREA DISTURBED BY CONSTRUCTION RESTORED TO CONDITION EQUAL OR BETTER THAN PRIOR TO CONSTRUCTION.
5. CONTRACTOR TO PROVIDE ANY TEMPORARY FENCING, BIOBAGS OR OTHER MEANS AS MAY BE REQUIRED.

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

7/12/02 REVISED CONSTRUCTION SET
6/27/02 REVISED CONSTRUCTION SET
5/16/02 CONSTRUCTION SET

Novel storm line & South

Appendix A: Pre-Developed and Post-Developed HydroCAD Analysis



Routing Diagram for 3199-01 Pre-Developed - 6" Pipe
Prepared by AKS Engineering & Forestry, Printed 12/17/2020

Summary for Subcatchment 1ES: Existing basin

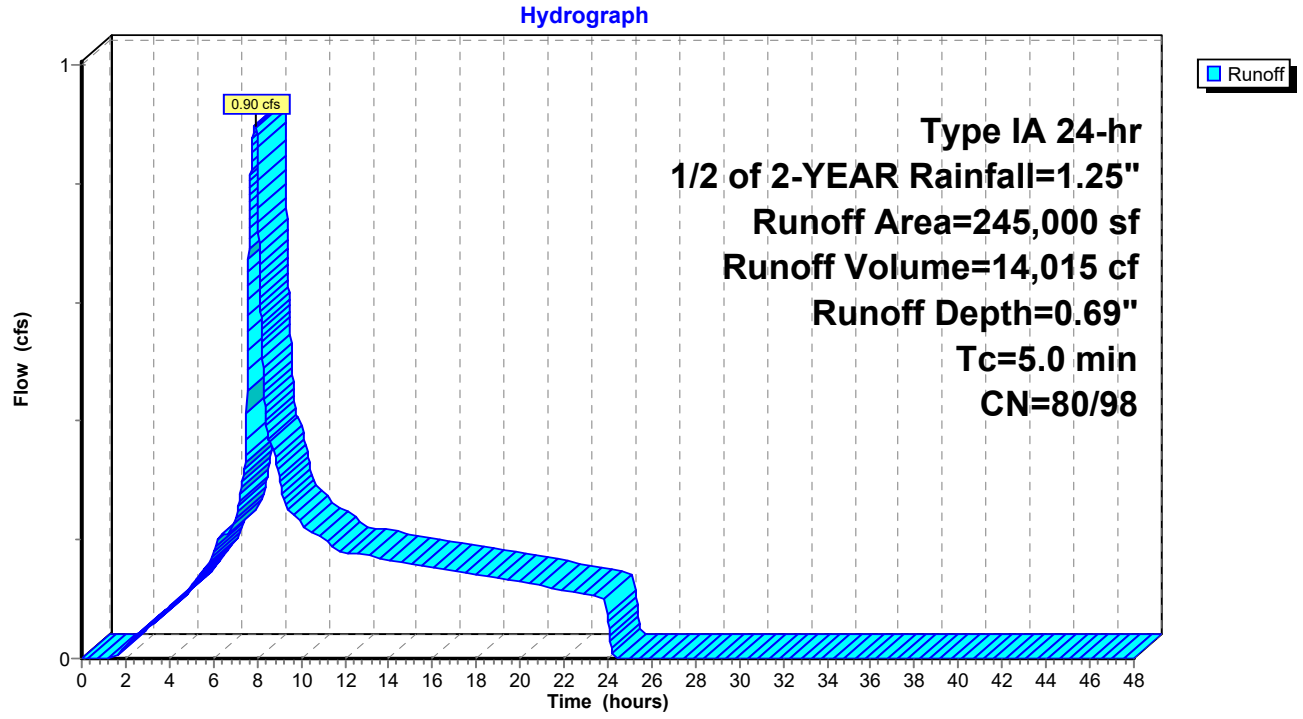
Runoff = 0.90 cfs @ 7.89 hrs, Volume= 14,015 cf, Depth= 0.69"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 of 2-YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	146,000	98	Existing Impervious Area
	99,000	80	>75% Grass cover, Good, HSG D
	245,000	91	Weighted Average
	99,000		40.41% Pervious Area
	146,000		59.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Pond 1EP: Existing Detention Pond Facility

Inflow Area = 245,000 sf, 59.59% Impervious, Inflow Depth = 0.69" for 1/2 of 2-YEAR event
Inflow = 0.90 cfs @ 7.89 hrs, Volume= 14,015 cf
Outflow = 0.89 cfs @ 7.97 hrs, Volume= 14,015 cf, Atten= 1%, Lag= 4.6 min
Primary = 0.89 cfs @ 7.97 hrs, Volume= 14,015 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 175.29' @ 7.97 hrs Surf.Area= 1,051 sf Storage= 287 cf

Plug-Flow detention time= 8.8 min calculated for 14,015 cf (100% of inflow)
Center-of-Mass det. time= 8.6 min (737.4 - 728.8)

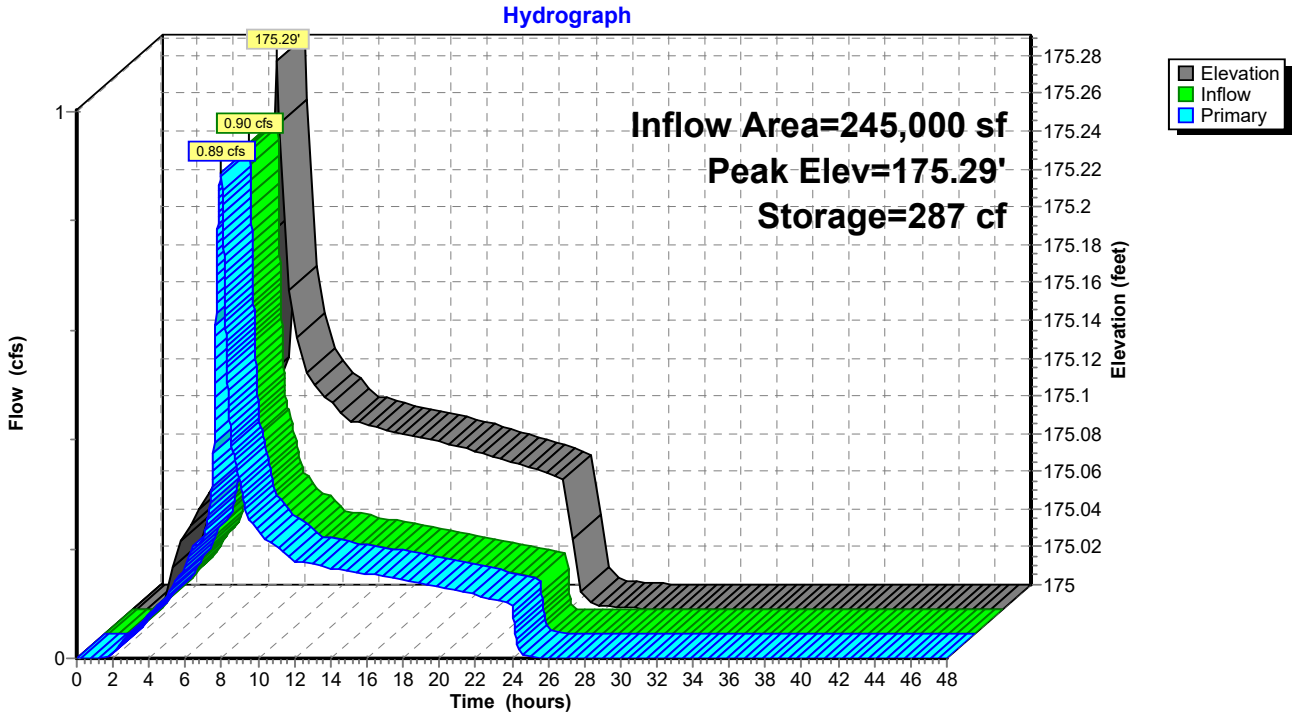
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	10,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	931	0.0	0	0
176.00	1,343	100.0	1,137	1,137
177.00	1,778	100.0	1,561	2,698
178.00	2,281	100.0	2,030	4,727
179.00	2,808	100.0	2,545	7,272
180.00	3,403	100.0	3,106	10,377

Device	Routing	Invert	Outlet Devices
#1	Primary	172.25'	**15.0" Round Culvert** L= 142.8' Ke= 0.500 Inlet / Outlet Invert= 172.25' / 170.72' S= 0.0107 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	177.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#3	Device 1	172.47'	**6.0" Horiz. WQV Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 3	175.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31

Primary OutFlow Max=0.89 cfs @ 7.97 hrs HW=175.29' (Free Discharge)
- **1=Culvert** (Passes 0.89 cfs of 8.16 cfs potential flow)
  - **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **3=WQV Orifice/Grate** (Passes 0.89 cfs of 1.59 cfs potential flow)
    - **4=Broad-Crested Rectangular Weir** (Weir Controls 0.89 cfs @ 1.53 fps)

Pond 1EP: Existing Detention Pond Facility



Summary for Subcatchment 1ES: Existing basin

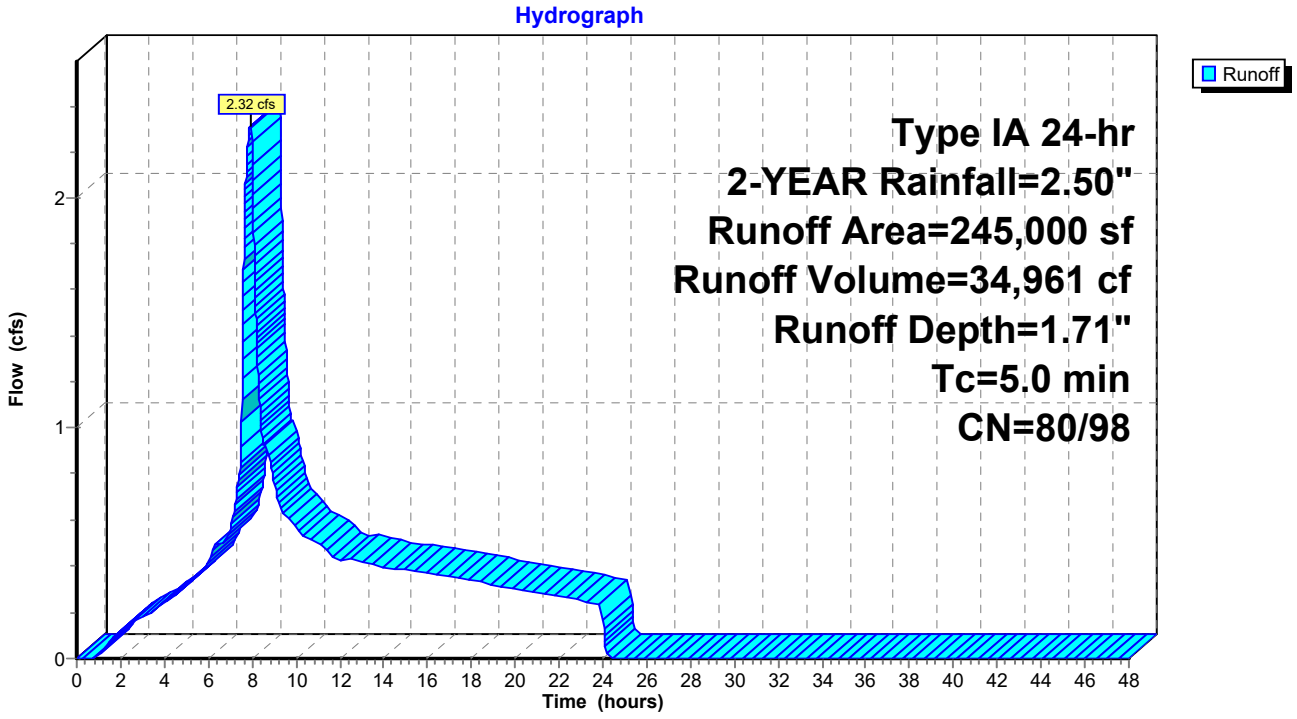
Runoff = 2.32 cfs @ 7.91 hrs, Volume= 34,961 cf, Depth= 1.71"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	146,000	98	Existing Impervious Area
	99,000	80	>75% Grass cover, Good, HSG D
	245,000	91	Weighted Average
	99,000		40.41% Pervious Area
	146,000		59.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Pond 1EP: Existing Detention Pond Facility

Inflow Area = 245,000 sf, 59.59% Impervious, Inflow Depth = 1.71" for 2-YEAR event
Inflow = 2.32 cfs @ 7.91 hrs, Volume= 34,961 cf
Outflow = 1.78 cfs @ 8.08 hrs, Volume= 34,961 cf, Atten= 23%, Lag= 10.4 min
Primary = 1.78 cfs @ 8.08 hrs, Volume= 34,961 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 176.01' @ 8.08 hrs Surf.Area= 1,347 sf Storage= 1,150 cf

Plug-Flow detention time= 7.2 min calculated for 34,961 cf (100% of inflow)
Center-of-Mass det. time= 7.1 min (717.0 - 709.9)

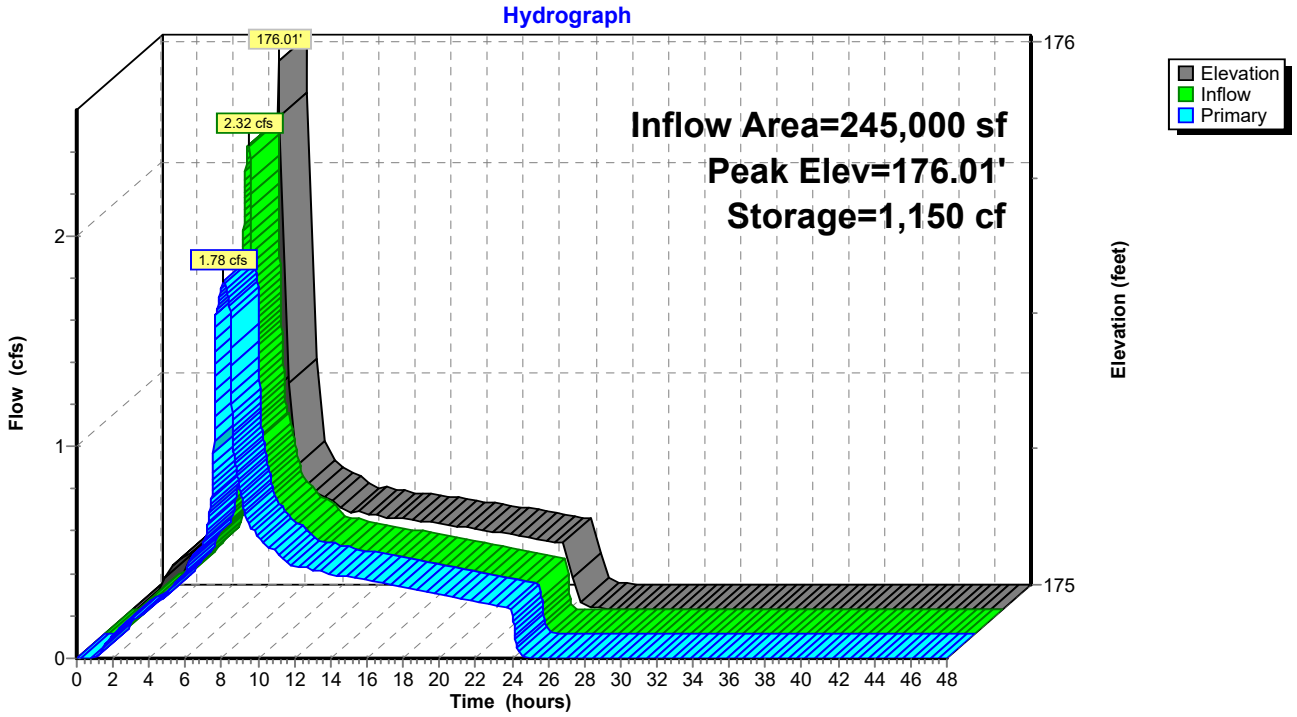
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	10,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	931	0.0	0	0
176.00	1,343	100.0	1,137	1,137
177.00	1,778	100.0	1,561	2,698
178.00	2,281	100.0	2,030	4,727
179.00	2,808	100.0	2,545	7,272
180.00	3,403	100.0	3,106	10,377

Device	Routing	Invert	Outlet Devices
#1	Primary	172.25'	**15.0" Round Culvert** L= 142.8' Ke= 0.500 Inlet / Outlet Invert= 172.25' / 170.72' S= 0.0107 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	177.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#3	Device 1	172.47'	**6.0" Horiz. WQV Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 3	175.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31

Primary OutFlow Max=1.78 cfs @ 8.08 hrs HW=176.01' (Free Discharge)
- **1=Culvert** (Passes 1.78 cfs of 9.01 cfs potential flow)
  - **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
  - **3=WQV Orifice/Grate** (Orifice Controls 1.78 cfs @ 9.06 fps)
    - **4=Broad-Crested Rectangular Weir** (Passes 1.78 cfs of 6.37 cfs potential flow)

Pond 1EP: Existing Detention Pond Facility



Summary for Subcatchment 1ES: Existing basin

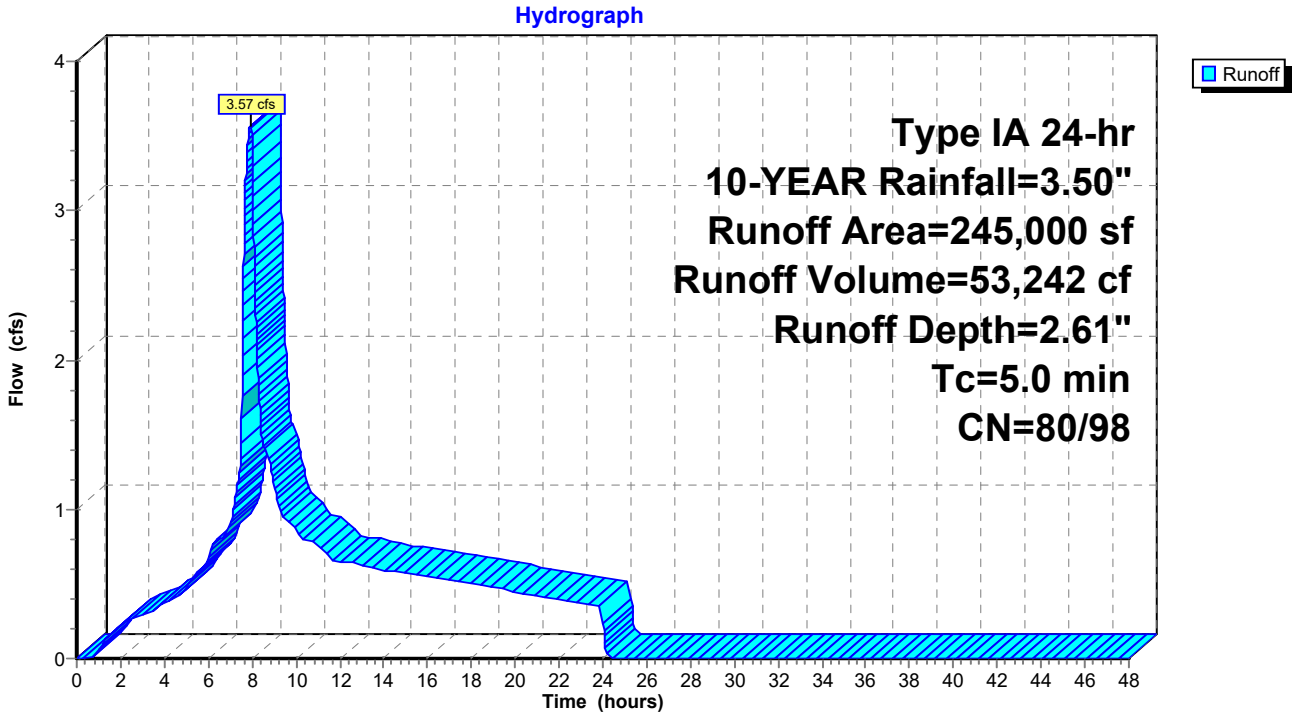
Runoff = 3.57 cfs @ 7.90 hrs, Volume= 53,242 cf, Depth= 2.61"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	146,000	98	Existing Impervious Area
	99,000	80	>75% Grass cover, Good, HSG D
	245,000	91	Weighted Average
	99,000		40.41% Pervious Area
	146,000		59.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Pond 1EP: Existing Detention Pond Facility

Inflow Area = 245,000 sf, 59.59% Impervious, Inflow Depth = 2.61" for 10-YEAR event
Inflow = 3.57 cfs @ 7.90 hrs, Volume= 53,242 cf
Outflow = 2.42 cfs @ 8.14 hrs, Volume= 53,242 cf, Atten= 32%, Lag= 13.9 min
Primary = 2.42 cfs @ 8.14 hrs, Volume= 53,242 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 177.16' @ 8.14 hrs Surf.Area= 1,860 sf Storage= 2,995 cf

Plug-Flow detention time= 8.6 min calculated for 53,231 cf (100% of inflow)
Center-of-Mass det. time= 8.6 min (709.1 - 700.4)

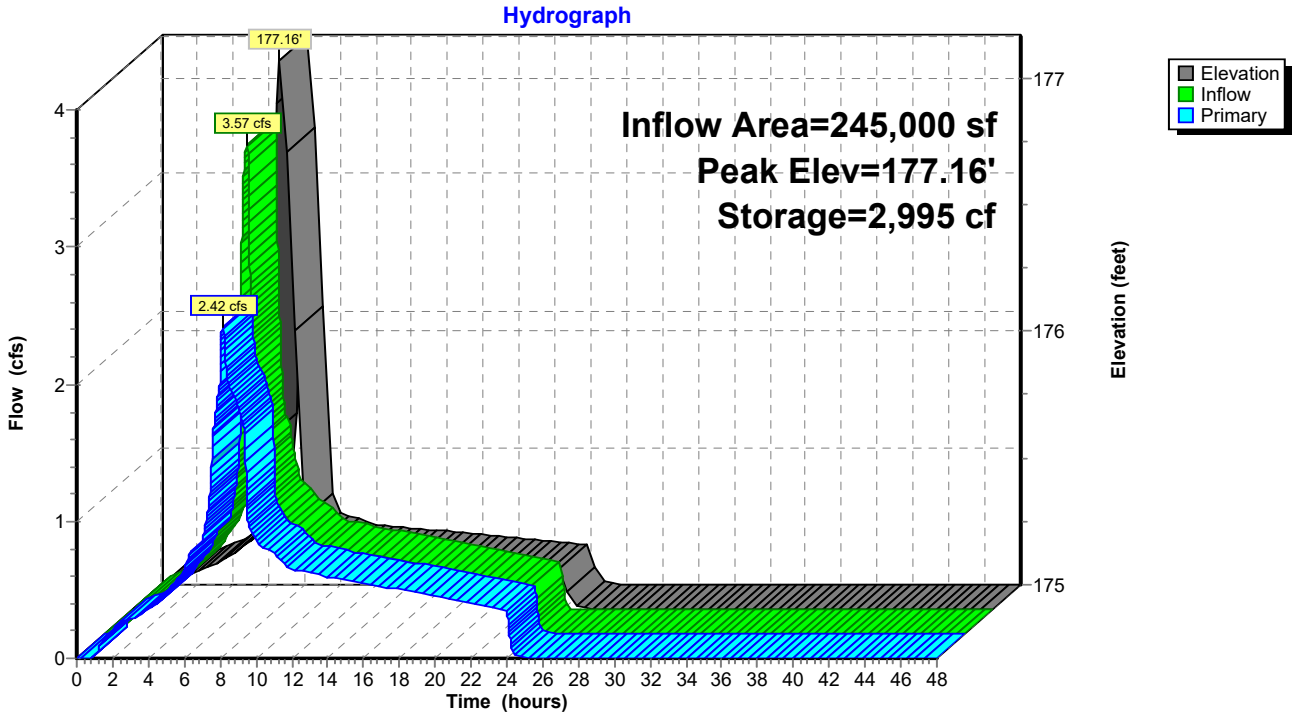
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	10,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	931	0.0	0	0
176.00	1,343	100.0	1,137	1,137
177.00	1,778	100.0	1,561	2,698
178.00	2,281	100.0	2,030	4,727
179.00	2,808	100.0	2,545	7,272
180.00	3,403	100.0	3,106	10,377

Device	Routing	Invert	Outlet Devices
#1	Primary	172.25'	**15.0" Round Culvert** L= 142.8' Ke= 0.500 Inlet / Outlet Invert= 172.25' / 170.72' S= 0.0107 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	177.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#3	Device 1	172.47'	**6.0" Horiz. WQV Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 3	175.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31

Primary OutFlow Max=2.42 cfs @ 8.14 hrs HW=177.16' (Free Discharge)
- **1=Culvert** (Passes 2.42 cfs of 10.21 cfs potential flow)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 0.37 cfs @ 1.15 fps)
  - **3=WQV Orifice/Grate** (Orifice Controls 2.05 cfs @ 10.43 fps)
    - **4=Broad-Crested Rectangular Weir** (Passes 2.05 cfs of 21.03 cfs potential flow)

Pond 1EP: Existing Detention Pond Facility



Summary for Subcatchment 1ES: Existing basin

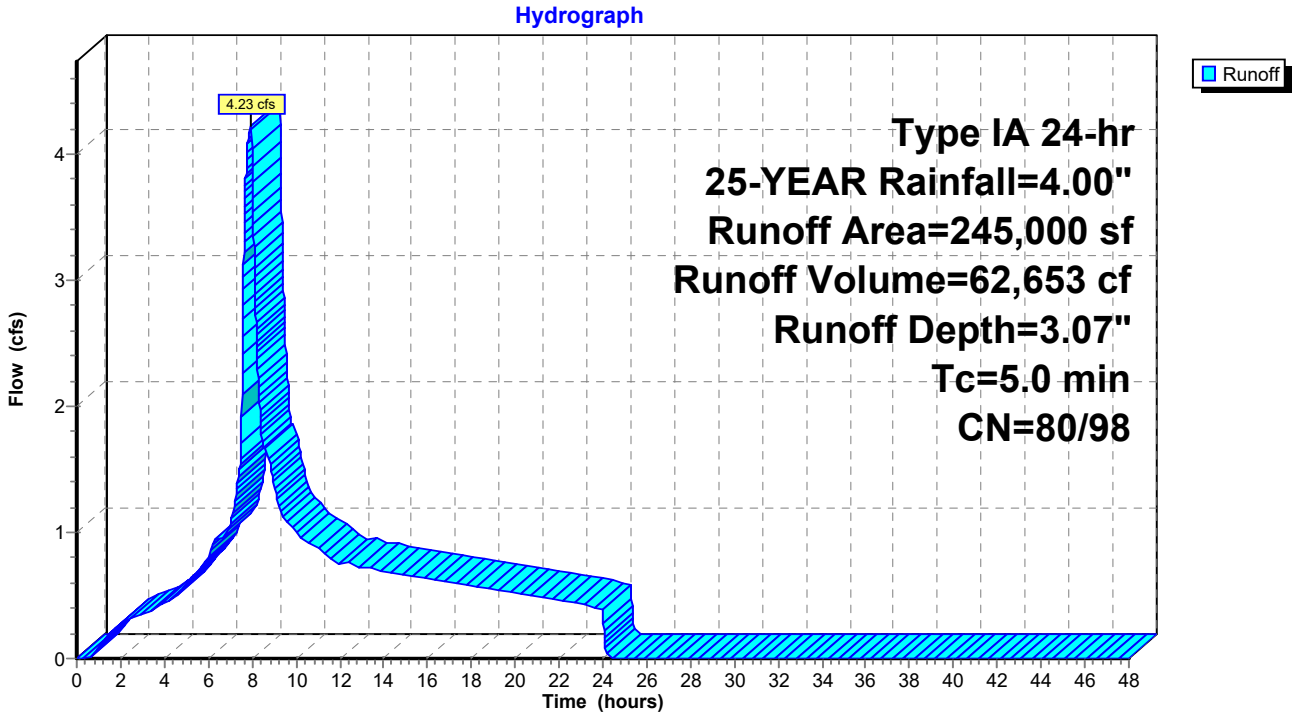
Runoff = 4.23 cfs @ 7.90 hrs, Volume= 62,653 cf, Depth= 3.07"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	146,000	98	Existing Impervious Area
	99,000	80	>75% Grass cover, Good, HSG D
	245,000	91	Weighted Average
	99,000		40.41% Pervious Area
	146,000		59.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Pond 1EP: Existing Detention Pond Facility

Inflow Area = 245,000 sf, 59.59% Impervious, Inflow Depth = 3.07" for 25-YEAR event
Inflow = 4.23 cfs @ 7.90 hrs, Volume= 62,653 cf
Outflow = 3.49 cfs @ 8.05 hrs, Volume= 62,653 cf, Atten= 17%, Lag= 9.2 min
Primary = 3.49 cfs @ 8.05 hrs, Volume= 62,653 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 177.39' @ 8.05 hrs Surf.Area= 1,975 sf Storage= 3,434 cf

Plug-Flow detention time= 8.9 min calculated for 62,653 cf (100% of inflow)
Center-of-Mass det. time= 8.7 min (705.3 - 696.6)

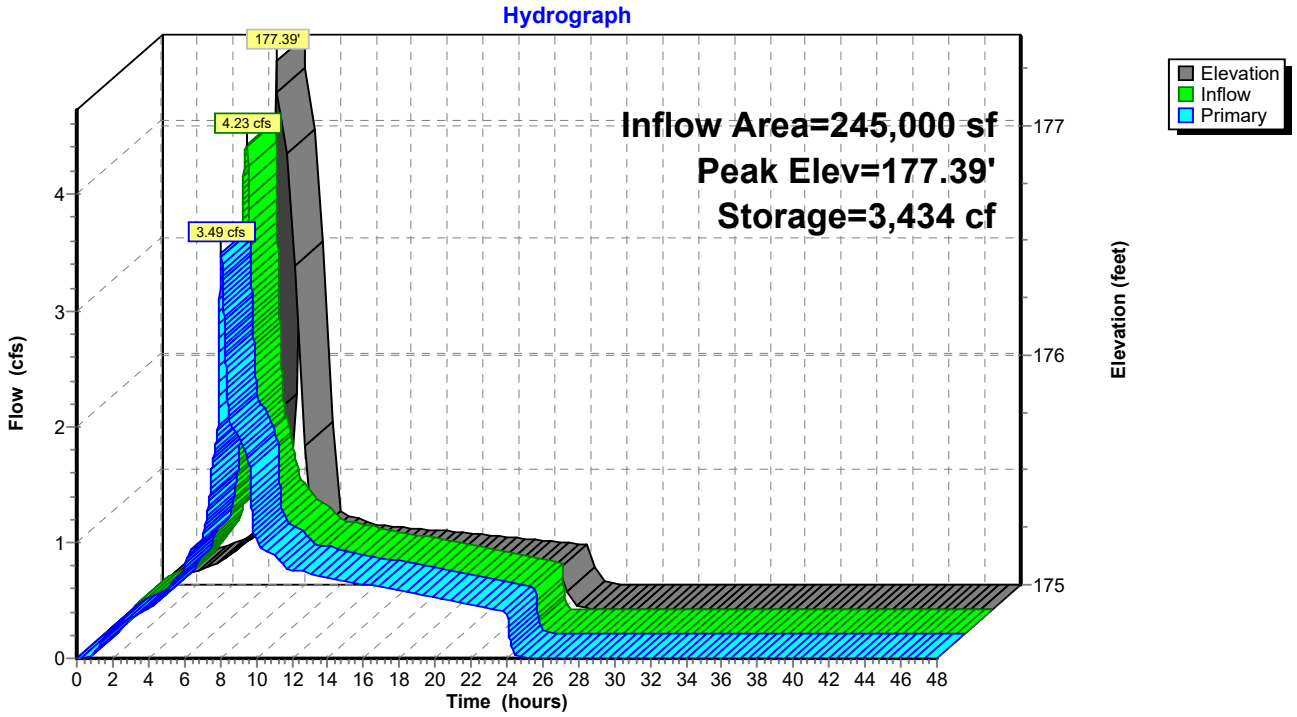
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	10,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

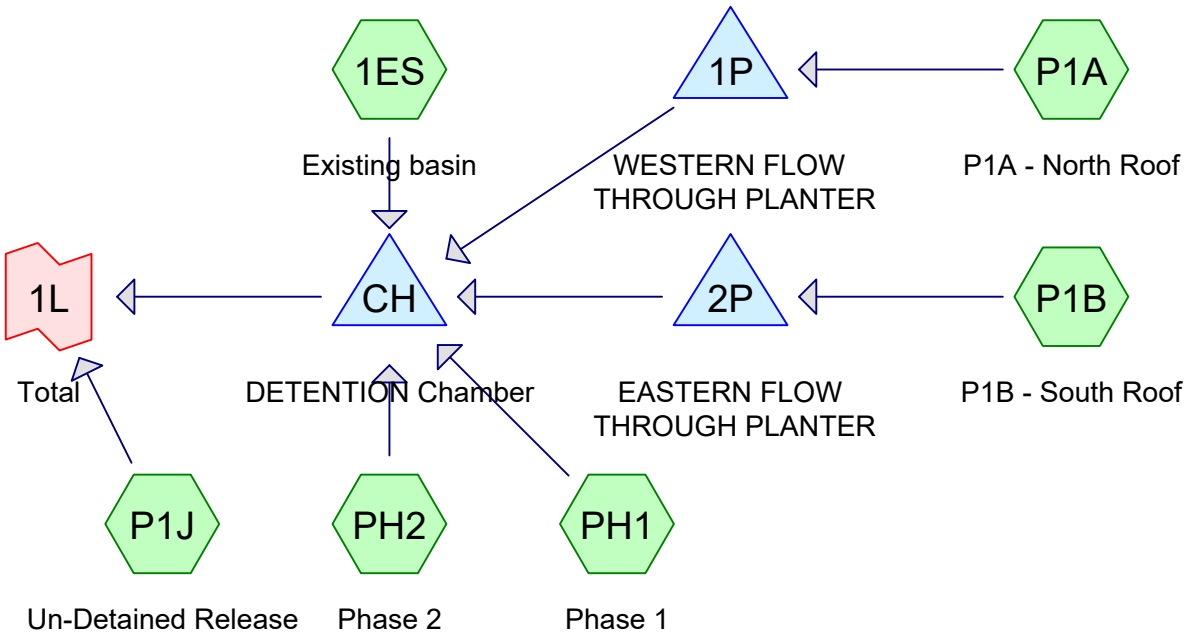
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
175.00	931	0.0	0	0
176.00	1,343	100.0	1,137	1,137
177.00	1,778	100.0	1,561	2,698
178.00	2,281	100.0	2,030	4,727
179.00	2,808	100.0	2,545	7,272
180.00	3,403	100.0	3,106	10,377

Device	Routing	Invert	Outlet Devices
#1	Primary	172.25'	**15.0" Round Culvert** L= 142.8' Ke= 0.500 Inlet / Outlet Invert= 172.25' / 170.72' S= 0.0107 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	177.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31
#3	Device 1	172.47'	**6.0" Horiz. WQV Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 3	175.00'	**2.0' long (Profile 17) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 1.97 2.46 2.95 Coef. (English) 2.84 3.13 3.26 3.30 3.31 3.31

Primary OutFlow Max=3.49 cfs @ 8.05 hrs HW=177.39' (Free Discharge)
- **1=Culvert** (Passes 3.49 cfs of 10.43 cfs potential flow)
  - **2=Broad-Crested Rectangular Weir** (Weir Controls 1.39 cfs @ 1.78 fps)
  - **3=WQV Orifice/Grate** (Orifice Controls 2.10 cfs @ 10.68 fps)
    - **4=Broad-Crested Rectangular Weir** (Passes 2.10 cfs of 24.48 cfs potential flow)

Pond 1EP: Existing Detention Pond Facility





Subcat Reach Pond Link

Routing Diagram for 3199-01 Post-Developed - 6" Pipe
Prepared by AKS Engineering & Forestry, Printed 12/17/2020

Summary for Subcatchment 1ES: Existing basin

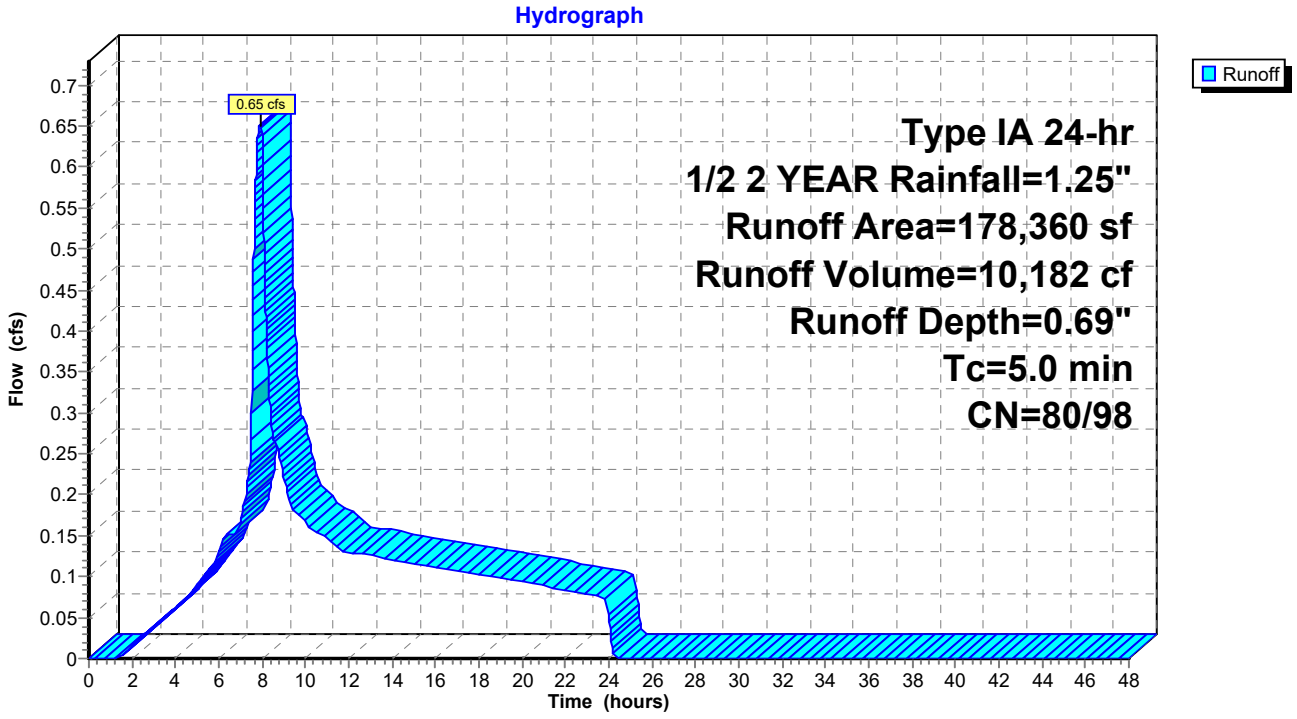
Runoff = 0.65 cfs @ 7.89 hrs, Volume= 10,182 cf, Depth= 0.69"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 2 YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	106,000	98	Existing Impervious Area
	72,360	80	>75% Grass cover, Good, HSG D
	178,360	91	Weighted Average
	72,360		40.57% Pervious Area
	106,000		59.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Subcatchment P1A: P1A - North Roof

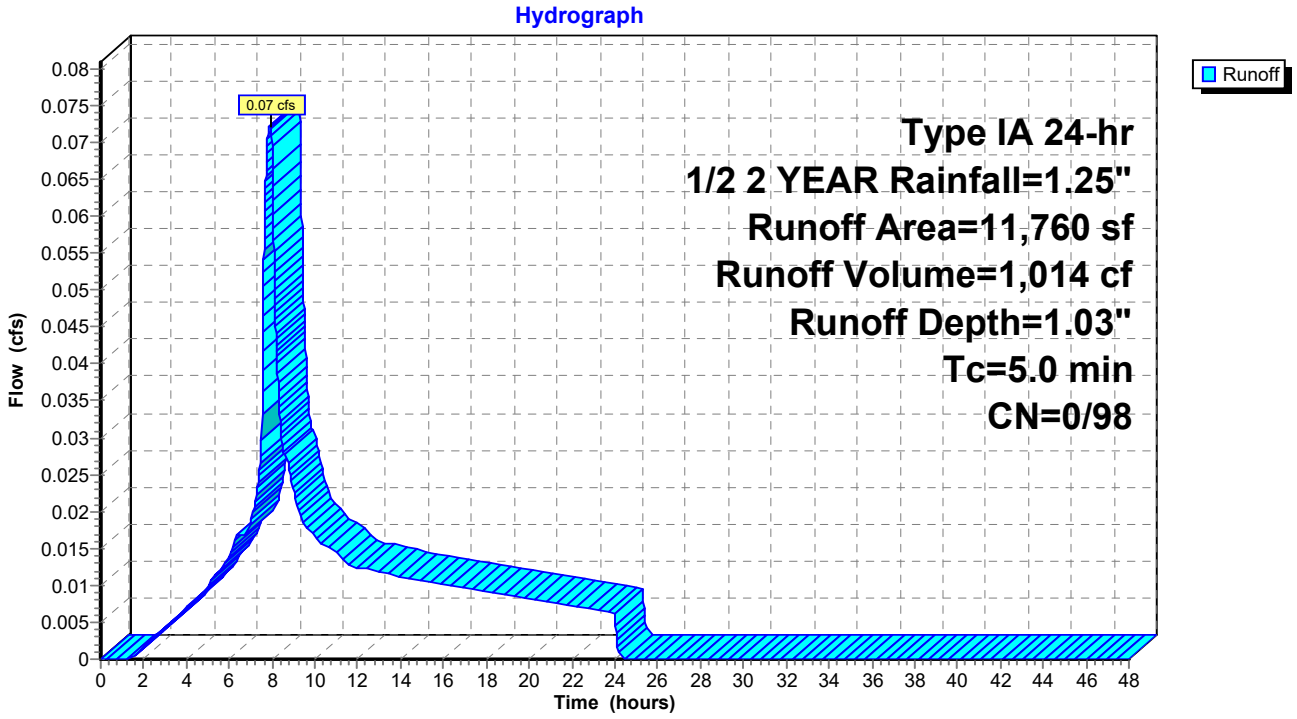
Runoff = 0.07 cfs @ 7.89 hrs, Volume= 1,014 cf, Depth= 1.03"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 2 YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	11,760	98	Roof
	11,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1A: P1A - North Roof



Summary for Subcatchment P1B: P1B - South Roof

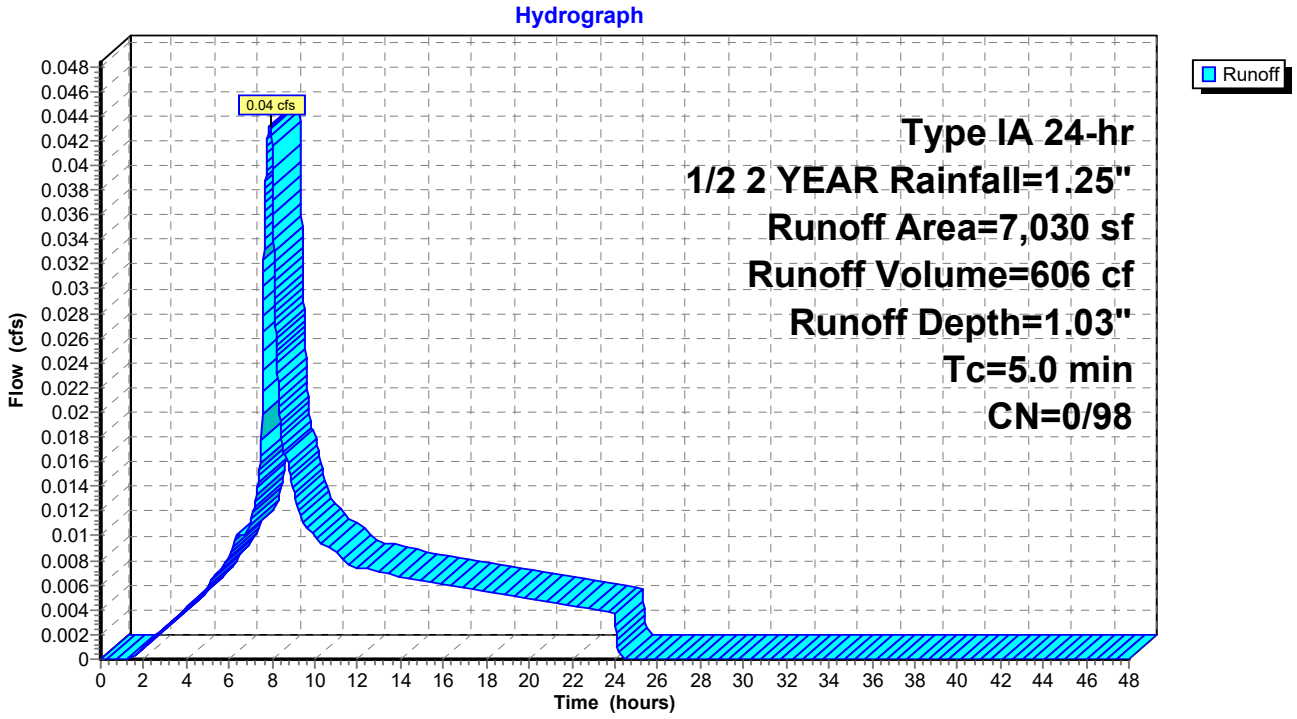
Runoff = 0.04 cfs @ 7.89 hrs, Volume= 606 cf, Depth= 1.03"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 2 YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	7,030	98	Roof
	7,030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1B: P1B - South Roof



Summary for Subcatchment P1J: Un-Detained Release

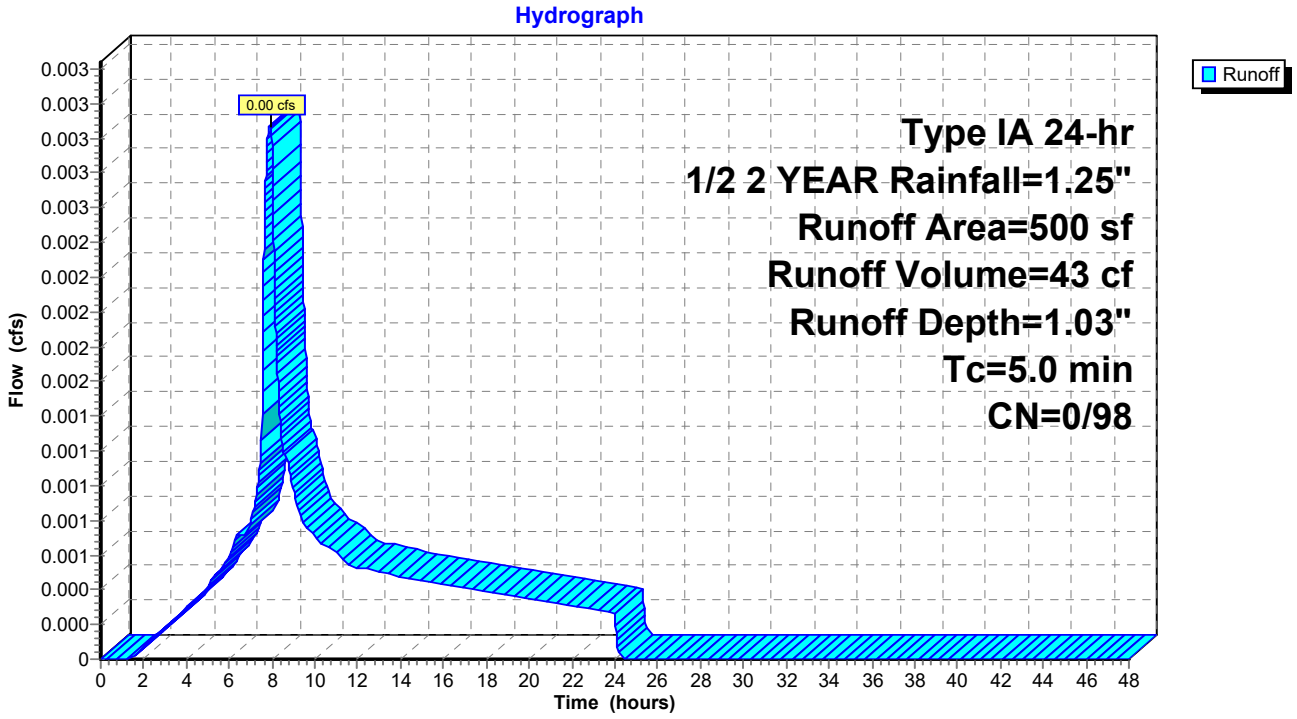
Runoff = 0.00 cfs @ 7.89 hrs, Volume= 43 cf, Depth= 1.03"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 2 YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	500	98	Impervious
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1J: Un-Detained Release



Summary for Subcatchment PH1: Phase 1

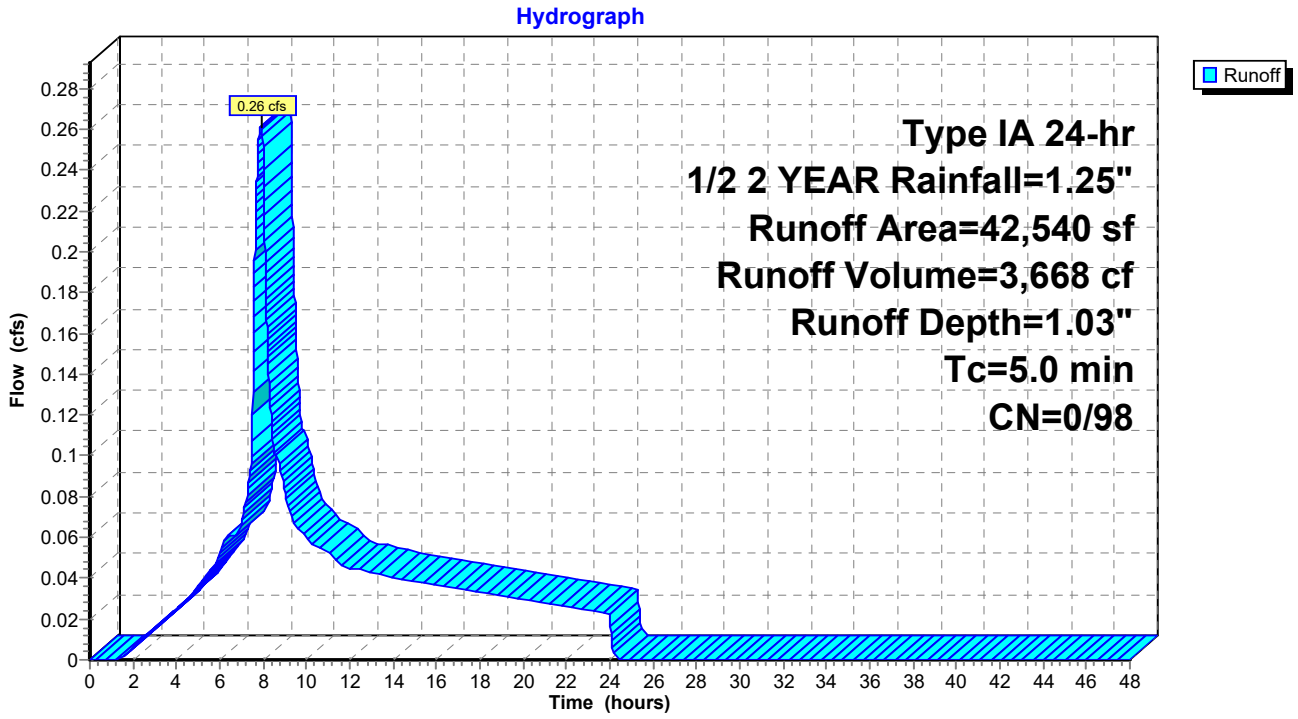
Runoff = 0.26 cfs @ 7.89 hrs, Volume= 3,668 cf, Depth= 1.03"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 2 YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	1,890	98	P1C - Impervious
*	820	98	P1D - Impervious
*	14,360	98	P1E - Impervious
*	16,710	98	P1F - Impervious
*	4,970	98	P1G - Impervious
*	3,790	98	P1H - Impervious
	42,540	98	Weighted Average
	42,540		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH1: Phase 1



Summary for Subcatchment PH2: Phase 2

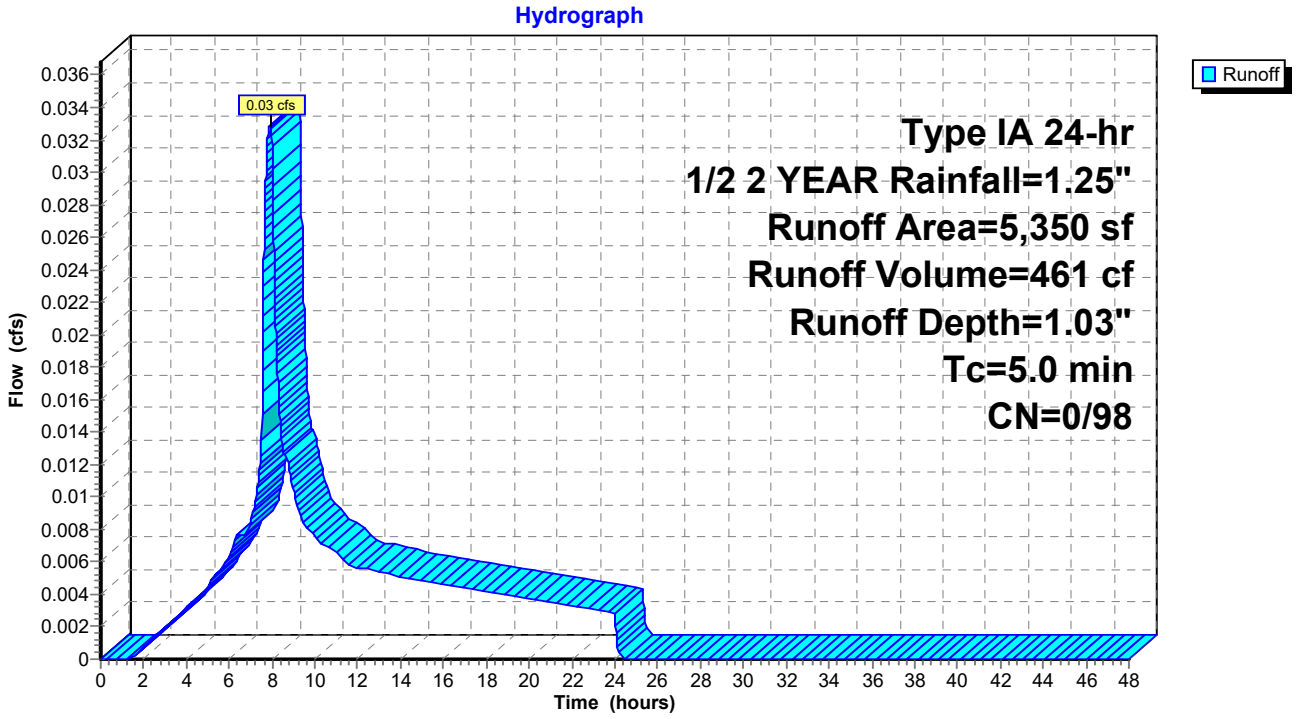
Runoff = 0.03 cfs @ 7.89 hrs, Volume= 461 cf, Depth= 1.03"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 1/2 2 YEAR Rainfall=1.25"

	Area (sf)	CN	Description
*	5,350	98	P2 - Impervious
	5,350		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH2: Phase 2



Summary for Pond 1P: WESTERN FLOW THROUGH PLANTER

Inflow Area = 11,760 sf,100.00% Impervious, Inflow Depth = 1.03" for 1/2 2 YEAR event
Inflow = 0.07 cfs @ 7.89 hrs, Volume= 1,014 cf
Outflow = 0.04 cfs @ 7.76 hrs, Volume= 1,014 cf, Atten= 44%, Lag= 0.0 min
Primary = 0.04 cfs @ 7.76 hrs, Volume= 1,014 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.29' @ 8.23 hrs Surf.Area= 875 sf Storage= 58 cf
Flood Elev= 181.65' Surf.Area= 875 sf Storage= 726 cf

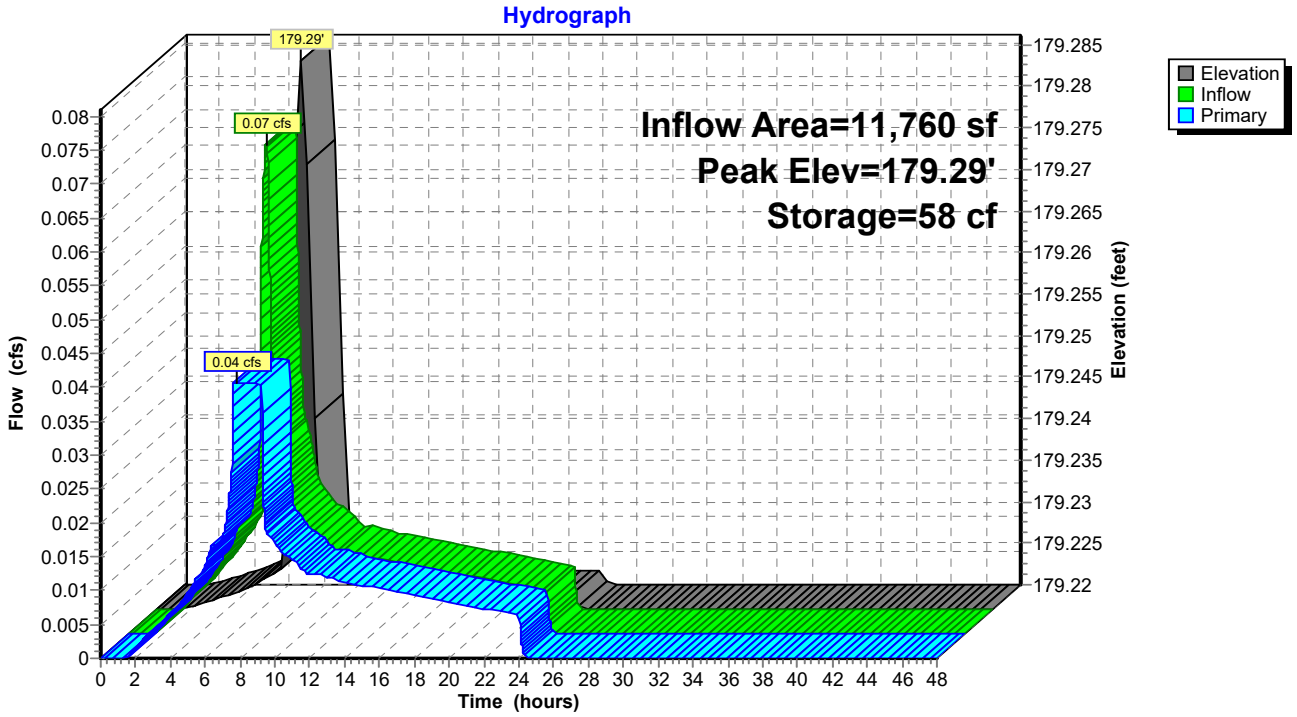
Plug-Flow detention time= 6.4 min calculated for 1,014 cf (100% of inflow)
Center-of-Mass det. time= 6.4 min (707.2 - 700.8)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	726 cf	**8.25'W x 106.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 7.76 hrs HW=179.24' TW=169.40' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.04 cfs of 1.43 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: WESTERN FLOW THROUGH PLANTER



Summary for Pond 2P: EASTERN FLOW THROUGH PLANTER

Inflow Area = 7,030 sf,100.00% Impervious, Inflow Depth = 1.03" for 1/2 2 YEAR event
Inflow = 0.04 cfs @ 7.89 hrs, Volume= 606 cf
Outflow = 0.02 cfs @ 7.67 hrs, Volume= 606 cf, Atten= 49%, Lag= 0.0 min
Primary = 0.02 cfs @ 7.67 hrs, Volume= 606 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.30' @ 8.29 hrs Surf.Area= 474 sf Storage= 40 cf
Flood Elev= 181.00' Surf.Area= 474 sf Storage= 394 cf

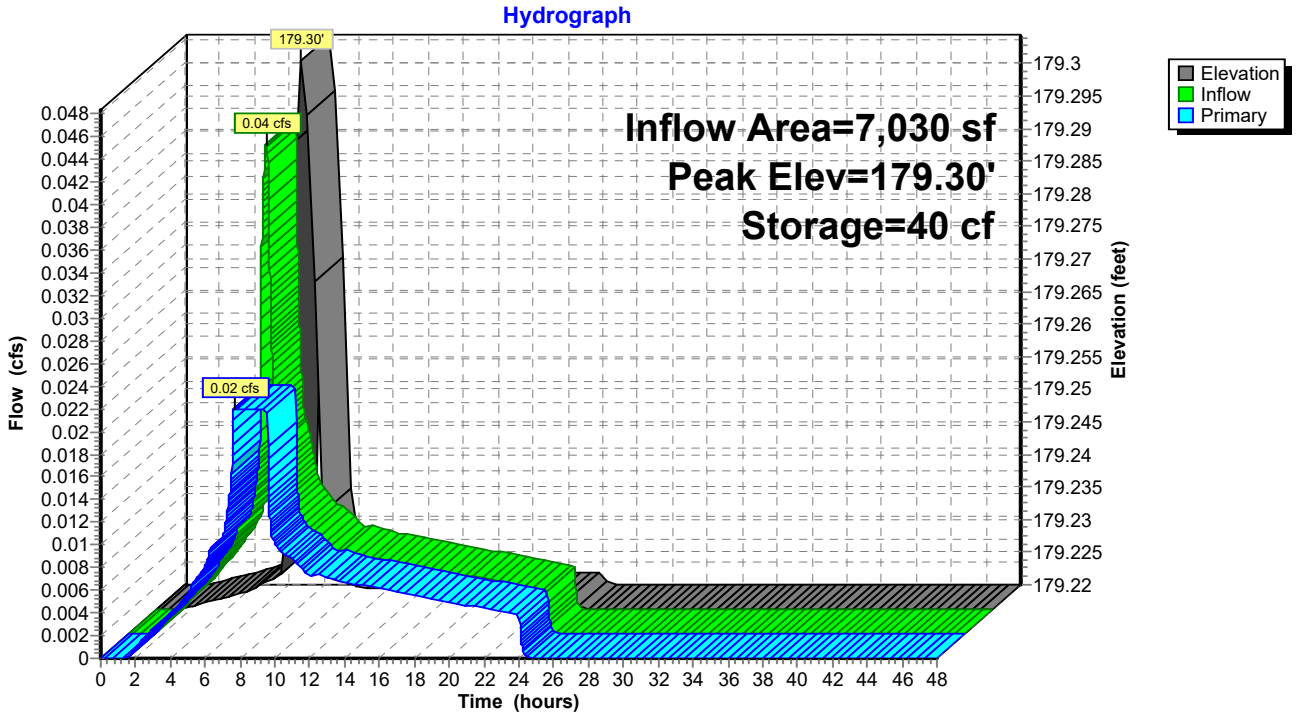
Plug-Flow detention time= 7.8 min calculated for 606 cf (100% of inflow)
Center-of-Mass det. time= 7.8 min (708.6 - 700.8)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	394 cf	**5.33'W x 89.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 7.67 hrs HW=179.24' TW=169.24' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 1.42 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.02 cfs)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: EASTERN FLOW THROUGH PLANTER



Summary for Pond CH: DETENTION Chamber

Inflow Area = 245,040 sf, 70.47% Impervious, Inflow Depth = 0.78" for 1/2 2 YEAR event
Inflow = 1.01 cfs @ 7.89 hrs, Volume= 15,931 cf
Outflow = 0.56 cfs @ 8.28 hrs, Volume= 15,931 cf, Atten= 45%, Lag= 23.3 min
Primary = 0.56 cfs @ 8.28 hrs, Volume= 15,931 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 169.94' @ 8.28 hrs Surf.Area= 0.056 ac Storage= 0.022 af
Flood Elev= 175.85' Surf.Area= 0.054 ac Storage= 0.216 af

Plug-Flow detention time= 5.6 min calculated for 15,931 cf (100% of inflow)
Center-of-Mass det. time= 5.6 min (725.1 - 719.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.10'	0.076 af	**20.33'W x 115.79'L x 6.75'H Field A** 0.365 af Overall - 0.135 af Embedded = 0.230 af x 33.0% Voids
#2A	169.85'	0.135 af	**ADS_StormTech MC-4500 +Cap** x 54 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 27 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
#3	168.19'	0.005 af	**15.0" Round Pipe Storage** L= 184.7' S= 0.0050 '/'
		0.216 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	**15.0" Round Outlet Pipe** L= 40.2' Ke= 0.500 Inlet / Outlet Invert= 168.00' / 167.79' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	168.00'	**4.0" Vert. 1/2 2 Year Overflow** C= 0.600
#3	Device 1	171.90'	**5.5" Horiz. 2 Year Overflow** C= 0.600 Limited to weir flow at low heads
#4	Device 1	174.50'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.56 cfs @ 8.28 hrs HW=169.94' TW=0.00' (Dynamic Tailwater)
└─**1=Outlet Pipe** (Passes 0.56 cfs of 5.97 cfs potential flow)
  ├─**2=1/2 2 Year Overflow** (Orifice Controls 0.56 cfs @ 6.41 fps)
  ├─**3=2 Year Overflow** (Controls 0.00 cfs)
  └─**4=Overflow** (Controls 0.00 cfs)

Pond CH: DETENTION Chamber - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-4500 +Cap (ADS StormTech®MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 20.0" Spacing = 120.0" C-C Row Spacing

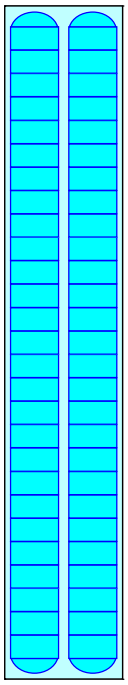
27 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 113.79' Row Length +12.0" End Stone x 2 = 115.79' Base Length
2 Rows x 100.0" Wide + 20.0" Spacing x 1 + 12.0" Side Stone x 2 = 20.33' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

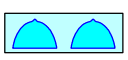
54 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 5,893.3 cf Chamber Storage

15,892.4 cf Field - 5,893.3 cf Chambers = 9,999.1 cf Stone x 33.0% Voids = 3,299.7 cf Stone Storage

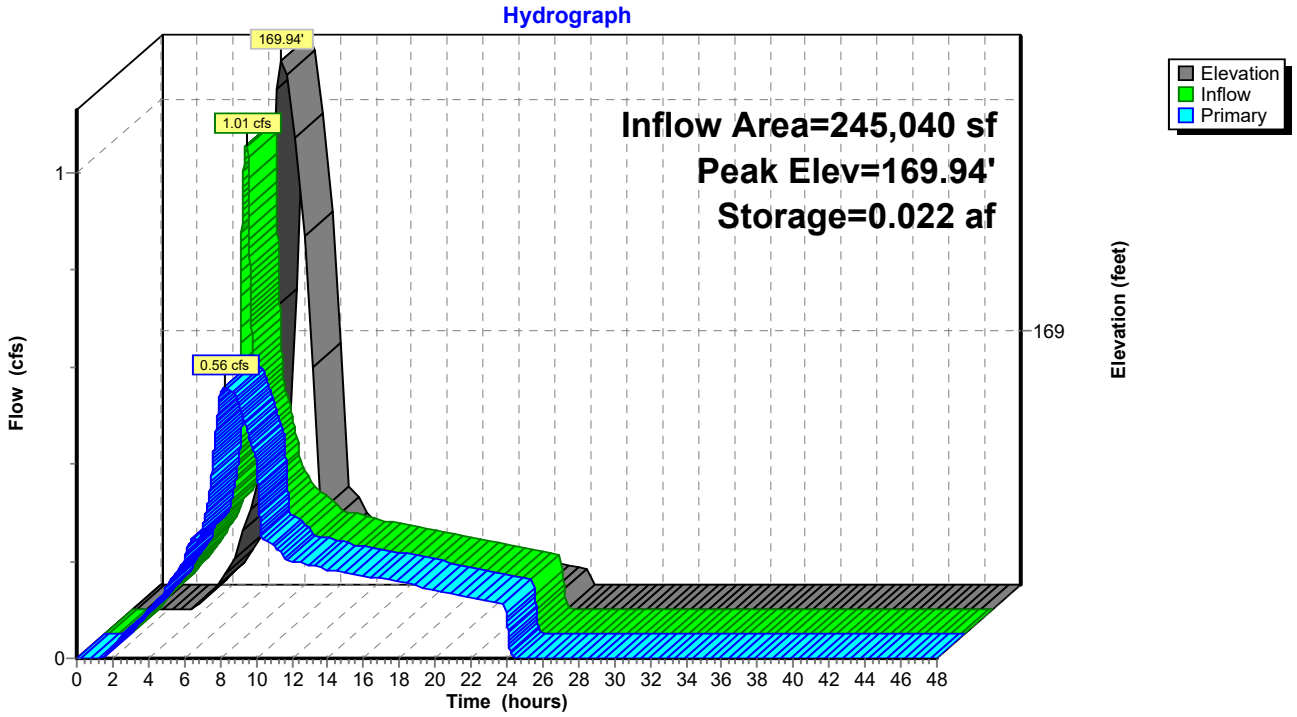
Chamber Storage + Stone Storage = 9,193.0 cf = 0.211 af
Overall Storage Efficiency = 57.8%
Overall System Size = 115.79' x 20.33' x 6.75'

54 Chambers
588.6 cy Field
370.3 cy Stone





Pond CH: DETENTION Chamber

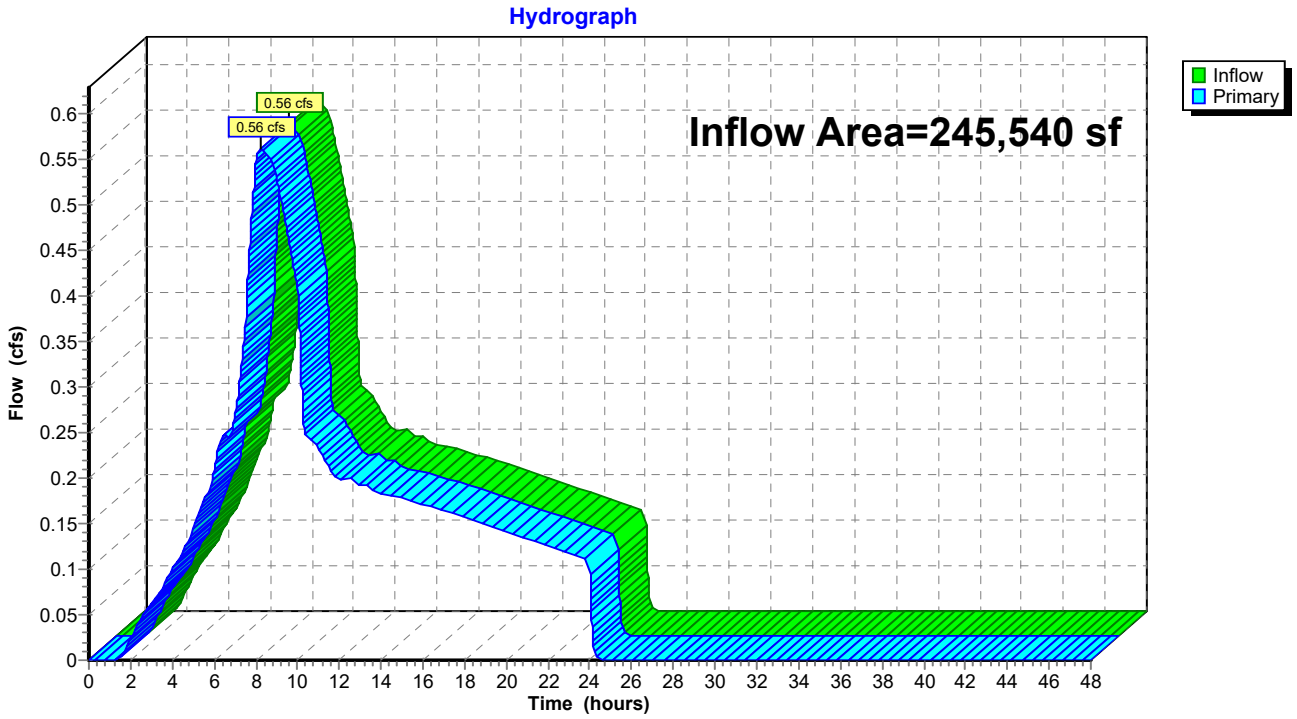


Summary for Link 1L: Total

Inflow Area = 245,540 sf, 70.53% Impervious, Inflow Depth = 0.78" for 1/2 2 YEAR event
Inflow = 0.56 cfs @ 8.27 hrs, Volume= 15,974 cf
Primary = 0.56 cfs @ 8.27 hrs, Volume= 15,974 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Total



Summary for Subcatchment 1ES: Existing basin

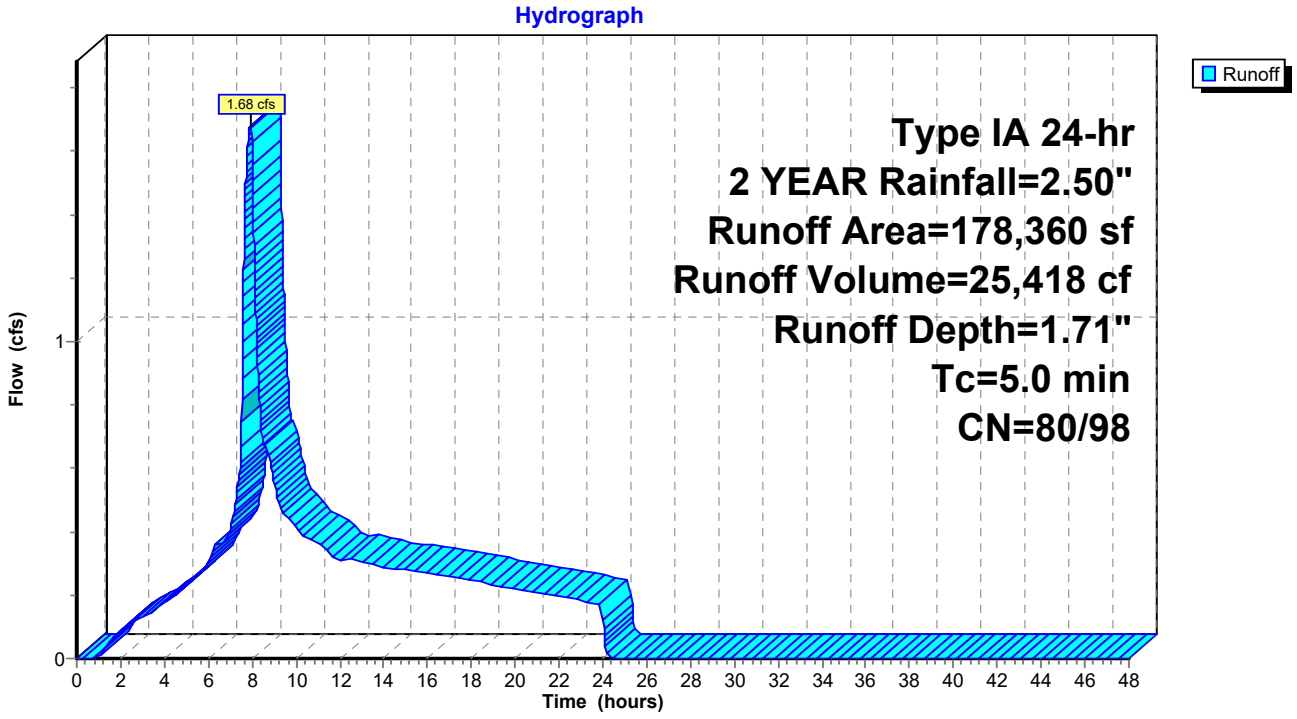
Runoff = 1.68 cfs @ 7.91 hrs, Volume= 25,418 cf, Depth= 1.71"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	106,000	98	Existing Impervious Area
	72,360	80	>75% Grass cover, Good, HSG D
	178,360	91	Weighted Average
	72,360		40.57% Pervious Area
	106,000		59.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Subcatchment P1A: P1A - North Roof

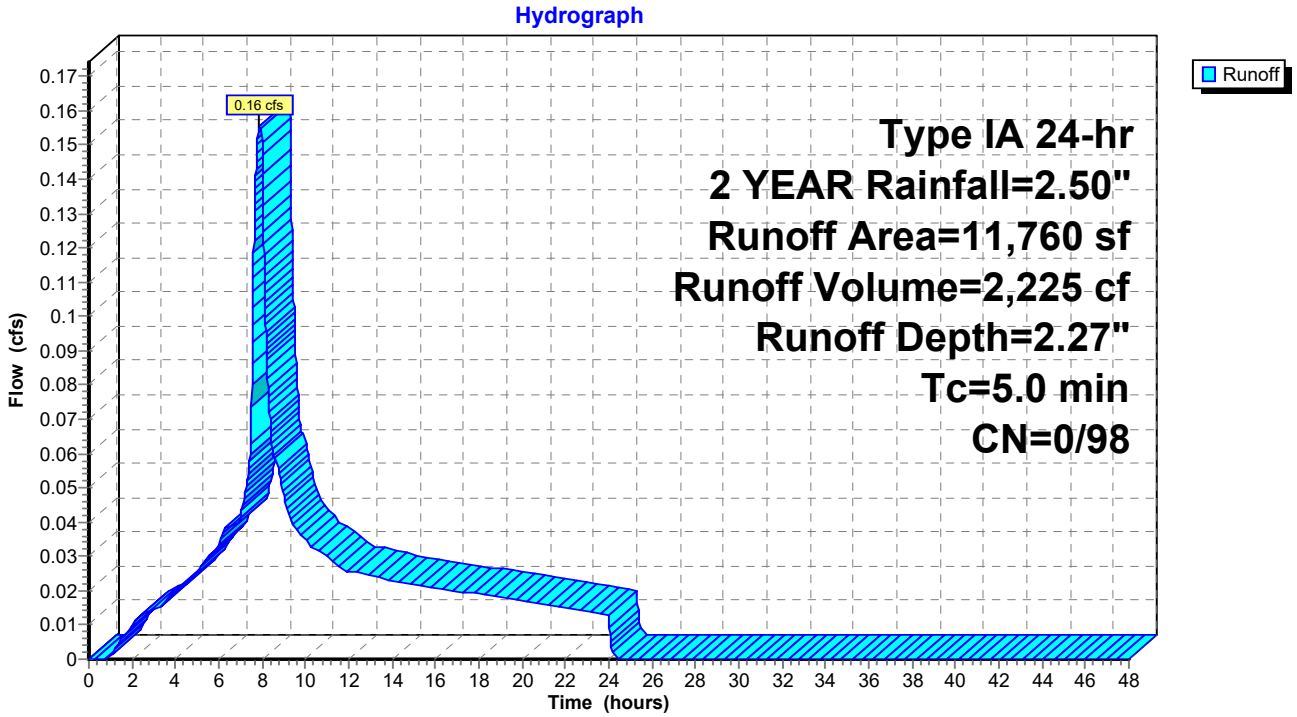
Runoff = 0.16 cfs @ 7.88 hrs, Volume= 2,225 cf, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	11,760	98	Roof
	11,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1A: P1A - North Roof



Summary for Subcatchment P1B: P1B - South Roof

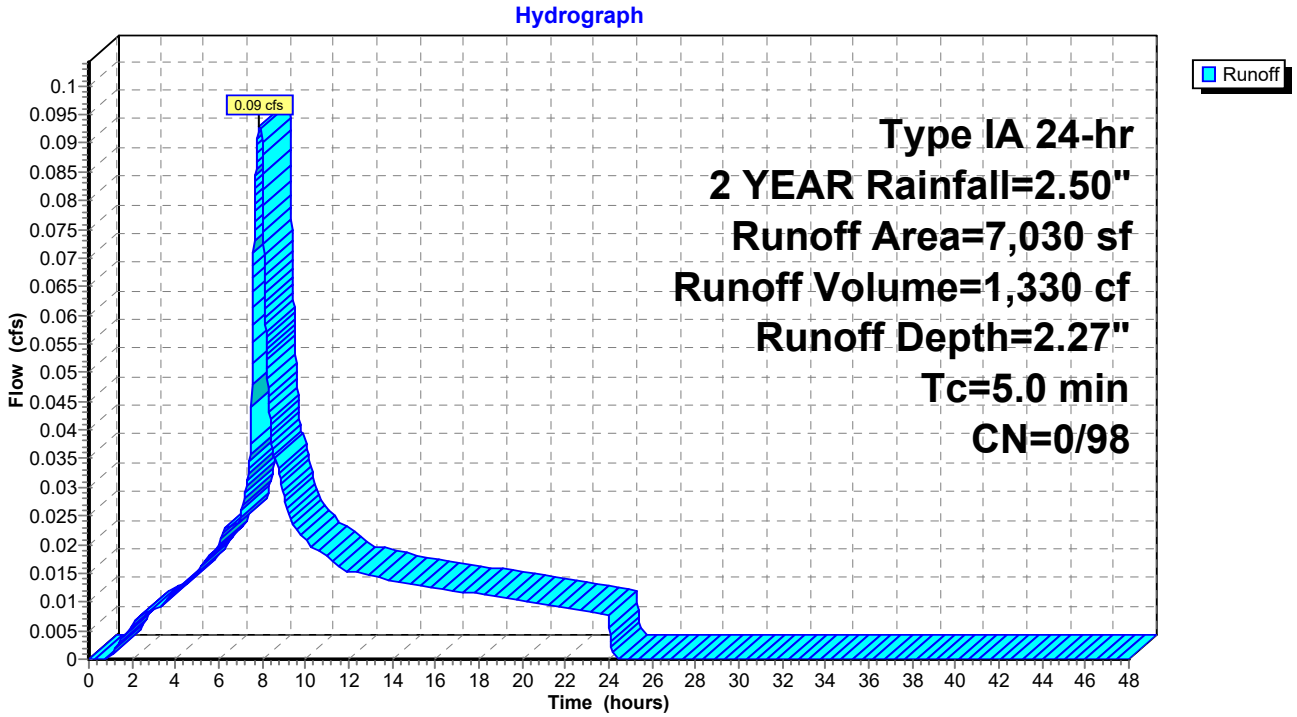
Runoff = 0.09 cfs @ 7.88 hrs, Volume= 1,330 cf, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	7,030	98	Roof
	7,030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1B: P1B - South Roof



Summary for Subcatchment P1J: Un-Detained Release

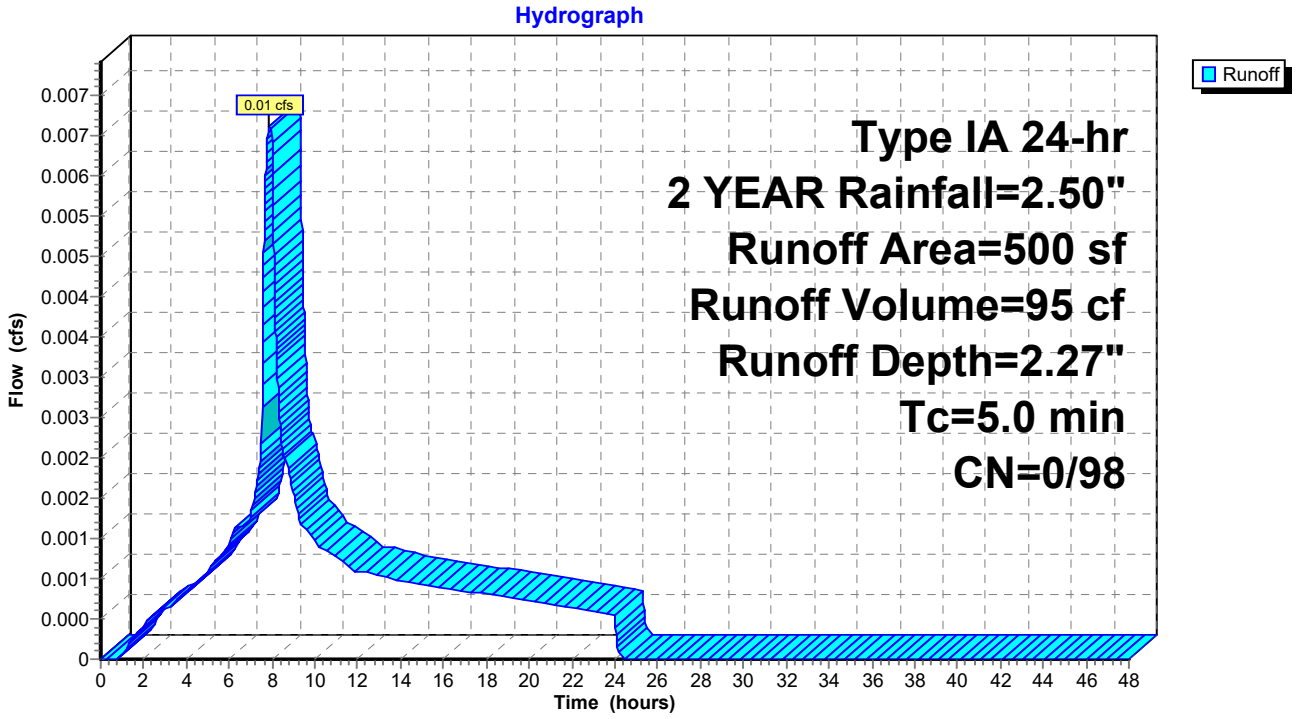
Runoff = 0.01 cfs @ 7.88 hrs, Volume= 95 cf, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	500	98	Impervious
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1J: Un-Detained Release



Summary for Subcatchment PH1: Phase 1

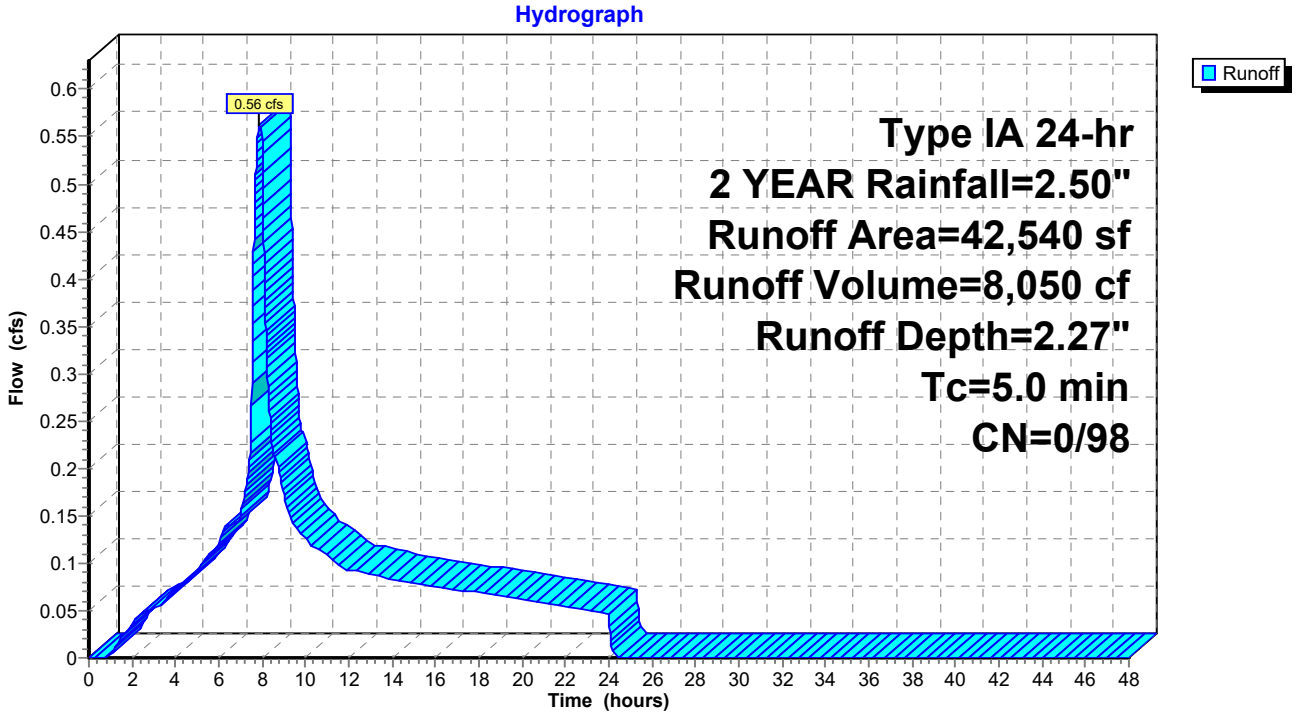
Runoff = 0.56 cfs @ 7.88 hrs, Volume= 8,050 cf, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	1,890	98	P1C - Impervious
*	820	98	P1D - Impervious
*	14,360	98	P1E - Impervious
*	16,710	98	P1F - Impervious
*	4,970	98	P1G - Impervious
*	3,790	98	P1H - Impervious
	42,540	98	Weighted Average
	42,540		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH1: Phase 1



Summary for Subcatchment PH2: Phase 2

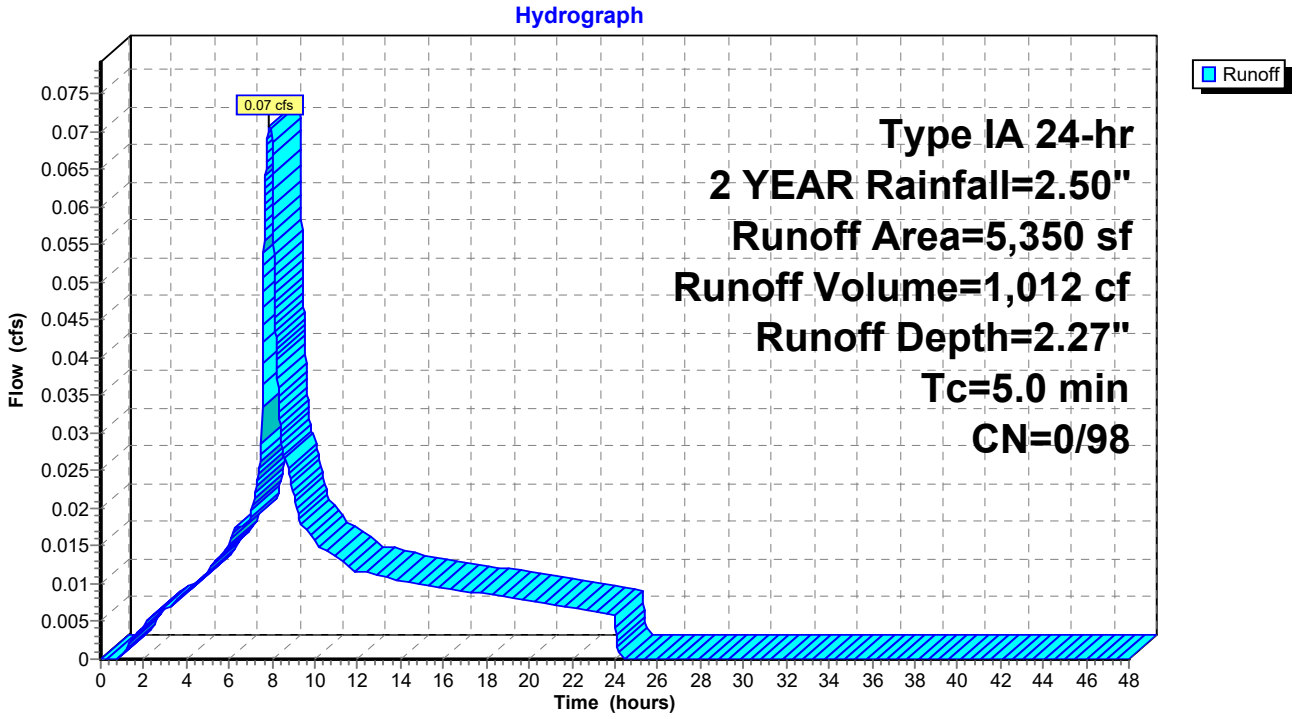
Runoff = 0.07 cfs @ 7.88 hrs, Volume= 1,012 cf, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	5,350	98	P2 - Impervious
	5,350		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH2: Phase 2



Summary for Pond 1P: WESTERN FLOW THROUGH PLANTER

Inflow Area = 11,760 sf,100.00% Impervious, Inflow Depth = 2.27" for 2 YEAR event
Inflow = 0.16 cfs @ 7.88 hrs, Volume= 2,225 cf
Outflow = 0.04 cfs @ 7.42 hrs, Volume= 2,225 cf, Atten= 74%, Lag= 0.0 min
Primary = 0.04 cfs @ 7.42 hrs, Volume= 2,225 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.58' @ 9.30 hrs Surf.Area= 875 sf Storage= 316 cf
Flood Elev= 181.65' Surf.Area= 875 sf Storage= 726 cf

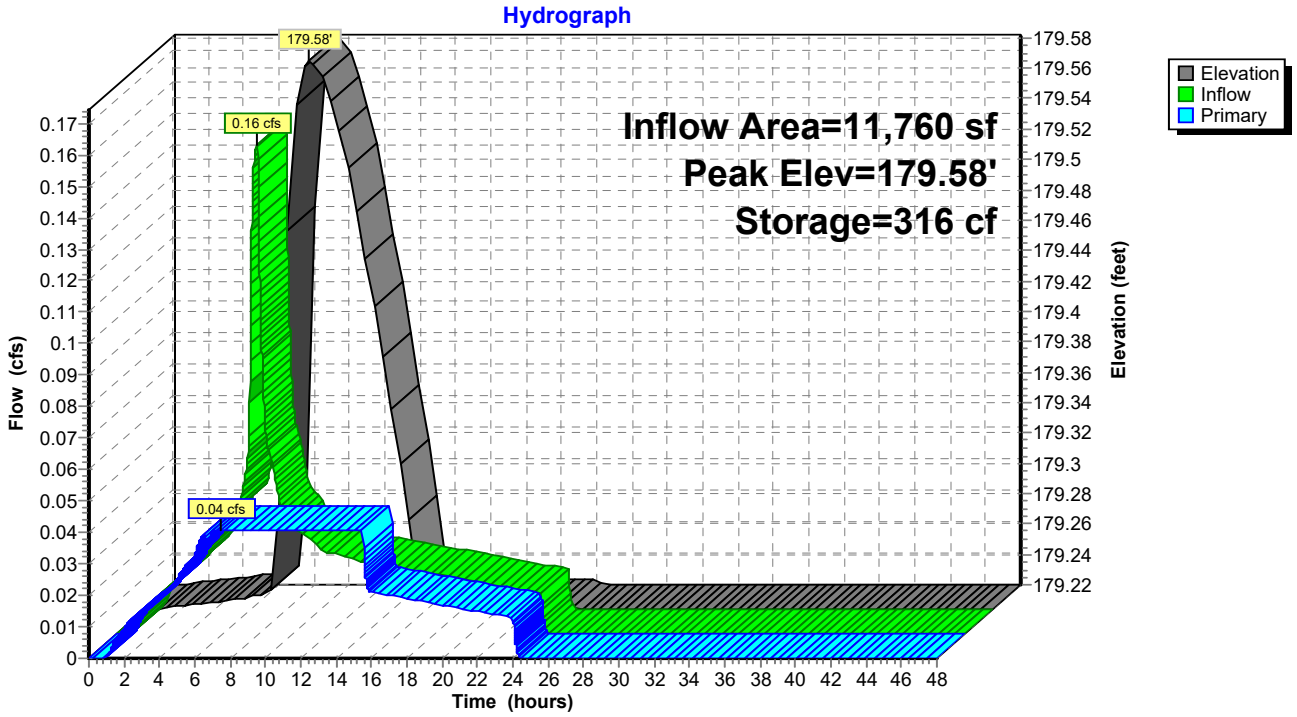
Plug-Flow detention time= 45.8 min calculated for 2,225 cf (100% of inflow)
Center-of-Mass det. time= 45.8 min (718.4 - 672.6)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	726 cf	**8.25'W x 106.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 7.42 hrs HW=179.24' TW=169.90' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.04 cfs of 1.43 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 1P: WESTERN FLOW THROUGH PLANTER



Summary for Pond 2P: EASTERN FLOW THROUGH PLANTER

Inflow Area = 7,030 sf,100.00% Impervious, Inflow Depth = 2.27" for 2 YEAR event
Inflow = 0.09 cfs @ 7.88 hrs, Volume= 1,330 cf
Outflow = 0.02 cfs @ 7.00 hrs, Volume= 1,330 cf, Atten= 76%, Lag= 0.0 min
Primary = 0.02 cfs @ 7.00 hrs, Volume= 1,330 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.67' @ 9.75 hrs Surf.Area= 474 sf Storage= 212 cf
Flood Elev= 181.00' Surf.Area= 474 sf Storage= 394 cf

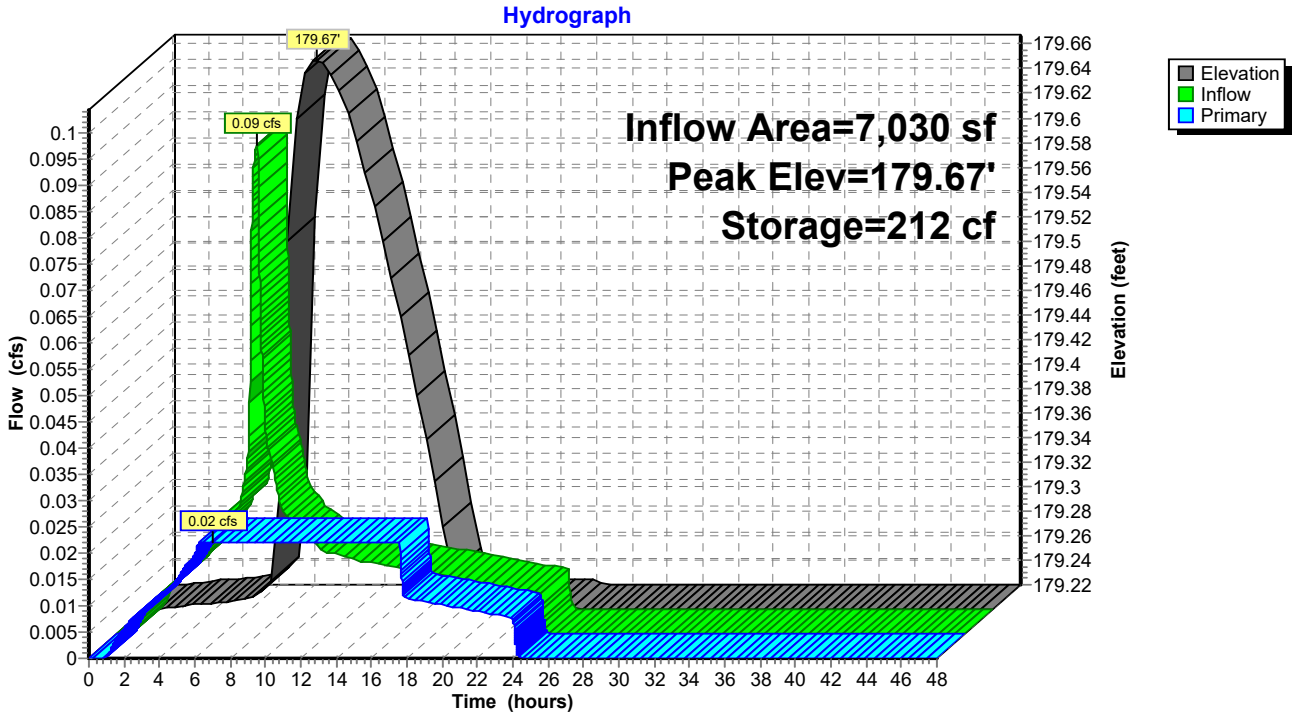
Plug-Flow detention time= 64.1 min calculated for 1,330 cf (100% of inflow)
Center-of-Mass det. time= 64.1 min (736.7 - 672.6)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	394 cf	**5.33'W x 89.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 7.00 hrs HW=179.24' TW=169.60' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.02 cfs of 1.42 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.02 cfs)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: EASTERN FLOW THROUGH PLANTER



Summary for Pond CH: DETENTION Chamber

Inflow Area = 245,040 sf, 70.47% Impervious, Inflow Depth = 1.86" for 2 YEAR event
Inflow = 2.38 cfs @ 7.90 hrs, Volume= 38,036 cf
Outflow = 0.93 cfs @ 8.76 hrs, Volume= 38,036 cf, Atten= 61%, Lag= 51.5 min
Primary = 0.93 cfs @ 8.76 hrs, Volume= 38,036 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 171.98' @ 8.76 hrs Surf.Area= 0.054 ac Storage= 0.108 af
Flood Elev= 175.85' Surf.Area= 0.054 ac Storage= 0.216 af

Plug-Flow detention time= 38.9 min calculated for 38,028 cf (100% of inflow)
Center-of-Mass det. time= 38.9 min (741.5 - 702.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.10'	0.076 af	**20.33'W x 115.79'L x 6.75'H Field A** 0.365 af Overall - 0.135 af Embedded = 0.230 af x 33.0% Voids
#2A	169.85'	0.135 af	**ADS_StormTech MC-4500 +Cap** x 54 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 27 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
#3	168.19'	0.005 af	**15.0" Round Pipe Storage** L= 184.7' S= 0.0050 '/'
		0.216 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	**15.0" Round Outlet Pipe** L= 40.2' Ke= 0.500 Inlet / Outlet Invert= 168.00' / 167.79' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	168.00'	**4.0" Vert. 1/2 2 Year Overflow** C= 0.600
#3	Device 1	171.90'	**5.5" Horiz. 2 Year Overflow** C= 0.600 Limited to weir flow at low heads
#4	Device 1	174.50'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.93 cfs @ 8.76 hrs HW=171.98' TW=0.00' (Dynamic Tailwater)
└─**1=Outlet Pipe** (Passes 0.93 cfs of 10.82 cfs potential flow)
  ├─**2=1/2 2 Year Overflow** (Orifice Controls 0.82 cfs @ 9.40 fps)
  ├─**3=2 Year Overflow** (Weir Controls 0.11 cfs @ 0.93 fps)
  └─**4=Overflow** (Controls 0.00 cfs)

Pond CH: DETENTION Chamber - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-4500 +Cap (ADS StormTech®MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 20.0" Spacing = 120.0" C-C Row Spacing

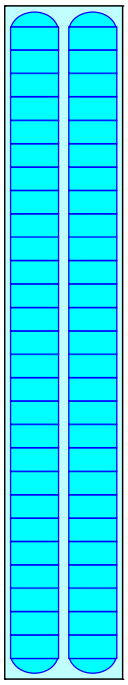
27 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 113.79' Row Length +12.0" End Stone x 2 = 115.79' Base Length
2 Rows x 100.0" Wide + 20.0" Spacing x 1 + 12.0" Side Stone x 2 = 20.33' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

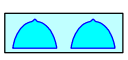
54 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 5,893.3 cf Chamber Storage

15,892.4 cf Field - 5,893.3 cf Chambers = 9,999.1 cf Stone x 33.0% Voids = 3,299.7 cf Stone Storage

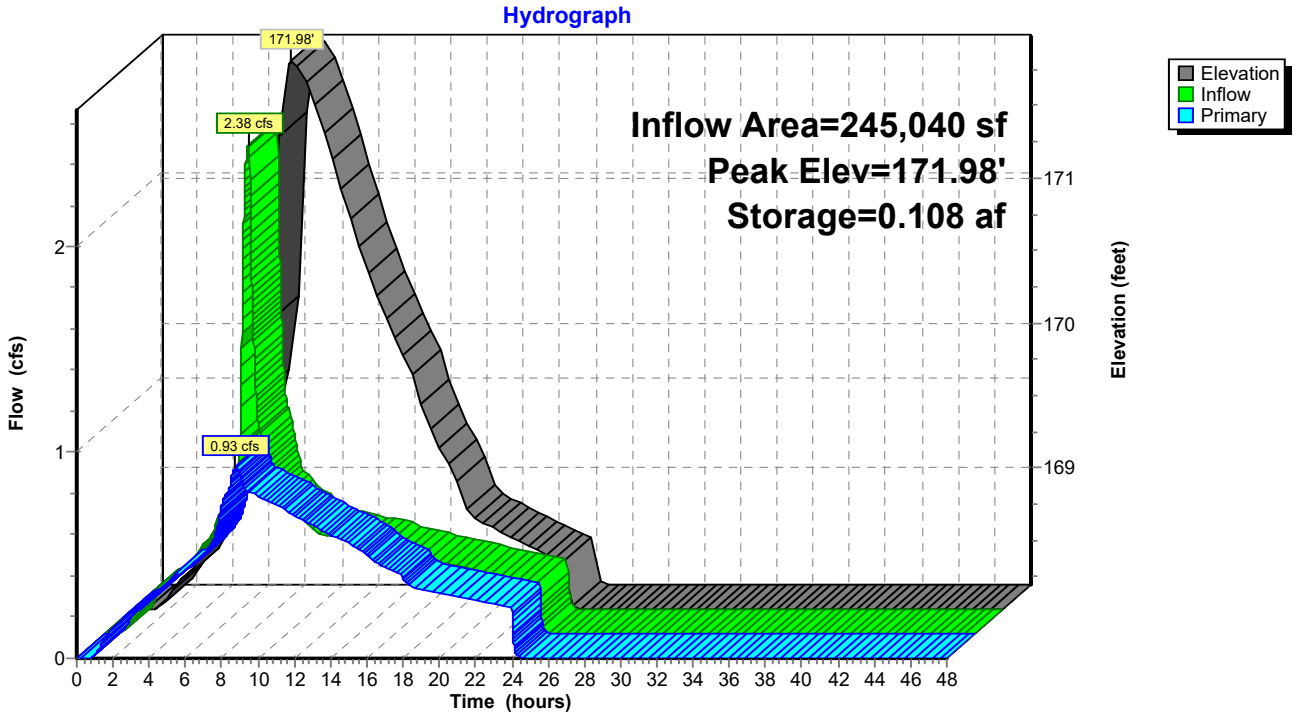
Chamber Storage + Stone Storage = 9,193.0 cf = 0.211 af
Overall Storage Efficiency = 57.8%
Overall System Size = 115.79' x 20.33' x 6.75'

54 Chambers
588.6 cy Field
370.3 cy Stone





Pond CH: DETENTION Chamber

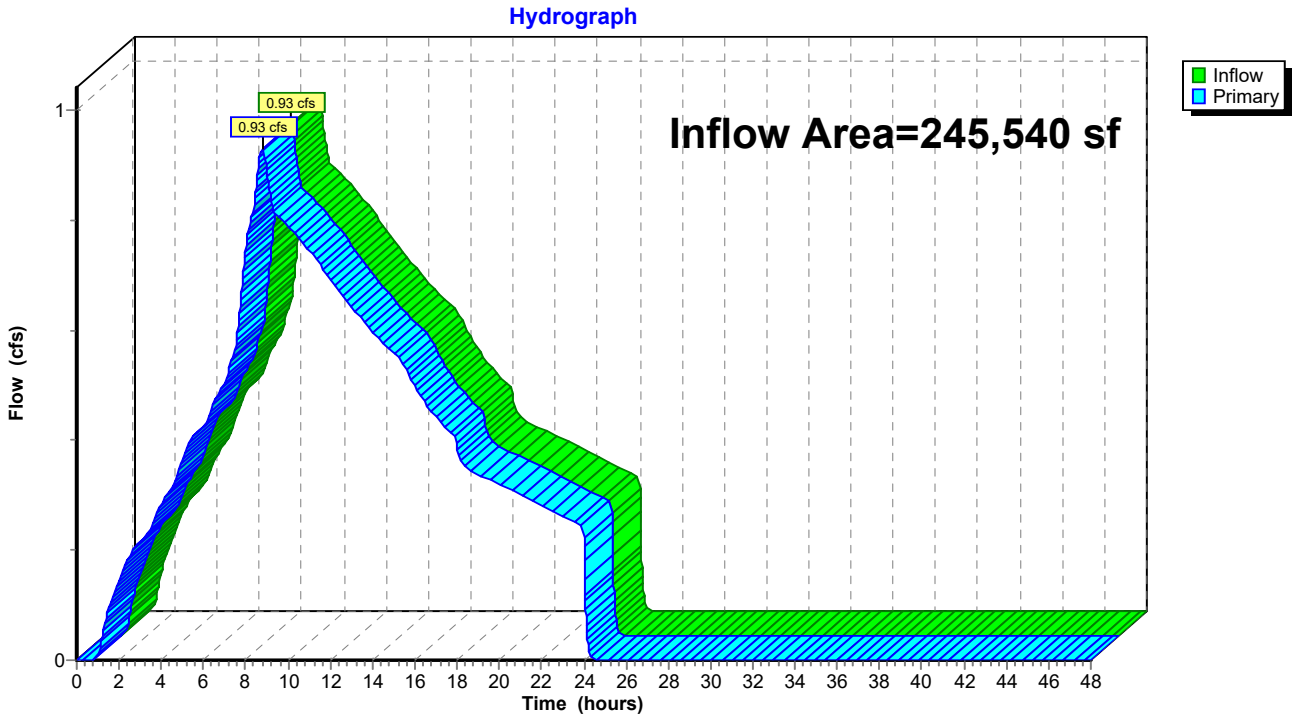


Summary for Link 1L: Total

Inflow Area = 245,540 sf, 70.53% Impervious, Inflow Depth = 1.86" for 2 YEAR event
Inflow = 0.93 cfs @ 8.76 hrs, Volume= 38,131 cf
Primary = 0.93 cfs @ 8.76 hrs, Volume= 38,131 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Total



Summary for Subcatchment 1ES: Existing basin

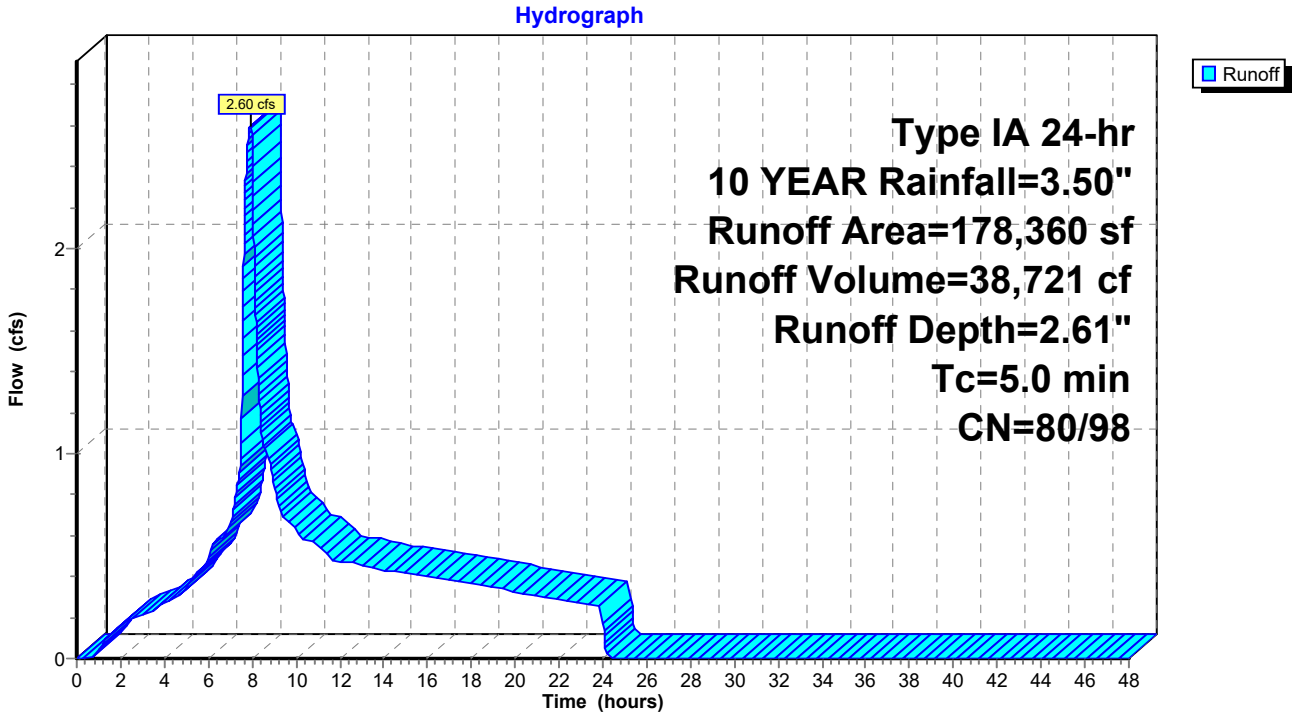
Runoff = 2.60 cfs @ 7.90 hrs, Volume= 38,721 cf, Depth= 2.61"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	106,000	98	Existing Impervious Area
	72,360	80	>75% Grass cover, Good, HSG D
	178,360	91	Weighted Average
	72,360		40.57% Pervious Area
	106,000		59.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Subcatchment P1A: P1A - North Roof

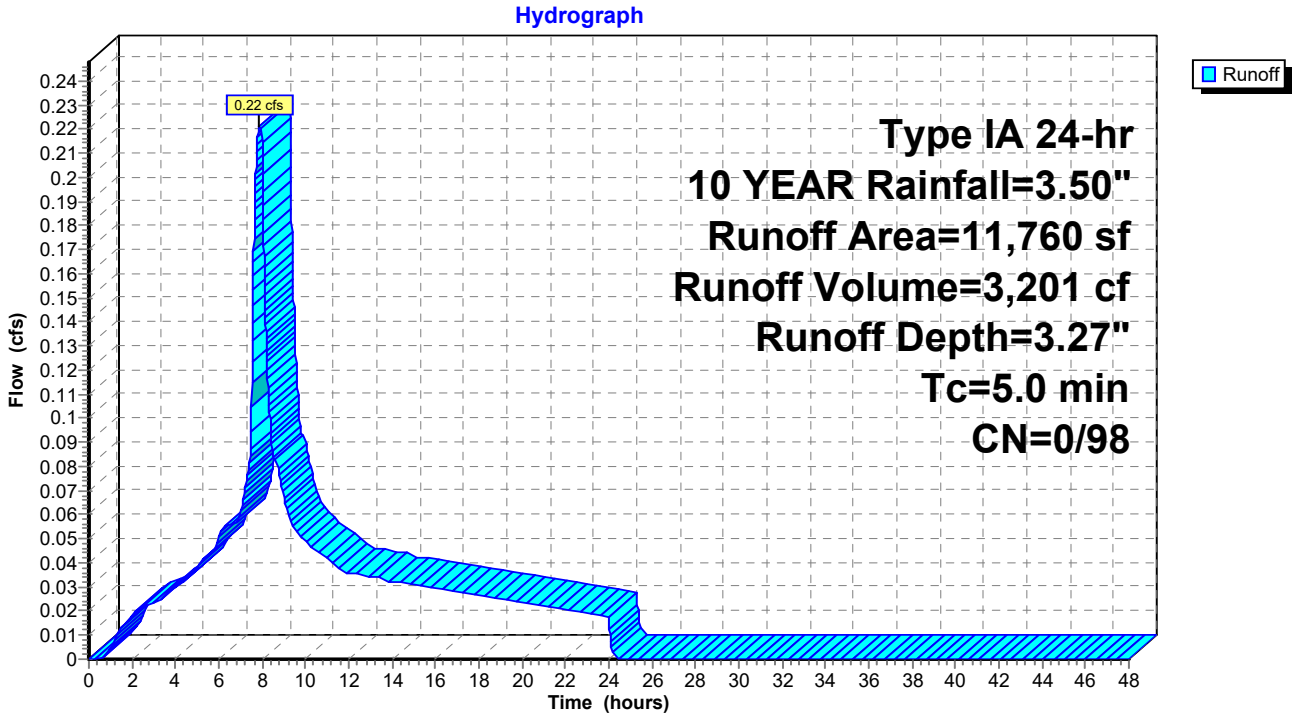
Runoff = 0.22 cfs @ 7.88 hrs, Volume= 3,201 cf, Depth= 3.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	11,760	98	Roof
	11,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1A: P1A - North Roof



Summary for Subcatchment P1B: P1B - South Roof

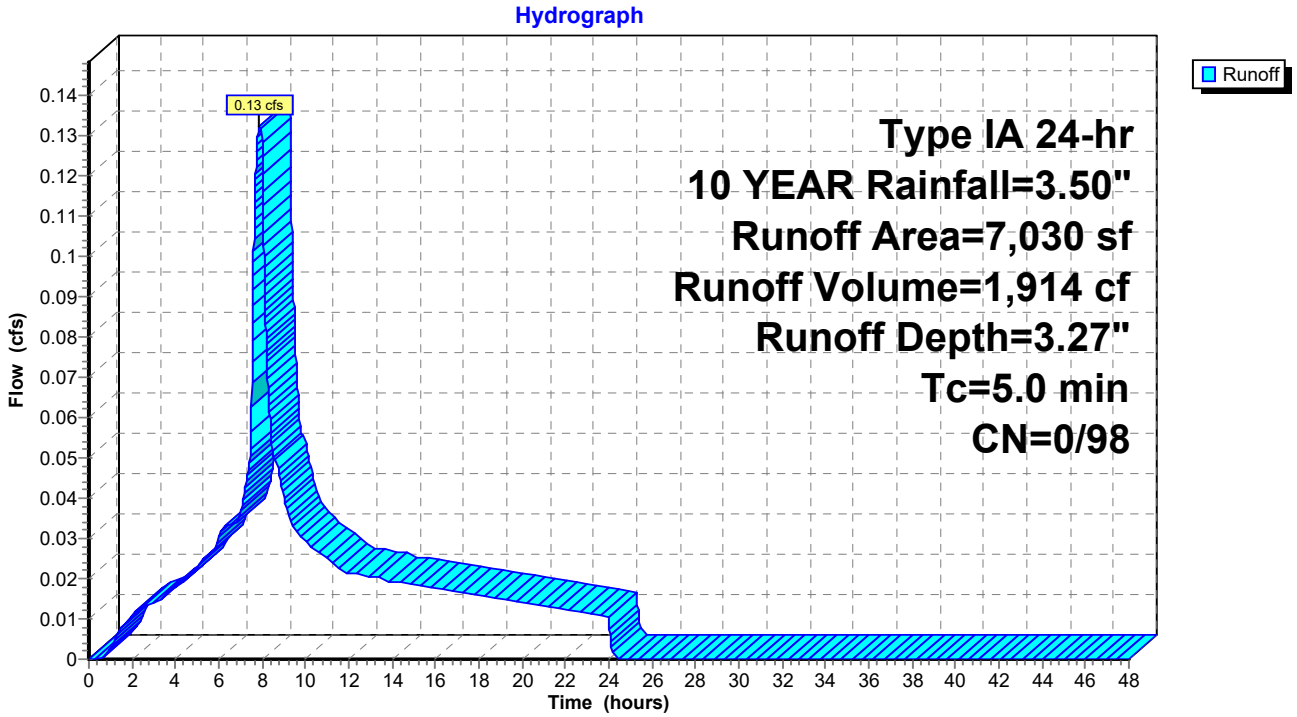
Runoff = 0.13 cfs @ 7.88 hrs, Volume= 1,914 cf, Depth= 3.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	7,030	98	Roof
	7,030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1B: P1B - South Roof



Summary for Subcatchment P1J: Un-Detained Release

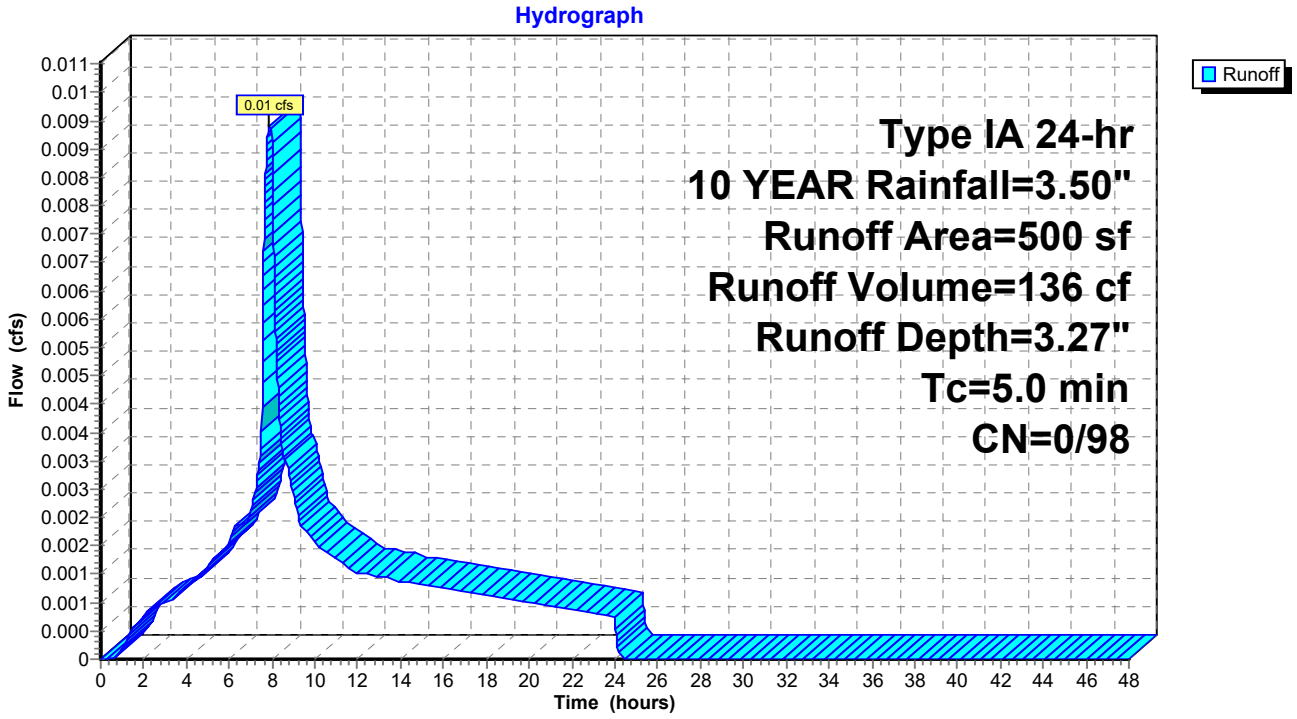
Runoff = 0.01 cfs @ 7.88 hrs, Volume= 136 cf, Depth= 3.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	500	98	Impervious
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1J: Un-Detained Release



Summary for Subcatchment PH1: Phase 1

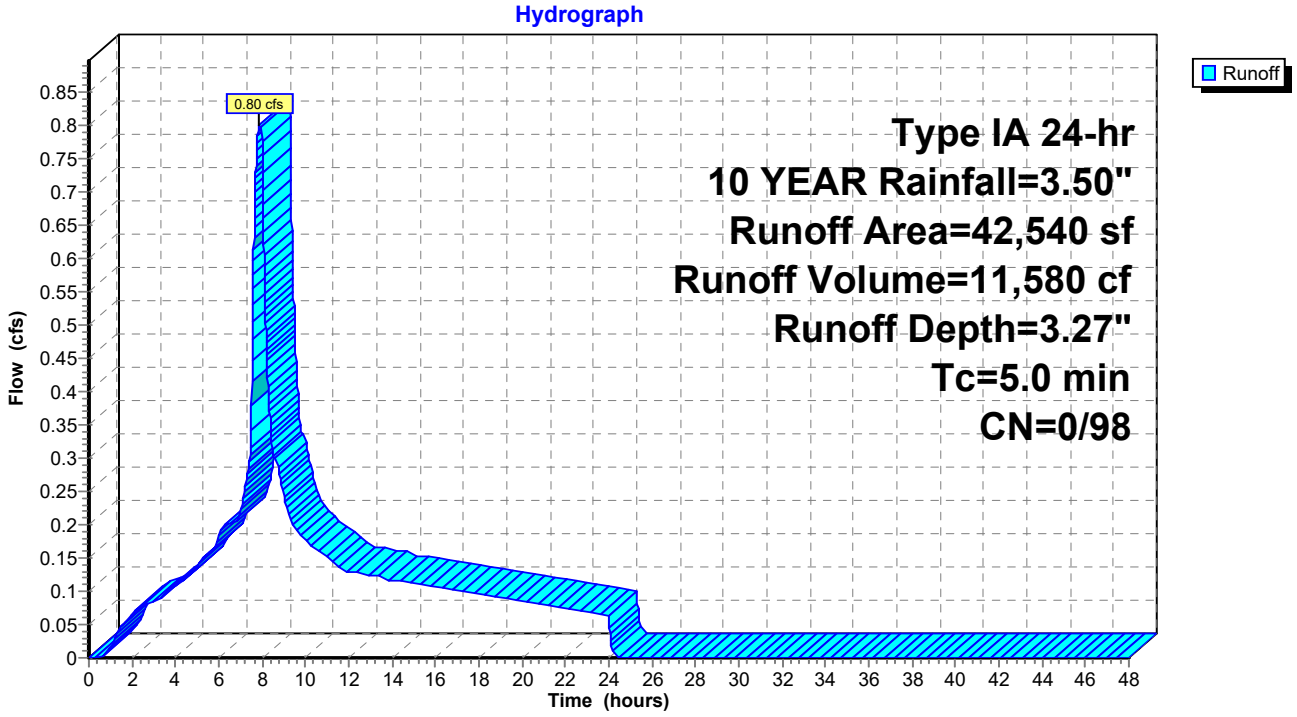
Runoff = 0.80 cfs @ 7.88 hrs, Volume= 11,580 cf, Depth= 3.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	1,890	98	P1C - Impervious
*	820	98	P1D - Impervious
*	14,360	98	P1E - Impervious
*	16,710	98	P1F - Impervious
*	4,970	98	P1G - Impervious
*	3,790	98	P1H - Impervious
	42,540	98	Weighted Average
	42,540		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH1: Phase 1



Summary for Subcatchment PH2: Phase 2

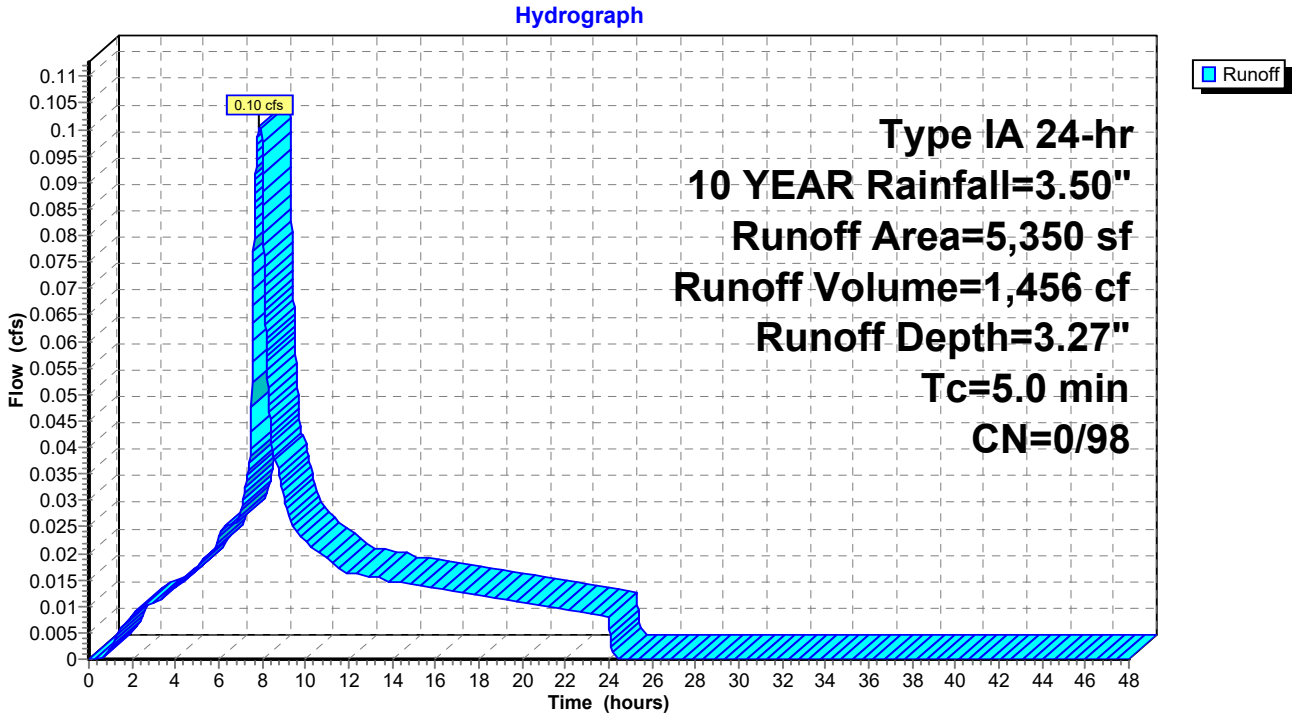
Runoff = 0.10 cfs @ 7.88 hrs, Volume= 1,456 cf, Depth= 3.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YEAR Rainfall=3.50"

	Area (sf)	CN	Description
*	5,350	98	P2 - Impervious
	5,350		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH2: Phase 2



Summary for Pond 1P: WESTERN FLOW THROUGH PLANTER

Inflow Area = 11,760 sf,100.00% Impervious, Inflow Depth = 3.27" for 10 YEAR event
Inflow = 0.22 cfs @ 7.88 hrs, Volume= 3,201 cf
Outflow = 0.11 cfs @ 8.31 hrs, Volume= 3,201 cf, Atten= 52%, Lag= 26.0 min
Primary = 0.11 cfs @ 8.31 hrs, Volume= 3,201 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.77' @ 8.31 hrs Surf.Area= 875 sf Storage= 485 cf
Flood Elev= 181.65' Surf.Area= 875 sf Storage= 726 cf

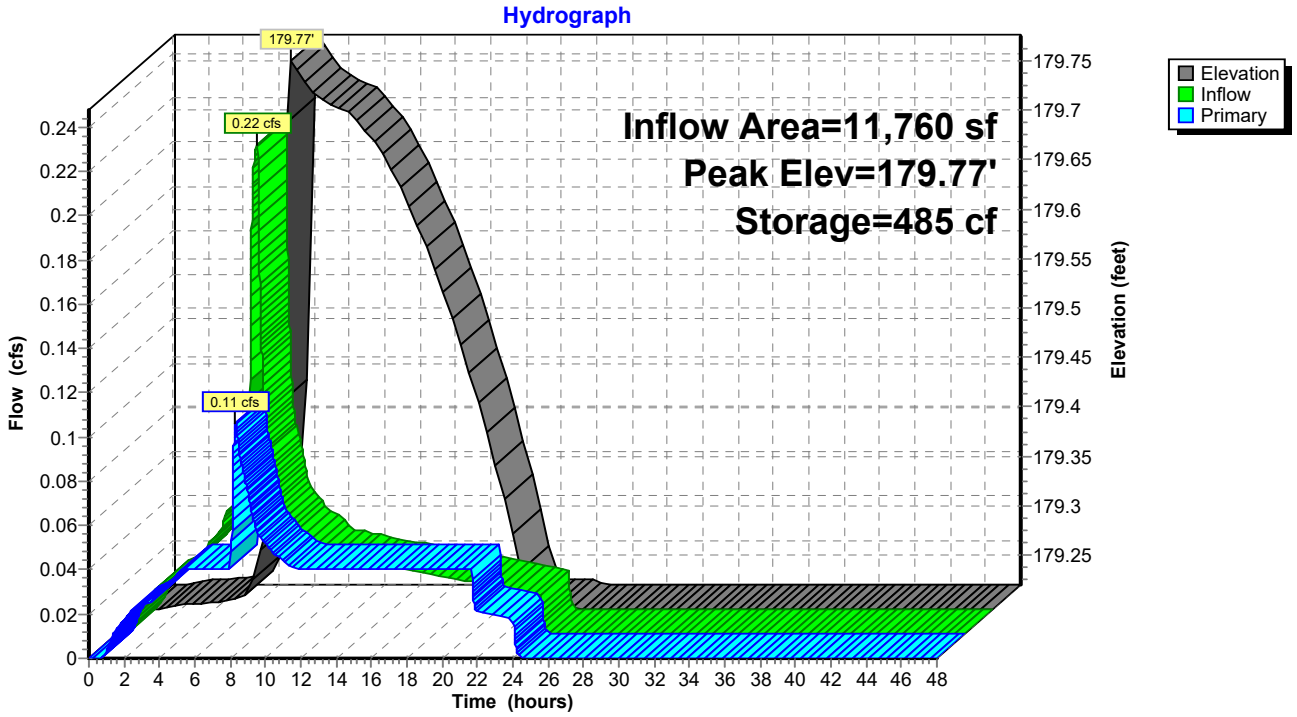
Plug-Flow detention time= 86.8 min calculated for 3,200 cf (100% of inflow)
Center-of-Mass det. time= 86.8 min (749.6 - 662.8)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	726 cf	**8.25'W x 106.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 8.31 hrs HW=179.77' TW=173.45' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.11 cfs of 1.58 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
3=Orifice/Grate (Weir Controls 0.07 cfs @ 0.76 fps)

Pond 1P: WESTERN FLOW THROUGH PLANTER



Summary for Pond 2P: EASTERN FLOW THROUGH PLANTER

Inflow Area = 7,030 sf,100.00% Impervious, Inflow Depth = 3.27" for 10 YEAR event
Inflow = 0.13 cfs @ 7.88 hrs, Volume= 1,914 cf
Outflow = 0.10 cfs @ 8.08 hrs, Volume= 1,914 cf, Atten= 25%, Lag= 12.5 min
Primary = 0.10 cfs @ 8.08 hrs, Volume= 1,914 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.78' @ 8.08 hrs Surf.Area= 474 sf Storage= 266 cf
Flood Elev= 181.00' Surf.Area= 474 sf Storage= 394 cf

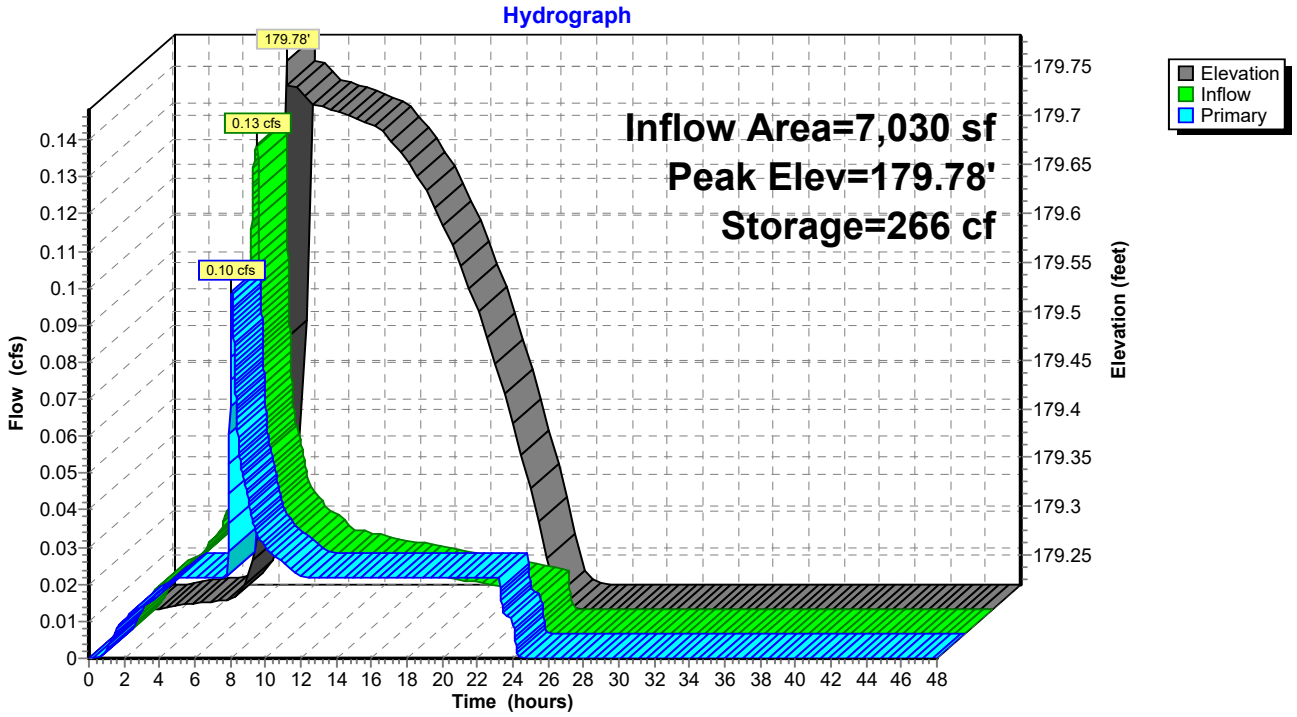
Plug-Flow detention time= 91.8 min calculated for 1,913 cf (100% of inflow)
Center-of-Mass det. time= 91.8 min (754.6 - 662.8)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	394 cf	**5.33'W x 89.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 8.08 hrs HW=179.78' TW=173.25' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.10 cfs of 1.59 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)
3=Orifice/Grate (Weir Controls 0.08 cfs @ 0.81 fps)

Pond 2P: EASTERN FLOW THROUGH PLANTER



Summary for Pond CH: DETENTION Chamber

Inflow Area = 245,040 sf, 70.47% Impervious, Inflow Depth = 2.79" for 10 YEAR event
Inflow = 3.56 cfs @ 7.90 hrs, Volume= 56,872 cf
Outflow = 1.96 cfs @ 8.29 hrs, Volume= 56,872 cf, Atten= 45%, Lag= 23.7 min
Primary = 1.96 cfs @ 8.29 hrs, Volume= 56,872 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 173.45' @ 8.29 hrs Surf.Area= 0.054 ac Storage= 0.162 af
Flood Elev= 175.85' Surf.Area= 0.054 ac Storage= 0.216 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 53.8 min (750.3 - 696.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.10'	0.076 af	**20.33'W x 115.79'L x 6.75'H Field A** 0.365 af Overall - 0.135 af Embedded = 0.230 af x 33.0% Voids
#2A	169.85'	0.135 af	**ADS_StormTech MC-4500 +Cap** x 54 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 27 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
#3	168.19'	0.005 af	**15.0" Round Pipe Storage** L= 184.7' S= 0.0050 '/'
		0.216 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	**15.0" Round Outlet Pipe** L= 40.2' Ke= 0.500 Inlet / Outlet Invert= 168.00' / 167.79' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	168.00'	**4.0" Vert. 1/2 2 Year Overflow** C= 0.600
#3	Device 1	171.90'	**5.5" Horiz. 2 Year Overflow** C= 0.600 Limited to weir flow at low heads
#4	Device 1	174.50'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.96 cfs @ 8.29 hrs HW=173.45' TW=0.00' (Dynamic Tailwater)
└─**1=Outlet Pipe** (Passes 1.96 cfs of 12.99 cfs potential flow)
  ├─**2=1/2 2 Year Overflow** (Orifice Controls 0.97 cfs @ 11.07 fps)
  ├─**3=2 Year Overflow** (Orifice Controls 0.99 cfs @ 6.00 fps)
  └─**4=Overflow** (Controls 0.00 cfs)

Pond CH: DETENTION Chamber - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-4500 +Cap (ADS StormTech®MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 20.0" Spacing = 120.0" C-C Row Spacing

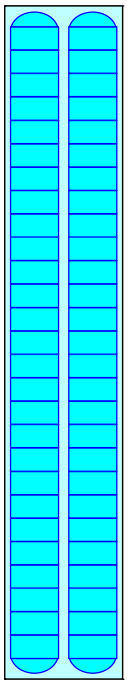
27 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 113.79' Row Length +12.0" End Stone x 2 = 115.79' Base Length
2 Rows x 100.0" Wide + 20.0" Spacing x 1 + 12.0" Side Stone x 2 = 20.33' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

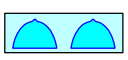
54 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 5,893.3 cf Chamber Storage

15,892.4 cf Field - 5,893.3 cf Chambers = 9,999.1 cf Stone x 33.0% Voids = 3,299.7 cf Stone Storage

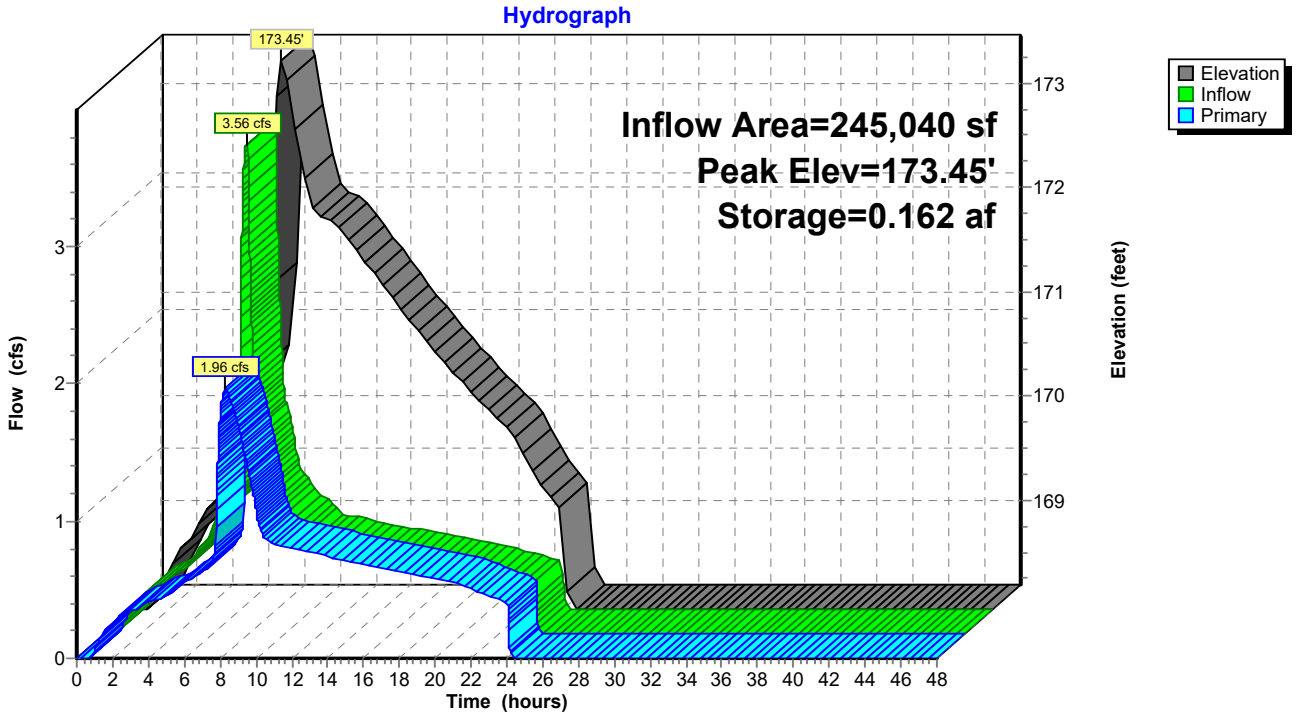
Chamber Storage + Stone Storage = 9,193.0 cf = 0.211 af
Overall Storage Efficiency = 57.8%
Overall System Size = 115.79' x 20.33' x 6.75'

54 Chambers
588.6 cy Field
370.3 cy Stone





Pond CH: DETENTION Chamber

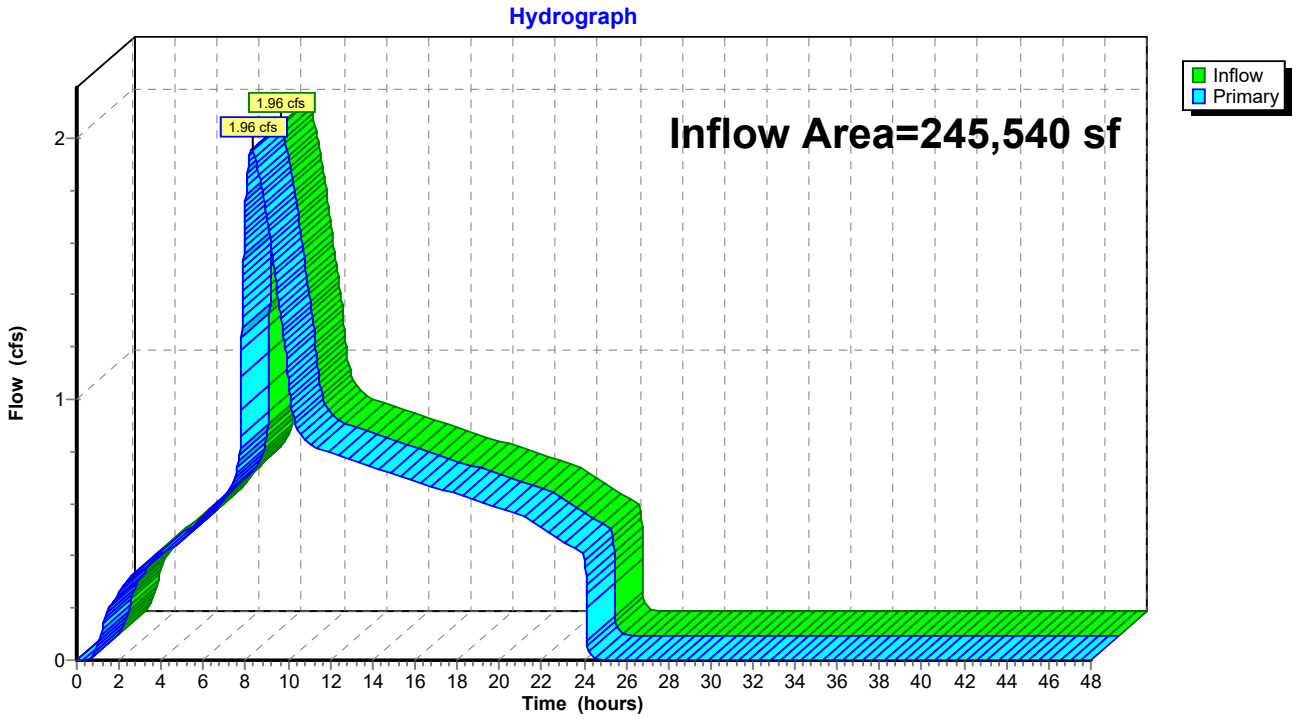


Summary for Link 1L: Total

Inflow Area = 245,540 sf, 70.53% Impervious, Inflow Depth = 2.79" for 10 YEAR event
Inflow = 1.96 cfs @ 8.29 hrs, Volume= 57,008 cf
Primary = 1.96 cfs @ 8.29 hrs, Volume= 57,008 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Total



Summary for Subcatchment 1ES: Existing basin

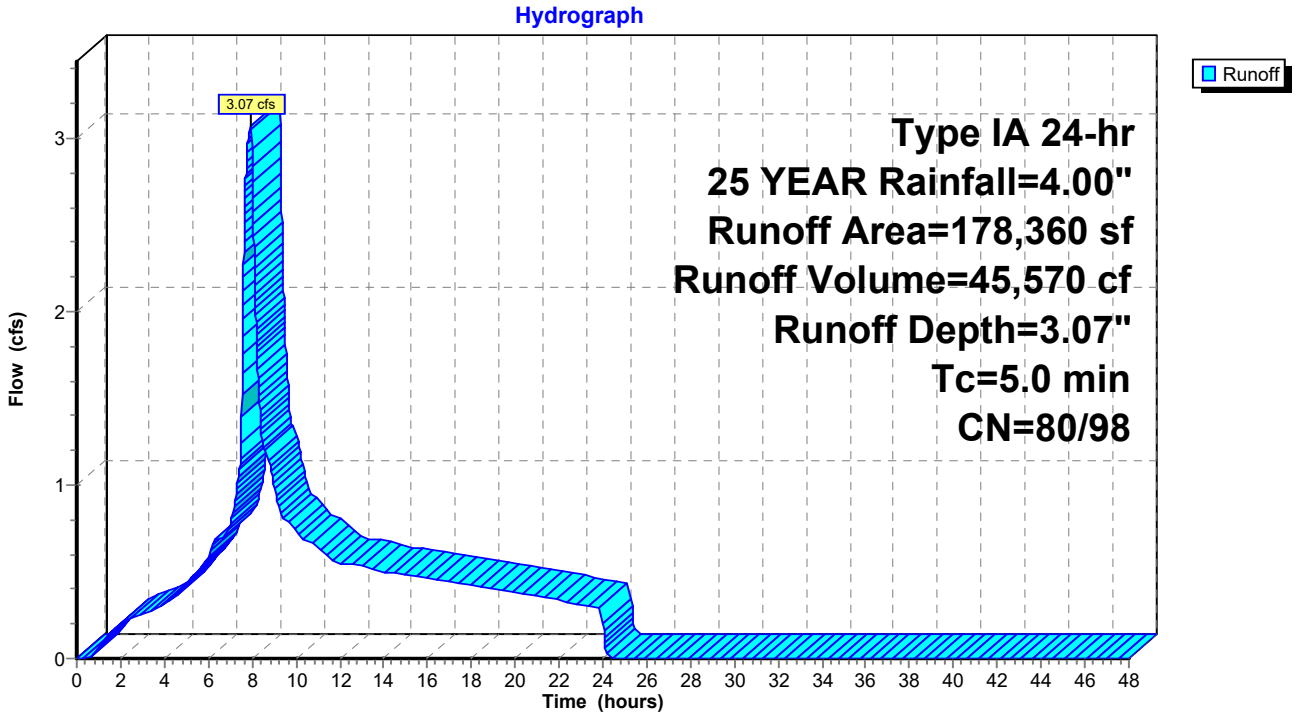
Runoff = 3.07 cfs @ 7.90 hrs, Volume= 45,570 cf, Depth= 3.07"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	106,000	98	Existing Impervious Area
	72,360	80	>75% Grass cover, Good, HSG D
	178,360	91	Weighted Average
	72,360		40.57% Pervious Area
	106,000		59.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Subcatchment P1A: P1A - North Roof

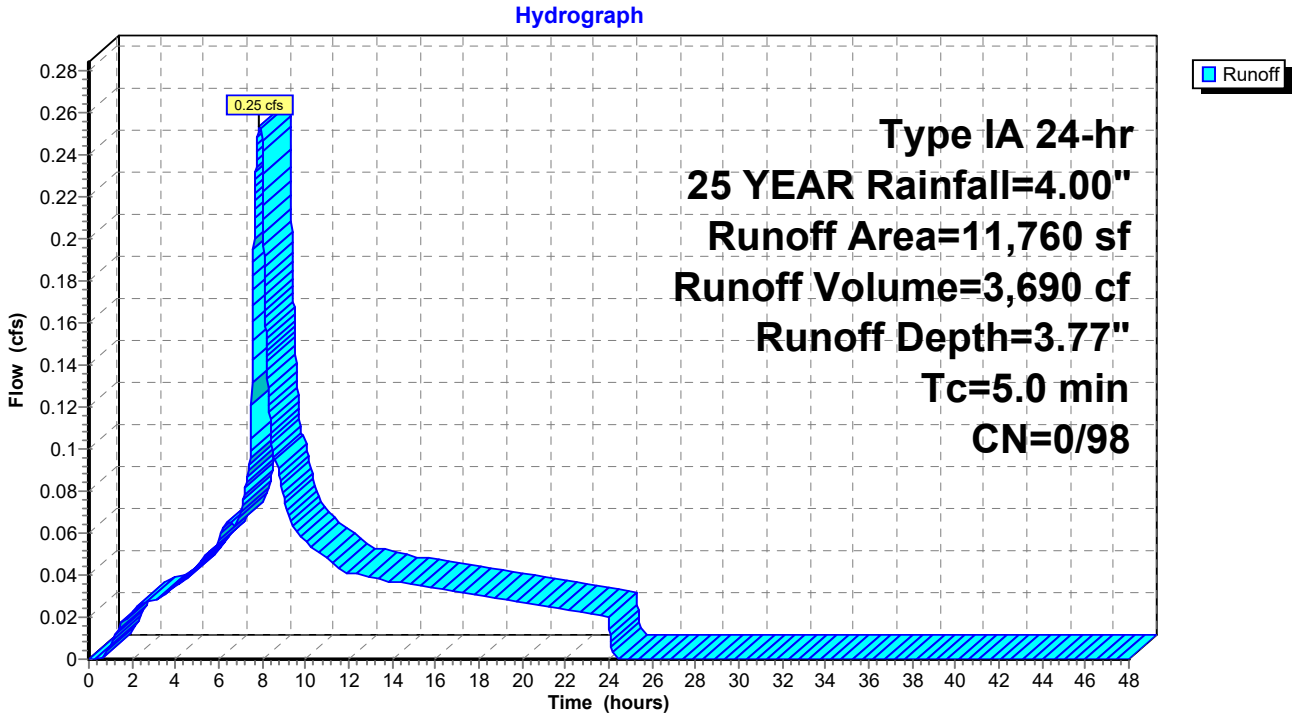
Runoff = 0.25 cfs @ 7.88 hrs, Volume= 3,690 cf, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	11,760	98	Roof
	11,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1A: P1A - North Roof



Summary for Subcatchment P1B: P1B - South Roof

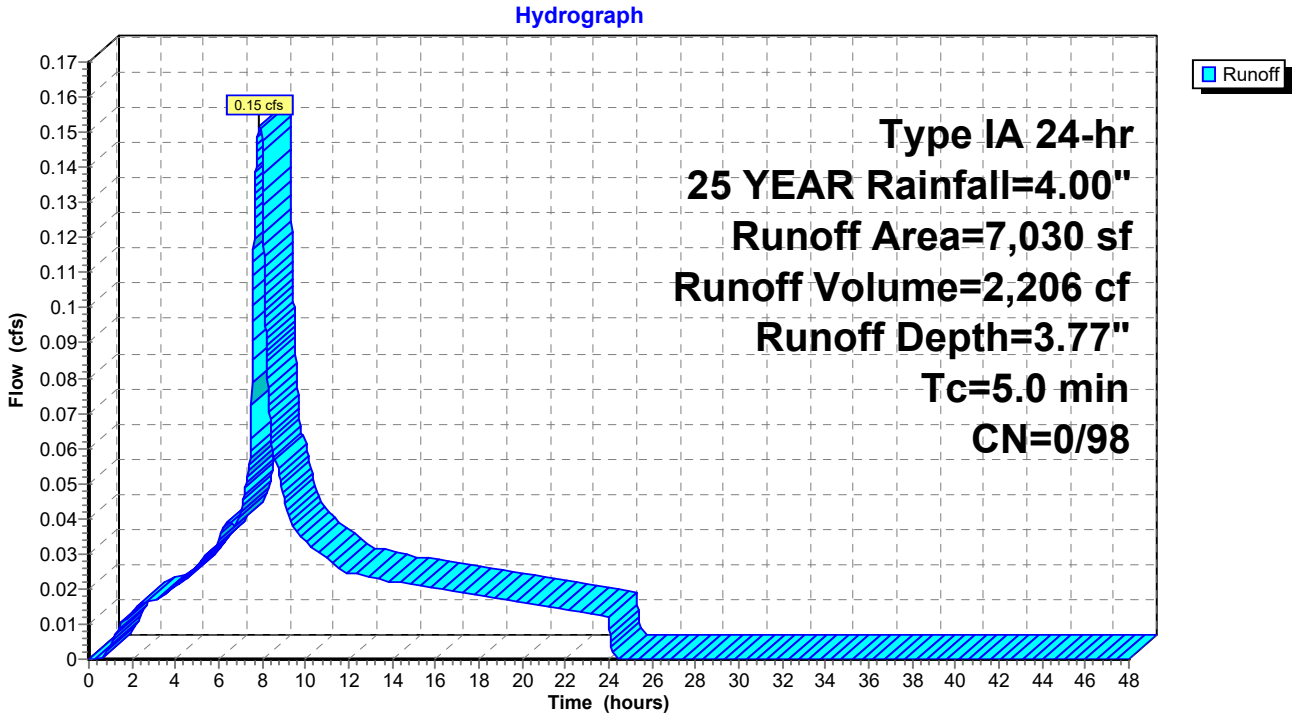
Runoff = 0.15 cfs @ 7.88 hrs, Volume= 2,206 cf, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	7,030	98	Roof
	7,030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1B: P1B - South Roof



Summary for Subcatchment P1J: Un-Detained Release

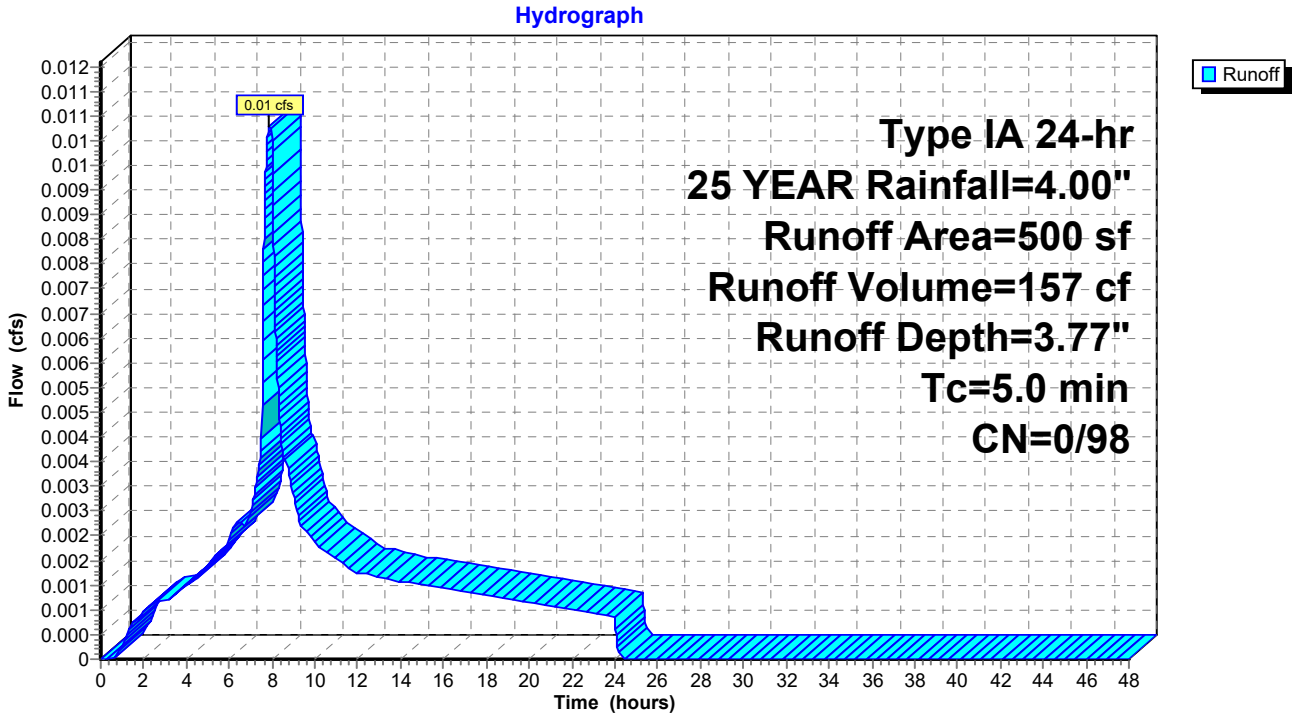
Runoff = 0.01 cfs @ 7.88 hrs, Volume= 157 cf, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	500	98	Impervious
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1J: Un-Detained Release



Summary for Subcatchment PH1: Phase 1

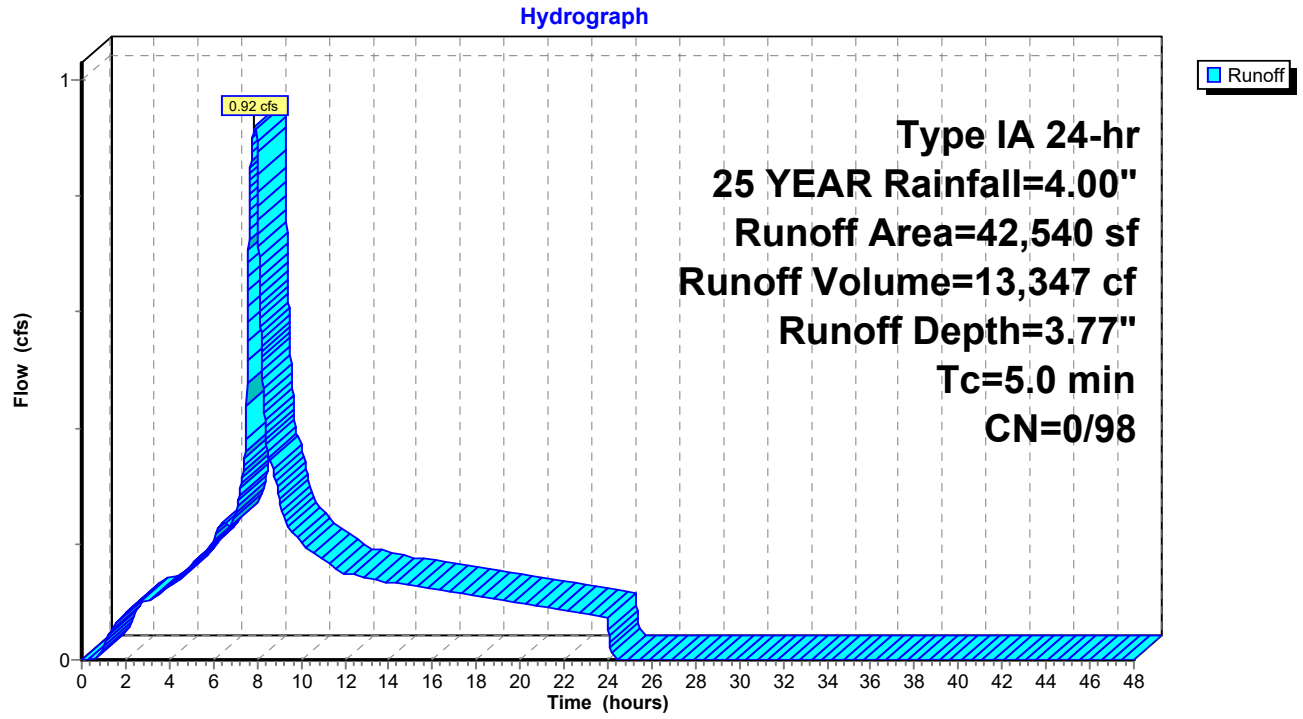
Runoff = 0.92 cfs @ 7.88 hrs, Volume= 13,347 cf, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	1,890	98	P1C - Impervious
*	820	98	P1D - Impervious
*	14,360	98	P1E - Impervious
*	16,710	98	P1F - Impervious
*	4,970	98	P1G - Impervious
*	3,790	98	P1H - Impervious
	42,540	98	Weighted Average
	42,540		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH1: Phase 1



Summary for Subcatchment PH2: Phase 2

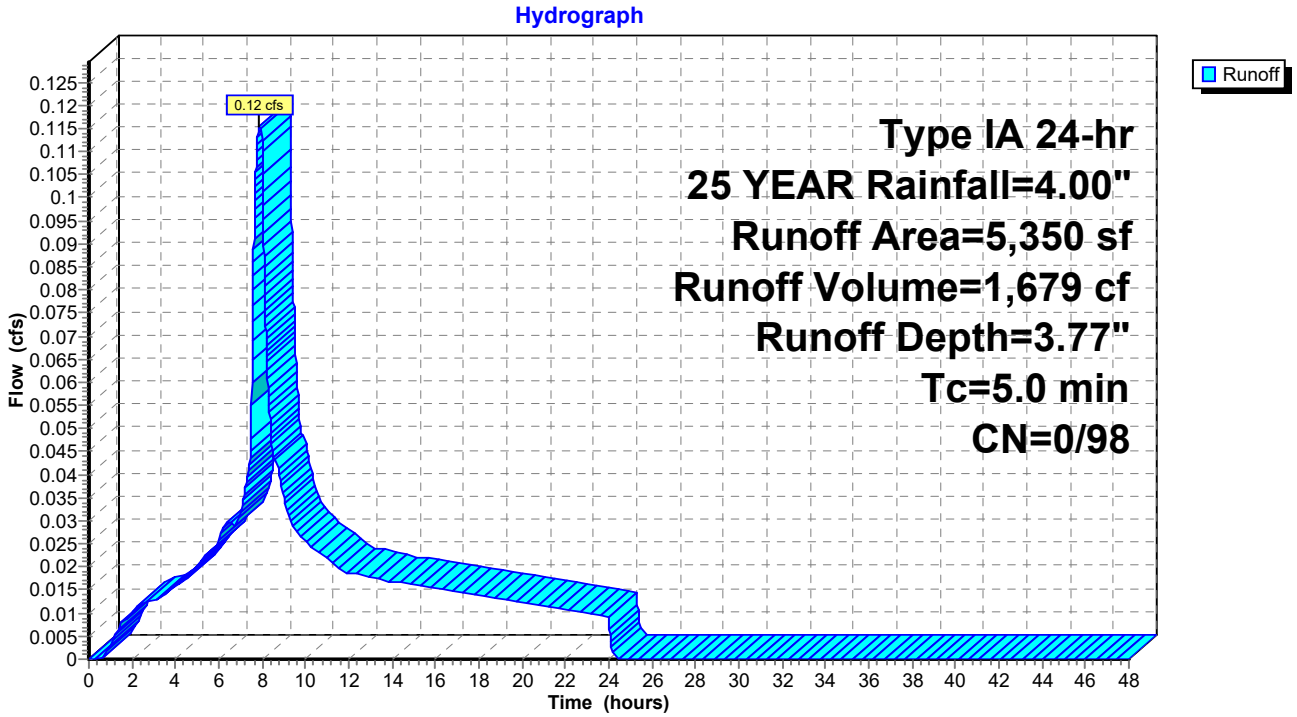
Runoff = 0.12 cfs @ 7.88 hrs, Volume= 1,679 cf, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YEAR Rainfall=4.00"

	Area (sf)	CN	Description
*	5,350	98	P2 - Impervious
	5,350		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH2: Phase 2



Summary for Pond 1P: WESTERN FLOW THROUGH PLANTER

Inflow Area = 11,760 sf,100.00% Impervious, Inflow Depth = 3.77" for 25 YEAR event
Inflow = 0.25 cfs @ 7.88 hrs, Volume= 3,690 cf
Outflow = 0.19 cfs @ 8.09 hrs, Volume= 3,690 cf, Atten= 26%, Lag= 12.7 min
Primary = 0.19 cfs @ 8.09 hrs, Volume= 3,690 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.81' @ 8.09 hrs Surf.Area= 875 sf Storage= 519 cf
Flood Elev= 181.65' Surf.Area= 875 sf Storage= 726 cf

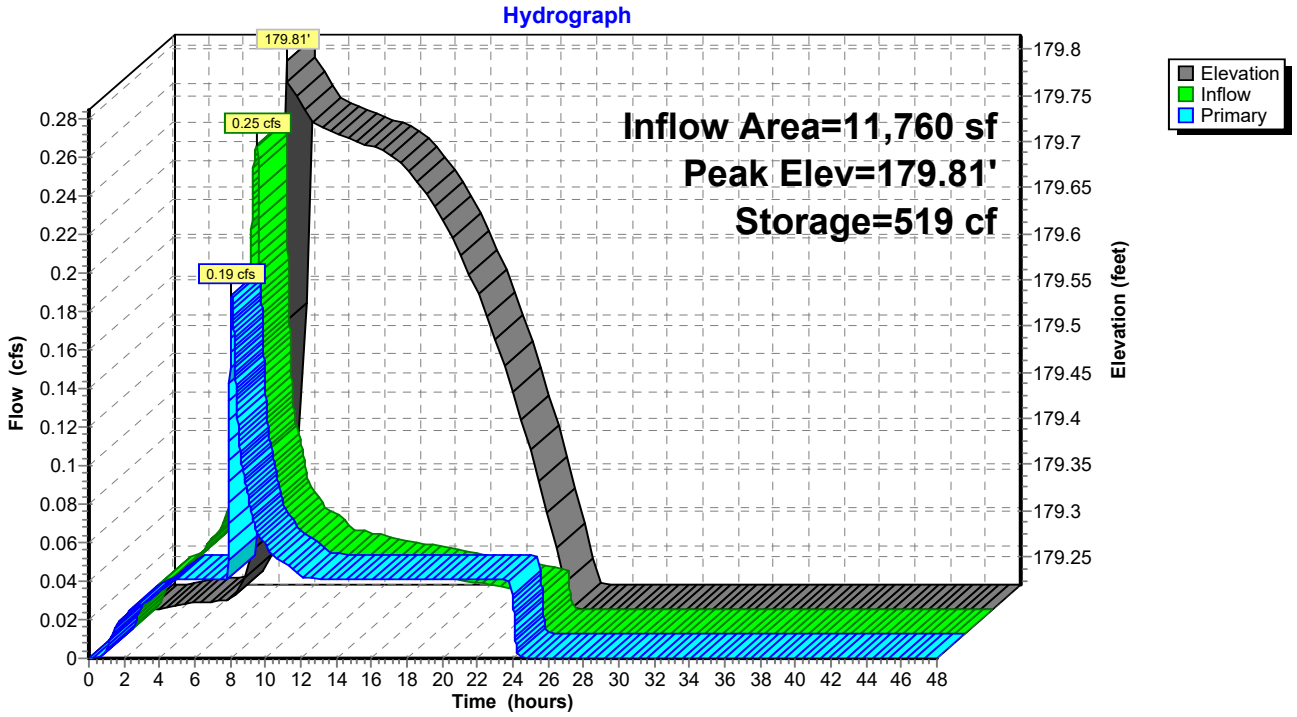
Plug-Flow detention time= 94.5 min calculated for 3,690 cf (100% of inflow)
Center-of-Mass det. time= 94.5 min (754.0 - 659.5)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	726 cf	**8.25'W x 106.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 8.09 hrs HW=179.81' TW=174.45' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.19 cfs of 1.59 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
  └─**3=Orifice/Grate** (Weir Controls 0.15 cfs @ 1.00 fps)

Pond 1P: WESTERN FLOW THROUGH PLANTER



Summary for Pond 2P: EASTERN FLOW THROUGH PLANTER

Inflow Area = 7,030 sf,100.00% Impervious, Inflow Depth = 3.77" for 25 YEAR event
Inflow = 0.15 cfs @ 7.88 hrs, Volume= 2,206 cf
Outflow = 0.14 cfs @ 8.00 hrs, Volume= 2,206 cf, Atten= 5%, Lag= 7.7 min
Primary = 0.14 cfs @ 8.00 hrs, Volume= 2,206 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.80' @ 8.00 hrs Surf.Area= 474 sf Storage= 277 cf
Flood Elev= 181.00' Surf.Area= 474 sf Storage= 394 cf

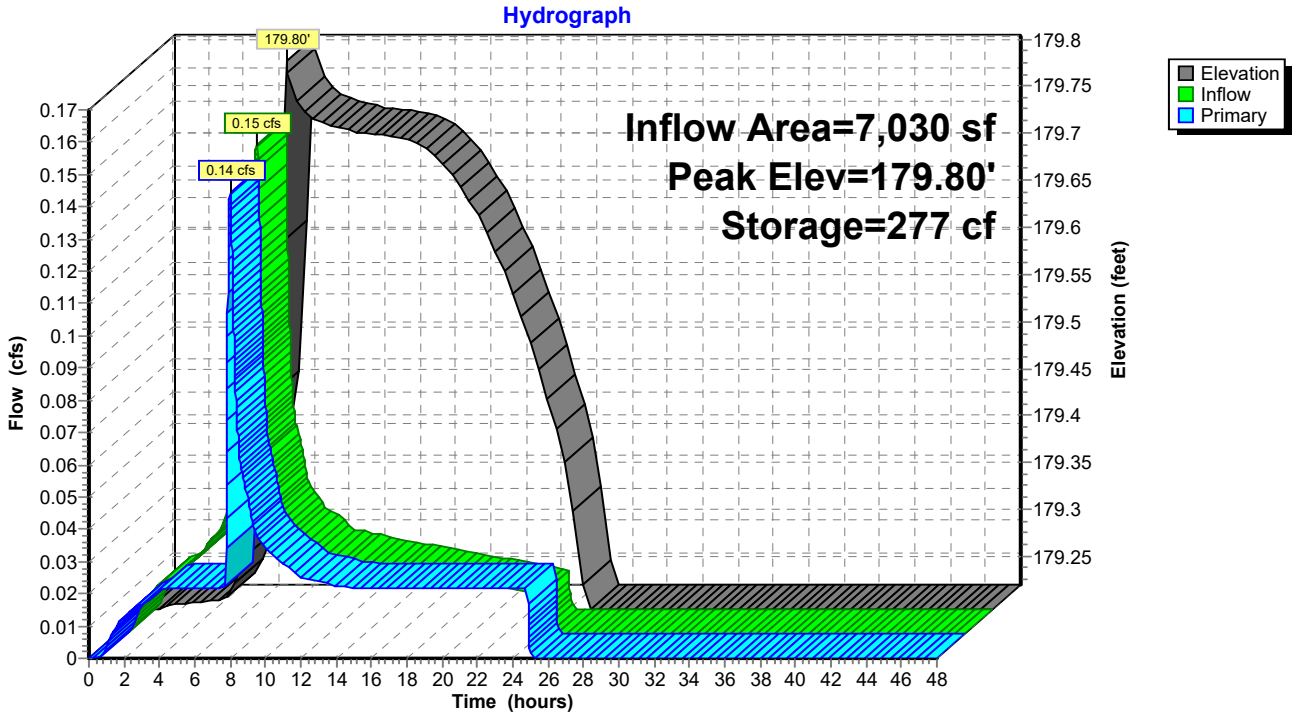
Plug-Flow detention time= 97.9 min calculated for 2,205 cf (100% of inflow)
Center-of-Mass det. time= 97.9 min (757.5 - 659.5)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	394 cf	**5.33'W x 89.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 8.00 hrs HW=179.80' TW=174.03' (Dynamic Tailwater)
└─**1=Culvert** (Passes 0.14 cfs of 1.59 cfs potential flow)
  ├─**2=Exfiltration** (Exfiltration Controls 0.02 cfs)
  └─**3=Orifice/Grate** (Weir Controls 0.12 cfs @ 0.94 fps)

Pond 2P: EASTERN FLOW THROUGH PLANTER



Summary for Pond CH: DETENTION Chamber

Inflow Area = 245,040 sf, 70.47% Impervious, Inflow Depth = 3.26" for 25 YEAR event
Inflow = 4.33 cfs @ 7.95 hrs, Volume= 66,491 cf
Outflow = 2.87 cfs @ 8.17 hrs, Volume= 66,493 cf, Atten= 34%, Lag= 12.9 min
Primary = 2.87 cfs @ 8.17 hrs, Volume= 66,493 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 174.61' @ 8.17 hrs Surf.Area= 0.054 ac Storage= 0.194 af
Flood Elev= 175.85' Surf.Area= 0.054 ac Storage= 0.216 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 60.2 min (753.7 - 693.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.10'	0.076 af	**20.33'W x 115.79'L x 6.75'H Field A** 0.365 af Overall - 0.135 af Embedded = 0.230 af x 33.0% Voids
#2A	169.85'	0.135 af	**ADS_StormTech MC-4500 +Cap** x 54 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 27 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
#3	168.19'	0.005 af	**15.0" Round Pipe Storage** L= 184.7' S= 0.0050 '/'
		0.216 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	**15.0" Round Outlet Pipe** L= 40.2' Ke= 0.500 Inlet / Outlet Invert= 168.00' / 167.79' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	168.00'	**4.0" Vert. 1/2 2 Year Overflow** C= 0.600
#3	Device 1	171.90'	**5.5" Horiz. 2 Year Overflow** C= 0.600 Limited to weir flow at low heads
#4	Device 1	174.50'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.87 cfs @ 8.17 hrs HW=174.61' TW=0.00' (Dynamic Tailwater)
└**1=Outlet Pipe** (Passes 2.87 cfs of 14.46 cfs potential flow)
  ├**2=1/2 2 Year Overflow** (Orifice Controls 1.07 cfs @ 12.23 fps)
  ├**3=2 Year Overflow** (Orifice Controls 1.31 cfs @ 7.93 fps)
  └**4=Overflow** (Weir Controls 0.49 cfs @ 1.10 fps)

Pond CH: DETENTION Chamber - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-4500 +Cap (ADS StormTech®MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 20.0" Spacing = 120.0" C-C Row Spacing

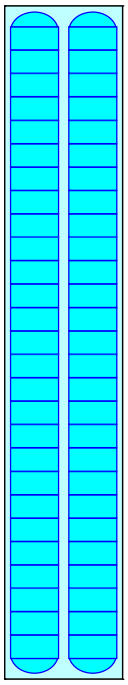
27 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 113.79' Row Length +12.0" End Stone x 2 = 115.79' Base Length
2 Rows x 100.0" Wide + 20.0" Spacing x 1 + 12.0" Side Stone x 2 = 20.33' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

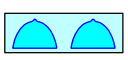
54 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 5,893.3 cf Chamber Storage

15,892.4 cf Field - 5,893.3 cf Chambers = 9,999.1 cf Stone x 33.0% Voids = 3,299.7 cf Stone Storage

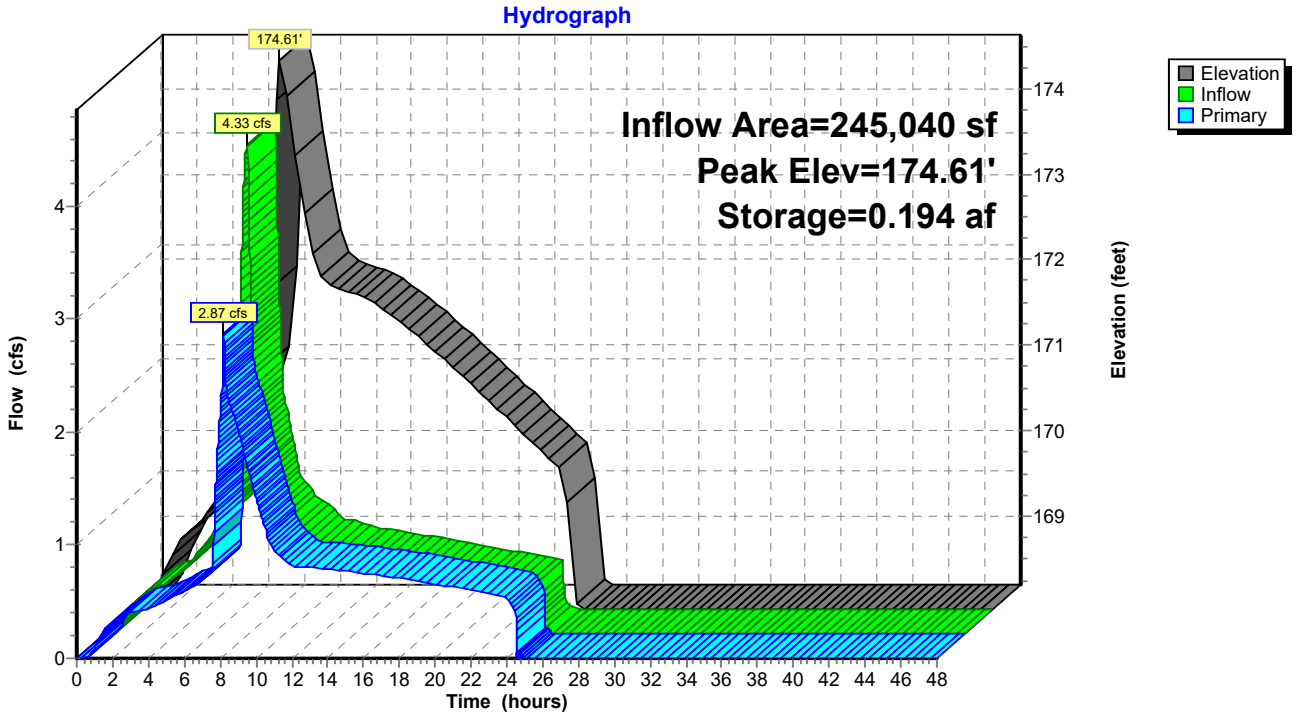
Chamber Storage + Stone Storage = 9,193.0 cf = 0.211 af
Overall Storage Efficiency = 57.8%
Overall System Size = 115.79' x 20.33' x 6.75'

54 Chambers
588.6 cy Field
370.3 cy Stone





Pond CH: DETENTION Chamber

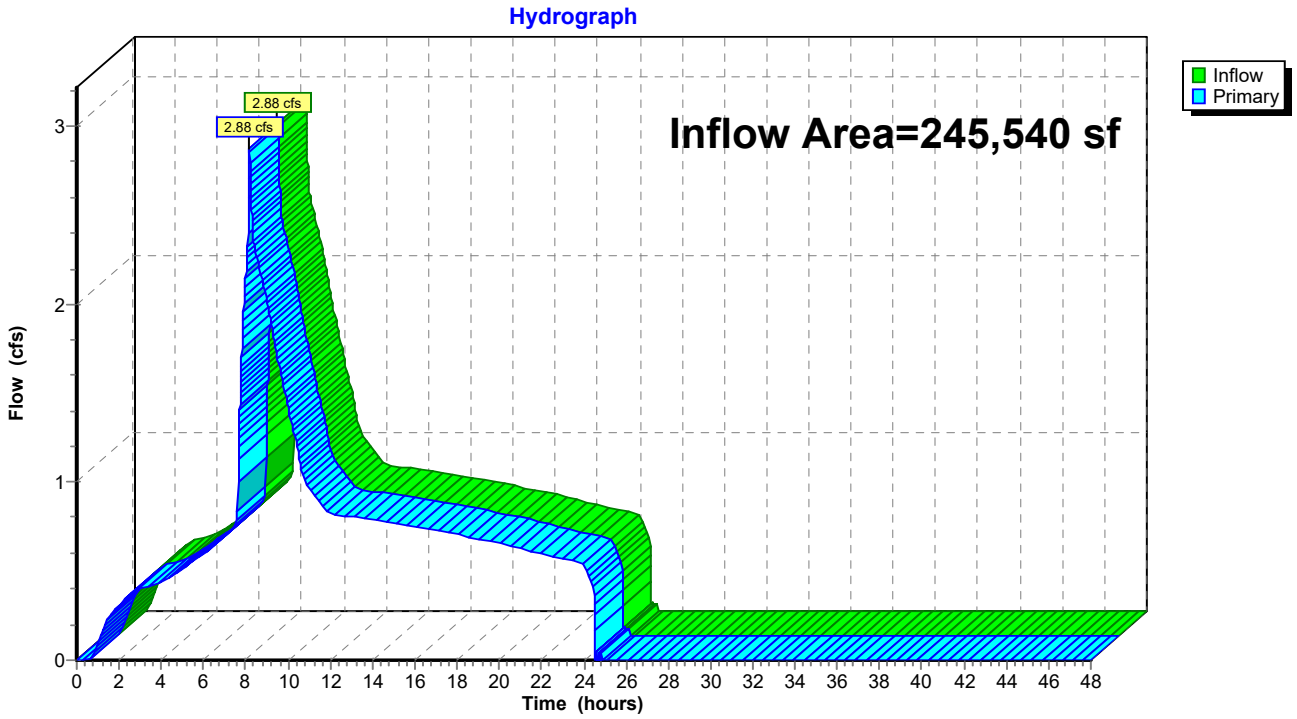


Summary for Link 1L: Total

Inflow Area = 245,540 sf, 70.53% Impervious, Inflow Depth = 3.26" for 25 YEAR event
Inflow = 2.88 cfs @ 8.17 hrs, Volume= 66,650 cf
Primary = 2.88 cfs @ 8.17 hrs, Volume= 66,650 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Total



Summary for Subcatchment 1ES: Existing basin

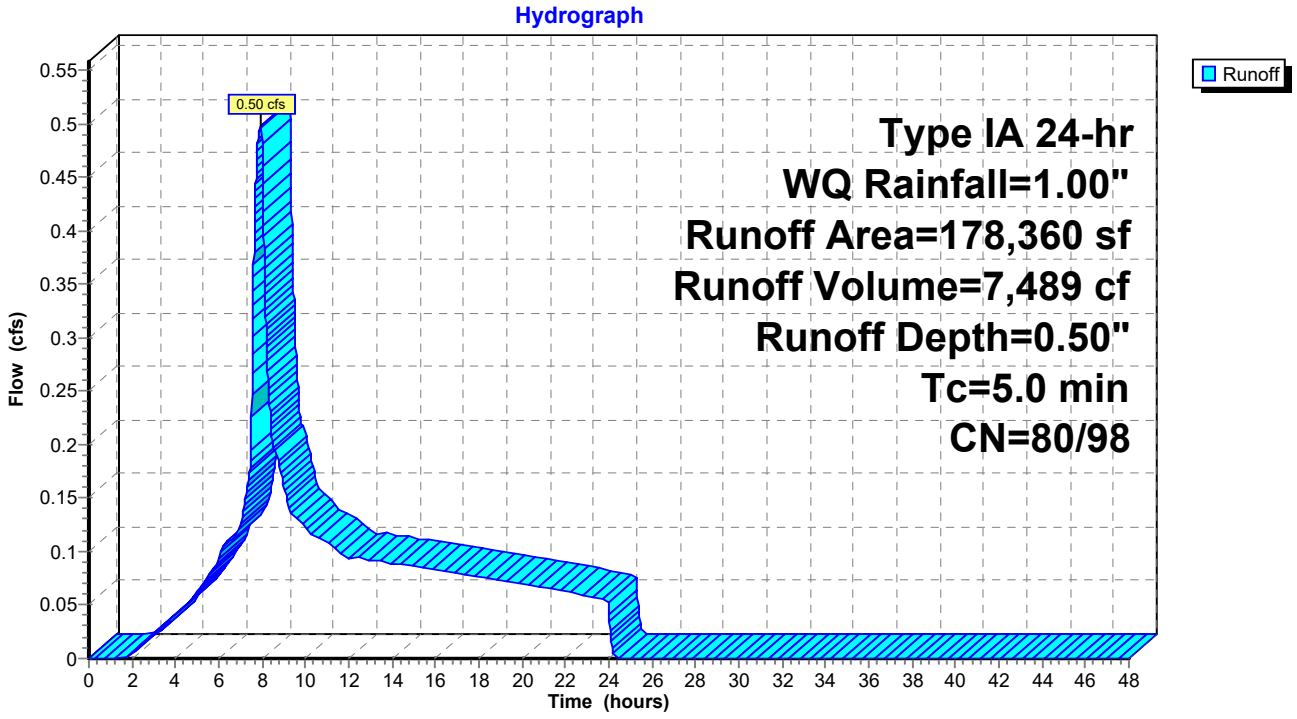
Runoff = 0.50 cfs @ 7.90 hrs, Volume= 7,489 cf, Depth= 0.50"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	106,000	98	Existing Impervious Area
	72,360	80	>75% Grass cover, Good, HSG D
	178,360	91	Weighted Average
	72,360		40.57% Pervious Area
	106,000		59.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1ES: Existing basin



Summary for Subcatchment P1A: P1A - North Roof

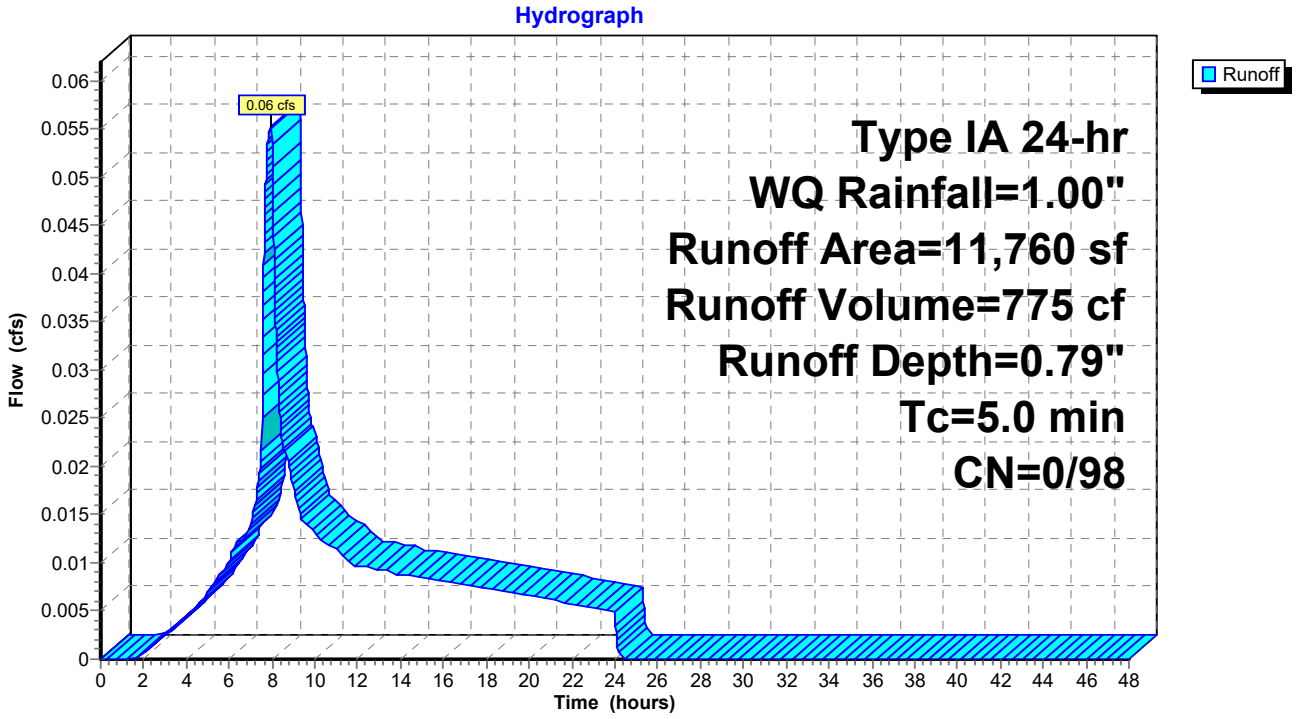
Runoff = 0.06 cfs @ 7.90 hrs, Volume= 775 cf, Depth= 0.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	11,760	98	Roof
	11,760		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1A: P1A - North Roof



Summary for Subcatchment P1B: P1B - South Roof

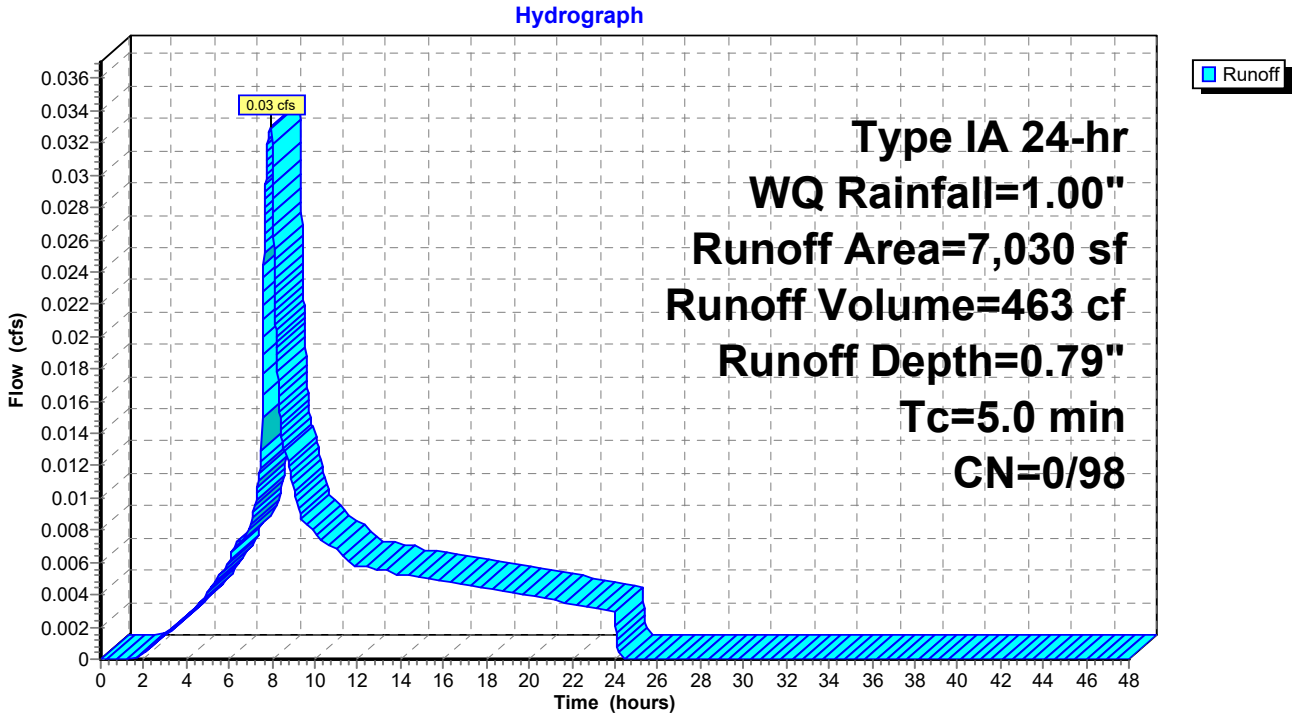
Runoff = 0.03 cfs @ 7.90 hrs, Volume= 463 cf, Depth= 0.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	7,030	98	Roof
	7,030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1B: P1B - South Roof



Summary for Subcatchment P1J: Un-Detained Release

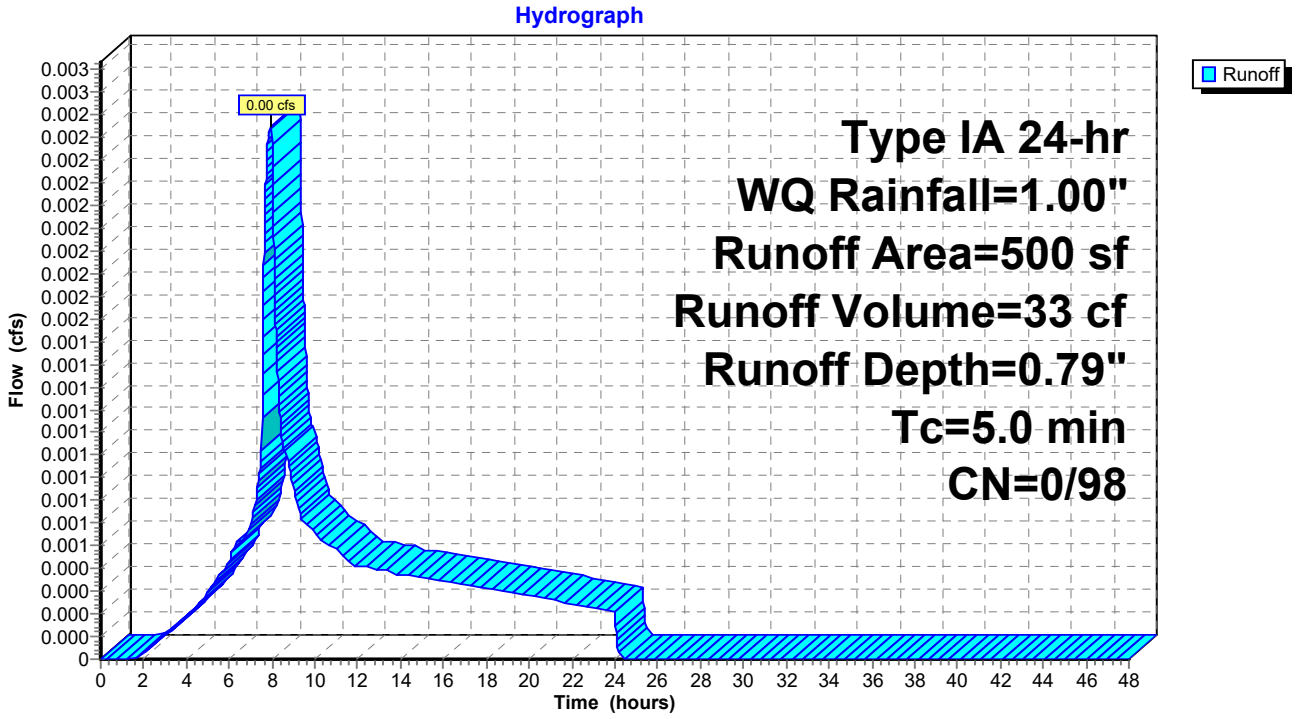
Runoff = 0.00 cfs @ 7.90 hrs, Volume= 33 cf, Depth= 0.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	500	98	Impervious
	500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment P1J: Un-Detained Release



Summary for Subcatchment PH1: Phase 1

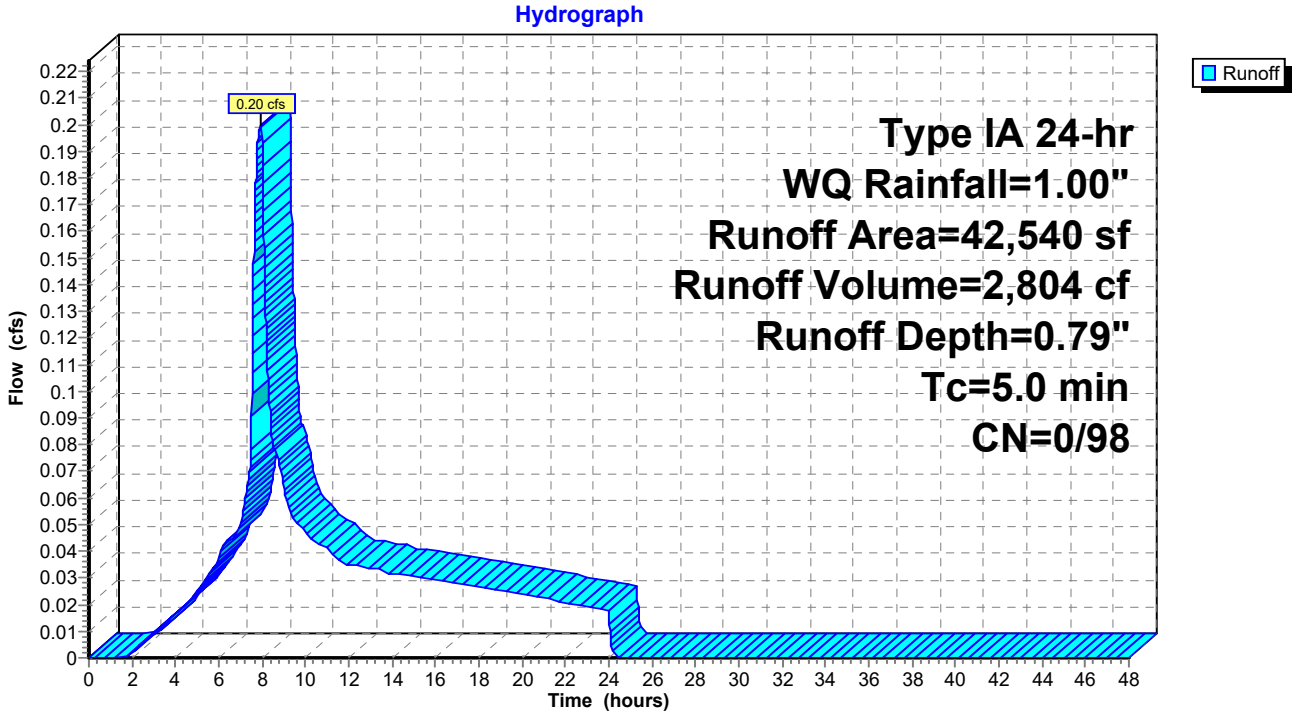
Runoff = 0.20 cfs @ 7.90 hrs, Volume= 2,804 cf, Depth= 0.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	1,890	98	P1C - Impervious
*	820	98	P1D - Impervious
*	14,360	98	P1E - Impervious
*	16,710	98	P1F - Impervious
*	4,970	98	P1G - Impervious
*	3,790	98	P1H - Impervious
	42,540	98	Weighted Average
	42,540		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH1: Phase 1



Summary for Subcatchment PH2: Phase 2

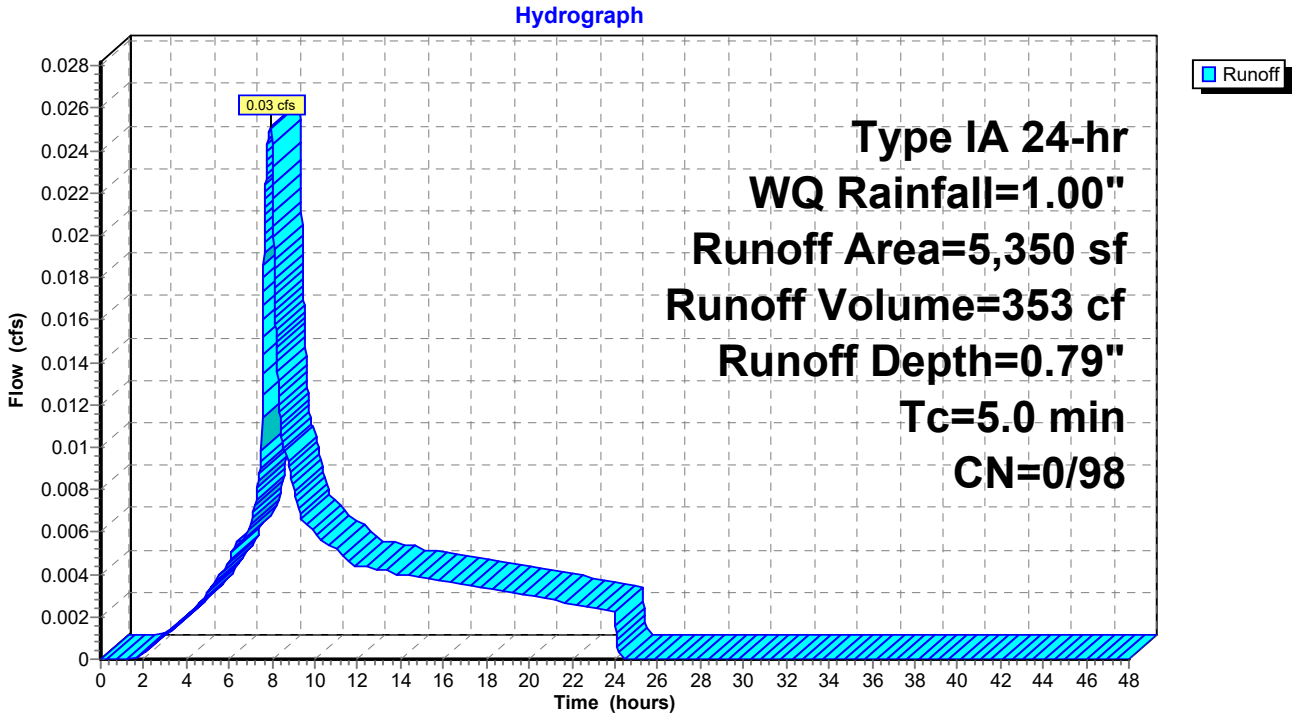
Runoff = 0.03 cfs @ 7.90 hrs, Volume= 353 cf, Depth= 0.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type IA 24-hr WQ Rainfall=1.00"

	Area (sf)	CN	Description
*	5,350	98	P2 - Impervious
	5,350		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment PH2: Phase 2



Summary for Pond 1P: WESTERN FLOW THROUGH PLANTER

Inflow Area = 11,760 sf,100.00% Impervious, Inflow Depth = 0.79" for WQ event
Inflow = 0.06 cfs @ 7.90 hrs, Volume= 775 cf
Outflow = 0.04 cfs @ 7.95 hrs, Volume= 775 cf, Atten= 27%, Lag= 3.0 min
Primary = 0.04 cfs @ 7.95 hrs, Volume= 775 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.25' @ 8.10 hrs Surf.Area= 875 sf Storage= 26 cf
Flood Elev= 181.65' Surf.Area= 875 sf Storage= 726 cf

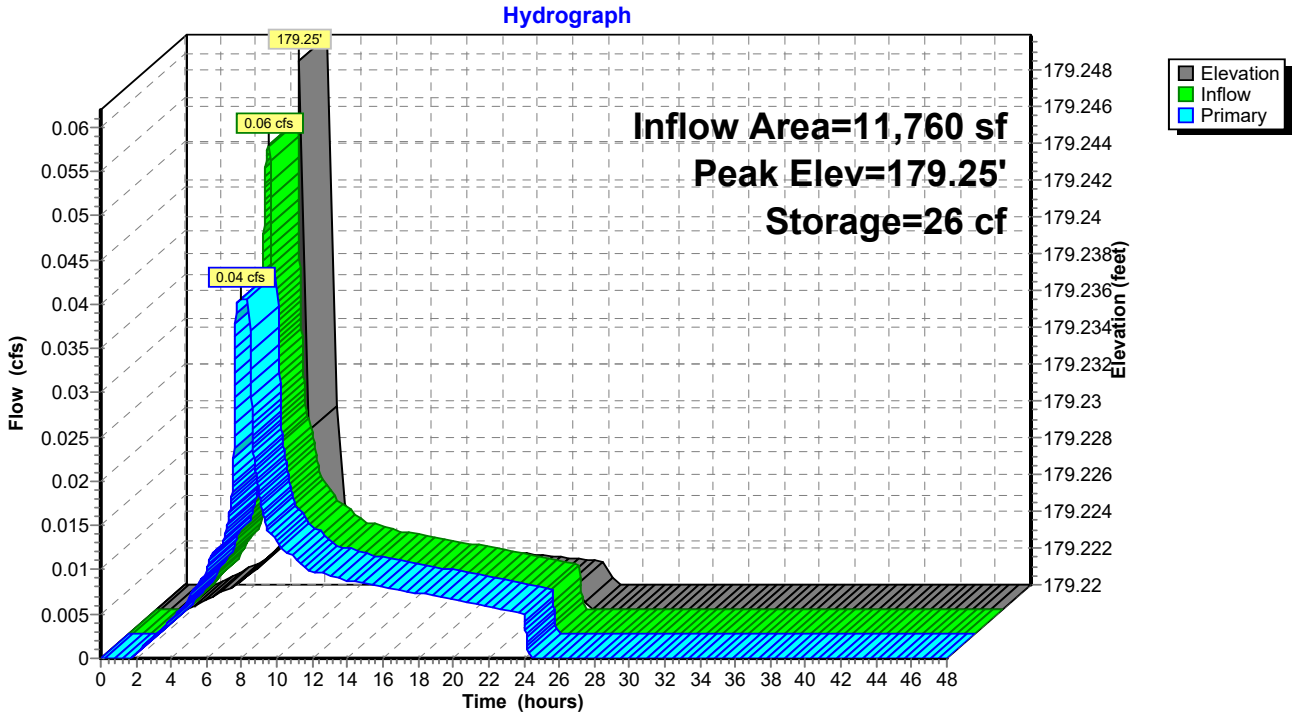
Plug-Flow detention time= 4.2 min calculated for 775 cf (100% of inflow)
Center-of-Mass det. time= 4.2 min (716.9 - 712.6)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	726 cf	**8.25'W x 106.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 7.95 hrs HW=179.24' TW=169.46' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.04 cfs of 1.43 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.04 cfs)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1P: WESTERN FLOW THROUGH PLANTER



Summary for Pond 2P: EASTERN FLOW THROUGH PLANTER

Inflow Area = 7,030 sf,100.00% Impervious, Inflow Depth = 0.79" for WQ event
Inflow = 0.03 cfs @ 7.90 hrs, Volume= 463 cf
Outflow = 0.02 cfs @ 7.78 hrs, Volume= 463 cf, Atten= 34%, Lag= 0.0 min
Primary = 0.02 cfs @ 7.78 hrs, Volume= 463 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 179.26' @ 8.14 hrs Surf.Area= 474 sf Storage= 19 cf
Flood Elev= 181.00' Surf.Area= 474 sf Storage= 394 cf

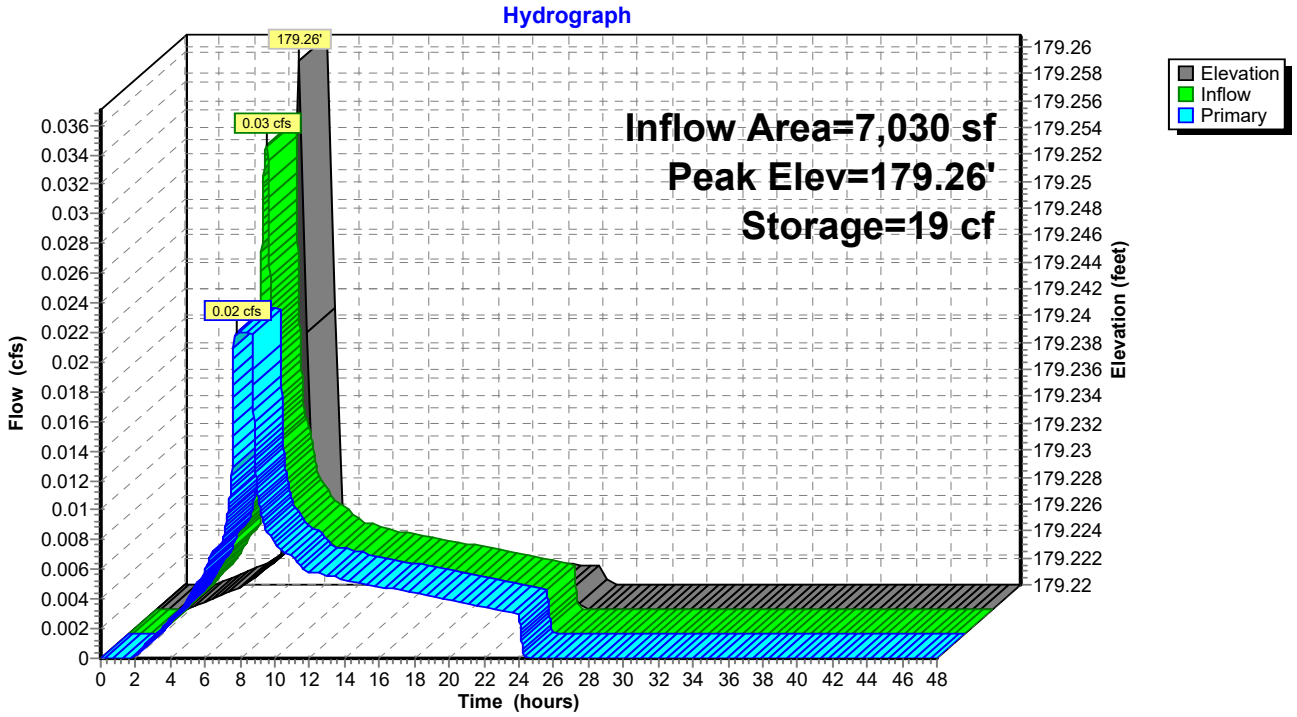
Plug-Flow detention time= 4.8 min calculated for 463 cf (100% of inflow)
Center-of-Mass det. time= 4.8 min (717.4 - 712.6)

Volume	Invert	Avail.Storage	Storage Description
#1	179.22'	394 cf	**5.33'W x 89.00'L x 0.83'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	176.72'	**6.0" Round Culvert** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 176.72' / 176.62' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.20 sf
#2	Device 1	179.22'	**2.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#3	Device 1	179.72'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 7.78 hrs HW=179.24' TW=169.26' (Dynamic Tailwater)
↑**1=Culvert** (Passes 0.02 cfs of 1.42 cfs potential flow)
↑**2=Exfiltration** (Exfiltration Controls 0.02 cfs)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 2P: EASTERN FLOW THROUGH PLANTER



Summary for Pond CH: DETENTION Chamber

Inflow Area = 245,040 sf, 70.47% Impervious, Inflow Depth = 0.58" for WQ event
Inflow = 0.79 cfs @ 7.90 hrs, Volume= 11,884 cf
Outflow = 0.50 cfs @ 8.19 hrs, Volume= 11,884 cf, Atten= 36%, Lag= 17.3 min
Primary = 0.50 cfs @ 8.19 hrs, Volume= 11,884 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 169.59' @ 8.19 hrs Surf.Area= 0.058 ac Storage= 0.013 af
Flood Elev= 175.85' Surf.Area= 0.054 ac Storage= 0.216 af

Plug-Flow detention time= 2.9 min calculated for 11,884 cf (100% of inflow)
Center-of-Mass det. time= 2.9 min (729.9 - 727.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	169.10'	0.076 af	**20.33'W x 115.79'L x 6.75'H Field A** 0.365 af Overall - 0.135 af Embedded = 0.230 af x 33.0% Voids
#2A	169.85'	0.135 af	**ADS_StormTech MC-4500 +Cap** x 54 Inside #1 Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap 2 Rows of 27 Chambers Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf
#3	168.19'	0.005 af	**15.0" Round Pipe Storage** L= 184.7' S= 0.0050 '/'
		0.216 af	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	168.00'	**15.0" Round Outlet Pipe** L= 40.2' Ke= 0.500 Inlet / Outlet Invert= 168.00' / 167.79' S= 0.0052 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	168.00'	**4.0" Vert. 1/2 2 Year Overflow** C= 0.600
#3	Device 1	171.90'	**5.5" Horiz. 2 Year Overflow** C= 0.600 Limited to weir flow at low heads
#4	Device 1	174.50'	**15.0" Horiz. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 8.19 hrs HW=169.59' TW=0.00' (Dynamic Tailwater)
└─**1=Outlet Pipe** (Passes 0.50 cfs of 5.00 cfs potential flow)
  ├─**2=1/2 2 Year Overflow** (Orifice Controls 0.50 cfs @ 5.75 fps)
  ├─**3=2 Year Overflow** (Controls 0.00 cfs)
  └─**4=Overflow** (Controls 0.00 cfs)

Pond CH: DETENTION Chamber - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-4500 +Cap (ADS StormTech®MC-4500 with cap volume)
Effective Size= 90.4"W x 60.0"H => 26.46 sf x 4.03'L = 106.5 cf
Overall Size= 100.0"W x 60.0"H x 4.33'L with 0.31' Overlap
Cap Storage= +35.7 cf x 2 x 2 rows = 142.8 cf

100.0" Wide + 20.0" Spacing = 120.0" C-C Row Spacing

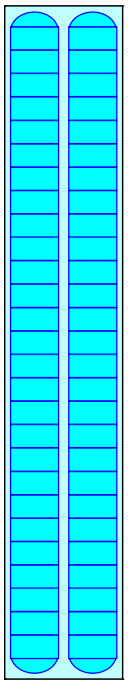
27 Chambers/Row x 4.02' Long +2.56' Cap Length x 2 = 113.79' Row Length +12.0" End Stone x 2 = 115.79' Base Length
2 Rows x 100.0" Wide + 20.0" Spacing x 1 + 12.0" Side Stone x 2 = 20.33' Base Width
9.0" Base + 60.0" Chamber Height + 12.0" Cover = 6.75' Field Height

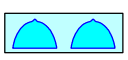
54 Chambers x 106.5 cf + 35.7 cf Cap Volume x 2 x 2 Rows = 5,893.3 cf Chamber Storage

15,892.4 cf Field - 5,893.3 cf Chambers = 9,999.1 cf Stone x 33.0% Voids = 3,299.7 cf Stone Storage

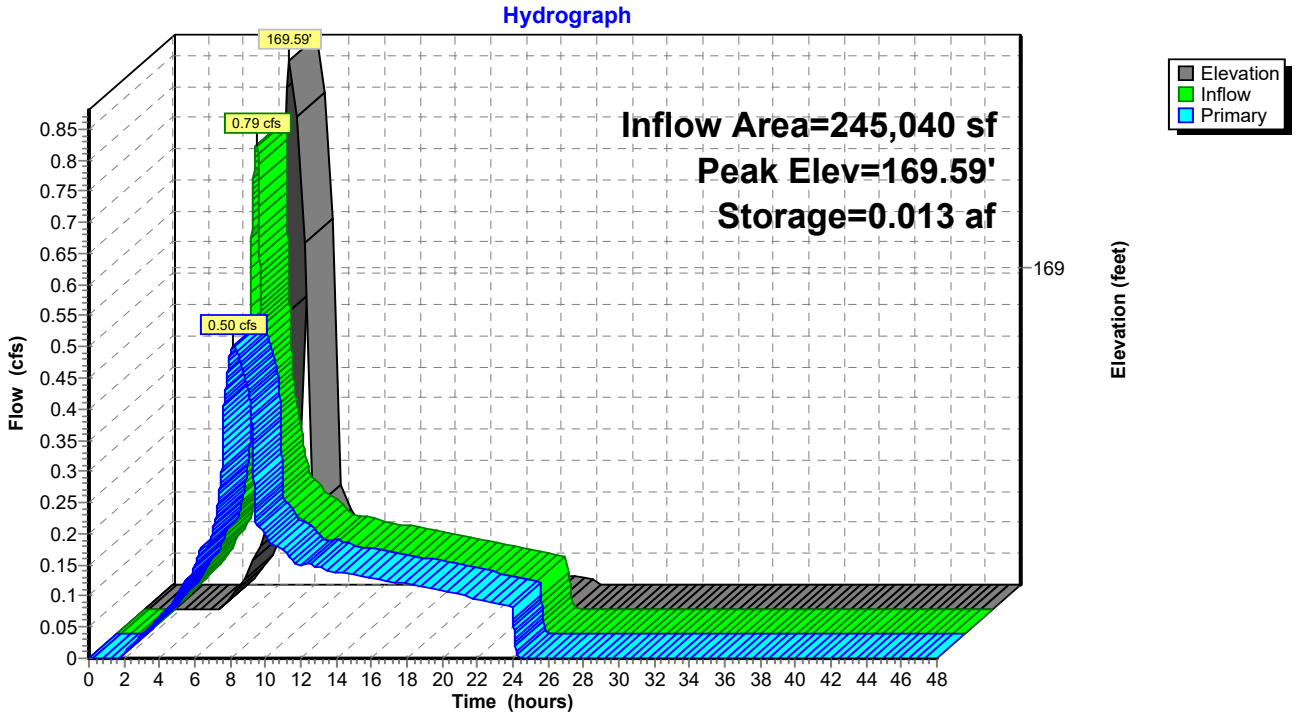
Chamber Storage + Stone Storage = 9,193.0 cf = 0.211 af
Overall Storage Efficiency = 57.8%
Overall System Size = 115.79' x 20.33' x 6.75'

54 Chambers
588.6 cy Field
370.3 cy Stone





Pond CH: DETENTION Chamber

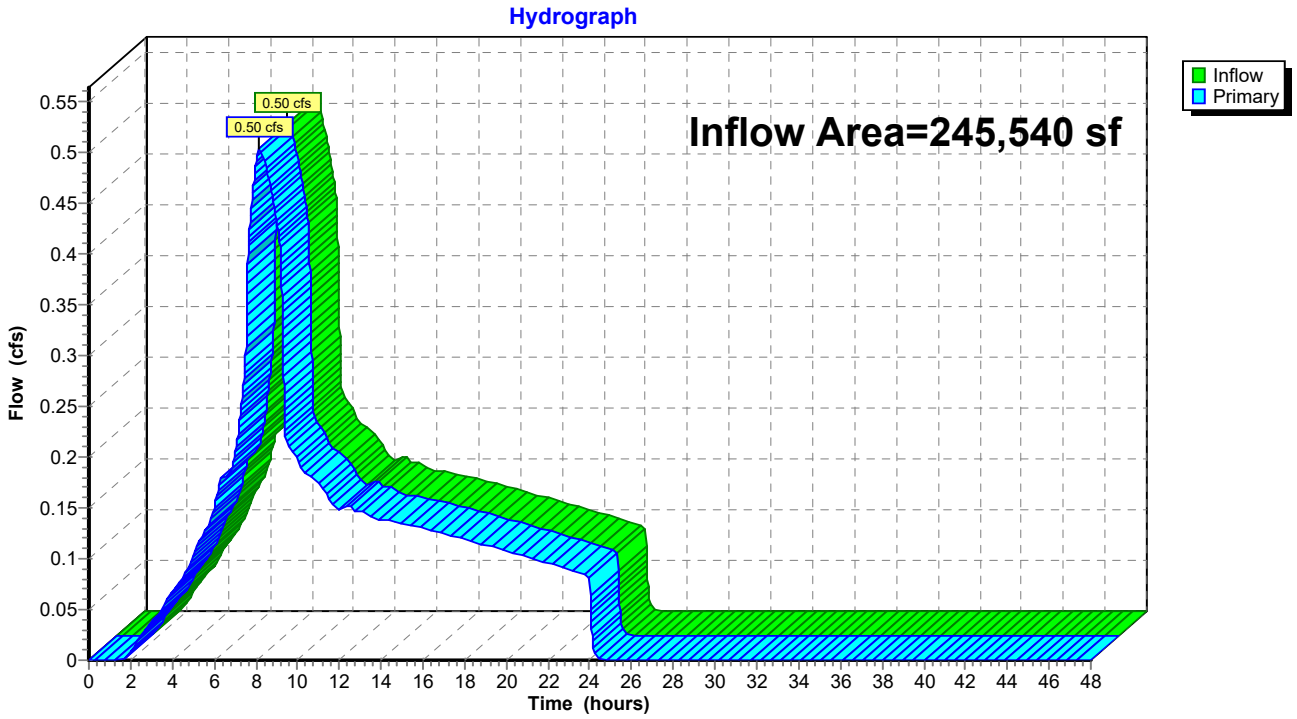


Summary for Link 1L: Total

Inflow Area = 245,540 sf, 70.53% Impervious, Inflow Depth = 0.58" for WQ event
Inflow = 0.50 cfs @ 8.18 hrs, Volume= 11,916 cf
Primary = 0.50 cfs @ 8.18 hrs, Volume= 11,916 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1L: Total



Appendix B: Water Quality Facility Calculations and Details

AKS ENGINEERING & FORESTRY, LLC.
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OR 97062
503-563-6151

Date: 12/17/2020
Designed by: AMC
Checked by: CEG

Friendsview Residential Care Facility - Phase 1

StormFilter Catch Basin Sizing

STORMFILTER® DESIGN PARAMETERS

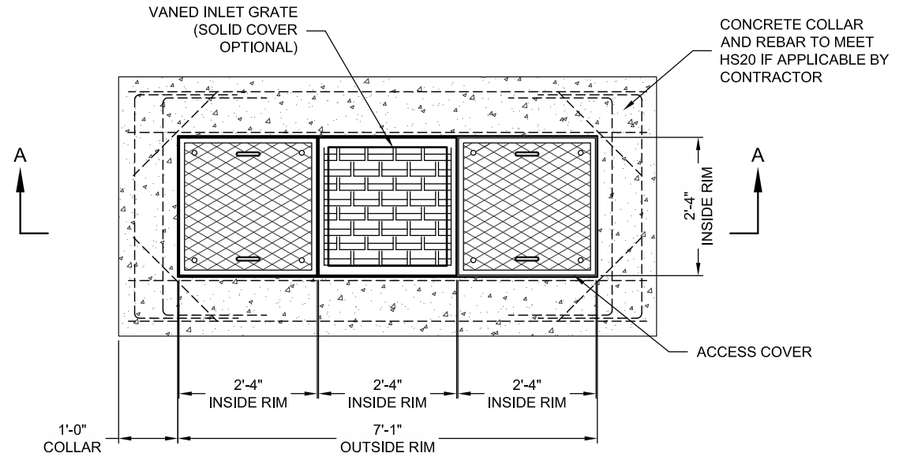
Number of Cartridges Required:

$N=Q_{treat}\,(449_{gpm/cfs} / Q_{cart\ gpm/cart})$

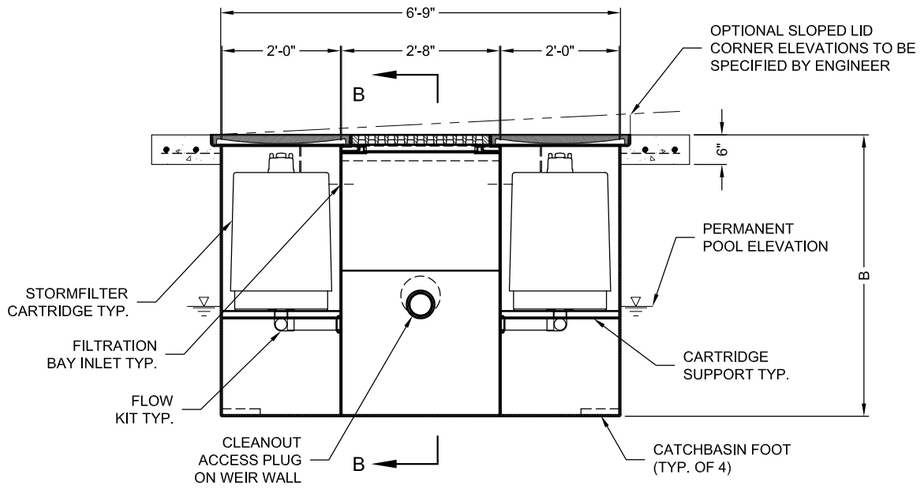
Q_{treat} = Water Quality Volume (WQV)

$Q_{cart\ gpm/cart}$ = Treatment per Cartridge = 22.5 $_{gpm/cart}$

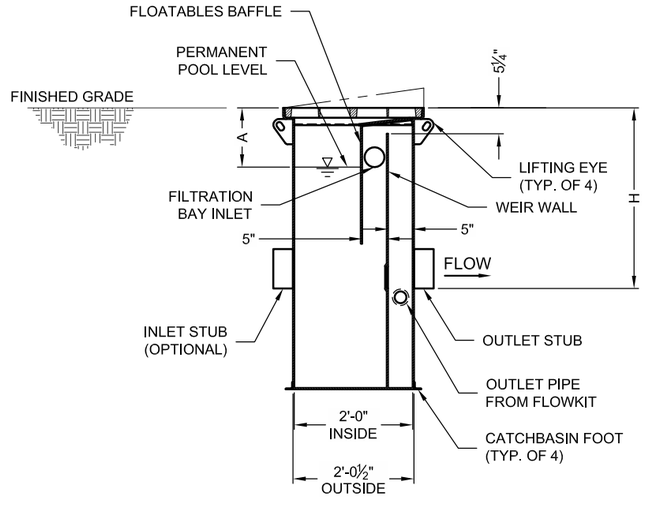
StormFilter Catchbasin Sizing		
Area Requiring Treatment	14,360 SF	
WQV	945 FT^3	
WQF	0.070 CFS	
Cartridge Required	$N=Q_{treat}\,(449_{gpm/cfs} / Q_{cart\ gpm/cart})$	$N=Q_{treat}\,(449_{gpm/cfs} / 22.5_{cart\ gpm/cart})$
	N= 1.40 cart	2 SINGLE CARTRIDGE STORMFILTER



PLAN VIEW



SECTION A-A



SECTION B-B

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 2 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF TWO CARTRIDGES. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL.
PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (H)	3.05'			2.3'			3.3'		
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.79	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-9"			3'-9"			4'-9"		

* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. WWW.CONTECHES.COM
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

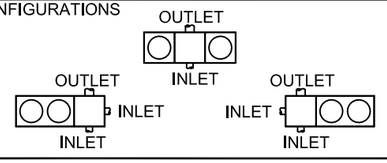
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

2-CARTRIDGE DEEP CATCHBASIN STORMFILTER DATA

STRUCTURE ID	XXX
WATER QUALITY FLOW RATE (cfs)	X.XX
PEAK FLOW RATE (<1.8 cfs)	X.XX
RETURN PERIOD OF PEAK FLOW (yrs)	XXX
CARTRIDGE FLOW RATE (gpm)	XX
MEDIA TYPE (PERLITE, ZPG, PSORB)	XXXXX
RIM ELEVATION	XXX.XX'

PIPE DATA:	I.E.	DIAMETER
INLET STUB	XXX.XX'	XX"
OUTLET STUB	XXX.XX'	XX"

CONFIGURATIONS



SLOPED LID	YES\NO
SOLID COVER	YES\NO

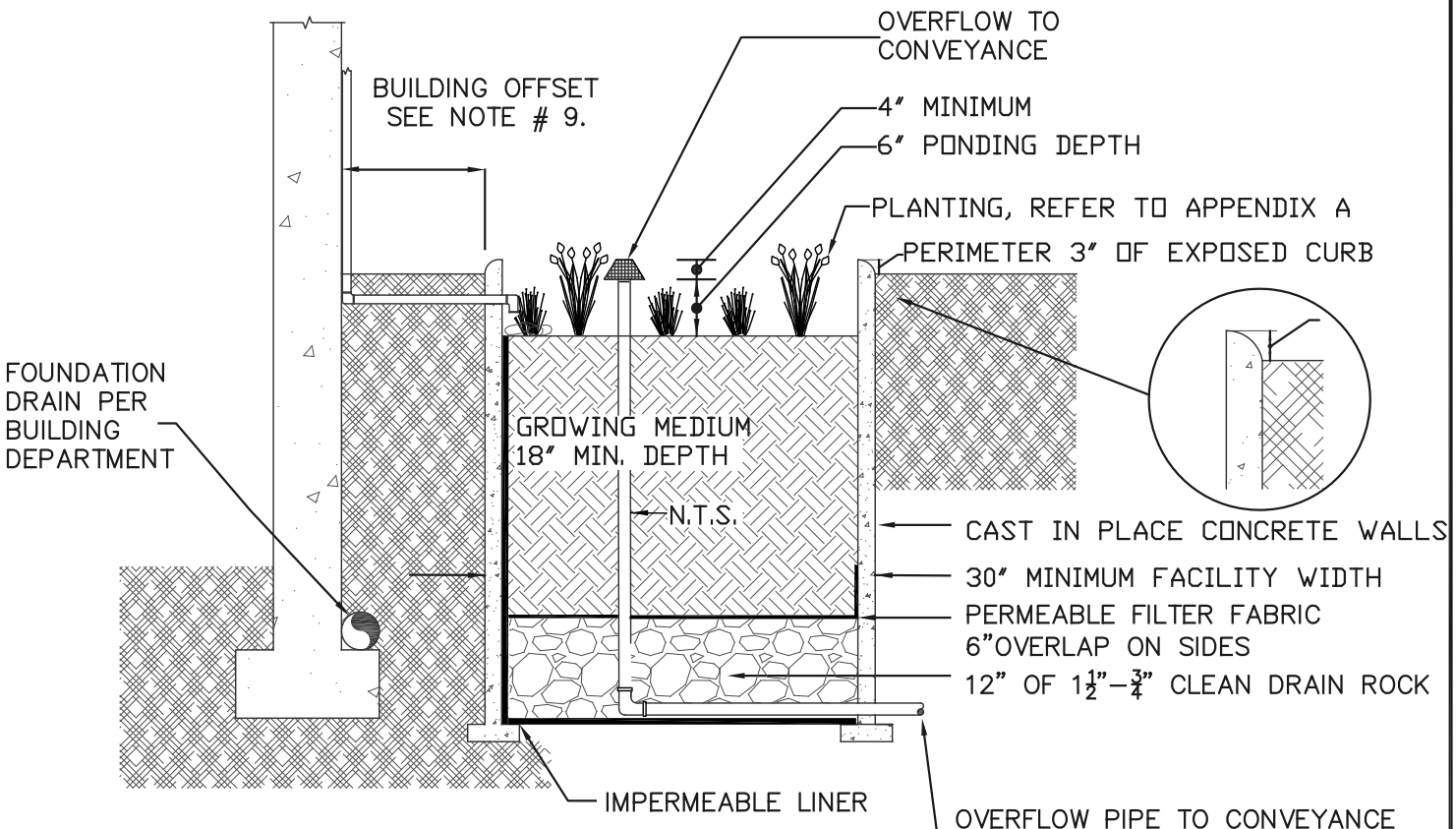
NOTES/SPECIAL REQUIREMENTS:

The Stormwater Management StormFilter®
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,322,629; 5,324,070; 5,707,527; 5,865,157; 6,027,639; 6,649,048; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-526-3999 513-645-7000 513-645-7993 FAX

2 CARTRIDGE CATCHBASIN STORMFILTER STANDARD DETAIL

PRIVATE/ PUBLIC WATER QUALITY & QUANTITY TREATMENT



OVERFLOW PIPE SIZE (1/8 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
822	3
1,880	4
3,340	6

OVERFLOW PIPE SIZE (1/4 in./ft. SLOPE)	
MAX PROJECT ROOF AREA (ft.)	OVERFLOW PIPE SIZE (in.)
1,160	3
2,650	4
4,720	6

NOTES:

1. MAXIMUM SLOPE OF PLANTER 0.5%.
2. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING IS ALLOWED IN FACILITY.
3. STORM PIPING TO FACILITY THROUGH WALL CORE HOLES, MAINTAIN MAXIMUM DISTANCE FROM THE OVERFLOW PIPE AS POSSIBLE.
4. PRIVATE OVERFLOW PIPE TO BE MINIMUM SPECIFIED IN PLUMBING CODE, SEE TABLE. PUBLIC FACILITIES SHALL BE SIZED TO CONVEY THE 25 YEAR STORM.
5. ENERGY DISSIPATERS REQUIRED AT WATER ENTRANCES MINIMUM 18"X18"X6" OF 4 TO 6 INCH ANGULAR RIPRAP.
6. PERMEABLE FILTER FABRIC REQUIRED BETWEEN LAYERS
7. IMPERMEABLE LINER REQUIRED AT FACILITY BOTTOM AND ON WALLS ADJACENT TO STRUCTURES (AS SHOWN).
8. "PARTIAL" INFILTRATION FACILITIES ARE ENCOURAGED. IMPERMEABLE LINER LOCATED AT FACILITY BOTTOM, MAY BE REMOVED FOR "PARTIAL" INFILTRATION, APPROVAL BY DESIGN PROFESSIONAL AND BUILDING DEPARTMENT REQUIRED.
9. BUILDING OFFSET REQUIRED ONLY WHEN INFILTRATING, 10 FT MINIMUM.
10. MUST BE LOCATED A MINIMUM OF 3 FT FROM ADJACENT PROPERTY LINE.

City of Newberg
PUBLIC WORKS ENGINEERING DIVISION
414 E. FIRST STREET NEWBERG, OR 97132
PHONE: 503-537-1240
FAX: 503-537-1277

REVISIONS:

FLOW THROUGH PLANTER

SCALE: N.T.S.
DATE: MARCH 2014
APPROVED BY: JAY H.
STANDARD DRAWING 452

Appendix C: USDA/NRCS Soil Resource Report

United States Department of Agriculture

NRCS

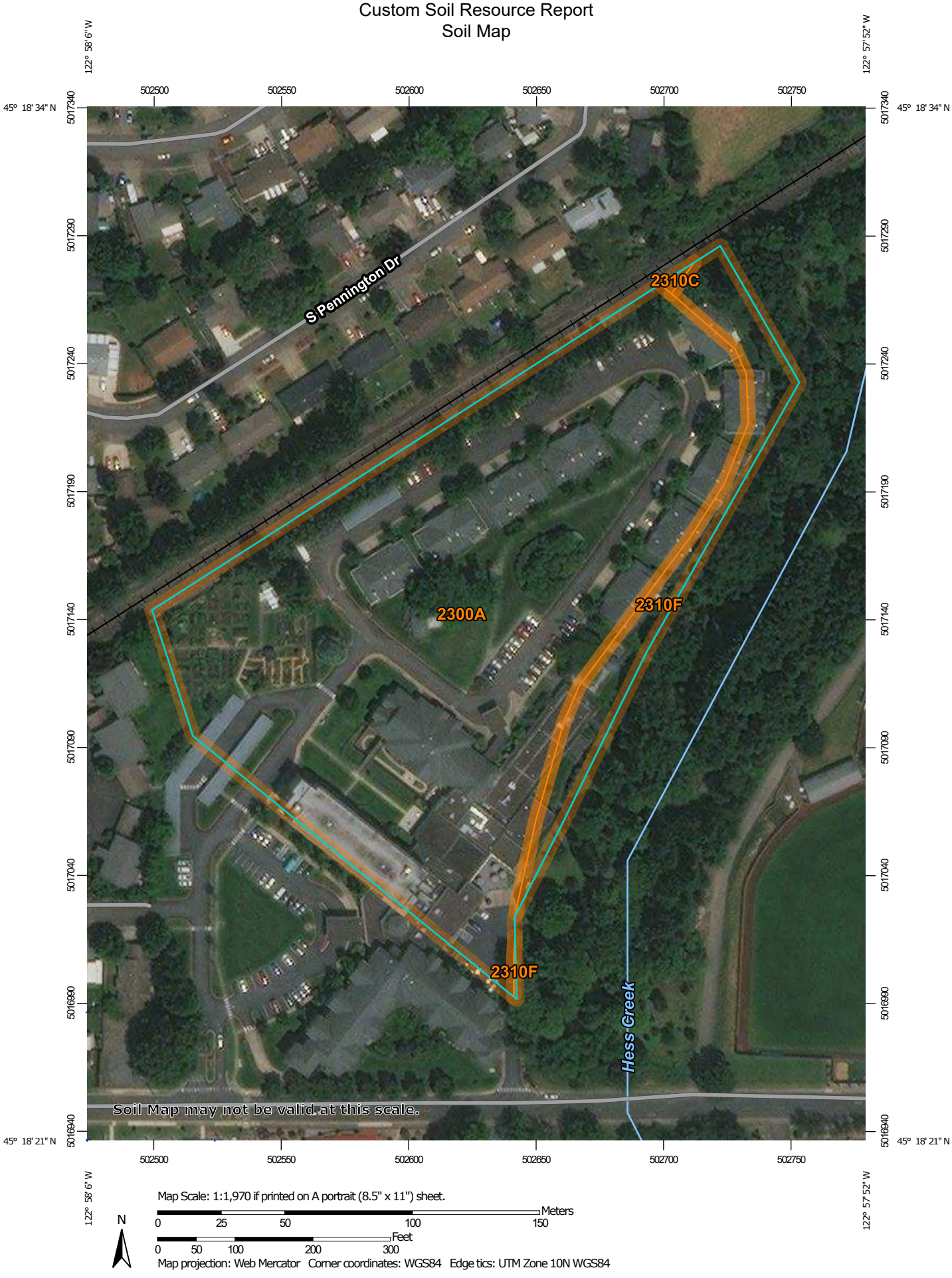
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Yamhill County, Oregon

September 18, 2020

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,970 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Yamhill County, Oregon

2300A—Aloha silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1j8b0
Elevation: 100 to 350 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Aloha and similar soils: 96 percent
Minor components: 4 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aloha

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: silt loam
BA - 8 to 15 inches: silt loam
Bt - 15 to 22 inches: silt loam
Bw1 - 22 to 31 inches: silt loam
Bw2 - 31 to 46 inches: silt loam
Bw3 - 46 to 60 inches: silt loam
C - 60 to 65 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 8 to 15 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Forage suitability group: Somewhat Poorly Drained (G002XY005OR)
Other vegetative classification: Somewhat Poorly Drained (G002XY005OR)
Hydric soil rating: No

Minor Components

Dayton

Percent of map unit: 3 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Willamette

Percent of map unit: 1 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Other vegetative classification: Well drained < 15% Slopes (G002XY002OR)
Hydric soil rating: No

2310C—Woodburn silt loam, 3 to 12 percent slopes

Map Unit Setting

National map unit symbol: 1j8b5
Elevation: 100 to 350 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Woodburn and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Silty glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
A - 9 to 17 inches: silt loam
2Bt1 - 17 to 25 inches: silty clay loam
2Bt2 - 25 to 32 inches: silty clay loam
2BCt1 - 32 to 39 inches: silt loam
2BCt2 - 39 to 54 inches: silt loam

2C1 - 54 to 68 inches: silt loam
2C2 - 68 to 80 inches: stratified fine sandy loam to silt loam
3C3 - 80 to 92 inches: stratified fine sandy loam to silt loam

Properties and qualities

Slope: 3 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 25 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Minor Components

Amity

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear, concave
Other vegetative classification: Somewhat Poorly Drained (G002XY005OR)
Hydric soil rating: No

Dayton

Percent of map unit: 2 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

2310F—Woodburn silt loam, 20 to 55 percent slopes

Map Unit Setting

National map unit symbol: 1j8b7
Elevation: 100 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days

Farmland classification: Not prime farmland

Map Unit Composition

Woodburn and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodburn

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
A - 9 to 17 inches: silt loam
2Bt1 - 17 to 25 inches: silty clay loam
2Bt2 - 25 to 32 inches: silty clay loam
2BCt1 - 32 to 39 inches: silt loam
2BCt2 - 39 to 54 inches: silt loam
2C1 - 54 to 68 inches: silt loam
2C2 - 68 to 80 inches: stratified fine sandy loam to silt loam
3C3 - 80 to 92 inches: stratified fine sandy loam to silt loam

Properties and qualities

Slope: 20 to 55 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 25 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties–Yamhill County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
2300A—Aloha silt loam, 0 to 3 percent slopes														
Aloha	96	C/D	0-8	Silt loam	ML, CL, CL-ML	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	95-100-100	95-97-100	85-85-95	25-35-40	5-9 -15
			8-15	Loam, silt loam	ML, CL-ML, CL	A-6, A-4	0- 0- 0	0- 0- 0	100-100-100	95-100-100	95-97-100	75-85-95	25-35-40	5-9 -15
			15-22	Silt loam, loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-97-100	75-85-95	30-36-40	10-13-15
			22-31	Silt loam, loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	75-82-95	30-36-40	10-13-15
			31-46	Loam, silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-98-100	65-82-95	30-36-40	10-13-15
			46-60	Silt loam, loam	CL-ML, CL	A-6, A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-98-100	65-80-95	25-30-40	5-10-15
			60-65	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-97-100	60-64-95	25-28-40	5-8 -15

Engineering Properties–Yamhill County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
2310C—Woodburn silt loam, 3 to 12 percent slopes														
Woodburn	93	C	0-9	Silt loam	CL, ML	A-6, A-4	0- 0- 0	0- 0- 0	95-99-100	95-98-100	95-97-100	85-94-100	30-36-40	5-11-15
			9-17	Silt loam	ML, CL	A-6, A-4	0- 0- 0	0- 0- 0	95-99-100	95-98-100	95-97-100	85-94-100	30-36-40	5-11-15
			17-25	Silty clay loam, silt loam	CL	A-6, A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-38-45	10-15-20
			25-32	Silty clay loam, silt loam	CL	A-6, A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-38-45	10-15-20
			32-39	Silt loam, silty clay loam	CL	A-7, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-36-45	10-14-20
			39-54	Silt loam, silty clay loam	CL	A-7, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-36-45	10-14-20
			54-68	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	80-90-100	25-35-40	5-11-15
			68-80	Stratified fine sandy loam to silt loam	ML, SM	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-92-100	40-60-90	20-28-35	NP-5-10
			80-92	Stratified fine sandy loam to silt loam	ML, SM	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-92-100	40-51-90	20-28-35	NP-5-10

Engineering Properties–Yamhill County, Oregon														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			In				*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*	*L-R-H*
2310F—Woodburn silt loam, 20 to 55 percent slopes														
Woodburn	100	C	0-9	Silt loam	ML, CL	A-4, A-6	0- 0- 0	0- 0- 0	95-99-100	95-98-100	95-97-100	85-94-100	30-36-40	5-11-15
			9-17	Silt loam	ML, CL	A-6, A-4	0- 0- 0	0- 0- 0	95-99-100	95-98-100	95-97-100	85-94-100	30-36-40	5-11-15
			17-25	Silt loam, silty clay loam	CL	A-7, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-38-45	10-15-20
			25-32	Silt loam, silty clay loam	CL	A-6, A-7	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-38-45	10-15-20
			32-39	Silt loam, silty clay loam	CL	A-7, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-36-45	10-14-20
			39-54	Silt loam, silty clay loam	CL	A-7, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-97-100	30-36-45	10-14-20
			54-68	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	80-90-100	25-35-40	5-11-15
			68-80	Stratified fine sandy loam to silt loam	ML, SM	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-92-100	40-60-90	20-28-35	NP-5-10
			80-92	Stratified fine sandy loam to silt loam	SM, ML	A-4	0- 0- 0	0- 0- 0	100-100-100	100-100-100	70-92-100	40-51-90	20-28-35	NP-5-10

Appendix D: TR-55 Runoff Curve Numbers

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Appendix E: Operations and Maintenance Plan

CONTECH®
ENGINEERED SOLUTIONS

OPERATION AND MAINTENANCE

CatchBasin StormFilter™

Important: These guidelines should be used as a part of your site stormwater plan.

Overview

The CatchBasin StormFilter™ (CBSF) consists of a multi-chamber steel, concrete, or plastic catch basin unit that can contain up to four StormFilter cartridges. The steel CBSF is offered both as a standard and as a deep unit.

The CBSF is installed flush with the finished grade and is applicable for both constrained lot and retrofit applications. It can also be fitted with an inlet pipe for roof leaders or similar applications.

The CBSF unit treats peak water quality design flows up to 0.13 cfs, coupled with an internal weir overflow capacity of 1.0 cfs for the standard unit, and 1.8 cfs for the deep steel and concrete units. Plastic units have an internal weir overflow capacity of 0.5 cfs.

Design Operation

The CBSF is installed as the primary receiver of runoff, similar to a standard, grated catch basin. The steel and concrete CBSF units have an H-20 rated, traffic bearing lid that allows the filter to be installed in parking lots, and for all practical purposes, takes up no land area. Plastic units can be used in landscaped areas and for other non-traffic-bearing applications.

The CBSF consists of a sumped inlet chamber and a cartridge chamber(s). Runoff enters the sumped inlet chamber either by sheet flow from a paved surface or from an inlet pipe discharging directly to the unit vault. The inlet chamber is equipped with an internal baffle, which traps debris and floating oil and grease, and an overflow weir. While in the inlet chamber, heavier solids are allowed to settle into the deep sump, while lighter solids and soluble pollutants are directed under the baffle and into the cartridge chamber through a port between the baffle and the overflow weir.

Once in the cartridge chamber, polluted water ponds and percolates horizontally through the media in the filter cartridges. Treated water collects in the cartridge's center tube from where it is directed by an under-drain manifold to the outlet pipe on the downstream side of the overflow weir and discharged.

When flows into the CBSF exceed the water quality design value, excess water spills over the overflow weir, bypassing the cartridge bay, and discharges to the outlet pipe.

Applications

The CBSF is particularly useful where small flows are being treated or for sites that are flat and have little available hydraulic head to spare. The unit is ideal for applications in which standard catch basins are to be used. Both water quality and catchment issues can be resolved with the use of the CBSF.

Retro-Fit

The retrofit market has many possible applications for the CBSF. The CBSF can be installed by replacing an existing catch basin without having to "chase the grade," thus reducing the high cost of re piping the storm system.

CatchBasin StormFilter™

Maintenance Guidelines

Maintenance procedures for typical catch basins can be applied to the CatchBasin StormFilter (CBSF). The filter cartridges contained in the CBSF are easily removed and replaced during maintenance activities according to the following guidelines.

1. Establish a safe working area as per typical catch basin service activity.
2. Remove steel grate and diamond plate cover (weight 100 lbs. each).
3. Turn cartridge(s) counter-clockwise to disconnect from pipe manifold.
4. Remove 4" center cap from cartridge and replace with lifting cap.
5. Remove cartridge(s) from catch basin by hand or with vactor truck boom.
6. Remove accumulated sediment via vactor truck (min. clearance 13" x 24").
7. Remove accumulated sediment from cartridge bay. (min. clearance 9.25" x 11").
8. Rinse interior of both bays and vactor remaining water and sediment.
9. Install fresh cartridge(s) threading clockwise to pipe manifold.
10. Replace cover and grate.
11. Return original cartridges to Contech for cleaning.

Media may be removed from the filter cartridges using the vactor truck before the cartridges are removed from the catch basin structure. Empty cartridges can be easily removed from the catch basin structure by hand. Empty cartridges should be reassembled and returned to Contech as appropriate.

Materials required include a lifting cap, vactor truck and fresh filter cartridges. Contact Contech for specifications and availability of the lifting cap. The vactor truck must be equipped with a hose capable of reaching areas of restricted clearance. the owner may refresh spent cartridges. Refreshed cartridges are also available from Contech on an exchange basis. Contact the maintenance department of Contech at 503-258-3157 for more information.

Maintenance is estimated at 26 minutes of site time. For units with more than one cartridge, add approximately 5 minutes for each additional cartridge. Add travel time as required.

Mosquito Abatement

In certain areas of the United States, mosquito abatement is desirable to reduce the incidence of vectors.

In BMPs with standing water, which could provide mosquito breeding habitat, certain abatement measures can be taken.

1. Periodic observation of the standing water to determine if the facility is harboring mosquito larvae.
2. Regular catch basin maintenance.
3. Use of larvicides containing Bacillus thuringiensis israelensis (BTI). BTI is a bacterium toxic to mosquito and black fly larvae.

In some cases, the presence of petroleum hydrocarbons may interrupt the mosquito growth cycle.

Using Larvicides in the CatchBasin StormFilter

Larvicides should be used according to manufacturer's recommendations.

Two widely available products are Mosquito Dunks and Summit B.t.i. Briquets. For more information, visit http://www.summitchemical.com/mos_ctrl/d efault.htm.

The larvicide must be in contact with the permanent pool. The larvicide should also be fastened to the CatchBasin StormFilter by string or wire to prevent displacement by high flows. A magnet can be used with a steel catch basin.

For more information on mosquito abatement in stormwater BMPs, refer to the following: http://www.ucmrp.ucdavis.edu/publications/managingmosquitoesstormwater8125.pdf

Appendix F: Geotechnical Engineering Report

GeoDesign Inc
An NV5 Company

REPORT OF GEOTECHNICAL ENGINEERING SERVICES

Friendsview – RCF Phase 1
East Cherry Street and Fulton Street
Newberg, Oregon

For
Greystone
September 22, 2020

GeoDesign Project: Friends-4-01

GeoDesign Inc
AN NV5 COMPANY

September 22, 2020

Greystone
225 East John Carpenter Freeway
Irving, TX 75062

Attention: Dave Hampton

Report of Geotechnical Engineering Services
Friendsview – RCF Phase 1
East Cherry Street and Fulton Street
Newberg, Oregon
GeoDesign Project: Friends-4-01

GeoDesign, Inc. is pleased to present this report of geotechnical engineering services for Phase 1 of the residential care facility (RCF) remodel at the Friendsview University Village development in Newberg, Oregon. Our work was completed in general conformance with our revised proposal dated August 17, 2020.

We appreciate the opportunity to be of service to you. Please call if you have questions regarding this report.

Sincerely,

GeoDesign, Inc.

Nick Paveglio, P.E.
Senior Associate Engineer

George Saunders, P.E., G.E.
Principal Engineer

cc: Kelsy Laughnan, LRS Architects (via email only)
Chris Nelson, Froelich Engineers (via email only)

NNP:GPS:kt
Attachments
One copy submitted (via email only)
Document ID: Friends-4-01-092220-geor.docx

EXECUTIVE SUMMARY

The primary geotechnical considerations for the project are summarized as follows:

- The building can be supported on conventional spread footings bearing on native soil, provided the exterior footings adjacent to the Hess Creek slope are continuous footings and all footings near slopes are embedded as described in the "Foundation Support" section.

- Analysis indicates post-construction slope stability of the proposed building and slope configuration near Hess Creek meets factors of safety requirements for static and seismic conditions. If the location of the building or foundation systems deviate from assumptions in this report, we should be contacted to revise our analysis.

- Undocumented fill (encountered in the east portion of proposed building footprint) should be removed from under footings and replaced with compacted crushed rock. We anticipate the foundation embedment requirements (see the "Foundation Embedment Recommendations" section) will remove a majority of the fill beneath the foundations adjacent to Hess Creek. Undocumented fill can be left beneath floor slab and pavement areas, provided the subgrades are evaluated as described in the report and minor risk of distress can be acceptable.

- Perched groundwater was observed at a depth of 7 feet BGS in recent explorations during the dry season. We anticipate perched groundwater could be less than 5 feet BGS in the wet season. Dewatering should be expected for excavations that extend more than a few feet below current grades. Static groundwater is expected to be 15 to 20 feet BGS during the year.

- Surface water should not be allowed to sheet flow onto the Hess Creek slope face. Stormwater should be collected and transferred away from the Hess Creek slopes.

- The near-surface soil is sensitive to disturbance when at a moisture content that is above optimum. Haul roads and staging areas will be necessary to prevent damage to subgrade and repair costs. A discussion of subgrade protection is included in the "Construction" section.

- Liquefaction and lateral spreading are not design considerations for the project.

- Based on the soil and groundwater conditions at the site, on-site infiltration systems are not recommended.

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ACRONYMS AND ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
AC	asphalt concrete
ACP	asphalt concrete pavement
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
BGS	below ground surface
CPT	cone penetration test
CSZ	Cascadia subduction zone
g	gravitation acceleration (32.2 feet/second^2)
H:V	horizontal to vertical
km	kilometers
MCE	maximum considered earthquake
M_w	moment magnitude
OSHA	Occupational Safety and Health Administration
OSSC	Oregon Standard Specifications for Construction (2018)
pcf	pounds per cubic foot
pci	pounds per cubic inch
PG	performance grade
psf	pounds per square foot
psi	pounds per square inch
SOSSC	State of Oregon Structural Specialty Code
SPT	standard penetration test
USGS	U.S. Geological Survey

1.0 INTRODUCTION

GeoDesign, Inc. is pleased to submit this report of geotechnical engineering services for Phase 1 of the residential care facility remodel at the Friendsview University Village development in Newberg, Oregon. The site is shown relative to surrounding physical features on Figure 1. Locations of geotechnical explorations completed as part of this report are shown on Figure 2.

Development includes construction of a four-story, wood-frame, above-grade residential building with a footprint of approximately 18,000 square feet. Structural loads and grading plans were not available at the time of this report. The proposed development configuration is shown on Figure 2.

We understand the perimeter and most of the building will be supported by continuous spread footings with occasional isolated footings on the interior of the building. Foundation loads for the building were unknown at the time of this report; however, based on our experience with similar structures, we estimate maximum column and wall loads will be less than 150 kips and 6 kips per foot, respectively. We anticipate floor slab loads could be up to 150 psf. Cuts and fills are expected to be less than a few feet.

Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 PURPOSE AND SCOPE

The purpose of our services was to complete geotechnical engineering services to support design and construction of the proposed project. The specific scope of our services included the following:

- Coordinated and managed the field investigation, including utility locates and scheduling subcontractors and GeoDesign staff.
- Completed the following explorations at the site:
  - Three drilled borings to depths between 26.5 and 51.5 feet BGS
  - One CPT to a depth of approximately 77.4 feet BGS
  - Two hand auger borings to depths between 5.5 and 10 feet BGS
- Collected soil samples from the borings for laboratory testing and maintained a log of encountered soil and groundwater conditions in the borings.
- Completed a laboratory testing program, including the following:
  - Fifteen moisture content determinations in general accordance with ASTM D2216
  - Three particle-size analyses in general accordance with ASTM D1140
  - Four Atterberg limits tests in general accordance with ASTM D4318
  - One consolidation test in general accordance with ASTM D2435
- Prepared this geotechnical report summarizing our explorations, laboratory testing, analyses, geotechnical design criteria, and construction recommendations, including information relating to the following:
  - Soil and groundwater conditions
  - Summary of liquefaction and lateral spreading potential at the site

- Slope stability analysis
- Recommendations for site preparation, grading and drainage, stripping depths, fill type for imported material, compaction criteria, trench excavation and backfill, use of on-site soil, and wet/dry weather earthwork
- Recommendations for foundation support of the building
- Recommendations for preparing floor slab subgrade
- Design criteria for retaining walls, including lateral earth pressures, backfill, compaction, and drainage, as well as temporary shoring recommendations
- Recommendations for managing identified groundwater conditions that may affect the performance of structures or pavements
- Recommendations for construction of AC pavement if needed for on-site access roads and parking areas, including subbase, base course, and AC paving thickness
- Seismic design parameters in accordance with the 2019 SOSSC.

3.0 SITE CONDITIONS

3.1 GEOLOGY

The site is located in the northwest portion of the Central Willamette Valley physiographic province. The coast range bounds the basin to the west with the Chehalem Mountains and Parrett Mountain to the north and east, respectively. The geologic profile in the site vicinity consists of 10 to 40 feet of catastrophic flood deposits comprised of silt with varying amounts of clay and fine sand, generally referred to as the Willamette Silt (Schlicker and Deacon, 1967). The catastrophic flood deposits are associated with Lake Missoula, a late Wisconsin glacial lake that formed when a lobe of the Cordilleran ice sheet impounded the Clark Fork River in western Montana. Periodic failure of the ice dam produced multiple flooding episodes with ponding into the Willamette Valley (Gannett and Caldwell, 1998).

The catastrophic flood deposits are underlain by Miocene to Pleistocene aged fluvial and lacustrine deposits. The fluvial and lacustrine deposits are up to 100 meters thick in the area and are underlain by Columbia River Basalt. The Columbia River Basalt is considered as the basement material (Gannett and Caldwell, 1998).

3.2 SURFACE CONDITIONS AND GEOLOGIC RECONNAISSANCE

The site is in the northeast portion of a residential care facility at the Friendsview University Village development in Newberg, Oregon. The proposed building footprint is occupied by two existing single-story residential structures, a wooden gazebo, and greenspace with a concrete slab. The remainder of the site is occupied by AC drive aisles and parking stalls, a driveway, and sidewalks. Vegetation at the site includes lawn grass with mature trees and landscape shrubs.

An engineering geologist from our office visited the site on September 1, 2020. Natural topography at the site is flat with the east edge of the proposed building at a slope break downward to the east towards Hess Creek. The slope is moderately steep and measured between 30 and 50 percent in the field. Moderately thick vegetation consisting of grass, shrubs, and a variety of trees are present on the slope. A paved path is located approximately halfway between the proposed structure and the creek.

Slopes near the existing residential structures appear uniform with fill likely placed as part of previous construction. No sign of recent sliding was observed during our visit. We did not observe any scarps or cracking in the paved path that may indicate signs of mass wasting events. However, conifer and deciduous trees did show signs of soil creep, with pistol-gripped trees from the edge of the slope to the creek. Water was observed in one area seeping from the ground on the paved trail directly below the gazebo area at the south end of the building footprint. It was unclear whether this was a naturally occurring spring or a possible irrigation leak during the time of our visit.

3.3 SUBSURFACE CONDITIONS

3.3.1 General

Subsurface conditions at the site were explored by drilling three borings (B-1 through B-3) to depths between 26.5 and 51.5 feet BGS, advancing one CPT (CPT-1) to a depth of approximately 77.4 feet BGS, and completing two hand auger borings (HA-1 and HA-2) to depths between 5.5 and 10 feet BGS. The approximate locations of our explorations are shown on Figure 2. The boring logs and laboratory test results are presented in Appendix A. The CPT results are presented in Appendix B.

3.3.2 Soil Conditions

3.3.2.1 Pavement Section

A pavement section consisting of 3 inches of AC over 16 inches of aggregate base was observed in boring B-2.

3.3.2.2 Fill

Fill was present in borings B-3, HA-1, and HA-2 in the east portion of the site near the Hess Creek slope. The fill consists of medium stiff to stiff, brown to gray clay with variable proportions of sand, gravel, and organics. The fill is moist and extends to depths between 4.5 and 5 feet BGS in HA-2 and B-3. Boring HA-1 was terminated at a depth of 5.5 feet BGS in fill. We anticipate maximum fill thickness could be up to 7 feet in the area. Laboratory testing indicates the moisture content of the fill was 25 to 26 percent at the time of our explorations.

3.3.2.3 Native Soil

Native soil below the fill consists medium stiff to very stiff silt and clay. The silt and clay are brown-gray-orange with trace to minor sand. Stiffness generally increases with depth and plasticity varies from low to high. The silt and clay extends to the maximum depth explored of 51.5 feet in the borings, and CPT-1 indicates the silt and clay are present to approximately 60 feet BGS. Medium dense, silty sand is present below the silt and clay and to the maximum depth explored of 77.5 feet BGS. Laboratory testing indicates the moisture content of the silt and clay was 31 to 45 percent at the time of our explorations.

3.3.3 Groundwater

Groundwater was observed at a depth of approximately 20 feet BGS in the explorations. Perched groundwater was also encountered in boring B-2 at a depth of 7 feet BGS. We anticipate static groundwater will vary between 15 and 20 feet BGS during year. We anticipate perched groundwater could be less than 5 feet BGS in the wet season.

3.4 GEOLOGIC HAZARDS

3.4.1 Seismicity

Three earthquake sources could affect the site. Two of the possible earthquake sources are associated with the CSZ, and the third source is a shallow, local crustal earthquake that could occur in the North American Plate.

The CSZ, which is the convergent boundary between the North America Plate and the Juan de Fuca Plate, lies offshore from northern California to southern British Columbia. The two plates are reportedly converging at a rate of approximately 3 to 4 centimeters (approximately 2 inches) per year. In addition, the northward-moving Pacific Plate is pushing the Juan de Fuca Plate north, causing complex seismic strains to accumulate. Earthquakes are caused by the abrupt release of this slowly accumulated strain. Evidence suggests that CSZ earthquakes can produce magnitudes up to approximately M_w 9.0 and are generally thought to occur on average every 500 years. The recurrence interval, however, has apparently been irregular, as short as approximately 100 years and as long as approximately 1,100 years. The last of these great earthquakes occurred in the Pacific Northwest in January 1700. Two types of subduction zone earthquakes are possible:

1. An interface event earthquake on the seismogenic part of the interface between the Juan de Fuca Plate and the North American Plate within the CSZ. This source can generate earthquakes with an M_w as large as 9+.
2. A deep intraplate earthquake on the seismogenic part of the subducting Juan de Fuca Plate. These events typically occur at depths between 30 and 60 km. This source can generate an event of up to M_w 7.5.

A significant earthquake could occur on a local fault near the site within the design life of the facility. Such an event would cause ground shaking at the site that could be more intense than the postulated CSZ events, although the duration would be shorter. The major local faults are the Newberg fault and Gales Creek fault zone.

3.4.2 Liquefaction

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. Granular soil, which relies on interparticle friction for strength, is susceptible to liquefaction until the excess pore pressures can dissipate. In general, loose, saturated sand soil with low silt and clay content is the most susceptible to liquefaction. Silty soil with low plasticity is moderately susceptible to liquefaction under relatively higher levels of ground shaking.

Based on soil and groundwater conditions in the explorations, liquefaction will be negligible at the site.

3.4.3 Lateral Spreading

Lateral spreading is a liquefaction-related seismic hazard and occurs on gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Liquefied soil adjacent to an open face can flow toward the open face, resulting in lateral ground displacement. Due to negligible liquefaction, lateral spreading is not a design consideration.

3.4.4 Fault Rupture

The nearest mapped faults are the Newberg fault (0.5 mile southwest) and the Gales Creek fault zone (7 miles northwest). Due to the distance from the site to the nearest faults, fault rupture is not considered a hazard at the site.

3.4.5 Landslides

3.4.5.1 Stability Analysis

The proposed building is planned at the top of the approximately 30-foot-tall slope leading to Hess Creek. The slope gradient ranges between 2H:1V and 3H:1V and is covered by trees and brush. A detailed description of the slope is discussed in the "Surface Conditions and Geologic Reconnaissance" section.

Due to proximity of the proposed building with respect to Hess Creek, a stability analysis was completed to determine slope setbacks and building foundation embedment (if necessary). Analysis was completed using Slope/W by Geo-Slope International, Ltd. Slope/W performs two-dimensional limiting equilibrium analysis to compute slope stability. The factor of safety against slope failure is simplistically defined as the ratio of the forces resisting slope movement (e.g., soil strength, soil mass, etc.) to the forces driving slope movement (e.g., soil weight, water pressure). The program predicts the location and geometry of "critical failures planes." Critical failure planes are the zones with the lowest factors of safety. A factor of safety less than 1.0 infers that the model is not in equilibrium and slope movement is likely to occur. Standard of care generally dictates that a minimum factor of safety for static and seismic conditions be 1.5 and 1.1, respectively.

Analysis was completed based on the topography and proposed building location provided by LRS Architects (shown on Figure 2). The steepest slope and closest distance from the building to the slope along the entire building footprint was used in analysis to model the "worst case" scenario. Analysis assumes the perimeter of the building is supported by continuous spread footings designed with allowable bearing pressures of 2,500 psf. A floor slab load of 150 psf was applied where footings were not present. A seismic coefficient of 0.197 g (one-half of the site peak ground acceleration of 0.394 g) was used for the seismic condition. The soil parameters, load, and results of the analysis are presented in Appendix C.

Analysis indicates factors of safety for the static and seismic conditions are above the minimum standard of care. The proposed building can be constructed, provided the exterior footings adjacent to the Hess Creek slope are continuous footings and all footings near slopes are embedded as described in the "Foundation Embedment Recommendations" section. Our analysis is based on the building location shown on Figure 2 and assumes the building perimeter will be supported by continuous spread footings (no isolated spread footings near the slope). If the location of the building or foundation systems deviate from these assumptions, we should be contacted to revise our analysis.

3.4.5.2 Foundation Embedment Recommendations

To reduce lateral loading on adjacent slopes, the base of all spread footings near slopes (continuous and isolated) should be embedded to maintain a minimum horizontal distance of 10 feet from the lowest outside edge of the footing to the face of adjacent slopes.

3.4.5.3 Stormwater System Recommendations on Steep Slopes

Surface water should not be allowed to sheet flow onto steep slope faces. Stormwater should be collected and transferred away from the Hess Creek slopes. If stormwater is directed to the bottom of Hess Creek, angular rock should be installed at the base of the outfall pipes to dissipate energy generated from the gradient.

Granular backfill for pipes on steep slopes will create preferential flow paths for water that can generate moderate velocities within the trenches and a potential for piping. Where stormwater pipes are installed in slopes that exceed 15 percent, we recommend including trench plugs in the design. We can provide recommendations with review of the drainage plans, if requested.

Stormwater infiltration systems are not recommended for the project. If stormwater detention ponds are required within 100 feet of the crest of the slope, they should be lined with an impermeable membrane or bentonite to prevent water from infiltrating into the subsurface soil.

4.0 DESIGN

4.1 FOUNDATION SUPPORT

4.1.1 Discussion

Structures associated with the project can be founded on spread footings bearing on native soil or structural fill on native soil. All spread footings near the Hess Creek slopes (continuous and isolated) should be embedded to maintain minimum depths as recommended in the "Foundation Embedment Recommendations" section.

4.1.2 Conventional Spread Footings

Footings bearing on native soil or structural fill overlying non-organic native soil should be proportioned on a maximum allowable bearing pressure of 2,500 psf. This value is a net bearing pressure; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and can be increased by one-third for short-term loads resulting from wind or seismic forces.

Footings should not be supported on undocumented fill. Undocumented fill was encountered in explorations in the east portion of the proposed building near the Hess Creek slope. All undocumented fill should be removed from under footings and replaced with compacted crushed rock. Over-excavation should extend 6 inches beyond the margins of the footings for every foot excavated below the base grade of the footings. The crushed rock should consist of imported granular material, as defined in the "Structural Fill" section. The imported granular material should be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557, or until well-keyed, as determined by one of our geotechnical staff. We recommend that a member of our geotechnical staff observe the prepared footing subgrade.

Continuous wall and isolated spread footings should be at least 18 and 24 inches wide, respectively. The bottom of exterior footings should be at least 18 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 12 inches

below the base of the slab. If footings are excavated in the wet season, we recommend they are covered with 3 to 6 inches of crushed rock shortly after excavation to prevent softening of the subgrade soil.

Total post-construction consolidation settlement is expected to be less than 1 inch with differential settlement less than 0.5 inch over a 50-foot span.

Lateral loads on building and retaining wall footings can be resisted by passive earth pressure on the sides of the structures and by friction on the base of footings. Our analysis indicates that the allowable passive earth pressure for footings confined by the on-site soil or planned structural fill is 250 pcf. Adjacent floor slabs, pavement, or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance. An allowable coefficient of friction equal to 0.35 can be used for footings at the site.

All footing subgrades should be evaluated by a representative of GeoDesign to confirm suitable bearing conditions. Observations should also confirm that loose or soft material, organic material, unsuitable fill, prior topsoil zones, undocumented fill and softened subgrades (if present) have been removed. Localized deepening of footing excavations may be required to penetrate any deleterious material.

4.2 SEISMIC DESIGN CRITERIA

Seismic design criteria for this project will be based on the 2019 SOSSC and ASCE 7-16. Based on the soil conditions, a seismic Site Class D is appropriate. ASCE 7-16 Section 11.4.8 requires a ground motion hazard study in accordance with Section 21.2 for structures on Site Class D sites with S_1 greater than or equal to 0.2 g (S_1 at the site is 0.414 g).

Exception 2 of ASCE 7-16 Section 11.4.8 indicates a ground motion hazard study is not required for structures on Site Class D sites with S_1 greater to or equal 0.2 g, provided the value of the seismic response coefficient C_S is determined by Eq. (12.8-2) for values of $T \leq T_s$ and taken as equal to 1.5 times the value computed in accordance with either Eq. (12.8-3) for $T_L \geq T > 1.5T_s$ or Eq. (12.8-4) for $T > T_L$.

Based on correspondence with Froelich Engineers, the proposed building meets the exception. The seismic design criteria in accordance with Exception 2 of ASCE 7-16 Section 11.4.8 are summarized in Table 1. If the exception is not applicable, we should be contacted to complete a ground motion hazard study for the site.

Table 1. Seismic Design Parameters (ASCE 7-16)

Parameter	Short Period (T_s = 0.2 second)	1 Second Period (T_1 = 1.0 second)
MCE Spectral Acceleration, S	S_s = 0.854 g	S_1 = 0.414 g
Site Class	D	
Site Coefficient, F	F_a = 1.158	F_v = 1.886
Adjusted Spectral Acceleration, S_M	S_{MS} = 0.989 g	S_{M1} = 0.781 g
Design Spectral Response Acceleration Parameters, S_D	S_{DS} = 0.660 g	S_{D1} = 0.521 g

4.3 FLOOR SLABS

Floor slabs on native soil or structural fill on native soil can support areal loads of up 150 psf, provided the subgrade is prepared in accordance with the "Site Preparation" section. A modulus of reaction of 120 pci should be used for slab design. Undocumented fill was encountered beneath the east portion of the proposed building. Where undocumented fill is present, the floor slab subgrade should be prepared as recommended in the "Undocumented Fill" section.

A minimum 6-inch-thick layer of imported granular material should be placed and compacted over the prepared subgrade to assist as a capillary break. The floor slab base rock should be crushed rock or crushed gravel and sand meeting the requirements outlined in the "Structural Fill" section. The imported granular material should be placed in one lift and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557. Floor slab base rock contaminated with excessive fines (greater than 5 percent by dry weight passing the U.S. Standard No. 200 sieve) should be replaced.

Flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives. Many flooring manufacturers will warrant their product only if a vapor barrier is installed according to their recommendations. Selection and design of an appropriate vapor barrier, if needed, should be based on discussions among members of the design team. We can provide additional information to assist you with your decision.

All slab subgrades should be evaluated by appropriate personnel to confirm suitable bearing conditions. Observations should also confirm that loose or soft material, organic material, unsuitable fill, prior topsoil zones, and softened subgrades (if present) have been removed.

4.4 RETAINING STRUCTURES

4.4.1 Assumptions

Our retaining wall design recommendations are based on the following assumptions: (1) the walls consist of conventional, cantilevered retaining walls, (2) the walls are less than 8 feet in height, (3) the backfill is drained, and (4) the backfill has a slope flatter than 4H:1V. Re-evaluation of our recommendations will be required if the retaining wall design criteria for the project vary from these assumptions.

4.4.2 Wall Design Parameters

Unrestrained site walls that retain native soil should be designed to resist an active earth pressure of 35 pcf. For embedded building walls, a superimposed seismic lateral force should be calculated based on a dynamic force of $7.5H^2$ pounds per linear foot of wall, where H is the height of the wall in feet, and applied at 0.6H from the base of the wall.

Where retaining walls are restrained from rotation prior to being backfilled, an equivalent fluid pressure of 55 pcf should be used for design. If other surcharges (e.g., slopes steeper than 4H:1V, foundations, vehicles, etc.) are located within a horizontal distance from the back of a wall equal to twice the height of the wall, additional pressures may need to be accounted for in the wall design. Our office should be contacted for appropriate wall surcharges based on the actual magnitude and configuration of the applied loads.

4.4.3 Wall Foundations

Wall foundations should be designed in accordance with the "Foundation Support" section.

4.4.4 Wall Drainage and Backfill

The above design parameters have been provided assuming that back-of-wall drains will be installed to prevent buildup of hydrostatic pressures behind all walls. If a drainage system is not installed, our office should be contacted for revised design forces. Backfill material placed behind walls and extending a horizontal distance of ½H, where H is the height of the retaining wall, should consist of retaining wall select backfill placed and compacted in conformance with the "Structural Fill" section.

A minimum 6-inch-diameter, perforated collector pipe should be placed at the base of the walls. The pipe should be embedded in a minimum 2-foot-wide zone of angular drain rock that is wrapped in a drainage geotextile fabric and extends up the back of the wall to within 1 foot of the finished grade. The drain rock and drainage geotextile fabric should meet specifications provided in the "Structural Fill" section. 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 stormwater drain systems unless measures are taken to prevent backflow into the wall's drainage system.

Settlement of up to 1 percent of the wall height commonly occurs immediately adjacent to the wall as the wall rotates and develops active lateral earth pressures. Consequently, we recommend that construction of flatwork adjacent to retaining walls be postponed at least four weeks after backfilling of the wall, unless survey data indicates that settlement is complete prior to that time.

4.5 PAVEMENT

4.5.1 AC Pavement

Pavement should be installed on subgrade prepared in conformance with the "Site Preparation" and "Structural Fill" sections. Note the discussions regarding undocumented fill in the "Undocumented Fill" section. Satisfactory subgrade support for pavement can be obtained, provided the subgrade is prepared as described in the "Undocumented Fill" section. Our pavement recommendations are based on the following assumptions:

- The top 12 inches of soil subgrade is prepared as recommended in the "Site Preparation" and "Structural Fill" sections or until proof rolling with heavy equipment indicates that is it firm and unyielding.
- Resilient moduli of 3,500 psi and 20,000 psi were assumed for the subgrade and base rock, respectively.
- Structural coefficient of 0.08 for cement-amended subgrade.
- The design manual provided for the project specifies pavement recommendations based on a design life of 20 years.
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively.
- Reliability of 85 percent and standard deviation of 0.4.
- Traffic consists of passenger vehicles with the occasional garbage, fire, and moving trucks.

If any of these assumptions are incorrect, our office should be contacted with the appropriate information so that the pavement designs can be revised. Our recommendations are provided in Table 2 and alternative sections using cement-amended subgrade are provided in Table 3.

Table 2. Minimum Pavement Thicknesses with Compacted Soil Subgrade

Traffic Loading	AC (inches)	Aggregate Base (inches)
Parking Stalls	2.5	7.0
Roadways/Drive Aisles	3.0	9.0

Table 3. Alternative Minimum Pavement Sections with Cement-Amended Subgrade

Traffic Loading)	AC (inches)	Aggregate Base (inches)	Cement-Amended Subgrade[1] (inches)
Parking Stalls	2.5	4.0	12.0
Roadways/Drive Aisles	3.0	4.0	12.0

1. Assumes a minimum seven-day unconfined compressive strength of 100 psi.

All thicknesses are intended to be the minimum acceptable. Design of the recommended pavement section assumes that construction will be completed during an extended period of dry weather. Wet weather construction could require an increased thickness of aggregate base as discussed in the "Construction Considerations" section.

To prevent strength loss during curing, cement-amended soil should be allowed to cure for at least four days prior to construction traffic or placing the base rock. Lastly, the amended subgrade should be protected with a minimum of 4 inches of base rock prior to construction traffic access.

The AC, aggregate base, and cement amendment should meet the requirements outlined in the "Structural Fill" section.

4.5.2 Construction Traffic Considerations

The pavement sections recommend above are designed to support post-construction traffic. Construction traffic should not be allowed on new pavement. If construction traffic is to be allowed on newly constructed road sections, an allowance for this additional traffic will need to be made in the design pavement section.

The pavement sections recommended above are for support of post-construction design traffic. The aggregate (with or without cement-amended subgrade) is designed to support construction traffic. Increased aggregate thicknesses will likely be required to support construction traffic as discussed in the "Construction Considerations" section.

4.6 DRAINAGE

4.6.1 Temporary

During work at the site, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water and/or erosion at the working surface. During rough and finished grading of the site, the contractor should keep all pads and subgrades free of ponding water.

4.6.2 Surface

The ground surface at finished pads should be sloped away from their edges at a minimum 2 percent gradient for a distance of at least 5 feet. Roof drainage from the building should be directed into solid, smooth-walled drainage pipes that carry the collected water to the storm drain system. Surface water should not be allowed to sheet flow above or onto the Hess Creek slope face. If stormwater is discharged to the east of the building, it should be collected and transferred to the base of the slope in solid pipes and angular rock should be installed at the base of the outfall pipes to dissipate energy generated from the gradient.

4.6.3 Subsurface

Based on the anticipated depth to groundwater, perimeter footing drains are not required. If requested, perimeter drains should consist of a filter fabric-wrapped, drain rock-filled trench that extends at least 12 inches below the lowest adjacent grade (i.e., slab subgrade elevation). A perforated pipe should be placed at the base to collect water that gathers in the drain rock. The drain rock and filter fabric should meet specifications outlined in the "Structural Fill" section. Discharge for footing drains should not be tied directly into the stormwater drainage system unless mechanisms are installed to prevent backflow. Stormwater directed to the Hess Creek slope should adhere to the recommendations in the "Surface" section above.

4.6.4 Stormwater Infiltration Systems

Based on the subsurface and groundwater conditions at the site, on-site infiltration systems are not recommended for the development.

4.7 PERMANENT SLOPES

The Hess Creek slope should be meet the topography shown on Figure 2. If more than 2 feet of fill is planned near the slope, we should be contacted to review our recommendations.

All cut and fill slopes away from Hess Creek should not exceed 2H:1V. Upslope roads and pavement should be located at least 5 feet from the top of cut and fill slopes. The setback should be increased to 10 feet for buildings. The slopes should be planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

5.0 CONSTRUCTION

5.1 SITE PREPARATION

5.1.1 Demolition

Demolition should include complete removal of existing site features within 5 feet of areas to receive new pavement, buildings, retaining walls, or engineered fills. Underground utility lines, vaults, or tanks encountered in areas of new development should be completely removed or (with approval) grouted full if left in place.

Crawlspace areas or voids resulting from removal of improvements or loose soil in utility lines should be backfilled with compacted structural fill, as discussed in the "Structural Fill" section. The bottom of such excavations should be excavated to expose a firm subgrade before filling and their sides sloped at a minimum of 1H:1V and benched to allow for more uniform compaction at the edges of the excavations.

Materials generated during demolition should be transported off site for disposal or stockpiled in areas designated by the owner. In general, these materials will not be suitable for re-use as engineered fill. However, AC, concrete, and base rock materials may be recycled in accordance the "Structural Fill" section.

5.1.2 Stripping and Grubbing

Existing root zone and topsoil zones should be stripped and removed from all structural and fill areas. We anticipate the average depth of stripping will be approximately 3 to 6 inches, although greater stripping depths will be required to remove localized zones of loose or organic soil. Greater stripping depths (approaching 12 inches) are anticipated in areas with thicker vegetation and shrubs, in all forested areas, and along the base of draws. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal or used in landscaped areas.

Trees and shrubs should be removed from fill areas. In addition, root balls should be grubbed out to the depth of the roots, which could exceed 3 feet BGS. Depending on the methods used to remove root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with structural fill.

5.1.3 Undocumented Fill

5.1.3.1 General

Undocumented fill was encountered in the east portion of the project area near the slope leading to Hess Creek. We assume the fill was placed during construction of the existing residences. Documentation on the placement and compaction of the fill is not available. Due to the variable composition of the fill and the unknown methods of placement and compaction, reliable strength properties for undocumented fill are extremely difficult to predict.

5.1.3.2 Foundation Areas

Undocumented fill should be removed from under new building foundations and footings supported on granular pads as discussed in the "Foundation Embedment Recommendations" and "Foundation Support" sections.

5.1.3.3 Floor Slab and Pavement Areas

There is a small risk for poor performance of floor slabs and pavement established directly over undocumented fill soil. If undocumented fill is present after site grading, removal and replacement of undocumented fill would eliminate all risk. Floor slabs and pavement can be constructed on fill, provided a small risk of distress is accepted (minor floor slab cracking and localized "bird baths" in pavement).

5.1.4 Subgrade Evaluation

Prior to the placement of fill, floor slabs, base rock, or pavement improvements, the exposed subgrade should be evaluated by proof rolling. The subgrade should be proof rolled with a fully loaded dump truck or similar heavy, rubber tire construction equipment to identify soft, loose, or unsuitable areas. A member of our geotechnical staff should observe proof rolling to evaluate yielding of the ground surface. During wet weather, subgrade evaluation should be performed by probing with a foundation probe rather than proof rolling. Areas that appear soft or loose should be removed and replaced with structural fill or improved by cement amending in accordance with subsequent sections of this report.

5.2 CONSTRUCTION CONSIDERATIONS

The fine-grained soil present on this site is easily disturbed. If not carefully executed, site preparation, utility trench work, and roadway excavation can create extensive soft areas and significant repair costs can result. Earthwork planning, regardless of the time of year, should include considerations for minimizing subgrade disturbance.

If construction occurs during or extends into the wet season, or if the moisture content of the surficial soil is more than a couple percentage points above optimum, site stripping and cutting may need to be accomplished using track-mounted equipment. Likewise, the use of granular haul roads and staging areas will be necessary for support of construction traffic during the rainy season or when the moisture content of the surficial soil is more than a few percentage points above optimum. The amount of staging and haul road areas, as well as the required thickness of granular material, will vary with the contractor's sequencing of a project and type/frequency of construction equipment. Based on our experience, between 12 and 18 inches of imported granular material is generally required in staging areas and between 18 and 24 inches in haul roads areas. Stabilization material may be used as a substitute, provided the top 4 inches of

material consists of imported granular material. The actual thickness will depend on the contractor's means and methods and should be the contractor's responsibility. In addition, a geotextile fabric should be considered to assist in developing a barrier between the subgrade and imported granular material in areas of repeated construction traffic. The imported granular material, stabilization material, and geotextile fabric should meet the specifications in the "Structural Fill" section. If the site is filled above current grades, the subgrade can be cement amended as described in the "Structural Fill" section.

As an alternative to thickened crushed rock sections, haul roads and utility work zones may be constructed using cement-amended subgrades overlain by a crushed rock wearing surface. Due to the size of the project and presence of existing roadways, we anticipate that cement amending is not economically feasible. If cement amending is considered, GeoDesign should be contacted to provide recommendations.

5.3 EXCAVATION

5.3.1 General

The subsurface conditions at the site consist of up to 5.5 feet of medium stiff to stiff, fine-grained fill on top of medium stiff to very stiff, fine-grained native soil. Groundwater was observed at a depth of approximately 20 feet BGS; however, perched water was observed in boring B-2 at a depth of 7 feet BGS.

Trench cuts in the native silt soil will likely stay open to depths of up to 4 feet. The stiffness of the fill indicates it will likely stay open to depths of 4 feet; however, some caving and sloughing could be possible. Open excavation techniques may be used to excavate trenches with depths between 4 and 8 feet, provided the walls of the excavation are cut at a slope of 1H:1V and groundwater seepage is not present. Excavations should be flattened to 1½H:1V or 2H:1V if excessive sloughing or raveling occurs. If groundwater is present, caving and raveling could occur. Excavations near Hess Creek should not destabilize the slopes.

Approved temporary shoring may be used for excavation support in lieu of large and open cuts. A wide variety of shoring and dewatering systems are available. Consequently, we recommend that the contractor be responsible for selecting the appropriate shoring and dewatering systems.

If shoring is used, we recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation. All excavations should be made in accordance with applicable OSHA and state regulations.

5.3.2 Dewatering

Dewatering should be expected for excavations that extend more than 5 feet below existing grades. Pumping from a sump may be effective in dewatering localized sections of trenches. However, this method is unlikely to prove effective in dewatering long sections of trench or large excavations, particularly for excavations that extend into native gravel. In addition, the sidewalls of trench excavations will need to be flattened or shored if seepage is encountered.

Where groundwater seepage into shored excavations occurs, we recommend placing at least 1 foot to 2 feet of stabilization material at the base of the excavations. Trench stabilization material should meet the requirements provided in the "Structural Fill" section.

While not anticipated, dewatering for large, open excavations may require a series of wells around the perimeter of the excavation. Selection, design, and construction of the dewatering system should be the responsibility of the contractor who is in the best position to modify or adapt the system to changing groundwater conditions and construction sequencing and requirements. The construction dewatering system should be adaptable to varying flow conditions and capable of lowering the level of the groundwater to a minimum of 2 feet below the base of the excavation.

5.4 STRUCTURAL FILL

5.4.1 General

Fills should only be placed over subgrade that has been prepared in conformance with the "Site Preparation" section. A variety of material may be used as structural fill at the site. However, all material used as structural fill should be free of organic material or other unsuitable materials and should meet the specifications provided in OSSC 00330 (Earthwork), OSSC 00400 (Drainage and Sewers), and OSSC 02600 (Aggregates), depending on the application. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill are provided below.

5.4.2 On-Site Soil

The soil at the site that will likely be excavated and subsequently used as structural fill consists of medium stiff clay fill and native silt and clay with variable proportions of sand. Material greater than 4 inches in diameter should be removed from all new fill if encountered in the existing fill.

Laboratory testing indicates that the moisture content of the on-site soil is greater than the anticipated optimum moisture content required for adequate compaction, and drying will be required to achieve adequate compaction during most times of the year. We recommend using imported granular material for structural fill if the on-site material cannot be properly moisture conditioned. When used as structural fill, the on-site soil should be placed in lifts with a maximum uncompacted thickness of 8 inches. The soil should be compacted to not less than 92 percent of the maximum dry density, as determined by ASTM D1557.

5.4.3 Imported Granular Material

Imported granular material used as structural fill should be pit- or quarry-run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in OSSC 00330.14 (Selected Granular Backfill) or OSSC 00330.15 (Selected Stone Backfill). The imported granular material should also be angular, should be well graded between coarse and fine material, should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve, and should have at least two mechanically fractured faces.

Imported granular material should be placed in lifts with a maximum uncompacted thickness of 12 inches and compacted to not less than 95 percent of the maximum dry density, as

determined by ASTM D1557. During the wet season or when wet subgrade conditions exists, the initial lift should be approximately 18 inches in uncompacted thickness and should be compacted by rolling with a smooth-drum roller without using vibratory action.

5.4.4 Trench Backfill

Trench backfill placed beneath, adjacent to, and for at least 12 inches above utility lines (i.e., the pipe zone) should consist of well-graded granular material with a maximum particle size of 1½ inches and less than 7 percent by dry weight passing the U.S. Standard No. 200 sieve and should meet the specifications provided in OSSC 00405.13 (Pipe Zone Material). The pipe zone backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

Within roadway alignments, the remainder of the trench backfill up to the subgrade elevation should consist of well-graded granular material with a maximum particle size of 2½ inches and less than 7 percent by dry weight passing the U.S. Standard No. 200 sieve and should meet the specifications provided in OSSC 00405.14 (Trench Backfill; Class B, C, or D). This material should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department. The upper 3 feet of the trench backfill should be compacted to at least 95 percent of the maximum dry density, as determined by ASTM D1557.

Outside of structural improvement areas (e.g., roadway alignments or building pads) trench backfill placed above the pipe zone may consist of general fill material that is free of organic material and material over 6 inches in diameter and meets the specifications provided in OSSC 00405.14 (Trench Backfill; Class A, B, C, or D). This general trench backfill should be compacted to at least 90 percent of the maximum dry density, as determined by ASTM D1557, or as required by the pipe manufacturer or local building department.

5.4.5 Stabilization Material

Stabilization material should consist of pit- or quarry-run rock, crushed rock, or crushed gravel and should meet the specifications provided in OSSC 00330.16 (Stone Embankment Material). In addition, the material should have a maximum particle size of 6 inches, should have less than 5 percent by dry weight passing the U.S. Standard No. 4 sieve, and should have at least two mechanically fractured faces. The material should be free of organic material and other deleterious materials. Stabilization material should be placed in lifts between 12 and 18 inches thick and compacted to a firm condition.

Where the stabilization material is used to stabilize soft subgrade beneath pavement or construction haul roads, a geotextile should be placed as a barrier between the soil subgrade and the imported granular material. Placement of the imported granular fill should be done in conformance with the specifications provided in OSSC 00331 (Subgrade Stabilization). The geotextile fabric should meet the specifications provided below for subgrade geotextiles. Geotextile is not required where stabilization material is used at the base of utility trenches. Stabilization material should be placed in lifts between 12 and 18 inches thick and compacted to a firm condition with a smooth-drum roller without using vibratory action.

5.4.6 Drain Rock

Drain rock should consist of granular material that meets the specifications provided in OSSC 00430.11 (Granular Drain Backfill Material). In addition, the drain rock should be angular, should be well graded between coarse and fine material, should have less than 2 percent by dry weight passing the U.S. Standard No. 200 sieve, and should have at least two mechanically fractured faces. The drain rock should be wrapped in a drainage geotextile that meets the specifications provided below for drainage geotextiles.

5.4.7 Building Slab Base and Pavement Aggregate

Imported granular material used as base rock for building floor slabs and pavement should consist of ¾- or 1½-inch-minus material (depending on the application) and meet the requirements in OSSC 00641 (Aggregate Subbase, Base, and Shoulders). In addition, the aggregate should have less than 5 percent by dry weight passing the U.S. Standard No. 200 sieve. The aggregate base should be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557.

5.4.8 Geotextile Fabric

5.4.8.1 Subgrade Geotextile

The subgrade geotextile should meet the specifications provided in OSSC Table 02320-4 – Geotextile Property Values for Subgrade Geotextile (Separation). The geotextile should be installed in conformance with OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles. All drainage aggregate and stabilization material should be underlain by a subgrade geotextile. Geotextile is not required where stabilization material is used at the base of utility trenches.

5.4.8.2 Drainage Geotextile

Drainage geotextile should meet the specifications provided in OSSC Table 02320-1 – Geotextile Property Values for Drainage Geotextile. The geotextile should be installed in conformance with OSSC 00350 (Geosynthetic Installation). A minimum initial aggregate base lift of 6 inches is required over geotextiles.

5.4.9 AC

5.4.9.1 ACP

The AC should be Level 2, ½-inch, dense ACP according to OSSC 00744 (Asphalt Concrete Pavement) and compacted to 91 percent of the theoretical maximum density of the mix, as determined by AASHTO T 209. The minimum and maximum lift thicknesses are 2.0 and 3.0 inches, respectively, for ½-inch ACP. Lift thicknesses desired outside these limits should be discussed with the design team prior to design or construction. Asphalt binder should be performance graded and conform to PG 64-22 or better.

5.4.9.2 Cold Weather Paving Considerations

In general, AC paving is not recommended during the cold weather (temperatures less than 40 degrees Fahrenheit). Compacting under these conditions can result in low compaction and premature pavement distress.

Each AC mix design has a recommended compaction temperature range that is specific for the particular AC binder used. In colder temperatures, it is more difficult to maintain the temperature of the AC mix as it can lose heat while stored in the delivery truck, as it is placed, and in the time between placement and compaction. In Oregon, the AC surface temperature during paving should be at least 40 degrees Fahrenheit for lift thickness greater than 2.5 inches and at least 50 degrees Fahrenheit for lift thickness between 2.0 and 2.5 inches.

If paving activities must take place during cold-weather construction as defined above, the project team should be consulted and a site meeting should be held to discuss ways to lessen low compaction risks.

5.5 EROSION CONTROL

In our opinion, earthwork is feasible during the rainy season, provided proper erosion control procedures are implemented and the "Construction Considerations" and "Structural Fill" sections are followed. The site soil is susceptible to erosion; therefore, erosion control measures should be carefully planned and in place before construction begins. Surface water runoff should be collected and directed away from slopes to prevent water from running down the slope face. Erosion control measures (such as straw bales, sediment fences, and temporary detention and settling basins) should be used in accordance with local and state ordinances.

6.0 OBSERVATION OF CONSTRUCTION

Satisfactory pavement, earthwork, and foundation performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. GeoDesign should be retained to observe subgrade preparation, fill placement, foundation excavations, drainage system installation, and pavement placement and to review laboratory compaction and field moisture-density information.

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.

7.0 LIMITATIONS

We have prepared this report for use by the Greystone and members of the design and construction teams for the proposed project. The data and report can be used for bidding or estimating purposes, but our report, conclusions, and interpretations should not be construed as warranty of the subsurface conditions and are not applicable to other sites. Exploration observations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.

◆ ◆ ◆

We appreciate the opportunity to be of continued service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

GeoDesign, Inc.

Nick Paveglio, P.E.
Senior Associate Engineer

George Saunders, P.E., G.E.
Principal Engineer

REFERENCES

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FIGURES

VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

GEODESIGN INC AN NV5 COMPANY	FRIENDS-4-01	**VICINITY MAP**	
	SEPTEMBER 2020	FRIENDSVIEW - RCF PHASE 1 NEWBERG, OR	**FIGURE 1**

Printed By: aday | Print Date: 9/21/2020 12:48:12 PM
File Name: J:\E-L\Friends\friends-4\friends-4-01\Figures\CAD\Friends-4-01-VM01.dwg | Layout: FIGURE 1

Printed By: aday | Print Date: 9/21/2020 12:48:21 PM
File Name: J:\E-L\Friends\friends-4\friends-4-01\Figures\CAD\Friends-4-01-SP02.dwg | Layout: FIGURE 2

LEGEND:

- APPROXIMATE LOCATION OF PROPOSED BUILDING FOOTPRINT
- B-1 ◉ BORING
- HA-1 ◉ HAND AUGER BORING
- CPT-1 △ CPT

0 50 100
(SCALE IN FEET)

N

NOTES:

1. SITE PLAN BASED ON DRAWING PROVIDED BY LRS ARCHITECTS SEPTEMBER 9, 2020.
2. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JUNE 1, 2020.

GEODESIGN INC AN NV5 COMPANY	FRIENDS-4-01	**SITE PLAN**	
	SEPTEMBER 2020	FRIENDSVIEW – RCF PHASE 1 NEWBERG, OR	**FIGURE 2**

APPENDIX A

APPENDIX A

FIELD EXPLORATIONS

GENERAL

Subsurface conditions at the site we explored by drilling three borings (B-1 through B-3) to depths between 26.5 and 51.5 feet BGS, advancing one CPT (CPT-1) to a depth of approximately 77.4 feet BGS, and completing two hand auger borings (HA-1 and HA-2) to depths between 5.5 and 10 feet BGS. Drilling services were conducted by Dan J. Fischer Excavating, Inc. using solid-stem auger techniques. The CPT was completed by Oregon Geotechnical Explorations of Kaiser, Oregon, and the hand augers were completed by a member of our geology staff. The exploration logs for the borings are presented in this appendix. The results of the CPT are presented in Appendix B.

The locations of the explorations were determined in the field by pacing or measuring from existing site features. This information should be considered accurate only to the degree implied by the methods used.

SOIL SAMPLING

We collected representative samples of the various soils encountered during drilling in the explorations for geotechnical laboratory testing. Samples were collected from the borings using 1½-inch-inside diameter, split-spoon SPT sampler in general accordance with ASTM D1586. The samplers were driven into the soil with a 140-pound automatic trip hammer free-falling 30 inches. The sampler was driven a total distance of 18 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the exploration logs, unless otherwise noted. Relatively undisturbed samples were collected using a standard Shelby tube in general accordance with ASTM D1587. Representative grab samples of the soil observed in the hand auger borings were collected from the tip of the hand auger. Sampling methods and intervals are shown on the exploration logs.

We understand that calibration of the SPT hammer used by Dan J. Fischer Excavating, Inc. has not been completed. The SPT blow counts completed by Dan J. Fischer Excavating, Inc. were conducted using two wraps around the cathead.

SOIL CLASSIFICATION

The soil samples were classified in the field in accordance with the "Exploration Key" (Table A-1) and "Soil Classification System" (Table A-2), which are presented in this appendix. The exploration logs indicate the depths at which the soil characteristics change, although the change actually could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

LABORATORY TESTING

We visually examined soil samples collected from the explorations to confirm field classifications. We also performed to following laboratory testing to evaluate the engineering properties of the soil.

ATTERBERG LIMITS

Atterberg limits (plastic and liquid limits) testing was performed on select soil samples in general accordance with ASTM D4318. The test results are presented in this appendix.

CONSOLIDATION TESTING

Consolidation testing was performed on a select soil sample in general accordance with ASTM D2435. This test determines the magnitude and rate of consolidation of soil when it is restrained laterally and drained axially while subjected to incrementally applied controlled-stress loading. The test results are used to estimate the magnitude and rate of settlement of the site soil under a specific increase in effective stress. The test results are presented in this appendix.

MOISTURE CONTENT

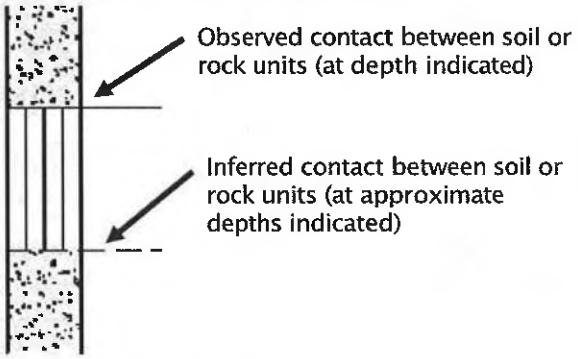
We tested the natural moisture content of select soil samples in general accordance with ASTM D2216. The test results are presented in this appendix.

PARTICLE-SIZE ANALYSIS

Particle-size analysis was completed on select soil samples in general accordance with ASTM D1140. The test results are presented in this appendix.

SYMBOL	SAMPLING DESCRIPTION
	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test with recovery
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of sample collected using 3-inch-O.D. California split-spoon sampler and 140-pound hammer with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal

ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
		MS	Moderate Sheen
ppm	Parts per Million	HS	Heavy Sheen

RELATIVE DENSITY - COARSE-GRAINED SOIL

Relative Density	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)
Very Loose	0 - 4	0 - 11	0 - 4
Loose	4 - 10	11 - 26	4 - 10
Medium Dense	10 - 30	26 - 74	10 - 30
Dense	30 - 50	74 - 120	30 - 47
Very Dense	More than 50	More than 120	More than 47

CONSISTENCY - FINE-GRAINED SOIL

Consistency	Standard Penetration Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)
Very Soft	Less than 2	Less than 3	Less than 2	Less than 0.25
Soft	2 - 4	3 - 6	2 - 5	0.25 - 0.50
Medium Stiff	4 - 8	6 - 12	5 - 9	0.50 - 1.0
Stiff	8 - 15	12 - 25	9 - 19	1.0 - 2.0
Very Stiff	15 - 30	25 - 65	19 - 31	2.0 - 4.0
Hard	More than 30	More than 65	More than 31	More than 4.0

PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (< 5% fines)	GW or GP	GRAVEL
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt
			GW-GC or GP-GC	GRAVEL with clay
		GRAVEL WITH FINES (> 12% fines)	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SAND (<5% fines)	SW or SP	SAND
		SAND WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt
			SW-SC or SP-SC	SAND with clay
		SAND WITH FINES (> 12% fines)	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)	SILT AND CLAY	Liquid limit less than 50	ML	SILT
			CL	CLAY
			CL-ML	silty CLAY
			OL	ORGANIC SILT or ORGANIC CLAY
		Liquid limit 50 or greater	MH	SILT
			CH	CLAY
			OH	ORGANIC SILT or ORGANIC CLAY
HIGHLY ORGANIC SOIL			PT	PEAT

MOISTURE CLASSIFICATION

Term	Field Test
dry	very low moisture, dry to touch
moist	damp, without visible moisture
wet	visible free water, usually saturated

ADDITIONAL CONSTITUENTS

Secondary granular components or other materials such as organics, man-made debris, etc.

Percent	Silt and Clay In: Fine-Grained Soil	Silt and Clay In: Coarse-Grained Soil	Percent	Sand and Gravel In: Fine-Grained Soil	Sand and Gravel In: Coarse-Grained Soil
< 5	trace	trace	< 5	trace	trace
5 - 12	minor	with	5 - 15	minor	minor
> 12	some	silty/clayey	15 - 30	with	with
			> 30	sandy/gravelly	Indicate %

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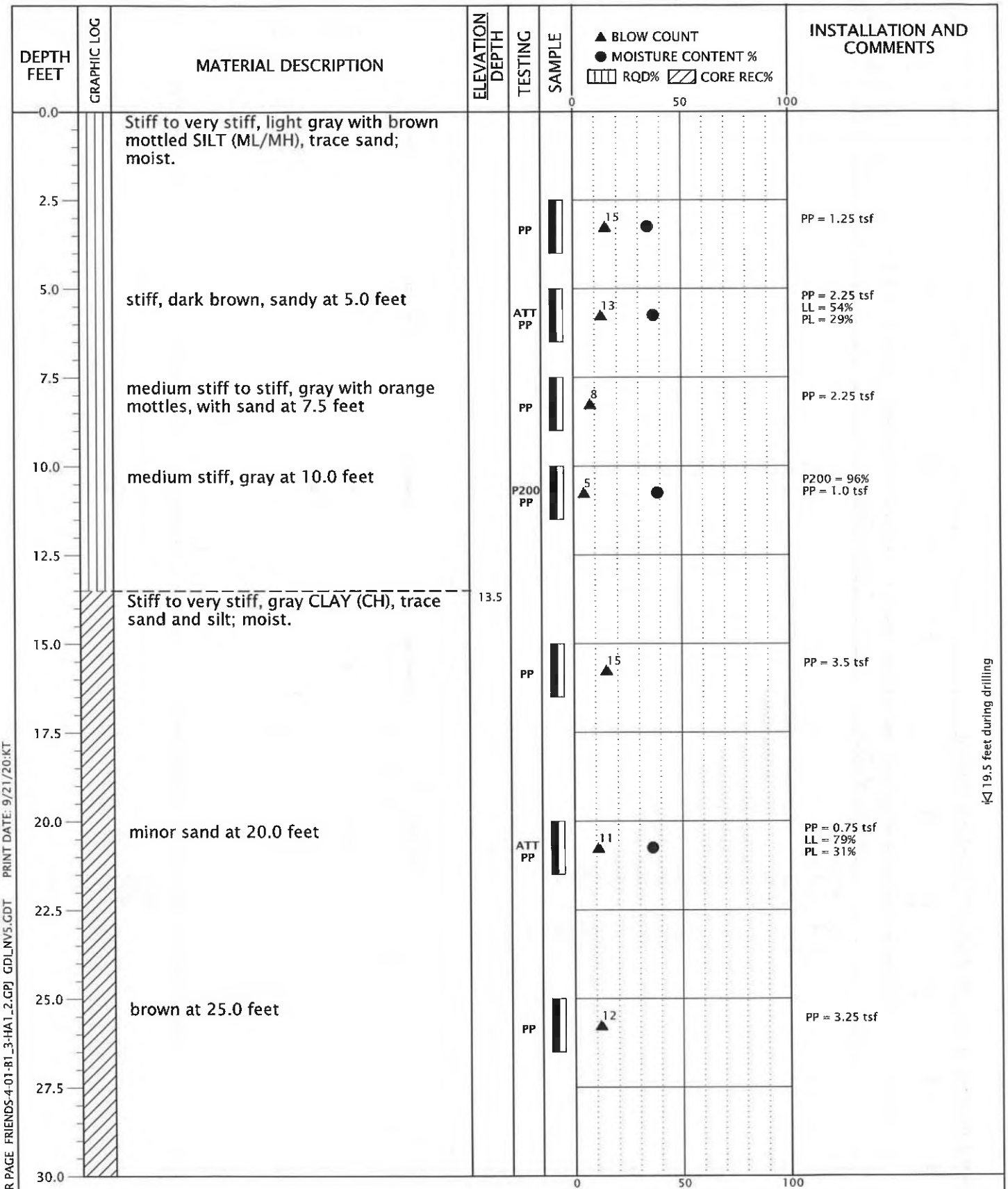
SOIL CLASSIFICATION SYSTEM

TABLE A-2



DRILLED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: L. Gose

COMPLETED: 06/25/20

BORING METHOD: solid-stem auger (see document text)

BORING BIT DIAMETER: 4 inches

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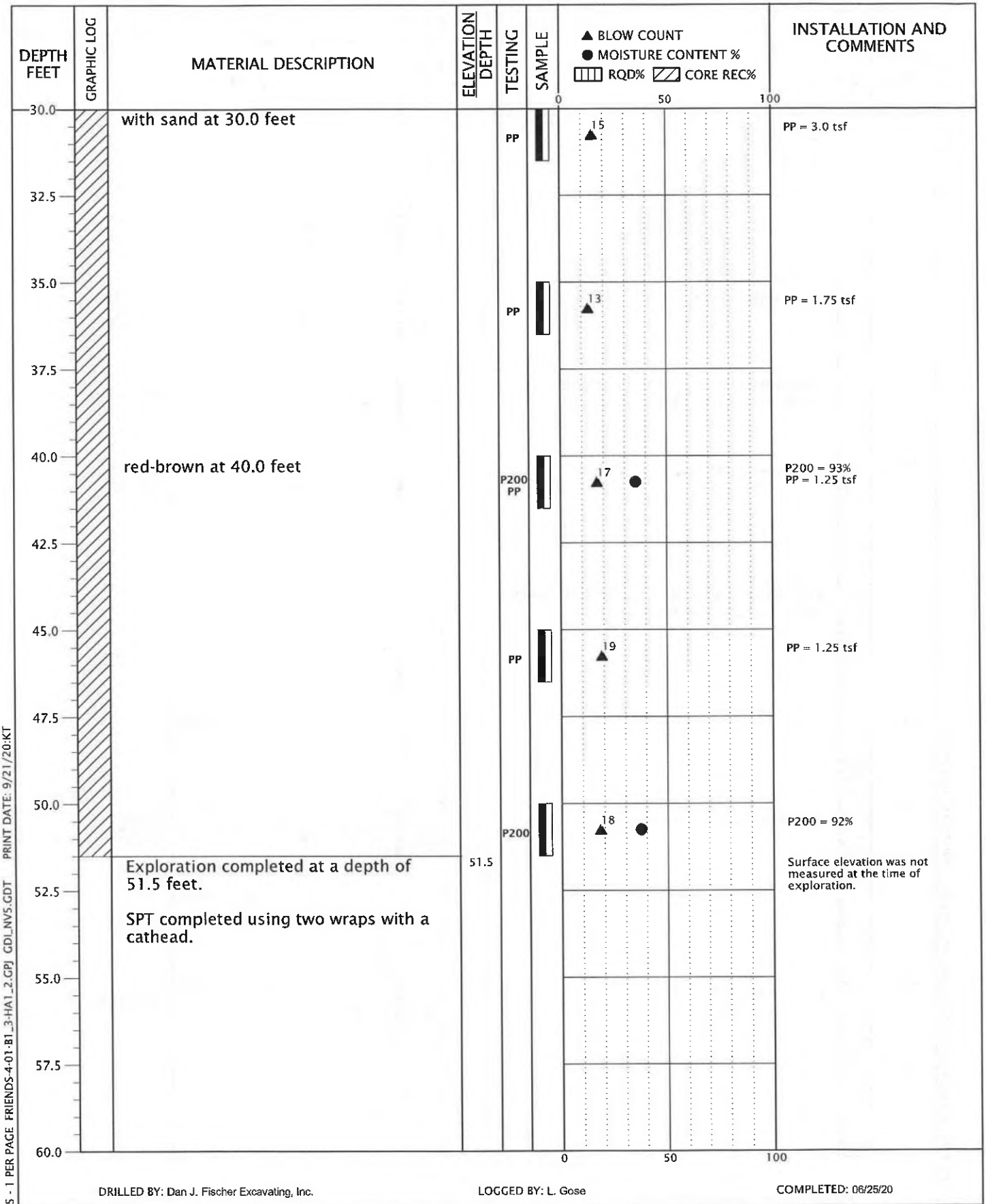
BORING B-1

SEPTEMBER 2020

FRIENDSVIEW – RCF PHASE 1
NEWBERG, OR

FIGURE A-1

BORING LOG - GDI-NV5 - 1 PER PAGE FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/21/20:KT



DRILLED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: L. Gose

COMPLETED: 06/25/20

BORING METHOD: solid-stem auger (see document text)

BORING BIT DIAMETER: 4 inches

BORING LOG - GDI-NV5 - 1 PER PAGE FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/21/20:KT

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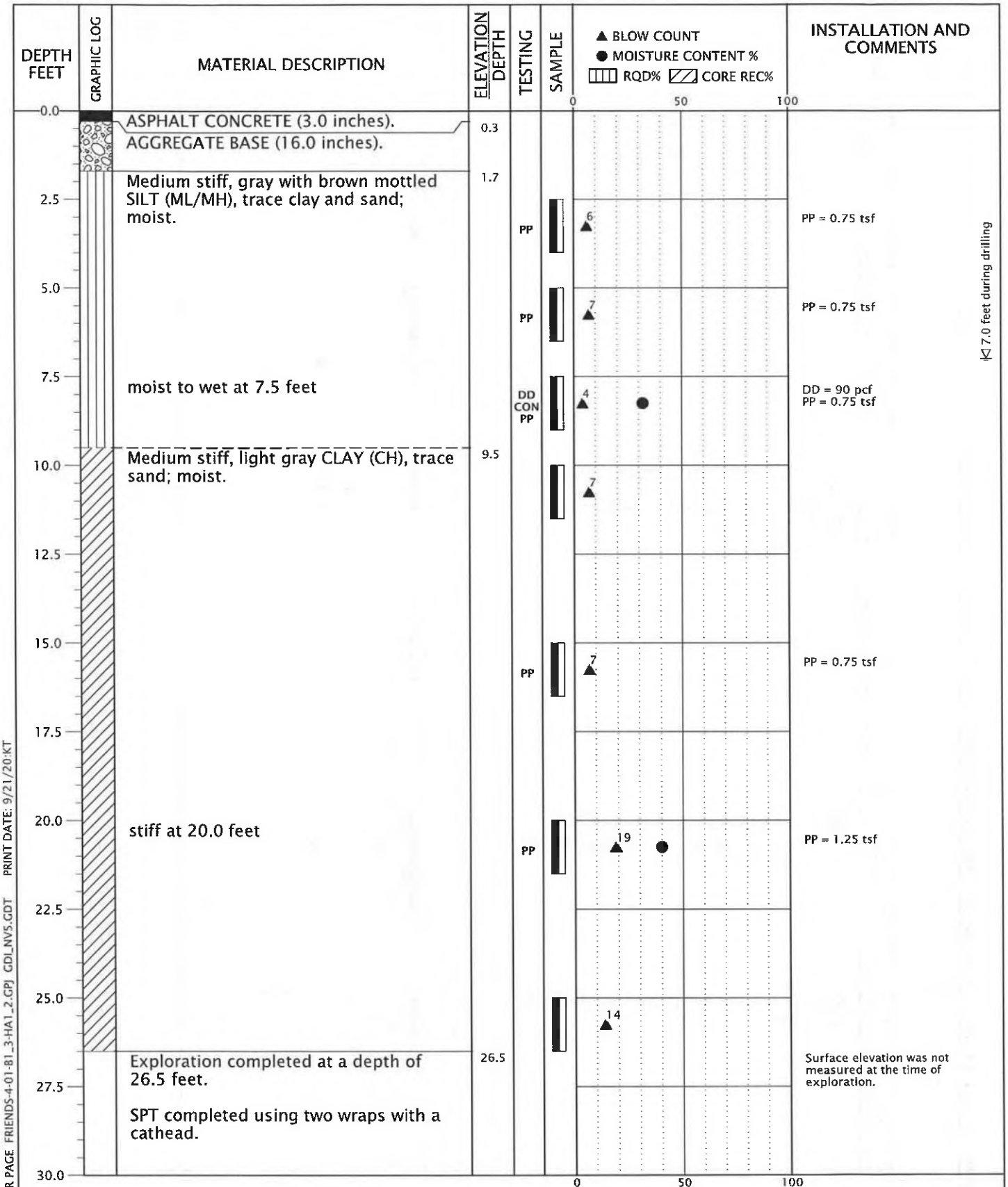
SEPTEMBER 2020

BORING B-1
(continued)

FRIENDSVIEW - RCF PHASE 1
NEWBERG, OR

FIGURE A-1



DRILLED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: L. Gose

COMPLETED: 06/25/20

BORING METHOD: solid-stem auger (see document text)

BORING BIT DIAMETER: 4 inches

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FRIENDS-4-01

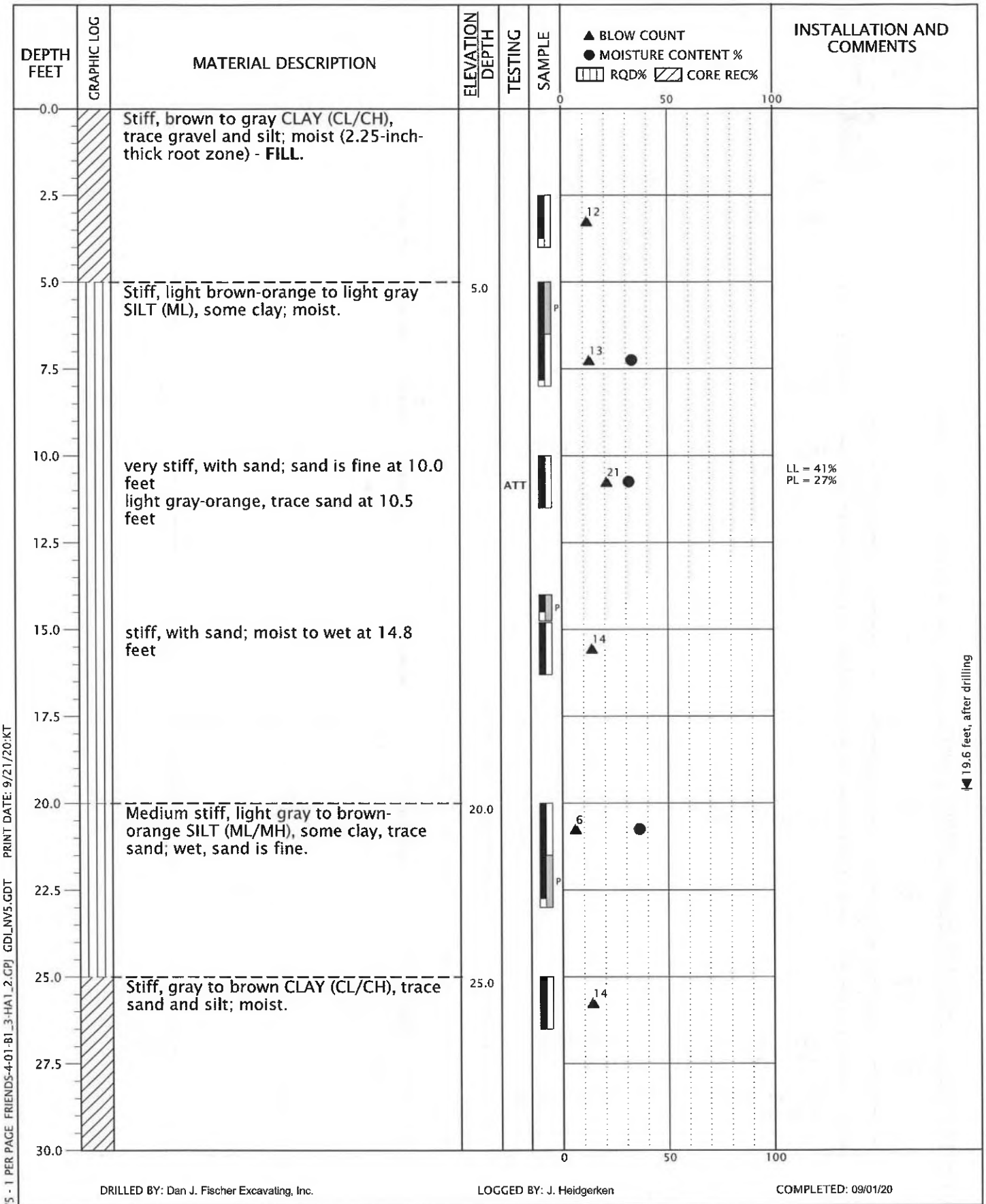
BORING B-2

SEPTEMBER 2020

FRIENDSVIEW – RCF PHASE 1
NEWBERG, OR

FIGURE A-2

BORING LOG - GDI-NV5 - 1 PER PAGE FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/21/20:KT



DRILLED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: J. Heidgerken

COMPLETED: 09/01/20

BORING METHOD: solid-stem auger (see document text)

BORING BIT DIAMETER: 4 inches

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FRIENDS-4-01

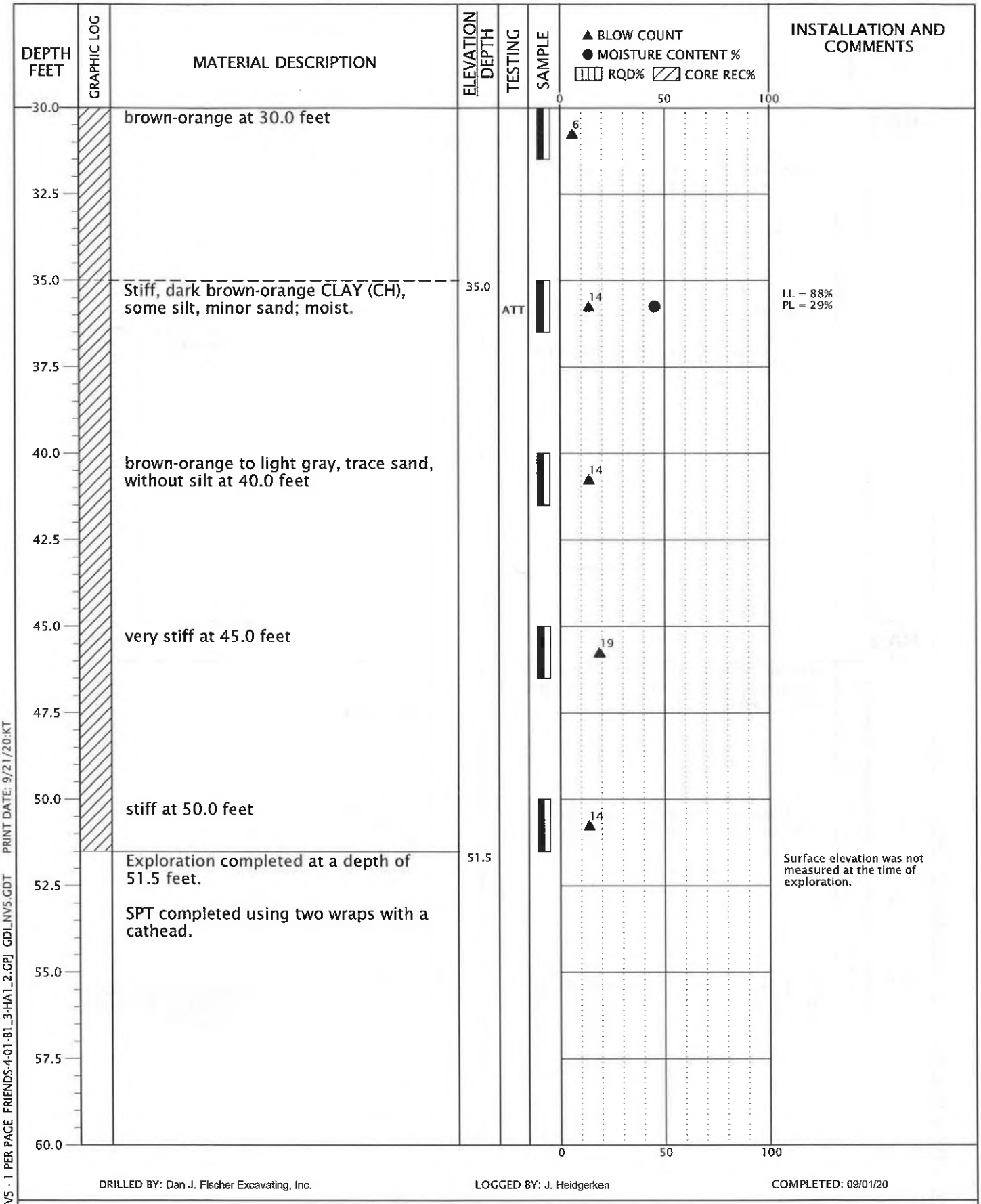
SEPTEMBER 2020

BORING B-3

FRIENDSVIEW – RCF PHASE 1
NEWBERG, OR

FIGURE A-3

BORING LOG - GDI-NV5 - 1 PER PAGE FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/21/20:KT



DRILLED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: J. Heidgerken

COMPLETED: 09/01/20

BORING METHOD: solid-stem auger (see document text)

BORING BIT DIAMETER: 4 inches

GEODESIGN INC
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FRIENDS-4-01

BORING B-3
(continued)

SEPTEMBER 2020

FRIENDSVIEW - RCF PHASE 1
NEWBERG, OR

FIGURE A-3

BORING LOG - GDI-NV5 - 1 PER PAGE FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/21/20:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION / DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT %	COMMENTS
HA-1						0 50 100	
0.0		Medium stiff, gray-brown CLAY (CL), minor silt and sand, trace organics (rootlets); moist - **FILL.**			⊠	●	
2.5		with sand, trace gravel at 2.5 feet			⊠		
5.0		dark brown, sandy; moist to wet at 5.0 feet	5.5		⊠		Surface elevation was not measured at the time of exploration.
		Exploration terminated at a depth of 5.5 feet due to refusal on gravel.					
7.5							
10.0							
12.5							
HA-2						0 50 100	
0.0		Medium stiff, brown CLAY (CL), minor silt and sand, trace organics (rootlets); moist - **FILL.**			⊠	●	
2.5							
5.0		Medium stiff, brown-gray with orange mottled SILT (ML/MH), trace clay; moist.	4.5		⊠	●	
7.5					⊠		
10.0		Exploration completed at a depth of 10.0 feet.	10.0		⊠		Surface elevation was not measured at the time of exploration.
12.5							
						0 50 100	

DRILLED BY: GeoDesign, Inc. staff | LOGGED BY: L. Gose | COMPLETED: 06/25/20

BORING METHOD: hand auger (see document text) | BORING BIT DIAMETER: 3 inches

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FRIENDS-4-01

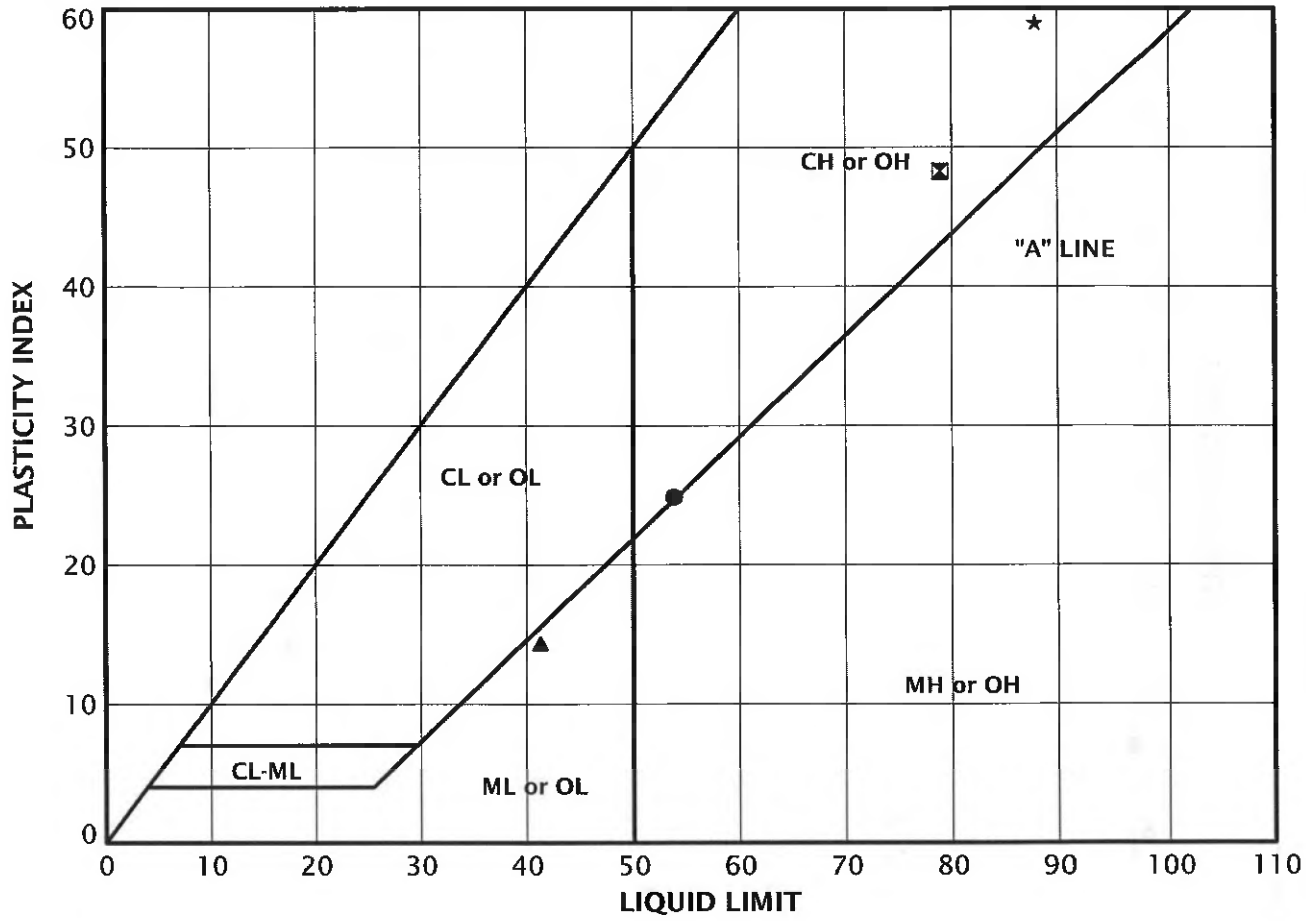
SEPTEMBER 2020

BORING

FRIENDSVIEW – RCF PHASE 1
NEWBERG, OR

FIGURE A-4

BORING LOG - GDI-NV5 - 2 PER PAGE FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/17/20:KT



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
●	B-1	5.0	37	54	29	25
⊠	B-1	20.0	40	79	31	48
▲	B-3	10.0	31	41	27	14
★	B-3	35.0	45	88	29	59

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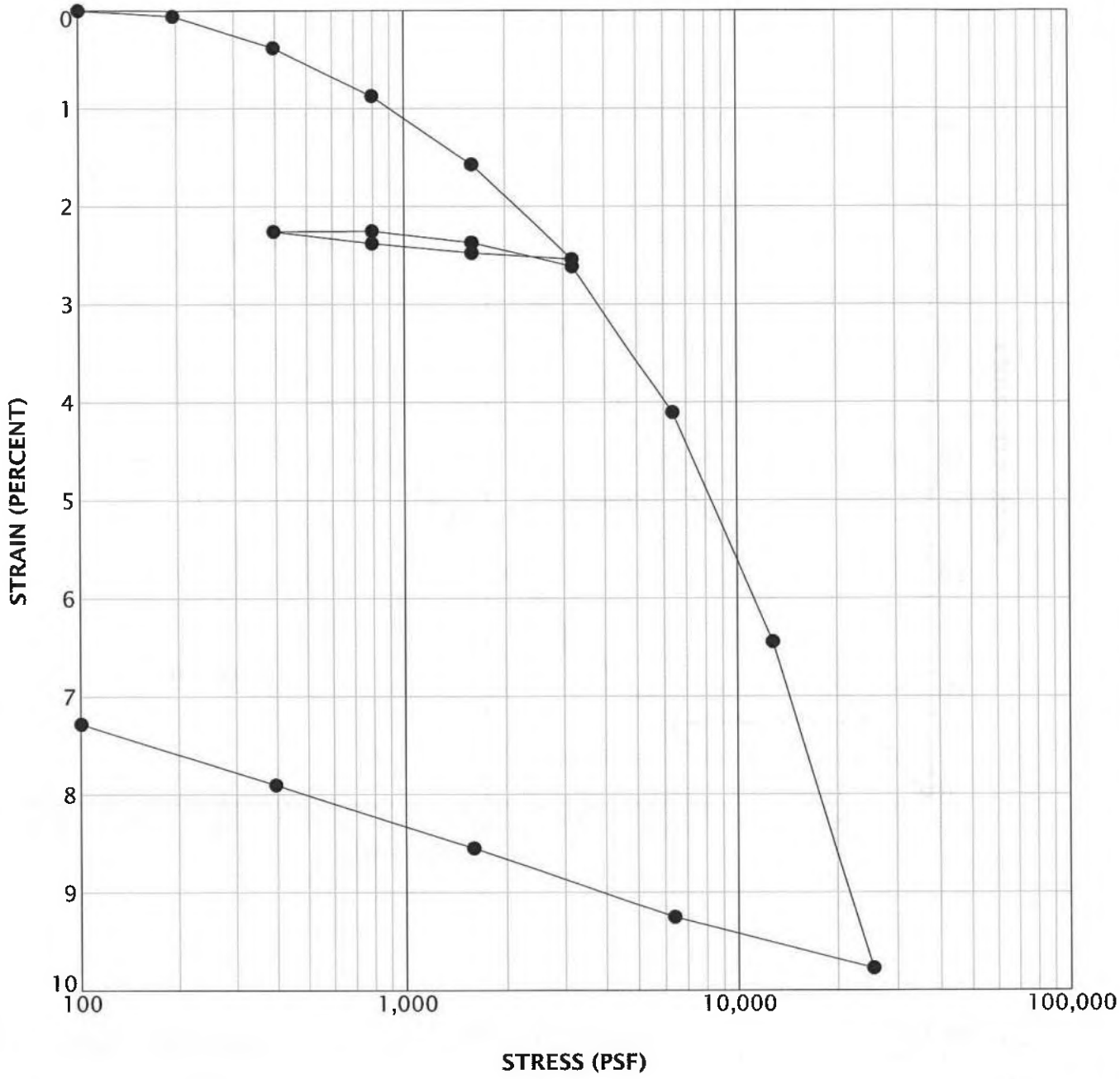
FRIENDS-4-01

ATTERBERG LIMITS TEST RESULTS

SEPTEMBER 2020

FRIENDSVIEW – RCF PHASE 1
NEWBERG, OR

FIGURE A-5



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)
●	B-2	7.5	32	90

GeoDesign Inc An NV5 Company	FRIENDS-4-01	**CONSOLIDATION TEST RESULTS**	
	SEPTEMBER 2020	FRIENDSVIEW - RCF PHASE 1 NEWBERG, OR	**FIGURE A-6**

CONSOL_STRAIN_100K FRIENDS-4-01-B1_3-HA1_2.GPJ GEODESIGN.GDT PRINT DATE: 9/17/20:KT

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	2.5		34							
B-1	5.0		37					54	29	25
B-1	10.0		39				96			
B-1	20.0		36					79	31	48
B-1	40.0		35				93			
B-1	50.0		37				92			
B-2	7.5		32	90						
B-2	20.0		40							
B-3	6.5		33							
B-3	10.0		31					41	27	14
B-3	20.0		36							
B-3	35.0		45					88	29	59
HA-1	1.0		25							
HA-2	1.5		26							
HA-2	4.5		27							

LAB SUMMARY - GDI-NV5 FRIENDS-4-01-B1_3-HA1_2.GPJ GDI_NV5.GDT PRINT DATE: 9/17/20:KT

GEODESIGN INC AN NV5 COMPANY

FRIENDS-4-01

SEPTEMBER 2020

SUMMARY OF LABORATORY DATA

FRIENDSVIEW – RCF PHASE 1
NEWBERG, OR

FIGURE A-7

APPENDIX B

APPENDIX B

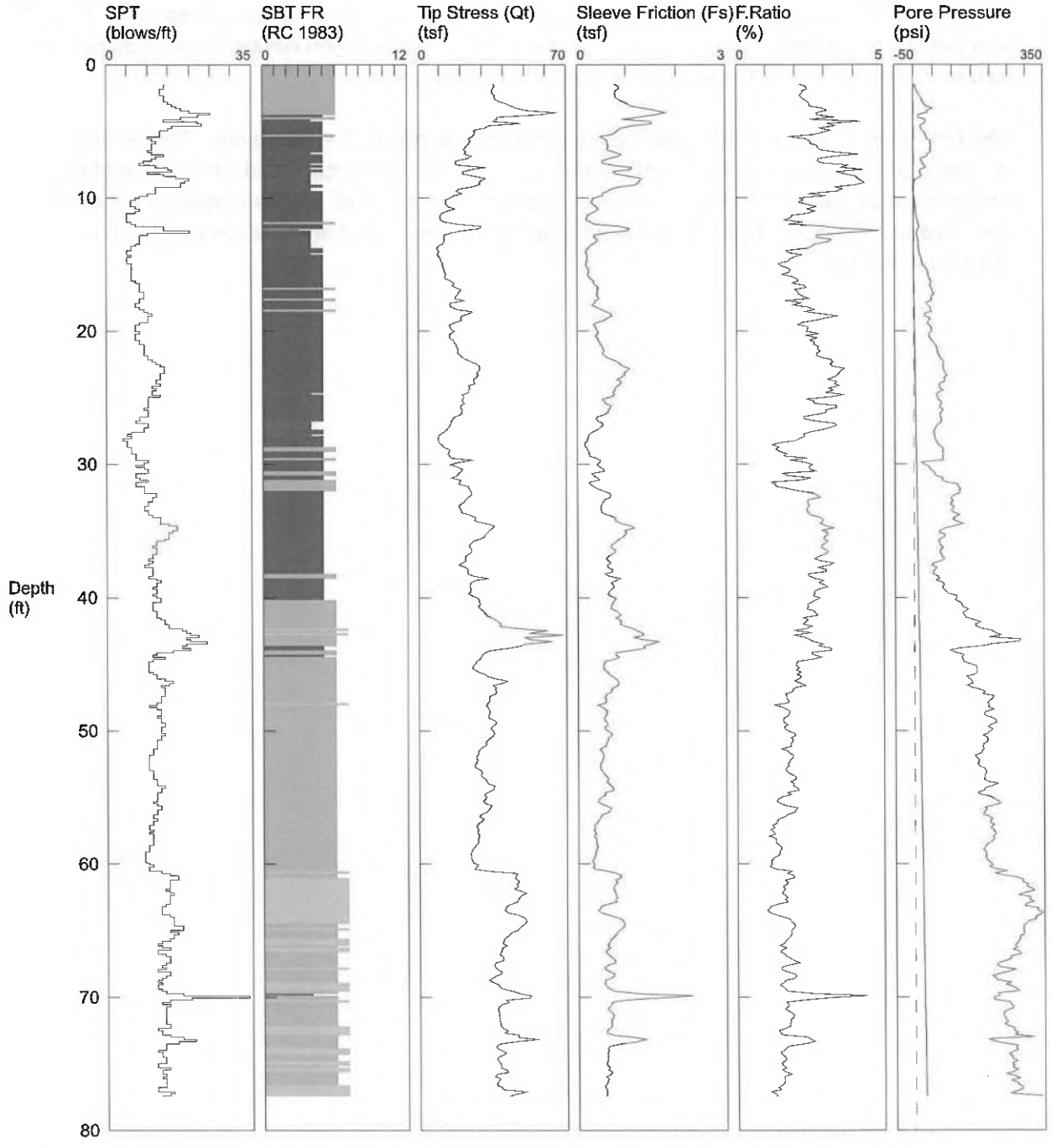
CONE PENETRATION TESTING

Our subsurface exploration program included one CPT (CPT-1) to a depth of approximately 77.4 feet BGS. Figure 2 shows the location of the CPT relative to existing site features. The CPT was performed in general accordance with ASTM D5778 by Oregon Geotechnical Explorations of Keizer, Oregon. The CPT results are presented in this appendix.

The CPT is an in-situ test that provides characterizes subsurface stratigraphy. The testing includes advancing a 35.6-millimeter-diameter cone equipped with a load cell and a friction sleeve through the soil profile. The cone is advanced at a rate of approximately 2 centimeters per second. Tip resistance, sleeve friction, and pore pressure at are typically recorded at 0.1-meter intervals.

GeoDesign / CPT-1 / 1301 Fulton St Newberg

OPERATOR: OGE BAK
CONE ID: DPG1211
HOLE NUMBER: CPT-1
TEST DATE: 6/25/2020 8:23:31 AM
TOTAL DEPTH: 77.428 ft



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

GeoDesign / CPT-1 / 1301 Fulton St Newberg

OPERATOR: OGE BAK
CONE ID: DPG1211
HOLE NUMBER: CPT-1
TEST DATE: 6/25/2020 8:23:31 AM
TOTAL DEPTH: 77.428 ft

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
1.476	35.28	0.7670	2.174	4.016	14	6	sandy silt to clayey silt
1.640	35.79	0.8548	2.388	4.664	14	6	sandy silt to clayey silt
1.804	34.99	0.8494	2.428	6.255	13	6	sandy silt to clayey silt
1.969	34.86	0.7959	2.283	8.496	13	6	sandy silt to clayey silt
2.133	34.73	0.7800	2.246	12.012	13	6	sandy silt to clayey silt
2.297	35.95	0.7830	2.178	15.155	14	6	sandy silt to clayey silt
2.461	35.69	0.7965	2.232	20.086	14	6	sandy silt to clayey silt
2.625	36.52	0.8526	2.335	21.598	14	6	sandy silt to clayey silt
2.789	38.43	0.9486	2.468	23.403	15	6	sandy silt to clayey silt
2.953	41.97	1.0500	2.502	27.197	16	6	sandy silt to clayey silt
3.117	43.92	1.1082	2.523	33.407	17	6	sandy silt to clayey silt
3.281	46.55	1.3794	2.963	49.753	18	6	sandy silt to clayey silt
3.445	51.25	1.5957	3.114	35.819	20	6	sandy silt to clayey silt
3.609	64.93	1.8015	2.775	34.706	25	6	sandy silt to clayey silt
3.773	57.41	1.5893	2.769	13.612	22	6	sandy silt to clayey silt
3.937	37.39	1.2493	3.341	11.351	18	5	clayey silt to silty clay
4.101	36.89	0.9375	2.542	29.353	14	6	sandy silt to clayey silt
4.265	34.97	1.4874	4.253	31.964	22	4	silty clay to clay
4.429	48.07	1.5151	3.152	25.674	23	5	clayey silt to silty clay
4.593	33.33	1.1300	3.390	17.776	16	5	clayey silt to silty clay
4.757	31.30	0.8980	2.869	18.842	15	5	clayey silt to silty clay
4.921	26.18	0.8445	3.226	22.327	13	5	clayey silt to silty clay
5.085	26.61	0.7881	2.962	28.348	13	5	clayey silt to silty clay
5.249	26.48	0.7115	2.687	30.595	13	5	clayey silt to silty clay
5.413	25.53	0.4638	1.816	33.125	10	6	sandy silt to clayey silt
5.577	23.66	0.5642	2.385	35.183	11	5	clayey silt to silty clay
5.741	24.46	0.6158	2.517	44.172	12	5	clayey silt to silty clay
5.906	23.83	0.6081	2.552	43.717	11	5	clayey silt to silty clay
6.070	22.95	0.6371	2.776	45.529	11	5	clayey silt to silty clay
6.234	22.29	0.6242	2.800	43.637	11	5	clayey silt to silty clay
6.398	21.57	0.6205	2.876	43.250	10	5	clayey silt to silty clay
6.562	22.48	0.7579	3.372	44.519	11	5	clayey silt to silty clay
6.726	21.87	0.9095	4.158	35.294	14	4	silty clay to clay
6.890	24.94	0.8435	3.382	34.917	12	5	clayey silt to silty clay
7.054	23.14	0.6546	2.829	18.085	11	5	clayey silt to silty clay
7.218	18.39	0.5139	2.794	19.819	9	5	clayey silt to silty clay
7.382	17.56	0.5124	2.917	23.591	8	5	clayey silt to silty clay
7.546	18.57	0.7093	3.819	26.664	12	4	silty clay to clay
7.710	31.22	1.1234	3.599	32.472	15	5	clayey silt to silty clay
7.874	25.16	1.0855	4.314	16.279	16	4	silty clay to clay
8.038	21.43	0.7407	3.456	15.907	10	5	clayey silt to silty clay
8.202	21.16	0.7835	3.704	17.965	14	4	silty clay to clay
8.366	25.92	1.0534	4.064	19.854	17	4	silty clay to clay
8.530	31.65	1.3153	4.156	9.758	20	4	silty clay to clay

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
8.694	29.90	1.2691	4.245	3.448	19	4	silty clay to clay
8.858	28.74	1.2594	4.382	0.890	18	4	silty clay to clay
9.022	28.98	1.1859	4.092	-0.025	18	4	silty clay to clay
9.186	25.20	0.8599	3.413	-0.885	12	5	clayey silt to silty clay
9.350	19.19	0.6965	3.629	-1.196	12	4	silty clay to clay
9.514	18.18	0.6266	3.446	-0.500	12	4	silty clay to clay
9.678	20.55	0.5181	2.521	0.088	10	5	clayey silt to silty clay
9.843	17.06	0.5195	3.045	0.596	8	5	clayey silt to silty clay
10.007	15.20	0.3303	2.173	1.372	7	5	clayey silt to silty clay
10.171	13.07	0.3012	2.305	1.935	6	5	clayey silt to silty clay
10.335	13.32	0.2858	2.146	2.669	6	5	clayey silt to silty clay
10.499	13.20	0.3211	2.432	3.430	6	5	clayey silt to silty clay
10.663	14.15	0.3870	2.734	4.307	7	5	clayey silt to silty clay
10.827	17.33	0.4247	2.450	4.933	8	5	clayey silt to silty clay
10.991	13.95	0.3750	2.689	5.428	7	5	clayey silt to silty clay
11.155	11.37	0.2816	2.477	5.870	5	5	clayey silt to silty clay
11.319	10.74	0.2052	1.911	6.649	5	5	clayey silt to silty clay
11.483	10.21	0.1911	1.872	7.627	5	5	clayey silt to silty clay
11.647	10.87	0.1802	1.658	8.921	5	5	clayey silt to silty clay
11.811	12.33	0.2765	2.243	10.135	6	5	clayey silt to silty clay
11.975	18.93	0.3490	1.844	12.024	7	6	sandy silt to clayey silt
12.139	29.46	0.8782	2.981	14.379	14	5	clayey silt to silty clay
12.303	29.09	1.0669	3.667	11.675	14	5	clayey silt to silty clay
12.467	21.09	1.0253	4.862	8.815	20	3	clay
12.631	15.48	0.5725	3.699	7.375	10	4	silty clay to clay
12.795	12.29	0.3392	2.761	8.011	8	4	silty clay to clay
12.959	12.42	0.3413	2.747	9.788	8	4	silty clay to clay
13.123	12.48	0.4061	3.255	11.301	8	4	silty clay to clay
13.287	12.38	0.3938	3.179	11.710	8	4	silty clay to clay
13.451	11.61	0.3139	2.705	12.090	7	4	silty clay to clay
13.615	9.69	0.2532	2.613	11.590	6	4	silty clay to clay
13.780	8.88	0.2176	2.451	12.273	6	4	silty clay to clay
13.944	9.49	0.1623	1.711	13.115	5	5	clayey silt to silty clay
14.108	9.60	0.1700	1.770	14.087	5	5	clayey silt to silty clay
14.272	9.00	0.2009	2.232	15.510	6	4	silty clay to clay
14.436	9.99	0.2005	2.006	17.437	5	5	clayey silt to silty clay
14.600	10.67	0.1946	1.823	19.146	5	5	clayey silt to silty clay
14.764	10.73	0.1910	1.780	20.608	5	5	clayey silt to silty clay
14.928	11.66	0.1661	1.425	22.287	6	5	clayey silt to silty clay
15.092	11.57	0.1754	1.516	23.840	6	5	clayey silt to silty clay
15.256	11.79	0.2041	1.731	31.215	6	5	clayey silt to silty clay
15.420	12.35	0.2269	1.837	33.477	6	5	clayey silt to silty clay
15.584	12.63	0.2278	1.804	36.070	6	5	clayey silt to silty clay
15.748	13.23	0.2065	1.562	36.673	6	5	clayey silt to silty clay
15.912	12.40	0.2356	1.900	37.528	6	5	clayey silt to silty clay
16.076	13.17	0.2711	2.058	40.433	6	5	clayey silt to silty clay
16.240	15.41	0.3280	2.128	43.448	7	5	clayey silt to silty clay
16.404	16.99	0.3247	1.911	43.224	8	5	clayey silt to silty clay
16.568	16.16	0.3769	2.332	40.498	8	5	clayey silt to silty clay
16.732	17.63	0.4235	2.402	45.009	8	5	clayey silt to silty clay
16.896	20.23	0.4047	2.001	46.964	8	6	sandy silt to clayey silt
17.060	19.28	0.4079	2.116	46.858	9	5	clayey silt to silty clay
17.224	18.75	0.3961	2.113	52.185	9	5	clayey silt to silty clay

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
17.388	17.79	0.4041	2.271	45.139	9	5	clayey silt to silty clay
17.552	17.48	0.4352	2.490	45.295	8	5	clayey silt to silty clay
17.717	21.34	0.3670	1.719	44.129	8	6	sandy silt to clayey silt
17.881	15.42	0.3415	2.215	29.544	7	5	clayey silt to silty clay
18.045	15.13	0.2897	1.914	35.166	7	5	clayey silt to silty clay
18.209	15.92	0.3869	2.430	41.036	8	5	clayey silt to silty clay
18.373	18.39	0.4910	2.669	43.574	9	5	clayey silt to silty clay
18.537	25.38	0.5950	2.344	44.617	10	6	sandy silt to clayey silt
18.701	23.50	0.6858	2.918	28.330	11	5	clayey silt to silty clay
18.865	20.56	0.7068	3.438	28.047	10	5	clayey silt to silty clay
19.029	19.93	0.6104	3.063	40.988	10	5	clayey silt to silty clay
19.193	20.39	0.5576	2.734	40.576	10	5	clayey silt to silty clay
19.357	17.35	0.3897	2.247	33.731	8	5	clayey silt to silty clay
19.521	14.93	0.3133	2.099	37.935	7	5	clayey silt to silty clay
19.685	15.04	0.3703	2.462	44.056	7	5	clayey silt to silty clay
19.849	15.59	0.3803	2.440	45.358	7	5	clayey silt to silty clay
20.013	17.19	0.4132	2.404	45.750	8	5	clayey silt to silty clay
20.177	15.10	0.4219	2.794	38.063	7	5	clayey silt to silty clay
20.341	15.01	0.3591	2.393	39.719	7	5	clayey silt to silty clay
20.505	14.77	0.4075	2.758	40.408	7	5	clayey silt to silty clay
20.669	16.73	0.4208	2.515	46.160	8	5	clayey silt to silty clay
20.833	16.92	0.4521	2.672	50.060	8	5	clayey silt to silty clay
20.997	17.81	0.4717	2.649	54.834	9	5	clayey silt to silty clay
21.161	18.04	0.5065	2.808	58.134	9	5	clayey silt to silty clay
21.325	18.80	0.5218	2.776	59.935	9	5	clayey silt to silty clay
21.490	18.83	0.5405	2.871	60.915	9	5	clayey silt to silty clay
21.654	18.54	0.5111	2.756	61.561	9	5	clayey silt to silty clay
21.818	19.92	0.5448	2.735	64.702	10	5	clayey silt to silty clay
21.982	20.84	0.6057	2.906	67.351	10	5	clayey silt to silty clay
22.146	22.59	0.7312	3.236	73.334	11	5	clayey silt to silty clay
22.310	25.10	0.8273	3.296	77.571	12	5	clayey silt to silty clay
22.474	27.52	0.8842	3.213	74.905	13	5	clayey silt to silty clay
22.638	28.61	0.9407	3.288	76.664	14	5	clayey silt to silty clay
22.802	28.88	1.0654	3.689	76.053	14	5	clayey silt to silty clay
22.966	28.51	1.0210	3.581	77.360	14	5	clayey silt to silty clay
23.130	27.29	0.9590	3.515	81.084	13	5	clayey silt to silty clay
23.294	27.92	0.9657	3.459	86.308	13	5	clayey silt to silty clay
23.458	27.31	0.9069	3.320	79.199	13	5	clayey silt to silty clay
23.622	25.95	0.8102	3.122	79.898	12	5	clayey silt to silty clay
23.786	26.02	0.8963	3.445	78.918	12	5	clayey silt to silty clay
23.950	26.47	0.8849	3.342	65.986	13	5	clayey silt to silty clay
24.114	23.58	0.8271	3.508	66.039	11	5	clayey silt to silty clay
24.278	24.07	0.7616	3.164	67.557	12	5	clayey silt to silty clay
24.442	23.48	0.7753	3.301	74.183	11	5	clayey silt to silty clay
24.606	23.64	0.7250	3.066	63.227	11	5	clayey silt to silty clay
24.770	20.76	0.7595	3.659	56.872	13	4	silty clay to clay
24.934	21.37	0.6949	3.252	62.074	10	5	clayey silt to silty clay
25.098	20.83	0.5004	2.403	62.255	10	5	clayey silt to silty clay
25.262	20.46	0.5429	2.654	69.115	10	5	clayey silt to silty clay
25.427	21.51	0.5732	2.665	71.771	10	5	clayey silt to silty clay
25.591	20.19	0.6935	3.435	67.235	10	5	clayey silt to silty clay
25.755	19.81	0.6753	3.409	67.577	9	5	clayey silt to silty clay
25.919	20.75	0.6360	3.065	74.696	10	5	clayey silt to silty clay

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
26.083	20.44	0.6309	3.087	69.419	10	5	clayey silt to silty clay
26.247	20.04	0.5541	2.765	67.733	10	5	clayey silt to silty clay
26.411	17.49	0.4021	2.299	67.426	8	5	clayey silt to silty clay
26.575	16.36	0.3761	2.298	71.464	8	5	clayey silt to silty clay
26.739	15.55	0.4135	2.659	70.766	7	5	clayey silt to silty clay
26.903	15.31	0.5115	3.341	66.813	10	4	silty clay to clay
27.067	15.19	0.5204	3.425	58.842	10	4	silty clay to clay
27.231	14.05	0.4499	3.202	56.030	9	4	silty clay to clay
27.395	13.50	0.3968	2.941	54.030	9	4	silty clay to clay
27.559	12.23	0.3111	2.544	49.871	6	5	clayey silt to silty clay
27.723	10.49	0.2393	2.282	53.329	5	5	clayey silt to silty clay
27.887	9.49	0.2222	2.342	53.467	6	4	silty clay to clay
28.051	9.38	0.2015	2.149	54.452	4	5	clayey silt to silty clay
28.215	9.52	0.1918	2.015	56.952	5	5	clayey silt to silty clay
28.379	9.83	0.1426	1.451	59.614	5	5	clayey silt to silty clay
28.543	11.20	0.1372	1.225	64.747	5	5	clayey silt to silty clay
28.707	11.79	0.1675	1.421	70.409	6	5	clayey silt to silty clay
28.871	14.37	0.1902	1.324	76.088	6	6	sandy silt to clayey silt
29.035	14.83	0.2181	1.471	73.716	6	6	sandy silt to clayey silt
29.199	13.96	0.2378	1.703	75.234	7	5	clayey silt to silty clay
29.364	14.87	0.2397	1.612	75.126	7	5	clayey silt to silty clay
29.528	15.49	0.3689	2.382	74.073	7	5	clayey silt to silty clay
29.692	25.25	0.4708	1.865	76.679	10	6	sandy silt to clayey silt
29.856	18.71	0.4401	2.353	16.781	9	5	clayey silt to silty clay
30.020	15.22	0.3935	2.584	28.288	7	5	clayey silt to silty clay
30.184	18.38	0.4542	2.470	39.234	9	5	clayey silt to silty clay
30.348	20.65	0.5186	2.511	40.264	10	5	clayey silt to silty clay
30.512	20.09	0.5428	2.702	47.011	10	5	clayey silt to silty clay
30.676	18.82	0.2945	1.565	53.417	7	6	sandy silt to clayey silt
30.840	18.33	0.3128	1.707	55.131	7	6	sandy silt to clayey silt
31.004	15.79	0.3963	2.510	73.746	8	5	clayey silt to silty clay
31.168	19.85	0.4386	2.210	72.442	10	5	clayey silt to silty clay
31.332	19.48	0.2279	1.170	82.081	7	6	sandy silt to clayey silt
31.496	19.36	0.2527	1.306	112.578	7	6	sandy silt to clayey silt
31.660	23.35	0.3134	1.342	112.829	9	6	sandy silt to clayey silt
31.824	23.74	0.4184	1.763	119.066	9	6	sandy silt to clayey silt
31.988	24.34	0.5062	2.080	116.609	9	6	sandy silt to clayey silt
32.152	25.03	0.6504	2.598	117.338	12	5	clayey silt to silty clay
32.316	24.59	0.6746	2.744	102.785	12	5	clayey silt to silty clay
32.480	23.05	0.6614	2.870	95.314	11	5	clayey silt to silty clay
32.644	22.07	0.5464	2.476	97.606	11	5	clayey silt to silty clay
32.808	21.68	0.5237	2.416	98.740	10	5	clayey silt to silty clay
32.972	20.02	0.4907	2.451	92.897	10	5	clayey silt to silty clay
33.136	19.16	0.4738	2.472	100.632	9	5	clayey silt to silty clay
33.301	19.42	0.4683	2.411	100.659	9	5	clayey silt to silty clay
33.465	20.10	0.4811	2.394	95.282	10	5	clayey silt to silty clay
33.629	20.39	0.4996	2.450	102.569	10	5	clayey silt to silty clay
33.793	23.70	0.5950	2.510	116.498	11	5	clayey silt to silty clay
33.957	26.67	0.7577	2.841	105.188	13	5	clayey silt to silty clay
34.121	26.24	0.7739	2.949	98.682	13	5	clayey silt to silty clay
34.285	26.84	0.7905	2.946	110.744	13	5	clayey silt to silty clay
34.449	31.92	0.9106	2.852	126.196	15	5	clayey silt to silty clay
34.613	35.59	1.0833	3.044	106.454	17	5	clayey silt to silty clay

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
34.777	34.50	1.1471	3.325	80.312	17	5	clayey silt to silty clay
34.941	33.29	0.9655	2.900	68.065	16	5	clayey silt to silty clay
35.105	32.23	0.9990	3.099	63.906	15	5	clayey silt to silty clay
35.269	31.19	0.9717	3.115	79.016	15	5	clayey silt to silty clay
35.433	30.73	0.9266	3.015	78.126	15	5	clayey silt to silty clay
35.597	28.92	0.8606	2.976	66.997	14	5	clayey silt to silty clay
35.761	25.66	0.7989	3.114	62.659	12	5	clayey silt to silty clay
35.925	24.47	0.7395	3.022	66.006	12	5	clayey silt to silty clay
36.089	23.72	0.6863	2.894	67.874	11	5	clayey silt to silty clay
36.253	24.08	0.6968	2.894	74.299	12	5	clayey silt to silty clay
36.417	24.93	0.7617	3.056	68.499	12	5	clayey silt to silty clay
36.581	24.68	0.7701	3.120	65.285	12	5	clayey silt to silty clay
36.745	23.20	0.6940	2.992	69.909	11	5	clayey silt to silty clay
36.909	22.02	0.6177	2.805	71.065	11	5	clayey silt to silty clay
37.073	21.84	0.5830	2.670	78.239	10	5	clayey silt to silty clay
37.238	22.02	0.6272	2.849	70.869	11	5	clayey silt to silty clay
37.402	20.53	0.6775	3.300	51.595	10	5	clayey silt to silty clay
37.566	19.04	0.6049	3.177	44.622	9	5	clayey silt to silty clay
37.730	22.21	0.6173	2.779	56.812	11	5	clayey silt to silty clay
37.894	23.08	0.7059	3.058	53.452	11	5	clayey silt to silty clay
38.058	23.09	0.7010	3.036	48.170	11	5	clayey silt to silty clay
38.222	22.92	0.5591	2.440	47.773	11	5	clayey silt to silty clay
38.386	25.98	0.6407	2.466	59.400	10	6	sandy silt to clayey silt
38.550	32.34	0.8603	2.660	64.582	12	6	sandy silt to clayey silt
38.714	26.35	0.7813	2.966	55.495	13	5	clayey silt to silty clay
38.878	24.52	0.6888	2.809	74.407	12	5	clayey silt to silty clay
39.042	24.09	0.7214	2.995	76.355	12	5	clayey silt to silty clay
39.206	23.94	0.7395	3.089	72.691	11	5	clayey silt to silty clay
39.370	24.44	0.6871	2.811	74.631	12	5	clayey silt to silty clay
39.534	24.30	0.6428	2.645	80.473	12	5	clayey silt to silty clay
39.698	23.38	0.6221	2.661	88.346	11	5	clayey silt to silty clay
39.862	25.10	0.6534	2.603	109.138	12	5	clayey silt to silty clay
40.026	27.60	0.7816	2.832	107.826	13	5	clayey silt to silty clay
40.190	28.18	0.7531	2.672	105.406	13	5	clayey silt to silty clay
40.354	28.43	0.7269	2.557	116.048	11	6	sandy silt to clayey silt
40.518	28.80	0.6940	2.410	122.265	11	6	sandy silt to clayey silt
40.682	27.78	0.6787	2.444	124.650	11	6	sandy silt to clayey silt
40.846	29.13	0.6930	2.379	138.531	11	6	sandy silt to clayey silt
41.011	30.24	0.7966	2.634	132.008	12	6	sandy silt to clayey silt
41.175	31.23	0.8379	2.683	124.555	12	6	sandy silt to clayey silt
41.339	31.84	0.8817	2.769	128.751	12	6	sandy silt to clayey silt
41.503	34.15	0.7776	2.277	134.239	13	6	sandy silt to clayey silt
41.667	36.13	0.8749	2.422	153.832	14	6	sandy silt to clayey silt
41.831	37.67	0.8855	2.351	173.147	14	6	sandy silt to clayey silt
41.995	38.53	0.8667	2.249	158.697	15	6	sandy silt to clayey silt
42.159	38.13	0.9750	2.557	160.260	15	6	sandy silt to clayey silt
42.323	46.81	1.1150	2.382	173.632	18	6	sandy silt to clayey silt
42.487	60.39	1.1914	1.973	202.925	19	7	silty sand to sandy silt
42.651	51.95	1.3140	2.529	212.494	20	6	sandy silt to clayey silt
42.815	67.90	1.3240	1.950	227.443	22	7	silty sand to sandy silt
42.979	49.72	1.1378	2.289	198.087	19	6	sandy silt to clayey silt
43.143	52.60	1.3036	2.478	282.699	20	6	sandy silt to clayey silt
43.307	63.01	1.6393	2.602	278.656	24	6	sandy silt to clayey silt

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
43.471	50.11	1.4758	2.945	205.696	19	6	sandy silt to clayey silt
43.635	48.08	1.3396	2.786	183.771	18	6	sandy silt to clayey silt
43.799	41.95	1.3506	3.219	116.398	20	5	clayey silt to silty clay
43.963	33.74	1.0835	3.212	91.487	16	5	clayey silt to silty clay
44.127	30.91	0.7853	2.541	104.012	12	6	sandy silt to clayey silt
44.291	29.58	0.7675	2.594	126.218	11	6	sandy silt to clayey silt
44.455	29.22	0.8464	2.897	122.494	14	5	clayey silt to silty clay
44.619	28.58	0.7423	2.597	124.836	11	6	sandy silt to clayey silt
44.783	26.96	0.5555	2.061	125.276	10	6	sandy silt to clayey silt
44.948	26.60	0.5371	2.020	137.162	10	6	sandy silt to clayey silt
45.112	25.51	0.5148	2.018	157.896	10	6	sandy silt to clayey silt
45.276	24.99	0.5282	2.114	162.547	10	6	sandy silt to clayey silt
45.440	26.43	0.5327	2.015	162.881	10	6	sandy silt to clayey silt
45.604	28.24	0.6142	2.175	162.062	11	6	sandy silt to clayey silt
45.768	31.16	0.6355	2.040	157.067	12	6	sandy silt to clayey silt
45.932	32.45	0.7116	2.193	134.280	12	6	sandy silt to clayey silt
46.096	36.41	0.7722	2.121	140.524	14	6	sandy silt to clayey silt
46.260	41.68	0.8187	1.964	146.208	16	6	sandy silt to clayey silt
46.424	39.00	0.8386	2.150	150.400	15	6	sandy silt to clayey silt
46.588	34.69	0.8157	2.352	135.104	13	6	sandy silt to clayey silt
46.752	36.23	0.7145	1.972	148.902	14	6	sandy silt to clayey silt
46.916	35.95	0.6849	1.905	170.418	14	6	sandy silt to clayey silt
47.080	36.44	0.6791	1.864	184.533	14	6	sandy silt to clayey silt
47.244	35.62	0.5844	1.641	178.122	14	6	sandy silt to clayey silt
47.408	33.10	0.5584	1.687	208.360	13	6	sandy silt to clayey silt
47.572	33.05	0.5577	1.687	204.834	13	6	sandy silt to clayey silt
47.736	32.97	0.5797	1.759	197.997	13	6	sandy silt to clayey silt
47.900	32.47	0.5593	1.723	191.797	12	6	sandy silt to clayey silt
48.064	31.54	0.3940	1.249	195.102	10	7	silty sand to sandy silt
48.228	32.02	0.4865	1.519	193.938	12	6	sandy silt to clayey silt
48.392	32.88	0.5569	1.694	208.312	13	6	sandy silt to clayey silt
48.556	33.21	0.5968	1.797	187.727	13	6	sandy silt to clayey silt
48.720	33.08	0.5786	1.749	181.273	13	6	sandy silt to clayey silt
48.885	32.45	0.5580	1.719	185.794	12	6	sandy silt to clayey silt
49.049	32.79	0.5194	1.584	206.405	13	6	sandy silt to clayey silt
49.213	35.18	0.5511	1.566	214.047	13	6	sandy silt to clayey silt
49.377	36.41	0.5812	1.596	215.735	14	6	sandy silt to clayey silt
49.541	35.43	0.6076	1.715	200.944	14	6	sandy silt to clayey silt
49.705	34.11	0.5448	1.597	192.074	13	6	sandy silt to clayey silt
49.869	33.83	0.5498	1.625	204.907	13	6	sandy silt to clayey silt
50.033	34.92	0.6117	1.752	198.658	13	6	sandy silt to clayey silt
50.197	35.48	0.6935	1.955	191.094	14	6	sandy silt to clayey silt
50.361	34.90	0.6865	1.967	178.982	13	6	sandy silt to clayey silt
50.525	33.45	0.6128	1.832	191.184	13	6	sandy silt to clayey silt
50.689	32.06	0.6109	1.906	191.606	12	6	sandy silt to clayey silt
50.853	31.26	0.5830	1.865	189.295	12	6	sandy silt to clayey silt
51.017	31.79	0.5723	1.801	179.816	12	6	sandy silt to clayey silt
51.181	30.23	0.5548	1.836	178.675	12	6	sandy silt to clayey silt
51.345	28.80	0.4322	1.501	180.690	11	6	sandy silt to clayey silt
51.509	28.03	0.4801	1.713	176.283	11	6	sandy silt to clayey silt
51.673	27.87	0.4979	1.786	174.556	11	6	sandy silt to clayey silt
51.837	27.24	0.5202	1.909	158.092	10	6	sandy silt to clayey silt
52.001	26.70	0.5064	1.896	159.705	10	6	sandy silt to clayey silt

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
52.165	27.40	0.4967	1.813	165.543	10	6	sandy silt to clayey silt
52.329	27.14	0.4816	1.775	167.656	10	6	sandy silt to clayey silt
52.493	26.34	0.4522	1.717	162.947	10	6	sandy silt to clayey silt
52.657	26.06	0.4551	1.747	167.885	10	6	sandy silt to clayey silt
52.822	27.22	0.4471	1.643	181.947	10	6	sandy silt to clayey silt
52.986	29.02	0.4810	1.658	186.380	11	6	sandy silt to clayey silt
53.150	29.50	0.5140	1.742	187.887	11	6	sandy silt to clayey silt
53.314	28.88	0.5455	1.889	183.774	11	6	sandy silt to clayey silt
53.478	29.80	0.5975	2.005	184.070	11	6	sandy silt to clayey silt
53.642	31.13	0.6181	1.986	181.706	12	6	sandy silt to clayey silt
53.806	31.70	0.5733	1.808	189.734	12	6	sandy silt to clayey silt
53.970	32.52	0.6253	1.923	219.718	12	6	sandy silt to clayey silt
54.134	35.49	0.6742	1.900	204.980	14	6	sandy silt to clayey silt
54.298	35.09	0.7167	2.043	183.080	13	6	sandy silt to clayey silt
54.462	34.09	0.7127	2.091	182.442	13	6	sandy silt to clayey silt
54.626	31.94	0.5410	1.694	163.849	12	6	sandy silt to clayey silt
54.790	30.43	0.5530	1.817	170.759	12	6	sandy silt to clayey silt
54.954	31.59	0.4839	1.532	199.577	12	6	sandy silt to clayey silt
55.118	30.98	0.4273	1.379	208.619	12	6	sandy silt to clayey silt
55.282	29.84	0.3989	1.337	220.286	11	6	sandy silt to clayey silt
55.446	31.23	0.4504	1.442	226.418	12	6	sandy silt to clayey silt
55.610	33.85	0.5598	1.654	204.842	13	6	sandy silt to clayey silt
55.774	33.22	0.6805	2.048	183.892	13	6	sandy silt to clayey silt
55.938	32.41	0.6476	1.998	188.355	12	6	sandy silt to clayey silt
56.102	31.45	0.6112	1.943	182.125	12	6	sandy silt to clayey silt
56.266	28.99	0.4950	1.708	177.886	11	6	sandy silt to clayey silt
56.430	28.17	0.4593	1.630	193.556	11	6	sandy silt to clayey silt
56.594	30.19	0.4302	1.425	203.065	12	6	sandy silt to clayey silt
56.759	29.42	0.3982	1.354	198.763	11	6	sandy silt to clayey silt
56.923	27.84	0.3706	1.331	199.753	11	6	sandy silt to clayey silt
57.087	27.13	0.3164	1.166	209.297	10	6	sandy silt to clayey silt
57.251	27.03	0.3383	1.251	198.768	10	6	sandy silt to clayey silt
57.415	27.61	0.3076	1.114	206.222	11	6	sandy silt to clayey silt
57.579	27.14	0.3287	1.211	209.330	10	6	sandy silt to clayey silt
57.743	27.78	0.3590	1.292	213.469	11	6	sandy silt to clayey silt
57.907	27.98	0.2987	1.067	205.852	11	6	sandy silt to clayey silt
58.071	27.64	0.3608	1.305	208.516	11	6	sandy silt to clayey silt
58.235	27.66	0.3617	1.307	203.967	11	6	sandy silt to clayey silt
58.399	27.56	0.3609	1.310	196.466	11	6	sandy silt to clayey silt
58.563	26.54	0.3714	1.399	187.757	10	6	sandy silt to clayey silt
58.727	25.86	0.3843	1.486	184.907	10	6	sandy silt to clayey silt
58.891	24.90	0.3708	1.490	177.816	10	6	sandy silt to clayey silt
59.055	24.45	0.3477	1.422	184.663	9	6	sandy silt to clayey silt
59.219	24.11	0.3485	1.446	186.988	9	6	sandy silt to clayey silt
59.383	24.21	0.3301	1.364	186.895	9	6	sandy silt to clayey silt
59.547	24.36	0.3007	1.234	185.603	9	6	sandy silt to clayey silt
59.711	24.56	0.2823	1.149	190.898	9	6	sandy silt to clayey silt
59.875	25.27	0.2918	1.154	198.085	10	6	sandy silt to clayey silt
60.039	27.49	0.3152	1.146	204.432	11	6	sandy silt to clayey silt
60.203	26.71	0.2896	1.084	194.805	10	6	sandy silt to clayey silt
60.367	25.87	0.3325	1.286	210.936	10	6	sandy silt to clayey silt
60.532	32.94	0.6043	1.835	241.538	13	6	sandy silt to clayey silt
60.696	45.95	0.7761	1.689	210.418	15	7	silty sand to sandy silt

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
60.860	45.40	0.8695	1.915	232.798	17	6	sandy silt to clayey silt
61.024	44.71	0.8604	1.925	272.989	17	6	sandy silt to clayey silt
61.188	46.17	0.7465	1.617	289.250	15	7	silty sand to sandy silt
61.352	46.91	0.7959	1.697	287.069	15	7	silty sand to sandy silt
61.516	45.52	0.7596	1.669	303.029	15	7	silty sand to sandy silt
61.680	46.45	0.7164	1.542	298.231	15	7	silty sand to sandy silt
61.844	44.38	0.7156	1.613	313.724	14	7	silty sand to sandy silt
62.008	47.36	0.7389	1.560	321.064	15	7	silty sand to sandy silt
62.172	50.10	0.7562	1.509	293.271	16	7	silty sand to sandy silt
62.336	48.07	0.7700	1.602	276.337	15	7	silty sand to sandy silt
62.500	46.84	0.7901	1.687	310.889	15	7	silty sand to sandy silt
62.664	46.43	0.7488	1.613	306.135	15	7	silty sand to sandy silt
62.828	45.82	0.7811	1.705	318.996	15	7	silty sand to sandy silt
62.992	42.93	0.5860	1.365	297.935	14	7	silty sand to sandy silt
63.156	41.00	0.4612	1.125	294.042	13	7	silty sand to sandy silt
63.320	40.43	0.4348	1.076	331.404	13	7	silty sand to sandy silt
63.484	40.09	0.3996	0.997	329.753	13	7	silty sand to sandy silt
63.648	41.72	0.4632	1.110	345.044	13	7	silty sand to sandy silt
63.812	46.29	0.5870	1.268	336.556	15	7	silty sand to sandy silt
63.976	48.81	0.7669	1.571	323.516	16	7	silty sand to sandy silt
64.140	50.09	0.8858	1.768	324.763	16	7	silty sand to sandy silt
64.304	50.19	0.9133	1.820	303.662	16	7	silty sand to sandy silt
64.469	49.48	0.9390	1.898	297.882	16	7	silty sand to sandy silt
64.633	48.13	0.9373	1.947	289.841	18	6	sandy silt to clayey silt
64.797	46.93	0.8968	1.911	290.479	18	6	sandy silt to clayey silt
64.961	46.05	0.8341	1.811	288.916	15	7	silty sand to sandy silt
65.125	43.22	0.7907	1.829	292.007	17	6	sandy silt to clayey silt
65.289	42.25	0.7678	1.817	290.376	16	6	sandy silt to clayey silt
65.453	40.95	0.7296	1.782	278.189	16	6	sandy silt to clayey silt
65.617	39.67	0.6711	1.692	279.656	15	6	sandy silt to clayey silt
65.781	39.64	0.6435	1.623	276.115	13	7	silty sand to sandy silt
65.945	38.90	0.6155	1.582	271.220	12	7	silty sand to sandy silt
66.109	40.85	0.5848	1.432	264.812	13	7	silty sand to sandy silt
66.273	39.09	0.6432	1.645	271.127	15	6	sandy silt to clayey silt
66.437	38.49	0.5824	1.513	258.442	12	7	silty sand to sandy silt
66.601	38.15	0.5477	1.436	277.467	12	7	silty sand to sandy silt
66.765	37.63	0.5993	1.593	282.312	14	6	sandy silt to clayey silt
66.929	38.92	0.6490	1.668	253.178	15	6	sandy silt to clayey silt
67.093	39.26	0.7070	1.801	254.406	15	6	sandy silt to clayey silt
67.257	38.78	0.7457	1.923	242.106	15	6	sandy silt to clayey silt
67.421	35.42	0.7457	2.105	219.919	14	6	sandy silt to clayey silt
67.585	35.04	0.6032	1.721	214.569	13	6	sandy silt to clayey silt
67.749	35.61	0.5225	1.467	222.957	14	6	sandy silt to clayey silt
67.913	36.71	0.5465	1.489	266.458	12	7	silty sand to sandy silt
68.077	38.32	0.6338	1.654	248.270	15	6	sandy silt to clayey silt
68.241	38.00	0.7272	1.913	224.171	15	6	sandy silt to clayey silt
68.406	35.82	0.7171	2.002	202.834	14	6	sandy silt to clayey silt
68.570	33.77	0.6466	1.915	212.258	13	6	sandy silt to clayey silt
68.734	32.40	0.5297	1.635	215.394	12	6	sandy silt to clayey silt
68.898	34.81	0.5412	1.555	253.286	13	6	sandy silt to clayey silt
69.062	37.07	0.5272	1.422	239.032	12	7	silty sand to sandy silt
69.226	37.34	0.5694	1.525	257.080	12	7	silty sand to sandy silt
69.390	39.63	0.6356	1.604	269.107	13	7	silty sand to sandy silt

Depth ft	Tip Stress (Qt) (tsf)	Sleeve Friction (Fs) (tsf)	F.Ratio (%)	Pore Pressure (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
69.554	43.70	0.7342	1.680	276.020	14	7	silty sand to sandy silt
69.718	47.30	1.2249	2.590	217.092	18	6	sandy silt to clayey silt
69.882	52.62	2.3020	4.375	221.528	34	4	silty clay to clay
70.046	51.57	1.6050	3.112	205.093	20	6	sandy silt to clayey silt
70.210	40.40	0.9348	2.314	208.513	15	6	sandy silt to clayey silt
70.374	41.78	0.6877	1.646	248.549	13	7	silty sand to sandy silt
70.538	38.72	0.6658	1.719	252.886	15	6	sandy silt to clayey silt
70.702	37.16	0.6338	1.706	258.975	14	6	sandy silt to clayey silt
70.866	36.60	0.5780	1.580	258.045	14	6	sandy silt to clayey silt
71.030	36.89	0.6269	1.699	240.080	14	6	sandy silt to clayey silt
71.194	37.41	0.6840	1.828	232.557	14	6	sandy silt to clayey silt
71.358	37.27	0.7087	1.901	232.667	14	6	sandy silt to clayey silt
71.522	37.38	0.7003	1.874	235.442	14	6	sandy silt to clayey silt
71.686	37.32	0.6650	1.782	238.510	14	6	sandy silt to clayey silt
71.850	37.50	0.6693	1.785	244.666	14	6	sandy silt to clayey silt
72.014	37.93	0.6738	1.776	235.228	15	6	sandy silt to clayey silt
72.178	37.97	0.6733	1.773	245.395	15	6	sandy silt to clayey silt
72.343	39.16	0.6308	1.611	262.938	12	7	silty sand to sandy silt
72.507	41.12	0.5726	1.393	259.955	13	7	silty sand to sandy silt
72.671	39.79	0.5670	1.425	272.731	13	7	silty sand to sandy silt
72.835	46.44	0.7029	1.514	262.433	15	7	silty sand to sandy silt
72.999	45.96	1.0891	2.370	318.837	18	6	sandy silt to clayey silt
73.163	55.55	1.3717	2.469	192.456	21	6	sandy silt to clayey silt
73.327	45.23	1.1899	2.631	203.814	17	6	sandy silt to clayey silt
73.491	37.43	0.8623	2.304	236.231	14	6	sandy silt to clayey silt
73.655	35.97	0.6324	1.758	271.909	14	6	sandy silt to clayey silt
73.819	36.23	0.5877	1.622	267.315	14	6	sandy silt to clayey silt
73.983	38.17	0.6018	1.577	272.590	12	7	silty sand to sandy silt
74.147	40.35	0.5834	1.446	256.336	13	7	silty sand to sandy silt
74.311	39.25	0.5886	1.500	246.953	13	7	silty sand to sandy silt
74.475	36.81	0.5901	1.603	257.037	14	6	sandy silt to clayey silt
74.639	36.13	0.5905	1.635	256.919	14	6	sandy silt to clayey silt
74.803	37.03	0.5807	1.568	270.220	14	6	sandy silt to clayey silt
74.967	37.80	0.5585	1.477	256.402	12	7	silty sand to sandy silt
75.131	38.09	0.5800	1.522	261.030	12	7	silty sand to sandy silt
75.295	38.08	0.6257	1.643	257.007	15	6	sandy silt to clayey silt
75.459	40.43	0.6021	1.489	272.728	13	7	silty sand to sandy silt
75.623	41.46	0.6737	1.625	258.553	13	7	silty sand to sandy silt
75.787	36.05	0.6498	1.803	239.455	14	6	sandy silt to clayey silt
75.951	35.01	0.5500	1.571	265.021	13	6	sandy silt to clayey silt
76.115	37.68	0.5956	1.580	276.806	14	6	sandy silt to clayey silt
76.280	37.06	0.5883	1.588	254.416	14	6	sandy silt to clayey silt
76.444	36.41	0.5680	1.560	271.316	14	6	sandy silt to clayey silt
76.608	36.18	0.5405	1.494	275.608	14	6	sandy silt to clayey silt
76.772	38.50	0.5196	1.350	285.602	12	7	silty sand to sandy silt
76.936	38.94	0.5671	1.457	283.689	12	7	silty sand to sandy silt
77.100	50.15	0.5610	1.119	267.039	16	7	silty sand to sandy silt
77.264	45.49	0.5701	1.253	250.240	15	7	silty sand to sandy silt
77.428	41.88	0.5601	1.337	341.866	13	7	silty sand to sandy silt

APPENDIX C

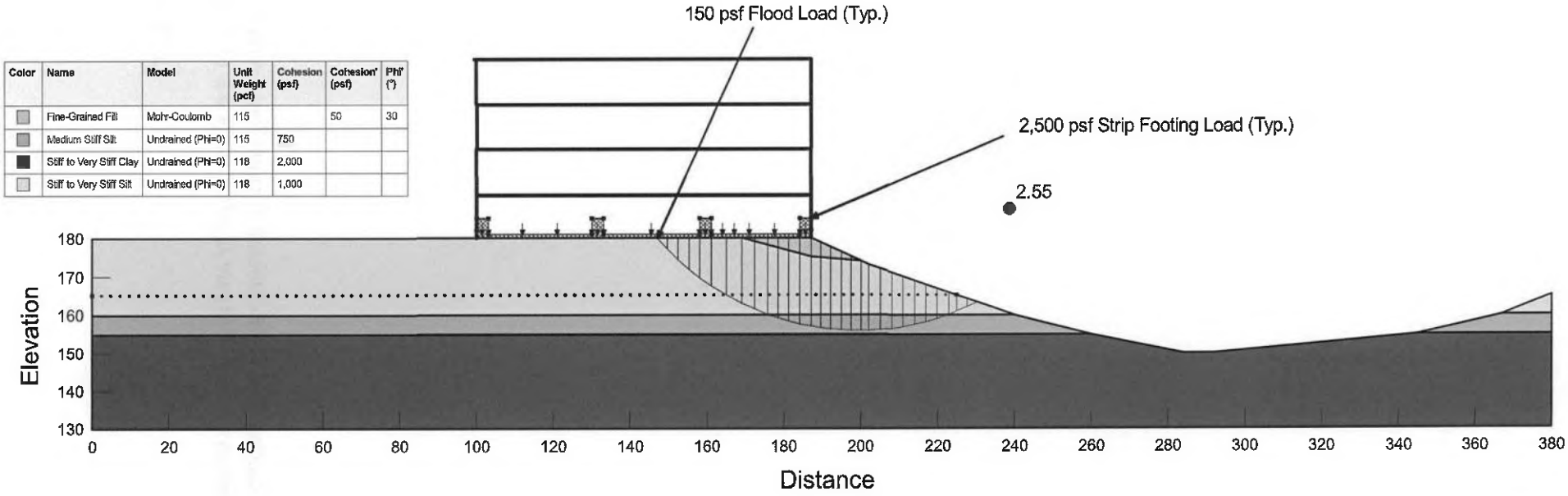
APPENDIX C

SLOPE STABILITY ANALYSIS RESULTS

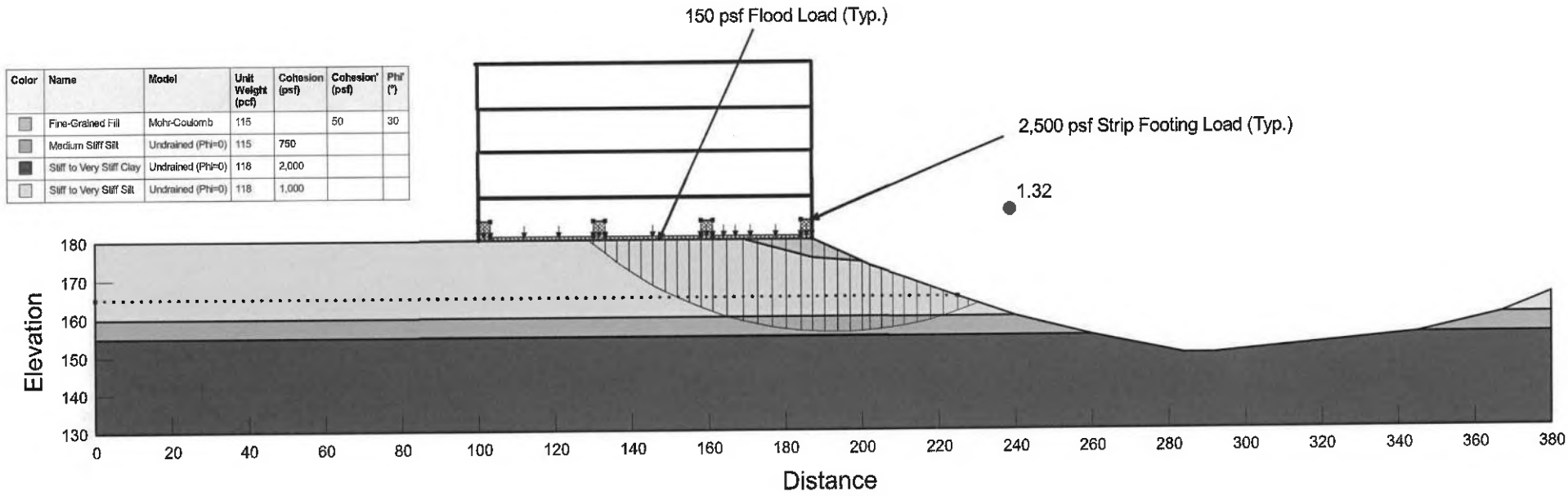
This appendix contains the outputs of the slope stability analysis from the software program Slope/W by GeoStudio. A discussion of the results is present in the main report.

Friends-4-01 - Stability Analysis
Static Conditions
Horz Seismic Coef.: 0

Color	Name	Model	Unit Weight (pcf)	Cohesion (psf)	Cohesion' (psf)	Phi' (°)
	Fine-Grained Fill	Mohr-Coulomb	115		50	30
	Medium Stiff Silt	Undrained (Phi=0)	115	750		
	Stiff to Very Stiff Clay	Undrained (Phi=0)	118	2,000		
	Stiff to Very Stiff Silt	Undrained (Phi=0)	118	1,000		



Friends-4-01 - Stability Analysis
Seismic Conditions
Horz Seismic Coef.: 0.2375



Color	Name	Model	Unit Weight (pcf)	Cohesion (psf)	Cohesion' (psf)	Phi' (°)
	Fine-Grained Fill	Mohr-Coulomb	115		50	30
	Medium Stiff Silt	Undrained (Phi=0)	115	750		
	Stiff to Very Stiff Clay	Undrained (Phi=0)	118	2,000		
	Stiff to Very Stiff Silt	Undrained (Phi=0)	118	1,000		

FRIENDSVIEW RCF PHASE 1

Exhibit H: Preliminary Sewer Evaluation Memo

December 17, 2020

City of Newberg - Engineering
414 E. First Street
Newberg, OR 97132

RE: Friendsview RCF - Sanitary Sewer Analysis

City Engineering Staff:

The purpose of this letter is to provide documentation and analysis of the existing and future wastewater flows from the development and the capacity of the existing downstream system as required per City of Newberg Pre-Application Meeting Notes dated May 27, 2019. This analysis is to show that the existing public sanitary sewer has capacity to support the development of Friendsview RCF Phase 1. The study includes the existing public sanitary sewer main directly downstream of the project site.

Existing Sanitary
The existing property is currently served by an 8" lateral that is connected to a manhole with a 10" public sewer main exiting at 1.00%. The 10" main runs parallel to Hess Creek where it progressively gets larger before making its way to the wastewater treatment plant. According to the City of Newberg's Wastewater Master Plan (WWMP) completed in May of 2018 there are no immediate deficiencies downstream of the subject site. The WWMP does indicate deficiencies closer to the wastewater treatment plant, however, upgrading this main line is at the top of the City's priority list and multiple alternatives were presented in the report.

Proposed/Existing Sanitary Flows
Sanitary flows for the basin were derived using the City of Newberg Wastewater Master Plan as well as the City's Zoning map. The City's zoning map as well as the utility GIS map was used to delineate a basin similar to FM Basin 1 shown in Figure 9. The basin was then delineated by zone and Table 4-2 was used to calculate the total dry weather flow. Inflow and infiltration were assumed to be approximately 1,000 gallons per acre per day and a peaking factor of 1.3 as stated on page 2-6 of the WWMP. The estimated total peak flow generated by the entire basin, including future developments shown on the attached Flow Calculation, is equal to approximately 1.00 cfs. As such, these improvements should not cause any immediate capacity deficiencies in the downstream sanitary sewer system.

Should you have any questions, do not hesitate to contact me at 503.563.6151 or by email at chuckg@aks-eng.com.

Sincerely,
AKS ENGINEERING & FORESTRY, LLC

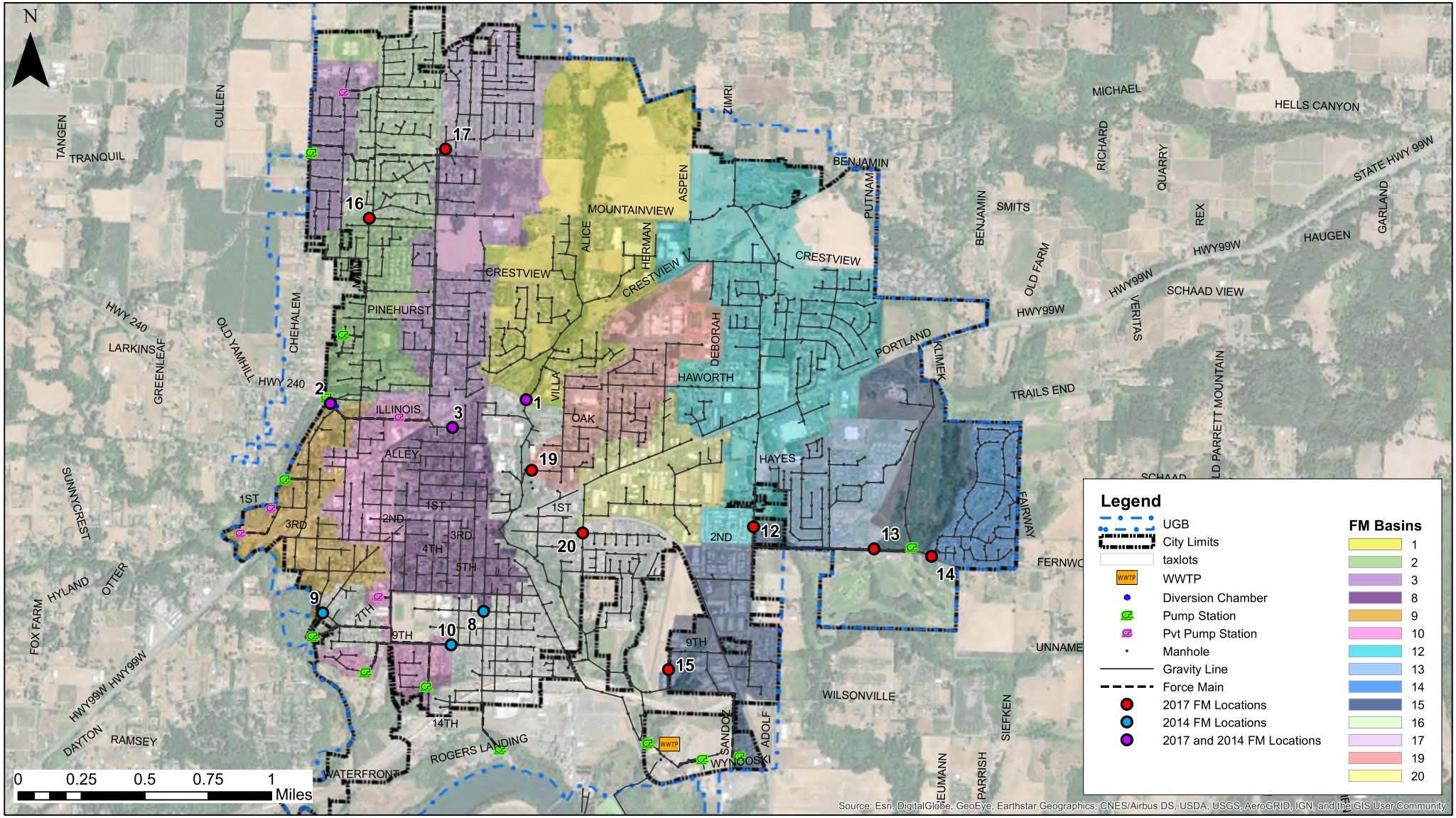
Chuck Gregory, PE – Associate

REGISTERED PROFESSIONAL ENGINEER
50644PE
OREGON
SEPT. 14, 1999
CHARLES EDWARD GREGORY

RENEWS: JUNE 30, 2021

Attachments:

- WWMP Figure 9 & Table 4-2
- WWMP Pages 2-5 & 2-6
- Newberg Zoning Map
- Flow Calculations



Flow Monitoring Locations

Wastewater Master Plan

Figure 9

City of Newberg, OR
May 2018

[A]Recommended Standards for Wastewater Facilities (Great Lakes – Upper Mississippi River Board, 2014 edition).

Modeled gravity main slopes were compared with these recommended minimum slopes. The mains that are less than their recommended minimum slope are shown in Figure 11 (Appendix A). Pipes with inverse slopes are highlight in this figure as well. Low or inverse slopes can cause capacity issues and require higher than normal O&M. These mains should be monitored for capacity, odor, and solids buildup problems. All pipes in the collection system should be on a regular maintenance schedule. Pipes with low slopes may need to be cleaned more frequently to prevent solids buildup and flow disruption.

4.2 FUTURE COLLECTION SYSTEM PERFORMANCE

This section summarizes future flow projections and the model evaluation of future system expansion, and documents anticipated future deficiencies. Alternative improvements to address these deficiencies are presented in Section 5.

4.2.1 Future Flow Projections & Model Scenarios

Future loads were distributed based on PSU population projections (Section 2) and City projected future residential, commercial, and industrial growth. Flows per capita for projected population growth were assumed to be similar to existing flows per capita. Residential flows were projected using future growth area, average lot size, population density, and ADWF per capita attributed with residential contributions. Commercial, industrial, and institutional flows were projected using future growth areas indicated by City planning staff and typical flow per acre values (Metcalf and Eddie, 3rd Edition). Projected flows per zoning designation for the 20-year planning period are presented in Table 4-2. Projected flows per zoning designation for buildout are presented in Table 4-3.

Table 4-2: 20-Year Projected Flows by Zoning

Zoning	Average Lot Size[A] (ac)	Pop. Density[A, B] (people/ac)	Flow[C] (gpad)	Future Growth Area[A] (ac)	Flow[D] (gpd)
R-1	0.227	12	880	388	334,500
R-2	0.111	24	1,801	99	213,800
R-3, R-4	0.061	44	3,301	37	131,700
M-1, M-2, M-3	N/A	N/A	1,250	109	135,700
C-1, C-2, C-3	N/A	N/A	1,250	61	76,700
I	N/A	N/A	2,000	56	113,000
Infill	N/A	N/A	N/A	N/A	40,100
			Totals:	**751**	**1,046,000**

[A]Allocates 25% of area for roads and other public dedication, except on industrial and commercial zones, where 20% is allocated.

[B]Assume 2.69 people/dwelling unit (2010 US Census).

[C]Residential flows based on design ADWF per capita value of 99 gpcd (Table 2-5) then reduced by 25% accounting for removal of the industrial, commercial and institutional flows that contribute to the derivation of the 99 gpcd value. Industrial, commercial, and institutional flows based on typical flow per acre values (Metcalf and Eddie, 3rd Edition).

[D]Utilizes average annual dry-weather flows.

Table 2-3 below). The DEQ method was used as the design value since it estimates a higher $PDAF_5$ than the top five flow events and was felt to be representative of the higher 5-year design rainfall event.

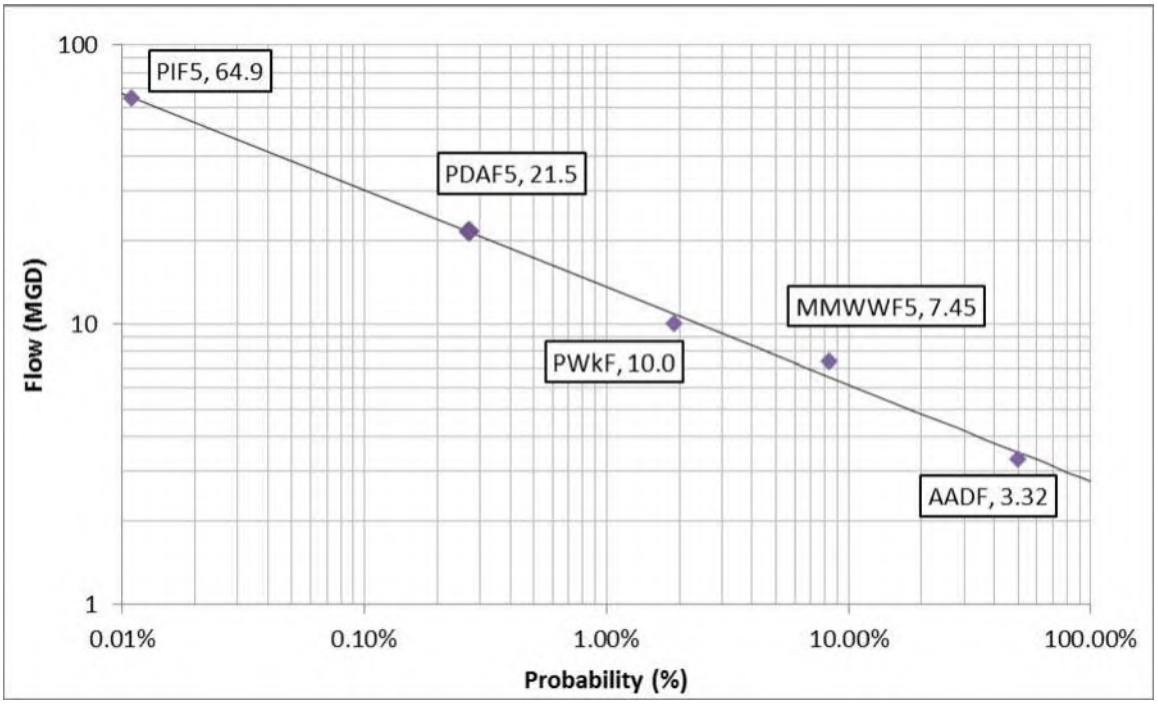
Table 2-3: Top Five Flow Events

Date	Flow (MGD)	Rain (in/day)
December 7, 2015	20.96	2.16
December 8, 2015	19.98	1.11
December 17, 2015	19.81	2.41
January 19, 2012	17.61	1.74
December 9, 2015	15.65	0.50

Peak Instantaneous Flow (PIF_5)

The peak instantaneous flow (PIF_5) represents the peak instantaneous flow (or peak hourly flow) associated with the $PDAF_5$. In the absence of hourly flow data, DEQ recommends obtaining the PIF_5 by extrapolation from their own chart titled Graph #3. $PDAF_5$, $MMWWF_5$, PWkF, and AADF are graphed (on specific log-probability scale) versus their probability of occurrence (Chart 2-3). A best-fit line between these known points is drawn. The PIF_5 is located where that best-fit line crosses the 0.011% probability.

Chart 2-3: DEQ Graph #3



The City has SCADA records, which provide continuous flow data that can be compared against the PIF_5 produced by the DEQ method. The DEQ PIF_5 represents a peaking factor of approximately 3, with respect to a $PDAF_5$ of 22.1 MGD (which is very large

even for peak flows so heavily influenced by I/I). When groundwater is very high after a large storm event, the effect of I/I is more or less constant, which dampens the peaking that occurs. A peaking factor of approximately 1.3 was observed in the City's SCADA data for previous peak events (see Appendix B) and was used to estimate a more realistic PIF_5 of 28.7 MGD.

Infiltration and Inflow (I/I)

I/I is an issue in the collection system and results in high peak flows experienced at the WWTP during wet weather. The City has been working to characterize and evaluate I/I throughout the system. I/I work completed previously and for this master plan is discussed in Section 7. The City's ongoing efforts to reduce I/I in its system will affect flows at the treatment plant.

Observed Historical Flows and Projected Design Flows

Observed flows for each year from 2012–2015 were developed for comparison with projected flows, and are summarized in Table 2-4 below. Observed historical flows were derived as described in the preceding paragraphs, with the exception of $PDAF_5$ and PIF_5. The $PDAF_5$ for historical flows is the observed maximum from the corresponding year; the peaking factor of 1.3 was used to convert $PDAF_5$ to PIF_5.

Table 2-4: Observed Historical Flows

	Historical Flows (MGD)				Design Flow (MGD)
Year	2012	2013	2014	2015	2015
Population	22,300	22,580	22,765	22,900	22,900
ADWF	2.25	2.51	2.19	2.14	**2.27**
$MMDWF_{10}$	2.96	3.63	2.93	2.30	**4.48**
AADF	3.78	2.69	3.27	3.54	**3.32**
AWWF	5.33	2.88	4.36	4.96	**4.38**
$MMWWF_5$	7.26	3.63	6.68	9.66	**9.66**
PWkF	10.8	6.02	8.73	14.5	**10.0**
$PDAF_5$	17.6	9.5	13.6	21.0	**21.5**
PIF_5	22.9	12.4	17.6	27.3	**28.0**
Total Rainfall (in/yr)	47	25	39	40	-

To project the design flows derived from the analysis described in preceding paragraphs, a projected flow per capita (reported in gallons per capita per day, gpcd) was developed. This projected per capita flow is the same as the design unit flow for ADWF, $MMDWF_{10}$, AADF, and AWWF, but was scaled down for $MMWWF_5$, PWkF, $PDAF_5$, and PIF_5. Projected design flows (MGD) are based on 2015 design flows with the addition of the product of projected unit flows (gpcd) and projected population increase. This method recognizes the existing effects of I/I on flow, but projects a reduced I/I influence on wet-weather flows in future, more watertight, developments that employ better construction

Date	Revisions
8/10	Revision due to ORD 2009-2722
12/08	Annexations and zone changes
12/07	Revision due to ORD 2007-2755
9/07	Revision due to ORD 2007-2678
11/06	UGB Amendment per ORD 2006-2660 and annexations
10/06	Springbrook Specific Plan amendment per ORD.2006-2657
6/06	Annexation and zone additions
3/06	Revision due to correction
6/05	Revision due to zone addition and changes
6/04	Revisions due to annexation and zone changes
3/04	Revision due to zone addition
5/03	Revision due to zone changes
4/03	Institutional District revision
11/02	Revision due to annex and zone additions
7/02	Revision due to annex and zone changes
5/02	C-2/C-3 revision & Civic Corridor addition per ORD.2002-2561
3/01	Revisions due to annex and zone changes
1/00	Springbrook Oaks Specific Plan per ORD. 99-2517
11/98	Institutional Zoning
1/97	Adopted Stream Corridor

City of Newberg, Oregon

NEWBERG ZONING MAP

Including the Urban Growth Boundary

- Interim Industrial Use Overlay
- Airport Industrial Overlay
- Airport Residential Overlay
- Institutional Overlay
- Civic Corridor Overlay
- Urban Growth Boundary
- Stream Corridor
- City Limits

Zones

ZONING

- C-1 Neighborhood Commercial
- SD/V Springbrook District - Village
- SD/NC Springbrook District - Neighborhood Commercial
- SD/H Springbrook District - Hospitality
- C-1/SP Specific Plan
- C-2 Community Commercial
- C-2/LU Community Commercial/Limited Use
- C-2 PD Planned Unit Development
- C-2/SP Specific Plan
- C-3 Central Business District
- C-3/LU Central Business District - Limited Use
- CF Community Facility
- CF/RD Community Facility Riverfront District
- I Institutional
- M-1 Limited Industrial District
- M-1/SP Specific Plan
- AI Airport Industrial
- M-2 Light Industrial District
- SD/E Springbrook District - Employment
- M-3 Heavy Industrial District
- R-1 Low Density Residential
- SD/LDR Springbrook District - Low Density Residential
- R-1/PD Planned Unit Development
- R-1/0.1 Low Density 0.1 d.u./ac.
- R-1/0.4 Low Density 0.4 d.u./ac.
- R-1/6.6 Low Density 6.6 d.u./ac
- R-1/SP Specific Plan
- R-2 Medium Density Residential
- R-2 PD Planned Unit Development
- R-2/RD Riverfront District
- R-2/SP Specific Plan
- SD/MRR Springbrook District - Mid-Rise Residential
- R-3 High Density Residential
- R-3 PD Planned Unit Development
- R-3/SP Specific Plan
- R-P Residential Professional
- R-P/SP Specific Plan
- R-P/LU Residential Profession - Limited Use Overlay
- AR Airport Residential

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This map is created from various data sources and is subject to change without notice. This map is intended for general planning purposes only.

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W E
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0 1,000 Feet

City of Newberg

Map created by Jan Wolf
Public Works Department - Engineering

Date Saved: 05/29/2012 9:35:35 AM
Path: C:\Dlgis_plan\zones.mxd

The most current edition of this map can be found at www.newbergoregon.gov

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Monday, Oct 12 2020

Friendsview

Circular

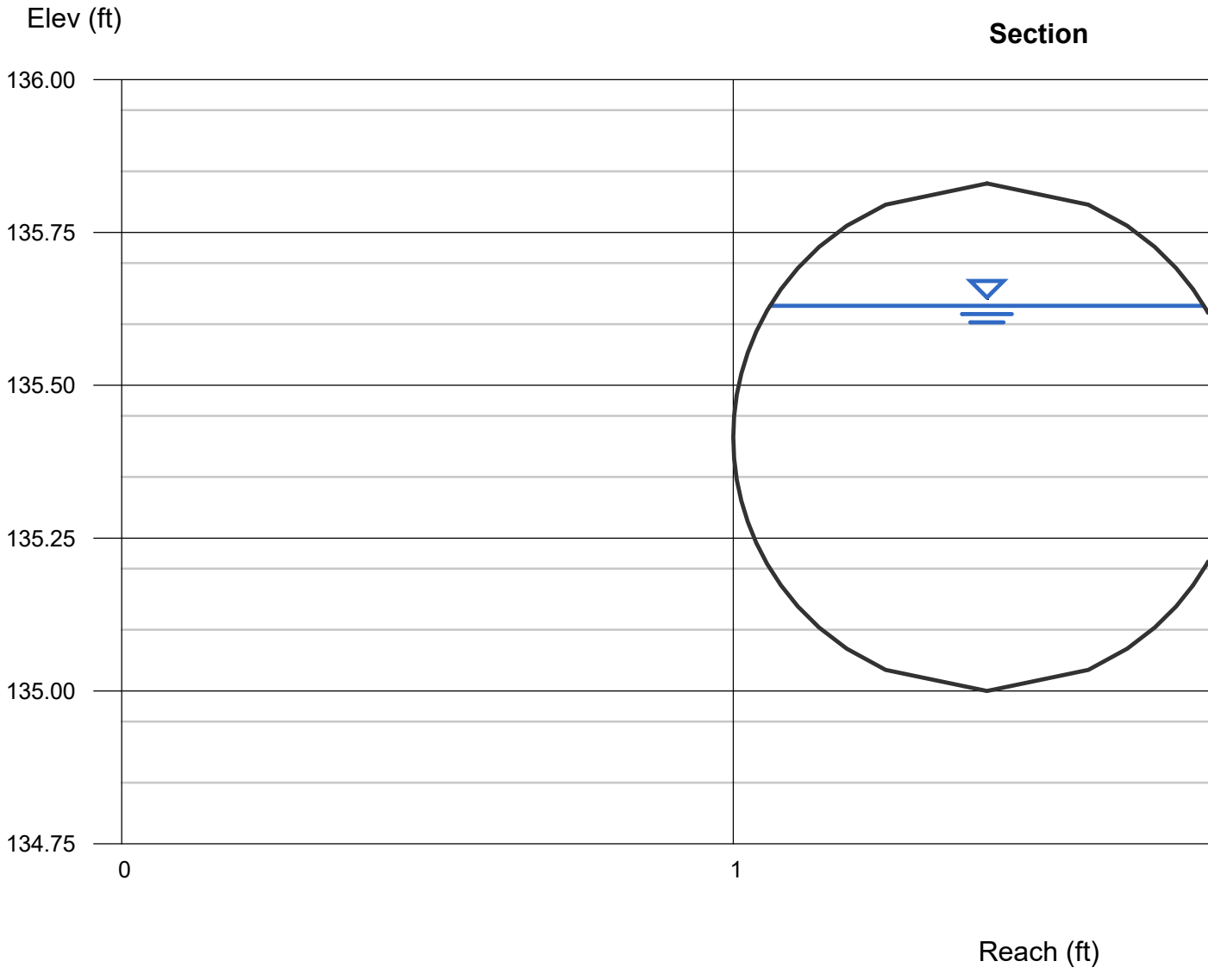
Diameter (ft)	= 0.83
Invert Elev (ft)	= 135.00
Slope (%)	= 1.00
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.63
Q (cfs)	= 2.000
Area (sqft)	= 0.44
Velocity (ft/s)	= 4.53
Wetted Perim (ft)	= 1.76
Crit Depth, Yc (ft)	= 0.64
Top Width (ft)	= 0.71
EGL (ft)	= 0.95



FRIENDSVIEW RCF PHASE 1

Exhibit I: Hydrant Flow Test

HYDRANT FLOW TEST REPORT

Project Name/#/Address:	Friendsview/3199/ 1301 Fulton Street
Client:	LRS Architects, Inc.
Date:	4/27/2020

Document Owner: John Christiansen

SAFETY PLAN

N/A	Notify fire department
X	Identify discharge point
X	Verify downstream
N/A	Traffic Control
N/A	Signage/Cones
X	PPE

Date/time of test:	04/27/2020 - 8:00 AM
Tested by:	Brent Whittaker / Waylon Knight
Witness:	City of Newberg Public Works
Test duration:	5 Minutes

FLOWED HYDRANT 1-F

Make:	MH	
Static:	88	PSI
Pitot:	22	PSI
Inside diameter of outlet:	2.5	Inch
Discharge coeff:	N/A	
Observed flow:	735	GPM
Flow method:	LPD-250 Difuser, de-chlor	
Ground elevation:	193	FT
Location description:	Eastern intersection of East Cherry Street & Fulton Street	

GAUGE HYDRANT 1-G

Make:	MH	
Static:	85	PSI
Residual:	82	PSI
Ground Elevation:	198	FT
Location Description:	200 feet west on East Cherry Street from main entrance	

PROJECTED FIRE FLOW

Projected Flow at 20-PSI:	3869	GPM

✓ JPC 4/27/20

NOTES/OBSERVATIONS

$Q_{Flowed} = 29.84 * (P_{pitot}\text{^}.5)*(D_{outlet}\text{^}2)*C$

$Q_{Projected} = QF \times ((GS - Pdesign)\text{^}0.54)/((GS - GR)\text{^}0.54)$

Photo Report by AKS Engineering & Forestry

Apr 27, 2020 | 5 Photos

3199 Friendsview

Hydrant Flow test

Static pressure on flowed hydrant at intersection of Fulton Street and East Cherry Street

Project: 3199 Friendsview
Date: April 27th, 2020, 8:10 a.m.
Creator: Waylon Knight

Static pressure on gauge hydrant located in front of 1013 N Center Street.

Project: 3199 Friendsview
Date: April 27th, 2020, 8:13 a.m.
Creator: Waylon Knight

Pitot reading with dechlor diffuser on flowed hydrant located on Fulton Street and East Cherry Street

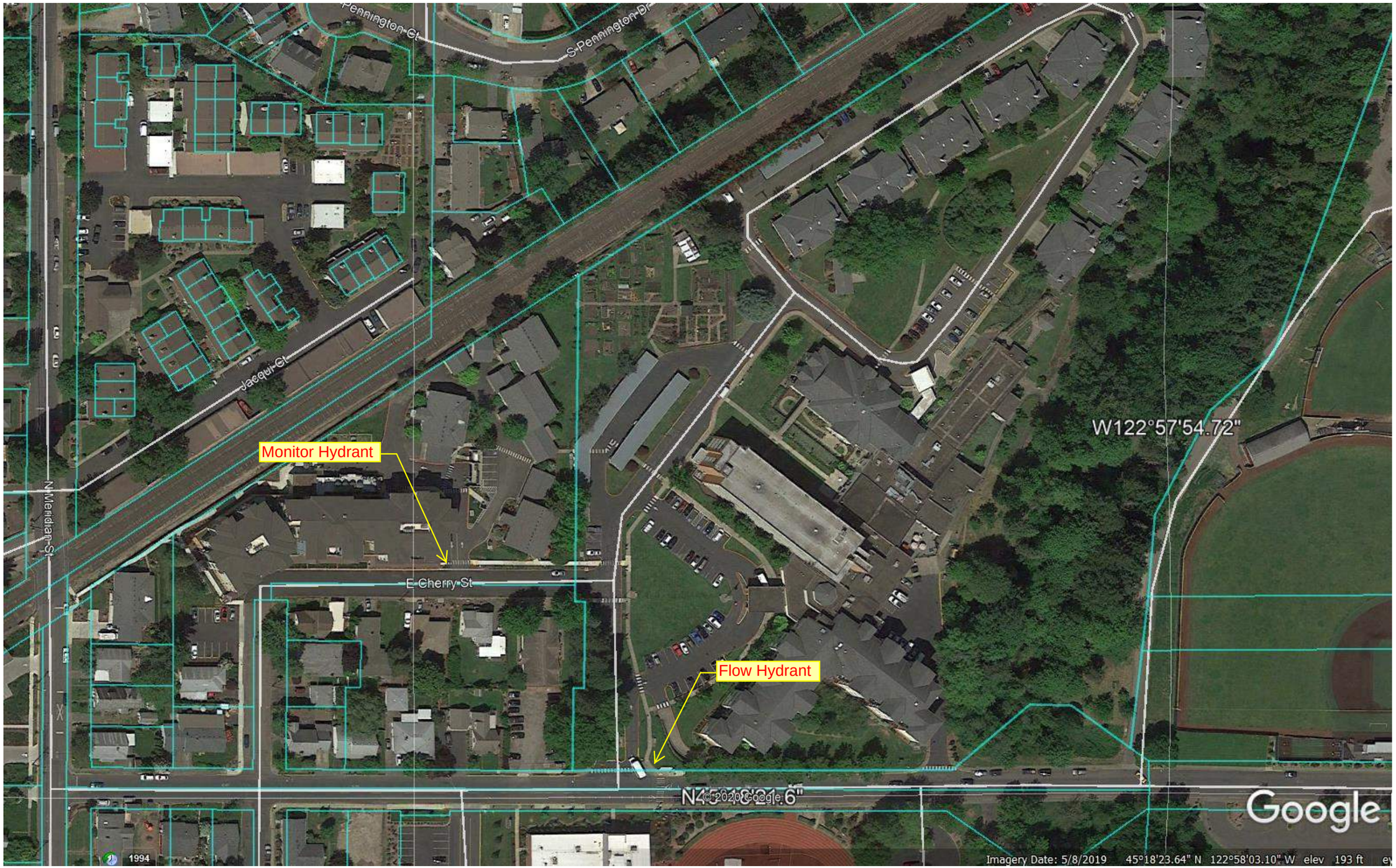
Project: 3199 Friendsview
Date: April 27th, 2020, 8:14 a.m.
Creator: Brent Whittaker

Residual pressure on flowed hydrant at intersection of Fulton Street and East Cherry Street

Project: 3199 Friendsview
Date: April 27th, 2020, 8:14 a.m.
Creator: Brent Whittaker

Residual Pressure on guage hydrant in front of 1013 N Center Street

Project: 3199 Friendsview
Date: April 27th, 2020, 8:15 a.m.
Creator: Waylon Knight


Pennington Ct
S Pennington Dr
Jacqui Ct
N Meridian St
E Cherry St
Monitor Hydrant
Flow Hydrant
W122°57'54.72"
N45°20'21.6"
© 2020 Google
Google
1994
Imagery Date: 5/8/2019 45°18'23.64" N 122°58'03.10" W elev 193 ft

FRIENDSVIEW RCF PHASE 1

Exhibit J: Luminaire Cut Sheets

Land Use Luminaire Cut Sheets

Friendsview RCF 1
2020-0287

Prepared for:

LRS Architects

Prepared by:

Deborah Raines, MIES

December 18, 2020

INTERFACE ENGINEERING

THE EDGE® Series

LED Area Luminaire – Round

TYPE SA

Rev. Date: V7 06/29/2020

Product Description

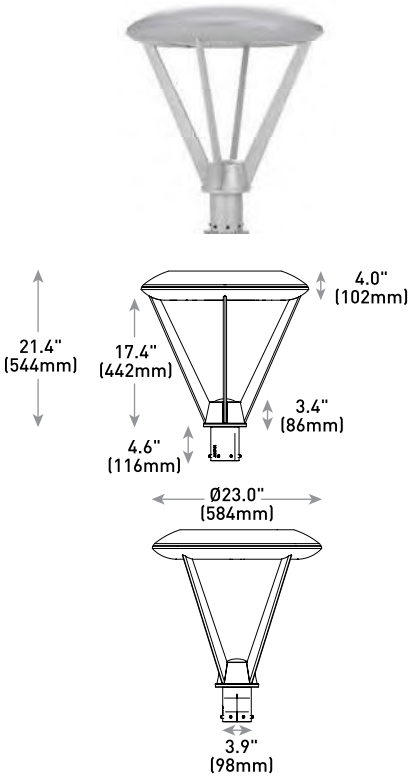
THE EDGE® Series has a slim, low profile design. Its rugged cast aluminum housing minimizes wind load requirements and features an integral, weathertight LED driver compartment, spun vented cover, high performance aluminum heat sinks and leaf/debris guard.
Applications: Auto Dealerships, parking lots, campuses, facade lighting and general site lighting applications

Performance Summary

- Patented NanoOptic® Product Technology
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT:** 4000K (+/- 300K), 5700K (+/- 500K) standard
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://creelighting.com/warranty for warranty terms

R3 Mount



LED Count (x10)	Weight
04	33.8 lbs. (15.3kg)
06	35.2 lbs. (15.9kg)
08	37.0 lbs. (16.8kg)
10	40.7 lbs. (18.5kg)
12	42.4 lbs. (19.3kg)

R4/R5 Mount - see page 14 for weight & dimensions

Accessories

Field-Installed	
Bird Spikes XA-BRDSPK	**Backlight Control Shields** XA-20BLS-4 - Four-pack - Unpainted stainless steel

Ordering Information

Example: ARE-EDR-2M-R3-12-E-UL-SV-350

ARE-EDR					E				
Product	**Optic**		**Mounting***	**LED Count (x10)**	**Series**	**Voltage**	**Color Options**	**Drive Current**	**Options**
ARE-EDR	**2M** Type II Medium **2MB** Type II Medium w/BLS **2MP** Type II Medium w/Partial BLS **3M** Type III Medium **3MB** Type III Medium w/BLS	**3MP** Type III Medium w/Partial BLS **4M** Type IV Medium **4MB** Type IV Medium w/BLS **4MP** Type IV Medium w/Partial BLS **5M** Type V Medium **5S** Type V Short	**R3** Spider, Center Tenon, 2-3/8" to 3" OD **R4** Spider, Center Direct, 4" Square **R5** Spider, Center Direct, 5" Round	**04**** **06**** **08**** **10** **12**	**E**	**UL** Universal 120-277V **UH** Universal 347-480V	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**350** 350mA **525** 525mA **700** 700mA - Available with 40-60 LEDs	**DIM 0-10V Dimming** - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current **HL Hi/Low (Dual Circuit Input)** - Refer to HL spec sheet for details - Sensor not included **P Photocell** - Available with UL voltage only **40K 4000K Color Temperature** - Minimum 70 CRI - Color temperature per luminaire **TRL Amber Turtle Friendly LEDs** - Available only with 350mA - Lumen multiplier from 5700K: 0.32 (350mA) - Power multiplier: 0.76 - 600nm dominant wavelength - Additional shielding (by others) may be required for Florida Fish and Wildlife Conservation Commission compliance

* Reference EPA and pole configuration suitability data beginning on page 14
** Consists of multiple 20 LED light bars. 40, 60, and 80 LED units use blanks as needed in place of populated light bars

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile, minimizing wind load requirements
- Luminaire sides are rugged die cast aluminum with integral, weathertight LED driver compartment, spun vented cover, and high performance aluminum heat sinks
- R3 spider mount hub slip-fits over a 2.375" (60mm) to 3" (76mm) O.D. minimum 4" (102mm) H steel or aluminum tenon or pole and secures with eight set screws
- R4 spider mount fits directly inside 4" (102mm) square pole and secures to pole with four set screws
- R5 spider mount fits directly inside of a 5" (127mm) round pole to provide a clean hardware-less outer appearance
- Includes leaf/debris guard
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver, and white are available
- **Weight:** See Dimensions and Weight charts on pages 1 and 14

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- **10V Source Current:** 40-80 LEDs: 0.15mA; 100-120 LEDs: 0.30mA
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Enclosure meets IP66 requirements per IEC 60529 when ordered without P option
- Certified to ANSI C136.31-2001, 1.5G normal vibration standards when ordered with R3, R4 and R5 mounts
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- DLC qualified with select SKUs. Refer to https://www.designlights.org/search/ for most current information
- Meets Buy American requirements within ARRA
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

LED Count (x10)	System Watts 120-480V	Total Current (A)					
		120V	208V	240V	277V	347V	480V
350mA							
04	46	0.36	0.23	0.21	0.20	0.15	0.12
06	66	0.52	0.31	0.28	0.26	0.20	0.15
08	90	0.75	0.44	0.38	0.34	0.26	0.20
10	110	0.92	0.53	0.47	0.41	0.32	0.24
12	130	1.10	0.63	0.55	0.48	0.38	0.28
525mA							
04	70	0.58	0.34	0.31	0.28	0.21	0.16
06	101	0.84	0.49	0.43	0.38	0.30	0.22
08	133	1.13	0.66	0.58	0.51	0.39	0.28
10	171	1.43	0.83	0.74	0.66	0.50	0.38
12	202	1.69	0.98	0.86	0.77	0.59	0.44
700mA							
04	93	0.78	0.46	0.40	0.36	0.27	0.20
06	134	1.14	0.65	0.57	0.50	0.39	0.29

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

THE EDGE® Series Ambient Adjusted Lumen Maintenance[1]

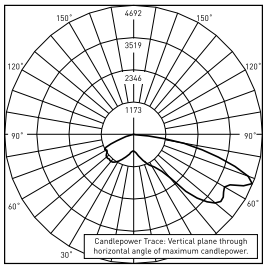
Ambient	CCT	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
5°C (41°F)	30K/40K/50K/57K	1.04	1.01	0.99	0.98	0.96
	TRL	1.06	1.06	1.06	1.06	1.06
10°C (50°F)	30K/40K/50K/57K	1.03	1.00	0.98	0.97	0.95
	TRL	1.04	1.04	1.04	1.04	1.04
15°C (59°F)	30K/40K/50K/57K	1.02	0.99	0.97	0.96	0.94
	TRL	1.03	1.03	1.03	1.03	1.03
20°C (68°F)	30K/40K/50K/57K	1.01	0.98	0.96	0.95	0.93
	TRL	1.01	1.01	1.01	1.01	1.01
25°C (77°F)	30K/40K/50K/57K	1.00	0.97	0.95	0.94	0.92
	TRL	1.00	1.00	1.00	1.00	1.00

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

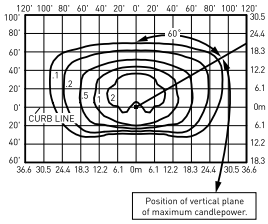
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/area/cree-edge-series-1

3MP



RESTL Test Report #: PL10097-002B
ARE-EDG-3MP-**-06-E-UL-525-40K
Initial Delivered Lumens: 8,670



ARE-EDR-3MP-**-10-E-UL-525-40K
Mounting Height: 25' (7.6m) A.F.G.
Initial Delivered Lumens: 14,548
Initial FC at grade

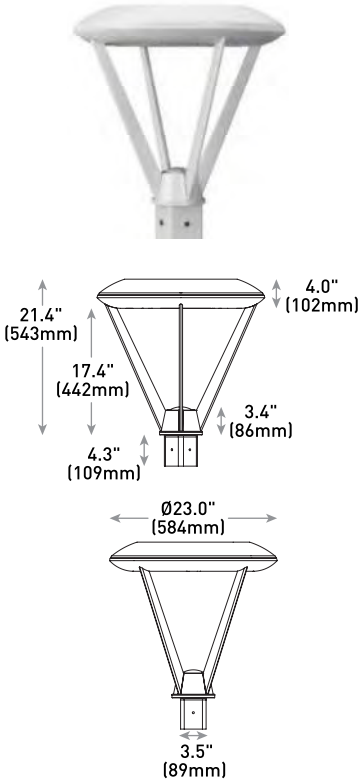
Type III Medium Distribution w/Partial BLS				
LED Count (x10)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
04	4,158	B1 U0 G1	4,240	B1 U0 G1
06	6,166	B1 U0 G2	6,288	B1 U0 G2
08	8,221	B2 U0 G2	8,384	B2 U0 G2
10	10,252	B2 U0 G2	10,455	B2 U0 G3
12	12,302	B2 U0 G3	12,546	B2 U0 G3
525mA				
04	5,901	B1 U0 G2	6,024	B1 U0 G2
06	8,750	B2 U0 G2	8,933	B2 U0 G2
08	11,667	B2 U0 G3	11,911	B2 U0 G3
10	14,548	B3 U0 G3	14,853	B3 U0 G3
12	17,458	B3 U0 G3	17,824	B3 U0 G3
700mA				
04	6,964	B2 U0 G2	7,106	B2 U0 G2
06	10,327	B2 U0 G2	10,537	B2 U0 G3

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Luminaire EPA

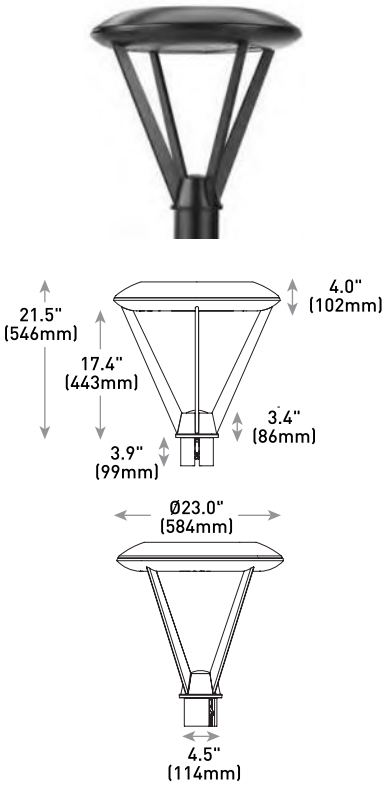
Post Top Mount – ARE-EDR-R3/R4/R5		
LED Count (x10)	Single R3	Single R4/R5
04	1.81	1.67
06	1.81	1.67
08	1.81	1.67
10	1.81	1.67
12	1.81	1.67

R4 Mount



LED Count (x10)	Weight
04	36.2 lbs. (16.4kg)
06	37.6 lbs. (17.0kg)
08	39.3 lbs. (17.8kg)
10	43.0 lbs. (19.5kg)
12	44.8 lbs. (20.3kg)

R5 Mount



LED Count (x10)	Weight
04	33.3 lbs. (15.1kg)
06	34.6 lbs. (15.7kg)
08	36.4 lbs. (16.5kg)
10	40.1 lbs. (18.2kg)
12	41.9 lbs. (19.0kg)

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

A COMPANY OF *IDEAL INDUSTRIES, INC.*

HAWK - model: WP-LED2

Endurance Wallpack

TYPE SD

WAC LIGHTING
Responsible Lighting®

Fixture Type: _____

Catalog Number: _____

Project: _____

Location: _____

PRODUCT DESCRIPTION

Die cast aluminum factory sealed housings with patent pending design for a water and dust proof IP66 rated outdoor luminaire

FEATURES

- Factory-Sealed LED Light Engine
- Die-Cast Aluminum Construction
- 20° Forward Throw Illumination
- Photo/Motion Sensor Compatible (Sold Separately)
- Built-in Level For Easy Adjustment
- Suitable to install in all directions
- Multi-Function Dimming: ELV (120V) or 0-10V
- 85 CRI
- 100,000 hour rated life

SPECIFICATIONS

Construction: Die-cast aluminum

Power: Integral driver in luminaire. Universal voltage input (120V-277V)

Dimming: 100% - 30% with 0 - 10V dimmer (120V - 277V)

100% - 15% with Electronic Low Voltage (ELV) dimmer (120V only)

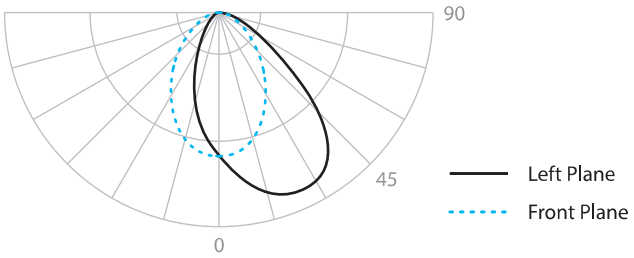
Finish: Architectural Bronze, Graphite, and White

Standards: IP66, Wet Location, ETL & cETL Listed

Total Harmonic Distortion: 35%

Operating Temperature: -40°C (-40°F) to 40°C (104°F)

PHOTOMETRY



ORDER NUMBER

	Power	Comparable	Color Temp		Delivered Lumens	CBCP
WP-LED219	*19W*	*39W HID*	**30**	*3000K*	*1345*	*1022*
			50	*5000K*	*1435*	*1056*
WP-LED227	*27W*	*70W HID*	**30**	*3000K*	*2050*	*1436*
			50	*5000K*	*2095*	*1478*

Finish	
aBZ	*Architectural Bronze*
aGH	*Architectural Graphite*
aWT	*Architectural White*

_____ – ☐ – ☐

Example: **WP-LED219-30-GH**

ACCESSORIES

Motion Sensor (120V)

MS-120-BZ	*Bronze*
MS-120-GY	*Gray*
MS-120-WT	*White*

Photo Sensor (120V)

PC-120-BZ	*Bronze*
PC-120-GY	*Gray*
PC-120-WT	*White*

WAC Lighting
www.waclighting.com
Phone (800) 526.2588 • Fax (800) 526.2585

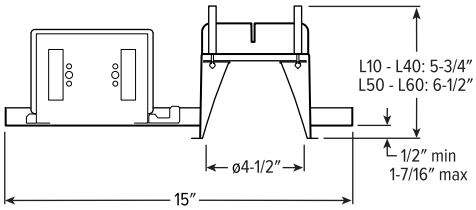
Headquarters/Eastern Distribution Center
44 Harbor Park Drive • Port Washington, NY 11050
Phone (516) 515.5000 • Fax (516) 515.5050

Western Distribution Center
1750 Archibald Avenue • Ontario, CA 91760
Phone (800) 526.2588 • Fax (800) 526.2585

4DR LED 4.5″ Downlight – Round

TYPE SF

Williams



CATALOG #:

TYPE:

PROJECT:

NEW CONSTRUCTION AND REMODEL

FEATURES

TrimLock®

- Innovative TrimLock reflector retention system ensures trim remains flush with ceiling plane
- Industry-leading efficacies as high as 113 lm/W – ENERGY STAR® certified
- Available on QuickShip

SPECIFICATIONS

- HOUSING – Die-cast aluminum trim housing with forged aluminum heat sink. Galvanized steel splice compartment with driver mounting plate/enclosure. Swing-out mounting arms adjust for ceiling thickness from 1/2″ - 1-7/16″ (see options for additional ceiling thicknesses).
- TRIMLOCK – Innovative TrimLock reflector retention system ensures the trim remains flush with the ceiling plane.
- OPEN REFLECTOR – Low-iridescent anodized aluminum. Clear semi-specular finish standard.
- LENSED TRIM – Die-cast aluminum frame with micro-prismatic, tempered glass lens.
- ELECTRICAL – High-performance Class 2 C.O.B. LED array. Modular quick-connect plug for easy field-connection of LED light assembly to driver. Reported L70>55,000 hours. Reported L90>55,000 hours. Estimated L70 = 200,000 hours.
- MOUNTING – Recessed. 20 ga. galvanized steel mounting pan for new construction or IC-rated enclosure. Remodel kit option includes receiver bracket hardware. Minimum 24″ O.C. marked spacing required for L50 and L60 lumen packages.
- LISTINGS –
  - cCSAus conforms to UL STD 1598; Certified to CAN/CSA STD C22.2 No. 250.0 for damp locations. LED light assembly conforms to UL 2108 for remote installation.
  - Suitable for wet location under covered ceiling when specified with WET/CC or TD options.
  - ENERGY STAR® certified in select configurations, see www.energystar.gov
  - IC-rated for direct contact with insulation when specified with I Mounting Type.
  - City of Chicago Environmental Air approved when specified with CP option.
  - Complies with ASTM-E283 when specified with ATH option.
  - RoHS compliant.
  - Title 24 (JA8) compliant in select configurations, see www.cacertappliances.energy.ca.gov.
- WARRANTY – 5-year limited warranty, see hew.com/warranty.

ENERGY STAR

bios ILLUMINATED

Available with BIOS® consult factory

ORDERING EXAMPLE: 4DR - TL - L20/835 - OPTIONS - DIM - UNV - OW - OF - CS - TRIM OPTIONS - N - F1

HOUSING | TRIM | MOUNT.

HOUSING

SERIES	LUMENS [1]	CRI	CCT
4DR - TL TrimLock	**L10** 1,000lm [3]	**8** 80	**27** 2700K
	L15 1,500lm	**9** 90 [4]	**30** 3000K
	L20 2,000lm		**35** 3500K
	L30 3,000lm		**40** 4000K
	L40 4,000lm		**50** 5000K
	L50 5,000lm		
	L60 6,000lm		

OPTIONS		CONTROL [2]		VOLTAGE
SCA_ _	Sloped ceiling adapter [5]	**DIM**	Dimming driver, 0-10V	**UNV** 120-277V
ATH	Airtight construction	**DIM1**	1% Dimming driver, 0-10V	**347** 347V [6]
F	Fuse			
EM/7W	7-watt emergency battery [7]			
EM/10W	10-watt emergency battery [8]			
EM/10W/RTS	10-watt emergency battery with regressed test switch [9]			
CP	Chicago plenum (CCEA) [10]			
SDT	Stepdown transformer [11]			
TC	Adjustable mounting arms for 1-1/2″ – 2-1/4″ thick ceilings			

TRIM [12]

TRIM TYPE

- **O** Open reflector
- **L** Flush lens
- **R** Regressed lens
- **A** Angled lens [14]
- **S** Non-conductive flush lens for shower applications [15]

DISTRIBUTION [13]

- **W** Wide
  - 65° Open
  - 50° Flush
  - 50° Regressed
- **M** Medium [16]
  - 45° Open
  - 35° Flush
  - 30° Regressed
- **N** Narrow [17]
  - 10° Open
  - 25° Flush
  - 25° Regressed
- **WW** Wall wash [18]

FLANGE TYPE

- **OF** 1/2″ standard flange
- **SF** 1/4″ mud-in flange [19]

REFLECTOR FINISH

Open trim types

- **CS** Clear semi-specular anodize
- **SG** Satin-glow anodize
- **GD** Gold anodize
- **CG** Champagne gold anodize
- **PW** Pewter anodize
- **SPC** Clear specular anodize
- **RG** Rose gold anodize
- **WH** White texture powder coat
- **BL** Black texture powder coat

Lens trim types

- **CS** Clear semi-specular powder coat
- **WH** White texture powder coat
- **BL** Black texture powder coat
- **MB** Black texture splay with white flange [27]

TRIM OPTIONS

- **MWT** Textured white trim flange [20]
- **IP** IP65 rated trim [21]
- **AD** Diffuse acrylic lens [22]
- **PD** Diffuse 1/8″ polycarbonate lens [23]
- **TD** Diffuse polycarbonate lens media at top of open reflector [24]
- **WET/CC** Wet location, covered ceiling listed [25]
- **AM** Anti-microbial [26]

MOUNTING

MOUNTING TYPE [28]

- **N** Open pan for new construction
- **I** IC-rated enclosure for new construction [30]
- **R** Remodel kit [31]

MOUNTING HARDWARE [29]

- **F1** Integral 2-position fixed pan bracket, universal bar hanger included [32]
- **BA1** Adjustable butterfly pan bracket, bar hanger not included [33]
- **CA1** Adjustable caterpillar pan bracket, universal bar hanger included [34]

NOTES

1 Lumen output based on O trim type, W distribution and CS finish, 3500K/80CRI. Actual lumens may vary +/-5%, see page 2 for FIXTURE PERFORMANCE DATA
2 See page 4 for ADDITIONAL CONTROL OPTIONS.
3 Not available with EM/10W emergency batteries.
4 Extended lead times may apply. Consult factory for availability.
5 9″ aperture, specify degrees of slope in 5° increments, 05°-30°. See page 4 for SLOPED CEILING ADAPTOR DETAILS. Not available with ATH or TC options. N Mounting Type only. Not available with WET/CC.
6 Not available with EM batteries or DMX controls.
7 N and R Mounting Types only.
8 N and R Mounting Types only.
9 Not available with WET/CC, ATH or IP options. N and R Mounting Types only. See page 5 for EM/10W/RTS DETAILS.
10 I Mounting Type required.
11 May be required for 347V, see product builder at hew.com/product-builder
12 Trim ships separately.
13 Beam angle based on CS or WH reflector finish.
14 Available with WW Distribution only.
15 W Distribution, OF Flange Type, WH Reflector Finish only. Standard with AD diffuse acrylic lens. IP and WET/CC options standard.
16 Not available with lumen stops L50 and higher when specified with flush or regressed trim types.
17 Not available with lumen stops L50 and higher when specified with flush or regressed trim types.
18 O and A Trim Types only.
19 For use with mud-in plaster construction only, supplied with mud flange installation kit. See page 5 for FLANGE TYPE DETAILS. Not available with ATH or IP options.
20 Not available with WH Reflector Finish, L or S Trim Types.
21 L and R Trim Types only.
22 Not available with O trim type. W distribution only.
23 Not available with O trim type. W distribution only.
24 O Trim Type only. WET/CC standard. L50 lumen package max.
25 L50 lumen package max with O Trim Type.
26 WH and BL Reflector Finishes only. Not available with S Trim Type.
27 R Trim Type only. Not available with MWT.
28 Mounting hardware required (N and I only), ordered separately, see MOUNTING HARDWARE ordering info. See page 5 for MOUNTING TYPE DETAILS.
29 Additional mounting hardware options available. See page 6 for MOUNTING HARDWARE DETAILS.
30 L20 lumen package max. L30 available, wide distribution only for lensed trims.
31 Also used in new construction sheetrock ceilings.
32 N and I Mounting Types only. I Mounting requires external brackets.
33 N Mounting Type only
34 N Mounting Type only

4DR LED
4.5" Downlight – Round

FIXTURE PERFORMANCE DATA

OPEN REFLECTOR TRIM TYPE

	DIST.	DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)
L10	W	1027	9.0	113.6
	M	999	9.0	110.5
	N	1000	9.0	110.6
L15	W	1466	13.9	105.8
	M	1471	13.9	106.2
	N	1473	13.9	106.3
L20	W	2005	19.8	101.0
	M	2002	19.8	101.0
	N	2004	19.8	101.1
L30	W	2985	27.8	107.3
	M	2900	27.8	104.2
	N	2734	27.8	98.3
L40	W	3979	38.0	104.7
	M	3865	38.0	101.7
	N	3644	38.0	95.9
L50	W	5124	45.2	113.4
	M	4956	45.2	109.6
	N	4818	45.1	106.8
L60	W	6157	58.6	105.0
	M	5955	58.6	101.6
	N	5789	58.6	98.8

FLUSH LENS TRIM TYPE

	DIST.	DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)
L10	W	674	9.0	74.6
	M	895	9.0	99.0
	N	914	9.0	101.2
L15	W	994	13.9	71.7
	M	1319	13.9	95.1
	N	1347	13.9	97.2
L20	W	1352	19.8	68.3
	M	1794	19.8	90.6
	N	1833	19.8	92.6
L30	W	2022	27.8	72.7
	M	2683	27.8	96.5
	N	2741	27.8	98.6
L40	W	2695	38.0	70.9
	M	3577	38.0	94.1
	N	3654	38.0	96.2
L50	W	3364	45.2	74.4
	M	–	–	–
	N	–	–	–
L60	W	4042	58.6	69.0
	M	–	–	–
	N	–	–	–

REGRESSED LENS TRIM TYPE

	DIST.	DELIVERED LUMENS	WATTAGE	EFFICACY (lm/W)
L10	W	660	9.0	73.0
	M	895	9.0	99.1
	N	882	9.0	97.7
L15	W	972	13.9	70.2
	M	1319	13.9	95.2
	N	1300	13.9	93.8
L20	W	1323	19.8	66.2
	M	1795	19.8	90.8
	N	1769	19.8	88.5
L30	W	1979	27.8	71.1
	M	2685	27.8	96.5
	N	2646	27.8	95.1
L40	W	2638	38.0	69.4
	M	3579	38.0	94.2
	N	3527	38.0	92.8
L50	W	3292	45.2	72.8
	M	–	–	–
	N	–	–	–
L60	W	3955	58.6	67.5
	M	–	–	–
	N	–	–	–

MULTIPLIER TABLES

	COLOR TEMPERATURE	
	CCT	CONVERSION FACTOR
80 CRI	2700K	0.92
	3000K	0.98
	3500K	1.00
	4000K	1.01
	5000K	1.02
90 CRI	2700K	0.76
	3000K	0.79
	3500K	0.82
	4000K	0.84
	5000K	0.88

	REFLECTOR FINISH	
	CATALOG NUMBER	CONVERSION FACTOR
0 TRIM	CS	1.00
	SG [1]	0.92
	GD	0.93
	CG	0.96
	PW	0.86
	SPC	1.02
	RG	0.88
	WH [1]	0.89
	BL [1]	0.47
R TRIM	WH	1.00
	CS	0.98
	BL	0.79

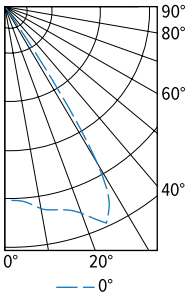
TRIM	
CATALOG NUMBER	CONVERSION FACTOR
S	0.85
AD	0.85
PD	0.85
TD	0.75
WET/CC [2]	0.85

[1] Distribution will also be affected, consult factory.
[2] Use multiplier when specified with O Trim Type.

- Photometrics tested in accordance with IESNA LM-79. Results shown are based on 25°C ambient temperature.
- Wattage shown is based on 120V input.
- Results based on 3500K, 80 CRI, actual lumens may vary +/-5%
- Use multiplier tables to calculate additional options.

PHOTOMETRY

4DR-TL-L20/835-DIM-UNV-OW-OF-CS Report #: 20685; 12/13/18 | Total Luminaire Output: 2005 lumens; 19.8 Watts | Efficacy: 101.0 lm/W | 83.1 CRI; 3472K CCT



CANDLEPOWER DISTRIBUTION	VERTICAL ANGLE	HORIZONTAL ANGLE 0°	ZONAL LUMENS
	0	1810	
	5	1864	178
	15	1960	556
	25	2231	1033
	35	307	193
	45	44	35
	55	11	10
	65	1	1
	75	0	0
	85	0	0
	90	0	

LUMEN SUMMARY	ZONE	LUMENS	% FIXTURE
	0 - 40	1959	98
	0 - 60	2004	100
	0 - 90	2005	100
	0-180	2005	100

THE EDGE® Series

TYPE SG

LED Pathway Luminaire

Rev. Date: V7 02/17/2020

Product Description

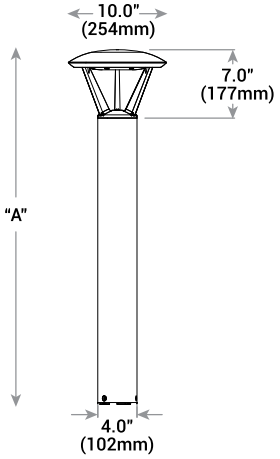
Durable die-cast aluminum luminaire housing mounts directly to 4" (102mm) diameter pole (included) without visible mounting hardware for clean appearance. Pole mounts to rugged die cast aluminum internal flange secured by three 3/8" - 16x6" anchor bolts with 1-1/4" hook (provided). **Note:** T45 Torx 3/8" socket required for head installation. Top mounted LEDs for superior optical performance and light control.

Applications: Landscape, walk-ways and general site lighting

Performance Summary

- Patented NanoOptic® Product Technology
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT:** 4000K (+/- 300K), 5700K (+/- 500K) standard
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://creelighting.com/warranty for warranty terms



Model	Dim. "A"	Weight*
Landscape (P0)	13" (330mm)	12.7 lbs. (5.8kg)
Landscape (P1)	18" (457mm)	13.3 lbs. (6.0kg)
Pathway (P3)	36" (914mm)	17.9 lbs. (8.1kg)
Pathway (P4)	42" (1068mm)	18.6 lbs. (8.4kg)
Pedestrian (P8)	96" (2438mm)	28.4 lbs (12.9kg)

* Add 4.5 lbs. (2.0kg) for 347-480V

Accessories

Field-Installed
Upgrade Kit - Used for replacement of existing bollards with a bolt hole circle of 5.75" (146mm) XA-XBP8RSV XA-XBP8RWH XA-XBP8RBK XA-XBP8RBZ

Ordering Information

Example: PWY-EDG-2M-P0-02-E-UL-SV-350

PWY-EDG			02	E				
Product	**Optic**	**Mounting**	**LED Count (x9)**	**Series**	**Voltage**	**Color Options**	**Drive Current**	**Options**
PWY-EDG	**2M** Type II Medium **3M** Type III Medium **5M** Type V Medium **5S** Type V Short	**P0** 13" (330mm) landscape **P1** 18" (457mm) landscape **P3** 36" (914mm) pathway **P4** 42" (1067mm) pathway **P8** 96" (2438mm) pedestrian	**02**	**E**	**UL** Universal 120-277V **UH*** Universal 347-480V - Available with P3, P4, and P8 mounts only **12** 120V - Available only with TL options **27** 277V - Available only with TL options	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**350** 350mA **525** 525mA - Available with P1, P3, P4, and P8 mounts only	**HL Hi/Low (Dual Circuit Input)** - Available with UL voltage and 525mA driver current only - Must specify 525mA drive current - Refer to HL spec sheet for details - Sensor not included **TL Two-Level (175/525 w/integrated sensor control)** - Available with 12 or 27 voltages only - Must specify 525mA drive current - Refer to TL spec sheet for details **TL2 Two-Level (0/350 w/integrated sensor control)** - Available with 12 or 27 voltages only - Must specify 350mA drive current - Refer to TL spec sheet for details **TL3 Two-Level (0/525 w/integrated sensor control)** - Available with 12 or 27 voltages only - Must specify 525mA drive current - Refer to TL spec sheet for details **WB Welded Base Plate** - Standard on P8 mount option, available with P3 and P4 mount - Includes welded base cover **40K 4000K Color Temperature** - Minimum 70 CRI - Color temperature per luminaire

* 347-480V utilizes magnetic step-down transformer. For input power for 347-480V, refer to the Electrical Data table

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

Product Specifications

CONSTRUCTION & MATERIALS

- Durable die-cast aluminum luminaire housing mounts directly to 4" (102mm) diameter pole (included) without visible mounting hardware for clean appearance
- Pole mounts to rugged die cast aluminum internal flange secured by three 3/8"-16x6" anchor bolts with 1-1/4" hook(provided).
  Note: T45 Torx 3/8" socket required for head installation
- Top mounted LEDs for superior optical performance and light control
- Open design, passive thermal management for superior lumen maintenance
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver and white are available
- **Weight:** See Dimension and Weight Chart on pages 1 and 4

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load at 120V
- **Total Harmonic Distortion:** < 20% at full load at 120V
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

LED Count (x9)	System Watts 120-277V	System Watts 347-480V	Total Current (A)					
			120V	208V	240V	277V	347V	480V
350mA								
02	22	28	0.18	0.12	0.10	0.10	0.09	0.13
525mA								
02	34	40	0.29	0.19	0.17	0.15	0.12	0.13

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

THE EDGE® Series Ambient Adjusted Lumen Maintenance[1]

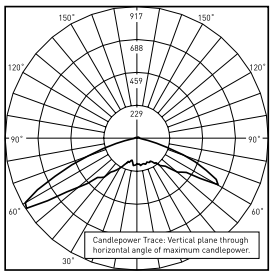
Ambient	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
5°C (41°F)	1.04	1.01	1.00	1.00	1.00
10°C (50°F)	1.03	1.00	0.99	0.99	0.99
15°C (59°F)	1.02	0.99	0.98	0.98	0.98
20°C (68°F)	1.01	0.98	0.97	0.97	0.96
25°C (77°F)	1.00	0.96	0.96	0.96	0.95

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

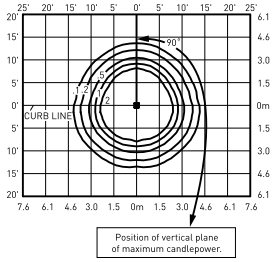
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/bollards-and-pathway/cree-edge-pathway

5S



RESTL Test Report #: PL5759-001
PWY-EDG-5S-**-02-E-UL-350-40K
Initial Delivered Lumens: 1,897

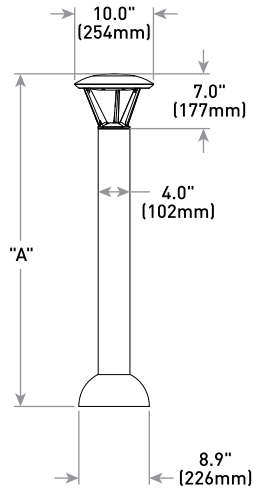


PWY-EDG-5S-**-02-E-UL-350-40K
Mounting Height: 3' (0.9m) A.F.G.
Initial Delivered Lumens: 1,868
Initial FC at grade

Type V Short Distribution				
LED Count (x9)	4000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
350mA				
02	1,868	B1 U2 G1	1,940	B1 U2 G1
525mA				
02	2,615	B1 U2 G1	2,716	B1 U2 G1

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

with Welded Base



Model	Dim. "A"	Weight*
Pathway (P3)	36" (914mm)	17.9 lbs. (8.1kg)
Pathway (P4)	42" (1068mm)	18.6 lbs. (8.4kg)
Pedestrian (P8)	96" (2438mm)	28.4 lbs (12.9kg)

* Add 4.5 lbs. (2.0kg) for 347-480V

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING
A COMPANY OF *IDEAL INDUSTRIES, INC.*

LUMINAIRE CUT SHEETS INCLUDED FOR REFERENCE ONLY

MIST

TYPE SB

1224BZ

MEDIUM WALL MOUNT LANTERN

The sleek design of the Mist collection discreetly emphasizes its contemporary heritage. Featuring a prominent interior panel of clear seedy glass captured on both ends and encased in a protective clear acrylic cylinder. Its solid aluminum construction is underscored by bold Satin Black, Bronze or Titanium finish options. Mist is both Dark Sky and ADA compliant.

DETAILS	
FINISH:	Bronze
MATERIAL:	Aluminum
GLASS:	Clear Acrylic Outside Cylinder & Seedy Glass Inside Panel

DIMENSIONS	
WIDTH:	4.8"
HEIGHT:	22"
WEIGHT:	5 lbs.
BACK PLATE:	4.75" Sq.
EXTENSION:	4"
TOP TO OUTLET:	11"

LIGHT SOURCE	
LIGHT SOURCE:	Socket
WATTAGE:	1-35w GU10
VOLTAGE:	120v

SHIPPING	
CARTON LENGTH:	8"
CARTON WIDTH:	8"
CARTON HEIGHT:	26"
CARTON WEIGHT:	6 lbs.

PRODUCT DETAILS:

- Mounting hardware is hidden on the backplate to ensure a clean silhouette.
- Suitable for use in wet (interior direct splash and outdoor direct rain or sprinkler) locations as defined by NEC and CEC. Meets United States UL Underwriters Laboratories & CSA Canadian Standards Association Product Safety Standards
- Fixture is Dark Sky compliant and engineered to minimize light glare upward into the night sky.
- Fixture is ADA compliant and adheres to the standards and guidelines listed by the Americans with Disabilities Act.
- 2 year finish warranty
- Bold lines and a clean, minimalist style complement contemporary architecture
- Warm rich light bronze tone

PROGRESS LIGHTING

Project:
Fixture Type:
Location: TYPE SC
Contact:

DISTRICT LED

Wall mounted • Wet location listed

PROGRESS LED

Specifications:

P5623-2030K9

Description:

The one-light large LED outdoor wall lantern from the District Collection features metal shade that offers an industrial-inspired design. The versatile vintage form can be used in indoor and outdoor applications.

Images:

Construction:

- Antique Bronze (-20) (painted)
- Aluminum construction
- LED Module is replaceable (Part # 93054049)
- Flicker-free dimming to 10% brightness with most ELV type dimmers (See Dimming Notes)
- CA Title 24 compliant
- Back plate covers a standard 4" hexagonal recessed outlet box
- Mounting strap for outlet box included
- 6" of wire supplied

Performance:

Number of Modules	1
Input Power	9W
Input Voltage	120V
Input Frequency	60Hz
Lumens/LPW	623/69.2 (LM-79) per module
CCT	3000K
CRI	90
Life	60000 (L70/TM-21)
EMI/RFI	FCC Title 47, Part 15, Class B
Min. Start Temp	-30
Max. Operating Temp	30
Warranty	5 year warranty
Labels	cCSAus Wet location listed
	ENERGY STAR® qualified

Dimensions:

Width: 12"
Height: 10-1/2"
Depth: 13-1/4"
H/CTR: 5"

Catalog number:

Base		Finish		Color Temp		CRI
P5623	-	20 - Antique Bronze	-	30K - 3000K	-	9 - 90 CRI

DISTRICT LED

Wall mounted • Wet location listed

PROGRESS LED

ENERGY STAR

P5623-2030K9

Dimming Notes:

P5623 is designed to be compatible with many Electronic Low Voltage (ELV-Reverse Phase) controls.

The following is a partial list of known compatible dimmer controls:

Electronic Low Voltage ELV Reverse Phase Controls

Lutron	Diva Series	(Part Number DVELV-300P)

Digital type dimmers are not recommended.

Dimming capabilities will vary depending on the dimmer control, load, and circuit installation.
Always refer to dimmer manufacturer instructions or a controls specialist for specific requirements.

Dimmer control brand names where identified above are trade names or registered trademarks of each respective company.

Attachment 2: Agency Comments

March 11, 2021

Keith Leonard
City of Newberg
414 E. First Street
Newberg, OR 97132

Re: Friendsview Manor New Building, DR221-0001
Tax Lot ID: R3217CB 00200

Dear Keith,

Thank you for the opportunity to review the proposed site plan surrounding the above-named development project. There may be more or less requirements needed based upon the final project design, however, Tualatin Valley Fire & Rescue will endorse this proposal predicated on the following criteria and conditions of approval.

FIRE APPARATUS ACCESS:

1. **FIRE APPARATUS ACCESS ROADS:** Access roads shall be provided for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction. **Exception:** Approved agricultural and equine structures complying with ORS 455.315 are not required to have fire apparatus access roads (see New Construction Guide Appendix C). Access roads are not required to be modified for commercial buildings that undergo a change in occupancy, change in use, or conversion from agricultural or equine exempt to non-exempt unless there is a change to the structure's square footage or building footprint. (OFC 503.1.1)

2. **FIRE ACCESS ROAD DISTANCE FROM BUILDINGS:** The access shall extend to within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. (OFC 503.1.1)

3. **DEAD ENDS AND ROADS IN EXCESS OF 150 FEET (TURNAROUNDS):** Dead end fire apparatus access roads or roads in excess of 150 feet in length shall be provided with an approved turnaround. Diagrams of approved turnarounds can be found in the corresponding guide that is located at (OFC 503.2.5 & Figure D103.1)

4. **FIRE APPARATUS ACCESS ROAD EXCEPTION FOR AUTOMATIC SPRINKLER PROTECTION:** When buildings are completely protected with an approved automatic fire sprinkler system, the requirements for fire apparatus access may be modified as approved by the Fire Marshal. (OFC 503.1.1) ***Note: If fire sprinklers are installed and the system will be supported by a municipal water supply, please contact the local water purveyor for information surrounding water meter sizing.***

5. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL HEIGHT:** Buildings exceeding 30 feet in height or three stories in height shall have at least two separate means of fire apparatus access. (D104.1)

6. **ADDITIONAL ACCESS ROADS – COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE:** Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least two approved separate means of fire apparatus access. Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire

apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems. (OFC D104.2)

7. **ADDITIONAL ACCESS ROADS – MULTI-FAMILY RESIDENTIAL DEVELOPMENTS:** Projects having more than 100 dwelling units shall be provided with two separate and approved fire apparatus access roads. Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1, 903.3.1.2. Projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus roads regardless of whether they are equipped with an approved automatic sprinkler system. (OFC D106)

8. **AERIAL FIRE APPARATUS ROADS:** Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement. (OFC D105.1, D105.2)

9. **AERIAL APPARATUS OPERATIONS:** At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the Fire Marshal. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building. (D105.3, D105.4)

10. **MULTIPLE ACCESS ROADS SEPARATION:** Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Marshal), measured in a straight line between accesses. (OFC D104.3)

11. **FIRE APPARATUS ACCESS ROAD WIDTH AND VERTICAL CLEARANCE:** Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants (OFC D103.1)) and an unobstructed vertical clearance of not less than 13 feet 6 inches. (OFC 503.2.1 & D103.1)

12. **NO PARKING SIGNS:** Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, “No Parking” signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read “NO PARKING - FIRE LANE” and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background. (OFC D103.6)

13. **NO PARKING:** Parking on emergency access roads shall be as follows (OFC D103.6.1-2):
    1. 20-26 feet road width – no parking on either side of roadway
    2. 26-32 feet road width – parking is allowed on one side
    3. Greater than 32 feet road width – parking is not restricted

    Note: For specific widths and parking allowances, contact the local municipality.

14. **PAINTED CURBS:** Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked “NO PARKING FIRE LANE” at 25 foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background (or as approved). (OFC 503.3)

15. **FIRE APPARATUS ACCESS ROADS WITH FIRE HYDRANTS:** Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant. (OFC D103.1)

16. **TURNOUTS:** Where access roads are less than 20 feet and exceed 400 feet in length, turnouts 10 feet wide and 30 feet long may be required and will be determined on a case by case basis. (OFC 503.2.2)

17. **SURFACE AND LOAD CAPACITIES:** Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested. (OFC 503.2.3)

18. **TURNING RADIUS:** The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point. (OFC 503.2.4 & D103.3)

19. **ACCESS ROAD GRADE:** Fire apparatus access roadway grades shall not exceed 15%. Alternate methods and materials may be available at the discretion of the Fire Marshal (for grade exceeding 15%).

20. **ANGLE OF APPROACH/GRADE FOR TURNAROUNDS:** Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

21. **ANGLE OF APPROACH/GRADE FOR INTERSECTIONS:** Intersections shall be level (maximum 5%) with the exception of crowning for water run-off. (OFC 503.2.7 & D103.2)

22. **AERIAL APPARATUS OPERATING GRADES:** Portions of aerial apparatus roads that will be used for aerial operations shall be as flat as possible. Front to rear and side to side maximum slope shall not exceed 10%.

23. **GATES:** Gates securing fire apparatus roads shall comply with all of the following (OFC D103.5, and 503.6):
    1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width).
    2. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved.
    3. Electric gates shall be equipped with a means for operation by fire department personnel
    4. Electric automatic gates shall comply with ASTM F 2200 and UL 325.

24. **ACCESS DURING CONSTRUCTION:** Approved fire apparatus access roadways shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. Temporary address signage shall also be provided during construction. (OFC 3309 and 3310.1)

25. **TRAFFIC CALMING DEVICES:** Shall be prohibited on fire access routes unless approved by the Fire Marshal. (OFC 503.4.1). Traffic calming measures linked here: http://www.tvfr.com/DocumentCenter/View/1578

FIREFIGHTING WATER SUPPLIES:

26. **COMMERCIAL BUILDINGS – REQUIRED FIRE FLOW:** The minimum fire flow and flow duration shall be determined in accordance with OFC Table B105.2. The required fire flow for a building shall not exceed the available GPM in the water delivery system at 20 psi residual. (OFC B105.3)
    Note: OFC B106, Limiting Fire-Flow is also enforced, except for the following:
    - The maximum needed fire flow shall be 3,000 GPM, measured at 20 psi residual pressure.
    - Tualatin Valley Fire & Rescue does not adopt Occupancy Hazards Modifiers in section B105.4-B105.4.1

27. **FIRE FLOW WATER AVAILABILITY:** Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project. (OFC Appendix B)

28. **WATER SUPPLY DURING CONSTRUCTION:** Approved firefighting water supplies shall be installed and operational prior to any combustible construction or storage of combustible materials on the site. (OFC 3312.1)

FIRE HYDRANTS:

29. **FIRE HYDRANTS – COMMERCIAL BUILDINGS:** Where a portion of the building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided. (OFC 507.5.1)
    - This distance may be increased to 600 feet for buildings equipped throughout with an approved automatic sprinkler system.
    - The number and distribution of fire hydrants required for commercial structure(s) is based on Table C105.1, following any fire-flow reductions allowed by section B105.3.1. Additional fire hydrants may be required due to spacing and/or section 507.5 of the Oregon Fire Code.

30. **FIRE HYDRANT(S) PLACEMENT:** (OFC C104)
    - Existing hydrants in the area may be used to meet the required number of hydrants as approved. Hydrants that are up to 600 feet away from the nearest point of a subject building that is protected with fire sprinklers may contribute to the required number of hydrants. (OFC 507.5.1)
    - Hydrants that are separated from the subject building by railroad tracks shall not contribute to the required number of hydrants unless approved by the Fire Marshal.
    - Hydrants that are separated from the subject building by divided highways or freeways shall not contribute to the required number of hydrants. Heavily traveled collector streets may be considered when approved by the Fire Marshal.
    - Hydrants that are accessible only by a bridge shall be acceptable to contribute to the required number of hydrants only if approved by the Fire Marshal.

31. **PRIVATE FIRE HYDRANT IDENTIFICATION:** Private fire hydrants shall be painted red in color. Exception: Private fire hydrants within the City of Tualatin shall be yellow in color. (OFC 507)

32. **FIRE HYDRANT DISTANCE FROM AN ACCESS ROAD:** Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal. (OFC C102.1)

33. **REFLECTIVE HYDRANT MARKERS:** Fire hydrant locations shall be identified by the installation of blue reflective markers. They shall be located adjacent and to the side of the center line of the access roadway that the fire hydrant is located on. In the case that there is no center line, then assume a center line and place the reflectors accordingly. (OFC 507)

34. **PHYSICAL PROTECTION:** Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided. (OFC 507.5.6 & OFC 312)

35. **CLEAR SPACE AROUND FIRE HYDRANTS:** A 3 foot clear space shall be provided around the circumference of fire hydrants. (OFC 507.5.5)

36. **FIRE DEPARTMENT CONNECTION (FDC) LOCATIONS:** FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved. (OFC 912.2.1 & NFPA 13)
    - Fire department connections (FDCs) shall normally be located remotely and outside of the fall-line of the building when required. FDCs may be mounted on the building they serve, when approved.
    - FDCs shall be plumbed on the system side of the check valve when sprinklers are served by underground lines also serving private fire hydrants.

BUILDING ACCESS AND FIRE SERVICE FEATURES

37. **EMERGENCY RESPONDER RADIO COVERAGE:** In new buildings where the design reduces the level of radio coverage for public safety communications systems below minimum performance levels, a distributed antenna system, signal booster, or other method approved by TVF&R and Washington County Consolidated Communications Agency shall be provided. (OFC 510, Appendix F, and OSSC 915) http://www.tvfr.com/DocumentCenter/View/1296.
    - Emergency responder radio system testing and/or system installation is required for this building. Please contact me (using my contact info below) for further information including an alternate means of compliance that is available. If the alternate method is preferred, it must be requested from TVF&R prior to issuance of building permit.
    - Testing shall take place after the installation of all roofing systems; exterior walls, glazing and siding/cladding; and all permanent interior walls, partitions, ceilings, and glazing.

38. **KNOX BOX:** A Knox Box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Order via www.tvfr.com or contact TVF&R for assistance and instructions regarding installation and placement. (OFC 506.1)

39. **FIRE PROTECTION EQUIPMENT IDENTIFICATION:** Rooms containing controls to fire suppression and detection equipment shall be identified as "Fire Control Room." Signage shall have letters with a minimum of 4 inches high with a minimum stroke width of 1/2 inch, and be plainly legible, and contrast with its background. (OFC 509.1)

40. **PREMISES IDENTIFICATION:** New and existing buildings shall have approved address numbers; building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property, including monument signs. These numbers shall contrast with their background. Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. (OFC 505.1)

If you have questions or need further clarification, please feel free to contact me at **[503-259-1409].**

Sincerely,

Ty Darby

Ty Darby
Deputy Fire Marshal II

Cc: file

Attachment 3: Public Comments

March 2, 2021

Community Development Department
P. O. Box 970
Newberg, OR 97132

To Whom It May Concern:

This note comes regarding the proposed expansion of Friendsview Retirement Community on 1301 E. Fulton St., Newberg. I share a comment and a question:

- I am in favor of the development as I understand it, believing it will be wonderful accommodations for many seniors but have the following question.
- How does the plan include just 39 parking spaces for 79 living units? Does this number of spaces (about one space for every two living units) match the existing parking needs for similar living accommodations at Friendsview? Does this number of parking spaces meet city code? It doesn't seem to make sense to me.

Respectfully,

Doug

Doug Bartlett
1100 N. Meridian St., #47
Newberg, OR 97132

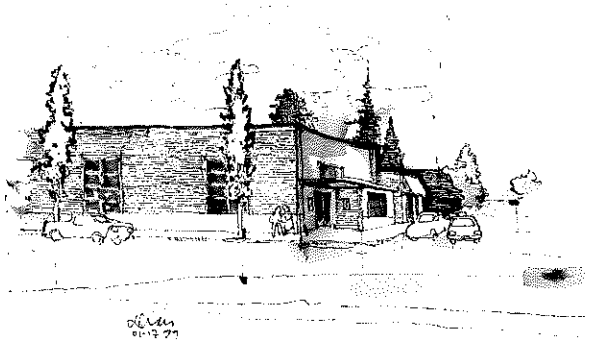
Attachment 4: Relevant Correspondence

BROWN, TARLOW, BRIDGES & PALMER, P.C.

Attorneys at Law

JOHN T. BRIDGES
STEPHEN C. PALMER
RICHARD P. BROWN
LOREN G. GAUKROGER

ALLYN E. BROWN
DONALD O. TARLOW
Retired



515 E. FIRST STREET
NEWBERG, OREGON 97132
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www.newberglaw.com

April 8, 2021

Keith Leonard
City of Newberg
P.O. Box 970
Newberg, Oregon 97132

Re: Friendsview Manor Inc., Underground Utilities Requirement
Tax Lot No. R3217CB 00200

Dear Keith,

Our office represents Friendsview Manor Inc., (Friendsview). Friendsview previously submitted a site design review application for some improvements that they intend to perform at or near Fulton Street. I am writing to request that the City not require Friendsview to underground utilities in the area east of their service driveway along Hess Creek pursuant to Newberg Municipal Code (NMC) 15.430.

NMC 15.430(c) allows the director to make exceptions to the requirement to underground utilities based on one or more of the following criteria:

1. The cost of undergrounding the utility is extraordinarily expensive.

2. There are physical factors that make undergrounding extraordinarily difficult.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

As explained below, Friendsview can satisfy not just one, but all all of the foregoing criteria in their request that the NMC 15.430 condition not be imposed.

1. The cost of undergrounding the utility is extraordinarily expensive.

In anticipation of the project, Friendsview has been working with LRS Architects (LRS) to develop and design the proposed improvements to the area. Based on the condition of NMC 15.430, Friendsview requested that LRS prepare a cost analysis of undergrounding the utilities in each of the areas of the project.

LRS prepared a report on the cost estimate per linear foot for undergrounding the utilities, which we have enclosed for your consideration. Based on the report, LRS estimates that the costs for undergrounding the utilities in Hess Creek area would be approximately $429,916.00. The approximate cost is 125% compared to the other areas.

It is important to recognize that this estimate is likely a best-case scenario. Hess Creek is within a conservation zone and holds many unique characteristics such as its' topography, which is shown on the enclosed map, and the fact that the City of Newberg's septic line runs along the creek bed. Any construction is almost certainly going to be fraught with unexpected delays and problems, which will only increase the overall costs of the project in this specific area.

Not only is the current estimated cost extraordinarily expensive, but we anticipate that this estimated cost will only increase, if and when, construction begins in the area.

2. *There are physical factors that make undergrounding extraordinarily difficult.*

Hess Creek, a conservation area, runs along the easterly boundary of Friendsview. From the Manor, steep slopes lead down to the creek bed ,which sits approximately sixty feet down, from the ground level of the Manor. The sixty foot vertical drop occurs over approximately 120 feet, which makes for a very steep slope. The creek bed area contains the City of Newberg's wastewater main.

Because of the nature of Hess Creek, any undergrounding of utilities would be extraordinarily difficult. Any work in the conservation zone would require an additional land use process and trigger an environmental study.

If the land use process and environmental study allow for construction in the area, then contractors will have to directionally drill approximately seventy feet down into the creek then laterally 250 feet and attempt to run the utilities under the existing wastewater main without disrupting the main. Once the utilities are under Hess Creek, contractors would then have to resurface the utilities and connect them to one of the existing overhead power poles on George Fox University property, which would require the University's consent for an easement.

Not only will the physical factors and the unique characteristics of Hess Creek make it extraordinarily difficult to underground the utilities, but the result will have the utilities be

connected to the existing above-ground power pole.

3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.

As depicted in the enclosed photo, the existing utilities that run east along Fulton Street to Villa Road are on property belonging to George Fox University. All of their utilities in this area are above ground. There is no current and/or proposed plan by George Fox University to alter the area in such a way as to trigger the undergrounding of these utilities along their property. It is unlikely that the existing above-ground utilities will ever be changed.

This letter has addressed all of the criteria for an exception to NMC 15.430.010. We believe, based on the foregoing responses, that Friendsview should be exempt from undergrounding their utilities on the west side of their property.

Yours truly,

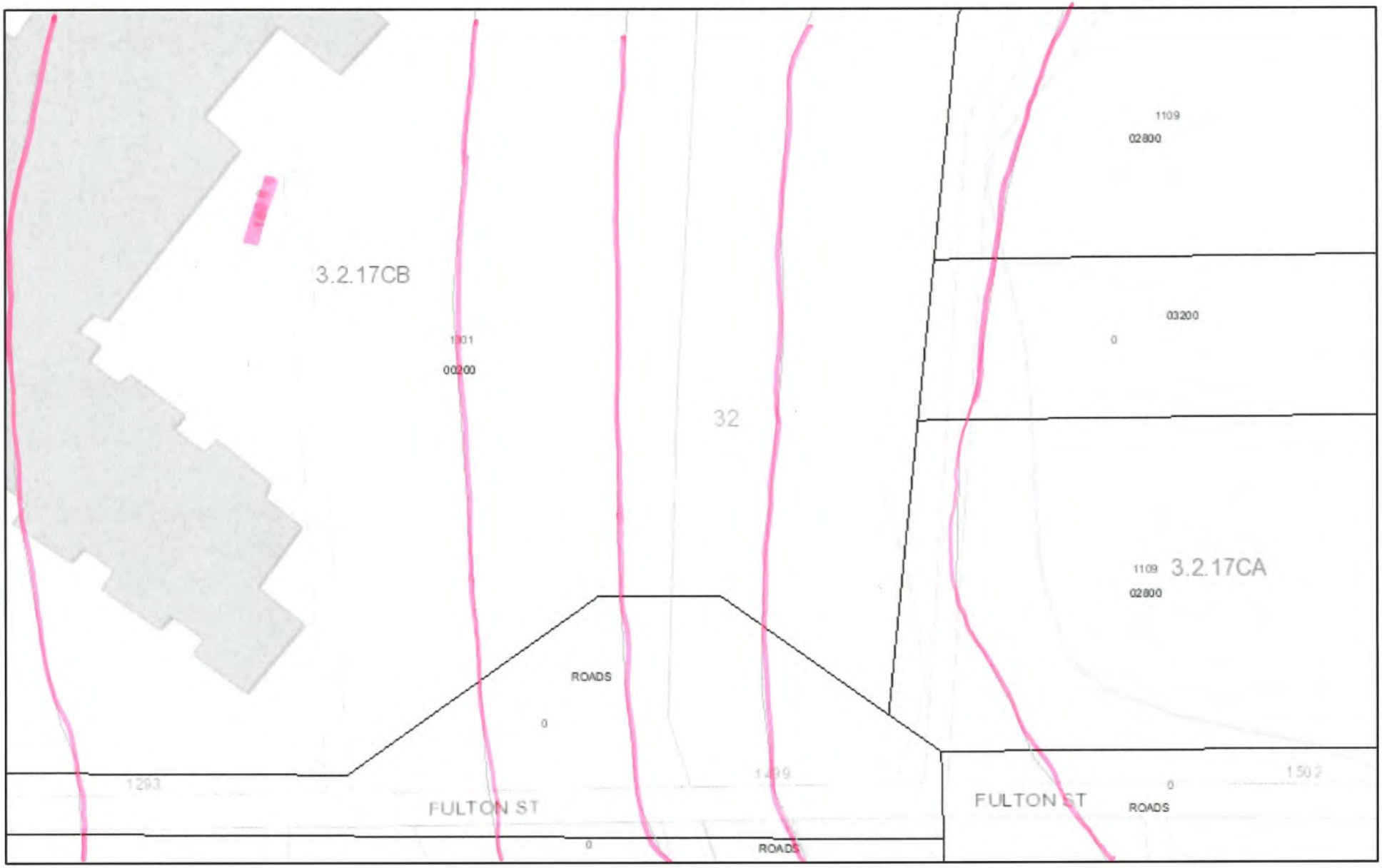
John T. Bridges

JTB:lgg

Enclosures
Photo of Utilities on Fulton Street
Topographic Map of Area
LRS Cost Analysis


Untitled Map
Write a description for your map.
Legend
Fulton St
Google Earth
© 2021 Google
8.08 ft
N

Yamhill County Map



April 8, 2021

1:960

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0 0.01 0.01 0.03 km

SL

UGB_YamhillCo

City Boundary

County

20 Foot Contours

County Roads

Surveys1

Townships

Taxlots

Tax Label

City of Newberg, Oregon Metro, Bureau of Land Management, State of

Yamhill County GIS
Yamhill County 2018

Friendsview PGE undergrounding Cost Estimate per linear Foot

		University Village - Fulton	RCF Fulton	Fulton Creek Crossing	
Distance - lineal Feet		**450**	**375**	**224**	**1049**
Location		**on site PUE**	**on site PUE**	**Offsite - ROW**	
	Qnty / LF	**COST**	**COST**	**COST**	**Total Cost**
		$ -	$ -	$ -	$ -
Off site Landscape replacement- Conservation Zone plantings		$ -	$ -	$ 45,000.00	$ 45,000.00
PUE- Conduits / trenching / back fill -	$ 419.00	$ 188,550.00	$ 157,125.00	$ -	$ 345,675.00
Boring under Creek-/ PGE plus 3rd party conduits	$ 470.00			$ 105,280.00	$ 105,280.00
PGE Vaults	$ 18,000.00	$ 18,000.00	$ 18,000.00	$ 36,000.00	$ 72,000.00
site landscape and other pavement replacement	$ 14,648.00	$ 8,000.00	$ 7,000.00	$ 5,300.00	$ 20,300.00
Re Feed private Utilities services and lines across Fulton street.	3	$ 60,000.00			$ 60,000.00
PGE labor cost	$ 379.00	$ 170,550.00	$ 142,125.00	$ 84,896.00	$ 397,571.00
Private Utility Labor Cost	$ 200.00	$ 90,000.00	$ 75,000.00	$ 44,800.00	$ 209,800.00
Survey / Civil / Electrical Engineering / LUR Conservation studies unknown)				$ 28,000.00	$ 28,000.00
Electric Engineer/ civil		$ 4,500.00	$ 2,000.00		$ 6,500.00
Contingency	$ 60.00	$ 27,000.00	$ 22,500.00	$ 13,440.00	$ 62,940.00
P&O/ Insurance/Escalation	$ 300.00	$ 135,000.00	$ 112,500.00	$ 67,200.00	$ 314,700.00
		$ 701,600.00	**$ 536,250.00**	**$ 429,916.00**	$ 1,667,766.00
Lineal Feet Cost		**$ 1,559.11**	**$ 1,430.00**	**$ 1,919.27**	