



File No. EA2020-124

CITY OF RICHLAND
Determination of Non-Significance

Description of Proposal: Construction of an approximately 10,360 square foot fire station (Fire Station 73) with associated infrastructure on an approximate 2 acre site.

Proponent: Richland Fire & Emergency Services Dept.
Attn: Len Zickler
328 W. Jay Ave.
Spokane, WA 99218

Location of Proposal: The proposed project will occur at 2120 Jadwin Ave., Richland, WA (APN 134081000029000).

Lead Agency: City of Richland

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

() There is no comment for the DNS.

(X) This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for fourteen days from the date of issuance.

() This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible Official: Mike Stevens

Position/Title: Planning Manager

Address: 625 Swift Blvd., MS #35, Richland, WA 99352

Date: September 16, 2020

Signature _____

Environmental Checklist

File No. _____

A. BACKGROUND

1. Name of proposed project, if applicable: Richland Fire Station 73
2. Name of Applicant: Richland Fire and Emergency Services Department
3. Address and phone number of applicant or contact person: Agent: Len Zickler, 328 W Jay Ave.
Spokane, WA 99218
(509) 720-3228.
4. Date Checklist Prepared: June 17, 2020.
5. Agency Requesting checklist: City of Richland
6. Proposed timing or schedule (including phasing, if applicable): It is anticipated construction of this fire station will begin summer 2020.
7. Do you have any plans for future additions, expansion or further activity related to or connected with this proposal? Not at this time.
8. List any environmental information you know that has been prepared or will be prepared, directly related to this proposal. None.
9. Do you know whether applications are pending for government approvals of other proposals directly affecting the property covered by your proposal? None.
10. List any government approvals or permits needed for your proposal, if known. SEPA approval, grading permit, building permit, utility/ROW permit.
11. Give brief, complete description of your proposal, including the proposed uses and size of the project and site. The proposal is to Construct an approximately 11,500 square-foot fire station including four apparatus bays totaling approximately 4378 ft.².
12. Location of the proposal. Proposed Fire Station 73 is located at the northeast corner of Coast Street and Jadwin Avenue.

B. ENVIRONMENTAL ELEMENTS

1. Earth
 - a. General description of the site (circle one): flat.
 - b. What is the steepest slope on the site (approximate percent slope)? 2%.
 - c. What general types of soil's are found on the site (For example, clay, sand, gravel, peat, muck)? The site is characterized generally by sandy soils.

- d. Are there surface indications or history of unstable soils in the immediate vicinity? No.
- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. The project will require grading of approximately 5000 yd.³ of on-site material. Cut and fill material will be balanced on site.
- f. Could erosion occur as a result of clearing, construction, or use? Erosion could occur. However an erosion and sedimentation control plan will be prepared and implemented during construction.
- g. About what percentage of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Approximately 50% of the site will be covered with impervious surfaces.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: An erosion and sedimentation control plan will be implemented during construction.

2. Air

- a. What type of emissions to the air would result from the proposal (i.e., dust, automobile, orders, industrial, woodsmoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known. Some dust will be generated during the construction of the project. Post construction, vehicle emissions typical of this type of facility will be generated by employees, visitors and firefighters during the conduct of business.
- b. Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe. None known.
- c. Proposed measures to reduce or control emissions or other impacts to air, if any. None proposed.

3. Water:

a. Surface Water:

- (1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, salt water, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, identify what stream or river it flows into. None.
- (2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe an attached available plans. No.
- (3) Estimate the amount of fill and dredge material that would be placed in or removed from the surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. N/A
- (4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities of known. No.
- (5) Does the proposal lie within a 100-year floodplain. No.
- (6) Does the proposal involve any discharge of waste materials to surface waters? If so, describe the type of waste and anticipated volumes of discharge. No.

b. Ground Water:

(1) Will groundwater be withdrawn, or water be discharged to ground water? Give general description, purpose and approximate quantities if known. No.

(2) Describe waste material to be discharged into the ground from septic tanks rather sanitary waste treatment facility. Describe the general size of the system, the number of houses to be served (if applicable) or the number of person(s) systems are expected to serve. None.

c. Water Runoff (including storm water):

(1) Describe the source of runoff (including stormwater) and method of collection and disposal if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. Runoff will occur from buildings and impervious surfaces as part of the project. Runoff will be retained on-site and infiltrated consistent with city of Richland storm drainage standards.

(2) Could waste materials enter ground or surface waters? If so, generally describe. No.

(3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? No.

d. Proposed measures to reduce or control surface, ground, and run off water impacts, if any. A storm drainage management plan will be prepared in conformance with city of Richland storm drainage standards.

(4) Plants

a. Check or circle type of vegetation found on the site: Native shrubs and grasses are found on the site.

b. What kind and amount of vegetation will be removed or altered? Native shrubs and grasses will be removed and replaced by site improvements and ornamental landscaping.

c. List threatened or endangered species known to be on or near the site. None known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any. Areas of the site not covered by impervious surfaces will be improved with plantings, including, lawn, shrubs and decorative rock mulch.

e. List all noxious weeds and invasive species known to be on or near the site. None known.

5. Animals

a. Circle any birds and animals which of been observed on or near the site or are known to be on or near the site: Birds: hawk, songbirds. Mammals: ground squirrels, rodents.

b. List any threatened or endangered species known to be on or near the site. None known.

c. Is the site part of a migration route? If so, explain. The site is within the mapped Pacific Flyway.

d. Proposed measures to preserve or enhance wildlife, if any: None proposed.

e. List any invasive animal species known to be on or near the site. None known.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, woodstove, solar) will be used to meet the completed projects energy needs? Describe whether it will be used for heating, manufacturing, etc. Energy efficient gas and electric heating and cooling systems will be included in the project.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. No.

c. What kinds of energy conservation features are included in the plans for this proposal? List other proposed measures to reduce or control energy impacts, if any. Energy efficient heating and cooling systems will be included in the project conforming with the current energy code standards.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe. No.

(1) Describe any known or possible contamination at the site from present or past uses. None known.

(2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity. None known.

(3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the projects development or construction, or at any time during the operating life of the project. None proposed.

(4) Describe special emergency services that might be required. None proposed.

(5) Proposed measures to reduce or control environmental health hazards, if any: None proposed.

b. NOISE:

(1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? None.

(2) What types and levels of noise would be created by or associated with the project on a short term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. Some noise will be generated typical in the delivery of emergency services. This type of noise could be generated at all hours and anytime.

(3) Proposed measures to reduce or control noise impacts, if any: None proposed.

8. Land and Shoreline Use

- a. What is the current use of the site and adjacent properties? This subject site is currently vacant. Properties to the south and east are in residential use. The property to the north, across Stevens Drive is in commercial use.
- b. Has the site been used for agriculture? No.
- c. Describe any structures on the site. None.
- d. Will any structures be demolished? No.
- e. What is the current zoning classification of the site? Park and Public Facility.
- f. What is the current comprehensive plan designation of the site? Public Facility.
- g. If applicable, what is the current shoreline master program designation of the site? N/A
- h. Has any part of the site been classified as a critical area? If so, specify. No.
- i. How many people will be employed on the site? Approximately 24 total.
- j. Approximately how many people will the completed project displace? None.
- k. Proposed measures to avoid to reduce displacement impacts, if any: N/A
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: Fire and emergency services are a permitted use in this zone.
- m. Proposed measures to reduce or control impacts to agricultural and forest lands of long – term commercial significance, if any: None.

9. Housing

- a. Approximately how many units would be provided, if any? Indicate whether high, middle or low income housing. None.
- b. Approximately how many units, if any, would be illuminated? Indicate whether high, middle or low income. None.
- c. Proposed measures to reduce her control housing impacts, if any: N/A

10. Aesthetics

- a. What is the tallest height of any proposed structures, not including antenna; what is the principal exterior building materials proposed?
Approximately 24 feet. The building will incorporate masonry and metal.
- b. What views in the immediate vicinity would be altered or obstructed? None.

c. Proposed measures to reduce or control aesthetic impacts, if any. Set improvements will include an architecturally attractive building as well as associated landscape improvements.

11. Light and Glare.

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? The site and building will be appropriately lit at night.

b. Could light or glare from the finished project be a safety hazard or interfere with views? No.

c. What existing offsite sources of light or glare may affect your proposal? None.

d. Proposed measures to reduce and control light and glare impacts, if any. Exterior lighting will include cut-off features to minimize glare to adjacent properties.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity? A public multi-use trail intersects the current site. Also, an athletic field including baseball diamonds and a bicycle park are located approximately three blocks to the north of the site.

b. With the proposed project displace any existing recreational uses? If so describe. No.

c. Proposed measures to reduce or control impacts on recreation, including recreational opportunities to be provided by the project or applicant, if any: The existing multi-use trail will be realigned and improved through the site.

13. Historic and cultural preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe. None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific or cultural importance known to be on or next to the site. None known.

c. Proposed measures to reduce or control impacts, if any: None proposed.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any. The site is located at the intersection of Jadwin Avenue and Coast Street. Primary access to the building will be off of Coast Street. Fire apparatus will utilize Jadwin Avenue.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? Public transit is available. Access to public transit as available within two blocks of the project site.

c. How many parking spaces with the completed project have? How many would the project eliminate? The project will include 25 parking stalls. No parking spaces will be eliminated.

RICHLAND FIRE STATION 73

RICHLAND FIRE STATION

RICHLAND, WA 99354

JOB NUMBER: 20005



210 E Lakeside Ave
Coeur d'Alene, ID 83814
t. 208.667.9402
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09/02/2020 PERMIT SET

DATE PROJECT PHASE



PROJECT CONTACTS

PROJECT OWNER

CITY OF RICHLAND
625 Swift Avenue
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Phone: _____
Fax: _____
Email: _____

ARCHITECT OF RECORD

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ELECTRICAL ENGINEER

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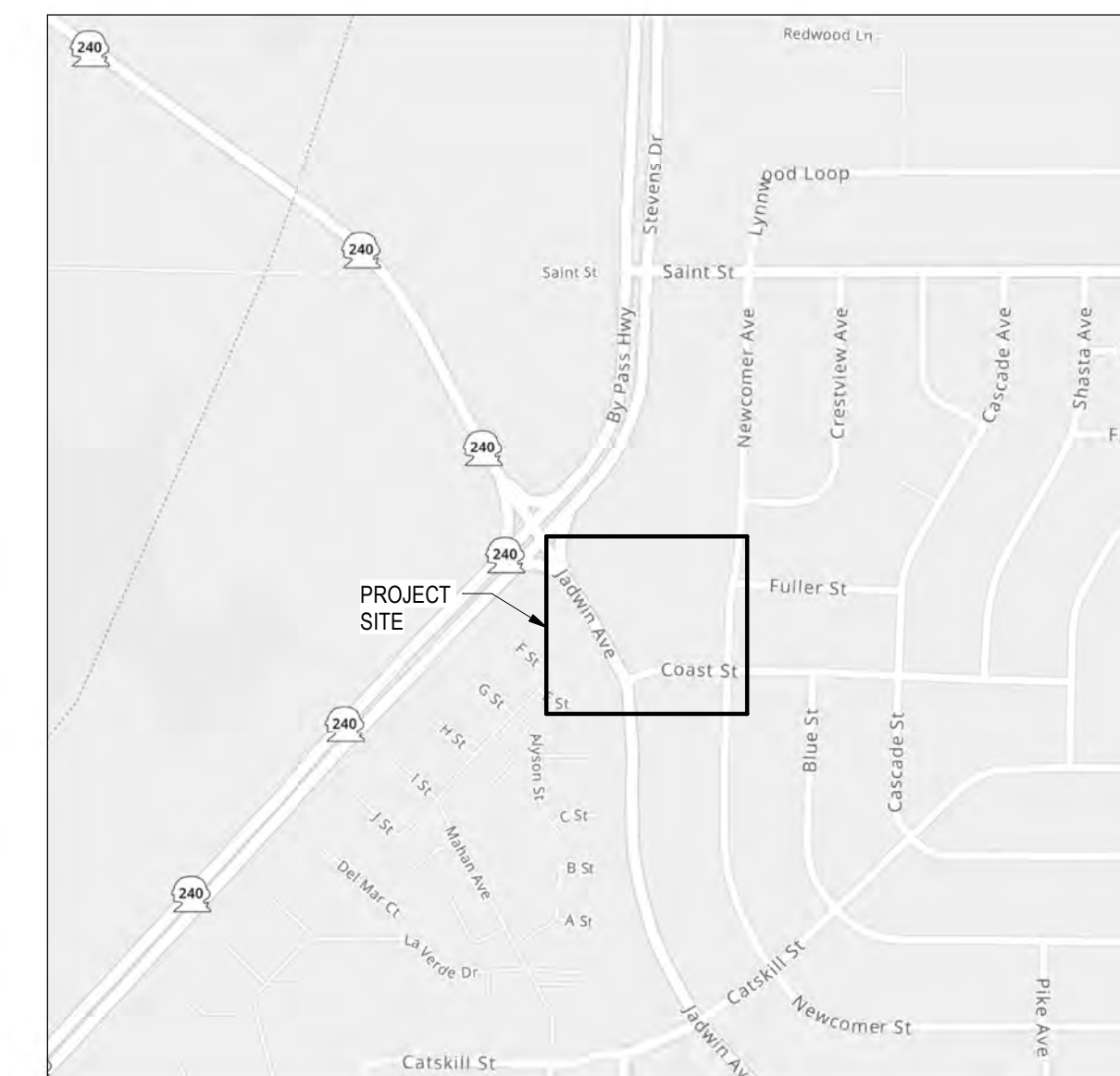
LANDSCAPE ARCHITECT

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DESIGN CONSULTANT

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Email: kenp@perلمانarchitects-AZ.com

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SECTION C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

C406.1 REQUIREMENTS. BUILDINGS SHALL COMPLY WITH NO LESS THAN TWO OF THE FOLLOWING:

- REDUCED LIGHTING POWER IN ACCORDANCE WITH SECTION C406.3.
- REDUCED AIR INFILTRATION IN ACCORDANCE WITH SECTION C406.9.

DRAWING KEYNOTING SYSTEM

A KEYNOTING SYSTEM IS USED ON THE DRAWINGS FOR MATERIAL REFERENCES AND NOTES. REFER TO THE KEYNOTE LEGEND ON THE DRAWINGS FOR THE INFORMATION WHICH RELATES TO EACH KEYNOTE SYMBOL ON THE RESPECTIVE DRAWINGS. EACH KEYNOTE SYMBOL CONSISTS OF A 6-DIGIT NUMBER FOLLOWED BY A PERIOD AND A LETTER SUFFIX. THE 6-DIGIT NUMBER RELATES TO THE SPECIFICATION WHICH GENERALLY COVERS THE ITEM THAT IS REFERENCED AND THE LETTER SUFFIX COMBINED WITH THE 6-DIGIT NUMBER AND PERIOD, CREATES A KEYNOTE SYMBOL WHICH IDENTIFIES THE SPECIFIC REFERENCE NOTATION USED ON THE DRAWINGS. THE SUFFIX DOES NOT RELATE TO ANY CORRESPONDING REFERENCE LETTER IN THE SPECIFICATIONS. THE ORGANIZATION OF THE KEYNOTING SYSTEM ON THE DRAWINGS, WITH THE KEYNOTE REFERENCE NUMBERS RELATED TO THE SPECIFICATIONS SECTIONS NUMBERING SYSTEM, SHALL NOT CONTROL THE CONTRACTOR IN DIVIDING THE WORK AMONG SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT OF WORK TO BE PERFORMED BY ANY TRADE.

Phone: _____
Fax: _____
Email: _____

Phone: _____
Fax: _____
Email: _____

Phone: _____
Fax: _____
Email: _____

2120 Jadwin Ave

20005 RICHLAND FIRE STATION 73

ABBREVIATIONS

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

PENETRATION FIRESTOPPING

WALLS AND PARTITIONS

PROVIDE AND INSTALL FIRESTOPPING AT ALL PENETRATIONS IN RATED WALLS AND PARTITIONS AS DESIGNATED AND AS PER SECTION 714 OF THE IBC. COORDINATE ACTUAL WALL CONSTRUCTION WITH WALL TYPES DESIGNATED IN THE WALL TYPES AND ON THE A-2 SERIES SHEETS

714.1 SCOPE

THE PROVISIONS OF THIS SECTION SHALL GOVERN THE MATERIALS AND METHODS OF CONSTRUCTION USED TO PROTECT THROUGH PENETRATIONS AND MEMBRANE PENETRATIONS OF HORIZONTAL ASSEMBLIES AND FIRE-RESISTANCE-RATED WALL ASSEMBLIES.

714.1.1 DUCTS AND AIR TRANSFER OPENINGS

PENETRATIONS OF FIRE-RESISTANCE-RATED WALLS BY DUCTS THAT ARE NOT PROTECTED WITH DAMPERS SHALL COMPLY WITH SECTIONS 714.2 THROUGH 714.3.3. PENETRATIONS OF HORIZONTAL ASSEMBLIES NOT PROTECTED WITH A SHAFT AS PERMITTED BY SECTION 717.6, AND NOT REQUIRED TO BE PROTECTED WITH FIRE DAMPERS BY OTHER SECTIONS OF THIS CODE, SHALL COMPLY WITH SECTIONS 714.4 THROUGH 714.5.2. DUCTS AND AIR TRANSFER OPENINGS THAT ARE PROTECTED WITH DAMPERS SHALL COMPLY WITH SECTION 717.

714.2 INSTALLATION DETAILS

WHERE SLEEVES ARE USED, THEY SHALL BE SECURELY FASTENED TO THE ASSEMBLY PENETRATED. THE SPACE BETWEEN THE ITEM CONTAINED IN THE SLEEVE AND THE SLEEVE ITSELF AND ANY SPACE BETWEEN THE SLEEVE AND THE ASSEMBLY PENETRATED SHALL BE PROTECTED IN ACCORDANCE WITH THIS SECTION. INSULATION AND COVERINGS ON OR IN THE PENETRATING ITEM SHALL NOT PENETRATE THE ASSEMBLY UNLESS THE SPECIFIC MATERIAL USED HAS BEEN TESTED AS PART OF THE ASSEMBLY IN ACCORDANCE WITH THIS SECTION.

714.3 FIRE-RESISTANCE-RATED WALLS

PENETRATIONS INTO OR THROUGH FIRE WALLS, FIRE BARRIERS, SMOKE BARRIER WALLS AND FIRE PARTITIONS SHALL COMPLY WITH SECTIONS 714.3.1 THROUGH 714.3.3. PENETRATIONS IN SMOKE BARRIER WALLS SHALL ALSO COMPLY WITH SECTION 714.4.4.

714.3.1 THROUGH PENETRATIONS

THROUGH PENETRATIONS OF FIRE-RESISTANCE-RATED WALLS SHALL COMPLY WITH SECTION 714.3.1.1 OR 714.3.1.2. EXCEPTION: WHERE THE PENETRATING ITEMS ARE STEEL, FERROUS OR COPPER PIPES, TUBES OR CONDUITS, THE ANNULAR SPACE BETWEEN THE PENETRATING ITEM AND THE FIRE-RESISTANCE-RATED WALL IS PERMITTED TO BE PROTECTED BY EITHER OF THE FOLLOWING MEASURES:

1. IN CONCRETE OR MASONRY WALLS WHERE THE PENETRATING ITEM IS A MAXIMUM 6-INCH (152 MM) NOMINAL DIAMETER AND THE AREA OF THE OPENING THROUGH THE WALL DOES NOT EXCEED 144 SQUARE INCHES (0.0929 M²), CONCRETE, GROUT OR MORTAR IS PERMITTED WHERE INSTALLED THE FULL THICKNESS OF THE WALL OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING.
2. THE MATERIAL USED TO FILL THE ANNULAR SPACE SHALL PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHEN SUBJECTED TO ASTM E119 OR UL 263 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE CONSTRUCTION PENETRATED.

714.3.1.1 FIRE-RESISTANCE-RATED ASSEMBLIES

PENETRATIONS SHALL BE INSTALLED AS TESTED IN AN APPROVED FIRE-RESISTANCE-RATED ASSEMBLY.

714.3.1.2 THROUGH-PENETRATION FIRESTOP SYSTEM

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED PENETRATION FIRESTOP SYSTEM INSTALLED AS TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AND SHALL HAVE AN F RATING OF NOT LESS THAN THE REQUIRED FIRE-RESISTANCE RATINGS OF THE WALL PENETRATED.

714.3.2 MEMBRANE PENETRATIONS

MEMBRANE PENETRATIONS SHALL COMPLY WITH SECTION 714.3.1. WHERE WALLS OR PARTITIONS ARE REQUIRED TO HAVE A FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:

1. MEMBRANE PENETRATIONS OF MAXIMUM 2-HOUR FIRE-RESISTANCE-RATED WALLS AND PARTITIONS BY STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES (0.0 103 M²) IN AREA, PROVIDED THE AGGREGATE AREA OF THE OPENINGS THROUGH THE MEMBRANE DOES NOT EXCEED 100 SQUARE INCHES (0.0645 M²) IN ANY 100 SQUARE FEET (9.29 M²) OF WALL AREA. THE ANNULAR SPACE BETWEEN THE WALL MEMBRANE AND THE BOX SHALL NOT EXCEED 1/8 INCH (3.2 MM). SUCH BOXES ON OPPOSITE SIDES OF THE WALL OR PARTITION SHALL BE SEPARATED BY ONE OF THE FOLLOWING:
 - 1.1. BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES (610 MM) WHERE THE WALL OR PARTITION IS CONSTRUCTED WITH INDIVIDUAL NONCOMMUNICATING STUD CAVITIES;
 - 1.2. BY A HORIZONTAL DISTANCE OF NOT LESS THAN THE DEPTH OF THE WALL CAVITY WHERE THE WALL CAVITY IS FILLED WITH CELLULOSE LOOSEFILL, ROCKWOOL OR SLAG MINERAL WOOL INSULATION;
 - 1.3. BY SOLID FIREBLOCKING IN ACCORDANCE WITH SECTION 718.2.1;
 - 1.4. BY PROTECTING BOTH OUTLET BOXES WITH LISTED PUTTY PADS; OR
 - 1.5. BY OTHER LISTED MATERIALS AND METHODS.

714.3.2.1 THROUGH-PENETRATION FIRESTOP SYSTEM

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AND SHALL HAVE AN F RATING/RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED.

714.3.2.2 THROUGH-PENETRATION FIRESTOP SYSTEM

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AND SHALL HAVE AN F RATING/RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED.

714.3.2.3 THROUGH-PENETRATION FIRESTOP SYSTEM

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AND SHALL HAVE AN F RATING/RATING OF NOT LESS THAN 1 HOUR BUT NOT LESS THAN THE REQUIRED RATING OF THE FLOOR PENETRATED.

714.3.3 DISSIMILAR MATERIALS

NONCOMBUSTIBLE PENETRATING ITEMS SHALL NOT CONNECT TO COMBUSTIBLE ITEMS BEYOND THE POINT OF FIRESTOPPING UNLESS IT CAN BE DEMONSTRATED THAT THE FIRE-RESISTANCE INTEGRITY OF THE WALL IS MAINTAINED.

714.4 HORIZONTAL ASSEMBLIES

PENETRATIONS OF A FIRE-RESISTANCE-RATED FLOOR, FLOOR/CEILING ASSEMBLY OR THE CEILING MEMBRANE OF A ROOF/CEILING ASSEMBLY NOT REQUIRED TO BE ENCLOSED IN A SHAFT BY SECTION 712.1 SHALL BE PROTECTED IN ACCORDANCE WITH SECTIONS 714.4.1 THROUGH 714.4.4.

714.4.1 THROUGH PENETRATIONS

THROUGH PENETRATIONS OF HORIZONTAL ASSEMBLIES SHALL COMPLY WITH SECTION 714.4.1.1 OR 714.4.1.2. EXCEPTIONS:

1. PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, PIPES, TUBES OR VENTS OR CONCRETE OR MASONRY ITEMS THROUGH A SINGLE FIRE-RESISTANCE-RATED FLOOR ASSEMBLY WHERE THE ANNULAR SPACE IS PROTECTED WITH MATERIALS THAT PREVENT THE PASSAGE OF FLAME AND HOT GASES SUFFICIENT TO IGNITE COTTON WASTE WHEN SUBJECTED TO ASTM E119 OR UL 263 TIME-TEMPERATURE FIRE CONDITIONS UNDER A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE FIRE-RESISTANCE RATING OF THE CONSTRUCTION PENETRATED. PENETRATING ITEMS WITH A MAXIMUM 6-INCH (152 MM) NOMINAL DIAMETER SHALL NOT BE LIMITED TO THE PENETRATION OF A SINGLE FIRE-RESISTANCE-RATED FLOOR ASSEMBLY, PROVIDED THE AGGREGATE AREA OF THE OPENINGS THROUGH THE ASSEMBLY DOES NOT EXCEED 144 SQUARE INCHES (9.290 M²) IN ANY 100 SQUARE FEET (9.3 M²) OF FLOOR AREA.
2. PENETRATIONS IN A SINGLE CONCRETE FLOOR BY STEEL, FERROUS OR COPPER CONDUITS, PIPES, TUBES OR VENTS WITH A MAXIMUM 6-INCH (152 MM) NOMINAL DIAMETER, PROVIDED THE CONCRETE, GROUT OR MORTAR IS INSTALLED THE FULL THICKNESS OF THE FLOOR OR THE THICKNESS REQUIRED TO MAINTAIN THE FIRE-RESISTANCE RATING. THE PENETRATING ITEMS SHALL NOT BE LIMITED TO THE PENETRATION OF A SINGLE CONCRETE FLOOR, PROVIDED THE AREA OF THE OPENING THROUGH EACH FLOOR DOES NOT EXCEED 144 SQUARE INCHES (9.290 M²).
3. PENETRATIONS BY LISTED ELECTRICAL BOXES OF ANY MATERIAL, PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED IN THE LISTING.

714.4.1.1 INSTALLATION

THROUGH PENETRATIONS SHALL BE INSTALLED AS TESTED IN THE APPROVED FIRE-RESISTANCE-RATED ASSEMBLY.

714.4.1.2 THROUGH-PENETRATION FIRESTOP SYSTEM

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE REQUIRED RATING OF THE FLOOR PENETRATED.

714.4.1.3 THROUGH-PENETRATION FIRESTOP SYSTEM

THROUGH PENETRATIONS SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479, WITH A MINIMUM POSITIVE PRESSURE DIFFERENTIAL OF 0.01 INCH (2.49 PA) OF WATER AT THE LOCATION OF THE PENETRATION FOR THE TIME PERIOD EQUIVALENT TO THE REQUIRED RATING OF THE FLOOR PENETRATED.

714.4.2 MEMBRANE PENETRATIONS

PENETRATIONS OF MEMBRANES THAT ARE PART OF A HORIZONTAL ASSEMBLY SHALL COMPLY WITH SECTION 714.4.1.1 OR 714.4.1.2. WHERE FLOOR/CEILING ASSEMBLIES ARE REQUIRED TO HAVE A FIRE-RESISTANCE RATING, RECESSED FIXTURES SHALL BE INSTALLED SUCH THAT THE REQUIRED FIRE RESISTANCE WILL NOT BE REDUCED.

EXCEPTIONS:

1. MEMBRANE PENETRATIONS BY STEEL, FERROUS OR COPPER CONDUITS, PIPES, TUBES OR VENTS, OR CONCRETE OR MASONRY ITEMS WHERE THE ANNULAR SPACE IS PROTECTED EITHER IN ACCORDANCE WITH SECTION 714.4.1.1 OR TO PREVENT THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION. THE AGGREGATE AREA OF THE OPENINGS THROUGH THE MEMBRANE SHALL NOT EXCEED 100 SQUARE INCHES (6.450 M²) IN ANY 100 SQUARE FEET (9.3 M²) OF CEILING AREA IN ASSEMBLIES TESTED WITHOUT PENETRATIONS.
2. CEILING MEMBRANE PENETRATIONS OF MAXIMUM 2-HOUR HORIZONTAL ASSEMBLIES BY STEEL ELECTRICAL BOXES THAT DO NOT EXCEED 16 SQUARE INCHES (10.323 M²) IN AREA, PROVIDED THE AGGREGATE AREA OF SUCH PENETRATIONS DOES NOT EXCEED 100 SQUARE INCHES (6.450 M²) OF CEILING AREA, AND THE ANNULAR SPACE BETWEEN THE CEILING MEMBRANE AND THE BOX DOES NOT EXCEED 1/8 INCH (3.2 MM).
3. MEMBRANE PENETRATIONS BY ELECTRICAL BOXES OF ANY SIZE OR TYPE, THAT HAVE BEEN LISTED AS PART OF AN OPENING PROTECTIVE MATERIAL SYSTEM FOR USE IN HORIZONTAL ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED IN THE LISTING.
4. MEMBRANE PENETRATIONS BY LISTED ELECTRICAL BOXES OF ANY MATERIAL, PROVIDED SUCH BOXES HAVE BEEN TESTED FOR USE IN FIRE-RESISTANCE-RATED ASSEMBLIES AND ARE INSTALLED IN ACCORDANCE WITH THE INSTRUCTIONS INCLUDED IN THE LISTING. THE ANNULAR SPACE BETWEEN THE CEILING MEMBRANE AND THE BOX SHALL NOT EXCEED 1/8 INCH (3.2 MM) UNLESS LISTED OTHERWISE.
5. THE ANNULAR SPACE CREATED BY THE PENETRATION OF A FIRE SPRINKLER, PROVIDED IT IS COVERED BY A METAL ESCUTCHEON PLATE.
6. NONCOMBUSTIBLE ITEMS THAT ARE CAST INTO CONCRETE BUILDING ELEMENTS AND THAT DO NOT PENETRATE BOTH TOP AND BOTTOM SURFACES OF THE ELEMENT.
7. THE CEILING MEMBRANE OF 1- AND 2-HOUR FIRE-RESISTANCE-RATED HORIZONTAL ASSEMBLIES IS PERMITTED TO BE INTERRUPTED WITH THE DOUBLE WOOD TOP PLATE OF A WALL ASSEMBLY THAT IS SHEATHED WITH TYPE X GYPSUM WALLBOARD, PROVIDED THAT ALL PENETRATING ITEMS THROUGH THE DOUBLE TOP PLATES ARE PROTECTED IN ACCORDANCE WITH SECTION 714.4.1.1 OR 714.4.1.2 AND THE CEILING MEMBRANE IS TIGHT TO THE TOP PLATES.

714.4.3 DISSIMILAR MATERIALS

NONCOMBUSTIBLE PENETRATING ITEMS SHALL NOT CONNECT TO COMBUSTIBLE MATERIALS BEYOND THE POINT OF FIRESTOPPING UNLESS IT CAN BE DEMONSTRATED THAT THE FIRE-RESISTANCE INTEGRITY OF THE HORIZONTAL ASSEMBLY IS MAINTAINED.

714.4.4 PENETRATIONS IN SMOKE BARRIERS

PENETRATIONS IN SMOKE BARRIERS SHALL BE PROTECTED BY AN APPROVED THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF UL 1479 FOR AIR LEAKAGE. THE L RATING OF THE SYSTEM MEASURED AT 0.30 INCH (7.62 PA) OF WATER IN BOTH THE AMBIENT TEMPERATURE AND ELEVATED TEMPERATURE TESTS SHALL NOT EXCEED:

1. 5.0 CFM PER SQUARE FOOT (0.025 M³ S · M²) OF PENETRATION OPENING FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM; OR
2. A TOTAL CUMULATIVE LEAKAGE OF 50 CFM (0.024 M³/S) FOR ANY 100 SQUARE FEET (9.3 M²) OF WALL AREA, OR FLOOR AREA.

714.5 NONFIRE-RESISTANCE-RATED ASSEMBLIES

PENETRATIONS OF NONFIRE-RESISTANCE-RATED FLOOR OR FLOOR/CEILING ASSEMBLIES OR THE CEILING MEMBRANE OF A NONFIRE-RESISTANCE-RATED ROOF/CEILING ASSEMBLY SHALL MEET THE REQUIREMENTS OF SECTION 713 OR SHALL COMPLY WITH SECTION 714.5.1 OR 714.5.2.

714.5.1 NONCOMBUSTIBLE PENETRATING ITEMS

NONCOMBUSTIBLE PENETRATING ITEMS THAT CONNECT NOT MORE THAN FIVE STORIES ARE PERMITTED, PROVIDED THAT THE ANNULAR SPACE IS FILLED TO RESIST THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION WITH AN APPROVED NONCOMBUSTIBLE MATERIAL OR WITH A FILL, VOID OR CAVITY MATERIAL THAT IS TESTED AND CLASSIFIED FOR USE IN THROUGH-PENETRATION FIRESTOP SYSTEMS.

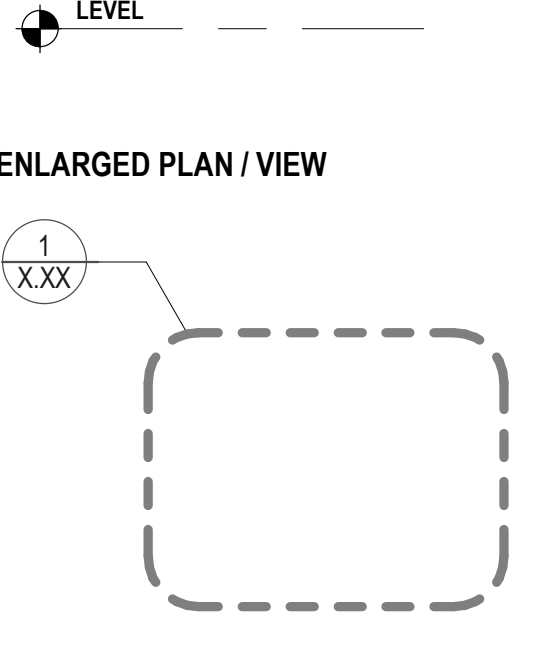
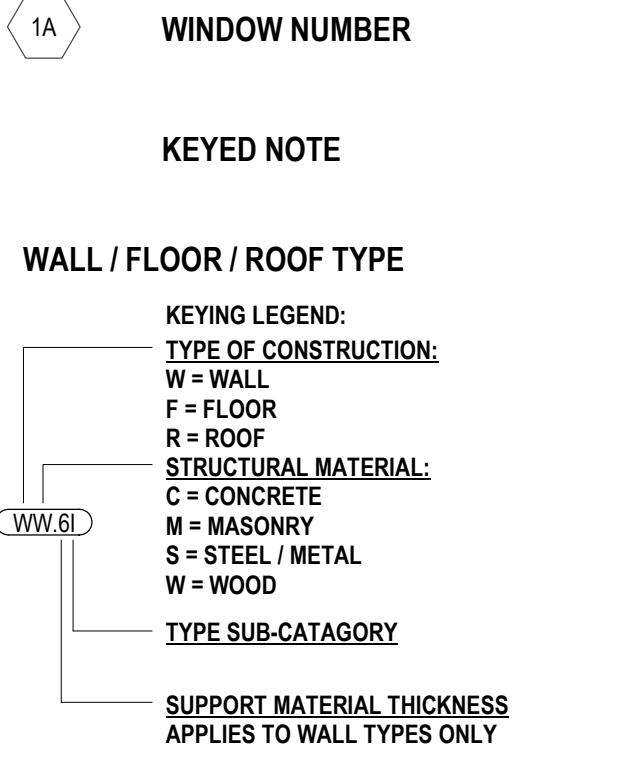
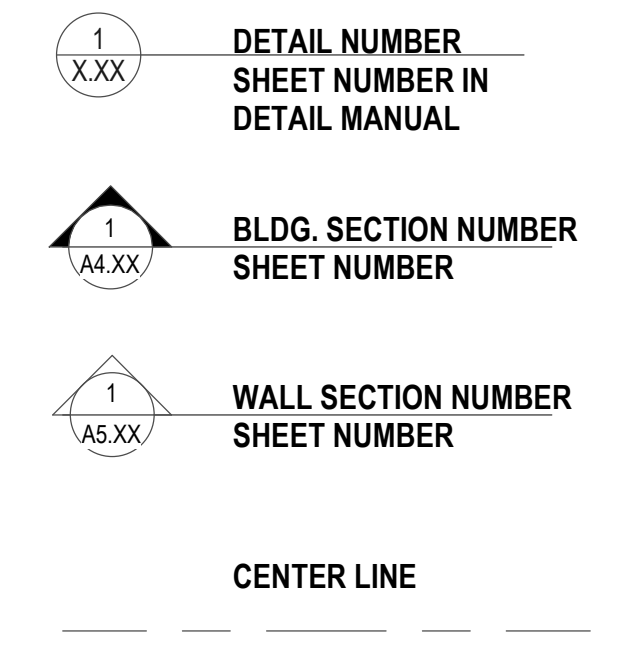
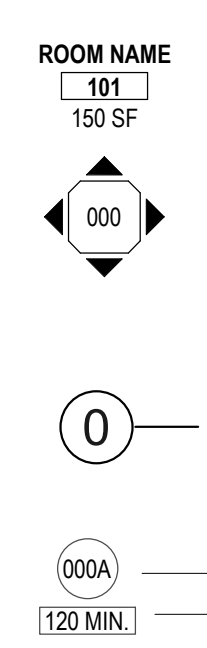
714.5.2 PENETRATING ITEMS

PENETRATING ITEMS THAT CONNECT NOT MORE THAN TWO STORIES ARE PERMITTED, PROVIDED THAT THE ANNULAR SPACE IS FILLED WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND THE PRODUCTS OF COMBUSTION.

A	AB ANCHOR BOLT AC ACOUTICAL ACC ACCESSIBLE ADD ADDITIVE ADJ ADJUSTABLE ADMIN ADMINISTRATION OR ADMINISTRATIVE ADR AREA DRAIN AFF ABOVE FINISH FLOOR AG AGGREGATE AGG AGGREGATE ALT ALTERNATE ALUM ALUMINUM ANOD ANODIZED AP ACCESS PANEL APPROX APPROXIMATE ARCH ARCHITECT (URAL) ASPH ASPHALT ASST ASSISTANT AT ACOUTICAL TILE NRC .85 AV AUDIO VISUAL AWP ACOUTICAL WALL PANEL	E	EA EAST EACH EACH ECC ELECTRICAL CONTRACTOR EFM ENTRY FLOOR MAT EJ EXPANSION JOINT EL ELEVATION ELEC ELECTRICAL ELEV ELEVATION OR ELEVATOR ENAM ENAMEL EP ELECTRICAL PANEL EPT EPOXY PAINT EQ EQUAL EQUIP EQUIPMENT ES EACH SIDE EW EACH WAY EX EXISTING TO REMAIN EXP EXPOSED EXT EXTERIOR EIFS EXTERIOR INSUL. & FINISH SYSTEM	L	LAM LAMINATE LAV LAVATORY LBS POUND OR LAG BOLT LBS POUNDS LG2 LAMINATED - CLEAR SAFETY GLASS 1/2" THICK LG4 LAMINATED - CLEAR SAFETY GLASS 1/4" THICK LH LEFT HAND LT LIGHT LVR LOUVER M MANUF MANUFACTURED MAT MATERIAL MAX MAXIMUM MB MACHINE BOLT MDO MEDIUM DENSITY OVERLAY MIE MECHANICAL/ELECTRICAL MECH MECHANICAL MED MEDIUM MEMB MEMBRANE MFG MANUFACTURING MFR MANUFACTURER MH MANHOLE MI MIRROR MIN MINIMUM MISC MISCELLANEOUS MO MASONRY OPENING MTL/MET METAL	S	S SOUTH SAF SELF ADHERING FLASHING SC SOLID CORE SCHD SCHEDULE SD SOAP DISPENSER OR STORM DRAIN SEAL SEALER SH SAFETY CLOTHES/TOWEL HOOK SHM SECURITY HOLLOW METAL SHEET SIM SIMILAR S & L STAIN & LACQUER SP SPEAKER SPECIFICATIONS SQ SQUARE SRV SLIP RESISTANT SHEET VINYL SIS STAINLESS STEEL STD STANDARD STG STORAGE STL STEEL STRUCT STRUCTURAL STRL STRUCTURAL SUSPENDED SV SHEET VINYL S & V STAIN & VARNISH SWF STAGE WOOD FLOOR SYSTEM SYM SYMMETRICAL SYSTEM
B	BD BOARD BKPL BACK PLATE BLDG BUILDING BLK BLOCK BLKG BLOCKING BM BEAM B.O.S. BOTTOM OF STRUCTURE BOT BOTTOM BPL BASEPLATE BR BULLET RESISTANT BRG BEARING BRGL BULLET RESISTANT GLASS BRK BRICK BS BACKSPASH BSMT BASEMENT BVL BEVEL (ED)	F	FA FIRE ALARM FD FLOOR DRAIN FX FIRE EXTINGUISHER FXCB FIRE EXTINGUISHER CABINET FEM FEMININE FF FACTORY FINISH FFD FUNNEL FLOOR DRAIN FH FIRE HYDRANT FIN FINISH FLR FLOOR FLSH FLASH OR FLASHING FLUOR FLUORESCENT FDN FOUNDATION FOC FACE OF CONCRETE OR FACE OF COLUMN FOS FACE OF STUD FRG FIRE RATED GLASS FT FEET OR FOOT FTG FOOTING FUR FURRED OR FURRING	N	N NORTH NIC NOT IN CONTRACT NO, OR # NUMBER NOM NOMINAL NTS NOT TO SCALE	I	I TREAD OR TOP TKBD TACKBOARD TC TOP OF CURB TEL TELEPHONE T & G TONGUE & GROOVE TKG TEMPERED - CLEAR FLOAT GLASS THK THICK TOB TOP OF BEAM TOC TOP OF CONCRETE OR TOP OF COLUMN TOP TOP OF PARAPET TPR TOP OF PILE TP TOP OF PAVEMENT TPD TOILET PAPER DISPENSER TRANSP TRANSPARENT TRANSV TRANSVERSE TSCD TOILET SEAT COVER DISPENSER TSL TOP OF SLAB TV TELEVISION TW TOP OF WALL TYP TYPICAL
C	CH CHANNEL CAB CABINET CB CATCH BASIN CC CENTER TO CENTER CCTV CLOSED CIRCUIT TELEVISION CFCI CONTRACTOR FURNISHED CONTRACTOR INSTALLED CH CHALKBOARD CHBD CHILLER DRINKING FOUNTAIN CIPC CIPIC CLG CLEAR CLR CLEAR CMU CONCRETE MASONRY UNIT COL COLUMN CONC CONCRETE CONF CONFERENCE CONN CONNECT (ED) CONST CONSTRUCTION CONT CONTRACTOR CORR CORRIDOR CP CEMENT PLASTER CP2 242 LAY-IN CEILING PANELS CP4 244 LAY-IN CEILING PANELS CPT CARPET CRS COLD ROLLER STEEL CRT COMPUTER TERMINAL CT CERAMIC TILE CTT CERAMIC TILE THINSET CTR CENTER	G	GA GAUGE GALV GALVANIZED GAT 12 x 12 GLUE ON ACOUSTIC TILE GB GLASS BOARD GC GENERAL CONTRACTOR GL GLASS OR GLAZED GP GYPSUM PLASTER GWB GYPSUM WALL BOARD	OA	OA OVERALL OC ON CENTER OD OVERFLOW DRAIN OR OUTSIDE DIAMETER OFCI OFFICE FURNISHED CONTRACTOR INSTALLED OFF OFFICE OFOI OWNER FURNISHED OWNER INSTALLED OPG OPENING OPH OPPOSITE HAND OPP OPPOSITE OWA ONE WAY/ACOUSTICAL (TRANSPARENT MIRROR) OVHD OVERHEAD	U	UNFIN UNFINISHED UNOT UNLESS OTHERWISE NOTED UR URINAL
D	DBL DOUBLE DEMO DEMOLITION DEPT DEPARTMENT DET DETAIL DF DRINKING FOUNTAIN DIAG DIAGONAL DIAM DIAMETER DIM DIMENSION DISP DISPENSER DMPR DAMPROOFING DN DOWN DS DOWNSPOUT DWG DRAWING	H	HB HOSE BIB HC HOLLOW CORE HDCP HANDICAP (PED) HDW HARDWARE HM HOLLOW METAL HRZ HORIZONTAL HR HOUR HT HEIGHT HVAC HEATING/VENTILATING/ AIR CONDITIONING HWH HOT WATER HEATER	OV	OV OVERFLOW DRAIN OR OUTSIDE DIAMETER OFCI OFFICE FURNISHED CONTRACTOR INSTALLED OFF OFFICE OFOI OWNER FURNISHED OWNER INSTALLED OPG OPENING OPH OPPOSITE HAND OPP OPPOSITE OWA ONE WAY/ACOUSTICAL (TRANSPARENT MIRROR) OVHD OVERHEAD	V	VCT VINYL COMPOSITION TILE VB VAPOR BARRIER VBT VERTICAL VFT VERTICAL VFB VINYL FABRIC VFF VINYL FACED GWB PANELS VFS VERTICAL GRAIN VFI VERTICAL IN FIELD VIN VINYL VNR VENEER VP VENEER PLASTER VW VINYL WALL COVERING
J	JAN JANITOR JT JOINT	H	HA HOLLOW CORE HDCP HANDICAP (PED) HDW HARDWARE HM HOLLOW METAL HRZ HORIZONTAL HR HOUR HT HEIGHT HVAC HEATING/VENTILATING/ AIR CONDITIONING HWH HOT WATER HEATER	PA	PAV PAVERS PB PLASTER BASE PBD PARTICLE BOARD PCC PRECAST CONCRETE PG PLATE GLASS (CLEAR FLOAT GLASS) PL PROPERTY LINE OR PLASTIC LAMINATE PLYWD PLYWOOD	W	W WEST, WIDE OR WIDTH W WITH WB WOOD BASE WC WATER CLOSET WD WOOD WDW WINDOW WF WIDE FLANGE WFS WOOD FLOORING SYSTEM WG WIRE GLASS WM WALK OFF MAT W/O WITHOUT WP WATERPROOF(ING) WR WATER RESISTANT WRING BOARD WSCT WANSNOT WT WEIGHT WWF WELD WIRE FABRIC
K	K KIPS OR 1000 POUNDS KP KICKPLATE KSI KIPS PER SQUARE INCH	I	IA INSIDE DIAMETER IGU INSULATING GLASS UNIT INCL INCLUDE (D/H/G) INFO INFORMATION INSUL INSULATION INT INTERIOR INV INVERT IRL IMPACT RESISTANT LAY-IN (ROCK FACE PANELS)	PS	PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PT PAINT (ED) PTD PAPER TOWEL DISPENSER PTR PAPER TOWEL RECEPTACLE PVC POLYVINYL CHLORIDE	Q	Q QUARRY TILE BASE QT QUARRY TILE QTY QUANTITY
R	R RADIUS OR RISER RA RETURN AIR RB 4" RUBBER BASE RB6 6" RUBBER BASE RD ROOF DRAIN REF REFERENCE REFL REFLECTED REFER REFRIGERATOR RENF REINFORCING REQD REQUIRED RESIL RESILIENT REV REVISION RM ROOM RO ROUGH OPENING RSV RESILIENT SHEET VINYL RWF RESILIENT WOOD FLOOR	Q	QA QUARRY TILE BASE QT QUARRY TILE QTY QUANTITY	R	R RADIUS OR RISER RA RETURN AIR RB 4" RUBBER BASE RB6 6" RUBBER BASE RD ROOF DRAIN REF REFERENCE REFL REFLECTED REFER REFRIGERATOR RENF REINFORCING REQD REQUIRED RESIL RESILIENT REV REVISION RM ROOM RO ROUGH OPENING RSV RESILIENT SHEET VINYL RWF RESILIENT WOOD FLOOR	W	W WEST, WIDE OR WIDTH W WITH WB WOOD BASE WC WATER CLOSET WD WOOD WDW WINDOW WF WIDE FLANGE WFS WOOD FLOORING SYSTEM WG WIRE GLASS WM WALK OFF MAT W/O WITHOUT WP WATERPROOF(ING) WR WATER RESISTANT WRING BOARD WSCT WANSNOT WT WEIGHT WWF WELD WIRE FABRIC

TYPICAL SYMBOLS

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



09/02/2020

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RICHLAND FIRE STATION 73
RICHLAND FIRE STATION
RICHLAND, WA 99354

ABBREVIATIONS AND SYMBOLS

PROJECT NO. 20005
DESIGNED BY MV KP
DRAWN BY RM
ISSUE DATE 09/02/2020
PHASE PERMIT SET
CHECKED BY RJ
REVISION
SHEET NO.

A0.01



09/02/2020

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CODE ANALYSIS

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CODE ANALYSIS LEGEND
IBC 2015

- B OCC** — OCCUPANCY GROUP (IBC 2015)
15,672 SF — AREA (SQUARE FEET)
- REQ. OPENING WIDTH → — EXIT: EXITING WIDTH AND DIRECTION
00" X 20" = 00" OPNG. PROVIDED
- REQ. CORRIDOR WIDTH — CORRIDOR: 44" MINIMUM PER IBC TABLE 1020.2
00" X 20" = 00" PROVIDED
- # → = NUMBER OF OCCUPANTS EXITING THROUGH DOOR
→ = TOTAL NUMBER OF OCCUPANTS EXITING INTO ADJOINING ROOM OR AREA
→ = TOTAL NUMBER OF OCCUPANTS EXITING THROUGH DESIGNATED EXTERIOR EXITING DOOR
- # → = NUMBER DOES NOT COUNT TOWARD OCC LOAD
- ⊗ — EXIT SIGN LOCATION SEE DETAIL 10.001
⊕ — FIRE EXTINGUISHER LOCATION
⊖ — BRAILLE EXIT SIGN LOCATION PER IBC 1013.4
- ⊙ — KNOX BOX - VERIFY BOX TYPE & LOCATION w/ FIRE DEPARTMENT - MOUNT 5 TO 6 FEET ABOVE GRADE
- 1-HOUR FIRE PARTITION
- 250' — 1017.2 MAXIMUM TRAVEL DISTANCE: 250'
100' — 1006.2.1 MAXIMUM COMMON PATH OF EGRESS TRAVEL: 100'

CODE ANALYSIS

BUILDING AREAS:
ALL

OCCUPANCY:
MIXED B, R-3 & S-1, NON-SEPARATED USE

B OCC = 36,000 SQFT SINGLE STORY ALLOWABLE
R-3 OCC = UNLIMITED SOFT SINGLE STORY ALLOWABLE
S-1 OCC = 36,000 SQFT SINGLE STORY ALLOWABLE
B MOST RESTRICTIVE

OCCUPANT LOAD:
B-OCC = 100 GROSS (FACTOR) = 42 PEOPLE
R-3 OCC = 4 ACTUAL - ONE PERSON PER DORM ROOM
S-1 OCC = 300 GROSS (FACTOR) = 19 PEOPLE
TOTAL OCCUPANT LOAD: 65 PEOPLE

CONSTRUCTION TYPE:
V-B, FULLY SPRINKLE; B GOVERNS

FIRE RESISTANCE RATING REQUIREMENTS:
TABLE 601 BUILDING ELEMENTS: NR
TABLE 602 EXTERIOR WALLS: 5'-0" ≤ 1 HOUR < 10'-0"

OPENINGS IN EXTERIOR WALLS:
TABLE 705.8 - WORST CASE: NO LIMIT > 20'-0"

ALLOWABLE HEIGHT:	ALLOWABLE	ACTUAL
TABLE 504.3 HEIGHT IN FEET	60'-0"	24'-0"
TABLE 504.4 NUMBER OF STORIES	3	1

ALLOWABLE BUILDING AREA	PER STORY	MULTI-STORY
B MOST RESTRICTIVE	36,000 SF	N/A

IBC TABLE 506.3 FRONTAGE INCREASE
NO FRONTAGE INCREASE CONSIDERED

IBC TABLE 506.2 ALLOWABLE AREA INCREASE
NO AREA INCREASE CONSIDERED

ACTUAL BUILDING AREA

FLOOR	AREA
BASEMENT	N/A
1ST FLOOR	10,361 S.F.
2ND FLOOR	N/A
OUTDOOR COVERED AREA	975 S.F.
TOTAL (FIRE AREA)	11,336 S.F.

REQUIRED FIRE FLOW - IFC 2015:
TABLE B105.1(2) 3,000 GPM 3 HOURS DURATION
TABLE 105.2 3,000 GPM x .25 = 750 GPM MIN
NOTE: THE REDUCED FIRE-FLOW SHALL BE NOT LESS THAN 1,000 GPM

PLUMBING FIXTURE ANALYSIS

R-3 OCCUPANCY	REQUIRED	PROVIDED
4 MEN/WOMEN	1	4
WATER CLOSETS	1:10 = 1	1
LAVATORIES	1:10 = 1	1
TUBS / SHOWERS	1:8 = 1	1

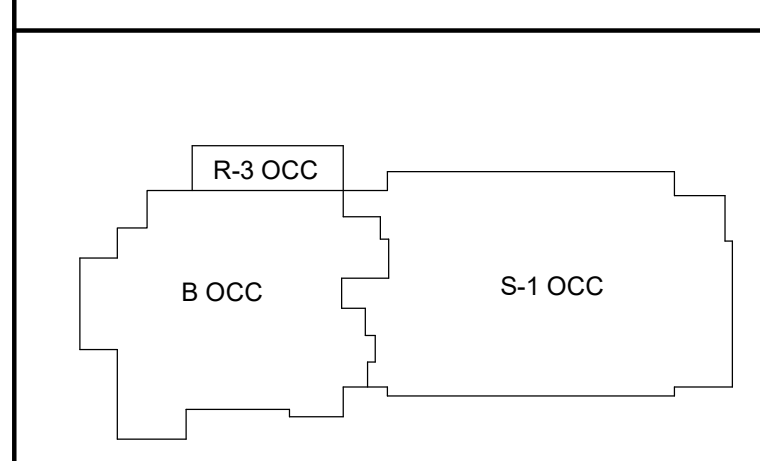
B OCCUPANCY	REQUIRED	PROVIDED
MALE		
WATER CLOSETS	1	2
URINALS	1	0
LAVATORIES	1	2
FEMALE		
WATER CLOSETS	1	2
LAVATORIES	1	2

S-1 OCCUPANCY	REQUIRED	PROVIDED
MALE - 10		
WATER CLOSETS	1	2
URINALS	0	0
LAVATORIES	1	1
FEMALE - 9		
WATER CLOSETS	1	2
LAVATORIES	1	1

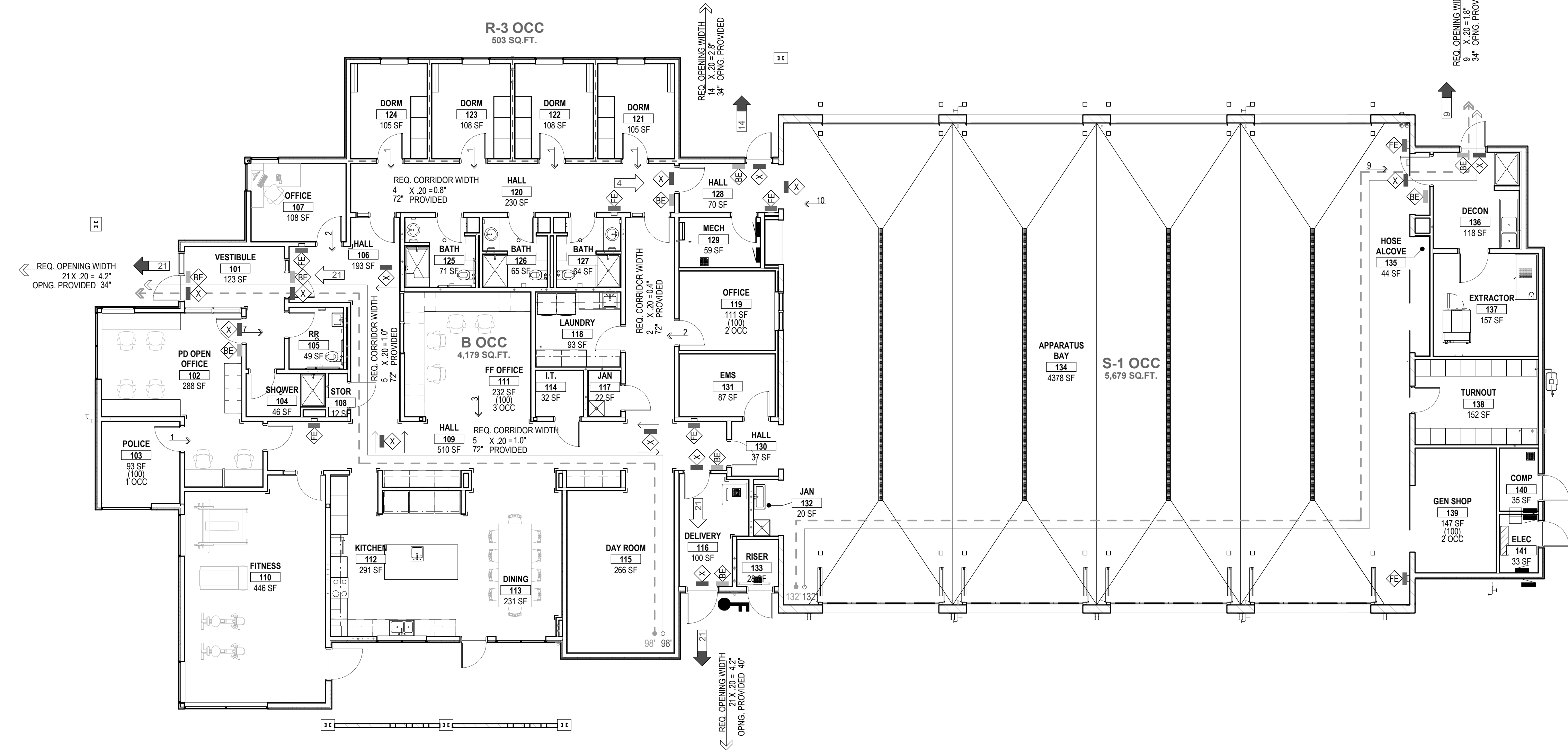
DRINKING FOUNTAIN: 1/100 N/A CUPS PROVIDED IN KITCHEN

MOP SINK:	REQUIRED	PROVIDED
	1	2

OCCUPANCY TYPE LEGEND



BUILDING AREA: 10,361 S.F.
OUTDOOR COVERED AREA: 975 S.F.
TOTAL AREA: 11,336 S.F.



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



Know what's below.
Call before you dig.

LEGEND

EXISTING		PROPOSED
△	SET NAIL AND WASHER	■
○	BOLLARD	●
□	MAIL BOX	●
⊙	SIGN	■
○	SANITARY SEWER MANHOLE	●
○	SANITARY SEWER CLEANOUT	●
⊙	STORM CATCH BASIN	■
⊙	STORM MANHOLE	●
●	ROOF DRAIN	●
	DRYWELL	⊙
△	POWER TRANSFORMER	
○	UTILITY POWER POLE	
P	ELECTRICAL VAULT	
X	LUMINAIRE	
⊙	COMMUNICATIONS MANHOLE	
⊙	FIRE HYDRANT	⊙
⊙	IRRIGATION CONTROL VALVE	⊙
⊙	WATER METER	⊙
⊙	WATER VALVE	⊙
---	STORM LINE	D
---	SANITARY SEWER LINE	S
---	GAS LINE	G
---	ELECTRICAL LINE	P
---	COMMUNICATIONS LINE	T
---	WATER LINE	W
█	CONCRETE	█
█	ASPHALT	█
	GRAVEL	
---	CONTOUR MAJOR INTERVAL	XXX
---	CONTOUR MINOR INTERVAL	XXX

CONSTRUCTION SEQUENCE

1. FLAG CLEARING LIMITS.
2. SCHEDULE AND ATTEND PRECONSTRUCTION MEETING WITH THE CITY OF RICHLAND.
3. PROVIDE MISC. DEMOLITION AND CLEAR AND GRUB AREA WITHIN CLEARING LIMITS REQUIRED FOR INSTALLATION OF TEMPORARY EROSION CONTROL FACILITIES. ALL EROSION AND SEDIMENT CONTROL FACILITIES SHOWN ON THE EROSION CONTROL PLAN SHALL BE INSTALLED PRIOR TO, OR AS A FIRST STAGE OF SITE PREPARATION.
4. PROVIDE INLET PROTECTION AND FILTER FABRIC FENCE AS SHOWN.
5. THE CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AND PROVIDE REPAIRS AS NEEDED.
6. CLEAR AND GRUB THE REMAINDER OF THE SITE WITHIN CLEARING LIMITS AND ROUGH GRADE.
7. PROVIDE COVER MEASURES TO INCLUDE ARMORING, MULCHING AND HYDROSEEDING TO STABILIZE DENUDED AREAS AND PREVENT THE TRANSPORT OF SEDIMENT-LADEN STORMWATER OFF-SITE.
8. PROVIDE STORM SYSTEM AND MISCELLANEOUS UTILITIES AS SHOWN ON THE PLANS. PROVIDE 6" VERTICAL AND 3' HORIZONTAL CLEARANCE (OUTSIDE SURFACES) BETWEEN STORM DRAIN LINES AND OTHER UTILITY PIPES AND CONDUITS PROVIDED. PROVIDE INLET PROTECTION ON ALL NEW CATCH BASINS AND DRYWELLS.
9. FINE GRADE SITE AND PAVE. COORDINATE WITH THE CITY OF RICHLAND FOR REQUIRED INSPECTIONS.
10. STABILIZE ALL REMAINING DISTURBED AREAS.

TOPOGRAPHIC NOTE

THE EXISTING CULTURAL AND TOPOGRAPHIC DATA SHOWN ON THESE DRAWINGS HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, AHBL CANNOT ENSURE ACCURACY AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THAT INFORMATION OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO THESE DRAWINGS AS A RESULT.

FILL SPECIFICATION

IMPORTED FILL MATERIAL SHALL NOT CONTAIN PETROLEUM PRODUCTS, OR SUBSTANCES WHICH ARE HAZARDOUS, DANGEROUS, TOXIC, OR WHICH OTHERWISE VIOLATE ANY STATE, FEDERAL, OR LOCAL LAW, ORDINANCE, CODE, REGULATION, RULE, ORDER, OR STANDARD.

TRENCH NOTE

IF WORKERS ENTER ANY TRENCH OR OTHER EXCAVATION FOUR OR MORE FEET IN DEPTH THAT DOES NOT MEET THE OPEN PIT REQUIREMENTS OF WSDOT SECTION 2-09.3(3)B, IT SHALL BE SHORED AND CRIBBED. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR WORKER SAFETY AND AHBL ASSUMES NO RESPONSIBILITY. ALL TRENCH SAFETY SYSTEMS SHALL MEET THE REQUIREMENTS OF THE WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT, CHAPTER 49.17 RCW.

GENERAL PROJECT NOTES

1. AFTER COMPLETION OF ALL ITEMS SHOWN ON THESE PLANS AND BEFORE ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL OBTAIN A "PUNCH LIST" PREPARED BY ENGINEER DETAILING REMAINING ITEMS OF WORK TO BE COMPLETED. ALL ITEMS OF WORK SHOWN ON THESE PLANS SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER PRIOR TO ACCEPTANCE OF THE PROJECT.
2. A COPY OF THESE APPROVED PLANS, SPECIFICATIONS, AND DETAILS SHALL BE ON SITE DURING CONSTRUCTION.
3. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE TRUE ELEVATIONS AND LOCATIONS OF HIDDEN UTILITIES. ALL VISIBLE ITEMS SHALL BE THE ENGINEER'S RESPONSIBILITY.
4. THE CONTRACTOR SHALL INSTALL, REPLACE, OR RELOCATE ALL SIGNS, AS SHOWN IN THE PLANS OR AS AFFECTED BY CONSTRUCTION.
5. DURING CONSTRUCTION, ALL PUBLIC STREETS ADJACENT TO THIS PROJECT SHALL BE KEPT CLEAR OF ALL MATERIAL DEPOSITS RESULTING FROM ON-SITE CONSTRUCTION, AND EXISTING STRUCTURES SHALL BE PROTECTED AS DIRECTED BY THE CITY.
6. CONTRACTOR TO DOCUMENT REVISIONS DURING CONSTRUCTION ON A SET OF PLANS AND SUBMIT MARKUPS TO AHBL PRIOR TO PROJECT ACCEPTANCE.
7. IF ADEQUATE INSPECTION IS NOT COMPLETED AND DOCUMENTED BEFORE COMPLETION OF THE ROADWAY CONSTRUCTION, IT MAY BE NECESSARY FOR CORE DRILLING AND TESTING TO BE PERFORMED TO ASSURE AN ACCEPTABLE QUALITY ROADWAY. WHEN CORE DRILLING IS FOUND TO BE NECESSARY, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED.
8. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES IN ORDER TO ASSURE THAT ALL LINES, PIPES, POLES AND OTHER APPURTENANCES ARE PROPERLY LOCATED AND THEIR INSTALLATION IS COORDINATED WITH THE ROAD CONSTRUCTION. ALL UTILITY RELOCATION WORK SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
9. BURIED UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL HAVE UTILITIES VERIFIED ON THE GROUND PRIOR TO ANY CONSTRUCTION. CALL 811 OR 1-800-424-5555 (CALL BEFORE YOU DIG HOTLINE) AT LEAST 48 HOURS IN ADVANCE. THE APPLICANT AND APPLICANT'S ENGINEER SHALL BE CONTACTED IMMEDIATELY IF A CONFLICT EXISTS.
10. THE CONTRACTOR IS RESPONSIBLE TO PROTECT EXISTING UTILITIES. ALL UTILITIES ARE TO BE PROTECTED UNLESS OTHERWISE NOTED. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ANY UTILITIES DAMAGED DURING CONSTRUCTION.
9. ONSITE EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING, HAULING, AND DISPOSING OF ANY UNSUITABLE MATERIAL IN A LEGAL MANNER. THIS MATERIAL SHALL NOT BE USED AS FILL.
11. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF WASHINGTON, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND CITY OF RICHLAND STANDARDS.
12. ALL BACKFILL AND EMBANKMENT SHALL BE COMPACTED PER THE GEOTECHNICAL REPORT RECOMMENDATIONS.
13. WHERE NEWLY CONSTRUCTED PAVING MEETS EXISTING PAVING, THE CONTRACTOR SHALL SAW CUT AND OVERLAY AND FEATHER NEW PAVEMENT TO PROVIDE A SMOOTH TRANSITION FROM EXISTING TO PROPOSED PAVING. APPLICATION OF A THIN TACK COAT OF EMULSIFIED ASPHALT SHALL BE APPLIED TO INSURE PROPER BONDING.
14. THE COMPLETE SURFACE OF ALL COURSES SHALL BE OF UNIFORM TEXTURE, SMOOTH, UNIFORM AS TO CROWN AND GRADE, AND FREE FROM DEFECTS OF ALL KINDS. THE COMPLETED SURFACE OF THE WEARING COURSE SHALL NOT VARY MORE THAN 1/8 INCH FROM THE LOWER EDGE OF A 10 FOOT STRAIGHTEDGE PLACED ON THE SURFACE PARALLEL TO THE CENTERLINE. THE TRANSVERSE SLOPE OF THE COMPLETED SURFACE OF THE WEARING COURSE SHALL VARY NOT MORE THAN 1/4 INCH IN 10 FEET FROM THE RATE OF TRANSVERSE SLOPE SHOWN ON THE PLANS.
15. IF THE CONTRACTOR DISCOVERS ANY DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER.
16. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNATING A LOCATION FOR CONCRETE TRUCK AND EQUIPMENT WASHOUT. THIS AREA SHALL NOT BE LOCATED NEAR, OR DRAIN INTO, A STORM DRAINAGE AREA, A TREATMENT AREA, OR A STORMWATER FACILITY.

CITY OF RICHLAND STANDARD NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE CITY OF RICHLAND STANDARD SPECIFICATIONS AND DETAILS AND THE CURRENT EDITION OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION. PLEASE CONFIRM THAT YOU HAVE THE LATEST SET OF STANDARD SPECS AND DETAILS BY VISITING THE CITY'S WEB PAGE.
2. ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, UTILITY EASEMENT, OR INVOLVING THE CONSTRUCTION OF PUBLIC INFRASTRUCTURE WILL REQUIRE THE APPLICANT TO OBTAIN A RIGHT-OF-WAY PERMIT PRIOR TO CONSTRUCTION. A PLAN REVIEW AND INSPECTION FEE IN THE AMOUNT EQUAL TO 5% OF THE CONSTRUCTION COSTS OF THE WORK THAT WILL BE ACCEPTED AS PUBLIC INFRASTRUCTURE OR IS WITHIN THE RIGHT-OF-WAY OR EASEMENT WILL BE COLLECTED AT THE TIME THE PERMIT IS ISSUED. A STAMPED, ITEMIZED ENGINEERS ESTIMATE (OPINION OF PROBABLE COST) SHALL BE USED TO CALCULATE THE 5% FEE.
3. ONCE THE PLANS HAVE BEEN ACCEPTED BY THIS DEPARTMENT, A PRE-CONSTRUCTION CONFERENCE WILL BE REQUIRED PRIOR TO THE START OF ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENT. CONTACT THE CIVIL AND UTILITY ENGINEERING DIVISION AT 942-7500 OR 942-7742 TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE.
4. WHEN THE CONSTRUCTION IS SUBSTANTIALLY COMPLETE A PAPER SET OF "RECORD DRAWINGS" SHALL BE PREPARED BY A LICENSED SURVEYOR AND INCLUDE ALL CHANGES AND DEVIATIONS. PLEASE REFERENCE THE PUBLIC WORKS DOCUMENT "RECORD DRAWING REQUIREMENTS & PROCEDURES" FOR A COMPLETE DESCRIPTION OF THE RECORD DRAWING PROCESS. AFTER APPROVAL BY THE CITY OF THE PAPER COPY, A MYLAR COPY OF THE RECORD DRAWINGS SHALL BE SUBMITTED ALONG WITH A CAD COPY OF THEM.
5. NO WORK ON THIS PROJECT SHALL COMMENCE UNTIL A CITY OF RICHLAND RIGHT-OF-WAY CONSTRUCTION PERMIT HAS BEEN ISSUED.
6. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."
7. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL BE LICENSED BY THE STATE OF WASHINGTON AND BONDED TO DO WORK IN THE PUBLIC RIGHT-OF-WAY.
8. THE CONTRACTOR AND ALL SUB-CONTRACTORS SHALL HAVE A CURRENT CITY OF RICHLAND BUSINESS LICENSE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CONSTRUCTION DEFICIENCIES FOR A PERIOD OF ONE-YEAR FROM THE DATE OF ACCEPTANCE BY THE CITY OF RICHLAND.
10. THE CONTRACTOR SHALL BE REQUIRED TO CALL 1-800-424-5555 OR "811" A MINIMUM OF TWO WORKING DAYS PRIOR TO COMMENCING ANY EXCAVATION ACTIVITIES TO DETERMINE FIELD LOCATIONS OF ALL UNDERGROUND UTILITIES.
11. ANY CHANGES OR MODIFICATIONS TO THE PROJECT PLANS SHALL FIRST BE APPROVED BY THE CITY ENGINEER OR HIS REPRESENTATIVE.
12. THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE ASSOCIATED WITH THE FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
13. THE FACE OF CURB SHALL BE STAMPED AT ALL UTILITY CROSSINGS, MAIN LINES AND SERVICE LINES AS FOLLOWS:
 "S" - SANITARY SEWER
 "I" - IRRIGATION
 "G" - GAS
 "W" - WATER
 "C" - CONDUITS
 "D" - STORM DRAIN
14. ALL FIRE HYDRANTS AND GUARD POSTS SHALL BE PAINTED OSHA SAFETY YELLOW, QUICKSET ENAMEL NO. 3472 HYDRANT YELLOW AS MANUFACTURED BY FARWEST PAINT MANUFACTURING COMPANY OR APPROVED EQUAL.
15. FIRE HYDRANTS AND STREET LIGHTS SHALL BE INSTALLED AT 2-FEET BEHIND THE BACK OF SIDEWALK TO THE FACE OF EQUIPMENT WHERE THE SIDEWALK IS ADJACENT TO THE CURB AND 6-FEET BEHIND THE BACK OF CURB WHERE THE SIDEWALK IS NOT ADJACENT TO THE CURB UNLESS OTHERWISE NOTED ON THE PLANS.
16. ANY DAMAGED OR BADLY DETERIORATED CONCRETE CURB, GUTTER AND SIDEWALK WITHIN PUBLIC RIGHT OF WAY SHALL BE REMOVED AND REPLACED. THIS INCLUDES ANY CURB DAMAGED BY CONSTRUCTION EQUIPMENT DURING THE PROJECT.
17. 2-INCHES OF CRUSHED GRAVEL SHALL BE PLACED AND COMPACTED BENEATH ALL SIDEWALKS PRIOR TO PLACEMENT OF CONCRETE.
18. ALL STORM DRAINAGE MANHOLES WITH A GRATED LID SHALL BE CONSTRUCTED WITH A "SUMP" IN THE BOTTOM OF THEM, IN ACCORDANCE WITH THE STANDARD DETAILS.
19. IRRIGATION VALVE BOXES OR LIDS WITHIN THE ROADWAY OR PUBLIC RIGHT-OF-WAY NEED TO BE PER CITY OF RICHLAND SPEC: "RICH 931" CAST IRON LID SHALL HAVE "IRR" CAST INTO TOP.
20. A MINIMUM HORIZONTAL SEPARATION OF TEN-FEET SHALL BE MAINTAINED BETWEEN WATER MAINS AND SEWER MAINS AND SERVICE LINES. WATER MAINS SHOULD CROSS OVER THE TOP OF SEWER MAINS WITH A MINIMUM VERTICAL SEPARATION OF 18-INCHES. ANY CROSSING WITH A VERTICAL SEPARATION OF LESS THAN 18" OR ANY CROSSING IN WHICH THE WATER MAIN CROSSES BELOW THE SEWER MAIN SHALL BE IN ACCORDANCE WITH WASHINGTON STATE DEPARTMENT OF ECOLOGY STANDARDS. PRESSURIZED SEWER MAINS SHALL NOT CROSS OVER POTABLE WATER MAINS IN ANY CASE. IF A MINIMUM VERTICAL SEPARATION OF 12" CANNOT BE MAINTAINED BETWEEN MAINLINE PIPES, CDF OR CONCRETE SHALL BE USED AS BACKFILL IN PLACE OF NATIVE SOILS OR GRAVEL.
21. RESIDENTIAL SEWER SERVICES SHALL BE 4-INCHES IN DIAMETER AND SHALL EXTEND 10-FEET BEYOND THE RIGHT-OF-WAY INTO THE LOT. THE END SHALL BE MARKED WITH A MARKER POST INSTALLED IN ACCORDANCE WITH CITY STANDARD DETAILS.
22. RESIDENTIAL WATER SERVICES SHALL BE 1-INCH IN DIAMETER AND SHALL EXTEND 1-FOOT BEYOND THE BACK OF SIDEWALK THROUGH THE CURB STOP. THE END SHALL BE MARKED WITH A BLUE MARKER POST INSTALLED IN ACCORDANCE WITH CITY STANDARD DETAILS.
23. THE CONTRACTOR SHALL TAKE ANY NECESSARY MEANS TO KEEP FROM TRACKING MUD AND DEBRIS OUT ONTO THE EXISTING STREETS, AND SHALL ALSO KEEP MUD AND ANY OTHER DEBRIS FROM HIS SITE FROM ENTERING THE EXISTING PUBLIC STORM DRAINAGE SYSTEM.
24. THE CONTRACTOR SHALL SUPPLY A DUST CONTROL PLAN PRIOR TO STARTING WORK IN ACCORDANCE WITH RMC CHAPTER 9.16.046, SECTION J.
25. ALL DISTURBED AREAS SHALL BE HYDRO-SEEDED AT THE COMPLETION OF THE PROJECT.
26. THE CONTRACTOR SHALL TAKE CARE TO PREVENT CONSTRUCTION SITE RUNOFF FROM THE ENTERING INTO THE CITY'S STORMWATER SYSTEM, IN ACCORDANCE WITH RMC CHAPTER 16.05. CONSTRUCTION MATERIALS THAT MAY INTRODUCE SEDIMENT INTO THE STORMWATER SYSTEM MAY NOT BE STOCKPILED IN THE STREET. SUCH MATERIALS MAY INCLUDE BUT NOT BE LIMITED TO: CONSTRUCTION MATERIALS, SOIL, SAND, GRAVELS, ETC.

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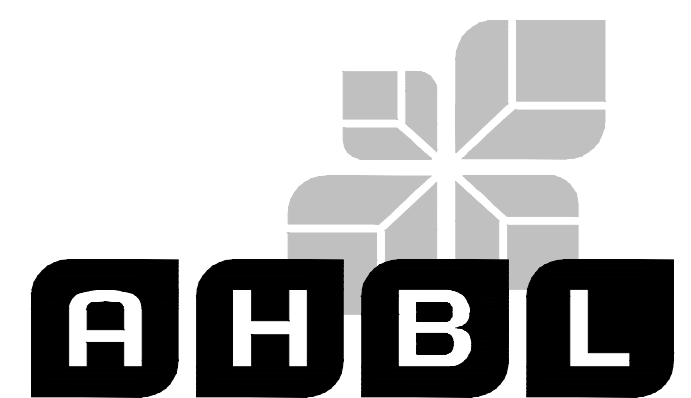
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CITY OF RICHLAND
RICHLAND FIRE STATION 73
RICHLAND, WA 99352

GENERAL NOTES

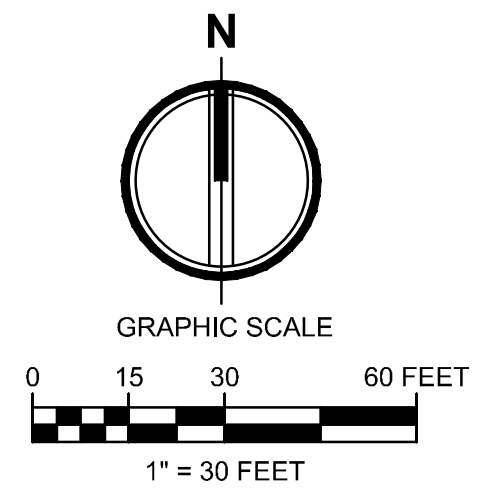
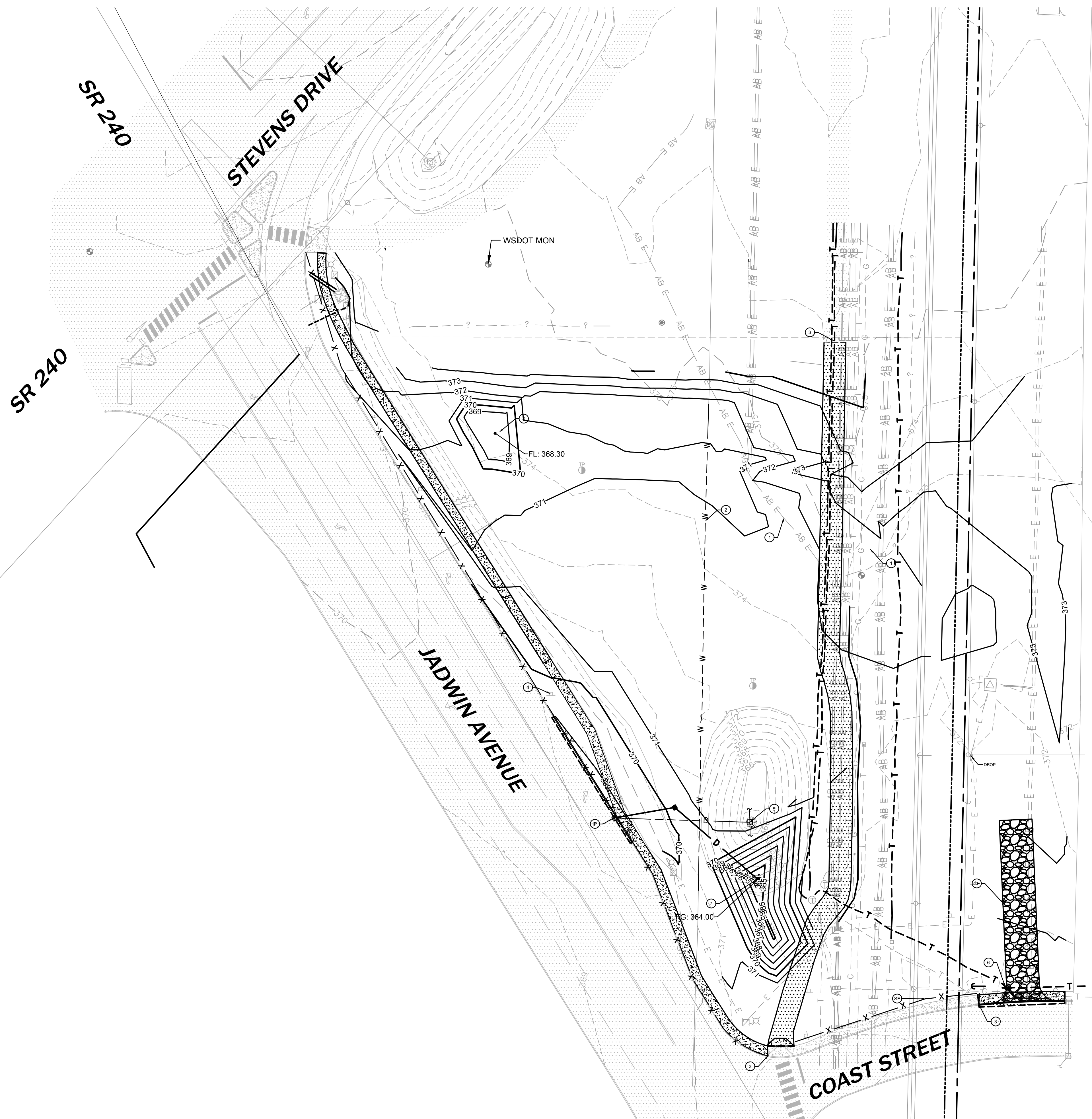
PROJECT NO.	2200084.10
DESIGNED BY	MAM
DRAWN BY	KTB
ISSUE DATE	09/02/2020
PHASE	PERMIT SET
CHECKED BY	EMF
REVISION	
SHEET NO.	

C101





Know what's below.
Call before you dig.



DEMOLITION GENERAL NOTES

- CONTRACTOR SHALL ATTEND A PRECONSTRUCTION CONFERENCE TO REVIEW SCOPE OF WORK.
- CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL UTILITIES HAVE BEEN DISCONNECTED PRIOR TO COMMENCING DEMOLITION.
- DEMOLITION: IT IS THE INTENT OF THE WORK UNDER THIS CONTRACT TO INCLUDE THE DEMOLITION INDICATED BY THIS DRAWING AND AS REQUIRED FOR NEW CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FULLY REVIEW THE SITE CONDITIONS AND TO CORRELATE THESE OBSERVATIONS WITH THE PROJECT WORK AND INCLUDE ALL NECESSARY DEMOLITION, WHETHER SHOWN OR NOT, AND INCLUDE ALL SUCH COSTS IN THE BASE BID.
- ANY DAMAGED OR BADLY DETERIORATED CONCRETE CURB, GUTTER AND SIDEWALK WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED AND REPLACED. THIS INCLUDES ANY CURB DAMAGED BY CONSTRUCTION ACTIVITIES DURING THE PROJECT.
- CLEARING: IT IS THE INTENT OF THE WORK UNDER THIS CONTRACT TO CONDUCT ALL CLEARING NECESSARY TO BE ABLE TO COMPLETE ALL THE WORK OF THIS PROJECT.
- CONTRACTOR SHALL LEGALLY DISPOSE OF THE OWNER'S PROPERTY, ALL DEMOLISHED AND REMOVED MATERIALS, UNLESS INDICATED OTHERWISE. THE DISPOSAL SITE FOR ACCEPTABLE WASTE MATERIALS SHALL BE EITHER THE RICHLAND LANDFILL OR A SITE APPROVED BY THE BENTON-FRANKLIN PUBLIC HEALTH DEPARTMENT, IN WRITING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLETELY COORDINATE UTILITY DEMOLITION WITH NEW CONSTRUCTION. CONTRACTOR SHALL ENSURE THAT ADEQUATE FIRE PROTECTION IN ACCORDANCE WITH THE FIRE MARSHAL'S REQUIREMENTS IS PROVIDED.
- COORDINATE POWER DEMOLITION WITH ELECTRICAL JURISDICTION AND ELECTRICAL PLANS. CONTRACTOR TO ENSURE THAT DEMOLITION OF LINES WILL NOT COMPROMISE POWER TO OTHER AREAS.
- THIS PLAN IS USED IN CONJUNCTION WITH THE CSWPPP AND NPDES CONSTRUCTION STORM WATER PERMIT.
- THE CLEARING LIMITS DEPICTED ON THESE PLANS REPRESENT THE EDGE OF CIVIL-RELATED WORK SUCH AS GRADING, UTILITY, STORM DRAINAGE, AND PAVING IMPROVEMENTS.
- CONTRACTOR SHALL COORDINATE ANY UTILITY SHUTDOWN WITH OWNER AT LEAST 1 WEEK PRIOR TO THE WORK BEING PERFORMED.
- ALL DISTURBED AREAS SHALL BE STABILIZED THROUGH TEMPORARY SEEDING.
- CONTRACTOR TO NEATLY SAWCUT ALONG LINE OF EXISTING PAVEMENT THAT IS TO REMAIN BEFORE REMOVING PAVEMENT.
- WORKING: APPURTENANCES ASSOCIATED WITH EXISTING UTILITIES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY.

TESC LEGEND

(CE)		CONSTRUCTION ENTRANCE	(CE) C202
(IP)		INLET PROTECTION	(IP) C202
(SF)		SILT FENCE	(SF) C202
(CL)		PROJECT CLEARING LIMITS	
		EXISTING GRADE CONTOUR (MINOR)	
		EXISTING GRADE CONTOUR (MAJOR)	
		FINISHED GRADE CONTOUR (MINOR)	
		FINISHED GRADE CONTOUR (MAJOR)	

DEMOLITION LEGEND

REMOVE	PROTECT

KEYNOTES

- DRY UTILITY TO BE ABANDONED
- WATER LINE TO BE REMOVED AND RELOCATED.
- CONTRACTOR TO PROVIDE NEAT SAWCUT LINE.
- SIGN TO BE REMOVED, PRESERVED, AND REINSTALLED
- CATCH BASIN, TRASH RACK, AND INFILTRATION PIPE TO BE RELOCATED AS SHOWN, SEE C4.00
- ZIPLY COMMUNICATIONS TO RELOCATE POLE AND REROUTE COMMUNICATIONS
- RELOCATED JADWIN/STEVENS STORM POND
- SITE STORMWATER POND

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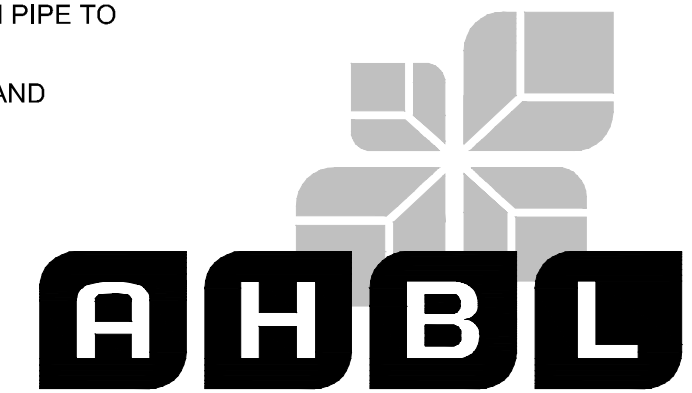
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CITY OF RICHLAND
RICHLAND FIRE STATION 73
RICHLAND, WA 99352

TESC & DEMOLITION PLAN

PROJECT NO.	2200084.10
DESIGNED BY	MAM
DRAWN BY	KTB
ISSUE DATE	09/02/2020
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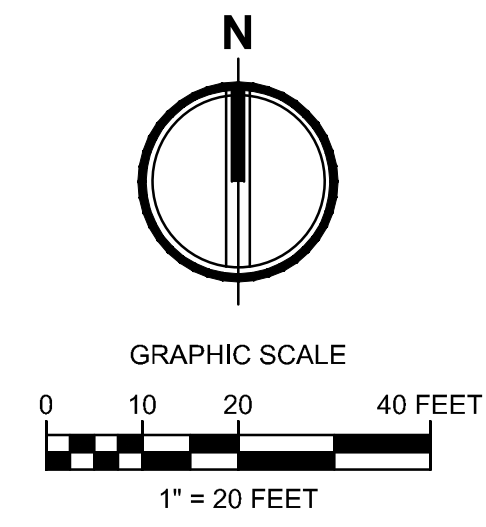
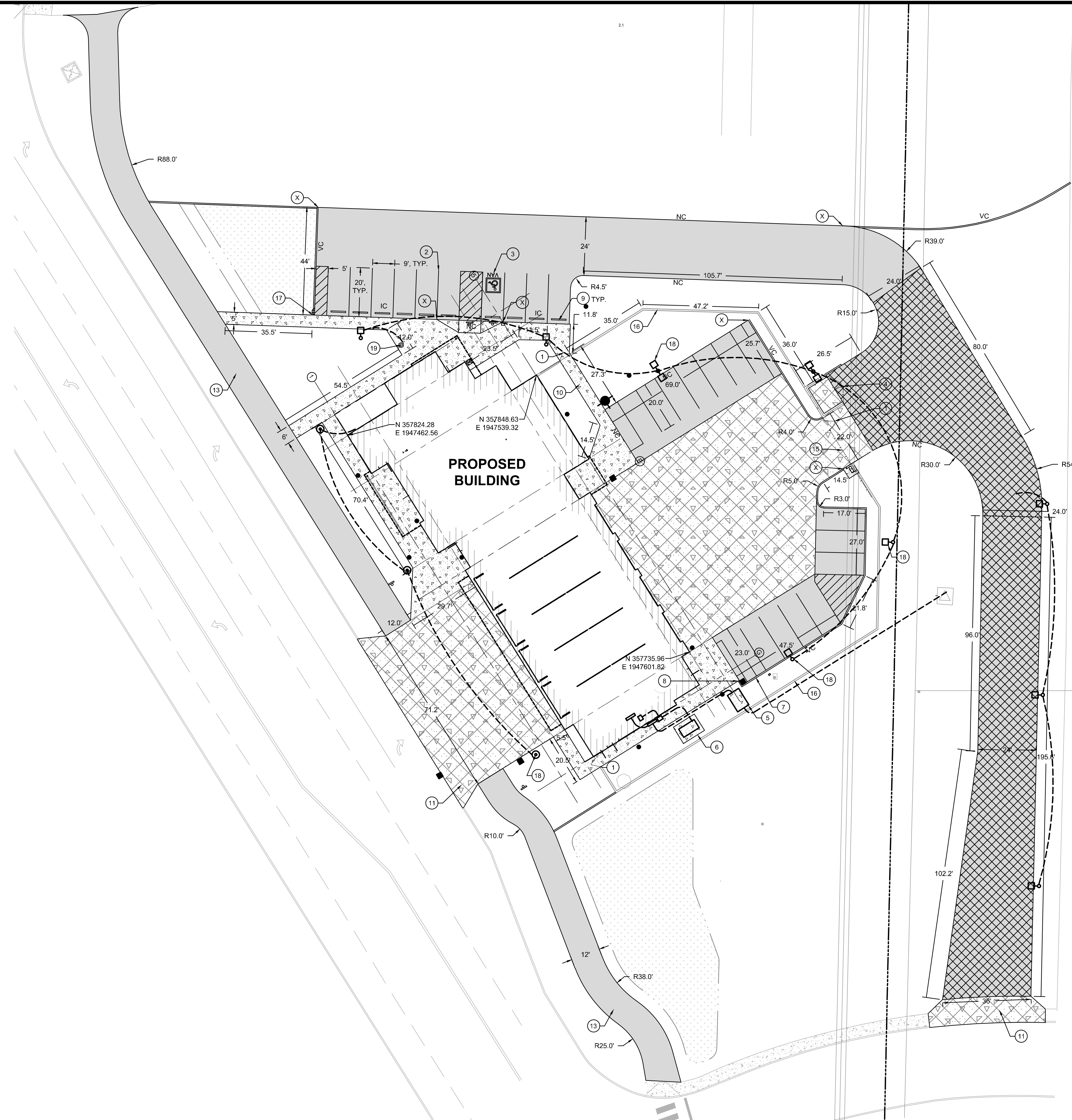


C200

June 2, 2020



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SITE PLAN NOTES

1. REFER TO LANDSCAPE AND ARCHITECTURAL PLANS FOR ADDITIONAL DETAILS REGARDING SITE FURNISHINGS, LIGHTING, CONCRETE SCORING, AND RELATED DETAILS NOT SHOWN ON THIS PLAN.
2. REFER TO SHEET C101 FOR CIVIL STANDARD NOTES.
3. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
4. ALL SIGNS TO BE INSTALLED PER CITY OF RICHLAND STANDARDS
5. ALL NEW SIDEWALKS AND CONNECTIONS TO EXISTING SIDEWALKS SHALL BE ADA COMPLIANT.

SURFACING LEGEND

	CONCRETE SIDEWALK	
	HEAVY-DUTY CONCRETE	
	HOT MIXED ASPHALT PAVEMENT	
	HEAVY DUTY HOT MIXED ASPHALT PAVEMENT	
VC	VERTICAL CURB	
NC	NO CURB	
IC	INTEGRAL CURB	
X	CURB CUT/CHANGE	

KEYNOTES

1. MAN GATE PER LANDSCAPE DETAILS
2. PARKING STALL MARKINGS
3. BARRIER FREE PARKING
4. TRASH ENCLOSURE, SEE ARCHITECTURAL PLANS
5. TRANSFORMER PAD LOCATION, REFER TO ELECTRICAL PLANS
6. GENERATOR PAD LOCATION, REFER TO ELECTRICAL PLANS
7. EV CHARGING STATION, REFER TO ELECTRICAL PLANS
8. CURB NOSE-DOWN
9. WHEEL STOP
10. CONCRETE SIDEWALK PER CITY OF RICHLAND STD DWG ST1
11. DRIVEWAY PER CITY OF RICHLAND STD DWG ST2A, WIDTH PER PLAN
12. DETECTABLE WARNING SURFACE PER CITY OF RICHLAND STD DWG ST21
13. ASPHALT WALKING PATH.
14. CURB & GUTTER PER CITY OF RICHLAND STD DWG ST1
15. 16' SLIDING GATE, SEE LANDSCAPE PLANS FOR DETAILS.
16. CMU WALL PER LANDSCAPE DETAILS
17. DRAINAGE CURB CUT
18. LUMINAIRES, JUNCTION BOXES, GENERATOR, AND TRANSFORMER IN LOCATIONS SHOWN. SEE ELECTRICAL FOR OTHER INFORMATION.
19. FLAGPOLE PER LANDSCAPING PLANS AND DETAILS

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Electrical Consultant

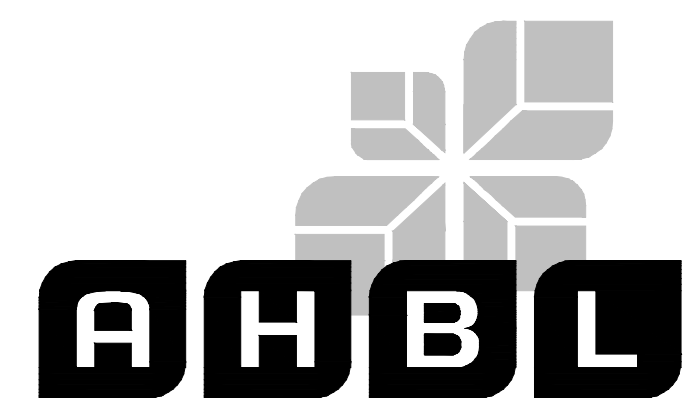
Landscape
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CITY OF RICHLAND
RICHLAND FIRE STATION 73
RICHLAND, WA 99352

CIVIL SITE PLAN

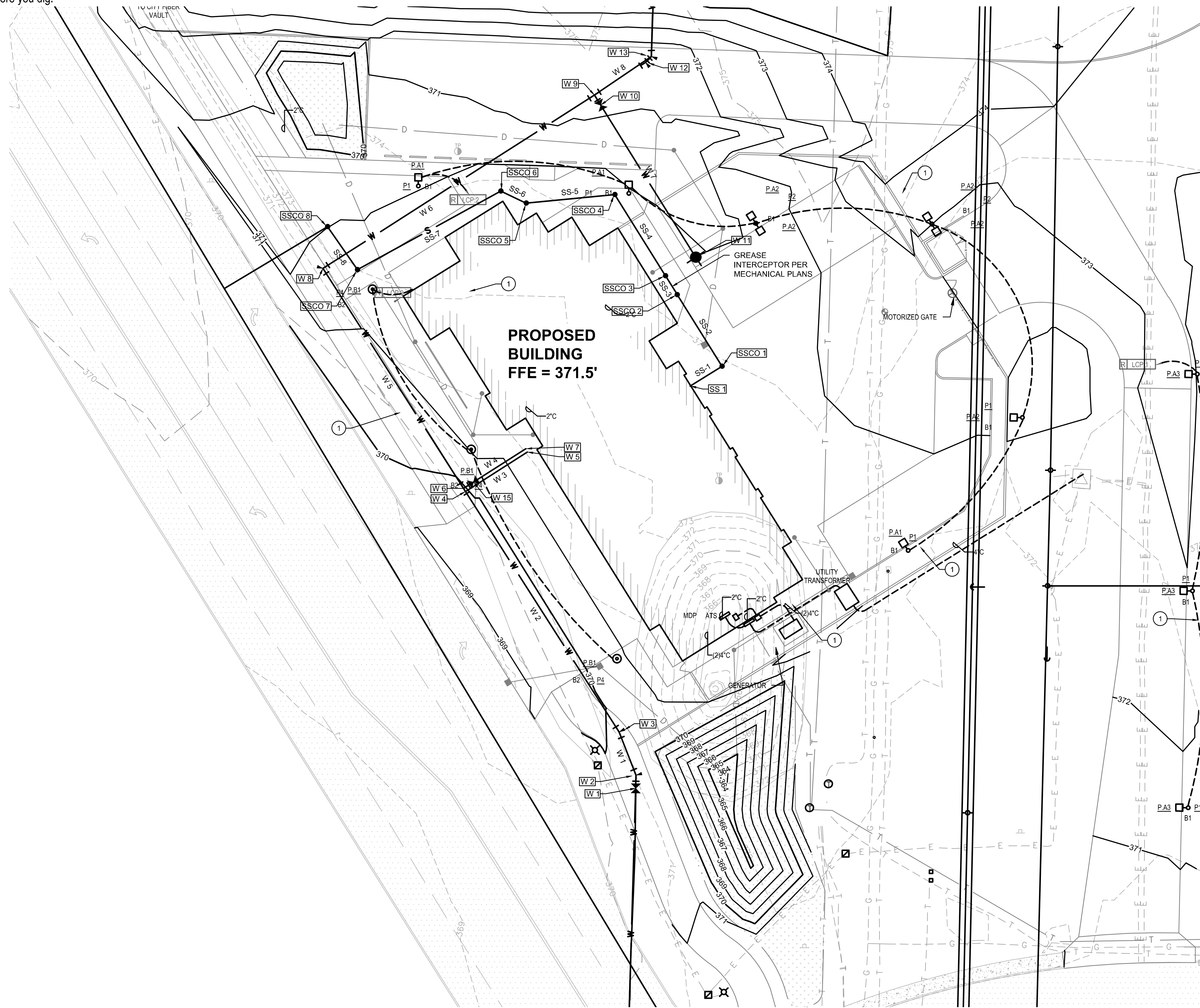
PROJECT NO.	2200084.10
DESIGNED BY	MAM
DRAWN BY	KTB
ISSUE DATE	09/02/2020
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SHEET NO.	

C300





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PROPOSED BUILDING
FFE = 371.5'

DOMESTIC WATER NOTES

1. WATER MAIN BEDDING SHALL BE PER CITY OF RICHLAND STD DWG U2.
2. FIRE HYDRANT ASSEMBLY SHALL BE PER CITY OF RICHLAND STD DWG W14.
3. 2" DCVA SHALL BE PER CITY OF RICHLAND STD DWG W20.
4. 2" WATER SERVICE SHALL BE PER CITY OF RICHLAND STD DWG W3.
5. TAPPING SLEEVE SHALL BE PER CITY OF RICHLAND STD DWG W11.
6. 1.5" IRRIGATION SERVICE SHALL BE PER CITY OF RICHLAND STD DWG IRR6.
7. 24" WATER MAIN TO BE RESTRAINED AND THRUST BLOCKED.

DOMESTIC WATER TABLE

W 1	CONNECT TO EXISTING W/ 24" DI TEE, RJXRJ N: 357647.4046 E: 1947545.8542
W 2	24" 22.5" BEND, RJXRJ N: 357652.1266 E: 1947545.9240
W 3	24" 11.25" BEND, OR DEFLECT JOINTS N: 357667.6757 E: 1947539.8544
W 4	2" SERVICE TAP W/ METER AND DCVA VAULTS N: 357754.1430 E: 1947484.6130
W 5	2" DOMESTIC CONNECTION TO BUILDING N: 357768.3369 E: 1947506.8552
W 6	24" X 6" DI TEE, MJXMJ N: 357755.2300 E: 1947483.9185
W 7	FIRE LINE CONNECTION TO BUILDING N: 357769.5239 E: 1947506.2922
W 8	24" DI 90° BEND, MJXMJ N: 357834.3377 E: 1947433.3789
W 9	24"X6" DI TEE, MJXFL N: 357696.6800 E: 1947530.9609
W 10	W/ 6" GATE VALVE, FLXMJ N: 357893.0620 E: 1947533.2723
W 11	FIRE HYDRANT ASSEMBLY N: 357838.3770 E: 1947567.3699
W 12	24" DI 11.25" BEND, MJXMJ N: 357908.4571 E: 1947549.3951
W 13	24" DI 45° BEND, MJXMJ N: 357910.5673 E: 1947551.4814
W 14	CONNECT TO EXISTING W/ RESTRAINTS PROVIDE TEMPORARY BLOWOFF AT START OF CONSTRUCTION, REMOVE AT FINAL CONFIGURATION N: 357947.3243 E: 1947552.3203
W 15	4" DI GATE VALVE W/ PIV POST N: 357757.5197 E: 1947487.5024

W 1	17 LF 24" DIP @ 4.05%
W 2	104 LF 24" DIP @ 1.01%
W 3	26 LF 2" DIP @ 0.00%
W 4	27 LF 4" DIP @ 0.00%
W 5	94 LF 24" DIP @ 0.00%
W 6	116 LF 24" DIP @ 1.25%
W 7	69 LF 6" DIP @ 2.86%
W 8	25 LF 24" DIP @ 14.43%

SANITARY SEWER NOTES

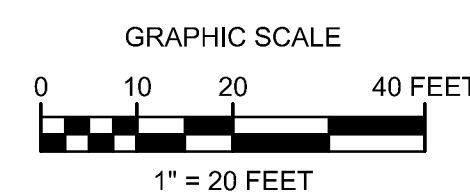
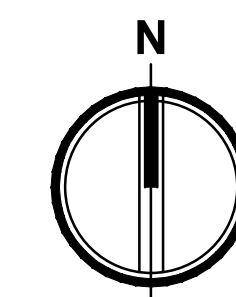
1. SANITARY SEWER BEDDING SHALL BE PER CITY OF RICHLAND STD DWG U2.
2. SSCO SHALL BE PER CITY OF RICHLAND STD DWG S9.
3. OIL WATER SEPARATOR SHALL BE PER OLDCASTLE PRECAST 1,000 GALLON CAPACITY OR EQUIVALENT.

SEWER TABLE

SS 1	CLEANOUT, CONNECT TO TRENCH DRAIN OUTLET N: 357792.0368 E: 1947565.4155 RIM 368.53 IE 367.98 (6" NE)
SSCO 1	CLEANOUT N: 357789.1680 E: 1947576.8351 RIM 371.37 IE 367.75 (6" NW) IE 367.85 (6" SW)
SSCO 2	CLEANOUT N: 357784.9331 E: 1947560.7454 RIM 371.40 IE 367.44 (6" SE) IE 367.34 (6" NW)
SSCO 3	CLEANOUT N: 357831.7169 E: 1947556.5091 RIM 371.40 IE 367.26 (6" SE) IE 367.16 (6" NW)
SSCO 4	CLEANOUT N: 357860.8871 E: 1947538.2931 RIM 371.11 IE 366.82 (6" SE) IE 366.72 (6" W)
SSCO 5	CLEANOUT N: 357857.8221 E: 1947506.4517 RIM 371.27 IE 366.40 (6" NW) IE 366.40 (6" E)
SSCO 6	CLEANOUT N: 357862.1465 E: 1947497.3386 RIM 371.19 IE 366.30 (6" SE) IE 366.20 (6" SW)
SSCO 7	CLEANOUT N: 357833.8794 E: 1947445.7603 RIM 371.29 IE 362.50 (6" NE) IE 362.40 (6" NW)
SSCO 8	CLEANOUT, CONNECT TO EXISTING SEWER SERVICE N: 357849.3710 E: 1947435.0340 RIM 370.53 IE 361.49 (6" SE)
SS-1	13 LF 6" PVC @ 1.00%
SS-2	30 LF 6" PVC @ 1.00%
SS-3	8 LF 6" PVC @ 1.00%
SS-4	34 LF 6" PVC @ 1.00%
SS-5	32 LF 6" PVC @ 1.00%
SS-6	10 LF 6" PVC @ 1.00%
SS-7	59 LF 6" PVC @ 6.29%
SS-8	19 LF 6" PVC @ 4.85%

KEYNOTES

1. ELECTRICAL APPURTENANCES AND ELECTRICAL TRENCHING IN LOCATIONS SHOWN. SEE ELECTRICAL FOR OTHER INFORMATION.



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09/01/2020



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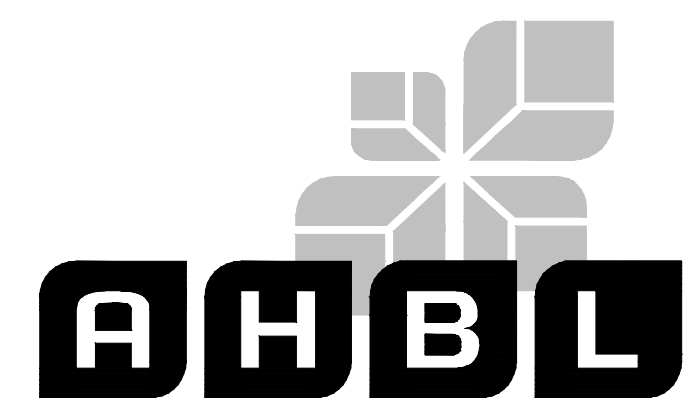
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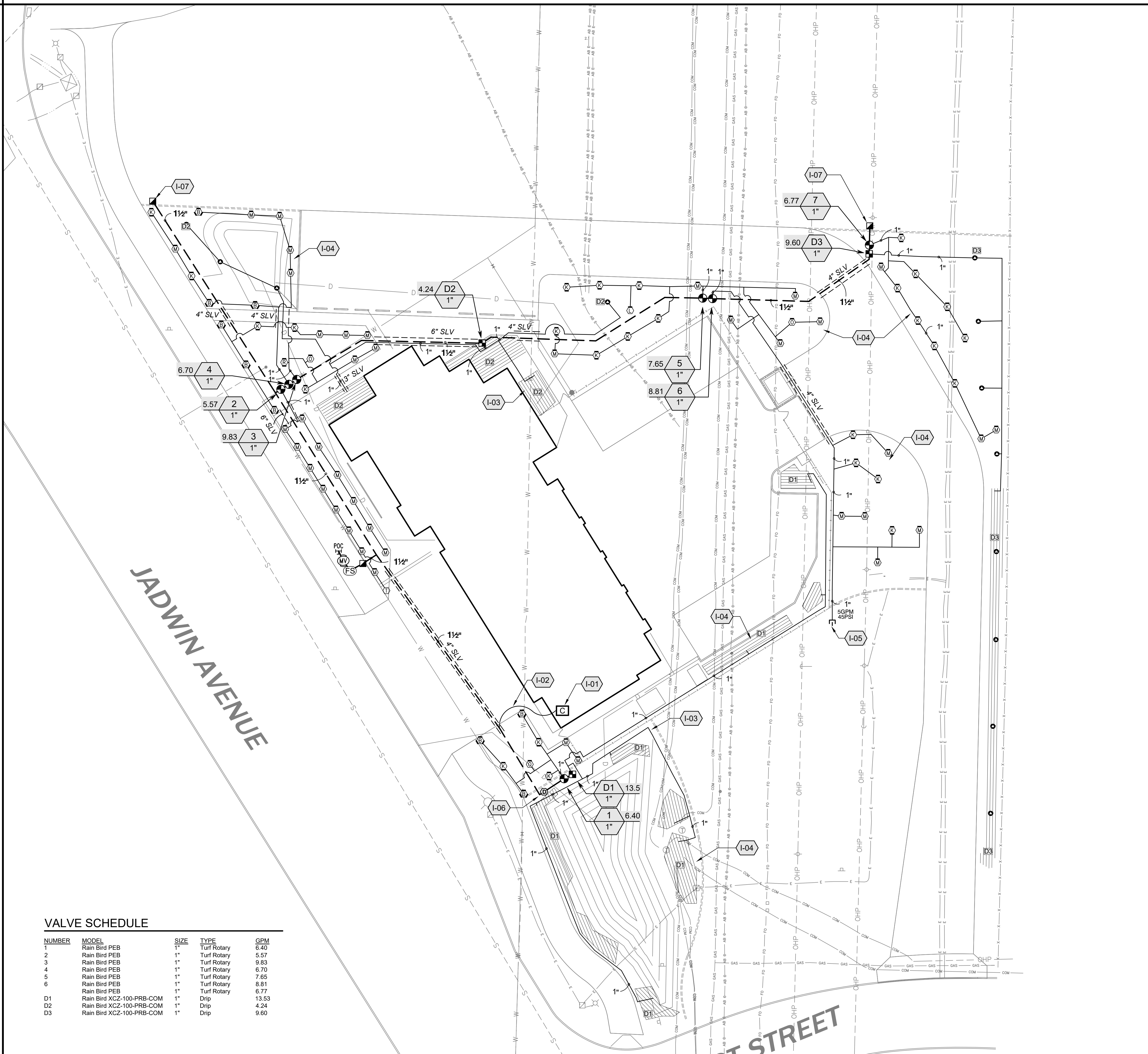
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RICHLAND FIRE STATION 73
RICHLAND, WA 99352

UTILITY PLAN

PROJECT NO.	2200084.10
DESIGNED BY	MAM
DRAWN BY	KTB
ISSUE DATE	09/02/2020
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VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM
1	Rain Bird PEB	1"	Turf Rotary	6.40
2	Rain Bird PEB	1"	Turf Rotary	5.57
3	Rain Bird PEB	1"	Turf Rotary	9.83
4	Rain Bird PEB	1"	Turf Rotary	6.70
5	Rain Bird PEB	1"	Turf Rotary	7.65
6	Rain Bird PEB	1"	Turf Rotary	8.81
D1	Rain Bird XCZ-100-PRB-COM	1"	Drip	13.53
D2	Rain Bird XCZ-100-PRB-COM	1"	Drip	4.24
D3	Rain Bird XCZ-100-PRB-COM	1"	Drip	9.60

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Hunter MP2000 PROS-06-PRS40-CV Turf Rotator, 6" (15.24 cm) pop-up with factory installed check valve, pressure regulated to 40 psi (2.76 bar), MP Rotator nozzle on PRS40 body. K=Black adj arc 90-210, G=Green adj arc 210-270, R=Red 360 arc.
	Hunter MP3000 PROS-06-PRS40-CV Turf Rotator, 6" (15.24 cm) pop-up with factory installed check valve, pressure regulated to 40 psi (2.76 bar), MP Rotator nozzle on PRS40 body. B=Blue adj arc 90-210, Y=Yellow adj arc 210-270, A=Gray 360 arc.
	Hunter I-20-04 Turf Rotor, 4.0" Pop-Up, Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Standard Nozzle.
	Hunter I-20-04-LA Turf Rotor, 4.0" Pop-Up, Adjustable and Full Circle. Plastic Riser. Drain Check Valve. Low Angle Nozzle.
	Area to Receive Hunter PLD-06-18 (12) Dripline as Specified. Install per detail 1/L.1.45 using "Modified Layout" where possible to reduce watering areas without plants.
	Rain Bird XCZ-100-PRB-COM Wide Flow Drip Control Kit for Commercial Applications. 1" Ball Valve with 1" PEB Valve and 1" Pressure Regulating 40psi Quick-Check Basket Filter. 0.3gpm to 20gpm.
	Manual drain valve as specified
	Rain Bird PEB 1" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration.
	Quick coupler valve as specified
	Irrigation Controller as Specified
	1.5" Bermad Normally Open Master Valve as Specified
	1" Flow Sensor As Specified
	1-1/4" Point of Connection per Civil
	Irrigation Lateral Line as Specified.
	1 1/2" Irrigation Mainline as Specified
	Pipe Sleeve size per plans: PVC Schedule 40

ALL IRRIGATION EQUIPMENT TO BE INSTALLED PER DETAILS FOUND ON SHEETS L1.30 L1.31 AND AS RECOMMENDED BY MANUFACTURER.

IRRIGATION GENERAL NOTES

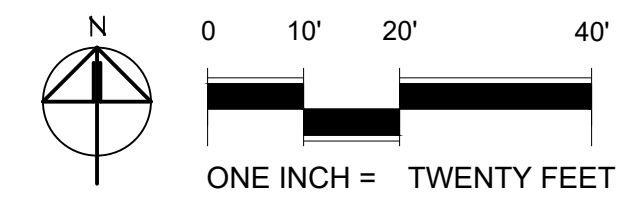
1. SYSTEM DESIGN BASED ON THE ASSUMPTION OF THE AVAILABILITY OF 35 GPM AND 70 PSI AT THE EXISTING MAINLINE CONNECTION POINT. FINAL PRESSURE TO BE 50 PSI AT ALL ROTATORS, 40 AT ROTARY HEADS.
2. CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO INITIATION OF ANY DEMOLITION OR CONSTRUCTION OPERATIONS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE CONTRACTOR'S RESPONSIBILITY.
3. COORDINATE ALL IRRIGATION INSTALLATION OPERATIONS WITH CIVIL, MECHANICAL, AND ELECTRICAL ENGINEERING SHEETS.
4. CONTRACTOR TO COORDINATE INSTALLATION OF IRRIGATION CONDUIT AND SLEEVES UNDER HARD SURFACE AREAS (COMPLETED IMPROVEMENTS) WITH RESPECTIVE CONTRACTORS.
5. CONTRACTOR TO OBTAIN AND PAY FOR ALL PERMITS AND FEES REQUIRED FOR THIS WORK.
6. OTHERS SHALL SUPPLY AND INSTALL TAP AND METER, REFER TO CIVIL. VERIFY TYPE OF METER AND INSTALLATION REQUIREMENTS WITH MUNICIPALITY OR WATER DISTRICT.
7. IRRIGATION PIPING LAYOUT IS SCHEMATIC WHERE LINES ARE SHOWN BELOW PAVEMENT ADJACENT TO LANDSCAPE AREAS. THEY ARE TO BE LOCATED IN THE LANDSCAPE AREA.
8. ALL ELECTRICAL WORK TO MEET OR EXCEED N.E.C., STATE CODES, LOCAL CODES, AND MANUFACTURER'S RECOMMENDATIONS.
9. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ROCK AND DEBRIS BROUGHT TO THE SURFACE AS A RESULT OF TRENCHING OPERATIONS.
10. CONTRACTOR SHALL REFER TO SPECIFICATIONS AND DETAIL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
11. ALL PIPES NOT LABELED SHALL BE 1" MINIMUM.
12. REFER TO SPECIFICATIONS FOR AS-BUILT DRAWING SUBMITTAL.
13. ADJUST HEAD AND PIPE LOCATIONS AS REQUIRED TO AVOID SITE FEATURES. ANY MAJOR CHANGES TO PLAN SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO WORK.
14. SPRAY FOAM INSULATION AT SLEEVE ENDS AFTER ALL PIPE AND WIRE ARE INSTALLED TO HELP PREVENT WATER FROM ENTERING SLEEVES.
15. MAKE ALL WIRE CONNECTIONS INSIDE A VALVE BOX. ALL VALVE BOXES ARE TO BE LOCATED OUTSIDE OF TURF AREAS.

IRRIGATION KEYED NOTES

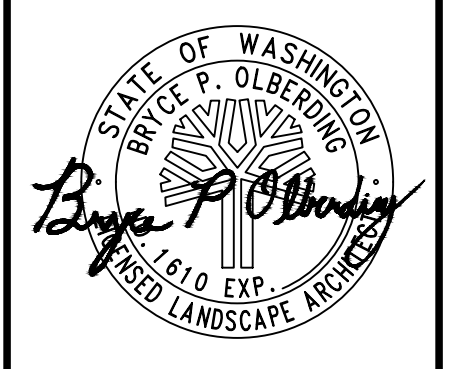
SYMBOL	DESCRIPTION	DETAIL
I-01	MOUNT SPECIFIED CONTROLLER IN ROOM #. MOUNTING HEIGHT TO BE 4'-0" FROM FINISH GRADE TO THE BOTTOM OF THE BOX. CONTRACTOR TO PROVIDE 120 VAC, 60 Hz POWER, ETHERNET CONNECTION AND CONDUIT TO CONTROLLER. COORDINATE WITH MECHANICAL AND ELECTRICAL SHEETS FOR LOCATION.	
I-02	INSTALL IRRIGATION CONTROL WIRE CONTROL WIRE IN 1-1/2" ELECTRICAL CONDUIT FROM CONTROLLER TO A PULL BOX AT IRRIGATION MAINLINE. PULL BOX TO BE STANDARD VALVE BOX SIZE AND INSTALLED PER REMOTE CONTROL VALVE DETAIL.	
I-03	AREA FOR DRIP IRRIGATION IS SHOWN AS A GENERAL REFERENCE TO INSTALLATION DETAIL. ADJUST EXTENTS OF IRRIGATED AREA TO ONLY WHAT IS NECESSARY. SEE OPTIONAL LAYOUT OPTION WITHIN DETAIL FOR MORE INFORMATION.	5/L1.31
I-04	ADJUST FINAL LOCATION OF DRIP IRRIGATION AND ROTARY HEADS TO ACCOMMODATE ACTUAL PLANT PLACEMENT. THE DESIGN INTENT OF THIS SYSTEM IS TO WATER ONLY THE LOCATIONS AT, OR ADJACENT TO PLANTS.	
I-05	INSTALL 1" MANUAL FLUSH VALVE AT END OF LATERAL LINE. THIS IRRIGATION ZONE HAS BEEN SIZED TO ACCOMMODATE THE EXPANSION OF AN ADDITIONAL 5 GPM MINIMUM.	
I-06	SLOPE MAINLINE TO DRAIN, OR ADJUST LOCATION OF DRAIN TO END OF MAINLINE IF IT OCCURS AT LOW POINT.	
I-07	INSTALL QUICK COUPLER VALVE AS SPECIFIED, PER DETAIL.	8/L1.31



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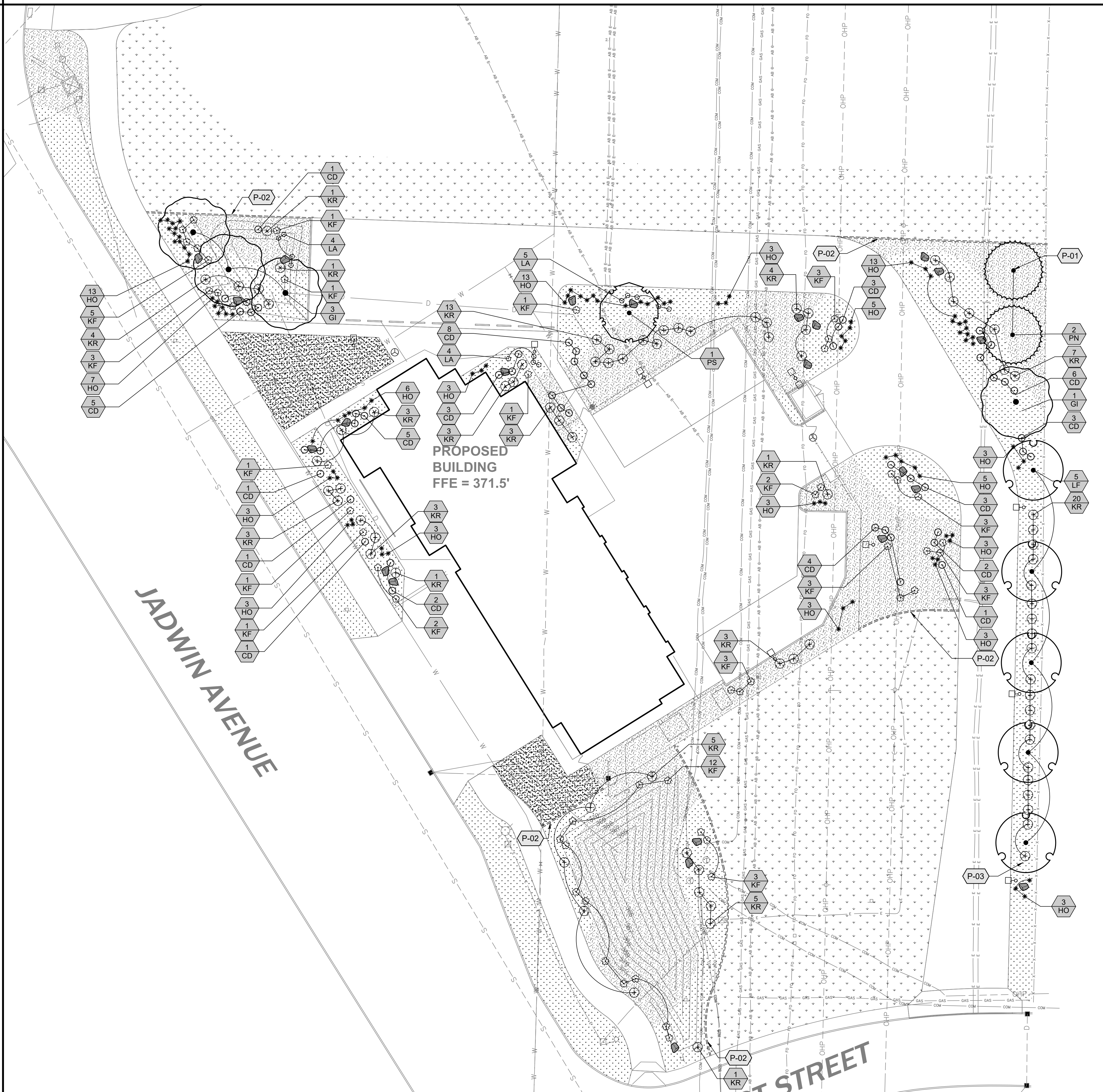
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COFFMAN ENGINEERS
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- CIVIL ENGINEER
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RICHLAND FIRE STATION #73
RICHLAND FIRE STATION
RICHLAND, WA
IRRIGATION PLAN

PROJECT NO.	2005
DESIGNED BY	BPO
DRAWN BY	BPO
ISSUE DATE	09/02/2020
PHASE	PERMIT SET
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L1.10



LANDSCAPE LEGEND

PLANTS TO BE INSTALLED PER DETAILS

- 3-4" BASALT BOULDER AS SPECIFIED - 22 Count
- INSTALL TURF SOD AS SPECIFIED
- INSTALL DRYLAND TURF SEED AS SPECIFIED
- TYPE 1 ROCK MULCH AS SPECIFIED.
- TYPE 2 ROCK MULCH AS SPECIFIED.

PLANT CALLOUT:
 QUANTITY
 PLANT IDENTIFICATION KEY

CONCRETE LANDSCAPE EDGING PER DETAIL.

PLANTING SCHEDULE

TREES	BOTANICAL / COMMON NAME	CONT	CAL	SIZE	QTY
GI	Gleditsia triacanthos inermis 'Skyline' / Skyline Thornless Honey Locust	15 gal	1.5" Cal		4
LF	Liquidambar styraciflua JFS KW1LS / Firehouse Sweet Gum	15 gal	1.5" Cal		5
PN	Pinus nigra / Austrian Black Pine	B & B		5'	2
PS	Pinus sylvestris / Scotch Pine	B & B		5'	1
SHRUBS	BOTANICAL / COMMON NAME	SIZE	FIELD2	FIELD3	QTY
CD	Caryopteris x clandonensis 'Dark Knight' / Dark Knight Bluebeard	2 gal			49
GRASSES	BOTANICAL / COMMON NAME	SIZE	FIELD2	FIELD3	QTY
KF	Calamagrostis arundinacea 'Karl Foerster' / Foerster's Feather Grass	2 gal			49
KR	Pennisetum orientale 'Karley Rose' / Karley Rose Fountain Grass	2 gal			81
PERENNIALS	BOTANICAL / COMMON NAME	SIZE	FIELD2	FIELD3	QTY
HO	Hemerocallis x 'Stella in Red' / Stella de Oro Daylily	2 gal			95
LA	Lavandula angustifolia 'Imperial Gem' / English Lavender	2 gal			13

NOTE:
 ALL TREES TO BE INSTALLED AND PROVIDED BY OWNER.
 CONTRACTOR TO COORDINATE IRRIGATION OF TREES WITH OWNER.

LANDSCAPE KEYED NOTES

SYMBOL	Planting DESCRIPTION	DETAIL
P-01	INSTALL CONIFEROUS TREE PER DETAIL. TYP.	3/L1.30
P-02	INSTALL LANDSCAPE EDGING PER DETAIL	5/L1.30
P-03	INSTALL DECIDUOUS TREE PER DETAIL. TYP.	2/L1.30

LANDSCAPE GENERAL NOTES

- CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO INITIATION OF ANY DEMOLITION OR CONSTRUCTION OPERATIONS. ANY DAMAGE TO EXISTING UTILITIES SHALL BE CONTRACTOR'S RESPONSIBILITY.
- ALL PLANT MATERIAL SHALL CONFORM TO THE CURRENT AMERICAN ASSOCIATION OF NURSERYMAN'S NATIONAL STANDARD SPECIFICATIONS.
- ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS AND CONTRACT SPECIFICATIONS.
- CONTRACTOR SHALL VERIFY ALL QUANTITIES. IN THE CASE OF A DISCREPANCY, THE ILLUSTRATED LOCATIONS SHALL DICTATE COUNT.
- CONTRACTOR SHALL COORDINATE PLANTING WITH IRRIGATION CONTRACTOR.
- NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT THE CONSENT OF THE LANDSCAPE ARCHITECT.
- ALL CONIFER TREES WITHOUT STRONG SINGLE LEADER WILL BE REJECTED.
- LANDSCAPE CONTRACTOR TO MEET WITH OWNER AND MAINTENANCE DIRECTOR IN A PRE CONSTRUCTION MEETING PRIOR TO STARTING ANY INSTALLATION.

CODE REQUIREMENTS

ZONE: Parks & Public Facilities (PPF)
 Underground irrigation of all landscape required.

Interior Coverage: A minimum of five percent of the interior of a parking facility & 1 Tree/ 100 SF.

Perimeter Coverage Adjacent to Abutting Properties:
 Width = 10'
 Trees = 1/40 L.F.

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09.02.2020

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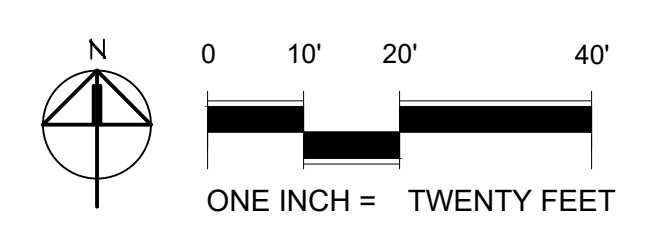
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RICHLAND FIRE STATION #73
 RICHLAND FIRE STATION
 RICHLAND, WA
 LANDSCAPE PLAN

PROJECT NO.	2005
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ISSUE DATE	09/02/2020
PHASE	PERMIT SET
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Stormwater Technical Information Report

PREPARED FOR:

Architects West
210 E Lakeside Ave
Coeur d'Alene, ID 83814

PROJECT:

Richland Public Safety Building 73
Undetermined
Richland, WA 99352
2200084.12

PREPARED BY:

Mason Mendel, PE
Senior Engineer

REVIEWED BY:

Erick Fitzpatrick, PE
Associate Principal

DATE:

August 2020

Stormwater Technical Information Report

PREPARED FOR:

Architects West
210 E Lakeside Ave
Coeur d'Alene, ID 83814

PROJECT:

Richland Public Safety Building 73
Undetermined
Richland, WA 99352
2200084.12

PREPARED BY:

Mason Mendel, PE
Senior Engineer

REVIEWED BY:

Erick Fitzpatrick, PE
Associate Principal

DATE:

August 2020



09/04/2020

I hereby state that this [Stormwater Technical Information Report](#) for the [Richland Public Safety Building 73](#) project has been prepared by me or under my supervision, and meets the standard of care and expertise that is usual and customary in this community for professional engineers. I understand [City of Richland](#) does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities prepared by me.

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Appendices

Appendix A

Figures

EX-A..... Basin Map

Appendix B

Stormwater Calculations

Appendix C

Subsurface Information

1.0 Project Overview

1.1 Purpose and Scope

This report accompanies the **Permit Set** for the Richland Public Safety Building 73 project. The total proposed parcel area is approximately 2.75 acres. The project site is located in the triangle east of Jadwin Ave and Stevens Drive In Richland, Benton County, Washington.

The proposed project entails the construction of Richland Public Safety Building 73, an approximately 10,300-square foot building. Additional components include concrete driveways, curbing, asphalt parking, sidewalks, landscaping, utilities and stormwater facilities.

The proposed onsite stormwater management system will include roof drains, minor site conveyance piping, and two infiltration ponds. A detailed description of the onsite stormwater management system is provided in Section 4.0 of this report.

The stormwater design for this project utilizes the methodology and criteria established by the *Stormwater Management Manual for Eastern Washington (SWMM EW)* as adopted by the City of Richland. This report documents that the proposed project complies with the requirements of the *SWMM EW* & City of Richland Standards.

1.2 Existing Conditions

1.2.1 Existing Conditions

The project area is currently unimproved and covered in weedy vegetation. The site is encumbered by a water transmission main, BPA power lines, two storm ponds for the nearby roadways, and various power and communication utilities.

1.2.2 Topography and Drainage

The existing site generally slopes from north to south at about 1%, where it drains to a roadway storm pond at the south end of the site. This storm pond receives runoff from Jadwin Ave to the south. A second roadway storm pond is located at the western tip of the triangular site, and receives runoff from Stevens Drive.

Soils onsite are "Type A" hydrologic group, and consist of a silty sand overlaying poorly graded gravel with sand and cobbles. Further soils information is available in the geotechnical report.

1.2.3 Critical Areas

To our knowledge, no critical areas, wetlands, or streams are identified on or directly adjacent to the project site.

1.3 Post-Development Conditions

This project site, as described in Section 1.1, will include a combination of building, sidewalk, landscape areas, parking, driveways, and stormwater facilities. Refer to the Basin Map in Appendix A.

2.0 Core Elements

2.1 Project Definition and Exemption

Based on the SWMMEW Core Elements 1 through 8 are applicable to the project.

2.2 Core Element #1: Preparation of a Stormwater Site Plan

This report and the engineering plans meet the requirement for a Stormwater Site Plan.

2.3 Core Element #2: Construction Stormwater Pollution Prevention

A Construction Stormwater Pollution Prevention Plan (SWPPP) will be prepared by the earthworks contractor when they are selected, as the contractor will determine the schedule, phasing, and other operational characteristics that dictate whether dust control or TESC measures are needed.

2.4 Core Element #3: Source Control of Pollution

There are no known activities associated with the project that would require specific source control Best Management Practices (BMPs).

2.5 Core Element #4: Preservation of Natural Drainage Systems

The natural drainage flows southward under major events, although runoff from predeveloped conditions was rare.

2.6 Core Element #5: Runoff Treatment

Basic Treatment: Basic water quality treatment for the project is provided for the site improvements by the infiltration ponds (BMP T5.10) located onsite.

Oil Control: Not Required.

Phosphorus Treatment: Not Required.

Metals Treatment: Not Required.

2.7 Core Element #6: Flow Control

A Soil Conservation Service (SCS) Type 1A 24-hour design storm with a return frequency of 25 years was used for flow control calculations, according to the City of Richland and Section 2.2.6 of the SWMMEW. The project does not discharge to a stream; therefore, restrictions on the 2-year discharge rate are not applicable.

Onsite stormwater flow control will be provided by infiltration through the infiltration ponds (BMP T5.10). Flow Control analysis has been completed and stormwater calculations are included in Appendix B.

2.8 Core Element #7: Operation and Maintenance

The proposed storm drainage system will be owned, operated and maintained by the City of Richland. An Operations and Maintenance Manual (O&M) will not be provided.

2.9 Core Element #8: Local Requirements

The design meets the City of Richland design guidelines and standards.

3.0 Offsite Analysis

3.1 Downstream Analysis

The stormwater modeling does not indicate offsite runoff discharge during a 25-year design storm; therefore, downstream analysis is not required. Further, the southern portion of the site is a closed depression with about 3 feet of storage before it would drain downstream.

3.2 Upstream Analysis

The project includes relocation of the existing Jadwin Ave storm pond, which will also receive some site runoff. Verbal approval was received to comingle site and roadway water during the pre-application meeting, since the site is City-owned and will continue to be for decades, given the custom nature of the facility.

The area to the north drains to the site, but modelling indicates no runoff from the 25-year event. The west and south are downstream and picked up by the roadway, and the area to the east drains away from the site.

4.0 Hydrologic Analysis and Design

The water quality (WQ) storm is the SCS Type 1A 24-hour storm with a 6-month return frequency per Section 2.7.6 of the *SWMMEW*. The total rainfall depth is calculated according to Section 4.3.7 of the *SWMMEW* as the depth of the 2-year, 24-hour storm multiplied by an adjustment coefficient.

According to Table 4.5, C_{WQS} is equal to 0.66 for Region 2.

$$P_{WQS} = C_{WQS} (P_{2yr-24hr}) = 0.66(0.8) = 0.53 \text{ inches}$$

A Soil Conservation Service (SCS) Type 1A 24-hour design storm with a return frequency of 25 years was used for flow control calculations, according to Section 2.7.7 of the *SWMMEW*.

An analysis of the stormwater management system is included in Appendix B utilizing the design storm depths listed below.

Methodology:	SCS Curve Number		
Rainfall Distribution:	Type 1A 24-Hour		
Rainfall Depth:	6-month	0.53 inch	Water Quality (WQ)
	2-year	0.8 inch	
	10-year	1.3 inches	
	25-year	1.6 inches	Flow Control
	50-year	1.8 inches	
	100-year	1.8 inches	

4.1 Existing Site Hydrology

All stormwater runoff from the 25-year design storm will be retained onsite; therefore, existing conditions were not modeled.

4.2 Developed Site Hydrology

The stormwater management system was analyzed with Autodesk Storm Sanitary Analysis 2019. A basin map is included in Appendix A. Basin times of concentration are a minimum of 5 minutes. Project hydrology calculations are included as Appendix B. Proposed basin hydrologic information is provided in the following Table 4-1.

Table 4-1 – Hydrologic Information

Basin	Impervious	Lawn / Landscape
A (Site)	41,000 sf	9,000 sf
B (Jadwin)	100,000 sf	

5.0 Treatment Facility Analysis and Design

Basic water quality treatment is provided by BPM T5.10-Infiltration Ponds. Proposed stormwater facilities will provide treatment of stormwater from new PGIS, as required by the *SWMMEW*. PGIS for this project includes paved parking areas, which will receive minimal traffic. The rooftop is considered NPGIS and will come along with polluted runoff to combine for a low pollutant load.

6.0 Flow Control System

The following section discusses the conditions assumed and methodology used for stormwater facility sizing. The following is a summary of the assumptions made and data used in flow control calculations. Calculations are provided in Appendix B.

Infiltration rates for treatment facilities were set at 4.7-inches/hour, which includes a safety factor of 3. The infiltration rate determined by infiltration testing was 15 inches per hour. This rate was determined by the geotechnical site study conducted by Geo Professional Innovations April 2020.

7.0 Conveyance System Analysis and Design

Storm lines onsite are minor and include roof drains and drains from swales. Several feet of head can build in the pipes and swales to provide attenuation and drive conveyance as needed. In the event that runoff were to exceed head-driven pipe capacity, the site generally sheet flows to the swales.

The pipe from Jadwin Ave has a 25-year peak flowrate of 0.8 cfs and an open-channel capacity of 3.5 cfs.

8.0 Special Reports and Studies

A Geotechnical Report by Geo Professional Innovation Corporation dated April 14, 2020 is included in Appendix C.

9.0 ESC Analysis and Design

A TESC plan is included with the construction drawings.

10.0 Operations and Maintenance Manual

The proposed storm drainage system will be owned, operated and maintained by the City of Richland. Operation and maintenance of the proposed stormwater runoff management facilities shall be per City of Richland maintenance manual.

11.0 Conclusion

This project is designed to meet the requirements of the *SWMMEW*.

This analysis is based on data and records either supplied to or obtained by AHBL, Inc. These documents are referenced within the text of the analysis. The analysis has been prepared utilizing procedures and practices within the standard accepted practices of the industry.

AHBL, Inc.

Mason Mendel
Senior Civil Engineer

MAM/

August 2020

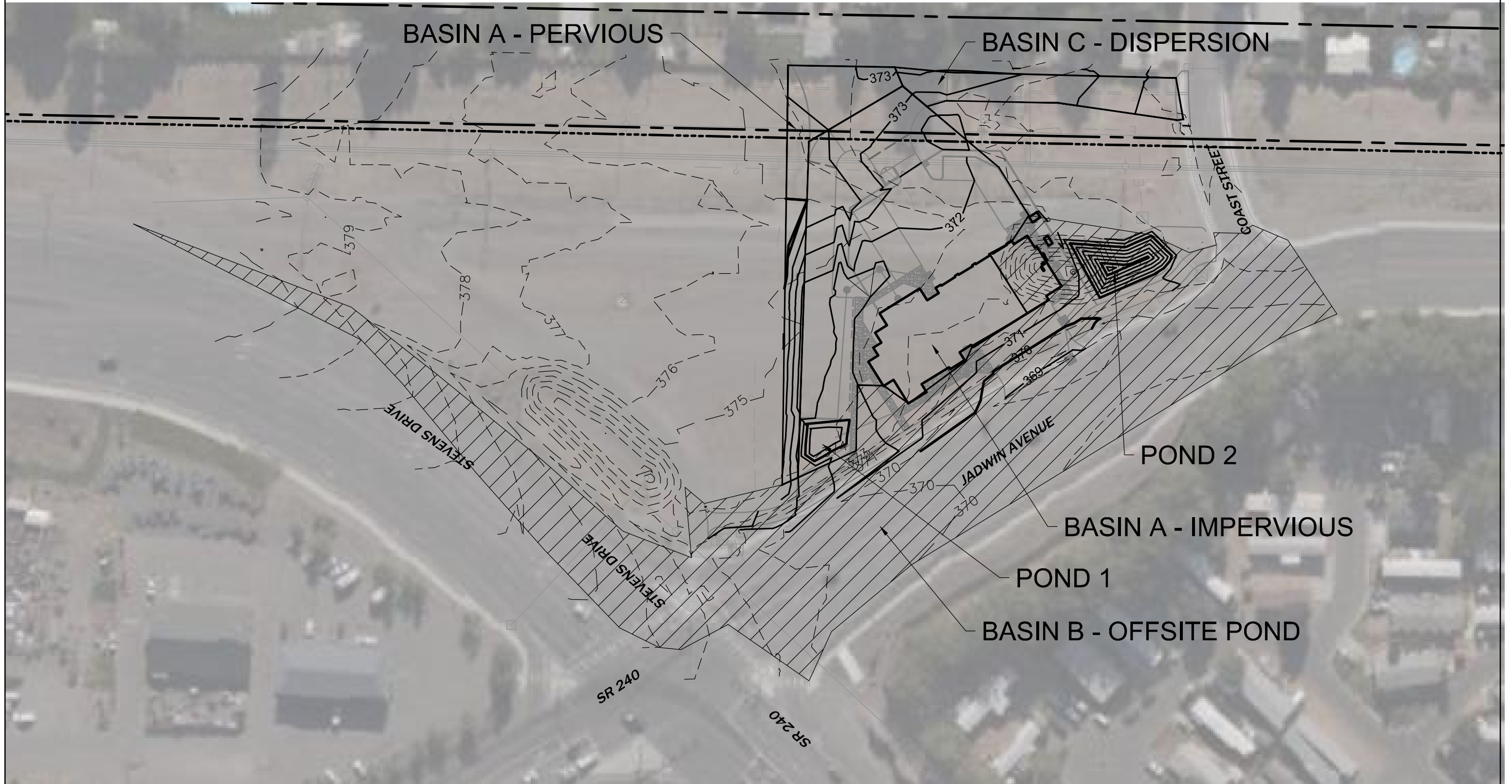
Q:\2020\2200084\10_CIVNON_CAD\REPORT\20200721 Rpt (Station 73 SWMMEW TIR) 2200084

Appendix A

Figures

EX-A.....Basin Map

CITY OF RICHLAND



Appendix B

Stormwater Calculations

Project Description

File Name 20200827 Calc (73 Station Storm) 2200084.10.SPF

Project Options

Flow Units CFS
 Elevation Type Elevation
 Hydrology Method Santa Barbara UH
 Time of Concentration (TOC) Method User-Defined
 Link Routing Method Kinematic Wave
 Enable Overflow Ponding at Nodes YES
 Skip Steady State Analysis Time Periods YES

Analysis Options

Start Analysis On May 15, 2020 00:00:00
 End Analysis On May 16, 2020 00:00:00
 Start Reporting On May 15, 2020 00:00:00
 Antecedent Dry Days 0 days
 Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
 Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
 Reporting Time Step 0 00:05:00 days hh:mm:ss
 Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins.....	3
Nodes.....	5
<i>Junctions</i>	0
<i>Outfalls</i>	3
<i>Flow Diversions</i>	0
<i>Inlets</i>	0
<i>Storage Nodes</i>	2
Links.....	2
<i>Channels</i>	1
<i>Pipes</i>	1
<i>Pumps</i>	0
<i>Orifices</i>	0
<i>Weirs</i>	0
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Richland	Time Series	25Yr 24Hr FC	Cumulative	inches	None	None	25	1.60	SCS Type IA 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ft ²)	Impervious Area (%)	Impervious Curve Number	Pervious Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Basin_A	41000.00	100.00	98.00	76.00	1.60	1.38	1.29	0.33	0 00:05:00
2	Basin_A-Per	9000.00	0.00	98.00	63.00	1.60	0.03	0.01	0.00	0 00:05:00
3	Basin_B	100000.00	100.00	98.00	68.00	1.60	1.38	3.16	0.81	0 00:05:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft ²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Basin_A-Out	Outfall	0.00					0.00	370.30					
2	Basin_B-Out	Outfall	0.00					0.00	370.00					
3	Basin_D-Out	Outfall	0.00					0.00	0.00					
4	Pond_1	Storage Node	368.30	370.60	0.00		0.00	0.33	369.95				0.00	0.00
5	Pond_2	Storage Node	364.00	370.00	0.00		0.00	0.81	368.66				0.00	0.00

Subbasin Hydrology

Subbasin : Basin_A

Input Data

Area (ft²) 41000.00
Impervious Area (%) 100.00
Impervious Area Curve Number 98.00
Pervious Area Curve Number 76.00
Rain Gage ID Richland

Composite Curve Number

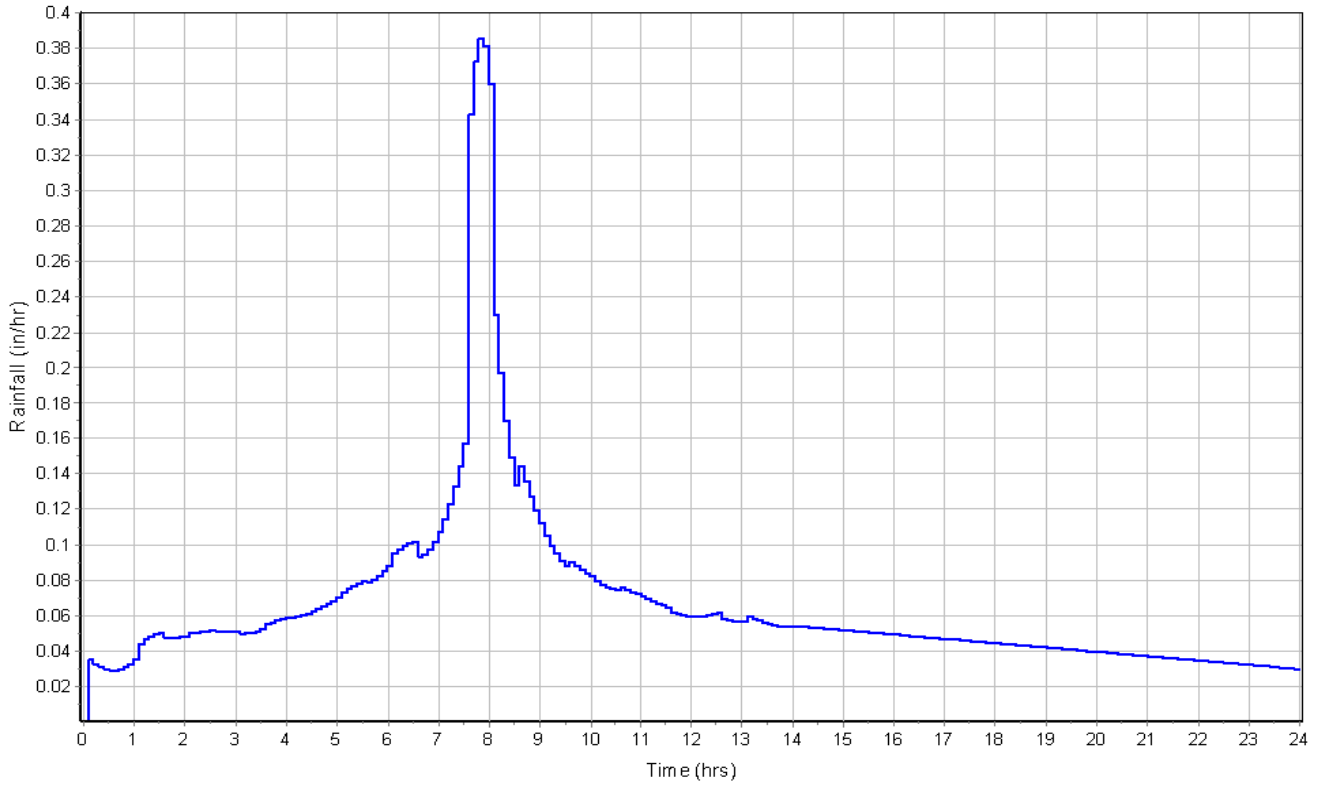
Soil/Surface Description	Area (ft ²)	Soil Group	Curve Number
Composite Area & Weighted CN	41000.00		98

Subbasin Runoff Results

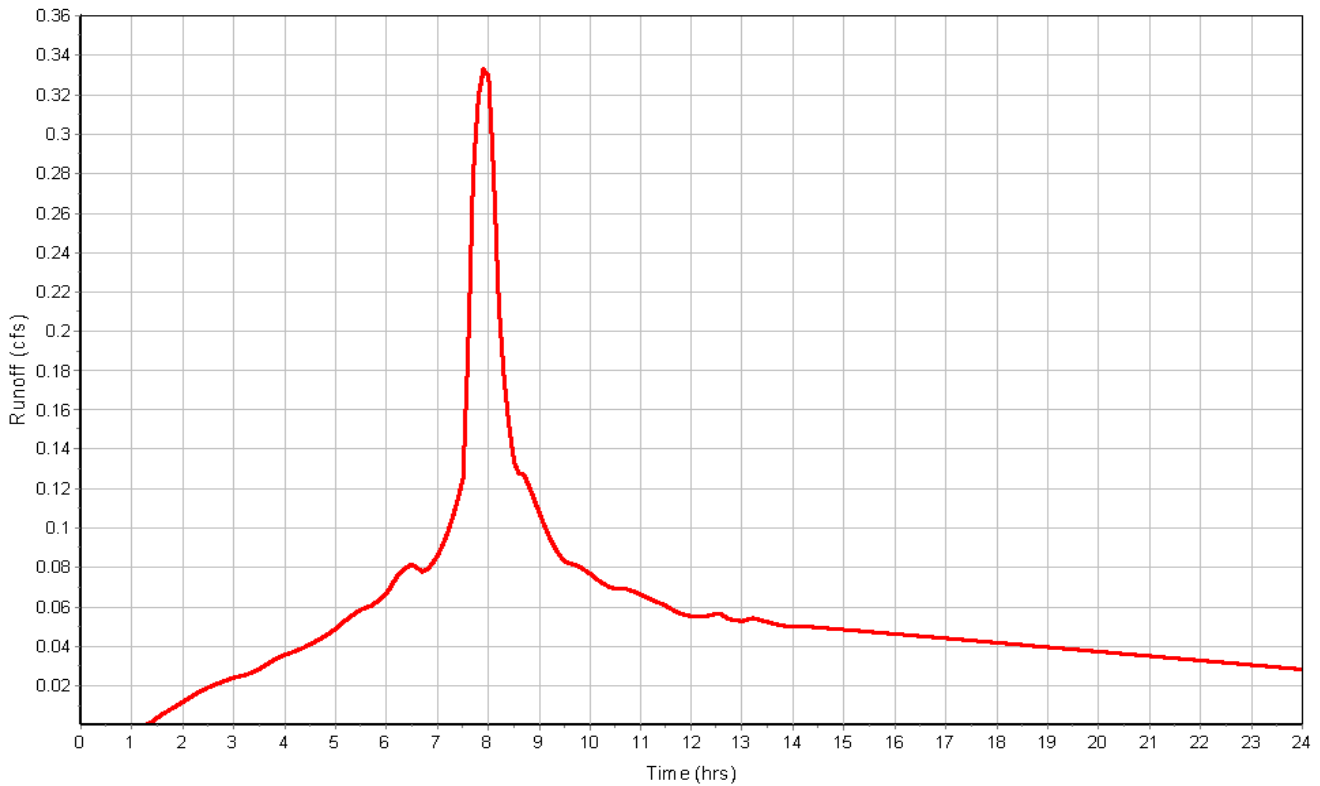
Total Rainfall (in) 1.60
Total Runoff (in) 1.38
Peak Runoff (cfs) 0.33
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:05:00

Subbasin : Basin_A

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Basin_A-Per

Input Data

Area (ft²) 9000.00
Impervious Area (%) 0.00
Impervious Area Curve Number 98.00
Pervious Area Curve Number 63.00
Rain Gage ID Richland

Composite Curve Number

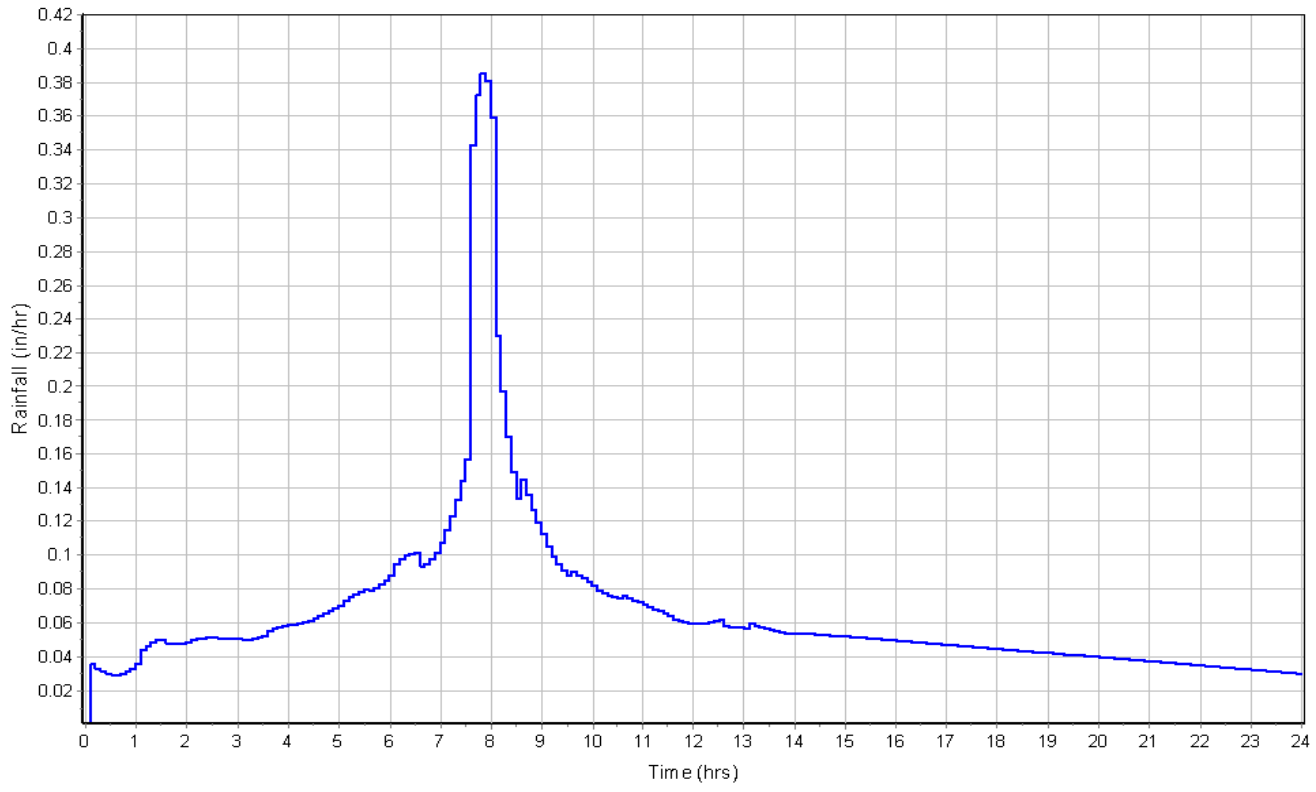
Soil/Surface Description	Area (ft²)	Soil Group	Curve Number
Composite Area & Weighted CN	9000.00		63

Subbasin Runoff Results

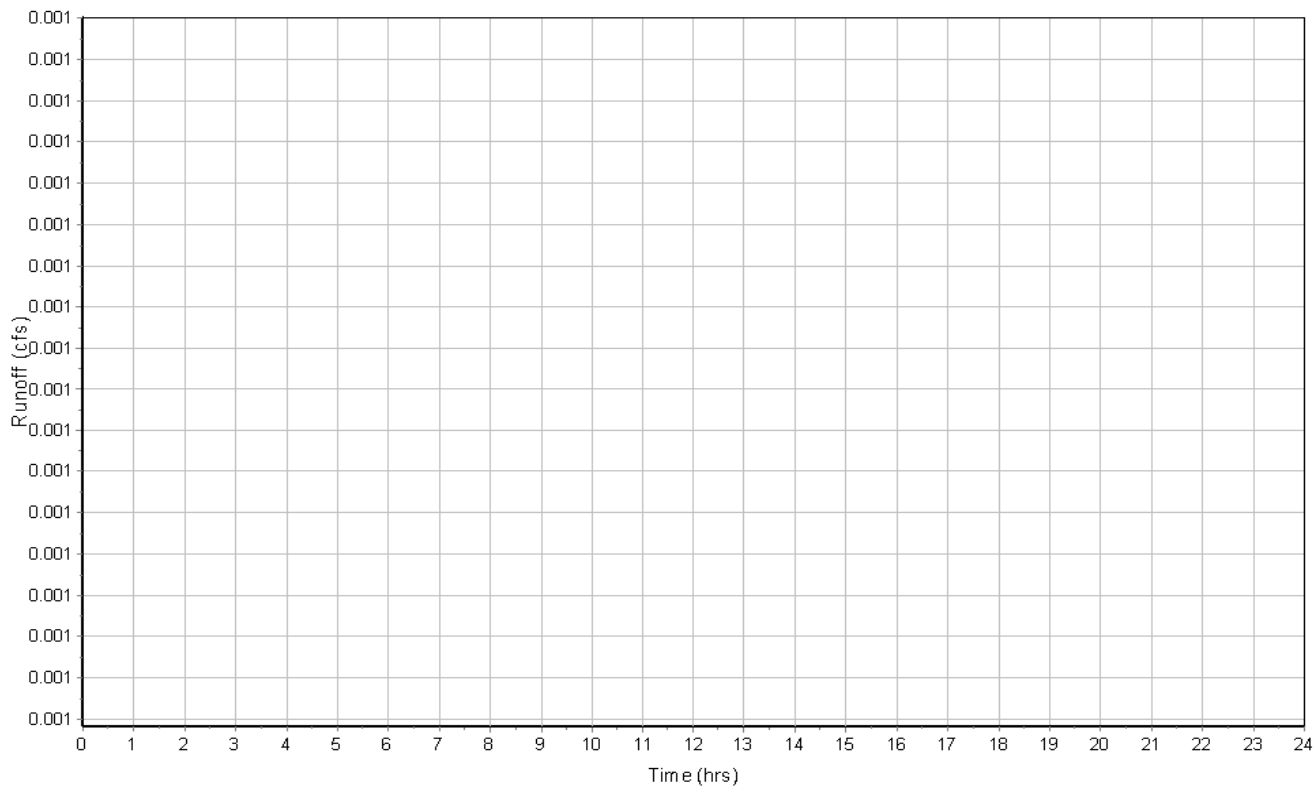
Total Rainfall (in) 1.60
Total Runoff (in) 0.03
Peak Runoff (cfs) 0.00
Weighted Curve Number 63.00
Time of Concentration (days hh:mm:ss) 0 00:05:00

Subbasin : Basin_A-Per

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Basin_B

Input Data

Area (ft²) 100000.00
Impervious Area (%) 100.00
Impervious Area Curve Number 98.00
Pervious Area Curve Number 68.00
Rain Gage ID Richland

Composite Curve Number

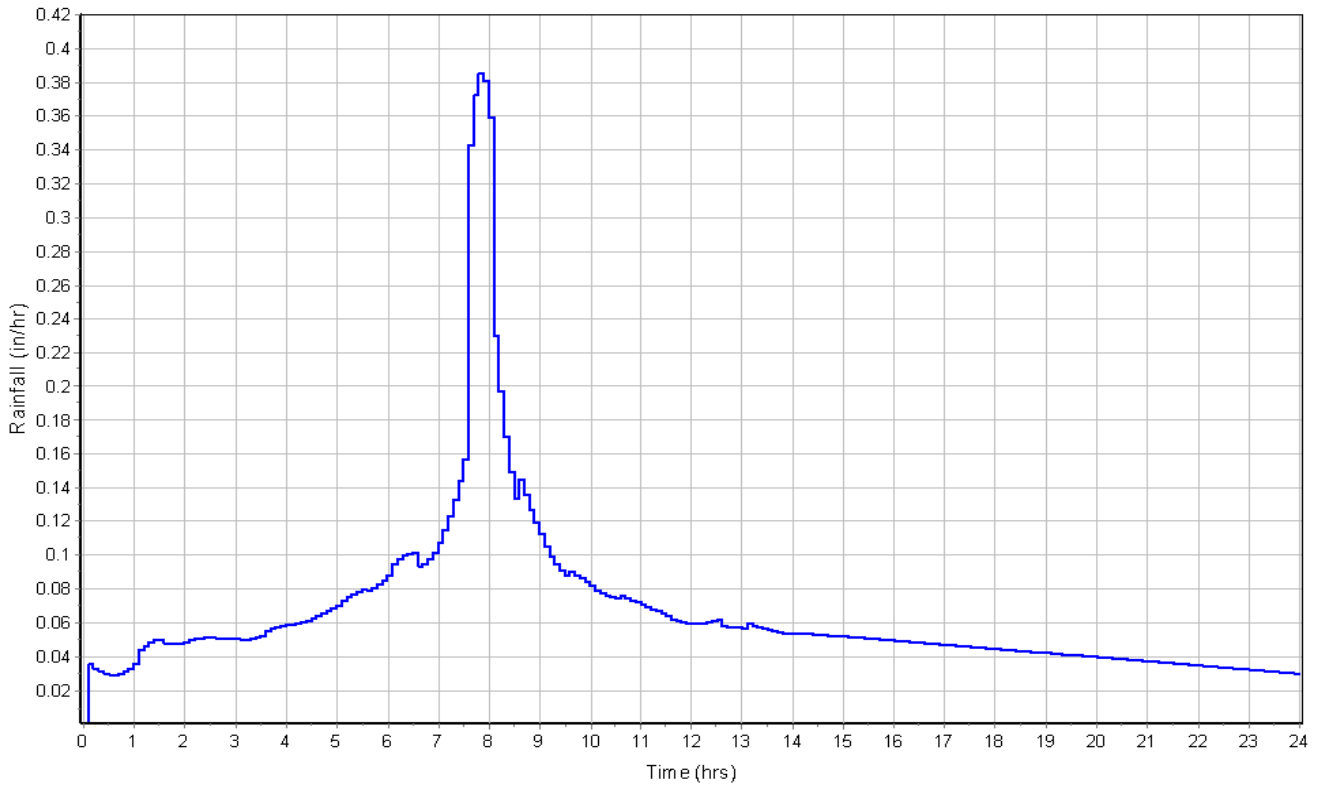
Soil/Surface Description	Area (ft²)	Soil Group	Curve Number
Composite Area & Weighted CN	100000.00		98

Subbasin Runoff Results

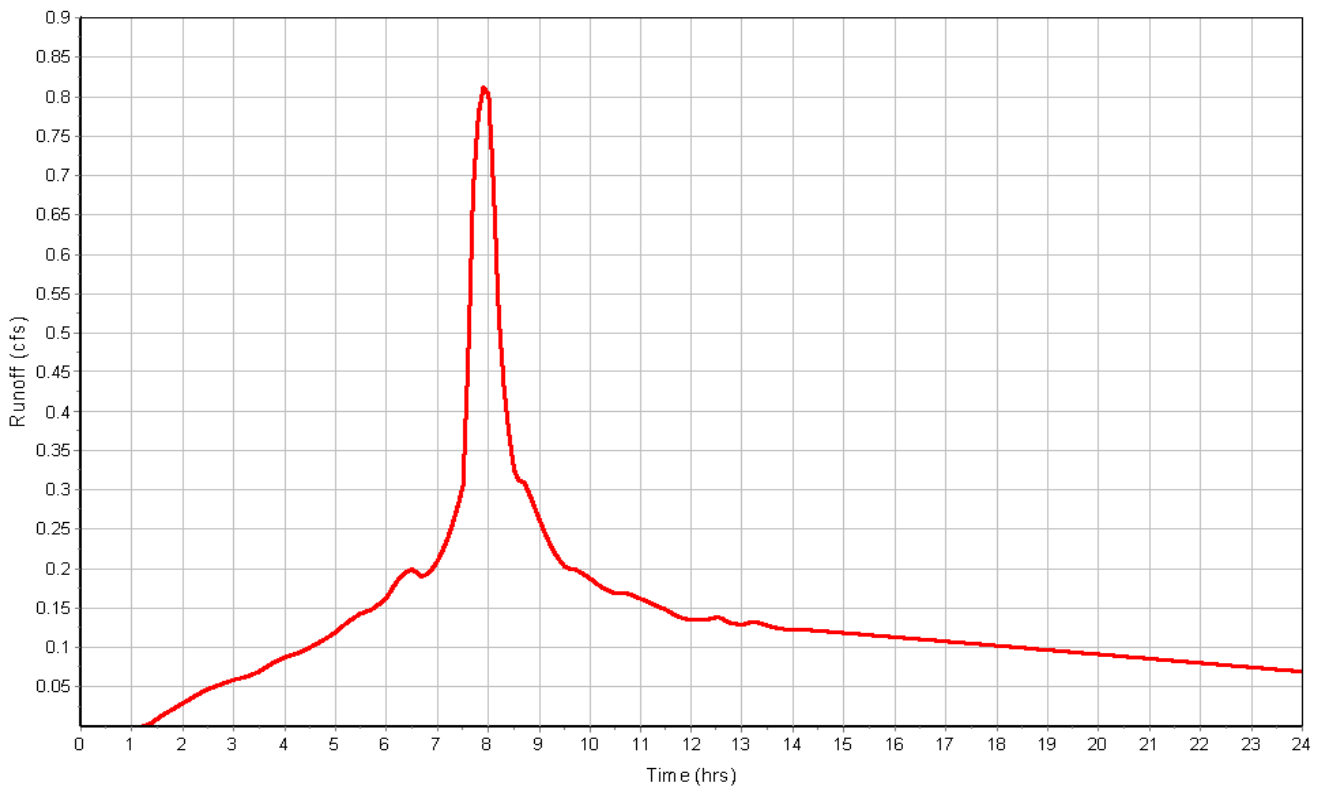
Total Rainfall (in) 1.60
Total Runoff (in) 1.38
Peak Runoff (cfs) 0.81
Weighted Curve Number 98.00
Time of Concentration (days hh:mm:ss) 0 00:05:00

Subbasin : Basin_B

Rainfall Intensity Graph



Runoff Hydrograph



Channel Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1 Link-06	40.00	370.60	2.30	370.30	370.30	0.30	0.7500	Rectangular	0.300	5.000	0.0150	1.0000	1.0000	0.0000	0.00	No

Channel Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Link-06	0.00	0 00:00	5.35	0.00	0.00		0.00	0.00	0.00		

Pipe Input

SN Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1 Link-07	30.00	370.00	6.00	370.00	370.00	0.00	0.0000	Dummy	0.000	0.000	0.0150	1.0000	1.0000	0.0000	0.00	No	1

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Travel Time	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Froude Number	Reported Condition
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		(min)		
1 Link-07	0.00	0 00:00	0.00	0.00	0.00		0.00	0.00	0.00		Calculated

Storage Nodes

Storage Node : Pond_1

Input Data

Invert Elevation (ft) 368.30
Max (Rim) Elevation (ft) 370.60
Max (Rim) Offset (ft) 2.30
Initial Water Elevation (ft) 0.00
Initial Water Depth (ft) -368.30
Ponded Area (ft²) 0.00
Evaporation Loss 0.00

Infiltration/Exfiltration

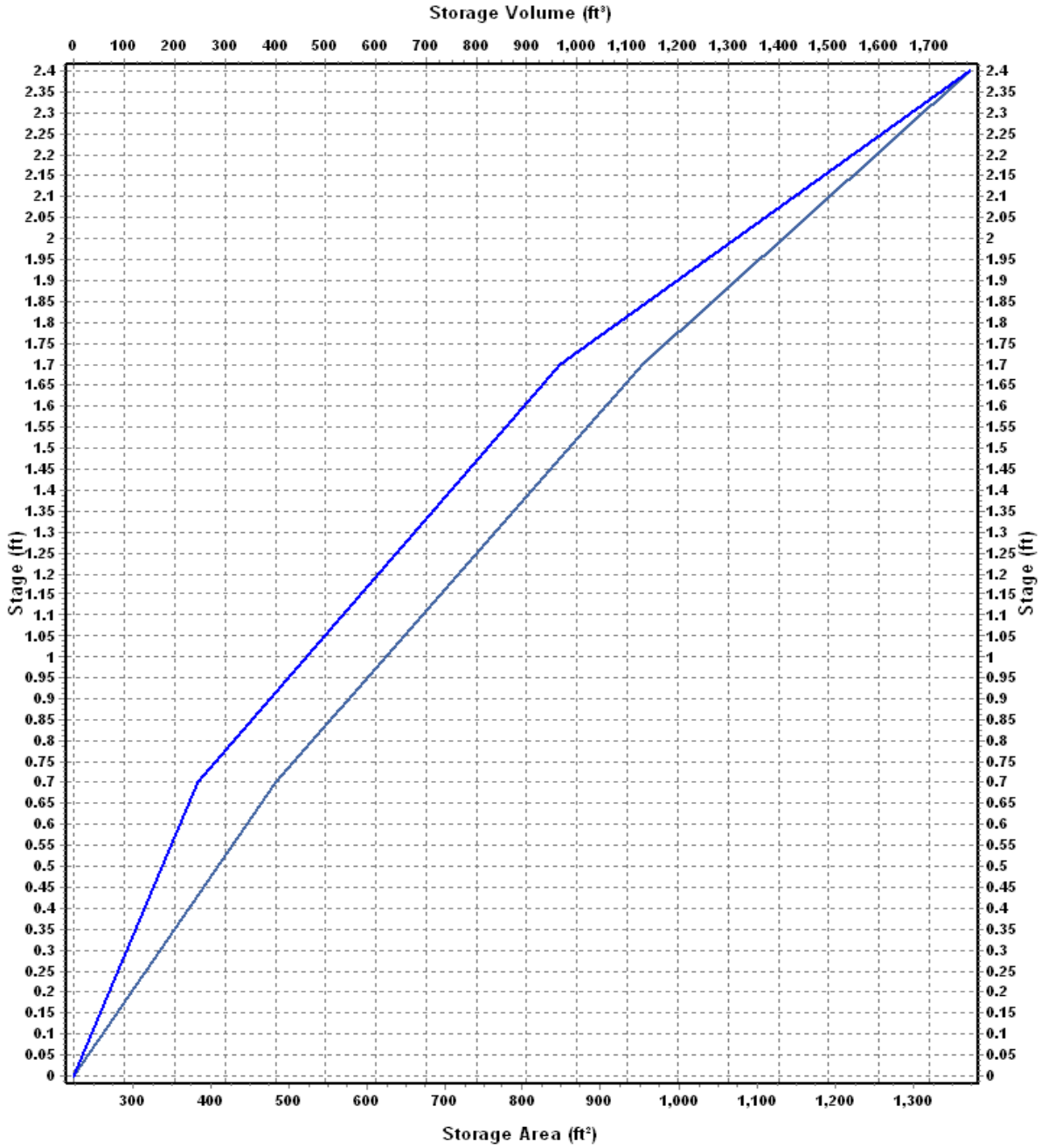
Exfiltration Rate (in/hr) 4.7000

Storage Area Volume Curves

Storage Curve : Pond_1-SS

Stage (ft)	Storage Area (ft ²)	Storage Volume (ft ³)
0	225	0.000
.7	483	247.80
1.7	953	965.80
2.4	1372	1779.55

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : Pond_1 (continued)

Output Summary Results

Peak Inflow (cfs)	0.33
Peak Lateral Inflow (cfs)	0.33
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	6.18
Max HGL Elevation Attained (ft)	369.95
Max HGL Depth Attained (ft)	1.65
Average HGL Elevation Attained (ft)	369.01
Average HGL Depth Attained (ft)	0.71
Time of Max HGL Occurrence (days hh:mm)	0 09:04
Total Exfiltration Volume (1000-ft ³)	4.557
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : Pond_2

Input Data

Invert Elevation (ft) 364.00
Max (Rim) Elevation (ft) 370.00
Max (Rim) Offset (ft) 6.00
Initial Water Elevation (ft) 0.00
Initial Water Depth (ft) -364.00
Ponded Area (ft²) 0.00
Evaporation Loss 0.00

Infiltration/Exfiltration

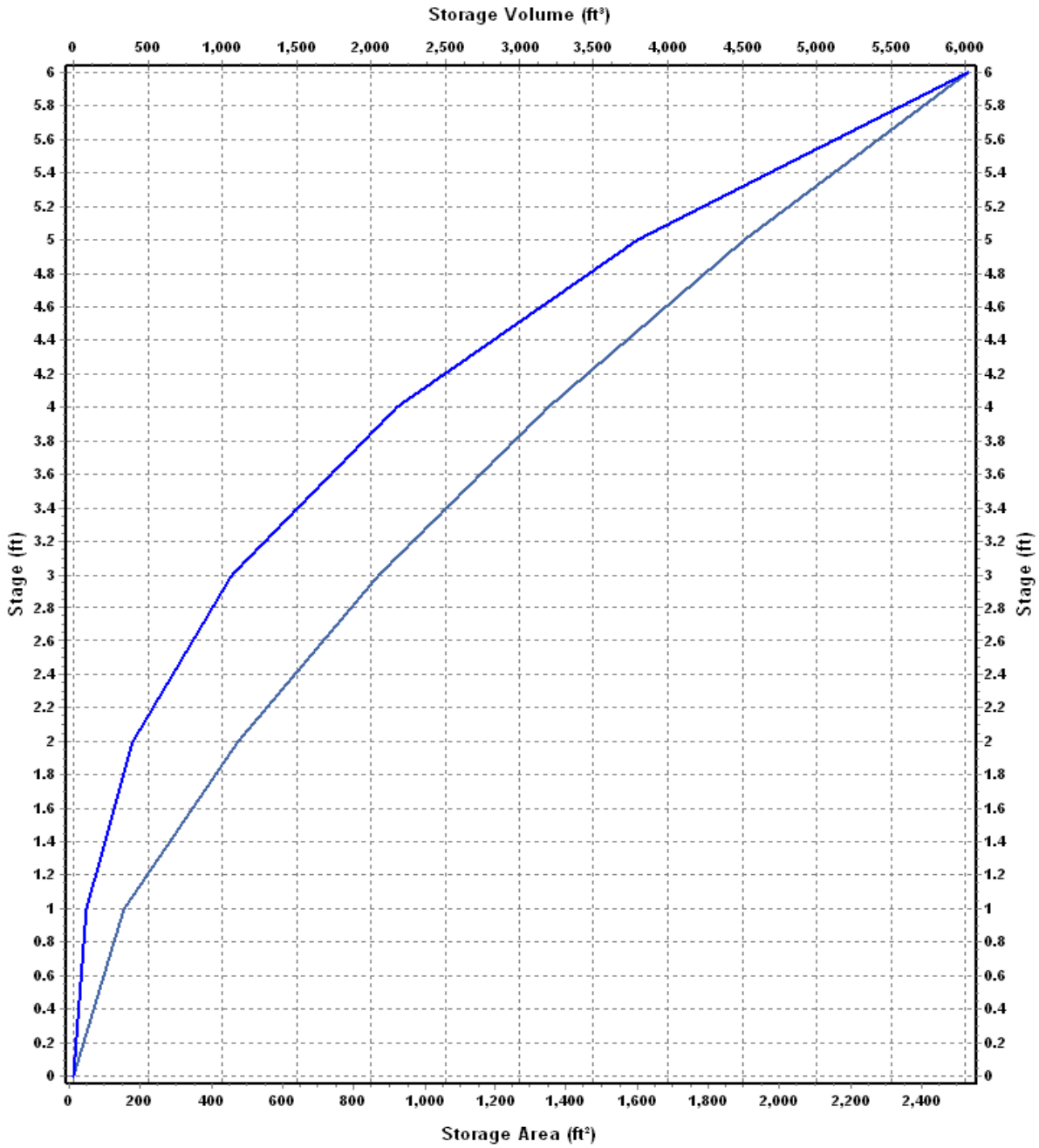
Exfiltration Rate (in/hr) 4.7000

Storage Area Volume Curves

Storage Curve : Pond_2-SS

Stage	Storage Area (ft²)	Storage Volume (ft³)
0	13	0.000
1	153	83.00
2	473	396.00
3	871	1068.00
4	1348	2177.50
5	1900	3801.50
6	2529	6016.00

Storage Area Volume Curves



— Storage Area — Storage Volume

Storage Node : Pond_2 (continued)

Output Summary Results

Peak Inflow (cfs)	0.81
Peak Lateral Inflow (cfs)	0.81
Peak Outflow (cfs)	0.00
Peak Exfiltration Flow Rate (cfm)	11.52
Max HGL Elevation Attained (ft)	368.66
Max HGL Depth Attained (ft)	4.66
Average HGL Elevation Attained (ft)	367.23
Average HGL Depth Attained (ft)	3.23
Time of Max HGL Occurrence (days hh:mm)	0 09:54
Total Exfiltration Volume (1000-ft³)	10.277
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Appendix C

Geotechnical Report UNDER SEPARATE COVER