Exhibit “A”

Cornelius
Oregon's Family Town

Land Use Application

Community Development
Located at 1300 S. Kodiak Circle, Cornelius, Oregon 97113
www.ci.cornelius.or.us

OFFICIAL USE ONLY

Date Received:_____ Date Complete:_____ ↓ File Number ↓

Application Fee:_____ Receipt Number:_____ _____

Application Type

Type I – *administrative review without public notice*

- ☐ Design Review I
- ☐ Lot Line Adjustment
- ☐ Administrative Relief
- ☐ Land Partition—Final Plat
- ☐ Subdivision—Final Plat
- ☐ Other *please describe:*_____

Type II – *administrative review with public notice*

- ☐ Design Review II
- ☐ Land Partition—Preliminary Plat
- ☐ Subdivision—Preliminary Plat
- ☐ Other *please describe:*_____

Type III – *public hearing(s) required with public notice*

- ☑ Design Review III
- ☑ Conditional Use Permit
- ☐ Planned Unit Development
- ☐ Comprehensive Plan Amendment
- ☐ Zone Map Amendment
- ☐ Zone Text Amendment
- ☐ Annexation
- ☐ ROW/Easement Vacation
- ☐ Subdivision—Preliminary Plat
- ☐ Other *please describe:*_____

Applicant Information

Name: Nang Ma Signature: Nang Ma

Mail Address: 4875 SW Griffith Dr, Beaverton, OR 97005

Phone: 503-244-0552 Fax:_____ E-mail: nang@mdgpc.com

Property Owner Information

Name: RCI Properties (Hillsboro) LLC Signature: William W. Moore

Mail Address: 5131 Masthead St NE Alb. NM 87109

Phone: 505-345-3655 Fax:_____ E-mail: bmoore@rinchem.com

Subject Site Information

Property Address: North Holladay Industrial Park, Cornelius, Oregon

Map & Tax Lot Number(s): 1N333DB00300; 1N333DB00400; 1N333DB00500; 1N333DB00600; 1N333DB00700

Current Zoning: M-1 General Industrial Total Size of Site: 479,170 SF

Existing Use: Greenfield Site - Undisturbed

Proposed Use: Warehouse Storage

Cornelius
Oregon's Family Town

Design Review – Type II or III Submittal Checklist

Community Development
Located at 1300 S. Kodiak Circle, Cornelius, Oregon 97113
www.ci.cornelius.or.us

Written Narrative Requirements

✓ A. **Checklist.** Please provide one completed copy of this six-page checklist.

✓ B. **Description of proposal**. Please describe what changes are proposed to the site, structure, landscaping, parking, and land use. Provide findings verifying that the intended use is allowed by the City's *Development Code* (Chapter 18).

✓ C. **Approval criteria findings**: Please provide findings verifying that the proposal meets the Code's requirements found in *Section 18.100,* Land Use & Zoning Site Design Review, Development Requirements & Standards of the applicable zone, and the off-street parking and loading requirements of *Section 18.145.,* in addition, provide findings for any other applicable Code requirements. Specify conformance or proposed variance request from those requirements.

✓ D. **Technical and design standards.** Please provide findings specifically addressing each criteria found in *Section 18.100.040* of the City's *Development Code* (Chapter 18).

✓ E. **Proposed Operations:** Please provide the hours of operation, total number of employees, and maximum number of employees per shift.

✓ F. **Additional Requirements:** Please be advised that special studies, investigations and reports may be required to ensure that the proposal does not adversely affect the surrounding community, and does not create hazardous conditions for persons or improvements on the site. These studies may include investigations and reports on noise attenuation, air quality, traffic control, soil conditions, flooding of waters and storm water run-off, natural resources, tree preservation, and other concerns.

Written Narrative Requirements (cont.)

✓ G. **Site Analysis Information:**

1. Existing building area: N/A sq. ft.
   Proposed building addition or subtraction: 63,112 sq. ft.

2. Existing building height: N/A ft.
   Proposed building height: 40' + 47.5' ft.

3. Existing parking area: N/A sq. ft.
   Existing number of parking spaces: N/A # sp.
   Proposed parking addition or subtraction: 30,000 sq. ft.
   Proposed number of parking spaces: 73 # sp.
   Proposed use: WAREHOUSE + OFFICE
   Parking requirement: 68.9

4. Existing landscaped area: N/A sq. ft.
   Percentage of site: N/A %
   Proposed landscape addition or subtraction: 106,879 sq. ft.
   Percentage of site: 22.3 %

✓ H. **Neighborhood Review Meeting:** information required (*Dev. Code Section 18.10.030.*). (Only required for Type III Reviews)

_____ 1. A copy of the notice sent to surrounding property owners.
_____ 2. A copy of the mailing list used to send out meeting notices.
_____ 3. An affidavit of mailing notice.
_____ 4. Representative copies of written materials and plans presented at the Neighborhood Review Meeting.
_____ 5. Notes of the meeting, including the meeting date, time, and location, the names and addresses of those who attended, and oral and written comments received.

✓ I. **Other Requirements:** Please provide documentation that the requirements from other agencies and/or jurisdictions for your proposal have been permitted OR submit your schedule for application and approval of the required permits. If applicable, include a copy of a signed Sensitive Area Pre-Screening Letter from the City Engineer. Based upon the findings of the Sensitive Area Pre-Screening Letter, a **Clean Water Services Service Provider Letter may be required.**

✓ J. **Temporary Construction Office.** Please provide information on the site plan showing the location and state the duration of the temporary construction office.

DESIGN REVIEW TYPE II & III

Plan Requirements

All plans, except architectural elevations, shall be presented at a minimum of 1" = 20' engineering scale and on a maximum sheet size of 24" x 36." Please also include one 'unbound' set that is 8 1/2" x 11" in size. Each of the following plans and drawings shall be submitted on separate sheets. Architectural elevations may be presented at an architectural scale. Please include all of the following information.

✓ A. **Existing Conditions Plan**:

_____ 1. North arrow, scale and date of plan.
_____ 2. Vicinity map.
_____ 3. The entire lot(s), including area and property lines dimensioned.
_____ 4. Points of existing access, interior streets, driveways, and parking areas.
_____ 5. Location of all existing buildings and structures.
_____ 6. Existing right-of-way and improvements.
_____ 7. Dimension from centerline to edge of existing right-of-way.
_____ 8. Existing topographical information, showing 2 ft. contours.
_____ 9. Surrounding development and conditions within 100 ft. of the property; such as zoning, land uses, buildings, driveways, and trees.
_____ 10. Location of existing public and private utilities, easements, and 100-year floodplain.
_____ 11. Sensitive areas, as defined by the Clean Water Services standards.
_____ 12. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated*.
_____ 13. Existing trees larger than 6" in dbh (diameter at breast height), including genus, species and size. Dbh is measured at 54" above grade.

✓ B. **Dimensioned Site Plan**:

_____ 1. North arrow, scale and date of plan.
_____ 2. The entire lot(s), including area, property lines dimensioned and labeled "front," "side," and "rear."
_____ 3. Proposed points of access, interior streets, driveways, and parking areas.
_____ 4. Proposed location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot-lots.
_____ 5. Proposed right-of-way, dedications and improvements.
_____ 6. Dimension from centerline to edge of proposed right-of-way.
_____ 7. Dimensions of all improvements, including setbacks, parking spaces, driveways, and distance between buildings.
_____ 8. Location of storm water quality/detention facilities.
_____ 9. Boundaries of development phases, if applicable.
_____ 10. Sensitive areas, as defined by the Clean Water Services standards.

_____ 11. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated.*

✓ C. **Grading Plan**:

_____ 1. North arrow, scale and date of plan.
_____ 2. The entire lot(s).
_____ 3. Points of access, interior streets, driveways, and parking areas.
_____ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot-lots.
_____ 5. Proposed rights-of-way, dedications and improvements.
_____ 6. Dimension from centerline to edge of proposed right-of-way.
_____ 7. Existing and proposed topographical information, showing 2 ft. contours and appropriate spot elevations for features such as walls, retaining walls (top and bottom elevations), catch basins, stairs, sidewalks, and parking areas.
_____ 8. Location of 100-year flood plain.
_____ 9. Location of storm water quality/detention facilities.
_____ 10. Boundaries of development phases, if applicable.
_____ 11. Natural Resource Areas, Significant trees, and Historic trees, if applicable.
_____ 12. Sensitive areas, as defined by the Clean Water Services standards.
_____ 13. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated*.
_____ 14. Existing trees larger than 6" dbh. Indicate which trees are proposed to be saved and which are proposed to be removed.

✓ D. **Utility Plan**:

_____ 1. North arrow, scale and date of plan.
_____ 2. The entire lot(s).
_____ 3. Points of access, interior streets, driveways, and parking areas.
_____ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot lots.
_____ 5. Proposed right-of-way, dedications and improvements.
_____ 6. Proposed topographical information, showing 2 ft. contours.
_____ 7. Location of 100-year flood plain.
_____ 8. Location of existing and proposed public and private utilities, easements, surface water drainage patterns, and storm water quality/detention facilities.
_____ 9. Boundaries of development phases, if applicable.
_____ 10. Sensitive areas, as defined by the Clean Water Services standards.
_____ 11. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated.*

✓ E. **Landscape Plan**:

_____ 1. North arrow, scale and date of plan.
_____ 2. The entire lot(s).
_____ 3. Points of access, interior streets, driveways, and parking areas.
_____ 4. Location of buildings and structures, including refuse storage locations, pedestrian/bike paths, swimming pools, tennis courts, and tot lots.
_____ 5. Proposed right-of-way, dedications and improvements.
_____ 6. Boundaries of development phases, if applicable.
_____ 7. Sensitive areas, as defined by the Clean Water Services standards.
_____ 8. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-croppings, and streams. *Wetlands must be professionally delineated*.
_____ 9. Existing trees, larger than 6" dbh, proposed to be saved. Include genus, species, and size.
_____ 10. The location and design of proposed landscaped areas, indicating all plant materials, including genus, species, common name, plant sizes, and spacing.
_____ 11. List of plant materials, including genus, species, common name, size, quantity, spacing and condition.
_____ 12. Other pertinent landscape features, including walls, retaining walls, berms, fences, and fountains.
_____ 13. A note on the plan indicating that an irrigation system will be installed to maintain the landscape materials.

✓ F. **Lighting Plan**:

_____ 1. Location of all exterior lighting, including those mounted on poles, walls, bollards and the ground.
_____ 2. Type, style, height, and the number of fixtures per light.
_____ 3. Wattage per fixture and lamp type, such as sodium, mercury, and halide.
_____ 4. 8 ½" x 11" manufacturer's illustrations and specifications (cut sheets) of all proposed lighting poles and fixtures.
_____ 5. For all exterior lighting, indicate the area and pattern of illumination measured at ½-foot candlepower.

✓ G. **Architectural Renderings and Elevations, or both:** Please provide information that identifies the general character of the buildings and structures; indicate dimensions, materials, colors, and textures proposed for any structures. This includes buildings, retaining walls, refuse storage facilities, play structures, and fences

✓ H. **Materials Board**: Please provide one 8½" x 11" or 8½" x 14" Materials Board with examples of all building materials, colors, and textures of exterior surfaces.

I have provided the items required in this six-page submittal checklist. I understand that any missing information, omissions or both may deem my project incomplete, which may lengthen the time to process the request.



Signature

AUGUST 18, 2021

Date

WILLIAM A GRIMM

Print Name

(971) 245-4352

Telephone Number

Cornelius
Oregon's Family Town

Conditional Use Permit Submittal Checklist

Community Development
Located at 1300 S. Kodiak Circle, Cornelius, Oregon 97113
www.ci.cornelius.or.us

Written Narrative Requirements

✓ A. **Checklist:** Please provide one completed and signed copy of this checklist.

✓ B. **Description of proposal:** Please describe the existing conditions on-site and the changes proposed to the site, structure, landscaping, parking, and land use, including the number of parcels created. Provide findings verifying that the intended use is allowed by the City's *Development Code*.

✓ C. **Approval criteria findings:** Please provide a narrative that evaluates and verifies that the proposal meets the approval criteria identified below:

Conditional Use Permit, Section 18.105.030(B) of the Development Code.

✓ 1. *The proposal conforms with the City's Comprehensive Plan;*

✓ 2. *The applicable requirements of the zoning district are satisfied; and*

✓ 3. *That the location, size, design, and functional characteristics of the proposed use are such that it can be made reasonably compatible with and have a minimum impact on the livability and appropriate development of other properties in the surrounding neighborhood;*

✓ 4. *The granting of the proposal will provide for a facility that is consistent with the overall needs of the city.*

✓ D. Please provide the hours of operation, total number of employees, and maximum number of employees per shift.

✓ E. **Site Analysis Information:**

1. Existing building area: N/A sq. ft.
   Proposed building addition or subtraction: 63,112 sq. ft.

2. Existing building height: N/A ft.
   Proposed building height: 40' + 47.5' ft.

3. Existing parking area: N/A sq. ft.
   Existing number of parking spaces: N/A # sp.
   Proposed parking addition or subtraction: 30,006 sq. ft.
   Proposed number of parking spaces: 73 # sp.
   Proposed use: WAREHOUSE + OFFICE
   Parking requirement: 66.9

4. Existing landscaped area: N/A sq. ft.
   Percentage of site: N/A %
   Proposed landscape addition or subtraction: 106,879 sq. ft.
   Percentage of site: 22.3 %

✓ F. **Additional Requirements:** Please be advised that special studies, investigations and reports may be required to ensure that the proposal does not adversely affect the surrounding community, and does not create hazardous conditions for persons or improvements on the site. These studies may include investigations and reports on noise attenuation, air quality, traffic control, soil conditions, flooding of waters and storm water run-off, natural resources, tree preservation, and other concerns.

✓ G. **Neighborhood Review Meeting:** information required (*Dev. Code Section 18.10.030.*)

✓ 1. A copy of the notice sent to surrounding property owners.

✓ 2. A copy of the mailing list used to send out meeting notices.

✓ 3. An affidavit of mailing.

✓ 4. Representative copies of written materials and plans presented at the Neighborhood Review Meeting.

✓ 5. Notes of the meeting, including the meeting date, time, and location, the names and addresses of those who attended, and oral and written comments received.

Plan Requirements

All plans, except architectural renderings, elevations or both, shall be presented at a minimum of 1" = 20'. Architectural elevations may be presented at an architectural scale. Each of the following plans and drawings shall be submitted on 24" x 36" (maximum size) separate sheets. Please also include one (1) full set of plans that is 8 ½" x 11" in size. Please include all of the following information for each plan.

✓ A. **Existing Conditions Plan:**

✓ 1. North arrow, scale and date of plan.
✓ 2. Vicinity map.
✓ 3. The entire lot(s), including area and property lines dimensioned.
✓ 4. Points of existing access, interior streets, driveways, and parking areas.
✓ 5. Location of all existing buildings and structures.
✓ 6. Existing right-of-way and improvements.
✓ 7. Dimension from centerline to edge of existing right-of-way.
✓ 8. Existing topographical information, showing 2 ft. contours and appropriate spot elevations for features such as walls, retaining walls (top and bottom elevations), catch basins, stairs, sidewalks, and parking areas.
✓ 9. Surrounding development and conditions within 100-ft. of the property; such as zoning, land uses, buildings, driveways, and trees.
✓ 10. Location of existing public and private utilities, easements, and 100-year floodplain.
✓ 11. Sensitive areas, as defined by the Clean Water Services (CWS) standards.
✓ 12. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-cropping's and streams. *Wetlands must be professionally delineated.*

✓ B. **Dimensioned Site Plan:**

✓ 1. North arrow, scale and date of plan.
✓ 2. The entire lot(s), including area, property lines dimensioned and labeled "front," "side," and "rear."
✓ 3. Points of access, interior streets, driveways, and parking areas.
✓ 4. Proposed land uses including housing densities and the location of buildings and structures. Building and structures include refuse storage locations, pedestrian and bike paths, or both, swimming pools, tennis courts, and tax lots.

✓ 5. Proposed right-of-way, dedications and improvements.

✓ 6. Dimension from centerline to edge of proposed right-of-way.

✓ 7. Dimensions of all improvements, including setbacks, parking spaces, driveways, and distance between buildings.

✓ 8. Location of storm water quality and detention facilities, or both.

✓ 9. Boundaries of development phases, if applicable.

✓ 10. Sensitive areas, as defined by the Clean Water Services standards.

✓ 11. Wetland boundaries, upland wooded area boundaries, riparian area boundaries, rock out-cropping's and streams. *Wetlands must be professionally delineated.*

✓ 12. Topographical information (2 ft. contour lines) of existing and proposed grades on-site and for surrounding properties within 100 ft. of the subject property.

✓ 13. Location and schematic massing of proposed buffering, screening, and landscaped areas.

✓ 14. Other pertinent landscape features, including walls, retaining walls, berms, fences, and fountains.

✓ C. **Architectural Renderings, Elevations, or both:** Please provide information which identifies the general character of the buildings and structures by indicating dimensions, materials, colors, and textures proposed. This includes buildings, retaining walls, refuse storage facilities, play structures, accessory facilities, and fences.

✓ D. **Sensitive Area Pre-Screening or Service Provider Letter:** Please provide a completed and signed Pre-Screening or CWS Service Provider Letter.

I have provided the items required in this submittal checklist. I understand that any missing information, omissions or both may deem my project incomplete, which may lengthen the time to process the request.

William Grimm
Signature

Sept 3, 2021
Date

WILLIAM GRIMM
Print Name

802-595-9448
Telephone Number

PROPOSAL NARRATIVE

Rinchem Development Review Application

September 3, 2021

Cornelius
Oregon's Family Town



PROPOSAL NARRATIVE

Rinchem Development Review Application

September 3, 2021

Cornelius
Oregon's Family Town

Prepared for:

City of Cornelius
Community Development Department
1300 S. Kodiak Circle
Cornelius, Oregon 97113

Prepared by:

First Forty Feet LLC
1716 SE 29th Ave, Suite B
Portland, Oregon 97214
will@firstfortyfeet.com

Proposer:

Robert Tolego
Rinchem Company, Inc.
5131 Masthead Street NE
Albuquerque, NM 87109

First Forty Feet, in collaboration with Mildren Design Group, will be submitting for the following applications:

Type III Conditional Use Permit

- Proposed above ground storage tanks, outdoor storage areas, and
- Request to exceed the maximum building height limit.

Type III Commission Review

- Site Design Review of the proposed on-site improvements by the Planning Commission set forth under CMC 18.10.070

PROPOSAL

Project Location and Identification

The property is located in the General Industrial, M-1 zone; currently vacant and includes an undeveloped public right-of-way and cul-de-sac (N 7th Court).

Lot No. 1N333DB00300; 1N333DB00400; 1N333DB00500; 1N333DB00600; 1N333DB00700

The proposed use will be chemical storage and warehouse, permitted outright within the M-1.

The proposed development is location north of N. Holladay Street between N. 7th Court and N. 10th Ave. in Cornelius, Oregon. The project consists of four storage warehouse buildings approximately 30,000sf each (316'X88'). Operations consist of tanker trucks delivering and shipping ISO tanks filled with H3 chemicals, stacked within framed structures that secure the integrity of the pressurized container.. A variety of ISO tanks types will be stored within the proposed warehouse, including the outdoor ISO tank yard, the outdoor gas pad storage, and inside each warehouse. Hours of operation are from 8a-4p with 50 employees with a maximum number of 35 employees per shift.

The site consists of secured entrance gates, vehicular parking for employees and visitors, one front office, an on-site stormwater retention system, trailer truck circulation, truck loading, and iso-tanker parking.

The development proposal includes a gracious landscaped public improvement frontage consisting of street trees, safe pedestrian pathways, crossings, and a landscaped screening and buffering of the buildings. The proposal includes an ADA accessible pedestrian path from the public right-of-way to the front office.

The development will be built through two phases. The first consists of two buildings, ISO yard, and the circulation roadway to ensure access around the building and yard. See phasing diagram on Page 18.

The proposal includes outdoor, above-ground storage tanks and a request for an increase in height, requiring a Conditional Use Permit (CUP) approval.

The following Land Use applications will be necessary. These applications are:

1) Vacation of the public right-of-way (N 7th Court). This action is a Type III review which is reviewed and approved by the Cornelius City Council. **This action will be administered by AKS Engineering through a separate application.** The vacation of N.7th Court is in process and will run in tandem to this application. AKS have informed me that they have completed the necessary documentation and requirement documentation to administer the vacation of N 7th Court. The aim will be to remove all public streets within the property site boudary.

2) One-Lot Land Partition to legally re-describe the multiple tax lots into one new lot. **This action is a Type II administrative review with public notice. This action will be administered by AKS Engineering through a separate application.** The lot partition of the existing lots is in process and will run in tandem to this application. AKS have informed me that they have completed the necessary documentation and requirement documentation to administer the existing lot consolidation.

3) Land Partition Final Plat. This an administrative review to ensure that the proposed one-lot land partition plat conforms to the approval, prior to recordation by Washington County. **This action will be administer by AKS Engineering through a separate application.** The final plat determination is in process and will run in tandem to this application. AKS have informed me that they have completed the necessary documentation and requirement documentation to administer the final plat.

4) Type III Conditional Use Permit

5) Type III Site Design Review.

PROJECT DATA

Building Address: North Holladay Industrial Park

Zoning: M-1 (General Industrial)

Site Area: 479,170 sf

Proposed Building Area: Phase 1 = 32,912 sf + 27808 sf + 2,392 sf = 63,112 sf;

Future Phase = 55,616 sf

Site Building Coverage: 24.6% (Phase 1 = 13%; Future Phase = 11.6%)

Building East Height = 40'-0" (measured to top of parapet)

Building West Height = 47'-6" (measured to top of parapet)

Building Setback: 20' Front; 5'Parking; 5' Rear; 5' Side

Landscape: 106,879 sf (22.3%)

Construction Type: H-3: Type I-B + B: Type III-B

Occupancy: H-3 (High Hazard Storage) + B (Office)

Parking: 73 Parking stalls (55 Standard + 19 Compact + 4 ADA)

APPLICABLE STANDARDS

The following Standards and Regulations have been addressed within this Narrative.

Title 18 Development Code - Zoning

18.55 General Industrial (M-1) zone

18.100 Site Design Review

18.105 Conditional Use Permit

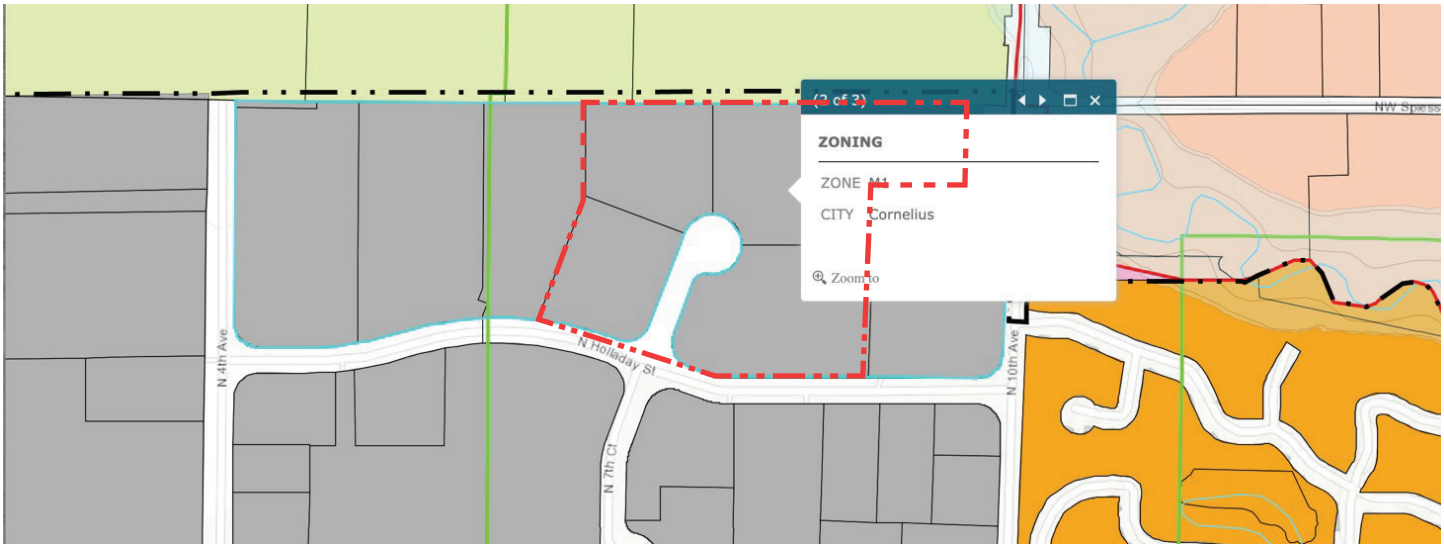
18.143 Transportation Facilities

18.145 Off-Street Parking

18.155 Solar Access for New Development

18.10.030 Neighborhood Review Meeting

18.05.030 Development Standards



GENERAL INDUSTRIAL (M-T) ZONE

18.55.010 Purpose

The purpose of the general industrial or M-1 zone is to provide for various industrial activities which require processing, fabrication and storage of raw, primary materials, including outdoor storage areas, heavy equipment storage and other uses not compatible with the commercial or residential zones.

18.55.020: Permitted Uses

The proposed development is permitted outright under (A) General uses involving manufacturing, processing, or storage.

18.55.030: Conditional Uses Permitted

The following uses are being requested as a conditional use subject to the standards contained in CMC 18.55.060 and Chapter 18.105 CMC.

Response: Under ***18.55.030 (G)***-- Development proposal requests the City of Cornelius to consider a request to exceed the maximum building height. Our proposed building heights are 40'-0" and 47'-6" respectively. The storage rack design and operational access maneuvering requires a clear height of 35', plus depth of roof structure will require additional height. The proposal would like to request additional height not-to-exceed 50'.

Response: Under ***18.55.030 (H)***- we are requesting the city to consider our request to building above ground storage tanks. We are asking to build an exterior gas pad 32' x 200' and 11' clear height. Although the structure will technically be outside, the space will be fully enclosed with CMU block up to eight feet with a 1" wire-mesh to the bottom of structure to the roof. See elevation drawings. The roof will be sloped. The structure will have two dock doors, one 8X8 Roll-up doors, and two egress doors.

18.55.050 Development Requirements

(A) Lot Size. In an M-1 zone there is no minimum lot size, save and except that the lot must be large enough to accommodate the proposed use, including all design standards and functional requirements related to the use.

Response: The lot size is large enough to accommodate four storage warehouse buildings approximately 30,000sf each and operations consisting of tanker trucks delivering and shipping. The lot accommodates a variety of ISO tanks storage, including the proposed warehouse, an outdoor ISO tank yard, the and an outdoor gas pad storage.

The site allows for two secured entrances, vehicular parking for employees and visitors, one front office, an on-site stormwater retention system, trailer truck circulation, truck loading, and iso-tanker parking.

The lot accommodates a gracious landscaped public improvement frontage consisting of street trees, safe pedestrian pathways, crossings, and a landscaped screening and buffering of the buildings. The proposal includes an ADA accessible pedestrian path from the public right-of-way to the front office.

(B) Setback Requirements. In an M-1 zone the following setbacks shall be the minimum required. The approval authority may require greater setbacks for uses allowed under CMC 18.55.030, based on the approval criteria in Chapter 18.105 CCC, the base standard; however, the review body may require a greater or lesser setback based on the design review criteria set forth in this chapter.

Response: (1) front yard setbacks are 20' per standard.

Response: (2) side and rear yard setbacks are 5'-0"

18.55.060 Performance Standards

In an M-1 zone no land or structure shall be used or occupied unless there is continuing compliance with the following standards:

(A) Design Review Approval.

(B) Environmental Standards.

Response: We have included a letter from Clean Water Services stating the proposed project will not significantly impact the existing Sensitive Areas found near the site.

Response: The proposal includes truck iso-trailer storage bays with a raised curb containment stopper in order to secure trailer and contents in place.

(C) Heat and Glare.

Response: (1) Our proposal ensures glare is not visible from a public street or adjacent property. (2) Our proposal ensures exterior lighting shall be designed such that glare is directed away from the public streets or adjacent properties. See Photometric Plan.

(D) Insects and Rodents

Response: All materials, including exterior storage, will be managed and stored in a manner that will not attract or aid the propagation of insects or rodents or create a health hazard.

(E) Outside Storage.

Response: Outside storage will be appropriately screened consistent with CMC 18.55.070(F)(1). We are asking to build an exterior storage pad of 32' x 200' and 11' clear height. Although the structure will technically be outside, the space will be fully enclosed with CMU block up to eight feet, then a 1" wire-mesh to the bottom of structure to the roof. See elevation drawings. The roof will be sloped. The structure will have two dock doors, one 8X8 Roll-up doors, and two egress doors. See Page 14 for details.

18.55.070 Development Standards

In an M-1 zone no new use or occupation of land or a structure or a new structure and no change of use of land or a structure shall be permitted unless there is continuing compliance with the following standards:

(A) Landscape Plan.

Response: (1) The proposal provides 20' setback and lineal street frontage of landscaping for public right of way improvements.

Response: (2) 80% of the landscape area will be covered by plant material, lawn, and trees when the plantings are at maturity. The remaining area will be covered in non-vegetative ground cover.

Response: (3) Street trees will be planted 30' on-center within the 20' landscaped frontage. The trees have been selected from the approved public works street tree list. The total number of trees have been determined by dividing the total lineal footage of the site which abuts a public street by 30. The new street trees shall be installed in accordance with the adopted public works standards.

(B) Vehicular Access, Internal Circulation and Clear Vision Areas.

Response: (1) Two truck and vehicular access points have been proposed. Both access points are off of N. Holladay Street.

Response: (1) The proposal includes access security gates will not swing into the public right of way. Gates have been setback at a minimum 20' so vehicles do not block the sidewalk.

Response: (2) Our proposal does not have public streets within the development. We anticipate a vacationing and lot partition/consolidation application forthcoming from AKS Engineering.

Response: (3) Internal access 'impervious' concrete and asphalt roadways and drives will be paved and maintained by owner. See site plan— all areas in light grey will be asphalt and areas in dark grey and truck loading areas are concrete. All entrance and exits will be located greater then 100' to any intersection of a public street.

Response: (3) Internal access dimensions are two-way and greater or equal to 24' feet.

Response: (4) The proposal provides internal sidewalk and pathway, from the public right of way along N. Holladay, to the facility's main office. A pathway varies in width but provides safe and convenient pedestrian circulation throughout the development with safety stripping, especially at critical crossings.

18.150.070 Clear vision zones.

(A) The clear vision zone is defined as the triangular area beginning at the intersection of the projected curb lines, and extending 15 feet along the leg of each intersection. No fence, berm, wall, hedge or other planting or structure shall be placed within the clear vision zone that would impede visibility between a height of 30 inches and 10 feet as measured from the top of curb, or in the absence of a curb, from the established street center line grades. If the relation of the surface of the lot to the streets is such that visibility is already obscured, nothing shall be done to increase the impediment to visibility within the vertical and horizontal limits set forth above. Poles, tree trunks, and similar objects less than 12 inches in width may be allowed in the clear vision zone if they meet the vertical requirements noted above.

Response: (5) Clear vision areas have been indicated on the site plan A 1.2. They illustrate all driveway access points are in accordance with the vision clearance standards set forth in CMC 18.150.070.

(C) Access Streets – Sidewalks – Drainage.

Response: (2) The two driveway / entry access points measure 40' wide each due to the requirement for large trailer trucks to maneuver entry and exit turning radius'.

Response: (2) Gates have been setback at a minimum 20' so vehicles do not block the sidewalk. Gates will be open during business hours so not to impact oncoming traffic, pedestrian crossing, and vehicular movement.

Response: (4) The proposal provides new construction, curbs, gutters, and a minimum 5' wide ADA accessible sidewalk along the entire lot frontage.

Response: (5) Proposed storm drainage is managed through a system of underground drainage lines and on-site stormwater retention catch basin. Please see stormwater plan for details. The stormwater management system complies with Clean Water Services (CWS) standards.

(D) Lighting Streets. Streets and walkways shall be lighted during the hours of darkness in accordance with public works standards.

Response: See Photometric Lighting Plan. The lighting design plan for internal streets and walkways will be lite during the hours of darkness in accordance with public works standards. The plan references location, height, mount, and type of lighting used throughout the plan.

(E) Mailboxes. Except for in-fill partitioning, clustered mailboxes shall be provided, consistent with the locational criteria set by the Post Master. They shall be of uniform style.

Response: The proposal locates a mailbox at the most eastern access point close to the entry gate.

(F) Screening.

Response: Sight-obscuring screening will be provided for all garbage, trash collection areas, and approved outdoor storage. The proposed screening will be screened on two side from the entry approach (East and South). The collection area is located more than 300' from the entry and built of 8'-0" CMU wall surrounding a 40 yard dumpster.

(G) Parking and Loading Space.

(1) Off-street Parking

Response: Total parking provided is 73 stalls. 55-standard; 18 compact; and 4 Accessible. Proposed parking is provided as set forth in Chapter 18.145 CMC and 18.145.030 - Table 1. Land Use – Warehouse;/Freight Movement = Zone B (0.5 / 1,000). Total required parking = 68.9

Required Parking Calculations:

PHASE 1

Warehouse Use = 60,720 NSF (60,721/1000)0.5 = 30.4 Parking Stalls

Office = 2,392 NSF (2,392/100)4.5 = 10.8 Parking Stalls

TOTAL = 41 Parking Stalls

PHASE 2

Warehouse = 55,616 NSF (60,721/1000)0.5 = 27.8 Parking Stalls

TOTAL Parking Stalls = 27 SPACES

(2) Paving and Design

Response: Off-street parking areas will be paved with asphalt and designed in accordance with the standards.

(3) Parking Lot Landscaping

Response: The proposed development has provided a 5' landscaped buffer at the perimeter of all parking areas, screened with evergreen plantings at a min. of 36" in height.

18.100 SITE DESIGN REVIEW

18.100.010 Purpose.

The council finds that projects involving building design and development of land should have special review in order to promote and protect the public health, safety, and welfare of the city, to promote orderly growth of the community, to enhance aesthetic values, to assure development which is suitably related to its environment, to prevent both extremes of monotonous uniformity and substantial dissimilarity, and to conform with the comprehensive plan of development of the city, and, that to promote and implement these policies requires consideration of the particular character and impact of new development over and above that included in the zoning, subdivision and building code, ordinances and regulations.

(A) Purposes and Objectives.

The council declares that the purposes and objectives of site development requirements and the site design review procedure are to:

(1) Encourage originality, flexibility, and innovation in site planning and development, including the architecture, landscaping, and graphic design of said development.

Response: The proposed project has taken many lessons learned from similar industrial projects constructed in the past. This project was envisioned to innovate within five pillars of design:

- Environmental Design
- Site and Building Efficiency
- Massing and materials
- Accessibility
- Safety

The projects innovates in a number of ways to ensure the environmental systems surrounding this site are not disturbed or harmed. The site's impervious surfaces are designed to capture on-site stormwater runoff and allow proper retention and filtering of contaminants from roadways.

The project also focuses on providing a gracious palette of landscaping and vegetation, especially along N. Holladay. The landscape design provides much needed tree canopy for the area and provides potential habitat for birds, insects, and sciuridae.

The site and building design are extremely efficient. The project displays an innovative technqiues in storage design. Over the past few years ISO tank storage and warehouse design has allowed for safer and more efficient methods of storage. The request for additional heights is due to the innovations in storage systems, allowing much more storage capacity, resulting in a smaller building and site operations footprint.

The massing and materials are high quality and not typical for industrial structures. This project incorporates concrete panels with architectural patterns and accent colors as a way to reduce the visual scale of the structures. The building also showcases a super graphic and signage for clear wayfinding and access.

Accessibility is a major focus of the site and building design. The project builds infrastructural systems to encourage walking, biking, and bus travel to access the facility. Clear pathways and pedestrian connections to and from major streets and transit stops will encourage safe ease of movement.

Lastly, safety of the entire operations is priority of the site and building design. Creating a safe operations for all employees, truck operators, and visitors will benefits the entire project and provide a model for other similar types of projects.

(2) Discourage monotonous, drab, unsightly, dreary, bright, showy, gaudy or cheaply ornate, and inharmonious development.

Response: This project incorporates concrete panels with architectural patterns and accent colors as a way to reduce the visual scale of the structures. The building also showcases a super graphic and signage for clear wayfinding and access.

(3) Conserve and enhance the city's natural beauty, visual character, and charm by insuring that structures, signs, and other improvements are properly related to their sites, and to surrounding sites and structures, with due regard to the aesthetic qualities of the natural terrain and landscaping, and that proper attention be given to exterior appearances of structures, signs, and other improvements.

Response: The project goes out of its way to enhance the site's visual character under the current conditions, providing a gracious palette of landscaping and vegetation, especially along N. Holladay. The landscape design provides much needed tree canopy for the area. The quality of materials and design is an improvement from the typical industrial buildings seen in similar conditions.

(4) Protect neighboring owners and users by assuring that reasonable provisions have been made for such matters as surface water drainage, suitable sound and sight buffers, the preservation of views, light and air, and those other aspects of design included under the zoning provisions of this code which may have substantial effects on neighboring land uses.

Response: Our neighborhood meeting touched on many of these issues and we addressed each concern. This project ensures we protect the neighboring residents from issues related to water drainage, overshadowing, night lighting, traffic impacts, sight lines, and buffers. We are taking precautions in case of an emergency power outage by providing facility back-up generator for the entire operation. We also ensured the neighbors that there will be no contaminants put into the water supply. We described the stormwater management system as a safe measure to collect stormwater from the impervious surfaces of the property which are diverted for retention. This avoids stormwater from running off our site and allows our stormwater to be naturally treated or filtered. We did explain that

Clean Water Services have been involved in determining environmental safety. The facility will also have a separate retention system for the ISO tanks yard and dock areas that can be pumped out if there was a spill.

We also noted that we are required to provide a photometric lighting plan ensuring we protect 'night sky' for habitat and prevent light from bleeding onto adjacent properties. All lighting will be directed down and internal.

(5) Ensure timely, orderly, and efficient administration of development permits.

Response: Our team will collaborate with the City staff to ensure timely, orderly, and efficient administration of development permits. We have a dedicated team to coordinate and respond quickly throughout the permitting process.

(B) Professional Quality Design Required. All development plans for Type II or Type III site design reviews shall be designed and drawn by a person trained, skilled, and knowledgeable in site planning and development. Such plans shall be of typical architectural, engineering, or drafting quality and accuracy as to scale and design detail. [Ord. 665 § 1, 1987; Ord. 810, 2000; Code 2000 § 11.30.11; Ord. 2020-05 § 1 (Exh. A), 2020.]

Response: The proposed plans will be under Type III Site Plan Review and have been designed and drawn by a licensed architect.

18.100.030 Types of applications.

(C) Design review Type III actions are those which are major and include:

Response: Our proposal meets (C) (2) – General site plans for new development or substantial redevelopment.

18.100.040 Approval criteria.

In addition to the other requirements of the zoning code and other city ordinances, a project submitted for design review shall comply with the standards and criteria in subsections (A) and (B) of this section; all applications for a sign permit subject to the provisions of the sign code, Chapter 18.175 CMC, inclusive, shall comply with the rules and regulations of the committee adopted under the provisions of Division III of this title and other applicable provisions of the Cornelius Municipal Code.

(A) Technical Standards.

Response: Where applicable, required off-site improvements shall be based on proportional analysis.

(1) Facilities and Services.

Response: The public and private facilities and services provided by the development are adequate as to location, size, design and timing of construction in order to serve the residents or establishments to be accommodated and meet city standards and the policies and requirements of the comprehensive plan. The service provider is presumed correct in the evidence which they submit;

(2) Traffic Generation.

Response: Adequate right-of-way and improvements to streets, pedestrian ways, bikeways, transitways are provided by the development. These improvements promote safety, reduce congestion, conserve energy and resources, and encourage transit use, bicycling and walking. The project has implemented site design strategies to improve the overall standards of the comprehensive plan and this code, public streets, bicycle, pedestrian, and other ways in the area of the proposed development impacted by the proposed development. For example, the design proposes improvements to the right-of-way, such as installation of lighting, parking strips, paving, curbs and gutters, sidewalks, bikeways, roadway drainage facilities, traffic calming devices due to anticipated vehicular, truck traffic, transit, bicycle, and pedestrian traffic generation.

Access and street design comply with the standards identified in Chapter 18.143 CMC, Transportation Facilities, and Chapter 5 of the adopted public works standards. Street trees will be installed to the standards identified in Chapter 5 of the adopted public works standards.

(3) Dedication.

Response: The project is dedicating real property for public use and public improvement.

(4) Internal Circulation.

Response: The project site design provides a safe and efficient circulation pattern within the boundaries of the site. Design objectives in regard to location, number, design and dimensions of vehicular, transit, and pedestrian access, exits, drives, walkways, bikeways, transit stops and facilities, building location and entrances, emergency equipment access have been implemented. The project provides adequate off-street parking and loading/unloading facilities provided in a safe, well designed and efficient manner.

The project proposes a layout of vehicular parking,, truck trailers, iso-tanker parking, shared parking lots, and common driveways, garbage collection and storage points, as well as the surfacing, lighting, screening, landscaping, concealing of these elements..

The proposed development provides a safe and direct pedestrian connection from the main entrance to the public right-of-way. The pedestrian

connection is free of hazards from automobile traffic to encourage pedestrian and bicycle travel;

The **ISO Yard** will be built during phase 1 and will consist of a large area to the north of the site designated for storage of ISO tanks and structures stacked three high. See picture below.

Rinchem is a proposing to store up to a maximum of4700-gallon Isotankers adjacent to the existing buildings. There will be a total of no more than 23,500 gallons in these Isotankers. The materials to be stored, and heated or cooled, (there will be no dispensing) is Cyclohexanone. Equipment that is involved in this process includes the following:

- Reefer Tank
- Frame
- Refrigeration Unit
- Electrical installation related to Refrigeration and Controls



(5) Maintenance of Private Facilities.

Response: The project typology has been built in the region and has a tested and proven necessary maintenance of private common facilities and areas, drainage ditches, roadways, storage structures, landscaping, fill and excavation areas, screening and fencing, ground cover, garbage storage areas that do not required periodic maintenance by the city. Typical materials, including wastes, will be stored and managed; the grounds will be maintained in a manner that will not attract or aid in the propagation of insects or rodents or cause a health hazard.

(6) Public Facilities.

Response: The structures and public facilities and services serving the site are designed and constructed in accordance with adopted codes and/or city standards at a level which will provide adequate fire protection and protection from other accidents.

(7) Security.

Response: Adequate facilities have be provided to prevent unauthorized entries to the property, facilitate the response of emergency personnel, and optimize fire protection for the building and its occupants. Facilities include lighting, signage, striping, and Fire Life Safety Planning.

(8) Grading.

Response: The grading and contouring of the site and site surface drainage with on-site storage of surface waters facilities are constructed to prevent adverse effect on neighboring properties, public rights-of-way or the public storm drainage system. The proposed development will commence in accordance with the city site development code;

(9) Utilities.

Response: Prior to the development of a site, utilities will be extended to serve the site or financially secured for extension to serve the site. Connection to city utilities are expect to be built before final inspection and occupancy. Electric, telephone, and other utility services to this development will be located underground.

(10) Accessibility.

Response: Access and facilities for physically handicapped people are incorporated into the site and building design with particular attention to providing continuous, uninterrupted access routes;

(11) Bicycle Lanes and Sidewalks.

Response: The proposed development includes bicycle access paths and sidewalks constructed in accordance with city standards.

(B) Design Standards.

(1) Relation of Building to Site. The proposed structures has been designed to relate harmoniously to the terrain. Building height, bulk, lot area, coverage, setbacks, and scale have been considered with regard to achieving compatible relationships with other structures in the area and considerations to the neighboring developments.

Exposed storage areas, utility buildings, and truck loading areas, solid waste disposal cans, containers and the outdoor storage structure have been adequately set back and screened.

(2) Trees and Vegetation.

Response: The development has not been able to save the lone existing tree on-site. The required site access distance from N 7th Court to our development entry prevents us from saving the existing tree. The dimension influences the truck circulation alignment.

(3) Historic Structures.

Response: There are no significant buildings or historic structures in the area.

(4) Grading

Response: The site grading and contouring aim to minimize the possible adverse effect of grading and contouring on the natural vegetation and physical appearance of the site;

(5) Landscaping.

Response: The quality, location, size, and structural and aesthetic design of walls, fences, berms, hedges, screen planting and landscape areas are such that they serve their intended purposes and have no adverse effect on existing or contemplated abutting land uses;

(6) Lighting.

Response: Adequate exterior lighting has been provided to promote public safety, and designed to avoid unnecessary glare upon other properties;

(7) Solar Access.

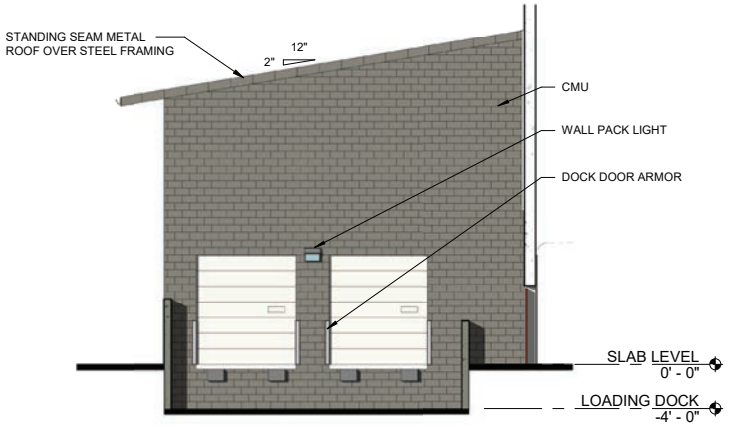
Response: In determining the appropriate relation of the building to the site, the proposal maintains solar access for adjacent properties and buildings or structures within the site. Even with the request of a height increase, the building does not impact neighboring developments. The building is setback 70' from the property line and in some cases up to 100' setback.

18.100.050 Special conditions.

(B) Objectionable Uses.

Response: There are no concerns of odor, dust, smoke, fumes, glare, or heat from the industrial use. The only concern may be with truck noise or vibrations, which might create a nuisance or be offensive to other uses in the area. However, the truck only operate during normal business hours from 8a-4p.

18.105 CONDITIONAL USE



1 NORTH ISO STORAGE ELEVATION
1/8" = 1'-0"

18.105.010 Purpose.

Certain types of uses require special consideratior prior to being permitted in a particular district. The reason for requiring special consideration involves among other things, the size of the area required the nature of the traffic problems, the effect such uses have on any adjoining land uses and, on the growth, and development of the community as a whole. The uses are listed in each use district as a conditional use

18.105.020 Authority.

(A) Authorization to Grant or Deny Conditional Uses.

(f) Limiting the coverage or height of buildings because of obstruction to view or reduction of light or air to adjacent property;

Response: Under 18.55.030 (G)-- we are requesting the city to consider our request to exceed the maximum building height. Our proposed building heights are 40'-0" + 47'-6" respectively. The innovation in storage rack design and operational access and maneuvering require an increase in clear height and structure beyond the maximum height per code. The innovative storage rack system will allow more efficient operations and efficient use of land.

Response: Under 18.55.030 (H)- we are requesting the city to consider our request to building above ground storage tanks. We are asking to build an exterior gas pad 32' x 200' and 11' clear height. Although the structure will technically be outside, the space will be fully enclosed with CMU block up to eight feet, then a 1" wire-mesh to the bottom of structure. See enlarge elevation drawings. The roof will be sloped. The structure will have two doors.

18.105.030 Procedures

(A) Application.

A request for a conditional use or modification of an existing conditional use may be initiated by a property owner or his authorized agent by filing an application form prescribed by the community development director and shall be filed with the community development director.

(B) Approval Criteria. The approval with conditions or denial of an application for conditional use or to enlarge or to alter a conditional use shall be based on findings of fact with regard to each of the following approval standards:

(1) The proposed development will comply with the comprehensive plan;

Response: The proposal with conditions comply with the goals of the comprehensive plan, including objectives focused improving public and private facilities and services, traffic generation, dedication, internal circulation, maintenance of private facilities, security, grading, bike infrastructure, operation safety, and accessibility.

(2) The applicable requirements of the zoning district are satisfied; and

Response: The proposed design satisfy the applicable requirements of the zoning area.

(3) That the location, size, design, and functional characteristics of the proposed use are such that it can be made reasonably compatible with and have a minimum impact on the livability and appropriate development of other properties in the surrounding neighborhood;

Response: The location, size, design, and functional characteristics of the proposed use are such that it can be made reasonably compatible with and have a minimum impact on the livability and appropriate development of other properties in the surrounding neighborhood;

(4) The granting of the proposal will provide for a facility that is consistent with the overall needs of the city.

Response: The proposal will provide for a facility that is consistent with the overall needs of the city's goals for job growth.

(C) Modifications. A request to substantially modify an existing conditional use permit shall be processed in the same manner as a new request for a conditional use permit. Minor modifications of an existing conditional use permit may be approved by the community development director. When an interpretation is discretionary, notice shall be provided in accordance with Chapter 18.15 CMC.

Response: We are not asking to substantially modify the existing conditional use.

18.143 TRANSPORTATION FACILITIES

18.143.010 Purpose and intent.

It is the purpose and intent of this chapter to establish design standards and performance requirements for all streets and other transportation facilities constructed or reconstructed within the city of Cornelius.

Table 1
Minimum and Maximum Required Off-Street Vehicle and Bicycle Parking Requirements
(unless otherwise noted, standard is per 1,000 sf of gross floor area)

Land Use	Minimum Parking Standards	Maximum Parking Standards		Minimum Bicycle Parking Standards
		Zone A	Zone B	
INDUSTRIAL				
Industrial Services	0.8/1,000	1.2/1,000	1.8/1,000	0.1/1,000
Manufacturing; Production; Light Industrial; General Industrial; Heavy Industrial	1.6/1,000	none	none	0.1/1,000
Research and Development	2.0/1,000	3.0/1,000	3.8/1,000	0.5/1,000
Warehouse/Freight Movement	< 150,000 sq ft: 0.5/1,000 > 150,000 sq ft: 0.3/1,000	0.8/1,000 0.4/1,000	1.2/1,000 0.5/1,000	0.1/1,000
Waste-Related	5	7	10	none
Wholesale Sales	0.8/1,000	1.2/100	1.8/1,000	0.1/1,000

18.143.010 General provisions.

Response: The proposal does not include off-site transportation facilities.

Response: No traffic impact analysis is required for this project.

18.145 Off-Street Parking

(1) Off-Street Parking. Parking shall be provided as set forth in Chapter 18.145 CMC.

18.145.010 General Provisions

Response: (B) All parking and loading spaces are located in a required yard.

18.145.020 Off-Street Parking

Response: Off-street parking is provided based on the primary use of the site according to the following standards (Table 1)

18.145.030 Required Off-Street Parking Space

Response: Our proposal land use is considered Warehouse/Freight Movement with a minimum parking standard of >150,000 sq. ft: 0.3 per 1,000. Warehouse (60,721 sq. ft / 1,000) X 0.3 = 30.4 parking spaces. Office – (2,392 sq. ft / 100) X 4.5 = 10.8. The proposal provides 41.1 Parking stalls for Phase 1.

Response: Minimum bicycle parking standards = 0.1 / 1,000. (65,161 sq.ft / 1,000) X 0.1 = 6.5 spaces. The proposal provides 8 total bicycle parking spaces located very close to the office.

18.145.040 Off-Street Loading

(A) Buildings and structures to be built or substantially altered which receive and distribute material or merchandise by truck shall provide and maintain off-street loading space as follows:

Response: The proposed operations include freight movement and requires 31 trailer truck containment

Table 2
Off-Street Loading Requirements

Land Use	Loading Space Required
Industrial	
Floor Area:	
Under 25,000 sq ft	1
25,000 to 50,000 sq ft	2
50,000 to 100,000 sq ft	3
Commercial	
Floor Area:	
Under 5,000 sq ft	0
5,000 to 25,000 sq ft	1
25,000 to 50,000 sq ft	2
50,000 to 100,000 sq ft	3

Table 3
Minimum Loading Berth Dimensions

Land Use	Length – Linear Feet	Width – Linear Feet
All uses except wholesale and industrial	35	12
Wholesale storage ar l industrial	65	12

parking spaces for operations, as well as 32 future trailer truck containment parking spaces.

(B) Passengers.

Response: Driveways have been designed for continuous forward flow of passenger vehicles.

C) Merchandise, Materials or Supplies

Response: The proposed loading berth dimensions of all off-street loading is 70' linear feet and 15' in width.

(D) Any area to be used for the maneuvering of delivery vehicles and the unloading or loading of materials shall be separated from designated off-street parking areas and appropriately designed to prevent the encroachment of delivery vehicles into off-street parking areas or into a public street.

Response: All passenger vehicles and off-street parking areas have been designed to prevent the encroachment of delivery vehicles.

(E) Modification of off-street loading requirements

(F) Exceptions and Adjustments.

18.145.050 Design and maintenance standards for off-street parking and loading facilities.

(A) Except as otherwise defined in this code, "one standard parking space" means a minimum of a parking stall of 9 feet in width and 20 feet in length. To accommodate compact cars more efficiently, up to 25 percent of the available parking spaces may have a minimum dimension of 8' feet in width and 16 feet in length, so long as they are identified as compact car stalls and are not readily accessible to large cars.

Response: The site plan integrates the standard 9'x 20' standard parking stalls with a mix of compact stalls. This development is NOT deviating from the standard parking dimension,; however, the plan proposing compact parking stalls.

(C) Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety of traffic access and egress consistent with CMC 18.150.070, and maximum safety of pedestrians and vehicular traffic on the site.

Response: All precautions and clear vision zones tested to facilitate the flow of traffic to provide maximum safety of pedestrians and vehicle traffic.

(D) Each parking and/or loading space shall be accessible from a street and the access shall be of a width and location as described in this section.

Response: All parking areas and loading areas will be accessible from a street.

(E) Parking space configuration, stall and access aisles shall be of sufficient width for all vehicles turning and maneuvering.

Response: All parking spaces and loading spaces have been tested for sufficient width and turning and maneuvering.

(G) Except for single- and two-family residences and multi-family uses with not more than four units in the core residential zone, all areas used for the parking and/or storage and/or maneuvering of any vehicle, boat and/or trailer shall be improved with asphalt or concrete surfaces according to the same standards required for the construction and acceptance of city streets. Off-street parking spaces for single- and two-family residences and multi-family uses with not more than four units in the core residential zone shall be improved with an asphalt or concrete surface to specification as approved by the building official.

Response: All proposed surfaces will either be impervious asphalt or concrete.

(H) Parking spaces along the outer boundaries of a parking lot or adjacent to interior landscaped areas or sidewalks shall be provided with a wheel stop at least four inches high located three feet back from the front of the parking stall. The facilities and design review committee or the planning commission may approve parking spaces without wheel stops, provided the abutting sidewalk is increased by three feet in width and/or the appropriate landscaping is planted where the bumper would overhang.

Response: We are requesting design review committee or the planning commission to approve our parking spaces without wheel stops due to our increased sidewalk by three extra feet in width where the bumper would overhang.

(I) Off-street parking and loading areas shall be drained in accordance with specifications approved by the city engineer.

Response: Off-street parking and loading areas have been designed to drain in accordance with stormwater management best practices and avoid flow of water across public sidewalks.

(J) Artificial lighting on all off-street parking facilities shall be designed to deflect all light away from surrounding residences and so as not to create a hazard to the public use of any road or street.

Response: See Lighting Plan. The lighting design plan for internal streets and walkways will be lite during the hours of darkness in accordance with public works standards.

(K) Signs which are provided on parking lots for the purpose of meeting this section shall be as prescribed by the building official.

Response: Our intent will be to apply for a signage permit with our building permit.

(L) All parking lots shall be kept clean and in good repair at all times. Breaks in paved surfaces shall be repaired promptly, and broken or splintered wheel stops shall be replaced so that their function will not be impaired.

(M) Bicycle parking spaces shall be conveniently located with respect to the street, bicycle path/lane and building entrance. Bicycle parking spaces shall not conflict with off-street vehicle parking spaces and drive aisles. There shall be at least 36 inches of clearance between parked bicycles and other obstructions or buildings.

Response: Our proposal does not include bike lanes within the development; however, we have provided pathways for bicyclists to walk their bicycles to the bicycle parking areas.

(G) Parking and Loading Space.

(2) Paving and Design. Off-street parking and maneuvering areas shall be paved with asphalt or concrete and designed in accordance with the standards of the off-street parking regulations of this title.

Response: All proposed surfaces will either be impervious asphalt or concrete.

(3) Parking Lot Landscaping. There shall be a five-foot landscaped buffer at the perimeter of all parking lot areas. The parking area shall be screened with evergreen plant material maintained at a minimum of 36 inches in height. Parking lots shall be designed and landscaped to break up large, paved areas with landscaped islands, every 10 parking spaces.

Response: See Landscape Plan. The proposed parking lot landscaping design allows for at least 5' landscaped buffer at the perimeter of all parking lots areas. The parking layout design does include a landscaped island every 10 parking spaces.

18.55 SOLAR ACCESS FOR NEW DEVELOPMENT

18.155.010 Purpose.

It is the city's intent to encourage the use of both active and passive solar energy systems for heating air and water in homes and businesses, as long as natural topography, soil, or other subsurface conditions or other natural conditions peculiar to the site are preserved. While the use of solar energy systems is optional, the right to solar access is protected. Additionally, a goal of this section is to ensure that site plan elements do not excessively shade adjacent properties, creating a significant adverse impact upon adjacent property owners. Thus, standards are set forth to evaluate

the potential impact of shade caused by buildings, structures, and trees.

18.155.020 Applicability.

All development shall be designed throughout to accommodate active and/or passive solar installations to the extent reasonably feasible.

Response: The building has been design to take advantage of solar income and daylighting through skylights. The building will not be taking advantage of active solar arrays or collectors.

18.155.030 Solar-oriented residential lots

At least 65 percent of the lots less than 10,000 square feet in area in single- and two-family residential developments must conform to the definition of a "solar-oriented lot" (see CMC 18.195.190) in order to preserve the potential for solar energy usage.

Response: Not applicable.

18.155.040 Access to Sunshine

The elements of the development plan (e.g., buildings, circulation, open space and landscaping) shall be located and designed, to the maximum extent feasible, to protect access to sunshine for planned solar energy systems or for solar-oriented rooftop surfaces that can support a solar collector or collectors capable of providing for the anticipated hot water needs of the buildings in the project between the hours of 9:00 a.m. and 3:00 p.m. PST, on December 21st.

Response: The development will not be taking advantage of solar energy systems or solar collectors.

18.155.050 Shading.

(A) The physical elements of the development plan shall be, to the maximum extent feasible, located and designed so as not to cast a shadow onto structures on adjacent property greater than the shadow which would be cast by a 25-foot hypothetical wall located along the property lines of the project between the hours of 9:00 a.m. and 3:00 p.m., PST, on December 21st. This provision shall not apply to structures within the central mixed use (CMU) and corridor commercial (CC) zoning districts.

(B) The impact of trees shall be evaluated on an individual basis considering the potential impacts of the shading and the potential adverse impacts that the shading could create for the adjacent properties in terms of blocking sunlight in indoor living areas, outdoor activity areas, gardens, and similar spaces benefiting from access to sunlight

Response: The building has been designed to avoid shadow overcasting onto neighboring buildings or residents. The setback from the adjacent existing developments are significant. The request for an increase in height will not impact the neighbors solar access.

18.155.060 Alternative compliance

Upon request by an applicant, the planning commission may approve an alternative site layout that may be substituted in whole or in part for a plan meeting the standards of this chapter.

(A) Procedure. Alternative compliance plans shall be prepared and submitted in accordance with submittal requirements for plans as set forth in this section. The plan shall clearly identify and discuss the modifications and alternatives proposed and the ways in which the plan will equally or better accomplish the purpose of this chapter than a plan which complies with the standards of this chapter.

(B) Review Criteria. In approving an alternative plan, the planning commission shall find that

the proposed alternative plan accomplishes the purposes of this chapter equally or better than a plan which complies with the standards of this chapter.

In reviewing the proposed alternative plan, the planning commission shall take into account whether the alternative design enhances neighborhood continuity and connectivity, fosters nonvehicular access, and preserves existing natural or topographic conditions on the site.

Response: There are no alternative plans

18.10.030 Neighborhood Review Meeting

Response: Our team conducted a neighborhood meeting on June 16th @ 6:00p-7:00p to gain insight and feedback on the proposed development. Please see list of addresses within 250 feet of the property. Please see attached notice sent to residents indicating date, time, and location of meeting. All mailers were sent 20 days prior to the required neighborhood review meeting.

Response: The design team presented the proposed application to the attendees.

18.10.040 Application documents.

(H) Documentation of Neighborhood Review Meeting, if Required.

Response: Please see the following documents attached to the permit application:

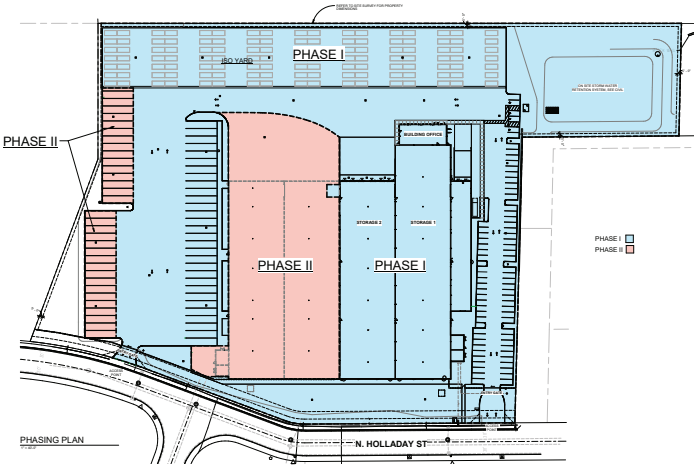
- A copy of the notice sent to surrounding property owners within 250 feet of the subject parcel.
- A copy of the mailing list used to send out meeting notices.
- A copy of the affidavit of notice delivery.
- Representative copies of written materials and plans presented at the neighborhood review meeting
- Notes of the meeting, including the meeting date, time, and location, the names and addresses of those attending, and oral and written comments received

DEVELOPMENT PHASING

Response: The development will be built through two phases. Phase 1 consists of two site entry points, two warehouse buildings, one front office space, ISO yard to the north, stormwater retention facility, and the main circulation roadway to ensure access around the building and yard.

Phase 2 consists of two additional buildings and additional iso-tanker parking stalls.

The full site will be graded prior to all phases of development. Utility work will be constructed for phase 1 and designed to accommodate an extension of services to phase 2. Most of the landscape work will be planted under phase 1 with some areas being planted during phase 2. See the following phase plan.



RESPONSE TO PRE-APP NOTES DATED: October 13, 2021

Land Use Project Specific Information:

Development and use of the site will need comply with Title 17 and 18 of the City of Cornelius Development Code. This includes, but is not limited to, demonstrating compliance to Section 17.05.030 Land Partition, and Chapters 18.55 General Industrial (M-1) zone, 18.100 Site Design Review, 18.105 Conditional Use Permit, 18.143 Transportation Facilities, 18.145 Off-Street Parking, 18.147 Street Vacations, and 18.155 Solar Access for New Development.

Response: Title 17 Land Partition will be issued as a separate permit.

Response: This narrative will demonstrate compliance to Title 18, especially Chapters 18.55 General Industrial (M-1) zone, 18.100 Site Design Review, 18.105 Conditional Use Permit, 18.143 Transportation Facilities, 18.145 Off-Street Parking, and 18.155 Solar Access for New Development.

Please provide a Clean Water Services (CWS) Service Provider Letter with your application submittal.

Response: Our proposed development has been reviewed by Clean Water Services. Please see attached letter.

The on-site storm water system shall be designed to comply with current CWS standards.

Response: Our proposed development has been reviewed by Clean Water Services. Please see attached letter.

Any garbage dumpster must be screened and accessible to the garbage company. Please provide a description and detail of your proposed trash collection facility.

Response: Sight-obscuring screening will be provided for all garbage and trash collection areas and approved outdoor storage. The proposed screening will be screened on two side from the entry approach (East and South). The collection is located 300' from the entry and built of 8'-0" CMU wall surrounding a forty yard dumpster. The vision clearance areas at driveways and sidewalks must be maintained.

Response: Clear vision areas have been indicated on the site plans. They illustrate all driveway access points are in accordance with the vision clearance standards set forth in CMC 18.150.070. The owner shall maintain vision clearance areas at driveways and sidewalks.

Provide safe interior pedestrian connectivity from the parking lot to the office areas.

Response: The proposal provides internal sidewalk and pathway from the public right of way along N. Holladay to the facility's main office. A pathway of 8' clear dimension will includes safety stripping, especially at critical crossings.

Provide pedestrian connectivity from the office area to the public sidewalk.

Response: An office space has been proposed to be located on the Northeast corner to the facility. The location ensures staff and operations managers to keep visual on all access and movement in and out of the facility. The proposal has provided a safe pedestrian connection from the office area to the public sidewalk.

Provide on-site bicycle parking that meets the requirements of CMC Chapter 18.145, Off-Street Parking Requirements.

Response: Minimum bicycle parking standards = 0.1 / 1,000. (65,161 sq.ft / 1,000) X 0.1 = 6.5 spaces. The proposal provides 8 total bicycle parking spaces located outside the office doors and connected to the ped/bike pathways.

All vehicle maneuvering areas are to be of an approved impervious (concrete or asphalt) surface.

Response: All proposed surfaces will either be impervious asphalt or concrete.

Internal drive aisles will need to be clearly identified on the proposed site plan. They will need to be readily open and clear of items for emergency access.

Response: (3) Internal access 'impervious' asphalt roadways and drives will be paved and maintained by owner. See site plan—light grey areas indicate asphalt and dark grey areas indicate concrete (truck loading areas). All entrance and exits will be located greater then 100' to any intersection of a public street.

Outdoor storage areas and material separations will need to be clearly identified on the proposed site plan.

Response: The site plan and drawing on page 14 clearly identifies outdoor storage areas.

For all new buildings/structures, please provide floorplans along with their respective elevations, locations, and setbacks.

Response: The Land Use Application includes conceptual floorplans and elevations.

For the proposed request to exceed the 35-foot building height limitation, please provide justification to the Planning Commission.

Response: Under 18.55.030 (G)-- Team requests the city to consider our proposal to exceed the maximum building height. Our proposed building heights are 40'-0" and 47'-6" respectively. The storage rack design and operational access and maneuvering requires a clear height of 35', plus depth of roof structure will require additional height. The proposal would like to request additional height not-to-exceed 50'.

Due to the nature of the materials stored on-site, please adequately address CMC 18.55.060(B), Environmental Standards.

Response: Clean Water Services will provide letter outlining approval of required air, land, and water quality standards set forth by state, federal, and local jurisdictions

Any gates that open into the site are not permitted to swing into the public right-of-way (sidewalk). Gates will need to be setback a minimum of 20 feet, so vehicles do not block the sidewalk or roadway when parked to open or close the gate.

Response: Gates have been setback at a minimum 20' so vehicles do not block the sidewalk. Note: all gates will be open during business hours so they do not impact oncoming traffic, pedestrian movement, or vehicular flow.

Parking, including ADA spaces, loading/unloaded areas, landscape islands, and wheel stops must be provided and striped with paint to meet the requirements of CMC Chapter 18.145, Off-Street Parking Requirements.

Response: All requirements under CMC Chapter 18.145, Off-Street Parking Requirements have been meet. These ADA parking stalls are located as close to the main office as possible.

Any signage shall comply with the Sign Code. Please note a separate Sign Permit application is required for signage.

Response: All proposed sign permit will be under a separate application.

All new utilities shall be underground.

Response: All new utilities will be underground

On-site lighting shall not glare or shine into the abutting ROW or adjacent properties. Please provide a photometric plan to demonstrate compliance. Please include details about the proposed lighting fixtures to be used.

Response: See Lighting Plan. The lighting design plan for internal streets and walkways will be lite during the hours of darkness in accordance with public works standards.

FIRST FORTY FEET
Place Strategy
Community Planning
Urban Design

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Portland, Oregon 97214
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www.firstfortyfeet.com

June 17, 2021

VIRTUAL NEIGHBORHOOD MEETING

Project:
Development Proposal
N. Holladay Industrial Park

Wednesday, June 16, 2021 6:30p-7:30p

Hosted by:
Nang Ma, Project Manager, Mildren Design Group
Will Grimm, Planning Consultant, First Forty Feet

Attendee List
Skye Langford – Manager and representative of Forest Hills Mobile Park Community.
Email - foresthills@cwres.com

Presentation
The virtual neighborhood meeting opened at 6:25 with the presentation starting at 6:35. Will started the meeting with introductions and summary of the intent of the project and purpose of the neighborhood meeting.

Nang presented the concept and site plan, providing a detailed description of the proposed facility, site location, edge conditions, and the type of operations and storage.

We concluded the virtual meeting at 7:31pm.

Questions and Concerns

All questions were answered by Nang and Will with the best of their knowledge. Our team will provide further clarifications and details with a follow up email to all attendees.

1. What precautions have been taken to prevent an emergency during a power outage? Does the facility have back-up power, especially with containers that need refrigeration? Skye told us the processing plant next door lost power and her neighborhood had to evacuate their homes. What measures do you have in place to avoid this from happening?

Our team noted that the facility will have a backup generator with the ability to run the entire operation, if needed.

2. Residents are asking about the physical appearance of the ISO yard. Are these stacked components? How high?

Our team described the ISO storage field as stacked open-air framed structure that secures the integrity of one pressurized container. They are approximately 7'X7'X20'in dimension.

3. What is the stormwater retention look like? How does it function? Does the stormwater go into our groundwater table or aquifer? Do chemicals seem into this system? How safe is the water?

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We described the stormwater management system as a safe measure to collect stormwater from the impervious surfaces of the property which are diverted for retention. This avoids stormwater from running off our site and allows our stormwater to be naturally treated or filtered. We did explain that Clean Water Services will be involved in determining environmental safety. The facility will also have a separate retention system for the ISO tanks yard and dock areas that can be pumped out if there was a spill.

4. What is being stored here? Are there fire concerns?

We communicated that H3 is being stored, exclusively. We presented the fire and life safety plan and noted our fire alarm systems, supervisions, fire safety plan, training programs, control system. The flammable portions of the warehouse will include rack sprinklers.

5. What type of sprinkler system will be used? Is there a special suppression medium used for chemicals?

The rack sprinkler system will have special specifications for the flammable warehouse contents.

6. How many trucks per day? What time during the day?

We noted about 20 trucks per day during the hours of operation.

7. How are we dealing with environmental sensitive areas regarding light pollution?

We noted that we are required to provide a photometric lighting plan ensuring we protect 'night sky' for habitat and prevent light from bleeding onto adjacent properties. All lighting will be directed down and internal.

8. How are using street trees and landscape to create a more attractive development?

We noted the requirement to provide streetscape improvements through street trees, and a mix of groundcover, deciduous, and coniferous trees along with a green buffer. We showed the rendering to illustrate how nice the facility will look and how much landscape the development will incorporate.

WALL
MATERIAL: Tilt-Up Concrete wall
MFR: SHERWIN-WILLIAMS

PT-1 (Base Color)
SW 6005 FOLKSTONE



PT-2 (Main Body Color)
SW 6003 PROPER GRAY



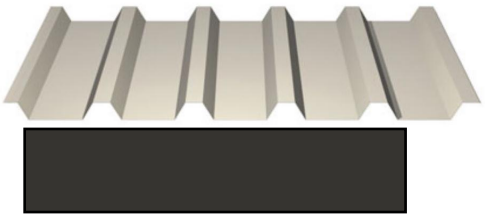
PT-3 (Top Accent Color)
SW 2849 WESTCHESTER GRAY



Canopy, Door, Window Frame, Parapet Cap & Flashing (MTL-1)
MATERIAL: Metal
FINISHES: ANODIZED FINISH
COLOR: Dark Bronze



Metal Roof over Outdoor Storage (R-2)
MFR: AEP SPAC
STYLE: Reverse Box Rib, 22 GA
Color: Midnight Bronze



SIGNAGE
MATERIAL: De-bossed 3/4" on Concrete Panel
FINISHES and COLOR: Match Rinchem Signage spec.



CMU (Outdoor Storage, Trash Enclosure)
MFR: Westbrook Concrete Block
Style and Finish: Standard, Ground Face
Color: GF-328 Lrg



RINCHEM STORAGE BUILDING

CORNELIUS, OREGON

SHEET INDEX

CS COVER SHEET

SURVEY
01 SURVEY COVER SHEET
02 BOUNDARY MAP
03 EXISTING CONDITION MAP
04 AERIAL MAP

PROPOSED RENDERING
A0.1 RENDERING
A0.2 RENDERING

CIVIL
C0 GENERAL NOTES & LEGEND
C1 EXISTING CONDITIONS PLAN
C2 GRADING PLAN
C2.1 GRADING PLAN NORTHWEST
C2.2 GRADING PLAN NORTHEAST
C2.3 GRADING PLAN SOUTHEAST
C2.4 GRADING PLAN SOUTHWEST
C3 UTILITY PLAN
C3.1 UTILITY PLAN NORTHWEST
C3.2 UTILITY PLAN NORTHEAST
C3.3 UTILITY PLAN SOUTHEAST
C3.4 UTILITY PLAN SOUTHWEST
C4 DETAILS

LANDSCAPE
L1.0 LANDSCAPE PLAN
L2.0 LANDSCAPE PLAN

ARCHITECTURAL
A1.0 PHASING PLAN
A1.1 LEGENDS, ASSEMBLIES, AND ABBREVIATIONS
A1.2 SITE PLAN
A1.3 SITE DETAILS
A1.4 ENLARGED SITE PLAN
A2.1 FLOOR PLAN
A3.1 BUILDING ELEVATIONS
A3.2 OUTDOOR STORAGE
A5.1 DETAILS
A5.2 DETAILS

LIGHTING
PM 1.0 PHOTOMETRIC PLAN
PM 2.0 PHOTOMETRIC PLAN

BUILDING SUMMARY

LOT DESCRIPTION

THE PROPERTY IS LOCATED IN THE CITY OF CORNELIUS

(4) TAX LOTS 300 - 600
TAX MAP 2 33DB
SITE TOTAL AREA = APPROX 479,170 SF

PROJECT DESCRIPTION

THIS SUBMITTAL IS FOR AN APPROXIMATELY 60,000 SF CHEMICAL STORAGE WAREHOUSE FOR RINCHEM COMPANIES.
THE APPLICANT IS PROPOSING TO DEVELOP APPROXIMATELY 10 ACRES OF LAND FOR A CHEMICAL STORAGE WAREHOUSE AND STORAGE YARD. THE ENTIRE DEVELOPMENT IS DIVIDED INTO TWO SEPARATE PHASES. THERE WILL BE AN OFFICE, TWO STORAGE WAREHOUSES, A COVERED OUTDOOR STORAGE YARD, AND SIX TRUCK LOADING SPACES IN THIS CURRENT PHASE. THE 72 VEHICLE PARKING SPACES SHALL ACCOMMODATE BOTH THE CURRENT PHASE AND THE FUTURE PHASE. THE FUTURE PHASE IS NOT A PART OF THIS PERMIT APPLICATION AND IT SHALL BE UNDER A SEPARATE PERMIT APPLICATION.

FIRE SPRINKLER NOTES

A. FIRE DEPARTMENT CONNECTION TO BE INSTALLED AT FIRE DEPARTMENT APPROVED LOCATION. 4" STORZ CONNECTION WITH KNOX LOCK.
B. THE CONTRACTOR SHALL SUBMIT PLANS FOR A CLASS 'B' WIRED FIRE ALARM SYSTEM CONSISTING OF AUDIO-VISUAL DEVICES, ACTIVATED BY THE SPRINKLER SYSTEM FLOW SWITCHES, ZONED THROUGH A FIRE ALARM PANEL, AND TRANSMITTED OFF-SITE TO A 24 HOUR MONITORING FACILITY.
C. SPRINKLER SYSTEM SHALL BE PRESSURE TESTED, FLUSHED, AND A LETTER SENT TO THE FIRE DEPARTMENT CONFIRMING COMPLIANCE WITH GOVERNING CODES.
D. PROVIDE SPRINKLER SYSTEM DATA NAME PLATE PERMANENTLY POSED AT EACH RISER
E. ZONE RISERS SHALL BE PROVIDED AS REQUIRED AND SHALL BE CONTAINED WITHIN OWNER'S ROOM OR DESIGNATED AREA.
F. FIRE ALARM WIRES SHALL BE RUN IN CODE COMPLIANT CONDUIT. EXPOSED WIRE IS NOT PERMITTED.

DEFERRED SUBMITTALS

NOTE:
PER OSSC 107.3.4.2 DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE WHO SHALL REVIEW THEM AND RETURN TO THE CONTRACTOR TO BE SUBMITTED TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

NOTES:
- SUBMIT SHOP DRAWINGS FOR REVIEW OF DESIGN INTENT COMPLIANCE PRIOR TO FABRICATION OF THE FOLLOWING:

1. MECHANICAL
2. ELECTRICAL
3. PLUMBING
4. FIRE SPRINKLER
5. FIRE ALARM SYSTEM
6. EXIT ILLUMINATION
7. KNOX BOX
8. LOW VOLTAGE
9. ROOF TRUSSES
10. STOREFRONT AND ALL OTHER GLAZING SYSTEMS
11. SHIP LADDER AND ATTACHMENTS

ZONING REVIEW

ZONE : GENERAL INDUSTRIAL M-1 ZONE

JURISDICTION : CITY OF CORNELIUS

ALLOWABLE USE TYPE: INDUSTRIAL USES , OUTDOOR STORAGE PER (CUP)

SITE DATA

AREA:	AREA	% COVERAGE
SITE	479,170 SF	
BUILDING- PHASE I		
H-3 OCCUPANCY	60,720 SF	
B OCCUPANCY	2,392 SF	
TOTAL	63,112 SF	13%
BUILDING- FUTURE PHASE	55,616 SF	11.6%
COVERED OUTDOOR STORAGE	6,500 SF	1.4%
IMPERVIOUS AREA:		
BUILDING (FOOTPRINT) :	72,160 SF	15.0%
PAVING AREA:	300,131 SF	62.6 %
TOTAL IMPERVIOUS AREA:	372,291 SF	77.7 %
LANDSCAPING AREA:		
LANDSCAPING:	106,879 SF	22.3%

PARKING:
STANDARD: (9'X20') 52
COMPACT: (9'X16') 17 (23.3% OF THE TOTAL PARKING)
ACCESSIBLE: 4
TOTAL SPACES PROVIDED: 73 PROVIDED (SEE BELOW FOR REQUIRED PARKING)

THE PROJECT PARKING PROPOSES AS FOLLOWS: (PER TABLE 1 OF SECTION 18.145.030)

WAREHOUSE = *60,720* NSF
(60,721/1000)0.5 = **30.4 PARKING SPACES**

OFFICE = *2,392* NSF
(*2,392*/100)4.5 = **10.8 PARKING SPACES**

TOTAL = *63,112* NSF
TOTAL = **41.1 PARKING SPACES**

FUTURE BUILDING

WAREHOUSE = *55,616* NSF
(60,721/1000)0.5 = **27.8 PARKING SPACES**

TOTAL PARKING SPACES = 68.9 (REQUIRED)

CODE ANALYSIS

BASED ON 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC) INCLUDING PORTIONS OF THE 2018 INTERNATIONAL BUILDING CODE (IBC) , THE 2019 OREGON FIRE CODE, AND THE 2019 OREGON ZERO ENERGY READY COMMERCIAL CODE, INCLUDING PORTIONS OF ANSI/ASHRAE/IES STANDARD 90.1-2016.

OCCUPANCY AND CONSTRUCTION OCCUPANCY:	PER OSSC SECTION 304, 307, 602 H-3 HIGH HAZARD (STORAGE) B (OFFICE)
CONSTRUCTION TYPE:	H-3: TYPE I-B CONSTRUCTION B: TYPE IIIB CONSTRUCTION
BUILDING HEIGHT AND AREA ALLOWABLE AREA:	PER OSSC TABLE 506.2 B: 150,000 SF H-3: 60,000 SF H-3: 70,432 SF (FRONTAGE INCREASE, SEE BELOW)
AREA FACTOR INCREASE DUE TO FRONTAGE	If=(F/P-0.25)W/30 F=12.5+66.1+37.5+28+179+89.5+58=470.6 P=318+179+376+89.5+58+89.5=1110 If=(470.6/1110-0.25)30/30=0.174
ALLOWABLE SF PER FRONTAGE INCREASE.	Aa=At+(NSx If) Aa=60000+(60000x0.174) Aa= 70,432 SF
ALLOWABLE HEIGHT: ALLOWABLE STORIES: PROPOSED BUILDING AREA: PROPOSED BUILDING HEIGHT:	160' PER TABLE 504.3 6 STORIES PER TABLE 504.4 REFER TO SITE DATA 1 STORY, 50' HIGH
FIRE-RESISTANCE RATING REQUIREMENTS	PER OSSC TABLE 601 AND 602
STRUCTURAL FRAME: EXTERIOR BEARING WALLS: INTERIOR BEARING WALLS: EXTERIOR NON-BEARING WALLS: INTERIOR NON-BEARING WALLS: FLOOR CONSTRUCTION: ROOF CONSTRUCTIONS AND ASSOCIATED SECONDARY MEMBERS	2 HRS. 2 HRS. 2 HRS. Per Table 602.<5' (3hr), >30' 0 hr. 0 HRS. 2 HRS. 1 HR.
FIRE PROTECTION	BUILDING IS EQUIPPED WITH AN AUTOMATIC FIRE PROTECTION SYSTEM THROUGHOUT IN ACCORDANCE WITH OSSC 903.3.1.1 FOR BUILDING 1 SPRINKLER SYSTEM SHALL BE DESIGNED FOR 32' CLEAR HIGH PILED STORAGE OF HIGH HAZARD COMMODITY THROUGHOUT. FOR BUILDING 2 SPRINKLER SYSTEM SHALL BE DESIGNED FOR 40' CLEAR HIGH PILED STORAGE OF HIGH HAZARD COMMODITY THROUGHOUT (AN ESFR FIRE-SPRINKLER SYSTEM, FIRE-PUMP AND IN-RACK SPRINKLER SYSTEM SHALL BE PROVIDED)
INTERIOR FINISH	B: CLASS B AND C: PER TABLE 803.9
EXIT ENCLOSURES AND PASSAGEWAYS:	B, CLASS B: FLAME SPREAD INDEX: 26-75; SMOKE DEVELOPED INDEX: 0-450 PER SECTION 803.1.1
ROOMS AND ENCLOSED SPACES:	B: CLASS C; FLAME SPREAD INDEX: 76-200; SMOKE DEVELOPED INDEX: 0-450 PER SECTION 803.1.1
EXIT TRAVEL DISTANCE (TABLE 1006.2.1)	
B OCCUPANCY:	COMMON PATH OF EGRESS TRAVEL DISTANCE DOES NOT EXCEED 100'-0" PER OSSC SECTION 1006.2.1, EXIT ACCESS TRAVEL DISTANCE DOES NOT EXCEED 300'-0" PER OSSC TABLE 1017.2
H3 OCCUPANCY:	COMMON PATH OF EGRESS TRAVEL DISTANCE DOES NOT EXCEED 25'-0" PER OSSC SECTION 1006.2.1 EXIT ACCESS TRAVEL DISTANCE DOES NOT EXCEED 150'-0" PER OSSC TABLE 1017.2
FREEZE PROTECTION:	
ACCESSIBLE PARKING/ACCESS TO SITE	SEE SITE PLAN FOR ACCESSIBLE PARKING STALL LOCATIONS AND ACCESS TO THE PUBLIC WAY

	REQUIRED	PROVIDED
STANDARD ACCESS	2	3
VAN ACCESSIBLE	1	1
TOTAL	3	4

2018 IECC

(2019 OREGON STRUCTURAL SPECIALITY CODE) CLIMATE ZONE 4C

ENVELOPE REQUIREMENTS PER TABLE C402.1.3	(REQUIRED)	(PROVIDED)
ROOF (INSULATION ABOVE DECK)	R-30 C.I.	R-30 C.I.
WALL ABOVE GRADE (MASS)	R9.5 C.I.	R9.5, AT THE OFFICE AREA

PROJECT TEAM

Owner:

RINCHEM COMPANY, INC.
5131 MASTHEAD STREET NE
ALBUQUERQUE, NM 87109
VOICE: 505-681-9124
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VICINITY MAP



N

VICINITY PLAN

N.T.S

MILDREN DESIGN GROUP

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Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

COVER SHEET

Revisions:

#	Description	Date

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Date: 08-05-2021

Drawn by: Author | Checked by: Checker

Job Number: 121029

Sheet

C-S

DESIGN REVIEW SUBMITTAL

C:\Users\JB\Revit\RinchemRinchem.rvt

EXCEPTIONS

THE FOLLOWING ITEMS WERE LISTED IN PRELIMINARY TITLE REPORT 7032-3605078, AND ARE LISTED BY THE SAID REPORT NUMBER HERE, WITH OUR COMMENTS IN BOLD:

6. WATER RIGHTS, CLAIMS TO WATER OR TITLE TO WATER, WHETHER OR NOT SUCH RIGHTS ARE A MATTER OF PUBLIC RECORD.
-NOT A SURVEY MATTER.

7. TAXES FOR THE YEAR 2020-2021

TAX AMOUNT $ 51.52
UNPAID BALANCE: $ 51.52 , PLUS INTEREST AND PENALTIES, IF ANY
CODE NO.: 007.56

MAP & TAX LOT NO.: 1N333DB00300
PROPERTY ID NO.: R1008572
(AFFECTS LOT 8 OF PARCEL I)
-NOT A SURVEY MATTER.

8. TAXES FOR THE YEAR 2020-2021

TAX AMOUNT $ 66.65
UNPAID BALANCE: $ 66.65 , PLUS INTEREST AND PENALTIES, IF ANY.
CODE NO.: 007.56

MAP & TAX LOT NO.: 1N333DB00400
PROPERTY ID NO.: R1008581
(AFFECTS LOT 9 OF PARCEL I)
-NOT A SURVEY MATTER.

9. TAXES FOR THE YEAR 2020-2021

TAX AMOUNT $ 31.39
UNPAID BALANCE: $ 31.39 , PLUS INTEREST AND PENALTIES, IF ANY.
CODE NO.: 007.56

MAP & TAX LOT NO.: 1N333DB00500
PROPERTY ID NO.: R1008590
(AFFECTS PARCEL II)
-NOT A SURVEY MATTER.

10. TAXES FOR THE YEAR 2020-2021

TAX AMOUNT $ 29.07
UNPAID BALANCE: $ 29.07 , PLUS INTEREST AND PENALTIES, IF ANY.
CODE NO.: 007.56

MAP & TAX LOT NO.: 1N333DB00600
PROPERTY ID NO.: R1008607
(AFFECTS PARCEL III)
-NOT A SURVEY MATTER.

11. EASEMENT AS SHOWN ON THE RECORDED PLAT/PARTITION

FOR: UTILITY
AFFECTS: SEE PLAT FOR EXACT LOCATION
-EASEMENTS APPEAR TO BE VACATED PER DOCUMENT NUMBER 2018-049592.

12. RESOLUTION AND ORDER
NO: 428

FILED: NOVEMBER 03, 1980
RECORDED: JANUARY 05, 1981 AS FEE NO. 81000234
FOR: SEWAGE PUMP STATION
-20'X20' SEWAGE PUMP STATION AFFECTS TAX LOT 400 OF TAX MAP 1N 3 33CA, AND DOES NOT APPEAR TO AFFECT THE SUBJECT PROPERTY.

13. COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN DEED.

RECORDED: MARCH 15, 1985
RECORDING INFORMATION: FEE NO. 85009174
-NOT A SURVEY MATTER.

14. EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:

RECORDING INFORMATION: FEBRUARY 11, 2008 AS FEE NO. 2008 011290
IN FAVOR OF: WASHINGTON COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF OREGON
FOR: PUBLIC ROAD, TEMPORARY CONSTRUCTION AND INCIDENTAL PURPOSES
(AFFECTS LOT NO. 9 OF PARCEL I)

RE-RECORDED FEBRUARY 22, 2008 AS FEE NO. 2008 015485
-TEMPORARY CONSTRUCTION EASEMENT ADJACENT TO THE NORTHERLY EAST LINE THAT APPEARS TO BE EXPIRED AS OF JULY 1, 2011.

15. EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN:

RECORDING INFORMATION: JULY 19, 2018 AS FEE NO. 2018 049592
IN FAVOR OF: THE CITY OF CORNELIUS, AN OREGON MUNICIPAL CORPORATION
FOR: PUBLIC UTILITY
-THIS IS A VACATION OF PUBLIC UTILITY EASEMENTS THAT FOLLOW THE SIDE LOT LINES OF THE PLAT OF "TENTH AVENUE INDUSTRIAL CENTER". THIS DEED ALSO CREATES AN 8.00 FOOT WIDE PUBLIC UTILITY EASEMENT ALONG THE RE-ALIGNED RIGHT-OF-WAY OF N HOLLIDAY STREET AND N 7TH COURT.

16. IN ORDER TO INSURE A TRANSACTION INVOLVING THE HEREIN NAMED TRUST, WE WILL NEED TO BE PROVIDED A CERTIFICATION OF TRUST PURSUANT TO ORS 130.800 THROUGH ORS 130.910.
-NOT A SURVEY MATTER.

17. UNRECORDED LEASES OR PERIODIC TENANCIES, IF ANY.
-NOT A SURVEY MATTER.

TABLE A ITEMS

2. ADDRESSES OF THE SURVEYED PROPERTY ARE AS SHOWN ON SHEET 3 – EXISTING CONDITIONS PLAN.

3. THIS PROPERTY IS IN ZONE X OF THE FLOOD INSURANCE RATE MAP, COMMUNITY OF CITY OF CORNELIUS, MAP NUMBER 41067C0319E WHICH BEARS AN EFFECTIVE DATE OF NOVEMBER 4, 2016 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE.

4. GROSS LAND AREA IS 10.27 ACRES.

5. VERTICAL DATUM: ELEVATIONS ARE BASED ON WASHINGTON COUNTY BENCHMARK NO. 470,. LOCATED IN FOREST GROVE AT THE SOUTHWEST CORNER OF THE INTERSECTION OF THE TV HIGHWAY AND THE PACIFIC HIGHWAY IN THE NORTHWEST CORNER OF A CONCRETE ISLAND. ELEVATION = 174.994 FEET (NGVD 29). CONTOUR INTERVAL IS 1 FOOT.

6A. NO ZONING REPORT WAS PROVIDED BY THE CLIENT, THE FOLLOWING INFORMATION WAS COLLECTED FROM CITY OF CORNELIUS ZONING CODE. THE SUBJECT PROPERTY IS ZONED GENERAL INDUSTRIAL M-1, CITY OF CORNELIUS MUNICIPAL CODE, TITLE 16 LAND DEVELOPMENT CODE, CHAPTER 18.55.050; DEVELOPMENT STANDARDS ARE AS FOLLOWS:

NO MINIMUM LOT SIZE IS DETERMINED BY THE CITY OF CORNELIUS
MINIMUM SETBACKS:

FRONT	20 FEET
REAR	0 FEET
INTERIOR SIDE	0 FEET
STREET SIDE (CORNER LOT)	0 FEET
MAXIMUM BUILDING HEIGHT:	35 FEET

6B. BUILDING SETBACK REQUIREMENTS ARE GRAPHICALLY DEPICTED ON SHEET 2 – BOUNDARY MAP.

8. SUBSTANTIAL FEATURES OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK ARE AS SHOWN ON SHEET 3 – EXISTING CONDITIONS PLAN.

11. UTILITIES SHOWN ARE BASED ON UNDERGROUND UTILITY LOCATE MARKINGS AS PROVIDED BY OTHERS, PER UTILITY LOCATE TICKET NUMBERS 20335706, 20335710 AND 20335712. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND LOCATES REPRESENT THE ONLY UTILITIES IN THE AREA. CONTRACTORS ARE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS PRIOR TO BEGINNING CONSTRUCTION.

13. NAMES OF ADJOINING OWNERS ACCORDING TO CURRENT TAX RECORDS ARE AS SHOWN ON SHEET 3 – EXISTING CONDITIONS PLAN.

14. THE SUBJECT PROPERTY IS ADJACENT TO THE INTERSECTION OF N HOLLADAY STREET AND N 7TH COURT.

15. RECTIFIED ORTHOPHOTOGRAPHY, PHOTOGRAMMETRIC MAPPING, REMOTE SENSING, AIRBORNE/MOBILE LASER SCANNING AND OTHER SIMILAR PRODUCTS, TOOLS OR TECHNOLOGIES AS THE BASIS FOR THE SHOWING THE LOCATION OF CERTAIN FEATURES (EXCLUDING BOUNDARIES) WHERE GROUND MEASUREMENTS ARE NOT OTHERWISE NECESSARY TO LOCATE THOSE FEATURES TO AN APPROPRIATE AND ACCEPTABLE ACCURACY RELATIVE TO A NEARBY BOUNDARY. THE SURVEYOR SHALL (A) DISCUSS THE RAMIFICATIONS OF SUCH METHODOLOGIES (E.G., THE POTENTIAL PRECISION AND COMPLETENESS OF THE DATA GATHERED THEREBY) WITH THE INSURER, LENDER, AND CLIENT PRIOR TO THE PERFORMANCE OF THE SURVEY, AND (B) PLACE A NOTE ON THE FACE OF THE SURVEY EXPLAINING THE SOURCE, DATE, PRECISION, AND OTHER RELEVANT QUALIFICATIONS OF ANY SUCH DATA.

16. THERE WAS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.

17. THERE ARE NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES THAT WERE FOUND AT THE TIME OF THIS SURVEY.

18. NO WETLANDS WERE DELINEATED FOR THIS SURVEY.

19. PLOTTABLE OFFSITE (I.E., APPURTENANT) EASEMENTS OR SERVITUDES DISCLOSED IN DOCUMENTS PROVIDED TO OR OBTAINED BY THE SURVEYOR AS A PART OF THIS SURVEY ARE AS SHOWN ON SHEET 3 – EXISTING CONDITIONS MAP.

LEGEND OF SYMBOLS & ABBREVIATIONS

FIRE HYDRANT		STORM SEWER CLEAN OUT	
WATER BLOWOFF		STORM SEWER CATCH BASIN	
WATER METER		STORM SEWER AREA DRAIN	
WATER VALVE		STORM SEWER MANHOLE	
SANITARY SEWER CLEAN OUT		GAS METER	
SANITARY SEWER MANHOLE		GAS VALVE	
SIGN		GUY WIRE ANCHOR	
STREET LIGHT		POWER POLE	
MAILBOX	MB	POWER VAULT	P
COMMUNICATIONS VAULT	C	POWER JUNCTION BOX	
COMMUNICATIONS JUNCTION BOX		POWER PEDESTAL	
COMMUNICATIONS RISER			

RIGHT-OF-WAY LINE
BOUNDARY LINE
PROPERTY LINE
CENTERLINE
DITCH
CURB
EDGE OF PAVEMENT
EASEMENT
FENCE LINE
GRAVEL EDGE
POWER LINE — PWR —
OVERHEAD WIRE — OHW —
COMMUNICATIONS LINE — COM —
FIBER OPTIC LINE — CFO —
GAS LINE — GAS —
STORM SEWER LINE — STM —
SANITARY SEWER LINE — SAN —
WATER LINE — WAT —

RECORD DESCRIPTION

RECORD DESCRIPTION PER EXHIBIT A OF TITLE REPORT NUMBER 7032-3605078.

PARCEL I:

LOTS 8 AND 9, TENTH AVENUE INDUSTRIAL CENTER (PLAT BOOK 43, PAGE 0021), IN THE CITY OF CORNELIUS, COUNTY OF WASHINGTON, STATE OF OREGON.
EXCEPTING THEREFROM THAT PORTION DESCRIBED IN DEED RECORDED OCTOBER 29, 1991 AS FEE NO. 91060090

PARCEL II

LOT 10, TENTH AVENUE INDUSTRIAL CENTER (PLAT BOOK 43, PAGE 0021), IN THE CITY OF CORNELIUS, COUNTY OF WASHINGTON, STATE OF OREGON.

PARCEL III

LOT 11, TENTH AVENUE INDUSTRIAL CENTER (PLAT BOOK 43, PAGE 0021), IN THE CITY OF CORNELIUS, COUNTY OF WASHINGTON, STATE OF OREGON. TOGETHER WITH THAT PORTION OF VACATED HOLLADAY STREET WHICH INURED THERETO BY ORDINANCE NO. 712 RECORDED AUGUST 09, 1991 AS FEE NO. 91043303.

N HOLLADAY ST LOTS
CORNELIUS, OR

LOCATED IN THE SOUTHEAST 1/4 OF SECTION 33,
TOWNSHIP 1 NORTH, RANGE 3 WEST, WILLAMETTE MERIDIAN,
CITY OF CORNELIUS, WASHINGTON COUNTY, OREGON

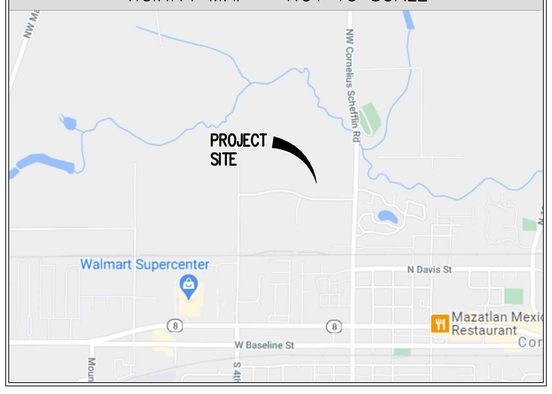
SHEET INDEX

SHEET 01 – COVER SHEET
SHEET 02 – BOUNDARY MAP
SHEET 03 – EXISTING CONDITIONS PLAN
SHEET 04 – AERIAL MAP

BASIS OF BEARINGS

THE BASIS OF BEARINGS IS PER A LOCAL DATUM PLANE DERIVED FROM OREGON STATE PLANE NORTH 3601 NAD83 (2011) EPOCH 2010.0000 BY HOLDING A PROJECT MEAN GROUND COMBINED SCALE FACTOR OF 1.0000910440 AND A MERIDIAN CONVERGENCE ANGLE OF -01°49'02" AT A CALCULATED CENTRAL PROJECT POINT WITH INTERNATIONAL FOOT GRID VALUES OF A NORTHING OF 688835.538, AND AN EASTING OF 7545556.547. OREGON STATE PLANE DATUM IS DERIVED BY TRIMBLE VRS NOW NETWORK.

VICINITY MAP – NOT TO SCALE



ALTA/NSPS LAND TITLE SURVEY

for

RCI PROPERTIES, LLC
5131 MASTHEAD ST NE
ALBUQUERQUE, NM 87109

BASED UPON TITLE REPORT NUMBER 7032-3605078
OF FIRST AMERICAN TITLE COMPANY
BEARING AN EFFECTIVE DATE OF NOVEMBER 2, 2020

SURVEYORS CERTIFICATE:

TO: RCI PROPERTIES, LLC, AND/OR THEIR ASSIGNS, AND FIRST AMERICAN TITLE INSURANCE COMPANY NAME AND ITS SUCCESSORS AND ASSIGNS.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 6A, 6B, 8, 11, 13, 14, 15, 16, 17, 18 AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 14, 2020.

DATE OF MAP: 12/22/2020

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON LS 70652
NICK WHITE
12965 SW HERMAN ROAD, SUITE 100
TUALATIN, OR 97062
PHONE: (503) 563-6151

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
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503.563.6151
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ALTA/NSPS LAND TITLE SURVEY
CORNELIUS OREGON
TAX LOTS 300, 400, 500 AND 600 WASHINGTON COUNTY TAX MAP IN 3 33DB

COVER SHEET

DESIGNED BY:
DRAWN BY: CC/WF
MANAGED BY: CC
CHECKED BY: NW
DATE: 12/22/2020

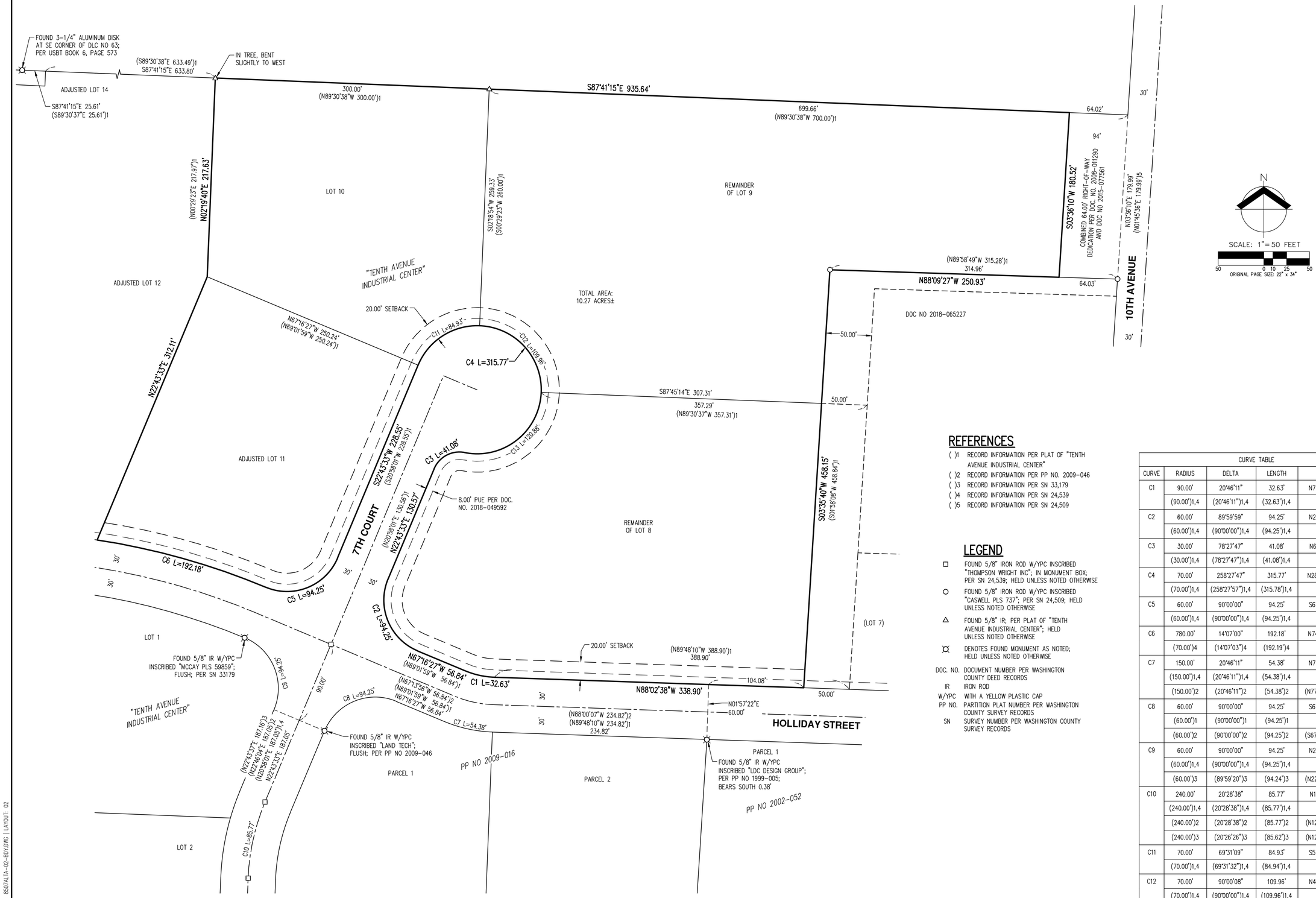
REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 9, 2007
NICK WHITE
70652LS
RENEWS: 6/30/22

REVISIONS

JOB NUMBER
8507

SHEET
01

AKS DRAWING FILE: 8507ALTA-01-COVER.DWG | LAYOUT: LAYOUT1



REFERENCES

( )1 RECORD INFORMATION PER PLAT OF "TENTH AVENUE INDUSTRIAL CENTER"
( )2 RECORD INFORMATION PER PP NO. 2009-046
( )3 RECORD INFORMATION PER SN 33,179
( )4 RECORD INFORMATION PER SN 24,539
( )5 RECORD INFORMATION PER SN 24,509

LEGEND

□ FOUND 5/8" IRON ROD W/YPC INSCRIBED "THOMPSON WRIGHT INC"; IN MONUMENT BOX; PER SN 24,539; HELD UNLESS NOTED OTHERWISE
○ FOUND 5/8" IRON ROD W/YPC INSCRIBED "CASWELL PLS 737"; PER SN 24,509; HELD UNLESS NOTED OTHERWISE
△ FOUND 5/8" IR; PER PLAT OF "TENTH AVENUE INDUSTRIAL CENTER"; HELD UNLESS NOTED OTHERWISE
⊠ DENOTES FOUND MONUMENT AS NOTED; HELD UNLESS NOTED OTHERWISE

DOC. NO. DOCUMENT NUMBER PER WASHINGTON COUNTY DEED RECORDS
IR IRON ROD
W/YPC WITH A YELLOW PLASTIC CAP
PP NO. PARTITION PLAT NUMBER PER WASHINGTON COUNTY SURVEY RECORDS
SN SURVEY NUMBER PER WASHINGTON COUNTY SURVEY RECORDS

CURVE TABLE				
CURVE	RADIUS	DELTA	LENGTH	CHORD
C1	90.00'	20°46'11"	32.63'	N77°39'32"W 32.45'
	(90.00')1,4	(20°46'11")1,4	(32.63')1,4	(32.45')1,4
C2	60.00'	89°59'59"	94.25'	N22°16'27"W 84.85'
	(60.00')1,4	(90°00'00")1,4	(94.25')1,4	(84.85')1,4
C3	30.00'	78°27'47"	41.08'	N61°57'27"E 37.95'
	(30.00')1,4	(78°27'47")1,4	(41.08')1,4	(37.95')1,4
C4	70.00'	258°27'47"	315.77'	N28°02'33"W 108.44'
	(70.00')1,4	(258°27'57")1,4	(315.78')1,4	
C5	60.00'	90°00'00"	94.25'	S67°43'33"W 84.85'
	(60.00')1,4	(90°00'00")1,4	(94.25')1,4	(84.85')1,4
C6	780.00'	14°07'00"	192.18'	N74°19'57"W 191.69'
	(70.00')4	(14°07'03")4	(192.19')4	(191.70')4
C7	150.00'	20°46'11"	54.38'	N77°39'32"W 54.08'
	(150.00')1,4	(20°46'11")1,4	(54.38')1,4	(54.08')1,4
	(150.00')2	(20°46'11")2	(54.38')2	(N77°37'02"W 54.08')2
C8	60.00'	90°00'00"	94.25'	S67°43'33"W 84.85'
	(60.00')1	(90°00'00")1	(94.25')1	(84.85')1
	(60.00')2	(90°00'00")2	(94.25')2	(S67°46'04"W 84.85')2
C9	60.00'	90°00'00"	94.25'	N22°16'27"W 84.85'
	(60.00')1,4	(90°00'00")1,4	(94.25')1,4	(84.85')1,4
	(60.00')3	(89°59'20")3	(94.24')3	(N22°16'03"W 84.84')3
C10	240.00'	20°28'38"	85.77'	N12°29'14"E 85.32'
	(240.00')1,4	(20°28'38")1,4	(85.77')1,4	(85.32')1,4
	(240.00')2	(20°28'38")2	(85.77')2	(N12°31'45"E 85.32')2
	(240.00')3	(20°26'26")3	(85.62')3	(N12°30'24"E 85.17')3
C11	70.00'	69°31'09"	84.93'	S57°29'08"W 79.82'
	(70.00')1,4	(69°31'32")1,4	(84.94')1,4	(79.83')1,4
C12	70.00'	90°00'08"	109.96'	N42°45'14"W 99.00'
	(70.00')1,4	(90°00'00")1,4	(109.96')1,4	(98.99')1,4
C13	70.00'	98°56'30"	120.88'	N51°43'05"E 106.41'
	(70.00')1,4	(98°56'25")1,4	(120.88')1,4	(106.41')1,4

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ALTA/NSPS LAND TITLE SURVEY

CORNELIUS OREGON
TAX LOTS 300, 400, 500 AND 600
WASHINGTON COUNTY TAX MAP 1N 3 33DB

BOUNDARY MAP

DESIGNED BY:
DRAWN BY: CC/WF
MANAGED BY: CC
CHECKED BY: NW
DATE: 12/22/2020

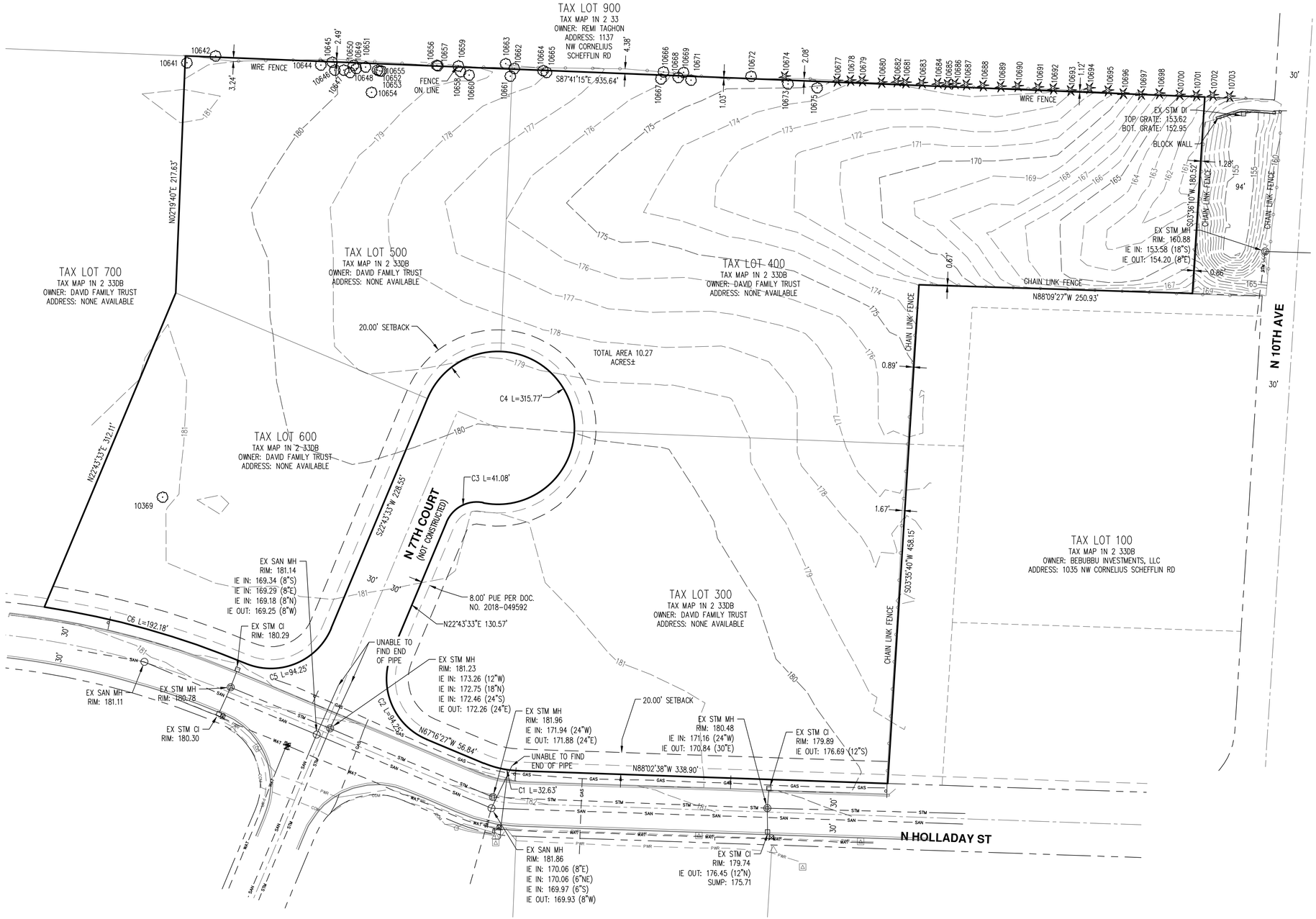
REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 9, 2007
NICK WHITE
70652LS
RENEWS: 6/30/22

REVISIONS

JOB NUMBER 8507

SHEET 02

AKS DRAWING FILE: 8507ALTA-02-BDY.DWG | LAYOUT: 02



TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10369	DECIDUOUS	6
10641	DECIDUOUS	6,7,8
10642	DECIDUOUS	36
10644	DECIDUOUS	6
10645	DECIDUOUS	9
10646	DECIDUOUS	8
10647	DECIDUOUS	8
10648	DECIDUOUS	6
10649	DECIDUOUS	18
10650	DECIDUOUS	18
10651	DECIDUOUS	10
10652	DECIDUOUS	7
10653	DECIDUOUS	7
10654	DECIDUOUS	7
10655	DECIDUOUS	6
10656	DECIDUOUS	6,6,7,9
10657	DECIDUOUS	11
10658	DECIDUOUS	6
10659	DECIDUOUS	6,7
10660	DECIDUOUS	6
10661	DECIDUOUS	6
10662	DECIDUOUS	10
10663	DECIDUOUS	6
10664	DECIDUOUS	12,12
10665	DECIDUOUS	10
10666	DECIDUOUS	10
10667	DECIDUOUS	7
10668	DECIDUOUS	12
10669	DECIDUOUS	10
10671	DECIDUOUS	10

TREE TABLE		
TREE NUMBER	TYPE	DBH (IN.)
10672	DECIDUOUS	10
10673	DECIDUOUS	13
10674	CONIFEROUS	14
10675	DECIDUOUS	13
10677	CONIFEROUS	18
10678	CONIFEROUS	23
10679	CONIFEROUS	12
10680	CONIFEROUS	31
10681	CONIFEROUS	24
10682	CONIFEROUS	15
10683	CONIFEROUS	18
10684	CONIFEROUS	22
10685	CONIFEROUS	24
10686	CONIFEROUS	24
10687	CONIFEROUS	24
10688	CONIFEROUS	23
10689	CONIFEROUS	29
10690	CONIFEROUS	24
10691	CONIFEROUS	30
10692	CONIFEROUS	30
10693	CONIFEROUS	28
10694	CONIFEROUS	24
10695	CONIFEROUS	25
10696	CONIFEROUS	22
10697	CONIFEROUS	20
10698	CONIFEROUS	20
10700	CONIFEROUS	17
10701	CONIFEROUS	15
10702	CONIFEROUS	14
10703	CONIFEROUS	19

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ALTA/NSPS LAND TITLE SURVEY

CORNELIUS OREGON
TAX LOTS 300, 400, 500 AND 600 | WASHINGTON COUNTY TAX MAP 1N 2 33DB

EXISTING CONDITIONS MAP

DESIGNED BY:
DRAWN BY: CC/WF
MANAGED BY: CC
CHECKED BY: NW
DATE: 12/22/2020

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JANUARY 9, 2007
NICK WHITE
70652LS
RENEWS: 6/30/22

REVISIONS

JOB NUMBER
8507

SHEET
03

AKS DRAWING FILE: 8507ALTA-03-EXCOND.DWG | LAYOUT: 03



AERIAL MAP

ALTA/NSPS LAND TITLE SURVEY

CORNELIUS **OREGON**

TAX LOTS 300, 400, 500 AND 600 — WASHINGTON COUNTY TAX MAP 1N 3 33DB

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON JULY 17, 2007 JACK WHITE 70852LS RENEWS: 6/30/22

REVISIONS

DESIGNED BY:
DRAWN BY: CC/MF
MANAGED BY: CC
CHECKED BY: NW
DATE: 12/22/2020

JOB NUMBER 8507

SHEET 04

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DR SET 06-18-2021

MILDREN DESIGN GROUP

ARCHITECTURE | INTERIORS

4875 SW Griffith Drive Suite 300
Beaverton OR, 97005
(503) 244-0552

Client/ Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

RENDERING
Street View-
East Entry

Revisions:

#	Description	Date

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Date: Issue Date

Drawn by: Author | Checked by: Checker

Job Number: 121029

Sheet

A0.1

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DR SET 06-18-2021

MILDREN DESIGN GROUP
ARCHITECTURE | INTERIORS
4875 SW Griffith Drive Suite 300
Beaverton OR, 97005
(503) 244-0552

Client/ Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

RENDERING
Phasing

Revisions:

#	Description	Date

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Date: Issue Date

Drawn by: Checked by:

Author Checker

Job Number: 121029

Sheet

A0.2

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GENERAL GRADING NOTES (GGN)

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE JURISDICTION AND THE PROJECT GEOTECHNICAL INVESTIGATION.
2. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL NOTIFY THE OREGON UTILITY NOTIFICATION CENTER (800 332 2344) THREE BUSINESS DAYS PRIOR TO ANY EXCAVATION.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF PRIVATE UTILITIES SUCH AS GAS, TELEPHONE, POWER, DATA, ETC. CONFIRM VAULT LOCATIONS WITH THE ARCHITECT.
5. THE CONTRACTOR SHALL KEEP THE ARCHITECT AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 48-HOUR NOTICE IS REQUIRED.
6. EXISTING CONDITIONS BASED ON TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY PREPARED BY AKS ENGINEERING & FORESTRY, LLC AND PROVIDED MARCH 2021.
7. FINISHED GRADES ARE TO BE BROUGHT TO WITHIN 0.08 FT. IN 10 FT. OF THE GRADES SHOWN AT SUBGRADE AND TO WITHIN 0.03 FT. IN 10 FT. AT FINISH GRADE. CONTRACTOR TO ALLOW FOR PLACEMENT OF REQUIRED TOPSOIL AND PLANTINGS IN ROUGH GRADING.
8. GRADING ELEVATIONS AS SHOWN ON PLANS ARE FINISHED GRADE, WHICH INCLUDES PAVING, BASE ROCK, AND SUBGRADE SOIL. GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE GRADING WITH BOTH EXCAVATOR AND PAVING CONTRACTOR.
9. SEE PROJECT GEOTECHNICAL ANALYSIS FOR ASPHALT AND CONCRETE PAVING AND BASE ROCK THICKNESS AND FOR EXCAVATION, FILL, AND COMPACTION REQUIREMENTS.
10. ELEVATIONS SHOWN AT FUTURE BUILDINGS ARE FINISHED GRADES, INCLUDING BASE ROCK, CONCRETE SLABS, WALKS, ETC. FUTURE TRUCK GRADING NOT SHOWN, GRADING IN AREA OF FUTURE TRUCK DOCKS IS FINISHED GRADE, INCLUDING LANDSCAPE, TOPSOIL, ETC. IF GROUND COVER FOR THIS AREA IS NOT SHOWN ON LANDSCAPE PLANS CONTACT LANDSCAPE ARCHITECT FOR TEMPORARY PLANTING REQUIREMENTS.
11. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN CONSISTENT WITH CITY OF CORNELIUS AND CLEAN WATER SERVICES (CWS) REQUIREMENTS, AND OBTAIN APPROVAL OF THE PLAN FROM BOTH JURISDICTIONS PRIOR TO PROCEEDING WITH DEWATERING.
12. THE CONTRACTOR SHALL CLEAN ALL CATCH BASINS AND STORM LINES IMPACTED BY SITE DEVELOPMENT FOLLOWING COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE CITY OF CORNELIUS AND CWS. NO SEDIMENT SHALL BE ALLOWED TO ENTER NEW OR EXISTING INLETS.

GENERAL UTILITY NOTES (GUN)

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE JURISDICTION.
2. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE PLUMBING CODE, BUILDING CODE, AND THE FIRE CODE.
3. THE CONTRACTOR SHALL HAVE A FULL SET OF THE CURRENT APPROVED CONSTRUCTION DOCUMENTS INCLUDING ADDENDA ON THE PROJECT SITE AT ALL TIMES.
4. THE CONTRACTOR SHALL NOTIFY THE OREGON UTILITY NOTIFICATION CENTER (800 332 2344) THREE BUSINESS DAYS PRIOR TO ANY EXCAVATION.
5. EXISTING CONDITIONS BASED ON TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY PREPARED BY AKS ENGINEERING & FORESTRY, LLC AND PROVIDED MARCH 2021.
6. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF PRIVATE UTILITIES SUCH AS GAS, TELEPHONE, POWER, CABLE TELEVISION, ETC. CONFIRM VAULT LOCATIONS WITH ARCHITECT.
7. THE CONTRACTOR SHALL KEEP THE ARCHITECT AND JURISDICTION INFORMED OF CONSTRUCTION PROGRESS TO FACILITATE SITE OBSERVATIONS AT REQUIRED INTERVALS. 48-HOUR NOTICE IS REQUIRED.
8. THE CONTRACTOR SHALL VERIFY AND CONFIRM EXISTING CONDITIONS. EXISTING UTILITIES AND POINTS OF CONNECTION TO EXISTING UTILITIES AND LOCATIONS WHERE NEW UTILITIES WILL CROSS EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR BY POTHOLING PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE POTHOLING SUCH THAT IF CONFLICTS ARE ENCOUNTERED, SUFFICIENT TIME EXISTS TO PREPARE MODIFIED DESIGNS AND HAVE THE MODIFICATIONS APPROVED BY THE JURISDICTION WITHOUT IMPACTING THE PROJECT SCHEDULE.
9. THIS PLAN IS GENERALLY DIAGRAMMATIC. IT DOES NOT SHOW EVERY JOINT, BEND, FITTING, OR ACCESSORY REQUIRED FOR CONSTRUCTION.
10. INSTALL CLEANOUTS AT 100' MAX. AND AT ALL LATERALS PER CODE. PROVIDE CLEANOUTS AS REQUIRED BY THE CURRENT OREGON PLUMBING SPECIALTY CODE. NOT ALL REQUIRED CLEANOUTS ARE SHOWN.
11. UTILITIES WITHIN 24" OF A BUILDING SHALL BE CONSTRUCTED OF MATERIALS APPROVED FOR INTERIOR USE AS DESCRIBED IN THE CURRENT EDITION OF THE PLUMBING CODE.
12. CHANGES IN DIRECTION OF DRAINAGE AND SEWER PIPING SHALL BE MADE BY THE APPROPRIATE USE OF APPROVED FITTINGS AND SHALL BE OF THE ANGLES PRESENTED BY ONE-SIXTEENTH BEND, ONE-EIGHTH BEND, ONE-SIXTH BEND OR OTHER APPROVED FITTINGS OF EQUIVALENT SWEEP.
13. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN CONSISTENT WITH CITY OF CORNELIUS AND CLEAN WATER SERVICES (CWS) REQUIREMENTS, AND OBTAIN APPROVAL OF THE PLAN FROM BOTH JURISDICTIONS PRIOR TO PROCEEDING WITH DEWATERING.
14. THE CONTRACTOR SHALL CLEAN ALL CATCH BASINS AND STORM LINES IMPACTED BY SITE DEVELOPMENT FOLLOWING COMPLETION OF CONSTRUCTION OR AS DIRECTED BY THE CITY OF CORNELIUS AND CWS. NO SEDIMENT SHALL BE ALLOWED TO ENTER THE STORM SYSTEM.
15. COORDINATE WITH CITY OF CORNELIUS FOR PROVISION OF NEW FIRE TAP AND SERVICES AND NEW DOMESTIC WATER TAP, SERVICE PIPE, AND METER AT NORTH HOLLADAY STREET FRONTAGE. ALL CONNECTIONS TO EXISTING PUBLIC WATER MAIN (WET TAPS) TO BE BY CITY OF CORNELIUS APPROVED CONTRACTORS, AS A SUBCONTRACTOR TO THE PROJECT GENERAL CONTRACTOR. CONTRACTOR TO INSTALL DOMESTIC SERVICE PIPE FROM METER TO BUILDING RISER ROOM AND INSTALL CITY OF CORNELIUS APPROVED DOMESTIC REDUCED PRESSURE TYPE BACKFLOW PREVENTER IN VAULT ADJACENT TO THE METERS. SIZE OF DOMESTIC SERVICE, CAPACITY OF METER, BUILDING DOMESTIC WATER DEMAND AND SIZE OF PIPING TO BUILDING IS ASSUMED AND TO BE DETERMINED BY BUILDING PLUMBING DESIGNER PRIOR TO CONSTRUCTION OR ORDERING MATERIAL. CONTRACTOR TO CONFIRM REQUIRED BACKFLOW PREVENTER TYPE PRIOR TO CONSTRUCTION OR ORDERING MATERIALS; COORDINATE WITH BUILDING PLUMBING DESIGNER. REDUCED PRESSURE BACKFLOW PREVENTER TO BE INSTALLED IN ABOVE GRADE HEATED AND INSULATED ENCLOSURE. PROVIDE POWER SOURCE FROM BUILDING FOR ENCLOSURE, COORDINATE WITH PROJECT ELECTRICAL DESIGNER FOR DEDICATED CIRCUIT FOR ENCLOSURE. CONTRACTOR TO DETERMINE IF REMOTE METER READER IS REQUIRED AND PROVIDE AS DIRECTED BY CITY OF CORNELIUS. IRRIGATION CONNECTION IS TO BE DOWNSTREAM OF BUILDING WATER METER AND TO BE OF CITY OF CORNELIUS APPROVED TYPE. SEE LANDSCAPE PLANS FOR DISCUSSION OF IRRIGATION BACKFLOW PREVENTER AND CONTINUATION TO IRRIGATION SYSTEM. NO CONNECTIONS MAY OCCUR BETWEEN DOMESTIC METER AND BACKFLOW PREVENTER.
16. FIRE DCDA TO SERVE SITE AND BUILDING TO BE INSTALLED AT RIGHT OF WAY WITH SIZE TO BE DETERMINED BY CONTRACTOR IN CONSULTATION WITH BUILDING FIRE SYSTEM DESIGNER. FIRE LINE PIPE SIZE, HYDRANT PIPE SIZE, AND DCDA SIZE IS ASSUMED AND TO BE DETERMINED BY BUILDING FIRE SYSTEM DESIGNER BASED ON THEIR FLOW TESTING. ALL SITE FIRE PIPING, FDC PIPING, AND HYDRANT PIPING TO BE FULLY MECHANICALLY RESTRAINED WITH PRODUCTS APPROVED BY THE CITY OF CORNELIUS.
17. INSTALL AUTOMATIC DRAIN VALVE IN VAULT AT LOW POINT OF FDC LINE. PROVIDE DRAINAGE FROM VAULT TO CITY OF CORNELIUS APPROVED LOCATION. SIZE OF FDC PIPE IS ASSUMED AND TO BE DETERMINED BY BUILDING FIRE SYSTEM DESIGNER. FDC TO CONFORM TO REQUIREMENTS OF CITY OF CORNELIUS FIRE DEPARTMENT.
18. WATER LINE, FITTINGS, VALVES, HYDRANTS, AND COMPONENTS TO CONFORM TO THE REQUIREMENTS OF CITY OF CORNELIUS AND BE FULLY MECHANICALLY RESTRAINED. HYDRANTS TO ALSO CONFORM TO REQUIREMENTS OF CITY OF CORNELIUS FIRE DEPARTMENT.
19. PROVIDE MINIMUM 36" OF COVER OVER FIRE, FDC, DOMESTIC WATER SERVICE AND HYDRANT PIPES.
20. BUILDING SANITARY PIPE SIZE IS ASSUMED AND TO BE CONFIRMED BY BUILDING PLUMBING DESIGNER BASED ON THEIR CALCULATION OF DESIGN FIXTURE DISCHARGE. SEE BUILDING PLUMBING PLANS FOR SANITARY CONTINUATION WITHIN BUILDING.
21. CONTRACTOR TO CONNECT BUILDING SANITARY SEWER SERVICE LATERAL TO EXISTING PUBLIC SANITARY SERVICE IN CONFORMANCE WITH CITY OF CORNELIUS REQUIREMENTS. LOCATION OF CONNECTION TO SERVICE LATERAL SHOWN ON PLANS IS APPROXIMATE AND DEPTH IS NOT KNOWN. CONTRACTOR TO LOCATE LATERAL AND DETERMINE DEPTH BY POTHOLING PRIOR TO CONSTRUCTION OF ANY PORTION OF THE ON-SITE SANITARY SYSTEM AND PRIOR TO ORDERING MATERIALS.
22. CONTRACTOR TO CONNECT SITE STORM DISCHARGE PIPE TO EXISTING PUBLIC STORM LATERAL IN CONFORMANCE WITH CITY OF CORNELIUS REQUIREMENTS. LOCATION OF CONNECTION TO SERVICE LATERAL SHOWN ON PLANS IS APPROXIMATE AND DEPTH IS NOT KNOWN. CONTRACTOR TO LOCATE LATERAL AND DETERMINE DEPTH BY POTHOLING PRIOR TO CONSTRUCTION OF ANY PORTION OF THE ON-SITE STORM SYSTEM AND PRIOR TO ORDERING MATERIALS.
23. STORM SHUT OFF VALVES SHOWN ARE FOR SPILL CONTAINMENT. SEE SEPARATE CONTAINMENT PLANS BY OTHERS FOR SPECIFIC INFORMATION ON VALVES, OPERATORS, CONTROLS, ETC.

LEGEND

	PROPOSED	EXISTING
PROJECT BOUNDARY		
PROPERTY LINE		
EASEMENT LINE		
FENCE		X X
CURB		
EDGE OF PAVEMENT		
1' CONTOUR	121	121
5' CONTOUR	120	120
STORM SEWER LINE	SD	STM
WATER LINE		WAT
FIRE DEPT. CONNECTION LINE	FDC	
FIRE WATER LINE	FW	
DOMESTIC WATER LINE	DW	
SANITARY SEWER LINE	SS	SAN
GAS LINE		GAS
OVERHEAD UTILITY WIRE		OHW
UNDERGROUND POWER LINE		PWR
COMMUNICATION LINE		COM
FLOODPLAIN BOUNDARY		
EXISTING FEATURE OR CONDITION		(E)
CATCH BASIN	CB	
TOP OF CURB	TC	
GUTTER	G	
TOP OF STEP	TS	
BOTTOM OF STEP	BS	
TOP OF WALL	TW	
BOTTOM OF WALL AT FINISHED GRADE	BW	
FINISHED GRADE	FG	
FOOTING	FTG	
PERFORATED PIPE	PERF	
DUCTILE IRON	D.I.	
BACKFLOW PREVENTER	BFP	
BOTTOM	BOT	
CLEAN WATER SERVICES	CWS	
GENERAL GRADING NOTES	GGN	
GENERAL UTILITY NOTES	GUN	
DECIDUOUS TREE		
CONIFEROUS TREE		

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Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon 97113

Sheet Title:

GENERAL NOTES & LEGEND

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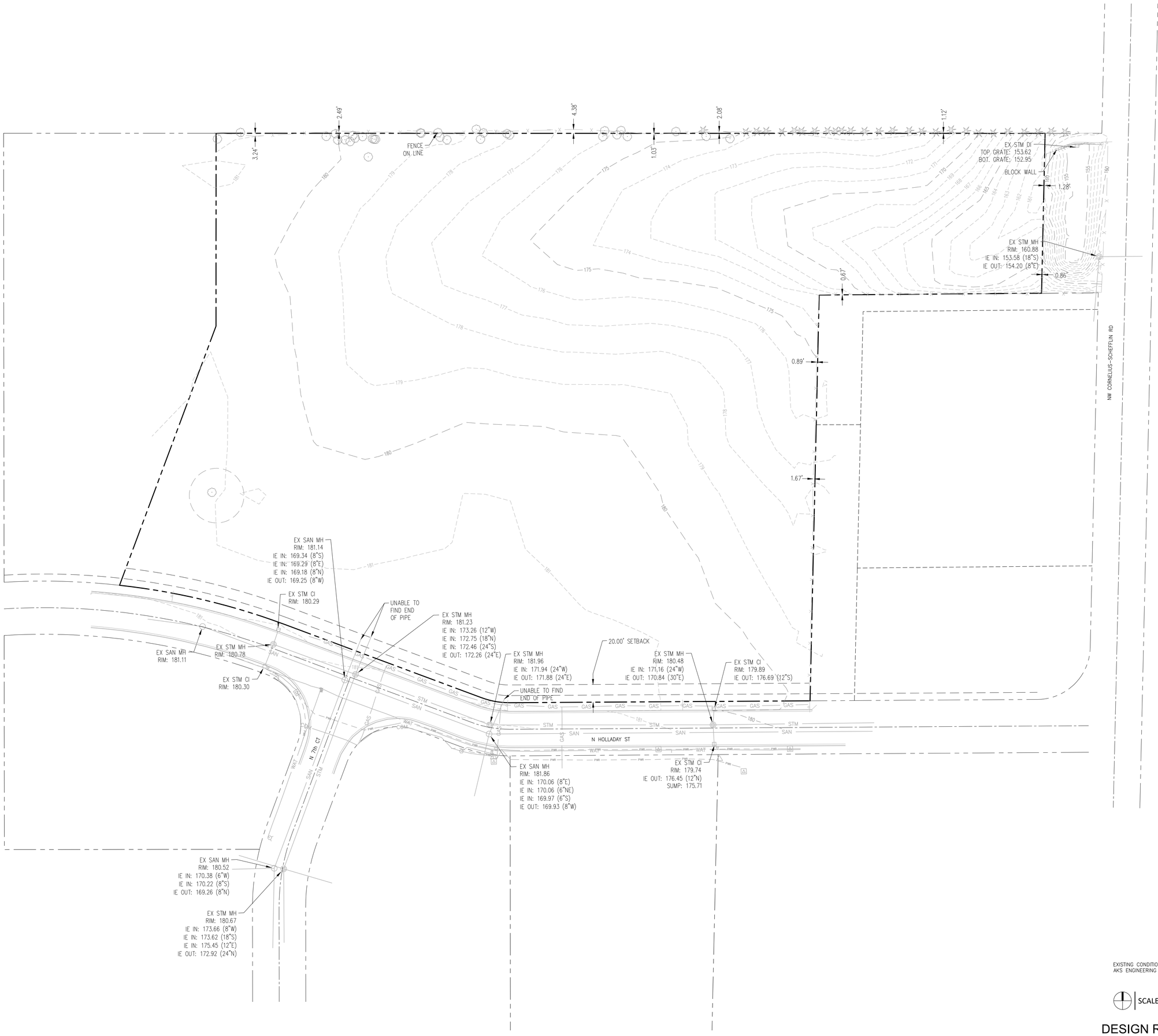
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EXISTING CONDITIONS INFORMATION PROVIDED BY AKS ENGINEERING & FORESTRY, DATED MARCH 2021.

SCALE: 1" = 40'

0 20 40 80

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EXISTING CONDITIONS PLAN

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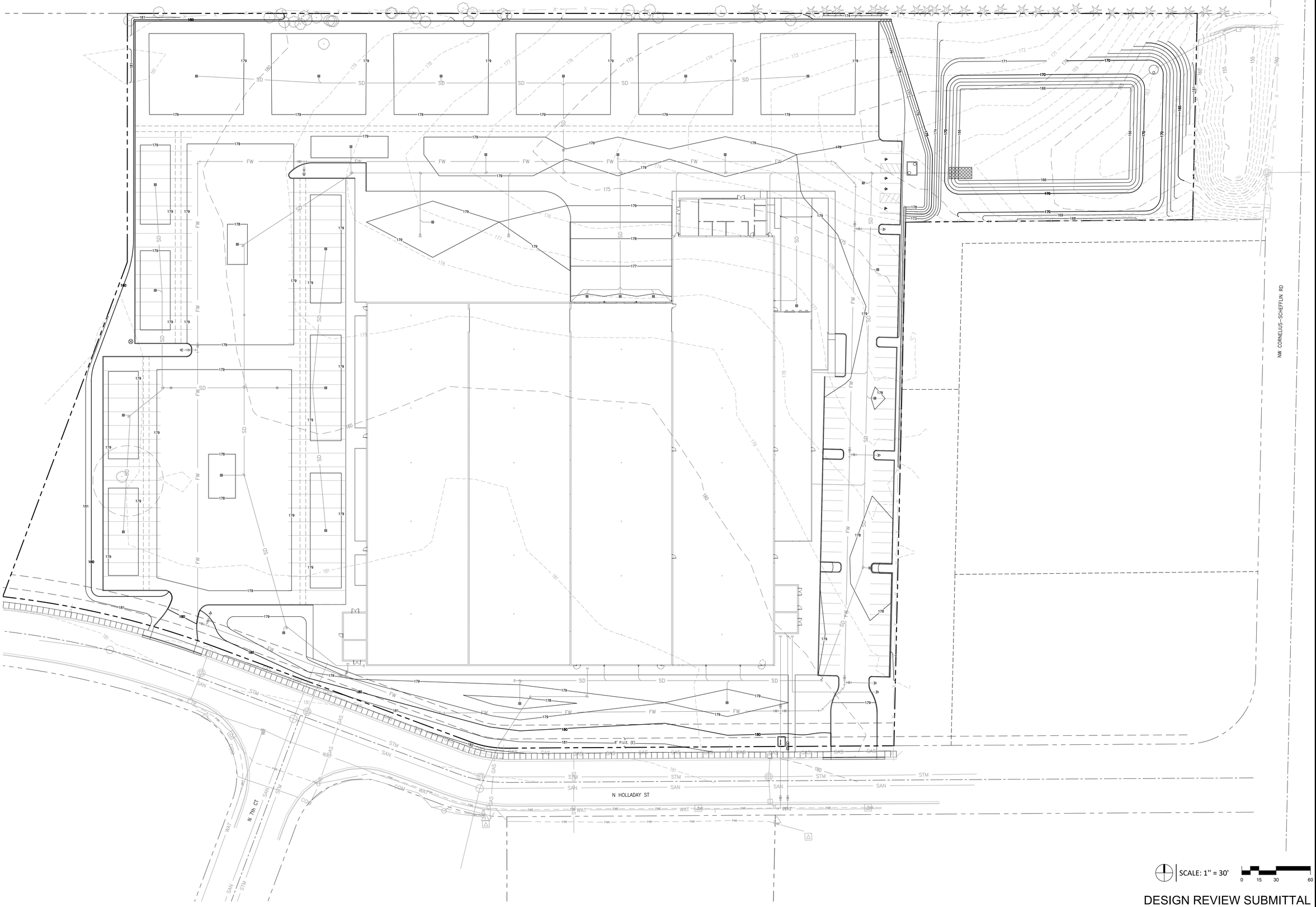
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SCALE: 1'' = 30'

0 15 30 60

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GRADING PLAN

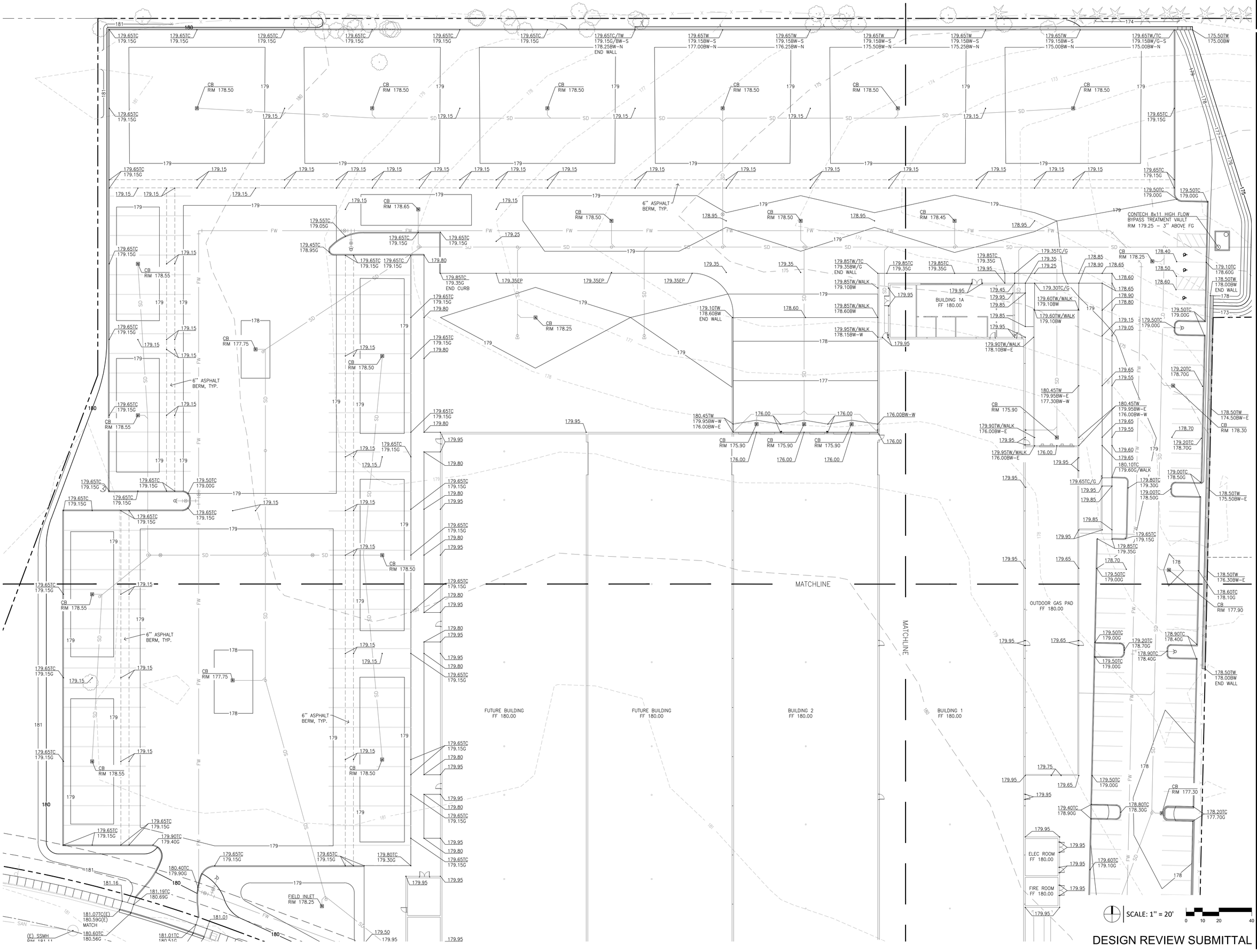
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GRADING PLAN NORTHWEST

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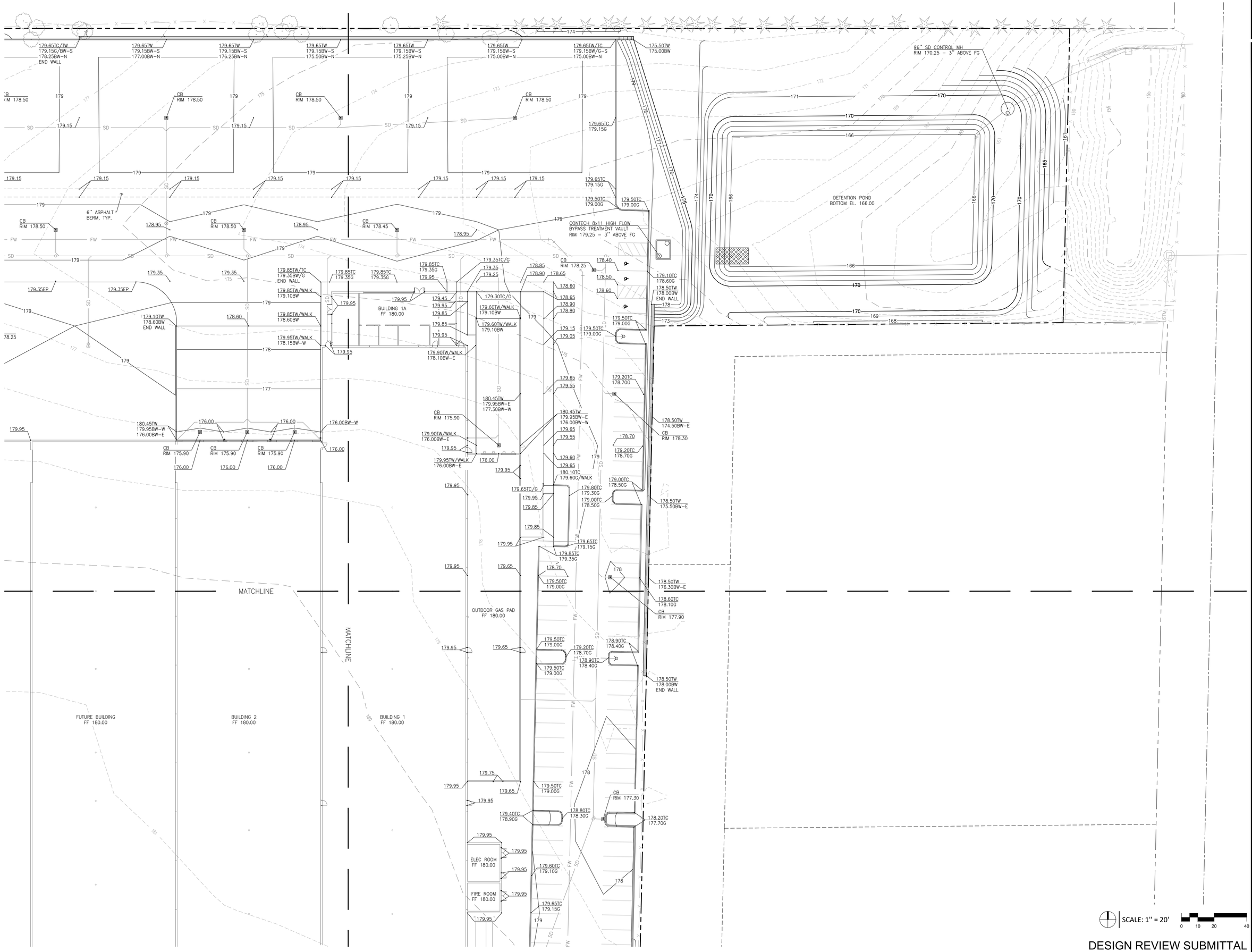
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SCALE: 1" = 20'

0 10 20 40

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MATCHLINE

MATCHLINE

FUTURE BUILDING
FF 180.00

FUTURE BUILDING
FF 180.00

BUILDING 2
FF 180.00

BUILDING 1
FF 180.00

OUTDOOR GAS PAD
FF 180.00

ELEC ROOM
FF 180.00

FIRE ROOM
FF 180.00

6" ASPHALT
BERM, TYP.

FIELD INLET
RIM 178.25

FIELD INLET
RIM 177.50

FIELD INLET
RIM 178.25

(E) SSMH
RIM 181.14

(E) SDMH
RIM 181.23

(E) SDMH
RIM 181.96

(E) SSMH
RIM 181.86

(E) SDMH
RIM 180.48

8' P.U.E. (E)

N HOLLADAY ST

N 7th CT

SCALE: 1" = 20'

0 10 20 40

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GRADING PLAN SOUTHEAST

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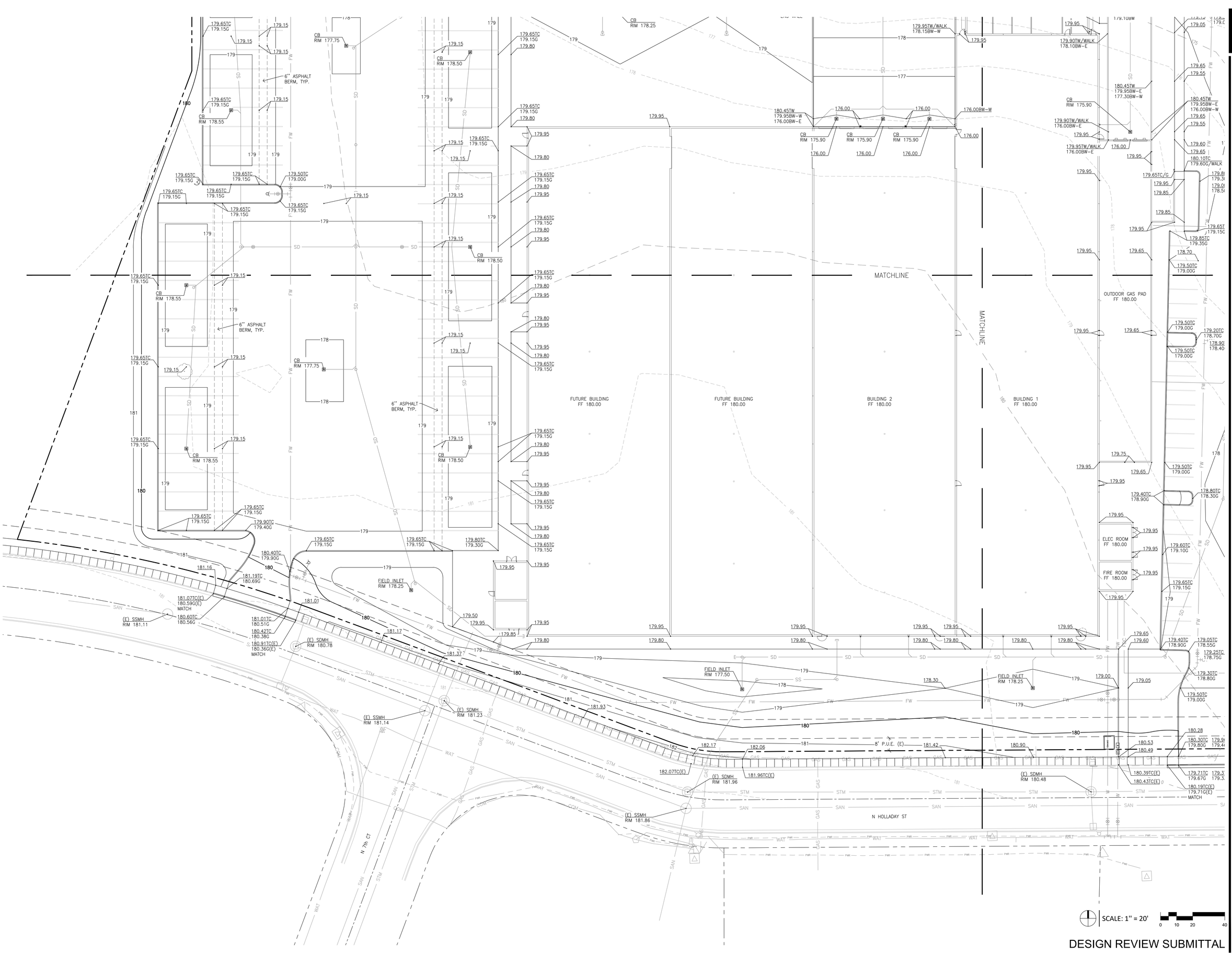
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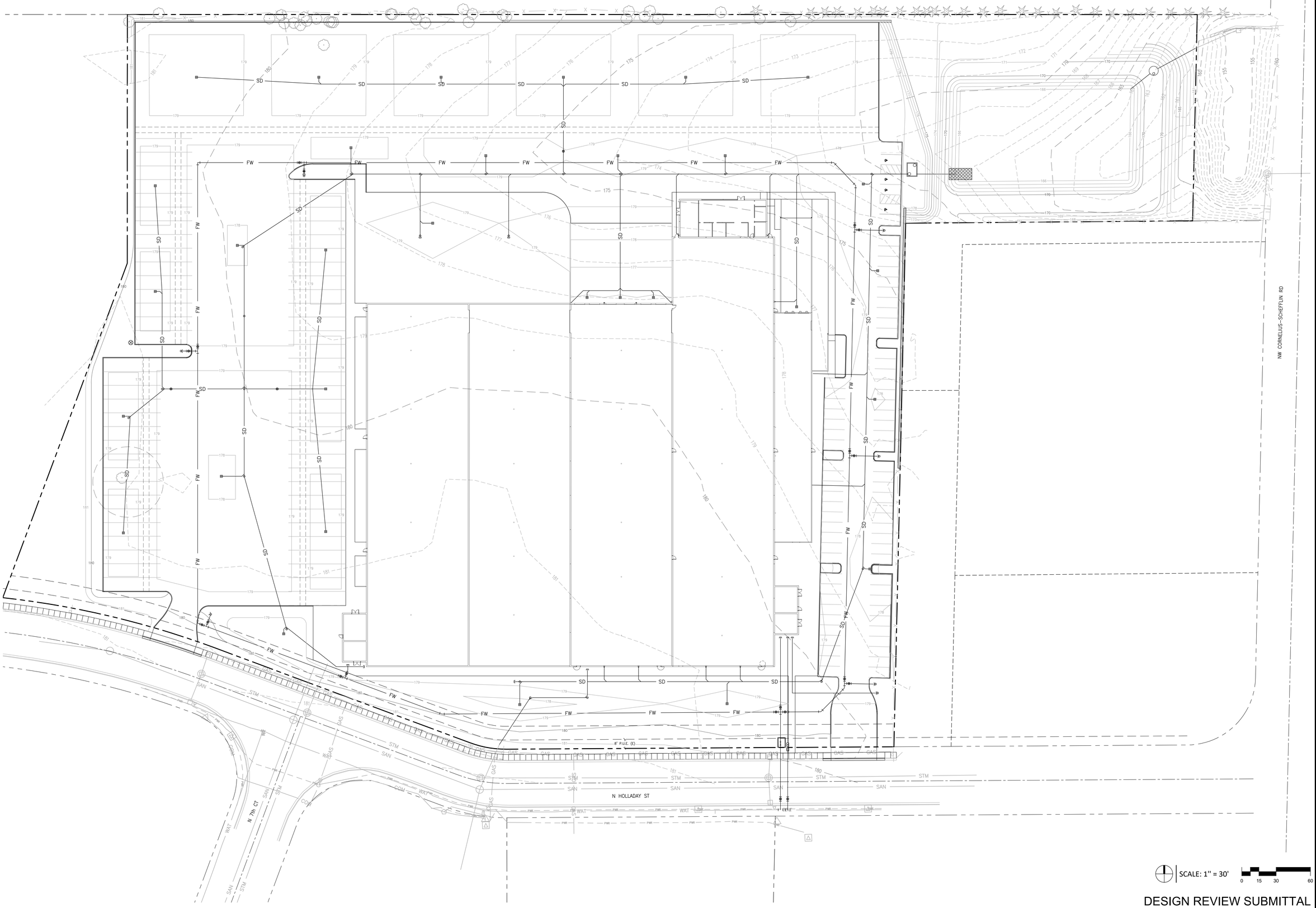
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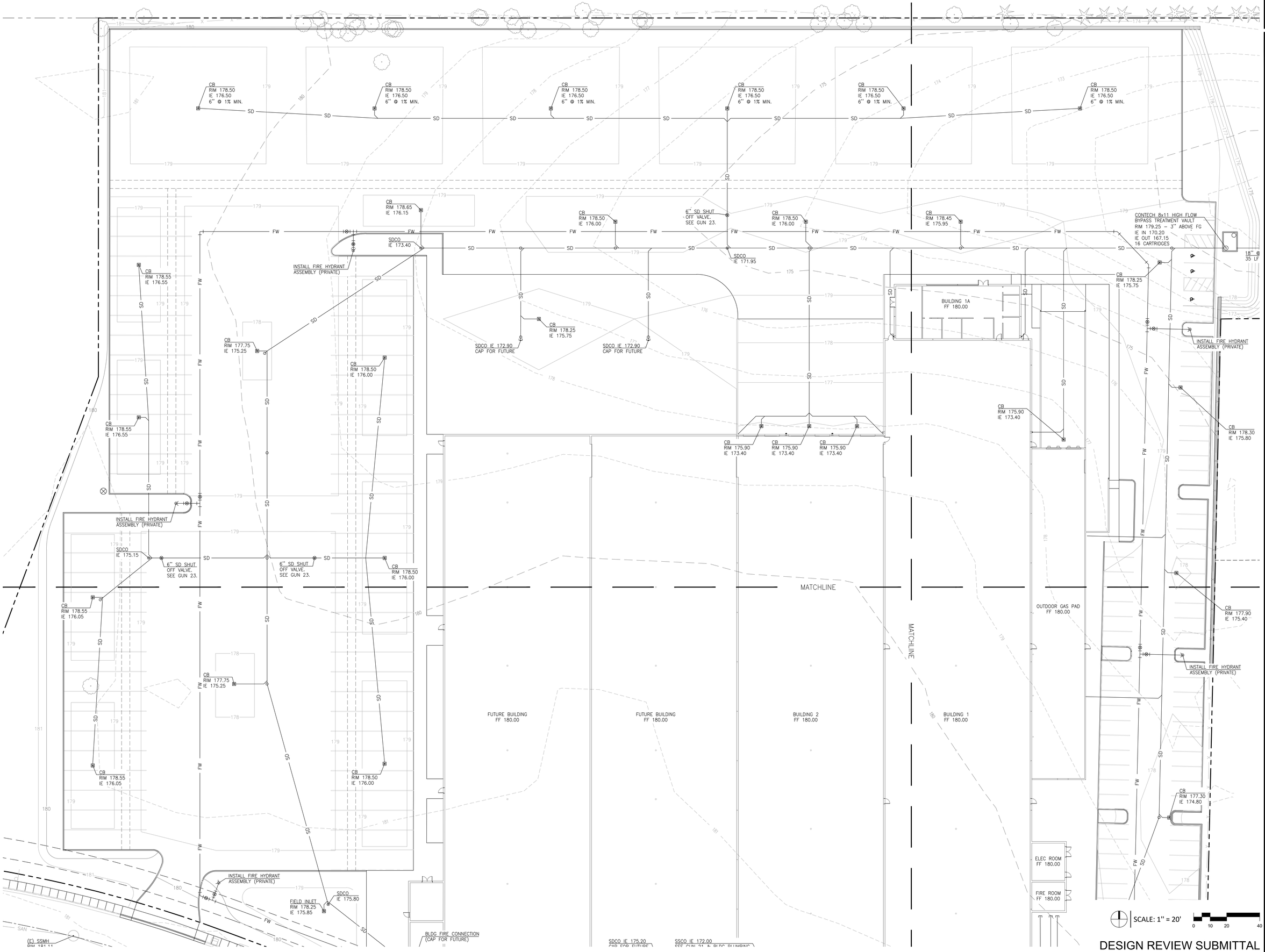
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UTILITY PLAN NORTHWEST

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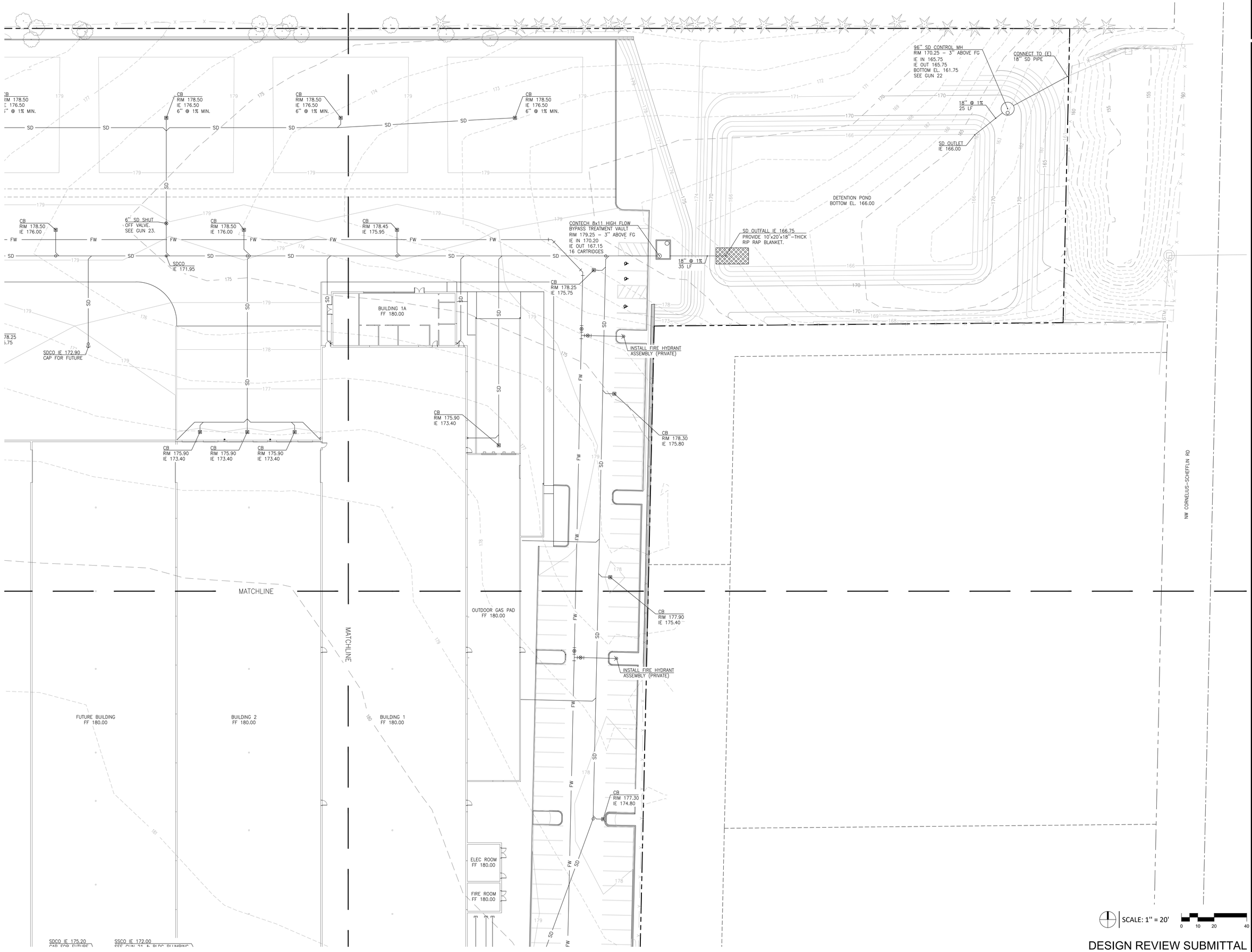
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Sheet Title:

UTILITY PLAN NORTHEAST

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Date: 17 JUNE 2021

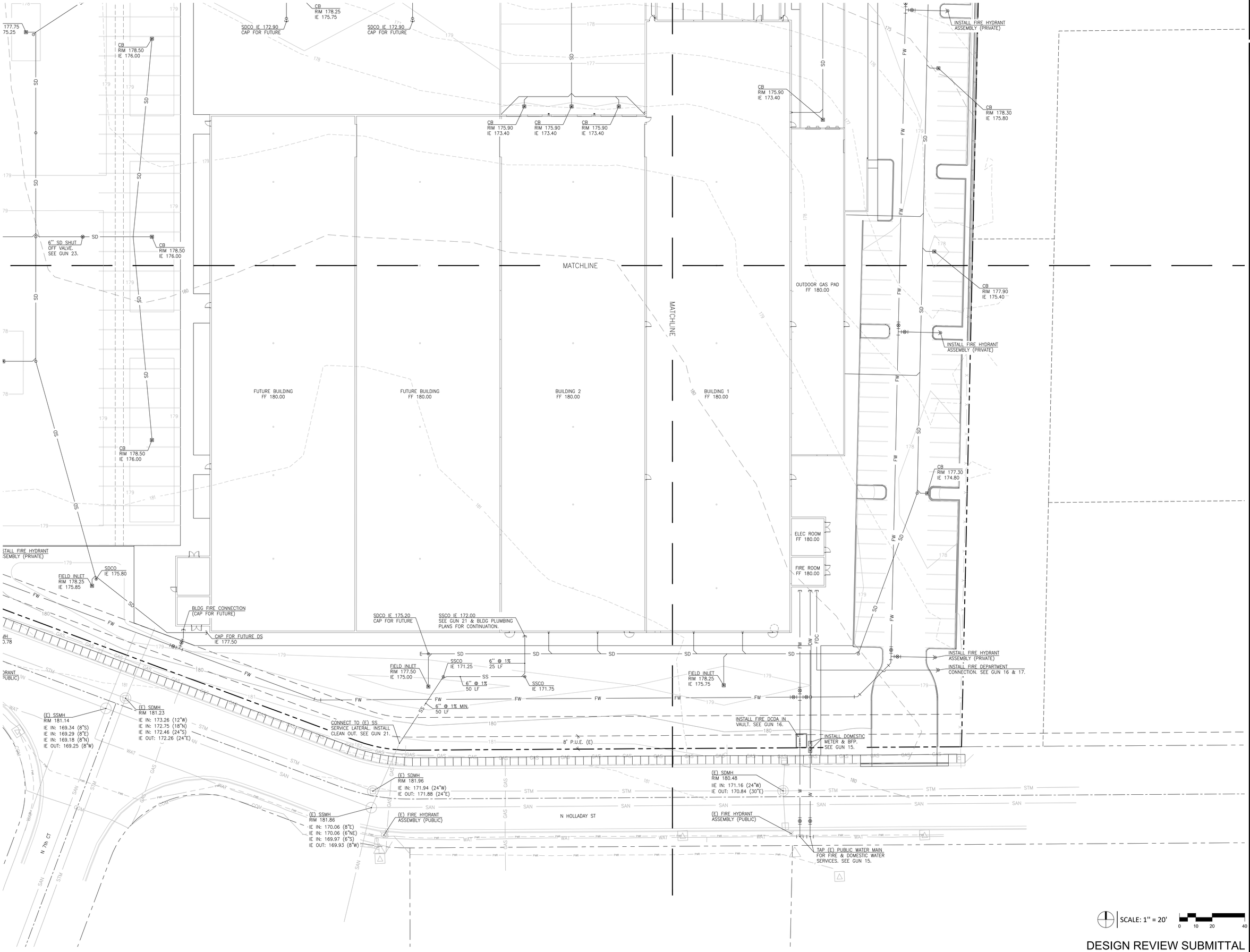
Drawn by: AS

Checked by: KJK

Job Number: 21102

Sheet

C3.2



SCALE: 1" = 20'

0 10 20 40

DESIGN REVIEW SUBMITTAL

MILDREN DESIGN GROUP

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REGISTERED PROFESSIONAL ENGINEER
15504
OREGON
JULY 25, 1997
KARL KOROCH
EXPIRES: 6/30/21

Client/ Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

UTILITY PLAN SOUTHEAST

Revisions:

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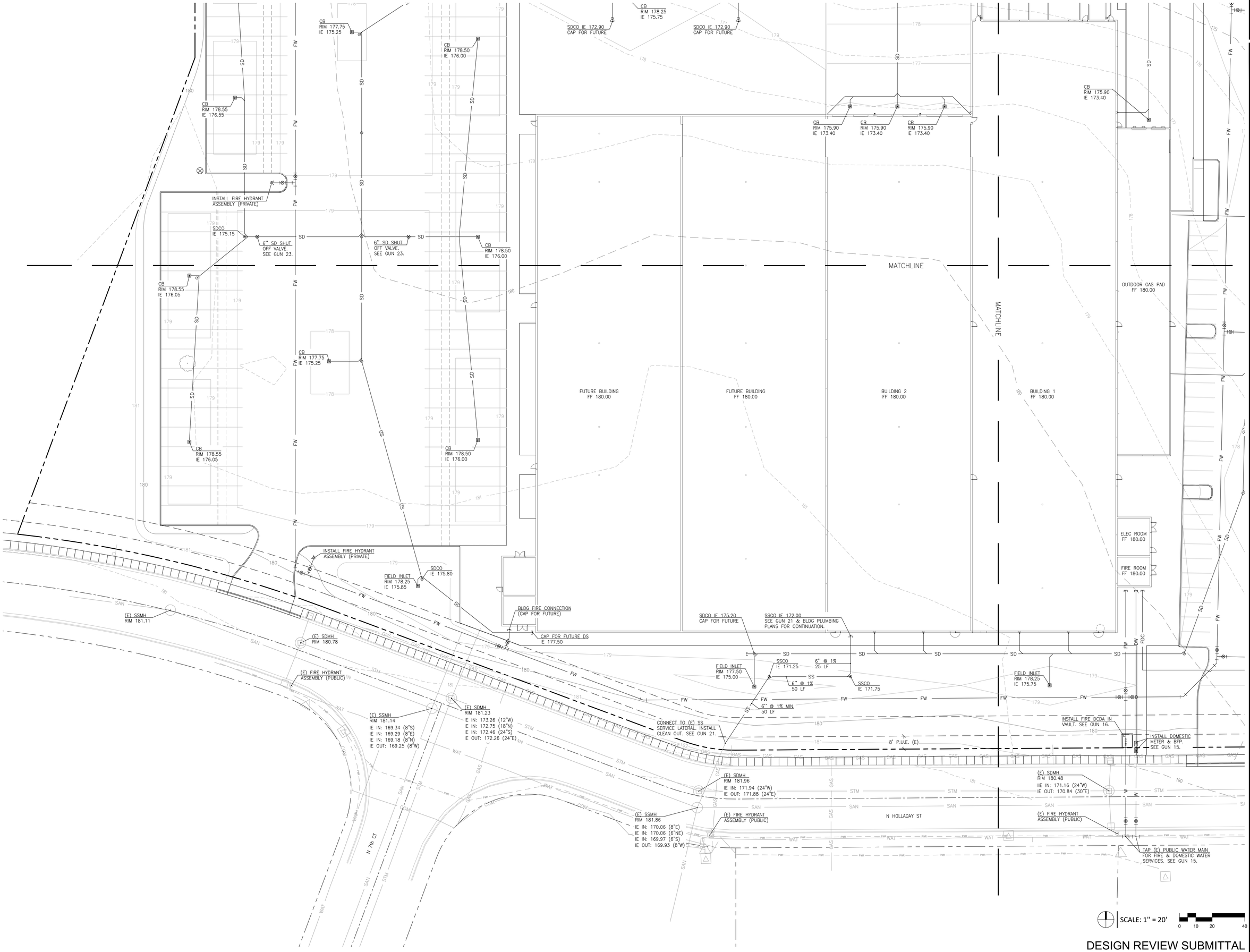
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Checked by: KJK

Job Number: 21102

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MILDREN DESIGN GROUP

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Alburquerque, NM 87107

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1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

UTILITY PLAN SOUTHWEST

Revisions:

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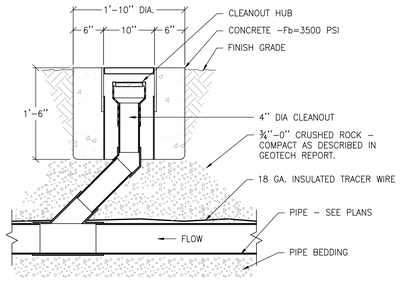
Drawn by: AS

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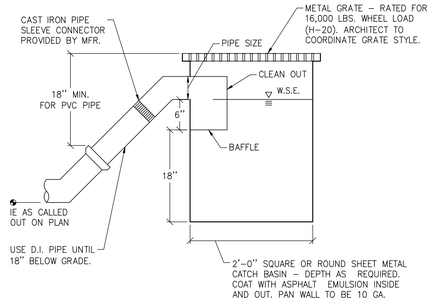
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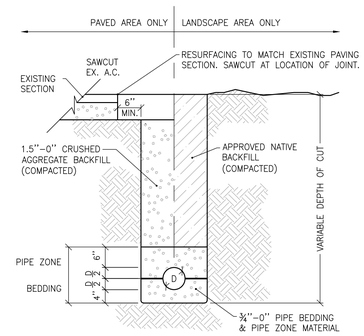
1 TYPICAL CLEANOUT DETAIL

NOT TO SCALE



2 CATCH BASIN DETAIL

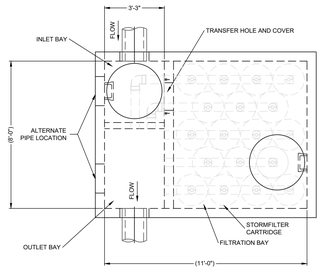
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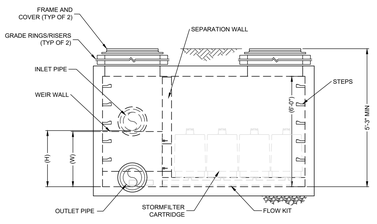
NOTE: VERIFY ALL REQUIREMENTS W/ JURISDICTION PRIOR TO START OF CONSTRUCTION

3 TRENCH BACKFILL DETAIL (PRIVATE SIDE ONLY)

NOT TO SCALE



PLAN



ELEVATION

StormFilter®

This drawing is the property of CONTECH and is not to be used for any purpose other than the specific project shown without the consent of CONTECH. This drawing is protected by copyright and other laws.

STORMFILTER DESIGN NOTES

- THE 8' x 11' PEAK DIVERSION STORMFILTER TREATMENT CAPACITY VARIES BY CARTRIDGE COUNT AND LOCALLY APPROVED SURFACE AREA SPECIFIC FLOW RATE. PEAK CONVEYANCE CAPACITY TO BE DETERMINED BY ENGINEER OF RECORD.
- THE PEAK DIVERSION STORMFILTER IS AVAILABLE IN A LEFT INLET (AS SHOWN) OR RIGHT INLET CONFIGURATION.
- ALL PARTS AND INTERNAL ASSEMBLY PROVIDED BY CONTECH UNLESS OTHERWISE NOTED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"		18"		LOW DROP	
RECOMMENDED HYDRAULIC DROP (H)	3.05'		2.3'		1.8'	
HEIGHT OF WEIR (W)	3.00'					
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67* gpm/sf	2 gpm/sf	1.67* gpm/sf	2 gpm/sf	1.67* gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.79	15	12.53	10	8.35

* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID			WQ VAULT
WATER QUALITY FLOW RATE (cfs)			0.7782
PEAK FLOW RATE (cfs)			7.86
RETURN PERIOD OF PEAK FLOW (yrs)			25
CARTRIDGE HEIGHT (27", 18", LOW DROP(LD))			27"
NUMBER OF CARTRIDGES REQUIRED			16
CARTRIDGE FLOW RATE			22.5
MEDIA TYPE (PERLITE, ZPG, PSORB)			PERLITE
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE	170.20	PVC	18"
OUTLET PIPE	167.15	PVC	18"
UPSTREAM RIM ELEVATION			179.25
DOWNSTREAM RIM ELEVATION			179.25
ANTI-FLOTATION BALLAST	WIDTH		HEIGHT
	N/A		N/A
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

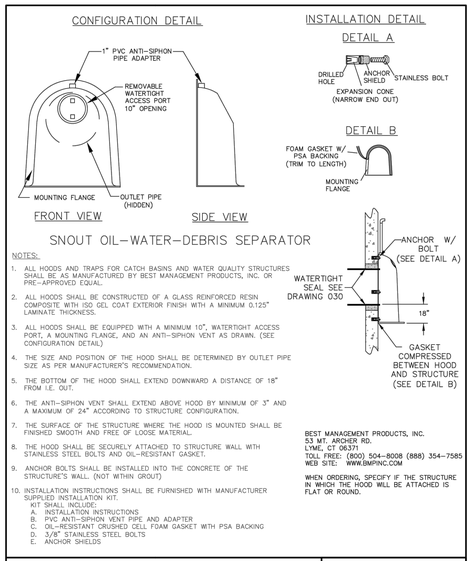
PERFORMANCE SPECIFICATION
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. **RADIAL MEDIA DEPTH SHALL BE 7-INCHES.** FILTER MEDIA CONTACT TIME SHALL BE AT LEAST **38 SECONDS**. SPECIFIC FLOW RATE SHALL BE **2 GPM/SF (MAXIMUM)**. SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE **6 GPM/CF OF MEDIA (MAXIMUM).**

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE: www.contechES.com
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
5. STRUCTURE SHALL MEET AASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 5' AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.

INSTALLATION NOTES
A. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
B. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
C. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CONTRACTOR TO REMOVE THE TRANSFER HOLE COVER WHEN THE SYSTEM IS BROUGHT ONLINE.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
11835 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

THE STORMWATER MANAGEMENT STORMFILTER
8' x 11' PEAK DIVERSION STORMFILTER
STANDARD DETAIL



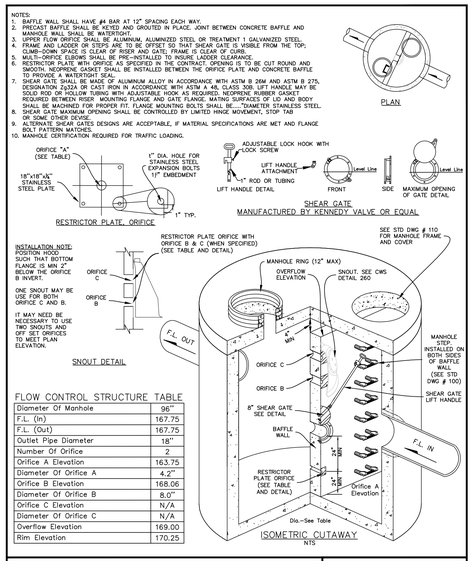
NOTES:
1. ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY BEST MANAGEMENT PRODUCTS, INC. OR PRE-APPROVED EQUAL.
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM 0.125" LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A MINIMUM 10", WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT AS DRAWN. (SEE CONFIGURATION DETAIL)
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION.
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A DISTANCE OF 18" FROM I.E. OUT.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 24" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL.
8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH STAINLESS STEEL BOLTS AND OIL-RESISTANT GASKET.
9. ANCHOR BOLTS SHALL BE INSTALLED INTO THE CONCRETE OF THE STRUCTURE'S WALL. (NOT WITHIN GROUT)
10. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.
    KIT SHALL INCLUDE:
    A. INSTALLATION INSTRUCTIONS
    B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
    C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
    D. 3/8" STAINLESS STEEL BOLTS
    E. ANCHOR SHIELDS

BEST MANAGEMENT PRODUCTS, INC.
53 MT. ARCHER RD.
LYME, CT 06371
TOLL FREE: (800) 504-8008 (888) 354-7585
WEB SITE: WWW.BMPINC.COM

WHEN ORDERING, SPECIFY IF THE STRUCTURE IN WHICH THE HOOD WILL BE ATTACHED IS FLAT OR ROUND.

WATER QUALITY MANHOLE (SNOUT) B
DRAWING NO. 260
REVISED 10-31-19

CleanWater Services



FLOW CONTROL STRUCTURE TABLE	
Diameter Of Manhole	96"
F.L. (In)	167.75
F.L. (Out)	167.75
Outlet Pipe Diameter	18"
Number Of Orifice	2
Orifice A Elevation	163.75
Diameter Of Orifice A	4.2"
Orifice B Elevation	168.06
Diameter Of Orifice B	8.0"
Orifice C Elevation	N/A
Diameter Of Orifice C	N/A
Overflow Elevation	169.00
Rim Elevation	170.25

FLOW CONTROL STRUCTURE DETAIL
DRAWING NO. 270

CleanWater Services

MILDREN DESIGN GROUP

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Phone: (503) 443-3900
Fax: (503) 443-3700

REGISTERED PROFESSIONAL ENGINEER 15504 OREGON JULY 25, 1997 KARL KOROCH

EXPIRES: 6/30/21

Client/ Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

DETAILS

Revisions:

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Date: 17 JUNE 2021

Drawn by: AS

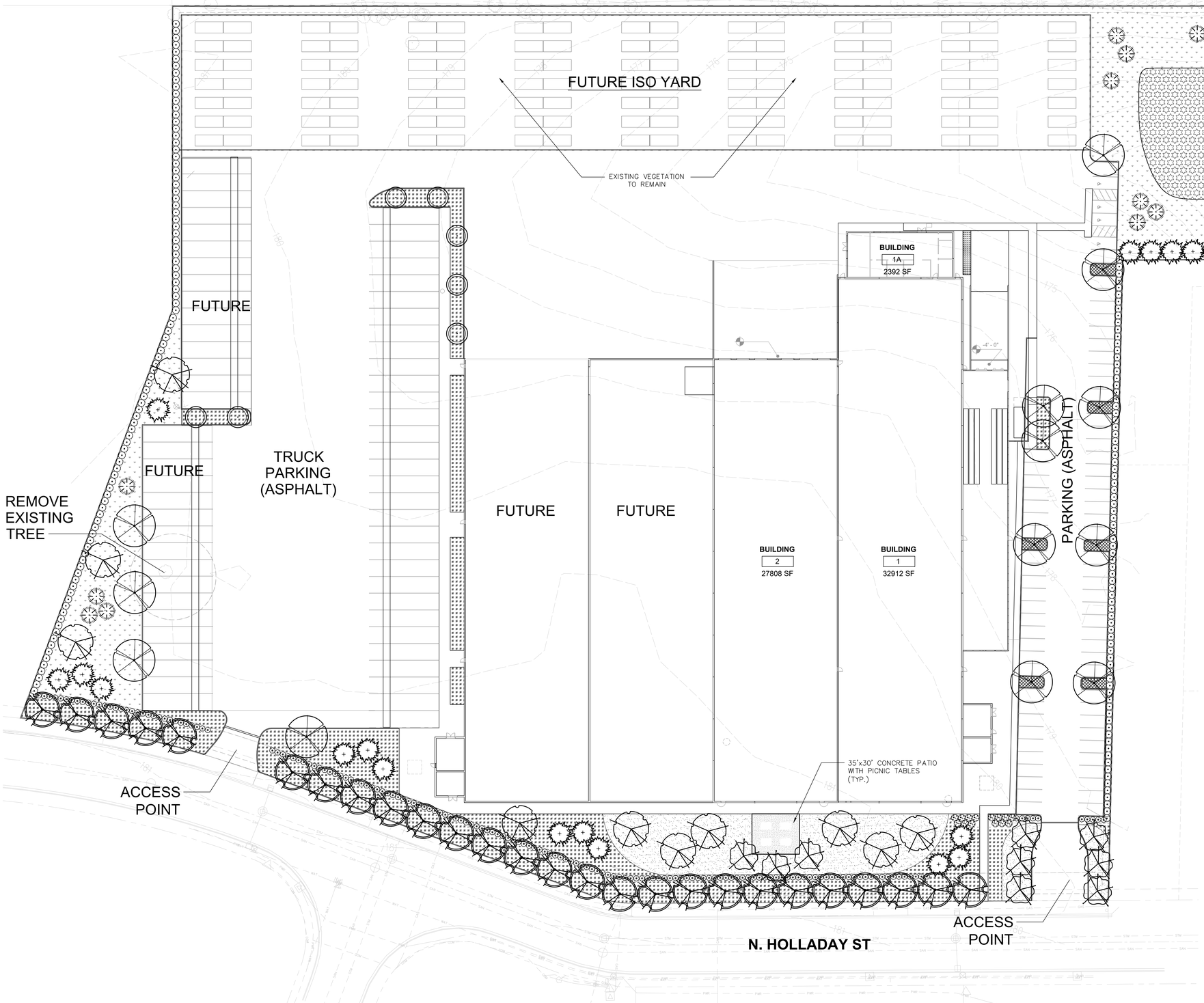
Checked by: KJK

Job Number: 21102

Sheet

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DESIGN REVIEW SUBMITTAL



PLANT SYMBOLS AND SUGGESTED PLANT LIST:

SYMBOL	SUGGESTED SPECIES	SIZE	SPACING
	STREET TREES (TO FOLLOW 10–20–30 RULE) Nyssa sylvatica Ginkgo biloba Acer rubrum Cercidphyllum japonicum Zelkova serrata Parrotia persica Tilia cordata	2" cal.	As shown
	FLOWERING DECIDUOUS TREE Flowering Cherry Flowering Dogwood	1.5" cal.	As shown
	SHADE TREE Green Ash Honeylocust	1.5" cal.	As shown
	COLUMNAR DECIDUOUS TREE Green Ash Honeylocust	1.5" cal.	As shown
	CONIFER TREE Douglas Fir Western Red Cedar	6' ht.	As shown
	EVERGREEN SCREENING SHRUBS Pacific Wax Myrtle Tall Oregon Grape Spring Bouquet Viburnum	5 gal.	4–6' o.c.
	ORNAMENTAL SHRUBS & GROUNDCOVER Spirea Abelia Kinnikinnick Creeping Mahonia	1–5 gal.	3–5' o.c.
	SEEDED AREAS Fine Lawn		
	Rough Seed		
	STORMWATER FACILITY PLANTING Per Clean Water Services Standards		

GENERAL NOTES:
1. Contractor is to verify all plant quantities.
2. Adjust plantings in the field as necessary.
3. Project is to be irrigated by an automatic, underground system, which will provide full coverage for all plant material. System is to be design/ build by Landscape Contractor. Guarantee system for a minimum one year. Show drip systems as alternate bid only.
4. All plants are to be fully foliaged, well branched and true to form.
5. Contractor is to notify Landscape Architect or Owner's Representative of any site changes or unforeseen conditions that may be detrimental to plant health, or cause future problems to any structural elements of the project.

N

15 30
0 60 120

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OTTEN + ASSOCIATES
LANDSCAPE ARCHITECTURE
3933 South Kelly Avenue, Suite B
Portland, OR, 97239
(503) 972-0311
www.ottenla.com

Client/ Owner:
Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:
RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:
LANDSCAPE PLAN

Revisions:

Description	Date

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Date: 07/29/2021
Drawn by: BH/EH
Checked by: EH
Job Number: 121029
Sheet
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OUTLINE SPECIFICATIONS PLANTING AND SEEDING:

GENERAL: All plants shall conform to all applicable standards of the latest edition of the "American Association of Nurserymen Standards", A.N.S.I. Z60.1 – 1973. Meet or exceed the regulations and laws of Federal, State, and County regulations, regarding the inspection of plant materials, certified as free from hazardous insects, disease, and noxious weeds, and certified fit for sale in Oregon.

The apparent silence of the Specifications and Plans as to any detail, or the apparent omission from them of a detailed description concerning any point, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of first quality are to be used. All interpretations of these Specifications shall be made upon the basis above stated.

Landscape contractor shall perform a site visit prior to bidding to view existing conditions.

PERFORMANCE QUALITY ASSURANCE: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary horticultural practices and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

NOTIFICATION: Give Landscape Architect minimum of 2 days advance notice of times for inspections. Inspections at growing site does not preclude Landscape Architect's right of rejection of deficient materials at project site. Each plant failing to meet the above mentioned "Standards" or otherwise failing to meet the specified requirements as set forth shall be rejected and removed immediately from the premises by the Contractor and at his expense, and replaced with satisfactory plants or trees conforming to the specified requirements.

SUBSTITUTIONS: Only as approved by the Landscape Architect or the Owner's Representative.

GUARANTEE AND REPLACEMENT: All plant material shall be guaranteed from final acceptance for one full growing season or one year, whichever is longer. During this period the Contractor shall replace any plant material that is not in good condition and producing new growth (except that material damaged by severe weather conditions, due to Owner's negligence, normally unforeseen peculiarities of the planting site, or lost due to vandalism). Guarantee to replace, at no cost to Owner, unacceptable plant materials with plants of same variety, age, size and quality as plant originally specified. Conditions of guarantee on replacement plant shall be same as for original plant.

Landscape Contractor shall keep on site for Owner's Representative's inspection, all receipts for soil amendment and topsoil deliveries.

PROTECTION Protect existing roads, sidewalks, and curbs, landscaping, and other features remaining as final work. Verify location of underground utilities prior to doing work. Repair and make good any damage to service lines, existing features, etc. caused by landscaping installation.

PLANT QUALITY ASSURANCE: Deliver direct from nursery. Maintain and protect roots of plant material from drying or other possible injury. Store plants in shade and protect them from weather immediately upon delivery, if not to be planted within four hours.

Nursery stock shall be healthy, well branched and rooted, formed true to variety and species, full foliaged, free of disease, injury, defects, insects, weeds, and weed roots. Trees shall have straight trunks, symmetrical tips, and have an intact single leader. Any trees with double leaders will be rejected upon inspection. All Plants: True to name, with one of each bundle or lot tagged with the common and botanical name and size of the plants in accordance with standards of practice of the American Association of Nurserymen, and shall conform to the Standardized Plant Names, 1942 Edition.

Container grown stock: Small container–grown plants, furnished in removable containers, shall be well rooted to ensure healthy growth. **Grow container plants in containers a minimum of one year** prior to delivery, with roots filling container but not root bound. Bare root stock: Roots well–branched and fibrous. Balled and burlapped (B&B): Ball shall be of natural size to ensure healthy growth. Ball shall be firm and the burlap sound. No loose or made ball will be acceptable.

TOPSOIL AND FINAL GRADES: Landscape Contractor is to supply and place 12" of topsoil in planting beds and 6" in lawn areas. Landscape Contractor is to verify with the General Contractor if the on–site topsoil is or is not conducive to proper plant growth. The topsoil shall be a sandy loam, free of all weeds and debris inimical to lawn or plant growth. Furnish soil analysis by a qualified soil testing laboratory stating percentages of organic matter; gradation of sand, silt and clay content; cation exchange capacity; deleterious material; pH; and plant nutrient content of the topsoil. Report suitability of topsoil for plant growth and recommended quantities of nitrogen, phosphorus and potash nutrients and soil amendments (including compost) to be added to produce satisfactory topsoil. If stockpiled topsoil on site is not conducive to proper plant growth, the Landscape Contractor shall import the required amount.

Landscaping shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated. Planting bed grades shall be approximately 3" below adjacent walks, paving, finished grade lines, etc., to allow for bark application. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

PLANTING SPECIFICATIONS:

HERBICIDES: Prior to soil preparation, all areas showing any undesirable weed or grass growth shall be treated with Round–up in strict accordance with the manufacturer's instructions.

SOIL PREPARATION: Work all areas by rototilling to a minimum depth of 8". Remove all stones (over 1½" size), sticks, mortar, large clumps of vegetation, roots, debris, or extraneous matter turned up in working. Soil shall be of a homogeneous fine texture. Level, smooth and lightly compact area to plus or minus .10 of required grades.

In groundcover areas add 2" of compost (or as approved) and till in to the top 6" of soil.

PLANTING HOLE: Lay out all plant locations and excavate all soils from planting holes to 2 1/2 times the root ball or root system width. Loosen soil inside bottom of plant hole. Dispose of any "subsoil" or debris from excavation. Check drainage of planting hole with water, and adjust any area showing drainage problems.

SOIL MIX: Prepare soil mix in each planting hole by mixing:
2 part native topsoil (no subsoil)
1 part compost (as approved)

Thoroughly mix in planting hole and add fertilizers at the following rates:
Small shrubs – 1/8 lb./ plant
Shrubs – 1/3 to 1/2 lb./ plant
Trees – 1/3 to 1 lb./ plant

FERTILIZER: For trees and shrubs use Commercial Fertilizer "A" Inorganic (5–4–3) with micro–nutrients and 50% slow releasing nitrogen. For initial application in fine seed lawn areas use Commercial Fertilizer "B" (8–16–8) with micro–nutrients and 50% slow–releasing nitrogen. For lawn maintenance use Commercial Fertilizer "C" (22–16–8) with micro–nutrients and 50% slow–releasing nitrogen. DO NOT apply fertilizer to Water Quality Swale.

PLANTING TREES AND SHRUBS: Plant upright and face to give best appearance or relationship to adjacent plants and structures. Place 6" minimum, lightly compacted layer of prepared planting soil under root system. Loosen and remove twine binding and burlap from top 1/2 of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids.

When approximately 2/3 full, water thoroughly, then allow water to soak away. Place remaining backfill and dish surface around plant to hold water. Final grade should keep root ball slightly above surrounding grade, not to exceed 1". Water again until no more water is absorbed. Initial watering by irrigation system is not allowed.

STAKING OF TREES: Stake or guy all trees. Stakes shall be 2" X 2" (nom.) quality tree stakes with point. They shall be of Douglas Fir, clear and sturdy. Stake to be minimum 2/3 the height of the tree, not to exceed 8'–0". Drive stake firmly 1'–6" below the planting hole. Tree ties for deciduous trees shall be "Chainlock" (or better). For Evergreen trees use "Gro–Strait" Tree Ties (or a reinforced rubber hose and guy wires) with guy wires of a minimum 2 strand twisted 12 ga. wire. Staking and guying shall be loose enough to allow movement of tree while holding tree upright.

MULCHING OF PLANTINGS: Mulch planting areas with dark, aged, medium grind fir or hemlock bark (aged at least 6 months) to a depth of 2" in ground cover areas and 2½" in shrub beds. Apply evenly, not higher than grade of plant as it came from the nursery, and rake to a smooth finish. Water thoroughly, then hose down planting area with fine spray to wash leaves of plants.

FINE LAWN AREAS: In fine lawn area apply Commercial Fertilizer Mix "B" at 4.5 lbs. Per 1,000 sq.ft. and rake into soil surface. Establish an even, fine textured seedbed meeting grades, surfaces and texture. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

ROUGH SEED AREA: In rough seeded area, establish an evenly graded seedbed. Sow seed with a mechanical spreader at the uniform rates as noted below. Rake seed lightly to provide cover.

SEED: Bluetag grass seed conforming to applicable State laws. No noxious weed seeds. Submit Guaranteed analysis.
Fine Lawn Seed Mix: To contain 50% Top Hat Perennial Ryegrass, 30% Derby Supreme Ryegrass, 20% Longfellow Chewings Fescue (Hobbs and Hopkins Pro–Time 303 Lawn Mix or as approved) Sow Seed at 5 lbs. / 1000 sq. ft.
Rough Seed Mix: To Contain: 60% Perennial Ryegrass, 15% Eureka Hard Fescue, and 20% Herbaceous Plants and Clover (Hobbs and Hopkins Pro–Time 705 PDX, or approved equal). Sow at 2 lbs. Per 1,000 sq.ft.

MAINTENANCE OF SEEDED AREAS:
Fine Lawn Areas: The lawn areas shall be maintained by watering, mowing, reseeding, and weeding for a minimum of 60 days after seeding. After 30 days, or after the second mowing, apply Commercial Fertilizer Mix "C" at 5 lbs. per 1,000 sq. ft. Mow and keep at 1½" to 2" in height. Remove clippings and dispose of off site.

GENERAL MAINTENANCE: Protect and maintain work described in these specifications against all defects of materials and workmanship, through final acceptance. Replace plants not in normal healthy condition at the end of this period. Water, weed, cultivate, mulch, reset plants to proper grade or upright position, remove dead wood and do necessary standard maintenance operations. Irrigate when necessary to avoid drying out of plant materials, and to promote healthy growth.

CLEAN–UP: At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.

WATER QUALITY SWALE AND VEGETATED CORRIDOR SPECIFICATIONS PER APPENDIX A OF CLEAN WATER SERVICES DESIGN & CONSTRUCTION STANDARDS:

SITE PREPARATION: Landscape contractor shall asses the existing soil conditions of the vegetated swale and/or corridor to determine the appropriate soil preparation methods, as follows:

For areas with at least one foot of native topsoil, but containing non–native or invasive plants, remove undesirable plants, roots and seeds prior to planting.

For areas with either disturbed or compacted soils, or less than one foot of topsoil and containing non–native or invasive plants:
1. Remove undesireable plants, roots and seeds prior to adding topsoil.
2. Till the sub–grade in these areas to a depth of at least 4" and add at least 12" of clean compost–amended topsoil. The compost amended topsoil shall have the following characteristics to ensure a good growing medium:
   A) Texture – material passes through 1" screen
   B) Fertility – 35% organic matter
3. In the event of flood plain grading, over–excavate the sub grade to ensure 12" of topsoil can be applied without impacting surface water elevations.

Where appropriate and necessary for erosion control or to enhance organic matter, leaf compost may be placed uniformly on the topsoil. (Refer to Chapter 6, Erosion Prevention and Sediment Control). Other amendments, conditioners, and bio amendments may be added as needed to support the specified plants or adjust the soil pH. Traditional fertilization techniques (appplying N–P–K) are not necessary for native plants.

TIMING: Containerized stock shall be installed between February 1 and May 1, or between October 1 and November 15. Bare root stock shall be installed only from December 15 through April 15 (bare root stock must be 12–16 inches long). Notify Landscape Architect if planting must be performed outside these times, as additional approved measures may be needed to assure survival.

EROSION CONTROL: Grading, soil preparation, and seeding shall be performed during optimal weather conditions and at low flow levels to minimize sediment impacts. Site disturbance shall be minimized and desirable vegetation retained, where possible. Slopes shall be graded to support the establishment of vegetation. Where seeding is used for erosion control, an appropriate native grass, Regreen (or its equivalent), or sterile wheat shall be used to stabilize slopes until permanent vegetation is established. Biodegradable fabrics (coir, coconut or approved jute matting (minimum 1/4" square holes) may be used to stabilize slopes and channels. Fabrics such as burlap may be used to secure plant plugs in place and to discourage floating upon inundation. No plastic mesh that can entangle wildlife is permitted. Consult CWS Chapter 6 – Erosion Prevention and Sediment Control for additional information.

A biodegradable Erosion Control Matting shall be placed over the topsoil throughout the swale cross section, fabric shall be held in place in accordance with the manufacturer's installation requirements. Use high density jute matting in the treatment area (Geojute Plus or approved equal). In all other areas use low density jute matting (Econojute or approved equal). Landscaping shall include finished grades and even distribution of topsoil to meet planting requirements. Grades and slopes shall be as indicated on civil plans. Finish grading shall remove all depressions or low areas to provide positive drainage throughout the area.

INVASIVE SPECIES CONTROL: Mechanical control by hand consistent with Clean Water Services' Integrated Vegetated and Animal Management Guide (March 2003) is recommended to control invasive spread prior to installing plantings. Invasive species control to be conducted as needed based upon the site inspections. Invasive species include: Himalayan and evergreen blackberry (Rubus discolor and R. laciniatus), reed canarygrass (Phalaris arundinacea), teasel (Dipsacus fullonum), Canada and bull thistle (Cirsium arvense and C. vulgare), Scotch broom (Cytisus scoparius), purple loosestrife (Lythrum salicaria), Japanese knotweed (Polygonium cuspidatum), morning glory (Convolvulus species, giant hogweed (Heracleum mantegazzianum), English ivy (Hedera helix), nightshade (Solanum species), and clematis (Clematis ligusticifolia and C. vitalba.

FERTILIZER: Do not apply fertilizer to any plantings within the Water Quality Swale or Wetland Buffer.

PLANTING TREES AND SHRUBS: Plant upright and face to give best appearance or relationship to adjacent plants and structures. Loosen and remove twine binding and burlap from top one–half of root balls. Cut off cleanly all broken or frayed roots, and spread roots out. Stagger Plants in rows. Backfill planting hole with soil mix while working each layer to eliminate voids. Plantings shall be tagged for dormant season identification and shall remain on plant material after planting for monitoring purposes.

MULCHING: Trees, shrubs, and groundcovers planted in upland areas shall be mulched a minimum of 3" in depth and 18" in diameter, to retain moisture and discourage weed growth around newly installed plant material. Appropriate mulches are made from composted bark or leaves that have not been chemically treated. The use of mulch in frequently inundated areas shall be limited, to avoid any possible water quality impacts including the leaching of tannins and nutrients, and the migration of mulch into waterways.

For vegetated swales, see CWS Standard Detail 710 for mulching of the treatment area plantings.

WILDLIFE PROTECTION: Depending on site conditions, appropriate measures shall taken to limit wildlife–related damage (deer, beaver, nutria, mice and voles). Examples include installing tree protector tubes or wire mesh cylinders around newly installed plantings.

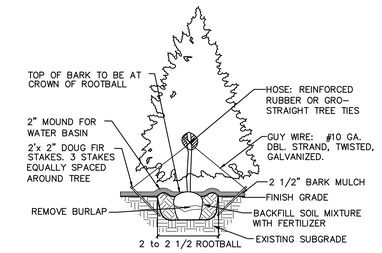
SEED: Bluetag grass seed conforming to applicable State laws. No noxious weed seeds. Submit Guaranteed analysis.
Wetland Buffer Seed: To contain 20% California Brome, 20% Blue Wildrye, 50% Native Red Fescue, and 10% Large–leafed Lupine. (Hobbs & Hopkins Clean Water Dray Area Seed Mix or approved equal). Apply at a rate of 1 lb / 1,000 sq.ft. Install seed as needed for bare soil areas larger than 25 sq.ft. following invasive species removal.
Freeboard Area Seed: To contain 40% Dwarf Tall Fescue, 30% Dwarf Perennial Rye, 25% Creeping Red Fescue and 5% Colonial Bent Grass. Apply at a rate of 2.75 lbs. / 1,000 sq.ft.
Moist Area Seed: To contain 45% American Sloughgrass, 45% Western Mannagrass, 5% Spreading Rush and 5% Slough Sedge (Hobbs & Hopkins ProTime 406 Native Water Quality Mix for Wet Areas or approved equal). Apply at a rate of 1 lb / 1,000 SF.

IRRIGATION: Plantings shall be watered using an approved temporary irrigation system (or equivalent) during the two year establishment period. Irrigation system shall be design/build by landscape contractor. All plantings under CWS jurisdiction are to be watered one inch per week from June 15 through October 15 for the duration of the two year maintenance period.

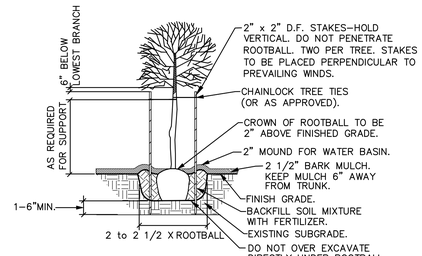
MAINTENANCE: The permitee is responsible for the maintenance of this facility to assess the status of plantings, irrigation, and mulchingfor for a minimum of two years following the acceptance of the facility by Clean Water Services. Owners Representative shall inspect the facility twice annually (Spring by June 1st & Fall by September 30th) throughout the two–year maintenance period. If at any time during the warranty period the landscaping falls below 80% survival of trees and shrubs, or 90% aerial coverage of herbaceous plants, or if the amount of invasive non–native species exceeds 20%, the Owner shall remove the undesirable vegetation and reinstall all deficient planting at the next appropriate time. The cause of plant loss and corrective measures taken shall be documented, and the two–year maintenance period shall begin again from the date of replanting.

Responsible Party:
Name
Address
Phone:

CLEAN–UP: At completion of each division of work all extra material, supplies, equipment, etc., shall be removed from the site. All walks, paving, or other surfaces shall be swept clean, mulch areas shall have debris removed and any soil cleared from surface. All areas of the project shall be kept clean, orderly and complete.

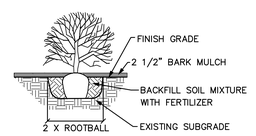


EVERGREEN TREE STAKING DETAIL
NOT TO SCALE



NOTE: ANY PROPOSED CHANGES TO OUR SPECIFICATION OR DETAIL SHOULD BE APPROVED BY THE LANDSCAPE ARCHITECT. LIKEWISE, IN ACCORDANCE WITH BEST PRACTICES OF LOCAL LANDSCAPE INSTALLATION, SHOULD THE LANDSCAPE CONTRACTOR FIND A PREFERRED ALTERNATE METHOD, THE LANDSCAPE ARCHITECT MAY BE SO ADVISED.

GENERAL DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

MILDREN DESIGN GROUP

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OTTEN + ASSOCIATES
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Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

LANDSCAPE PLAN

Revisions:

Description	Date

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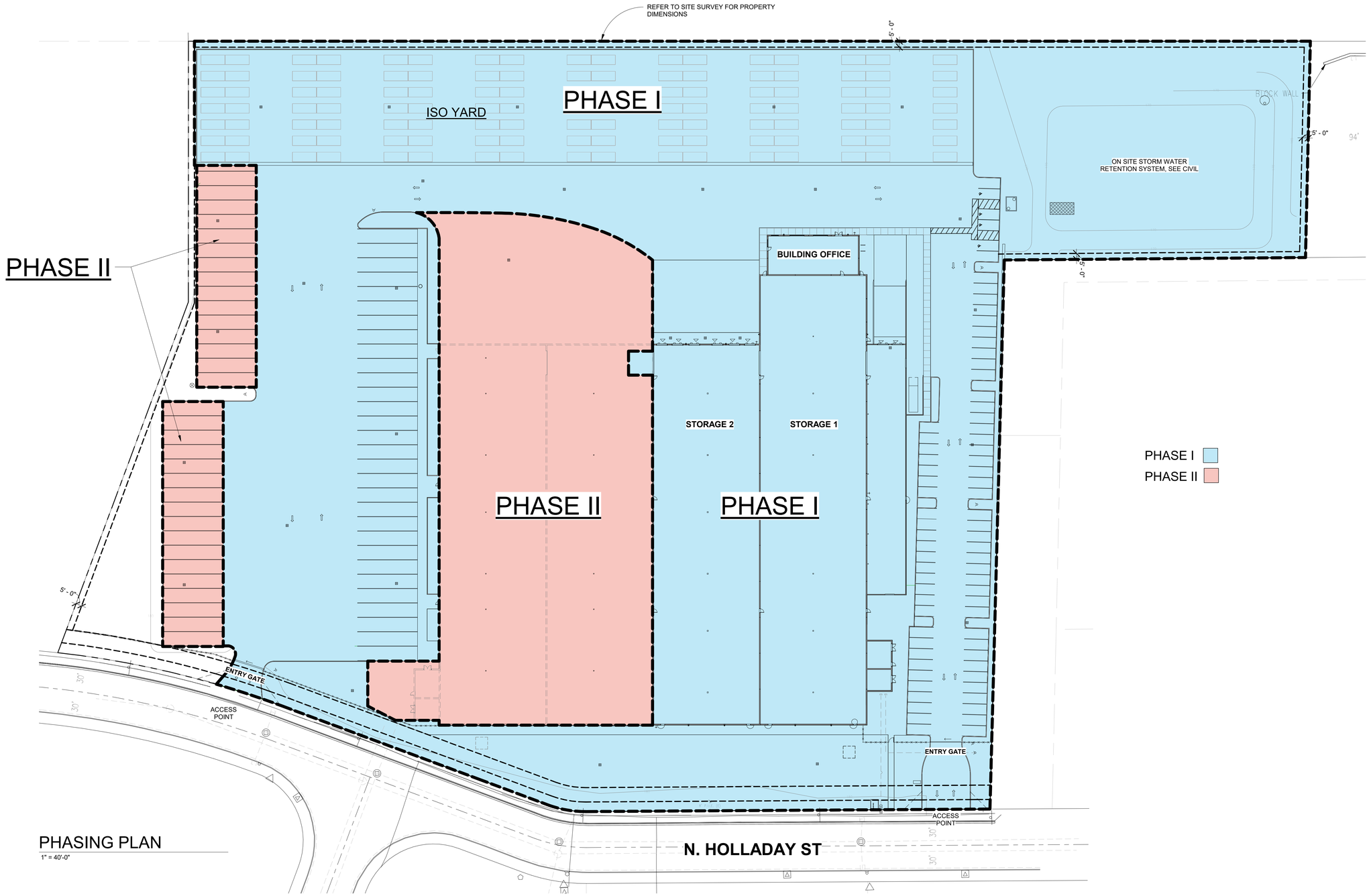
Drawn by: BH/EH

Checked by: EH

Job Number: 121029

Sheet

L2.0



PHASING PLAN
1" = 40'-0"

N

0 4' 8' 16' 32'

DESIGN REVIEW SUBMITTAL

MILDREN DESIGN GROUP
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Project:
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1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:
PHASING PLAN

Revisions:

#	Description	Date

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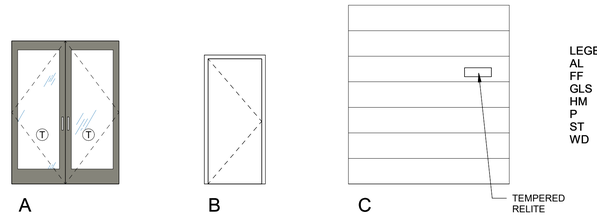
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Drawn by: Author
Checked by: Checker
Job Number: 121029
Sheet
A1-0

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ABBREVIATIONS

AB	ANCHOR BOLT
AC	ASPHALTIC CONCRETE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
B/	BOTTOM OF
BD	BOARD
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCH MARK
BOTT	BOTTOM
BRG PL	BEARING PLATE
CB	CATCH BASIN
CI	CAST IRON
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR
CMP	CORRUGATED METAL PANEL
CMU	CONCRETE MASONRY UNIT
CNTR	CENTER
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRUGATED (ION)
CSP	CONCRETE SEWER PIPE
DBL	DOUBLE
DIA	DIAMETER
DN	DOWN
DR	DOOR
DS	DOWN SPOUT
DWG	DRAWING
EIFS	EXTERIOR INSULATION FINISH SYSTEM
ELECT	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EXIST	EXISTING
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FIN FLR	FINISH FLOOR
FIN GR	FINISH GRADE
FLR	FLOOR
FND	FOUNDATION
FOC	FACE OF CONCRETE
FOIC	FURNISH BY OWNER, INSTALL BY CONTRACTOR
FOIO	FURNISH BY OWNER, INSTALL BY OWNER
FOS	FACE OF SHEATHING
FOW	FACE OF WALL
FSD	FIRE SEPARATION DISTANCE
FT	FEET/FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GYP BD	GYPSUM BOARD
HB	HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HRDW	HARDWARE
HTG	HEATING
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
ID	INSIDE DIMENSION
IE	INVERT ELEVATION
INSUL	INSULATION
INT	INTERIOR
KD	KNOCK DOWN
MECH	MECHANICAL
MFR	MANUFACTURER
MGR	MANUFACTURER
MH	MAN HOLE
MIN	MINUMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
NIC	NOT IN CONTRACT
NO./#	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O/S	OUTSIDE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHD	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSIDE
PL	PLATE
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
PT	PRESSURE TREATED
PVC	POLY VINYL CHLORIDE
PVMT	PAVEMENT
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCING
REQ	REQUIRED
REV	REVISION
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
SUSP	SUSPENDED
T/	TOP OF
THK	THICK(NESS)
TS	TUBE STEEL
TYP	TYPICAL
U/S	UNDERSIDE
UL	UNDERWRITERS LABORATORIES
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
WP	WATER PROOF
WR	WATER RESISTANT
WWM	WELDED WIRE MESH

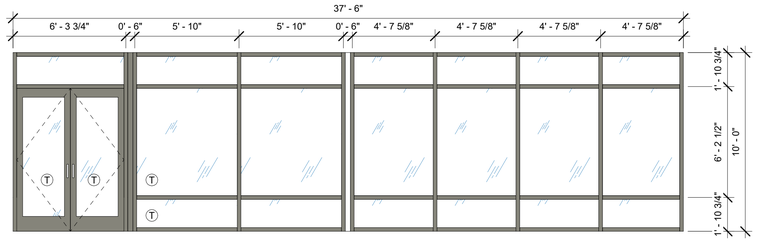
DOOR TYPES



LEGEND:

AL	ALUMINUM
FF	FACTORY FINISH
GLS	GLASS
HM	HOLLOW METAL
P	PAINT
ST	STAIN
WD	WOOD

STOREFRONT TYPES



SF-1

STOREFRONT

MFR: KAWNEER
ENTRANCE DOOR.
STILES: 3-1/2 INCHES. TOP RAIL: 3-3/16 INCHES.
BOTTOM RAIL: 9-1/2 INCHES.
GLAZING INFILL: 1 INCH INSULATED.

STORE FRONT FRAMING SYSTEM:
FRAMING SYSTEM: TRIFAB, VERSAGLAZE, FLUSH FRONT, 451T.
FACE WIDTH: 1-3/4 INCHES.
OVERALL DEPTH: 4-1/2 INCHES.
GLAZING INFILL: 1 INCH INSULATED.
GLAZING METHOD: EXTERIOR.
THERMAL BREAK: YES.
FABRICATION: SCREW SPLINE SYSTEM.

GENERAL NOTES

A. VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS - NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO START OF WORK
B. ALL HARDWARE IN ACCORDANCE WITH ANSI 117.1
C. PROVIDE (1) APPROVED FIRE EXTINGUISHER WITH RATING NOT LESS THAN 2-A:10b FOR EACH 3,000 SF OF FLOOR AREA. TRAVEL FROM ANY PORTION OF THE BUILDING NOT TO EXCEED 75'-0"
D. PROVIDE A SIGN AT MAIN EXIT DOOR PER IBC 1008.1.8.3 2.2 STATING "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED"
E. LEVEL 2 FINISHED WALLS TO RECIEVE (1) COAT PRIMER, (1) COAT ACRYLIC LATEX. LEVEL OF GYPSUM BOARD FINISH TO BE PER ASTM C840
F. PROVIDE ADA SIGNATE AT TOILET ROOMS AND ADA COMPLIANT EXIT SIGNAGE.
G. PROVIDE OUTSIDE AIR PER OCCUPANT PER MECHANICAL CODE (BY SEPERATE PERMIT)

HARDWARE SCHEDULE

HW SET: 1 (ELECTRICAL)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	**EA**	**PANIC HARDWARE**	**LD-98-NL-996L-NL R/V**	**626**	**VON**
1	**EA**	**RIM CYLINDER**	**20-057**	**626**	**SCH**
1	EA	LOCK GUARD	LG14	630	IVE
1	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	DRIP CAP	16A	CL	NGP
1	SET	SEALS	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	896S MS/LA	AL	NGP

HW SET: 2 (DOOR NEXT TO ROLL UP GARAGE)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	**EA**	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	**EA**	**VANDL STOREROOM LK**	**ND92PD SPA EVEREST T RESTRICTED**		
				626	**SCH**
1	EA	LOCK GUARD	LG14	630	IVE
1	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	DRIP CAP	16A	CL	NGP
1	SET	SEALS	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	896S MS/LA	AL	NGP

HW SET: 3 (STAND ALONE DOOR)

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
4	**EA**	HINGE	5BB1 4.5 X 4.5 NRP	630	IVE
1	**EA**	**VANDL STOREROOM LK**	**ND96PD SPA EVEREST T RESTRICTED**		
				626	**SCH**
1	EA	LOCK GUARD	LG14	630	IVE
1	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	DRIP CAP	16A	CL	NGP
1	SET	SEALS	5050B (HEAD & JAMBS)	BRN	NGP
1	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	896S MS/LA	AL	NGP

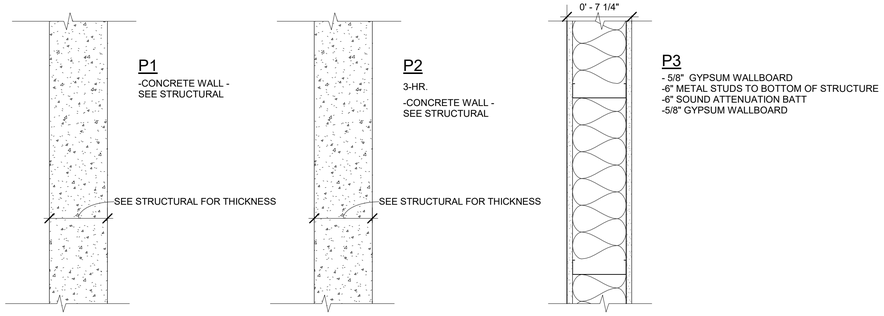
HW SET: 4 (STOREFRONT DOUBLE)

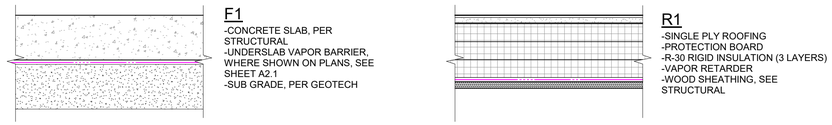
QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	PIVOT SET	7226F SET	630	IVE
2	EA	INTERMEDIATE PIVOT	7226F INT	626	IVE
1	EA	RIM CYLINDER	20-057	626	SCH
1	EA	DEADLOCK	MS1850S	628	ADM
1	EA	THRESHOLD BOLT	4015		ADM
1	EA	HEADER BOLT	4016		ADM
1	EA	EXIT INDICATOR	4089	626	ADM
2	EA	PUSH/PULL	CM12x28BS	CLR	CRL
2	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
2	EA	CUSH SHOE SUPPORT	4110-30	689	LCN
2	EA	BLADE STOP SPACER	4110-61	689	LCN
2	EA	DRIP CAP	16A	CL	NGP
2	EA	DOOR SWEEP	C627A	CL	NGP
1	EA	THRESHOLD	896S MS/LA	AL	NGP

HARDWARE FINISHES IN BHMA NUMBERS:

- EXTERIOR BUTT HINGES: 630
- INTERIOR BUTT HINGES: 630
- LATCHSETS AND LOCKSETS: 626
- SURFACE DOOR CLOSERS: 689
- THRESHOLDS: 628
- DOOR STOP: 630
- EXIT DEVICES: 652
- COORDINATOR: 600
- ASTRAGEL: 652
- AUTOMATIC FLUSHBOLT: 626
- DUSTPROOF STRIKE: 626

ASSEMBLIES





DR SET 06-18-2021

MILDREN DESIGN GROUP

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Beaverton OR, 97005
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Rinchem Company

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Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

LEGENDS, ASSEMBLIES, AND ABBREVIATIONS

Revisions:

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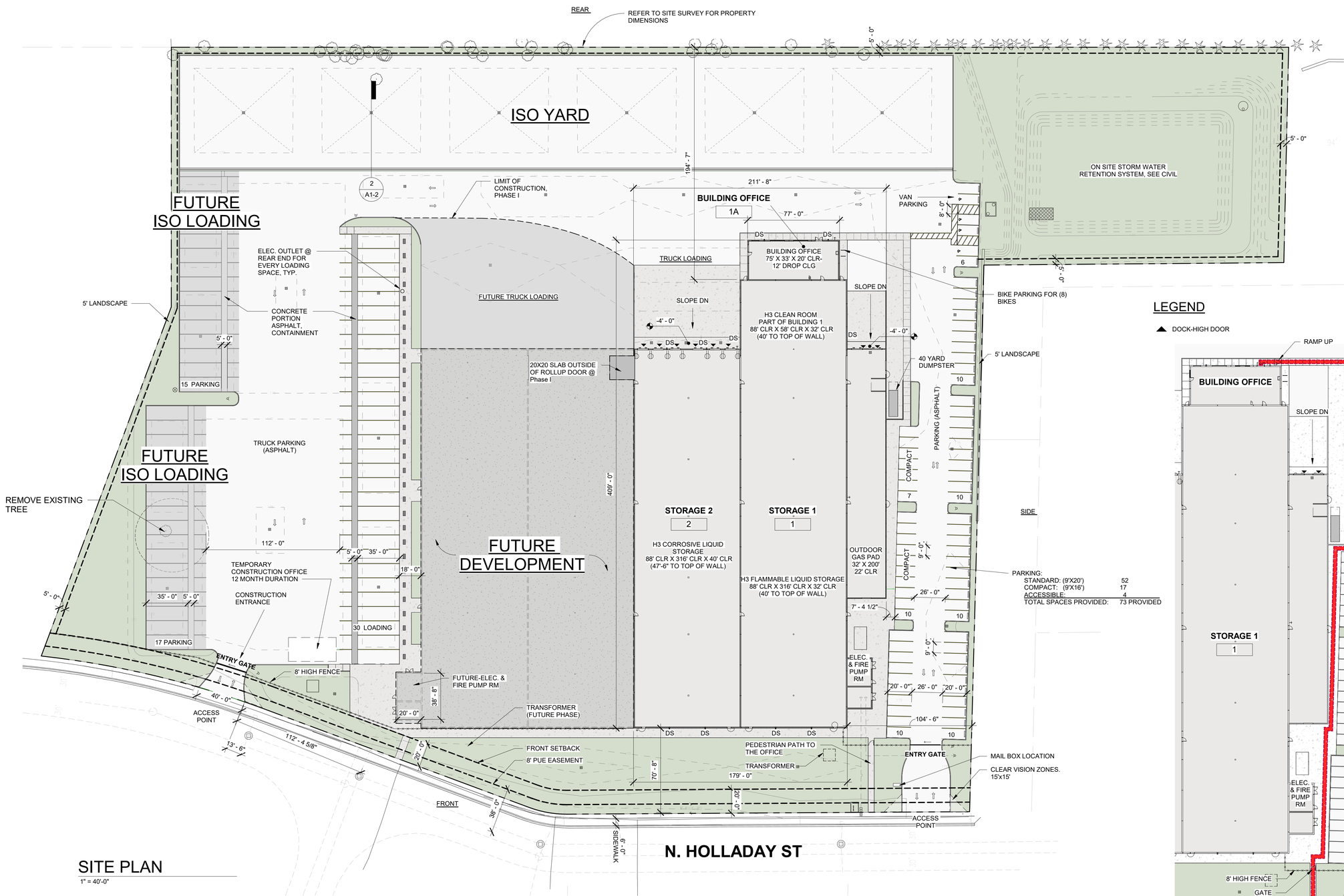
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Job Number: 121029

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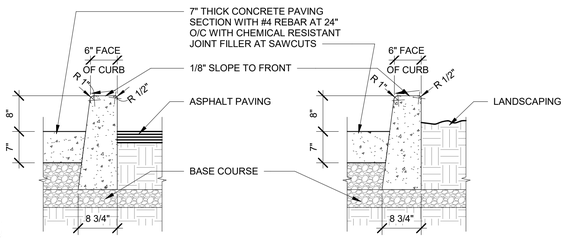
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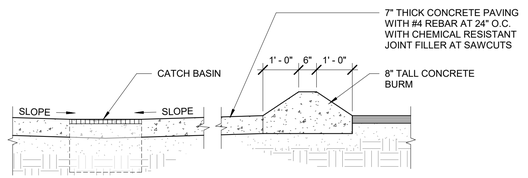


SITE PLAN
1" = 40'-0"

NOTE:
1. CONCRETE TO HAVE A BREAKING STRENGTH OF 3000 PSI AFTER 28 DAYS
2. EXPANSION JOINTS TO BE PROVIDED:
   A. AT EACH POINT OF TANGENCY OF THE CURB
   B. AT EACH COLD JOINT
   C. AT EACH SIDE OF INLET STRUCTURES
   D. AT EACH END OF DRIVEWAYS
   E. AT LOCATIONS NECESSARY TO LIMIT SPACING TO 45 FEET
3. CONTRACTION JOINTS:
   A. SPACING TO BE NOT MORE THAN 15 FEET
   B. THE DEPTH OF THE JOINT SHALL BE AT LEAST 1%%134"
4. BASE ROCK TO BE 2" OR %%136" COMPACTED TO 95% OF AASHTO T-99 AND SHALL BE TO SUBGRADE, STREET STRUCTURE, OR 4" IN DEPTH, WHICHEVER IS GREATER



1 DR_CAST-IN-PLACE CURB
3/4" = 1'-0"



2 DR_DRAIN WITH CONTAINMENT CURB
1/2" = 1'-0"

LEGEND
▲ DOCK-HIGH DOOR

ACCESIBLE PEDESTRIAN PATHWAY
1" = 40'-0"

N

0 20' 40' 80' 160'

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MILDREN DESIGN GROUP
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4875 SW Griffith Drive Suite 300
Beaverton OR, 97005
(503) 244-0552

Client/ Owner:

RCI PROPERTIES (HILLSBORO) LLC

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

SITE PLAN

Revisions:

#	Description	Date

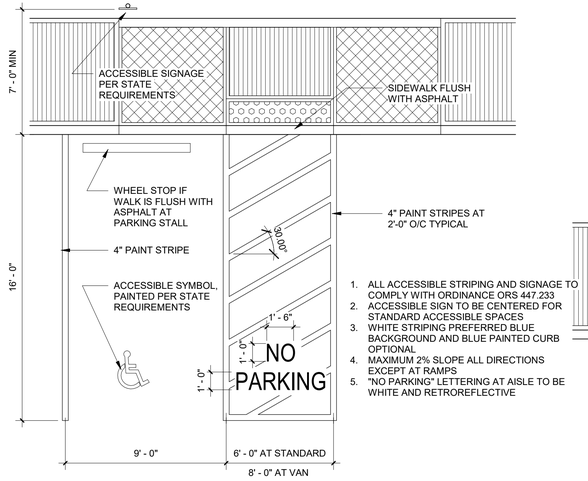
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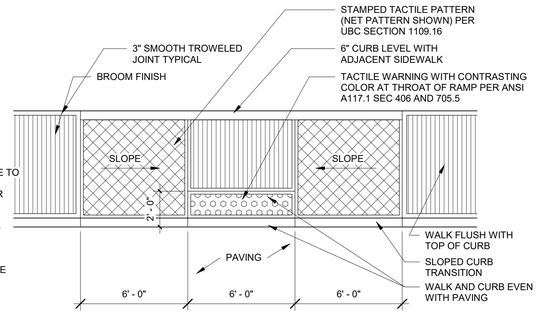
A1-2

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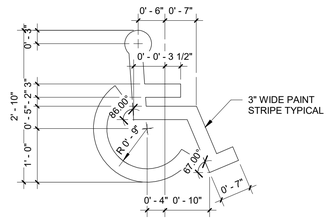


1. ALL ACCESSIBLE STRIPING AND SIGNAGE TO COMPLY WITH ORDINANCE ORS 447.233
2. ACCESSIBLE SIGN TO BE CENTERED FOR STANDARD ACCESSIBLE SPACES
3. WHITE STRIPING PREFERRED BLUE BACKGROUND AND BLUE PAINTED CURB OPTIONAL
4. MAXIMUM 2% SLOPE ALL DIRECTIONS EXCEPT AT RAMPS
5. "NO PARKING" LETTERING AT AISLE TO BE WHITE AND RETROREFLECTIVE

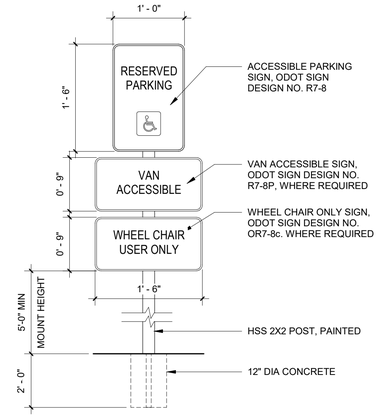
1 ACCESSIBLE PARKING STALL
1/4" = 1'-0"



2 ACCESSIBLE SIDEWALK RAMP
1/4" = 1'-0"



3 INTERNATIONAL ACCESSIBLE SYMBOL
3/4" = 1'-0"



4 ACCESSIBLE PARKING SINAGE
1" = 1'-0"

5 ACCESSIBLE SIDEWALK RAMP
1/4" = 1'-0"

6 ACCESSIBLE SIDEWALK RAMP
1/4" = 1'-0"

7 BOLLARD
3/4" = 1'-0"

8 BICYCLE RACK
1" = 1'-0"

9 TRASH ENCLOSURE PLAN
1/4" = 1'-0"

10 ROLLING GATE ELEVATION
3/8" = 1'-0"

11 PERIMETER FENCE ELEVATION
3/8" = 1'-0"

DR SET 06-18-2021

MILDREN DESIGN GROUP
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SITE DETAILS

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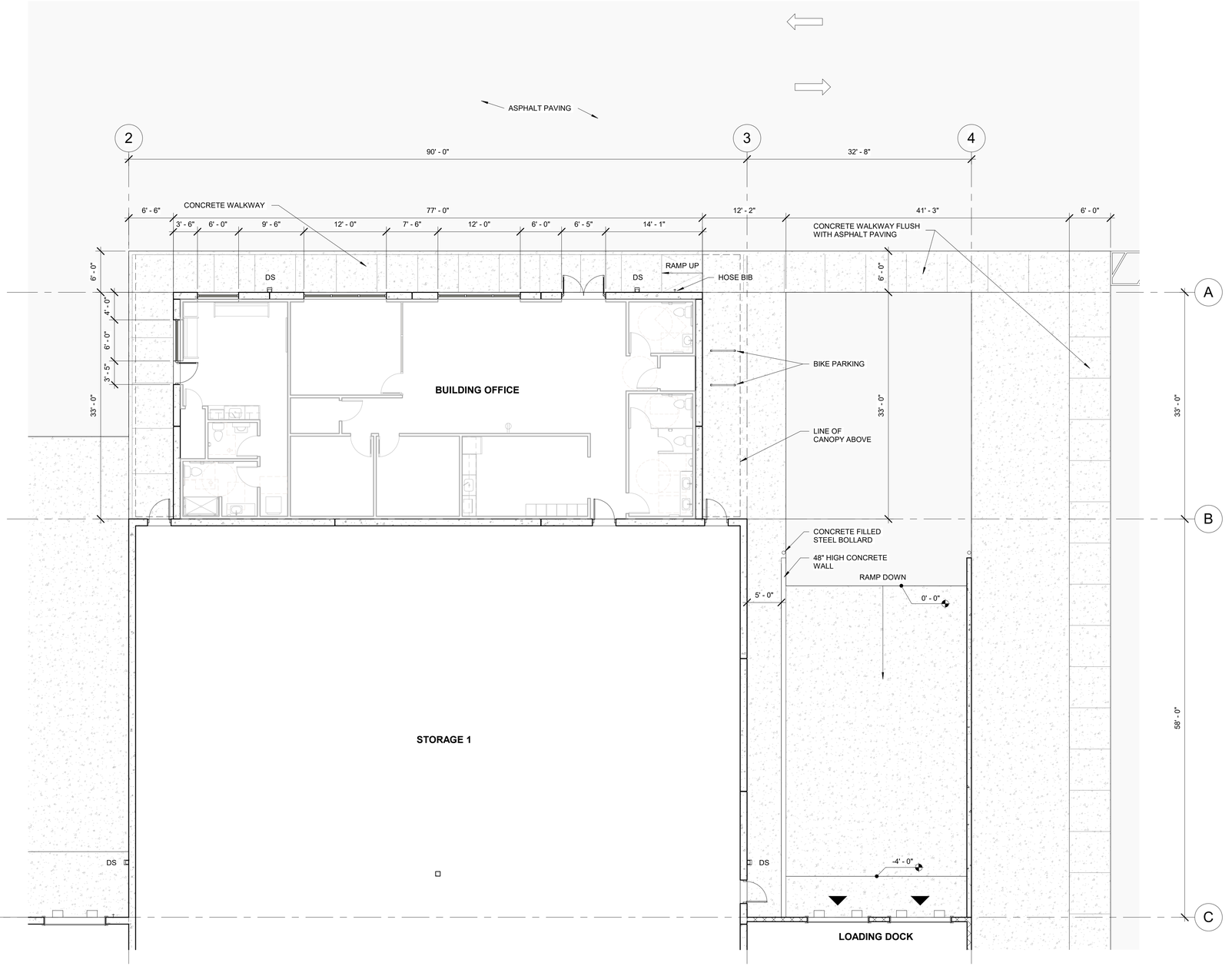
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A1.3

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ENLARGED SITE-PLAN

1/8" = 1'-0"

N

0 4' 8' 16' 32'

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ENLARGED SITE PLAN

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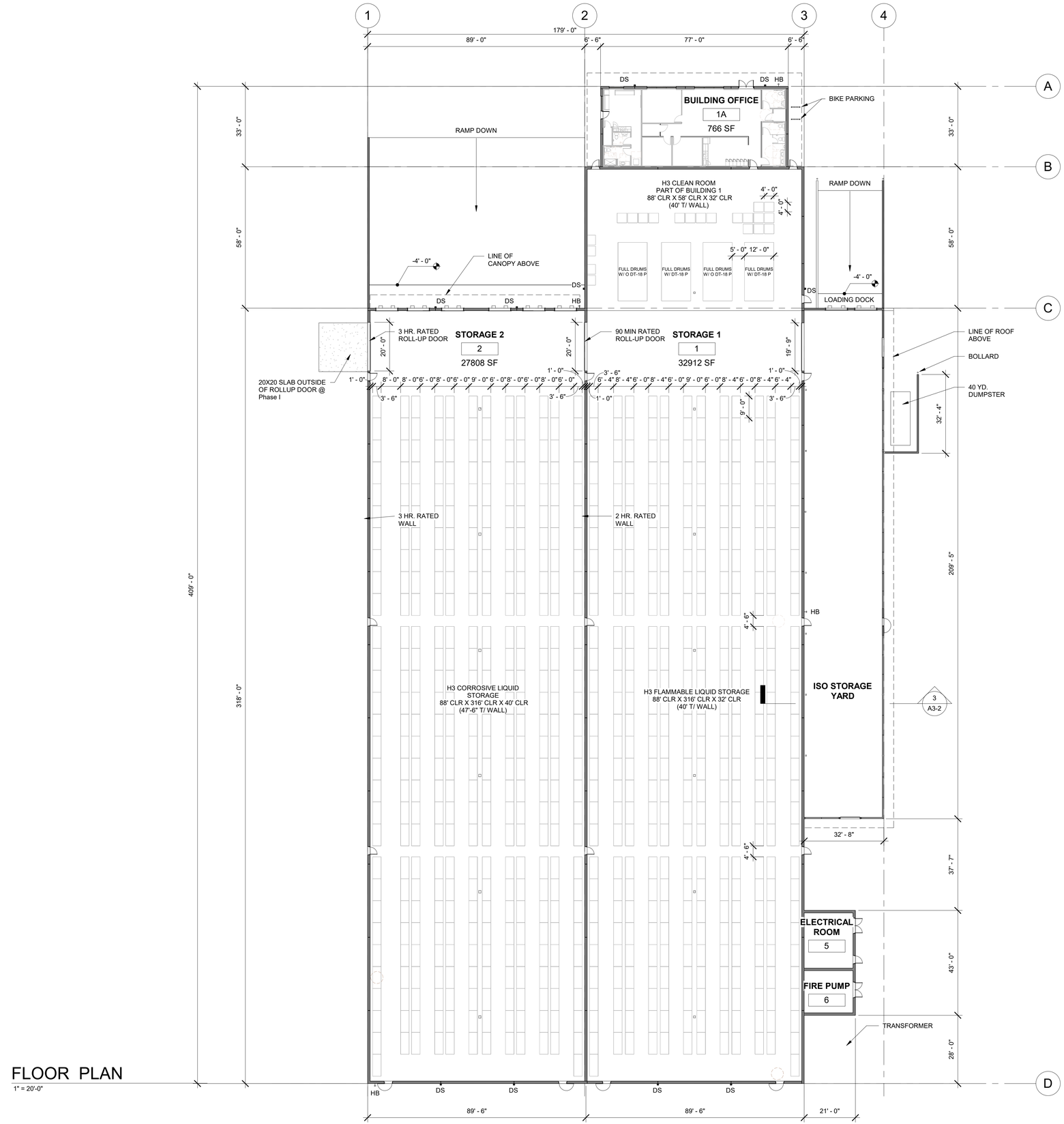
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A1-4



FLOOR PLAN

1" = 20'-0"

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FLOOR PLAN

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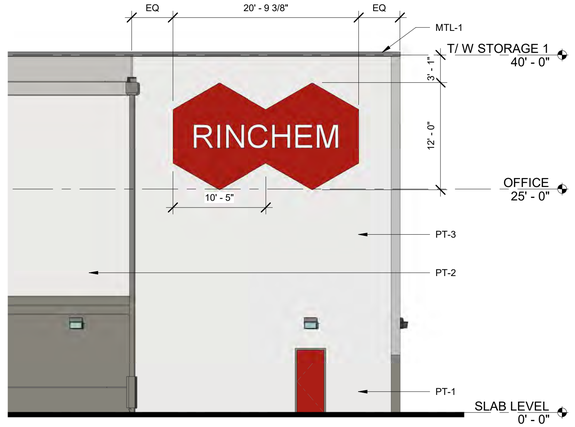
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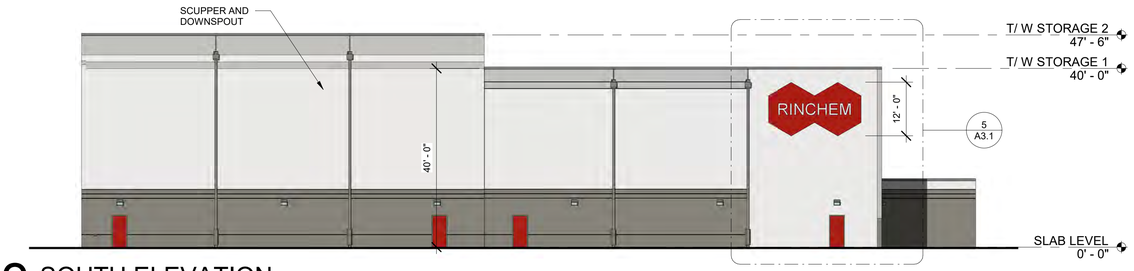
1 NORTH ELEVATION

1/16" = 1'-0"



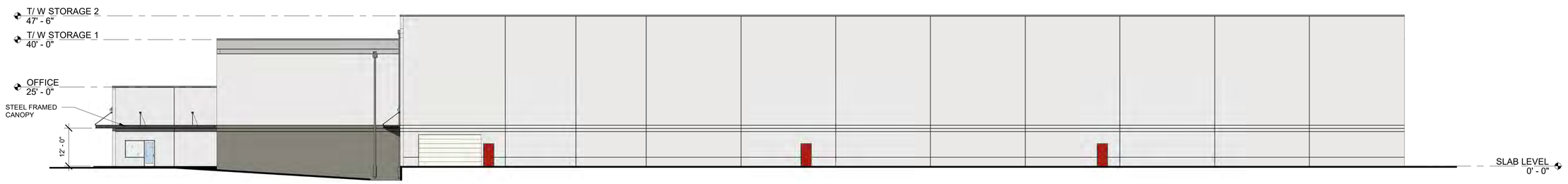
5 ENLARGED ELEVATION

1/8" = 1'-0"



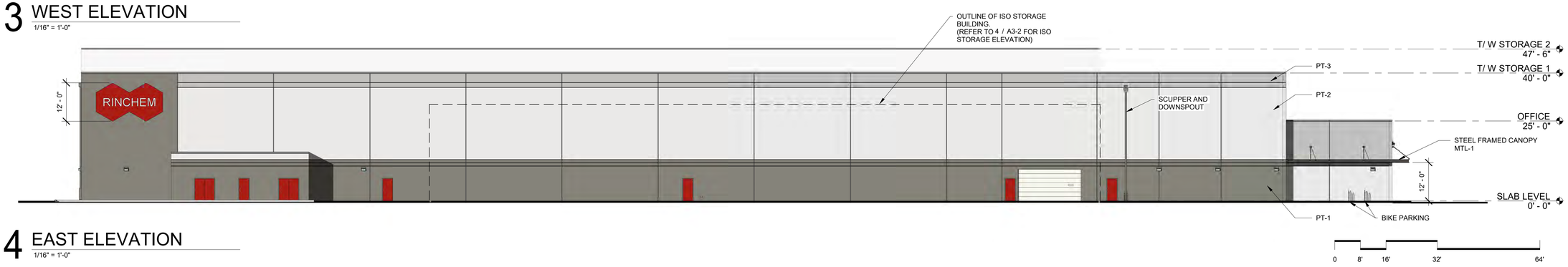
2 SOUTH ELEVATION

1/16" = 1'-0"



3 WEST ELEVATION

1/16" = 1'-0"



4 EAST ELEVATION

1/16" = 1'-0"

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BUILDING ELEVATIONS

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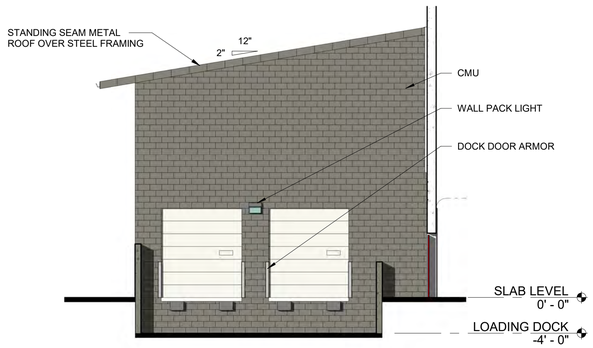
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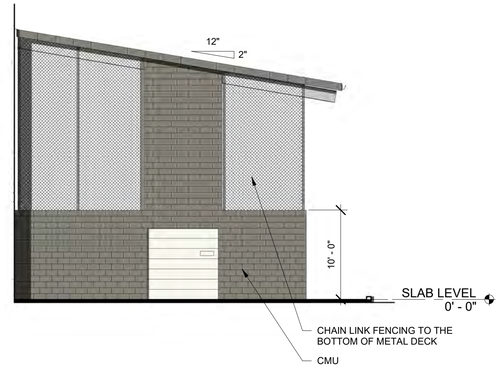
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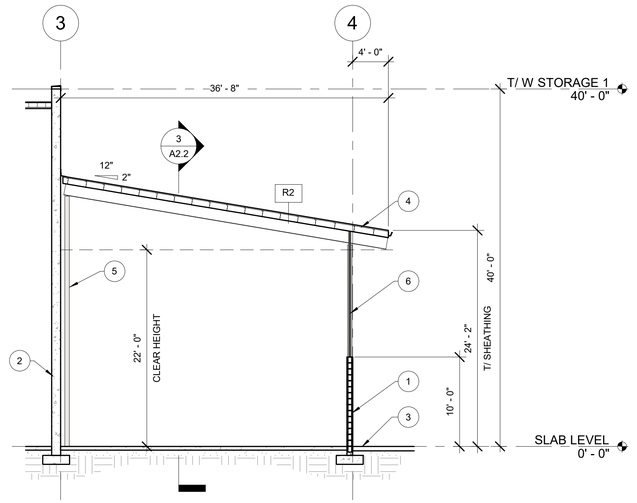
1 NORTH ISO STORAGE ELEVATION

1/8" = 1'-0"



2 SOUTH ISO STORAGE ELEVATION

1/8" = 1'-0"

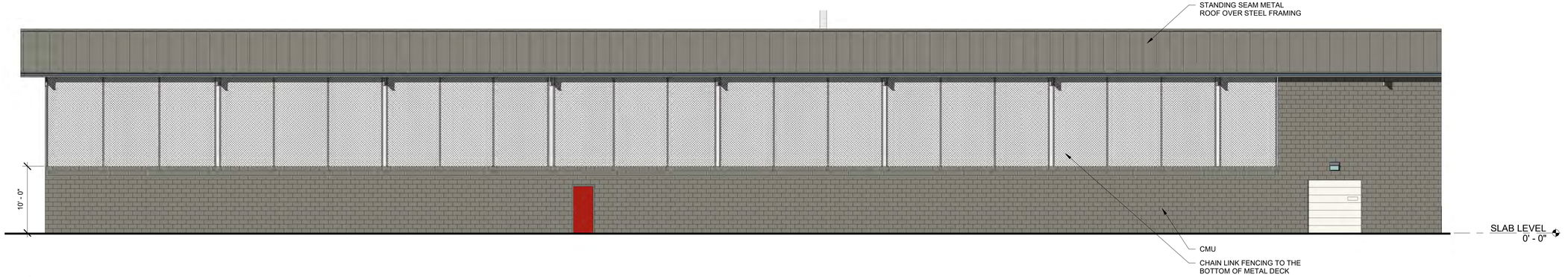


3 ISO STORAGE-SECTION

1/8" = 1'-0"

KEYNOTES

1. 8' HIGH CMU WALL WITH CHAIN LINK ABOVE TO BOTTOM OF STRUCTURE - SEE STRUCTURAL
2. CONCRETE TILT-UP PANEL WITH FIRE PROOFING AT ALL PANEL JOINTS TYP. - SEE STRUCTURAL
3. CONCRETE SLAB ON GRADE - SEE STRUCTURAL
4. STANDING SEAM METAL ROOF OVER STEEL FRAMING - SEE STRUCTURAL
5. TS COLUMN - SEE STRUCTURAL
6. CHAIN LINK FENCING



4 EAST ISO STORAGE ELEVATION

1/8" = 1'-0"

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STORAGE ELEVATIONS AND SECTION

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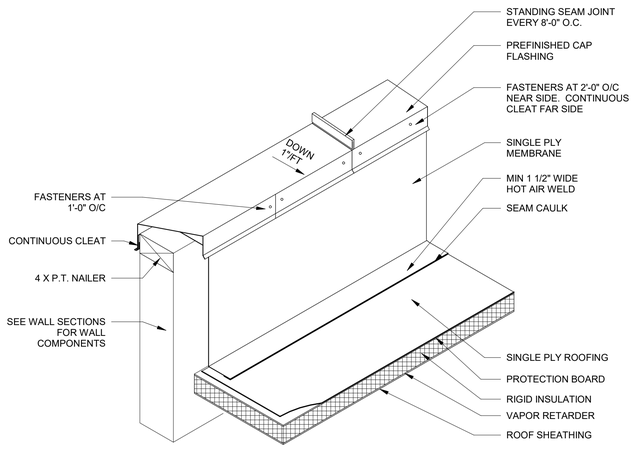
Job Number: 121029

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A3-2

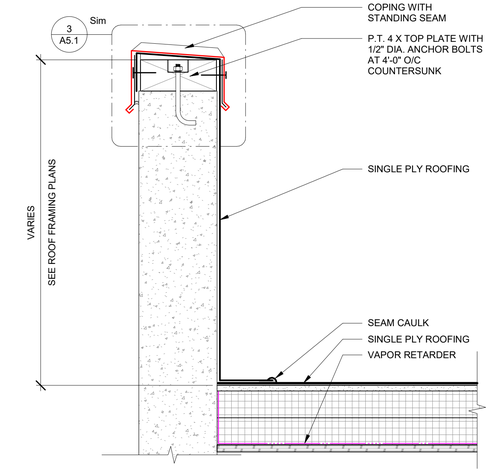
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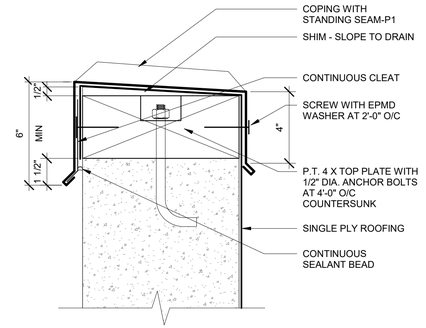
1 TYPICAL WALL PARAPET

1 1/2" = 1'-0"



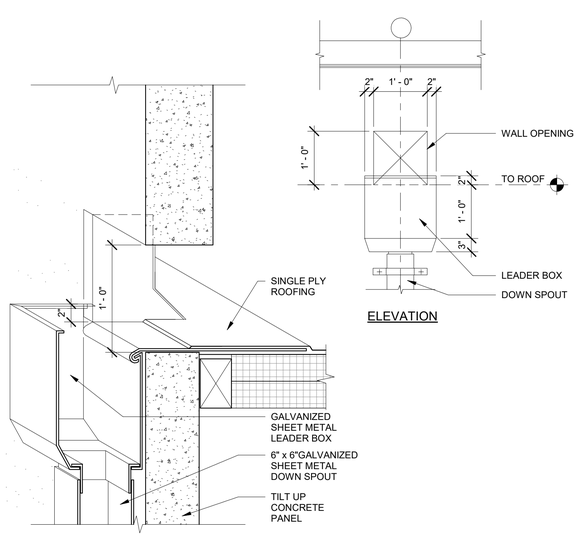
2 PARAPET FLASHING

1 1/2" = 1'-0"



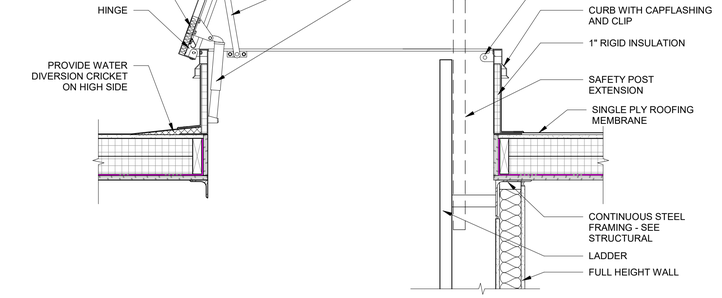
3 PARAPET FLASHING

3" = 1'-0"



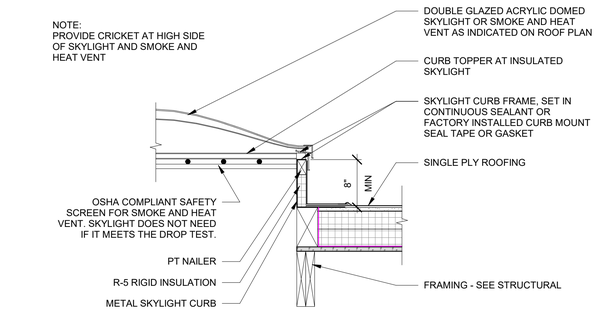
4 SCUPPER AND DOWNSPOUT

1 1/2" = 1'-0"



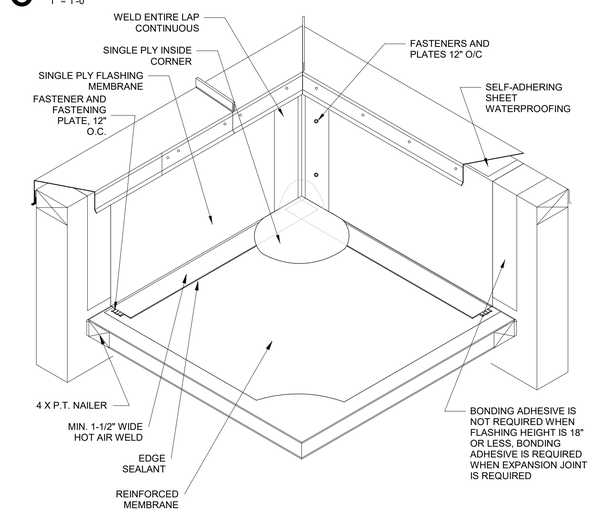
5 ROOF HATCH

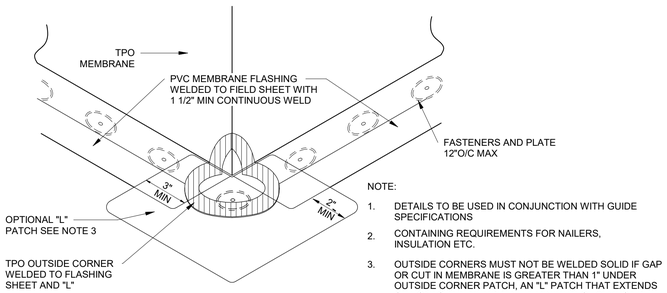
1" = 1'-0"



6 SKYLIGHT OR SMOKE AND HEAT VENT

1" = 1'-0"



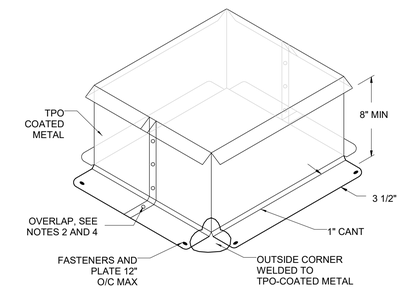


NOTE:

1. DETAILS TO BE USED IN CONJUNCTION WITH GUIDE SPECIFICATIONS
2. CONTAINING REQUIREMENTS FOR NAILERS, INSULATION ETC.
3. OUTSIDE CORNERS MUST NOT BE WELDED SOLID IF GAP OR CUT IN MEMBRANE IS GREATER THAN 1" UNDER OUTSIDE CORNER PATCH, AN "L" PATCH THAT EXTENDS OUT ONTO THE MEMBRANE A MINIMUM OF 2" MUST BE INSTALLED UNDER THE CORNER COVER

7 OUTSIDE CORNER

3/4" = 1'-0"



NOTE:

1. DETAILS TO BE USED IN CONJUNCTION WITH GUIDE SPECIFICATIONS CONTAINING REQUIREMENTS FOR NAILERS, INSULATION ETC.
2. FABRICATION OF TWO PIECES OF TPO-COATED METAL, WITH SEAMS OVERLAPPING A MINIMUM OF 1/2" AND POP RIVETED 3" O/C
3. SEE BASE TIE-IN DETAILS FOR SECUREMENT
4. COVER TPO-COATED METAL SEAMS WITH TPO 6" STRIP

8 TPO COATED METAL CURB FLASHING

1/2" = 1'-0"

9 ROOFING CORNER ATTACHMENT

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DETAILS

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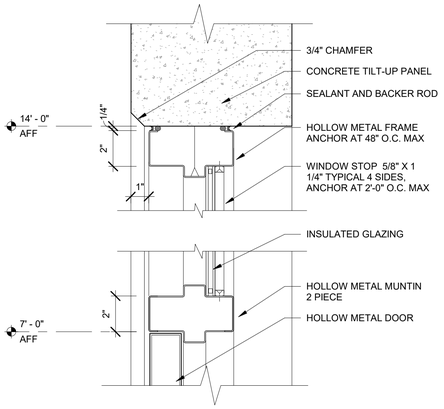
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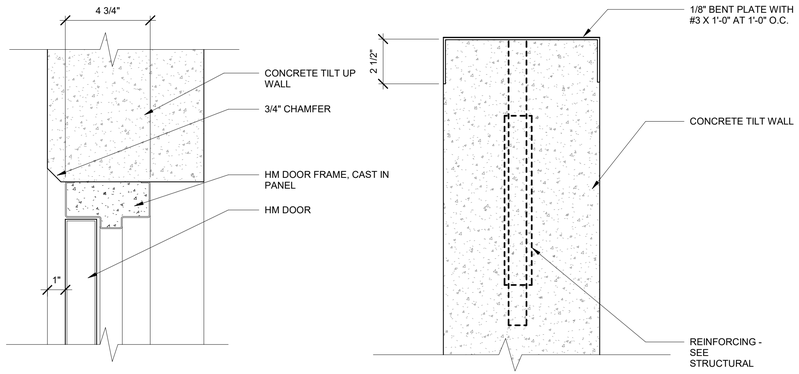
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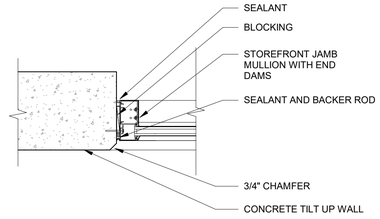


1 HOLLOW METAL TRANSOM AT DOOR
3" = 1'-0"

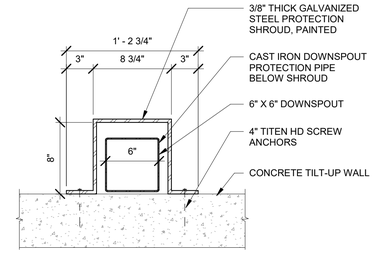


2 HM DOOR HEAD AT TILT
3" = 1'-0"

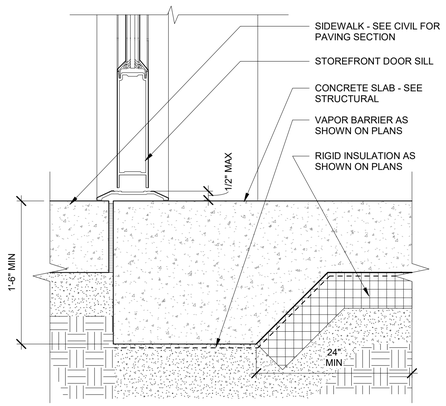
3 DOCK DOOR ARMOR
3" = 1'-0"



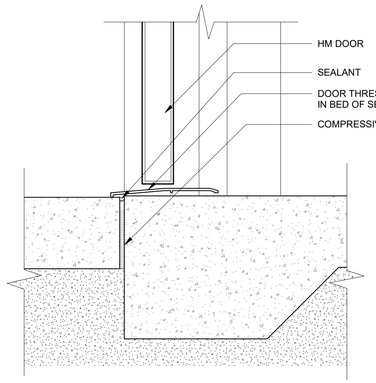
4 STOREFRONT JAMB
1 1/2" = 1'-0"



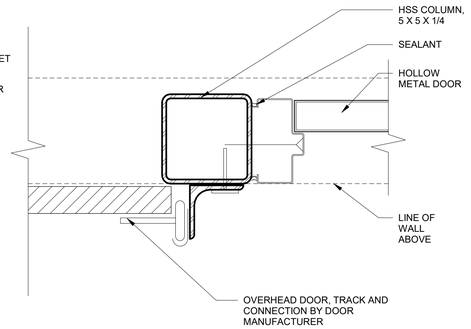
5 SHROUD AT DOWNSPOUT
1 1/2" = 1'-0"



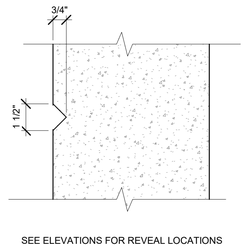
6 STOREFRONT DOOR SILL
3" = 1'-0"



7 HM DOOR SILL
3" = 1'-0"

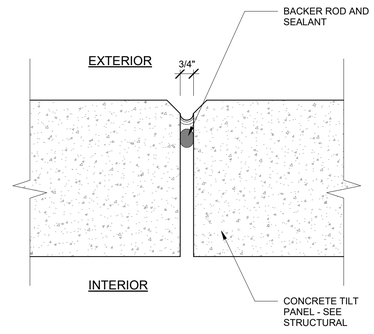


8 HM DOOR JAMB AT COLUMN
3" = 1'-0"

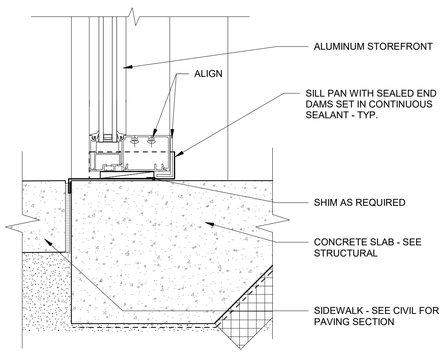


SEE ELEVATIONS FOR REVEAL LOCATIONS

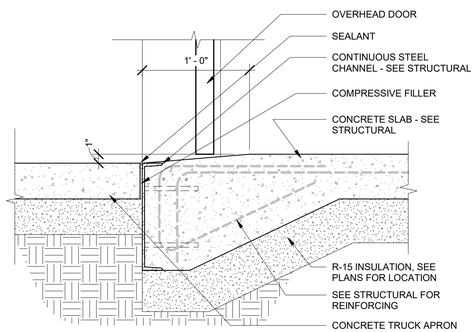
9 CONCRETE REVEAL
3" = 1'-0"



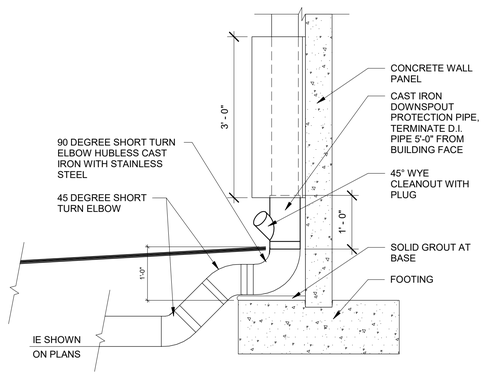
10 PANEL JOINT
3" = 1'-0"



11 STOREFRONT SILL AT SLAB
3" = 1'-0"



12 OVERHEAD DOOR SILL
1 1/2" = 1'-0"



13 DOWNSPOUT CONNECTION
3/4" = 1'-0"

DR SET 06-18-2021

MILDREN DESIGN GROUP
ARCHITECTURE | INTERIORS
4875 SW Griffith Drive Suite 300
Beaverton OR, 97005
(503) 244-0552

Client/ Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

DETAILS

Revisions:

#	Description	Date

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Date: 06-18-2021
Drawn by: Author
Checked by: Checker
Job Number: 121029
Sheet

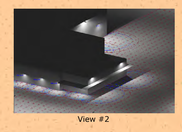
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FUTURE ISO YARD

FUTURE

BUILDING OFFICE
1A
2488 SF


View #2

FUTURE

TRUCK PARKING (ASPHALT)

FUTURE

FUTURE

BUILDING 2
2
27808 SF

BUILDING 1
1
32912 SF

PARKING (ASPHALT)

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Wattage
	L1-HSS	2	Lithonia Lighting	DSX2 LED P2 30K T3M MVOLT HS	DSX2 LED P2 30K T3M MVOLT with houseside shield	185
	L2	6	Lithonia Lighting	DSX2 LED P2 30K T4M MVOLT	DSX2 LED P2 30K T4M MVOLT	217
	L2A	2	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	434
	L2B	0	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	434
	L3-HSS	5	Lithonia Lighting	DSX2 LED P2 30K T4M MVOLT HS	DSX2 LED P2 30K T4M MVOLT with houseside shield	185
	L4	4	Lithonia Lighting	DSX2 LED P6 30K T4M MVOLT HS	DSX2 LED P6 30K T4M MVOLT with houseside shield	343
	SM2	14	Lithonia Lighting	WDGE1 LED P2 30K 90CRI VW	WDGE1 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 90CRI, VISUAL COMFORT WIDE OPTIC	15.0178
	SM3	1	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	217
	SM4	4	Lithonia Lighting	WDGE2 LED P5 50K 80CRI VF	WDGE2 LED WITH P5 - PERFORMANCE PACKAGE, 5000K, 80CRI, VISUAL COMFORT FORWARD OPTIC	48.44

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Prop Line	+	0.2 fc	3.0 fc	0.0 fc	N/A	N/A
Site	+	1.7 fc	10.7 fc	0.0 fc	N/A	N/A

Designer

Date
05/19/2021
Scale
Not to Scale
Drawing No.

Summary

PM 1.0

FUTURE ISO YARD

FUTURE

TRUCK PARKING (ASPHALT)

FUTURE

FUTURE

FUTURE

BUILDING OFFICE
1A
2488 SF

BUILDING 2
2
27808 SF

BUILDING 1
1
32912 SF

PARKING (ASPHALT)

Schedule							
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Wattage
	L1-HSS	2	Lithonia Lighting	DSX2 LED P2 30K T3M MVOLT HS	DSX2 LED P2 30K T3M MVOLT with houseside shield	1	185
	L2	6	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	1	217
	L2A	2	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	1	434
	L2B	0	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	1	434
	L3-HSS	5	Lithonia Lighting	DSX2 LED P2 30K T4M MVOLT HS	DSX2 LED P2 30K T4M MVOLT with houseside shield	1	185
	SM2	14	Lithonia Lighting	WDGE1 LED P2 30K 90CRI VW	WDGE1 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 90CRI, VISUAL COMFORT WIDE OPTIC	1	15.0178
	SM3	1	Lithonia Lighting	DSX2 LED P3 30K T4M MVOLT	DSX2 LED P3 30K T4M MVOLT	1	217
	SM4	4	Lithonia Lighting	WDGE2 LED P5 50K 80CRI VF	WDGE2 LED WITH P5 PERFORMANCE PACKAGE, 5000K, 80CRI, VISUAL COMFORT FORWARD OPTIC	1	48.44

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Prop Line	+	0.2 fc	3.0 fc	0.0 fc	N/A	N/A
Site	+	1.7 fc	10.7 fc	0.0 fc	N/A	N/A

VISUAL

Designer

Date
05/19/2021
Scale
Not to Scale
Drawing No.

Summary

PM 2.0

DEVELOPER OR AGENT: WILLIAM GRIMM, FIRST FORTY FEET

PROJECT LOCATION: N. HOLLADAY STREET, CORNELIUS, OR

AFFIDAVIT OF MAILING NOTICE

I, WILLIAM GRIMM, being first duly sworn; say that I am (represent) the party intended to submit an application to the City of Cornelius for a proposed N. HOLLADAY ST. DEVELOPMENT affecting land located at N. HOLLADAY ST., and that pursuant to Ordinance 810, Chapter 18.10, and the guidelines set out by the Community Development Director, did on the MAY day of 10, 2021, personally mail notice to affected property owners within 250 feet of the proposed development site.

Sign and Date in the presence of a Notary Public. Certain City staff are Notary Publics and are available for witnessing.

Signature: William M Grimm

Dated this ~~August~~ SEPT day of 3, 2021.

State of Oregon
County of Multnomah

Subscribed and sworn to (or affirmed) before me this 3rd *day of* September, 2021.

A Williams

Notary Public for the State of Oregon

My Commission expires: 17th May 2025

OFFICIAL STAMP
ADDAM JOHN WILLIAMS
NOTARY PUBLIC-OREGON
COMMISSION NO. 1012049
MY COMMISSION EXPIRES MAY 17, 2025

Neighborhood Review Meeting

on a

Preliminary Development Proposal affecting

N. HOLLADAY STREET in Cornelius, OR

Proposed as a chemical storage warehouse and storage yard. The project will be in two phases of construction , including two 90' x 300' structures.

A **virtual conference meeting** to discuss the preliminary development proposal is scheduled for **JUNE 16th at 6:30p-7:30p** at the following link:

https://global.gotomeeting.com/join/824385333

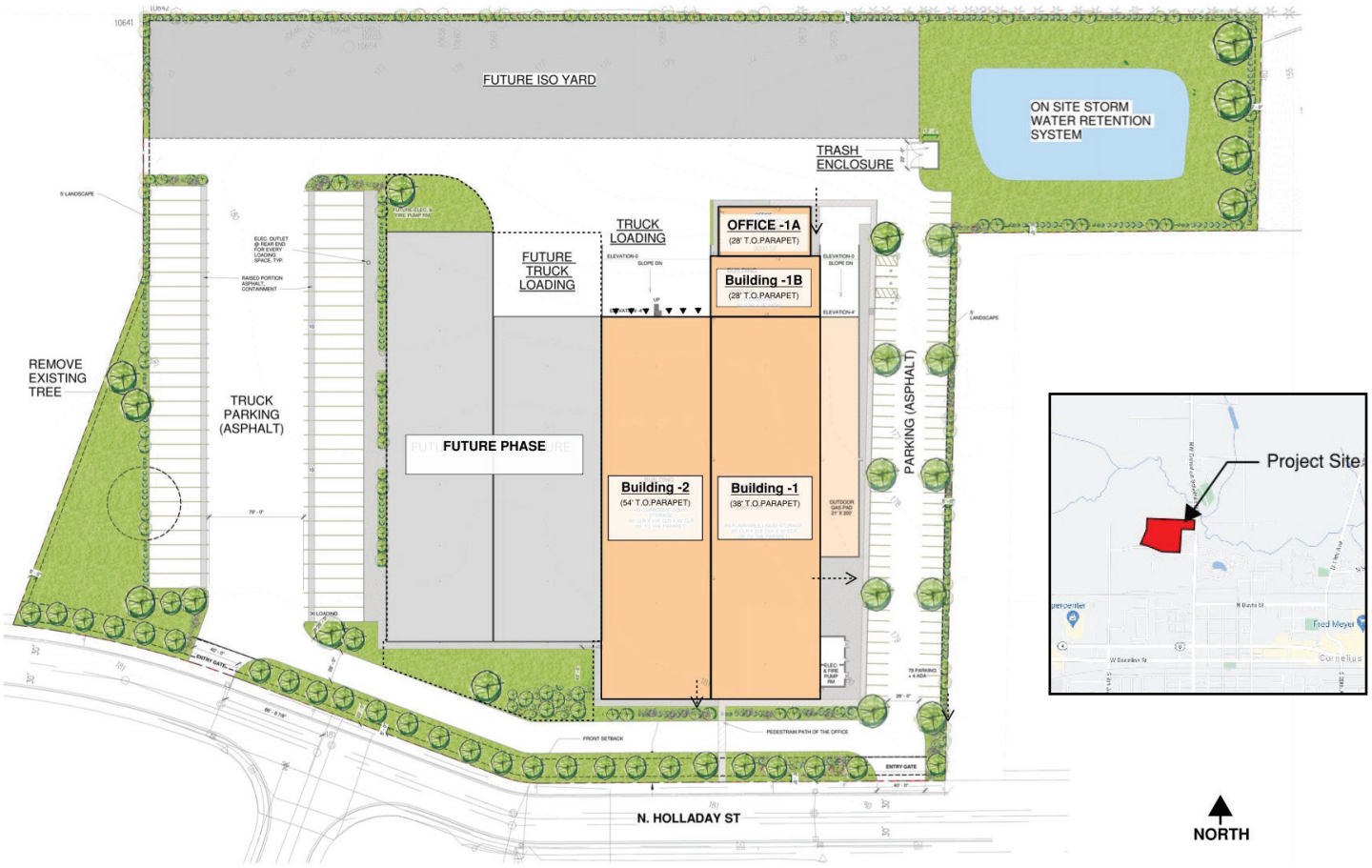
Access Code: **824-385-333**

You can also dial in using your phone -- **(224) 501-3412**

All interested persons may attend

For more information, please contact:

William Grimm, 802-595-9448 or email **will@firstfortyfeet.com**



FIRST FORTY FEET

Place Strategy
Community Planning
Urban Design

1716 SE 29th Ave
Portland, Oregon 97214
o: 971-245-4352
c: 802-595-9448
www.firstfortyfeet.com

May 5, 2021

NEIGHBORHOOD MAILING LIST

Project:
Development Proposal
N. Holladay Industrial Park

Meeting Hosted by:
Nang Ma, Project Manager, Mildren Design Group
Will Grimm, Planning Consultant, First Forty Feet

1. Greatwide Dedicated Transport, 495 N. Holladay Street
2. Business, 707 N. Holladay Street
3. Eagle Precision Sheet Metal, 761 N. Holladay St
4. Resident, 1137 NW Cornelius-Schefflin Rd.
5. Resident, 36955 NW Spiesschaert Road
6. Valley Agronomics LLC, 986 N. Holladay St.
7. Resident, 1060 NW Cornelius-Schefflin Rd.
8. Resident, 1020 NW Cornelius-Schefflin Rd.
9. Forest Hills Mobile Estate, 570 N. 10th Ave
10. Resident, 681 N. 10th Ave
11. Higher Taste Ltd., 981 N. Holladay St.


RINCHEM
RINCHEM

FIRST FORTY FEET
Place Strategy
Community Planning
Urban Design

1716 SE 29th Ave
Portland, Oregon 97214
o: 971-245-4352
c: 802-595-9448
www.firstfortyfeet.com

June 17, 2021

VIRTUAL NEIGHBORHOOD MEETING

Project:
Development Proposal
N. Holladay Industrial Park

Wednesday, June 16, 2021 6:30p-7:30p

Hosted by:
Nang Ma, Project Manager, Mildren Design Group
Will Grimm, Planning Consultant, First Forty Feet

Attendee List
Skye Langford – Manager and representative of Forest Hills Mobile Park Community.
Email - foresthills@cwres.com

Presentation
The virtual neighborhood meeting opened at 6:25 with the presentation starting at 6:35. Will started the meeting with introductions and summary of the intent of the project and purpose of the neighborhood meeting.

Nang presented the concept and site plan, providing a detailed description of the proposed facility, site location, edge conditions, and the type of operations and storage.

We concluded the virtual meeting at 7:31pm.

Questions and Concerns

All questions were answered by Nang and Will with the best of their knowledge. Our team will provide further clarifications and details with a follow up email to all attendees.

1. What precautions have been taken to prevent an emergency during a power outage? Does the facility have back-up power, especially with containers that need refrigeration? Skye told us the processing plant next door lost power and her neighborhood had to evacuate their homes. What measures do you have in place to avoid this from happening?

Our team noted that the facility will have a backup generator with the ability to run the entire operation, if needed.

2. Residents are asking about the physical appearance of the ISO yard. Are these stacked components? How high?

Our team described the ISO storage field as stacked open-air framed structure that secures the integrity of one pressurized container. They are approximately 7'X7'X20'in dimension.

3. What is the stormwater retention look like? How does it function? Does the stormwater go into our groundwater table or aquifer? Do chemicals seem into this system? How safe is the water?

FIRST FORTY FEET
Planning
Urban Design
Place Strategy

2260 NW Everett Street
Portland, Oregon 97210
t: 971-245-4352
www.firstfortyfeet.com

We described the stormwater management system as a safe measure to collect stormwater from the impervious surfaces of the property which are diverted for retention. This avoids stormwater from running off our site and allows our stormwater to be naturally treated or filtered. We did explain that Clean Water Services will be involved in determining environmental safety. The facility will also have a separate retention system for the ISO tanks yard and dock areas that can be pumped out if there was a spill.

4. What is being stored here? Are there fire concerns?

We communicated that H3 is being stored, exclusively. We presented the fire and life safety plan and noted our fire alarm systems, supervisions, fire safety plan, training programs, control system. The flammable portions of the warehouse will include rack sprinklers.

5. What type of sprinkler system will be used? Is there a special suppression medium used for chemicals?

The rack sprinkler system will have special specifications for the flammable warehouse contents.

6. How many trucks per day? What time during the day?

We noted about 20 trucks per day during the hours of operation.

7. How are we dealing with environmental sensitive areas regarding light pollution?

We noted that we are required to provide a photometric lighting plan ensuring we protect 'night sky' for habitat and prevent light from bleeding onto adjacent properties. All lighting will be directed down and internal.

8. How are using street trees and landscape to create a more attractive development?

We noted the requirement to provide streetscape improvements through street trees, and a mix of groundcover, deciduous, and coniferous trees along with a green buffer. We showed the rendering to illustrate how nice the facility will look and how much landscape the development will incorporate.

Clean Water Services

SENSITIVE AREA PRE-SCREENING SITE ASSESSMENT

Clean Water Services File Number 21-001597

1. **Jurisdiction:** Cornelius

2. **Property Information** (example: 1S234AB01400)
Tax lot ID(s): Tax Map: 1N333DB Tax Lots: 300, 400, 500, & 600

***OR* Site Address:** Not defined by City of Cornelius
City, State, Zip: cornelius, oregon,
Nearest cross street: 4th and Holladay

3. **Owner Information**
Name: Robert Tokado
Company: Rinchem Company
Address: 5131 masthead street ne,
City, State, Zip: albuquerque, new mexico, 87109
Phone/fax: 505 681 9124
Email: rtoledo@rinchem.com

4. **Development Activity** (check **all** that apply)
- ☐ Addition to single family residence (rooms, deck, garage)
- ☒ Lot line adjustment
- ☐ Minor land partition
- ☐ Residential condominium
- ☐ Commercial condominium
- ☐ Residential subdivision
- ☐ Commercial subdivision
- ☐ Single lot commercial
- ☒ Multi lot commercial

Other Site development, commercial building construction

4. **Applicant Information**
Name: karl koroch
Company: tm rippey consulting engineers
Address: 7650 sw beveland street
City, State, Zip: portland, oregon, 97276
Phone/fax: 503 803 8600
Email: kkoroch@tmrippey.com

6. **Will the project involve any off-site work?** ☐ Yes ☒ No ☐ Unknown
Location and description of off-site work:

7. **Additional comments or information that may be needed to understand your project:**
Right of way vacation, lot consolidation, site development, grading, utility, and commercial building construction,

This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/type name karl koroch Print/type title principal

Signature ***ONLINE SUBMITTAL*** Date 5/17/2021

FOR DISTRICT USE ONLY

☒ Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.

☐ Based on review of the submitted materials and best available information sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, State and federal law.

☐ Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, state and federal law.

☐ **THIS SERVICE PROVIDER LETTER IS NOT VALID UNLESS _____ CWS APPROVED SITE PLAN(S) ARE ATTACHED.**

☐ The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). **NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.**

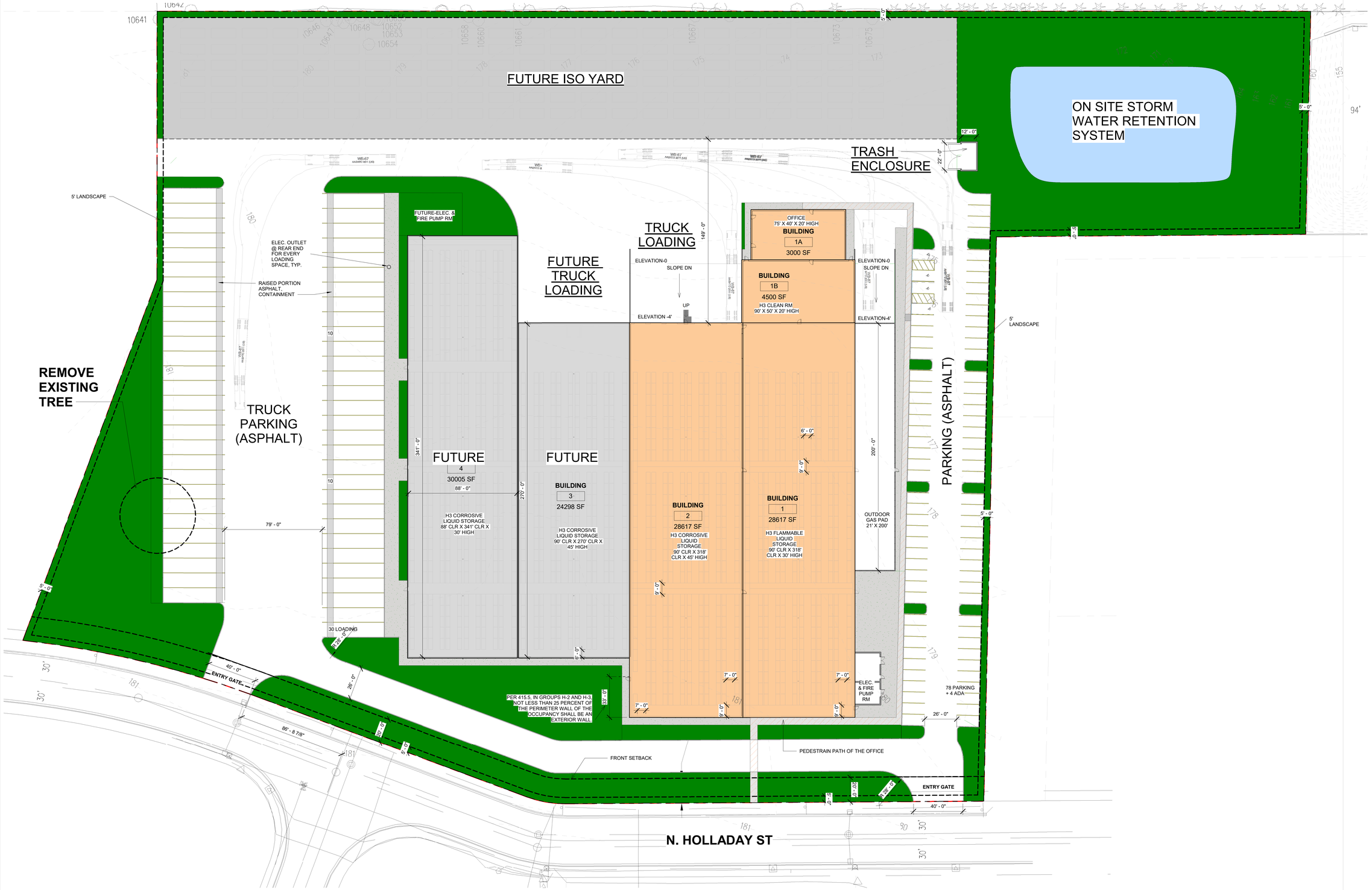
Reviewed by _____ Date 6/24/21

Once complete, email to: **SPLReview@cleanwaterservices.org** • Fax: **(503) 681-4439**

OR mail to: SPL Review, Clean Water Services, 2550 SW Hillsboro Highway, Hillsboro, Oregon 97123

Revised 2/2020

KEYNOTE LEGEND



1 SITE PLAN
1" = 30'-0"

0 2 4 8 16

N

Project Status

MILDREN DESIGN GROUP
ARCHITECTURE | INTERIORS
7650 SW Beveland Street, Suite 120
Tigard, Oregon 97223 - 8692
O | 503.244.0552

Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

SITE PLAN

Revisions:

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Date: 02/18/21

Drawn by: Author

Checked by: Checker

Job Number: 121007

Sheet

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Clean Water Services

SENSITIVE AREA CERTIFICATION FORM

Clean Water Services File Number

1. Property Information (example 1S234AB01400)

Tax lot ID(s): 1N333DB00500, 1N333DB00600 , 1N333DB00300 , 1N333DB00400

Site Address: North Holladay Street

City, State, Zip: Cornelius, OR 97113

Nearest cross street: North 10th Avenue

2. Owner Information

Name: Robert Toledo

Company: Rinchem Company, Inc.

Address: 5131 Masthead Street, NE

City, State, Zip: Albuquerque, NM 87109

Phone/Fax: 505-681-9124

E-Mail: rtoledo@rinchem.com

3. Development Activity (check **all** that apply)

- ☐ Addition to single family residence (rooms, deck, garage)
- ☐ Lot line adjustment
- ☐ Minor land partition
- ☐ Residential condominium
- ☐ Commercial condominium
- ☐ Residential subdivision
- ☐ Commercial subdivision
- ☐ Single lot commercial
- ☐ Multi lot commercial

Other Industrial Development

4. Applicant Information

Name: Tuan Q. Luu

Company: Mildren Design Group

Address: 4875 SW Griffith Drive, Suite 300

City, State, Zip: Beaverton, OR 97005

Phone/Fax: 503-244-0552

E-Mail: tuan@mdgpc.com

5. Check any of the following that apply to this project

- ☐ Adds less than 500 square feet of impervious surface.
- ☐ Does not encroach closer to the Sensitive Area than existing development on the property.
- ☒ Is not located on a slope greater than 25%.

6. Applicant Information

Name:

Company:

Address:

City, State, Zip:

Phone/Fax:

E-Mail:

7. Will the project involve any off-site work? ☐ Yes ☒ No ☐ Unknown (check appropriate box)

If yes, location and description of off-site work:

8. Additional comments or information that may be needed to understand your project:

9. An on-site, water quality sensitive area reconnaissance was completed on:

Date 7/19/2021 By Craig Tumer, PWS

Title Senior Environmental Scientist Company Pacific Habitat Services, Inc.

Clean Water Services

SENSITIVE AREA CERTIFICATION FORM

Clean Water Services File Number _____

10. Existence of Water Quality Sensitive Areas (check all appropriate boxes)

As defined in the District's Design and Construction Standards:

A. Water Quality Sensitive Areas ☐ do ☒ do not exist on the tax lot.

B. Water Quality Sensitive Areas ☐ do ☐ do not exist within 200' on adjacent properties, or ☒ unable to evaluate adjacent property.

C. Vegetated corridors ☐ do (_____SF) ☒ do not exist on the tax lot.

D. Vegetated corridors ☐ do ☐ do not exist within 200' on adjacent properties, or ☒ unable to evaluate adjacent property.

E. Impacts to sensitive areas and/or vegetated corridors will occur ☐ On-site ☐ Off-site ☒ None proposed at this time.

F. If impacts, mitigation is ☐ On-site ☐ Off-site ☐ Other_____

11. Simplified Site Assessment containing the following information: (check only items submitted)

Please refer to Design and Construction Standards 19-5 section 3.02.2, as amended by Resolution and Order 19-22, for application requirements.

☒ Complete Certification Form (2 pages)

☒ Written description of the site and proposed activity.

☒ Site plan of the entire property.

☒ Photographs of the site labeled and keyed to the site plan.

12. Standard Site Assessment containing the following information: (check only items submitted)

Please refer to Design and Construction Standards 19-5 section 3.02.2, as amended by Resolution and Order 19-22, for application requirements.

☐ Complete Certification Form (2 pages)

☐ Written description per Design and Construction Standards 19-5 section 3.13.3 b. 1, as amended by Resolution and Order 19-22

☐ Wetland Data sheets

☐ Vegetated Corridor Data sheets

☐ Existing Site Condition Figures

☐ Proposed Development Figures

By signing this form the Owner, or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site.

I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Applicant:

Print/Type Name Tuan Q. Luu Print/Type Title Principal

Signature _____ Date 07/29/2021

PACIFIC HABITAT SERVICES, INC.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070
(800) 871-9333 ● (503) 570-0800 ● Fax (503) 570-0855

July 28, 2021

Tuan Luu
Mildren Design Group
4875 SW Griffith Drive, Suite 300
Beaverton, OR 97005

Subject: Simplified Site Assessment for the proposed Rinchem Storage Building Project, Cornelius, Washington County, Oregon
PHS project number: 7290

Dear Tuan:

Pacific Habitat Services, Inc. (PHS) has prepared a Simplified Site Assessment in order to obtain a Service Provider Letter (SPL) from Clean Water Services (CWS) for the development of the proposed Rinchem Storage Building Project I Cornelius, Oregon. Previous investigations of the project site by PHS determined that no wetlands or other sensitive areas regulated by CWS are present on this site; therefore, a Simplified Site Assessment must be submitted to CWS to obtain an SPL. This memorandum provides the information required for a Simplified Site Assessment, in accordance with Section 3.13.2 of CWS's Design & Construction Standards: R&O 19-5 as Amended by R&O 19-22, and adopted November 12, 2019.

Site Description

The project site consists of four tax lots located north of North Holladay Street and west of North 10th Avenue in the City of Cornelius (Tax Map 1N333DB, Tax Lots 300, 400, , and 600). The project site is zoned General Industrial Zone M-1. The project site is bordered on the south by North Holladay Street and industrial uses, on the east by North 10th Avenue and Valley Agronomics, and on the north and west by agricultural fields. The project location is depicted on Figure 1 in Attachment 1.

Site topography is relatively flat to moderately sloping with drainage generally to the northeast. A topographic swale in the northeastern portion of the site carries runoff to a stormwater facility adjacent to the northeastern corner of the site. The majority of the site is in agricultural use, being used most recently for grass seed production. A large Oregon white oak (*Quercus garryana*) tree is located in the southwestern corner of the project site. A hedgerow of trees and shrubs, including Douglas-fir (*Pseudotsuga menziesii*), English hawthorn (*Crataegus monogyna*), and Himalayan blackberry (*Rubus armeniacus*) is present along the northern site boundary. Photographs of existing conditions within the project site are provided in Attachment 2.

Description of Proposed Development Activity

The proposed is the construction of an approximately 60,000-square foot (sf) chemical storage warehouse for the Rinchem Companies. The Applicant proposes to develop approximately 10 acres of land for a chemical storage warehouse, storage yard, and associated infrastructure. The entire development is divided into two phases. The first phase will include an office, two storage

warehouses, a covered outdoor storage yard, six truck loading spaces, and 72 vehicle parking spaces. The future phase is not part of this permit application and will be considered under a separate application. The parking spaces will accommodate the current phase and the future phase of the development. The proposed site plan is depicted in Figure 2.

Sensitive Areas and Vegetated Corridors

No Sensitive Areas (i.e., wetlands streams, or other waterbodies) or associated Vegetated Corridors are present on the project site. PHS performed a wetland delineation on the North Holladay Industrial Park site, which included the current project site, as described in a wetland delineation report dated July 19, 2013. That investigation found that there are no wetlands or other non-wetland waters on the site of the proposed Rinchem Storage Building Project. On March 24, 2014, the Oregon Department of State Lands (DSL) issued a letter of concurrence DSL# 2013-0348) confirming that wetland delineation.

On July 19, 2021, PHS visited the Rinchem project site to document current site conditions and confirm that the finding of PHS's previous wetland delineation on the site are still accurate. During this site visit, PHS examined the study area for the presence of the three wetland parameters (i.e., wetland hydrology, hydric soils, and hydrophytic vegetation), which are used to identify the location and extent pf jurisdictional wetlands, in accordance with the Routine On-site Determination, as described in the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y-87-1* ("The 1987 Manual") and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West*. At the time of the site visit, PHS collected data at representative sample points, paying particular attention to topographically low areas where wetlands would be most likely to occur, to document hydrology, soil, and vegetation characteristics. Wetland determination data sheets describing existing conditions are included in Attachment 3.

No jurisdictional wetlands or non-wetland waters are present within the project site. The majority of the project site is planted in perennial ryegrass (*Lolium perrenans*) for grass seed production, under existing conditions. As described above, the site's topography is relatively flat to gently sloping with a topographic swale in the northeastern portion of the project area. Sample Points 1 and 2 within this topographic swale document that the soils are not hydric and there is no evidence of wetland hydrology; therefore, this swale does not meet wetland criteria. Photographs of the sample points and other site conditions are provided in Attachment 2. The locations of sample points and the photographs are depicted on Figure 3.

SUMMARY

No Sensitive Areas (i.e., wetlands, streams, or other waterbodies) or associated Vegetated Corridors are present on the project site; therefore, the proposed project will not result in impacts to Sensitive Areas or Vegetated Corridors.

Sincerely,

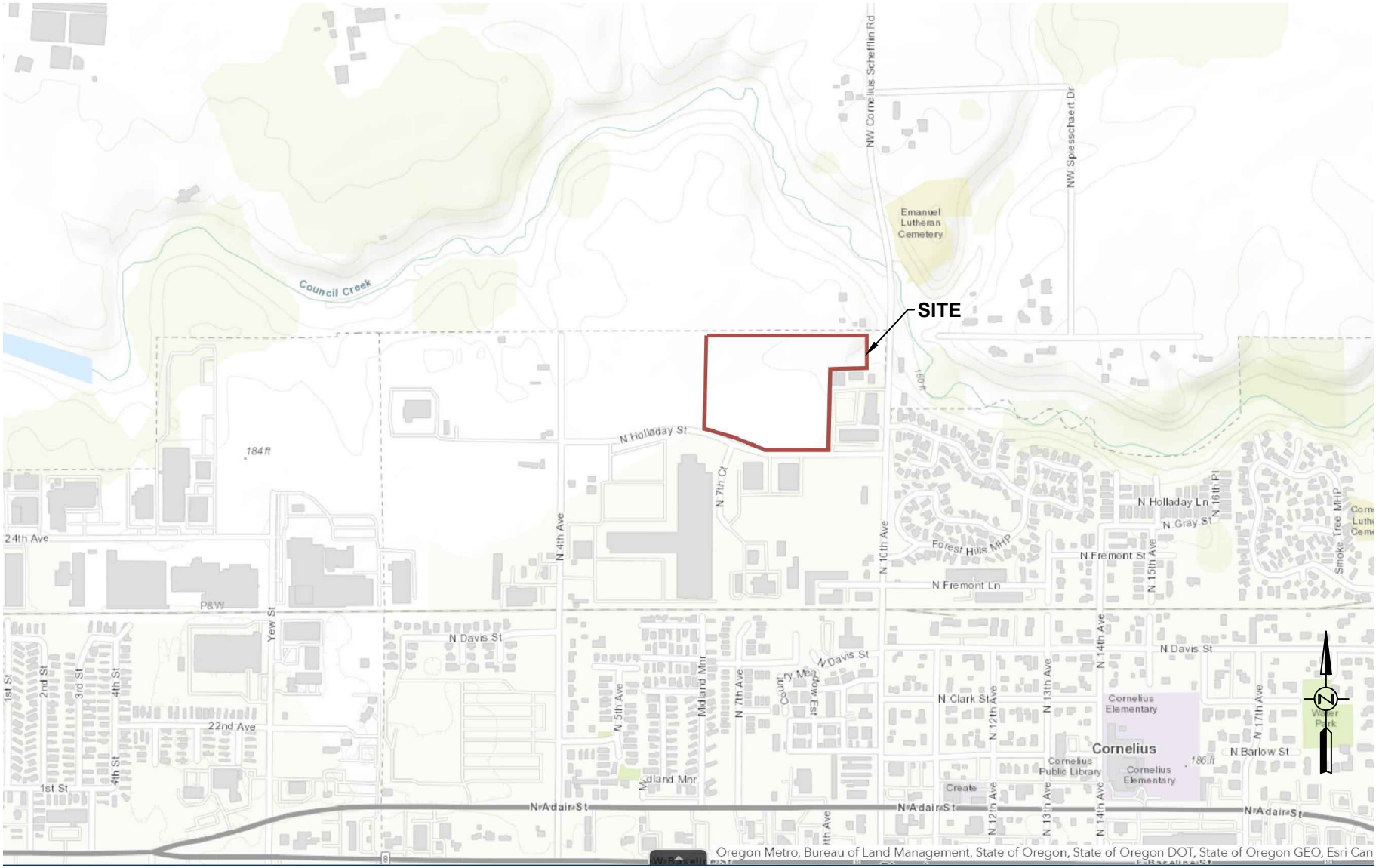
Craig E. Turner

Craig Tumer, PWS,
Senior Environmental Scientist

Attachments 1-3

Attachment 1

Figures



Pacific Habitat Services, Inc.
9450 SW Commerce Circle, Suite 180 Wilsonville, Oregon 97070
Phone: (503) 570-0800 Fax (503) 570-0855

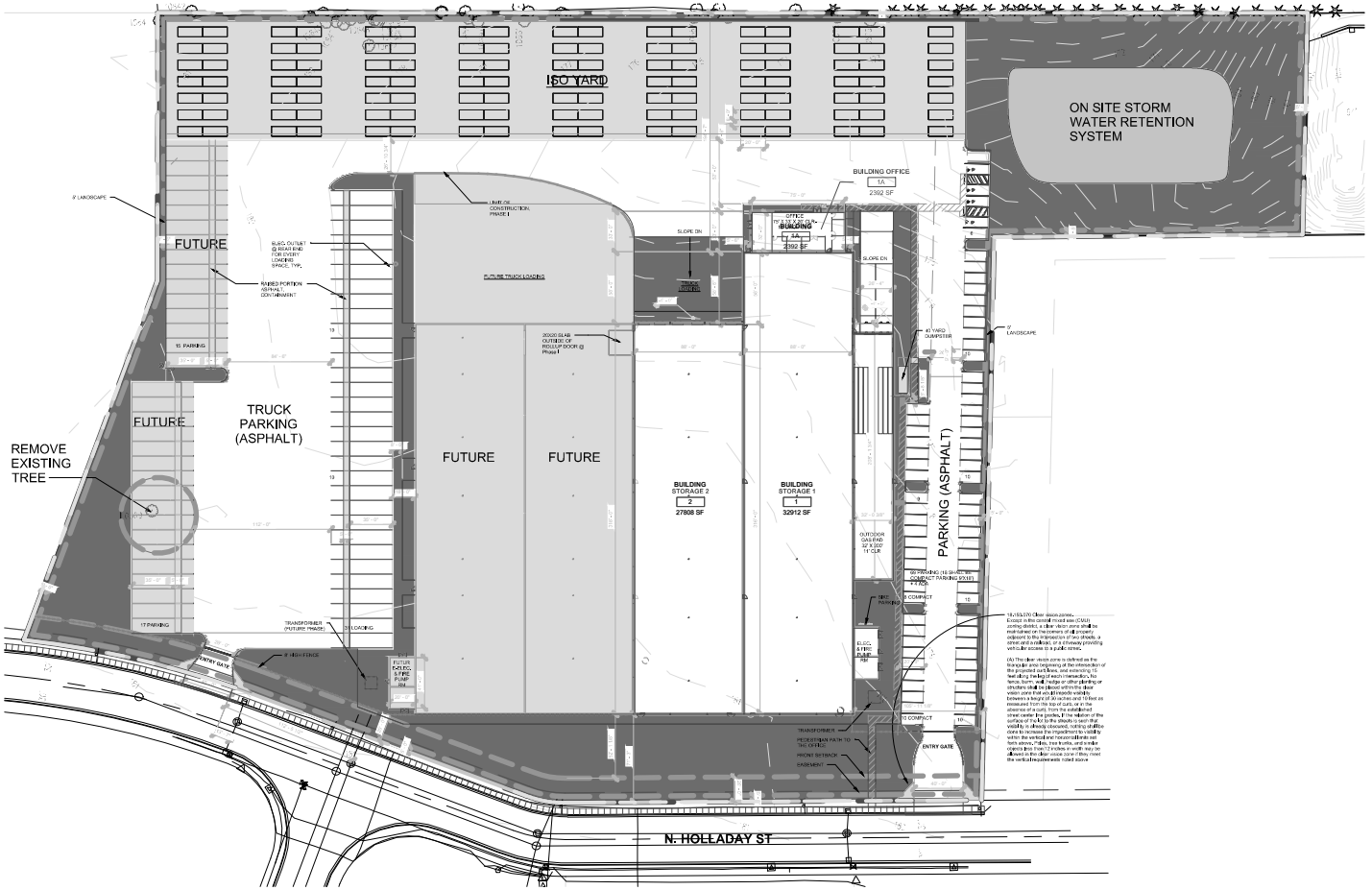
Source: USGS National Map Viewer

Project Location

Rinchem Storage Building Project - Cornelius, Oregon

FIGURE 1

7/28/2021



Source: Site Plan provided by Mildren Design Group, P.C.

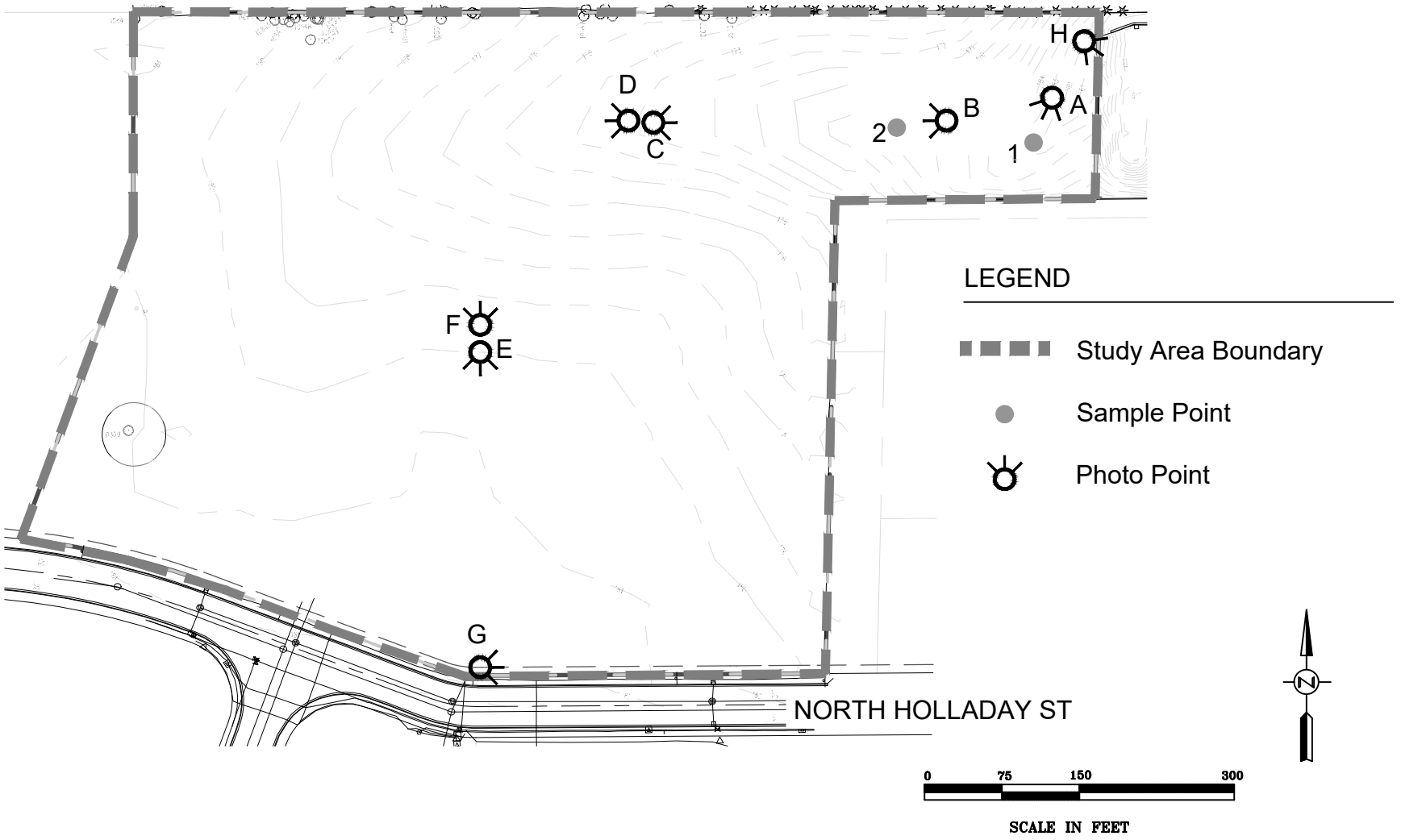
Proposed Site Plan

Rinchem Storage Building Project - Cornelius, Oregon

FIGURE 2

7/28/2021

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Pacific Habitat Services,Inc.
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Phone: (503) 570-0800 Fax (503) 570-0855

Source: Base Map provided by Mildren Design Group, P.C.

Existing Conditions
Rinchem Storage Building Project - Cornelius, Oregon

FIGURE 3

7/28/2021

Attachment 2

Site Photographs



Photo A:

Looking southwest at Sample Point 1.

Photo taken on July 19, 2021.

Photo B:

Looking west at Sample Point 2.

Photo taken on July 19, 2021.



Project #7290
7/28/2021

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9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070

Photo documentation

Rinchem Storage Building Project, Cornelius, Oregon



Photo C:

Looking east across the northeastern portion of the site.

Photo taken on July 19, 2021.

Photo D:

Looking west across the northern portion of the site.

Photo taken on July 19, 2021.



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Photo E:

Looking south across the central portion of the site.

Photo taken on July 19, 2021.

Photo F:

Looking north across the central portion of the site.

Photo taken on July 19, 2021.



Project #7290
7/28/2021

Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Photo documentation

Rinchem Storage Building Project, Cornelius, Oregon



Photo G:

Looking east along the southern site boundary. There is no roadside ditch along North Holladay Street.

Photo taken on July 19, 2021.

Photo H:

Existing stormwater facility adjacent to the northeastern site boundary.

Photo taken on July 19, 2021.



Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Photo documentation

Rinchem Storage Building Project, Cornelius, Oregon

Attachment 3

Wetland Determination Data Forms



PHS # 7290

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: **Rinchem Storage Building** City/County: **Cornelius / Washington Co** Sampling Date: **7/19/2021**

Applicant/Owner: **Mildren Design Group** State: **OR** Sampling Point: **1**

Investigator(s): **C.Tumer** Section, Township, Range: **Sect. 33, T1N, R 3W**

Landform (hillslope, terrace, etc.:) **Swale** Local relief (concave, convex, none): **convex** Slope (%): **<2**

Subregion (LRR): **LRR A** Lat: **45.5281** Long: **-123.0598** Datum: **WGS84**

Soil Map Unit Name: **Woodburn silt loam** NWI Classification: **UPL**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No **X** (if no, explain in Remarks)

Are vegetation **N** Soil **N** or Hydrology **N** significantly disturbed? Are "Normal Circumstances" present? (Y/N) **Y**

Are vegetation **N** Soil **N** or Hydrology **N** naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	**X**	No		**Is Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes		No	**X**	
Wetland Hydrology Present?	Yes		No	**X**	

Remarks:
Precipitation is below average, and the region is currently experiencing drought conditions.

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: ____)			
1 ***Lolium perenne***	**10**	**X**	**FAC**
2			
3			
4			
5			
6			
7			
8			
	10	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum **90**

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	**0**
FACW species		x 2 =	**0**
FAC Species		x 3 =	**0**
FACU Species		x 4 =	**0**
UPL Species		x 5 =	**0**
Column Totals	**0** (A)		**0** (B)

Prevalence Index =B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

- ____ 1- Rapid Test for Hydrophytic Vegetation
- **X** 2- Dominance Test is >50%
- ____ 3-Prevalence Index is ≤ 3.0[1]
- ____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)
- ____ 5- Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes X** **No** ____

Remarks:

SOIL

PHS # 7290 Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-18	**7.5YR 4/3**	**100**	**n/a**	**n/a**	**n/a**	**n/a**	**Silt Loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- **X** Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Fac-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes	___	No **X**	Depth (inches):	**n/a**
Water Table Present?	Yes	___	No **X**	Depth (inches):	**>18**
Saturation Present? (includes capillary fringe)	Yes	___	No **X**	Depth (inches):	**>18**

Wetland Hydrology Present?

Yes ___ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHS # 7290

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast Region

Project/Site: **Rinchem Storage Building** City/County: **Cornelius / Washington Co** Sampling Date: **7/19/2021**

Applicant/Owner: **Mildren Design Group** State: **OR** Sampling Point: **2**

Investigator(s): **C.Tumer** Section, Township, Range: **Sect. 33, T1N, R 3W**

Landform (hillslope, terrace, etc.:) **Swale** Local relief (concave, convex, none): **convex** Slope (%): **<2**

Subregion (LRR): **LRR A** Lat: **45.5280** Long: **-123.0604** Datum: **WGS84**

Soil Map Unit Name: **Woodburn silt loam** NWI Classification: **UPL**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ____ No **X** (if no, explain in Remarks)

Are vegetation **N** Soil **N** or Hydrology **N** significantly disturbed? Are "Normal Circumstances" present? (Y/N) **Y**

Are vegetation **N** Soil **N** or Hydrology **N** naturally problematic? If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No **X**	**Is Sampled Area within a Wetland?**	Yes ____	No **X**
Hydric Soil Present?	Yes ____	No **X**			
Wetland Hydrology Present?	Yes ____	No **X**			

Remarks:
Precipitation is below average, and the region is currently experiencing drought conditions.

VEGETATION - Use scientific names of plants.

	absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (plot size: ____)			
1			
2			
3			
4			
	0	= Total Cover	
Sapling/Shrub Stratum (plot size: ____)			
1			
2			
3			
4			
5			
	0	= Total Cover	
Herb Stratum (plot size: ____)			
1 ***Lolium perenne***	**40**	**X**	**FAC**
2 ***Daucus carota***	**10**	**X**	**FACU**
3			
4			
5			
6			
7			
8			
	50	= Total Cover	
Woody Vine Stratum (plot size: ____)			
1			
2			
	0	= Total Cover	

% Bare Ground in Herb Stratum **50**

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of		Multiply by:	
OBL Species		x 1 =	**0**
FACW species		x 2 =	**0**
FAC Species		x 3 =	**0**
FACU Species		x 4 =	**0**
UPL Species		x 5 =	**0**
Column Totals	**0** (A)		**0** (B)

Prevalence Index =B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

____ 1- Rapid Test for Hydrophytic Vegetation

____ 2- Dominance Test is >50%

____ 3-Prevalence Index is ≤ 3.0[1]

____ 4-Morphological Adaptations[1] (provide supporting data in Remarks or on a separate sheet)

____ 5- Wetland Non-Vascular Plants[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No **X**

Remarks:

SOIL

PHS # 7290 Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-20	**10YR 4/4**	**100**	**n/a**	**n/a**	**n/a**	**n/a**	**Silt Loam**	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) **(except MLRA 1)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes _____ **No X**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water stained Leaves (B9) **(Except MLRA 1, 2, 4A, and 4B)**
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Plowed Soils (C6)
- Stunted or Stressed Plants (D1) **(LRR A)**
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water stained Leaves (B9) **(MLRA1, 2, 4A, and 4B)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Fac-Neutral Test (D5)
- Raised Ant Mounds (D6) **(LRR A)**
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes		No **X**	Depth (inches):	**n/a**
Water Table Present?	Yes		No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes		No **X**	Depth (inches):	**>20**

Wetland Hydrology Present?

Yes _____ **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Rinchem Site
Storm Drainage Calculations

North Holladay Street
Cornelius, Oregon

June 2021
Project Number: 21102



TM RIPPEY
CONSULTING ENGINEERS

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Table of Contents

Introduction 1
Water Quality Treatment 1
Runoff Flow Control 1

Appendix
- HydroCAD Output for Detention
- HydroCAD Output for Pipe Sizing
- Site Conveyance Calculations
- Basin and Pipe Key Map
- Water Quality Treatment Calculations

Introduction

This project is a new commercial building on an undeveloped site. The project is located on the north side of North Holladay Street, west of North 10th Avenue in Cornelius.

The site consists of four parcels, Tax Lot 300, 400, 500, and 600. An existing right of way (North 7th Court) will be vacated as part of this development. In addition to the vacation, property line adjustments will be performed as part of the land use activity and one parcel will exist following development.

These storm drainage calculations have been prepared in conformance with the current Clean Water Services (CWS) requirements contained in their resolution and order (R&O 19-5 and 19-22). This analysis pertains to the private storm system to be constructed with development.

CWS requirements include the mandate to use their Hydro Modification design procedures. Based on discussion with City of Cornelius staff, it is understood existing public storm piping was installed at the east end of the site. Staff indicates this system has was designed with capacity for development of the four subject parcels subject to flow control compliant with CWS standards.

Water Quality Treatment

Water quality treatment conforms to current City of Cornelius and CWS standards. The standards specify a water quality event of 0.36 inches of rainfall over four hours. Water quality treatment is provided by a peak flow diversion cartridge treatment vault, produced by Contech. The cartridges have a treatment flow rate capacity of 22.5 gpm.

Runoff from the entirety of the new development area is treated in the vault and the sizing calculations are included in the appendix. The sizing calculations show 16 treatment cartridges are required.

Runoff Flow Control

As noted above, the City's existing public system was sized presuming the development of these parcels will include runoff flow control consistent with the current CWS standards which require runoff to be detained so the peak post development runoff flows match predevelopment flows from the site. Development runoff area is approximately 373,545 square feet.

Runoff has been modeled using HydroCAD software employing Santa Barbara Unit Hydrograph methodology. Runoff curve number, CN for predeveloped conditions is 83, small grain, soil type C, CN for the impervious areas is 98.

Detention is provided in a pond located on site. Outflow is controlled with a series of orifi within a storm control manhole near the northeast corner of the site. See the table below for specific detention information and the construction plans for configuration.

Control Structure Discharge	½ of 2 Year	2 Year	5 Year	10 Year	25 Year
Predevelopment Runoff, cfs	0.72	1.43	2.26	2.77	3.46
Post Development Runoff, cfs	--	4.94	6.20	6.92	7.86
Controlled Outflow, cfs	0.70	0.70	1.16	1.50	1.89
Orifice Elevation, ft.	163.75	163.75	168.06	168.06	168.06
Orifice Diameter, in.	4.2	4.2	8	*	*
Water Surface Elevation, ft.	168.06	168.06	168.43	168.58	168.81
Detained Volume, cf.	27,683	27,683	33,339	35,760	39,398

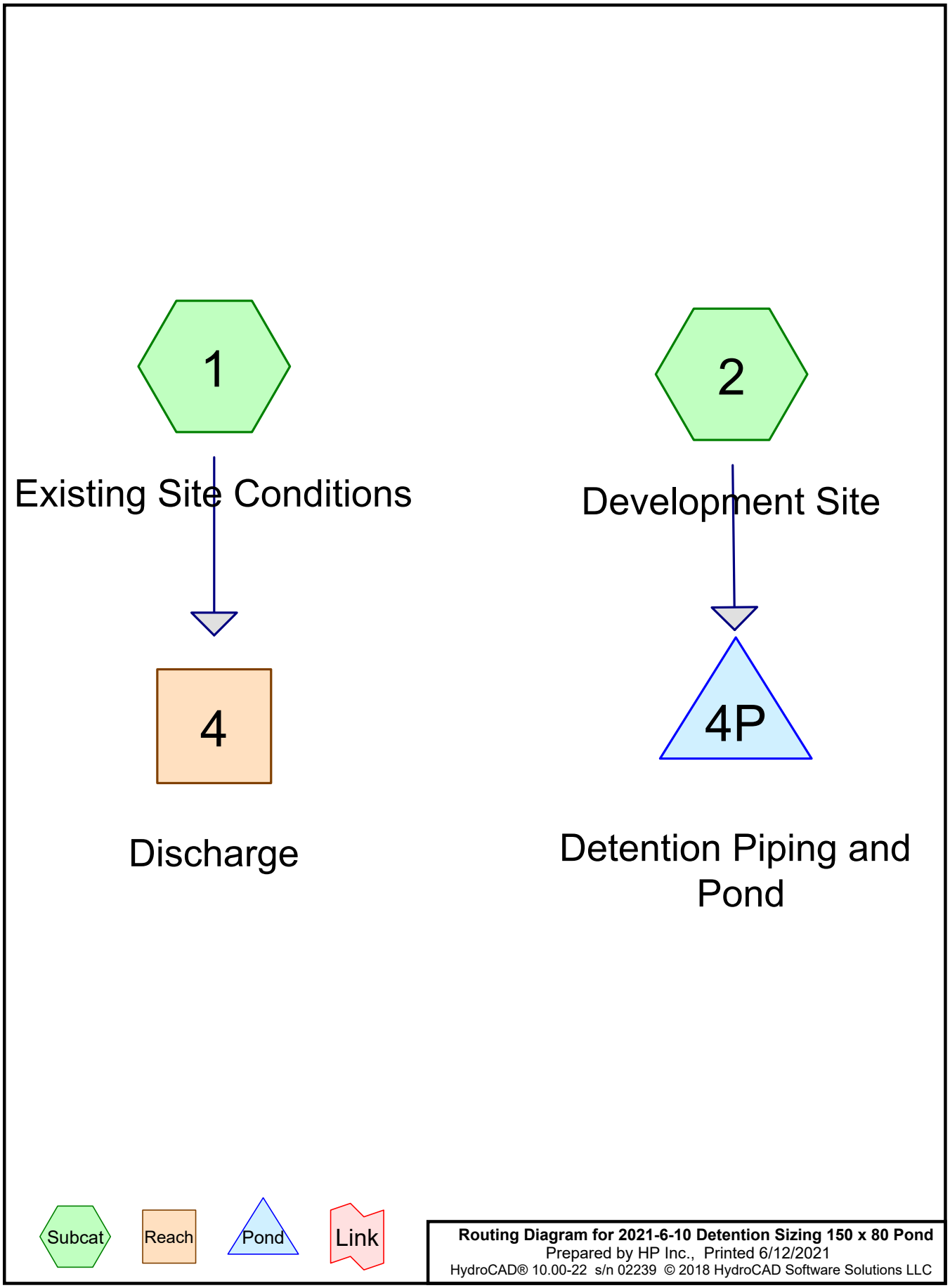
*Orifice for 5-year event controls for 10 and 25-year events as well.

Runoff for detention and for pipe sizing is modeled using HydroCAD™ software employing Santa Barbara Unit Hydrograph (SBUH) methodology. Rainfall is based on the 2 (2.50”), 5 (3.10”), 10 (3.45”) and 25 (3.90”) year Type 1A storm events, per CWS R & O 19-5, Pipe sizing is based on Manning’s Equation with a roughness coefficient, n, of 0.013. See attached pipe sizing spreadsheet.

As no changes to site outflow will occur because of the provided flow control, the downstream system will experience no additional flow and no modifications will occur.

Appendix

HydroCAD Output for Detention
HydroCAD Output for Pipe Sizing
Site Conveyance Calculations
Basin and Pipe Key Map
Water Quality Treatment Calculations


1
2
Existing Site Conditions
Development Site
4
4P
Discharge
Detention Piping and Pond
Subcat
Reach
Pond
Link
Routing Diagram for 2021-6-10 Detention Sizing 150 x 80 Pond
Prepared by HP Inc., Printed 6/12/2021
HydroCAD® 10.00-22 s/n 02239 © 2018 HydroCAD Software Solutions LLC

Time span=0.00-180.00 hrs, dt=0.01 hrs, 18001 points
Runoff by SBUH method, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Existing Site Conditions Runoff Area=373,545 sf 0.00% Impervious Runoff Depth=1.06"
Flow Length=740' Slope=0.0140 '/' Tc=24.3 min CN=83 Runoff=1.43 cfs 32,867 cf

Subcatchment2: Development Site Runoff Area=373,545 sf 100.00% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=98 Runoff=4.94 cfs 70,685 cf

Reach 4: Discharge Avg. Flow Depth=0.44' Max Vel=3.24 fps Inflow=1.43 cfs 32,867 cf
18.0" Round Pipe n=0.013 L=400.0' S=0.0050 '/' Capacity=7.43 cfs Outflow=1.42 cfs 32,867 cf

Pond 4P: Detention Piping and Pond Peak Elev=168.05' Storage=27,577 cf Inflow=4.94 cfs 70,685 cf
Outflow=0.70 cfs 70,685 cf

Total Runoff Area = 747,090 sf Runoff Volume = 103,552 cf Average Runoff Depth = 1.66"
50.00% Pervious = 373,545 sf 50.00% Impervious = 373,545 sf

Summary for Subcatchment 1: Existing Site Conditions

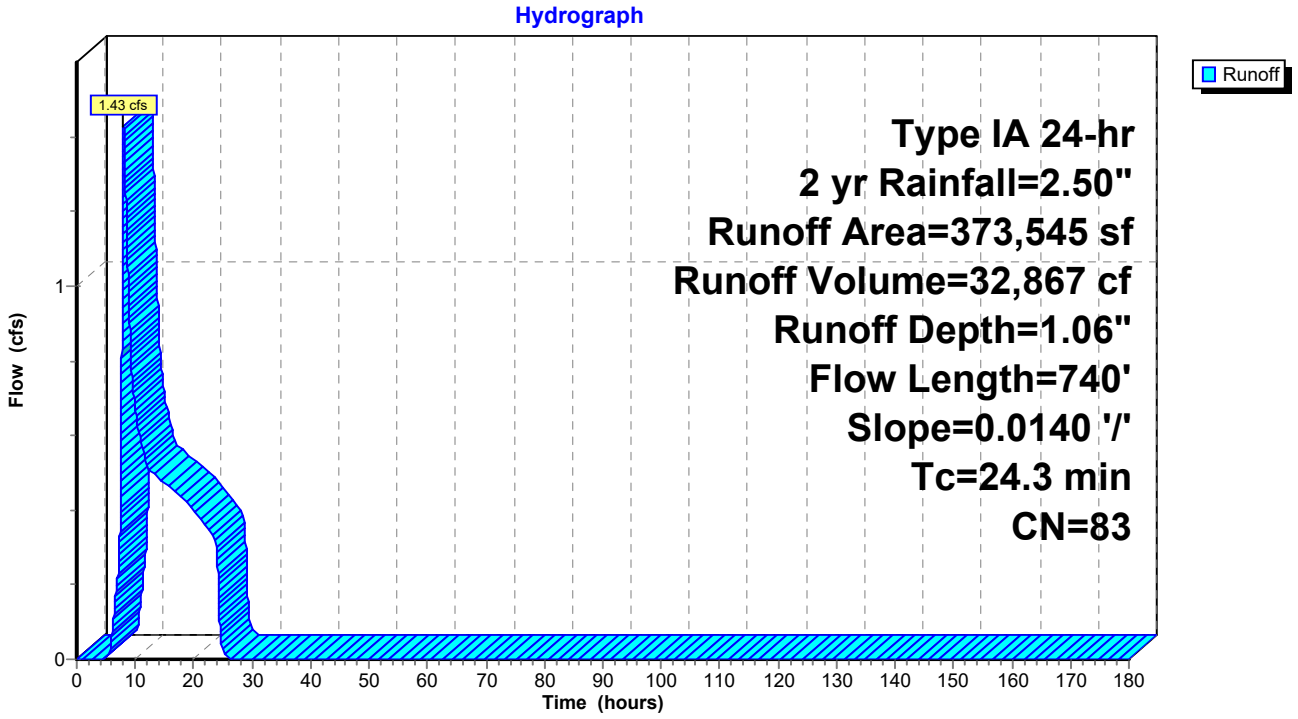
Runoff = 1.43 cfs @ 8.01 hrs, Volume= 32,867 cf, Depth= 1.06"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 yr Rainfall=2.50"

Area (sf)	CN	Description
373,545	83	Small grain, straight row, Good, HSG C
373,545		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0140	0.15		**Sheet Flow,** Range n= 0.130 P2= 2.50"
12.9	640	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.3	740	Total			

Subcatchment 1: Existing Site Conditions



Summary for Subcatchment 2: Development Site

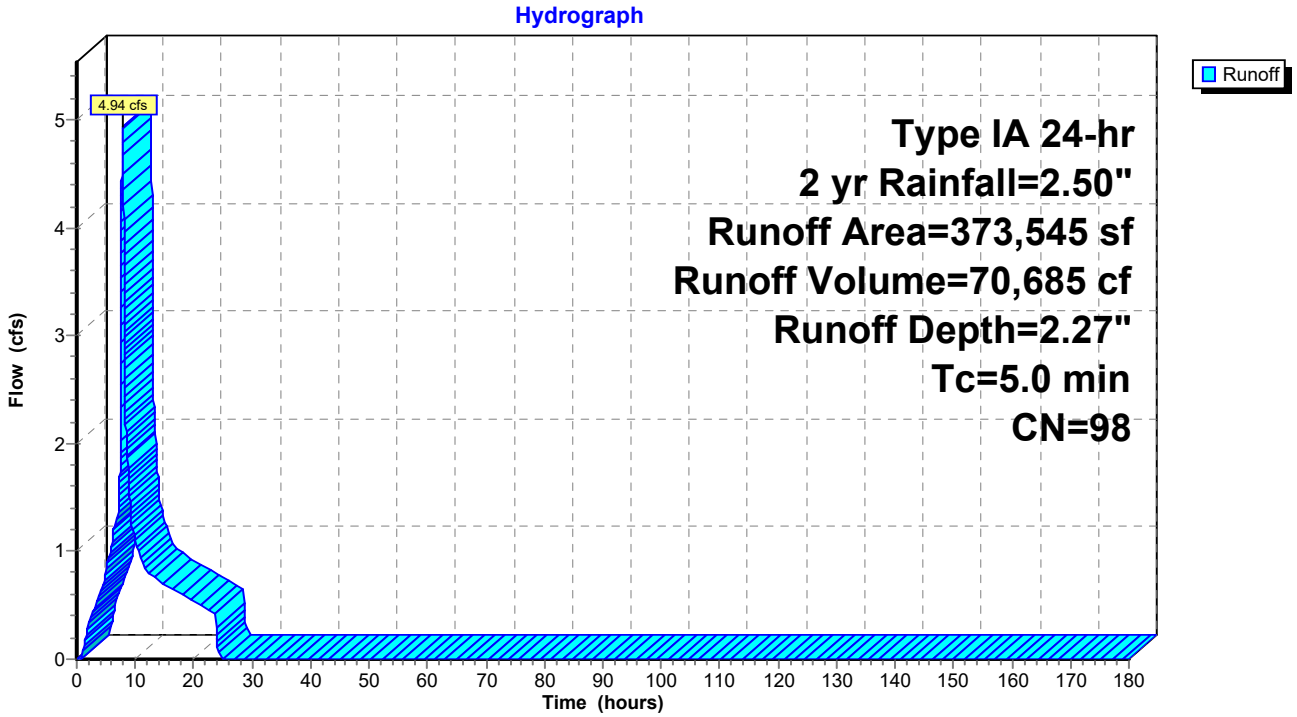
Runoff = 4.94 cfs @ 7.88 hrs, Volume= 70,685 cf, Depth= 2.27"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 yr Rainfall=2.50"

Area (sf)	CN	Description
373,545	98	Paved parking & roofs
373,545		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2: Development Site



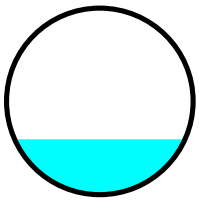
Summary for Reach 4: Discharge

Inflow Area = 373,545 sf, 0.00% Impervious, Inflow Depth = 1.06" for 2 yr event
Inflow = 1.43 cfs @ 8.01 hrs, Volume= 32,867 cf
Outflow = 1.42 cfs @ 8.10 hrs, Volume= 32,867 cf, Atten= 1%, Lag= 5.0 min

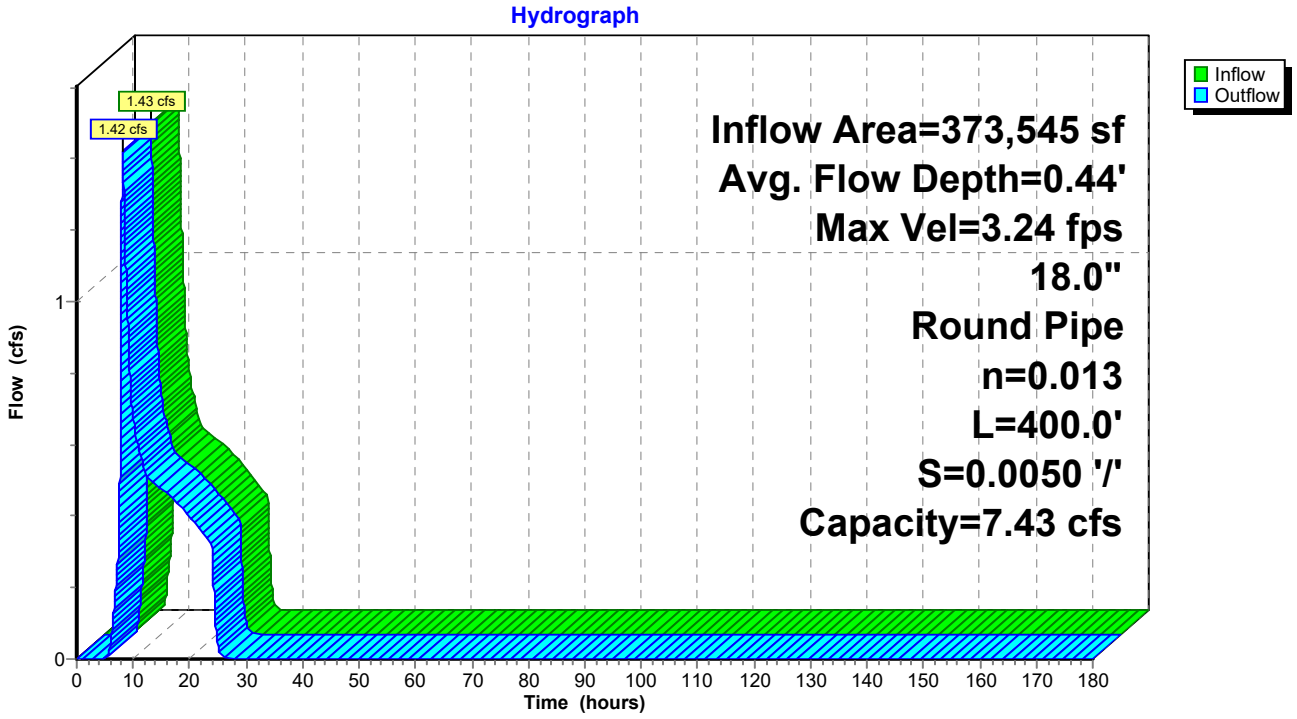
Routing by Stor-Ind+Trans method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.24 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 2.00 fps, Avg. Travel Time= 3.3 min

Peak Storage= 175 cf @ 8.06 hrs
Average Depth at Peak Storage= 0.44'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.43 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 167.20', Outlet Invert= 165.20'



Reach 4: Discharge



Summary for Pond 4P: Detention Piping and Pond

Inflow Area = 373,545 sf,100.00% Impervious, Inflow Depth = 2.27" for 2 yr event
Inflow = 4.94 cfs @ 7.88 hrs, Volume= 70,685 cf
Outflow = 0.70 cfs @ 14.87 hrs, Volume= 70,685 cf, Atten= 86%, Lag= 419.6 min
Primary = 0.70 cfs @ 14.87 hrs, Volume= 70,685 cf

Routing by Stor-Ind method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Peak Elev= 168.05' @ 14.87 hrs Surf.Area= 14,978 sf Storage= 27,577 cf

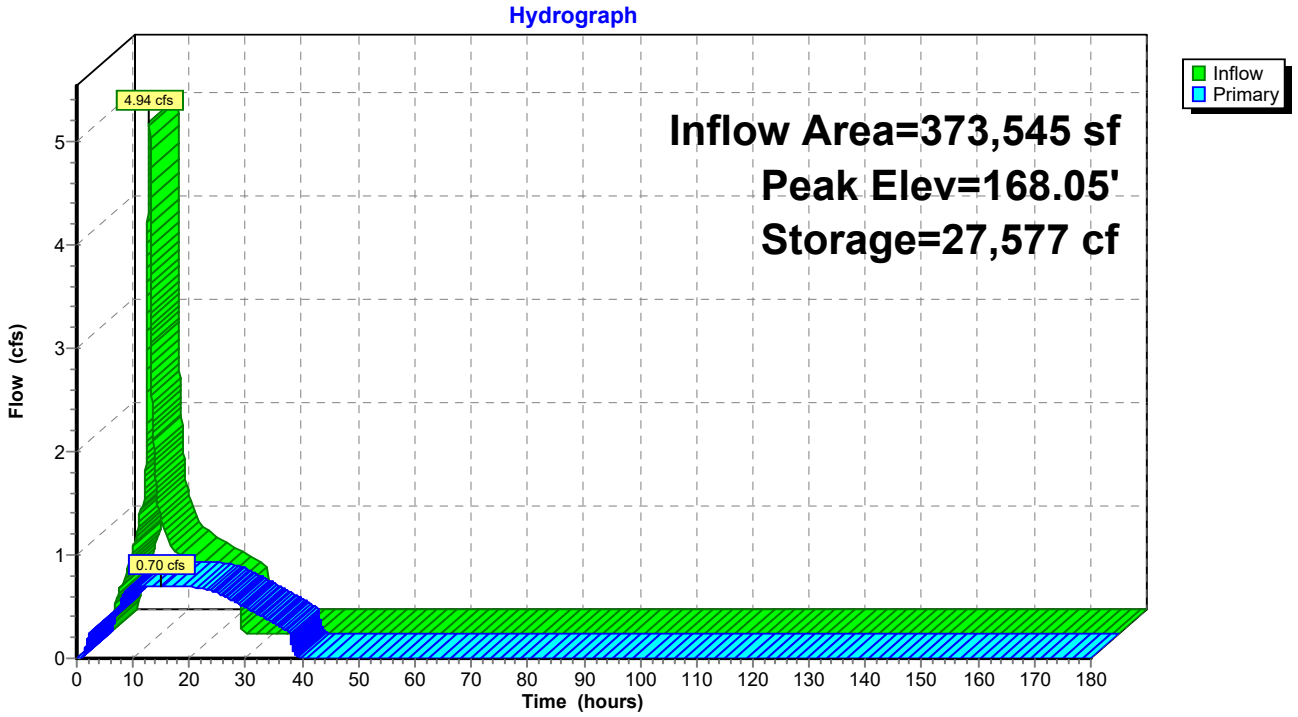
Plug-Flow detention time= 495.3 min calculated for 70,685 cf (100% of inflow)
Center-of-Mass det. time= 495.3 min (1,167.9 - 672.6)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	59,808 cf	**80.00'W x 150.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	165.75'	**18.0" Round Culvert** L= 20.0' Ke= 0.200 Inlet / Outlet Invert= 165.75' / 165.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	163.75'	**4.2" Vert. Orifice/Grate** C= 0.600
#3	Device 1	168.06'	**8.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=0.70 cfs @ 14.87 hrs HW=168.05' (Free Discharge)
└─**1=Culvert** (Passes 0.70 cfs of 11.32 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.70 cfs @ 7.30 fps)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 4P: Detention Piping and Pond



Time span=0.00-180.00 hrs, dt=0.01 hrs, 18001 points
Runoff by SBUH method, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Existing Site Conditions Runoff Area=373,545 sf 0.00% Impervious Runoff Depth=1.53"
Flow Length=740' Slope=0.0140 '/' Tc=24.3 min CN=83 Runoff=2.26 cfs 47,549 cf

Subcatchment2: Development Site Runoff Area=373,545 sf 100.00% Impervious Runoff Depth=2.87"
Tc=5.0 min CN=98 Runoff=6.20 cfs 89,273 cf

Reach 4: Discharge Avg. Flow Depth=0.57' Max Vel=3.68 fps Inflow=2.26 cfs 47,549 cf
18.0" Round Pipe n=0.013 L=400.0' S=0.0050 '/' Capacity=7.43 cfs Outflow=2.25 cfs 47,549 cf

Pond 4P: Detention Piping and Pond Peak Elev=168.43' Storage=33,339 cf Inflow=6.20 cfs 89,273 cf
Outflow=1.16 cfs 89,273 cf

Total Runoff Area = 747,090 sf Runoff Volume = 136,822 cf Average Runoff Depth = 2.20"
50.00% Pervious = 373,545 sf 50.00% Impervious = 373,545 sf

Summary for Subcatchment 1: Existing Site Conditions

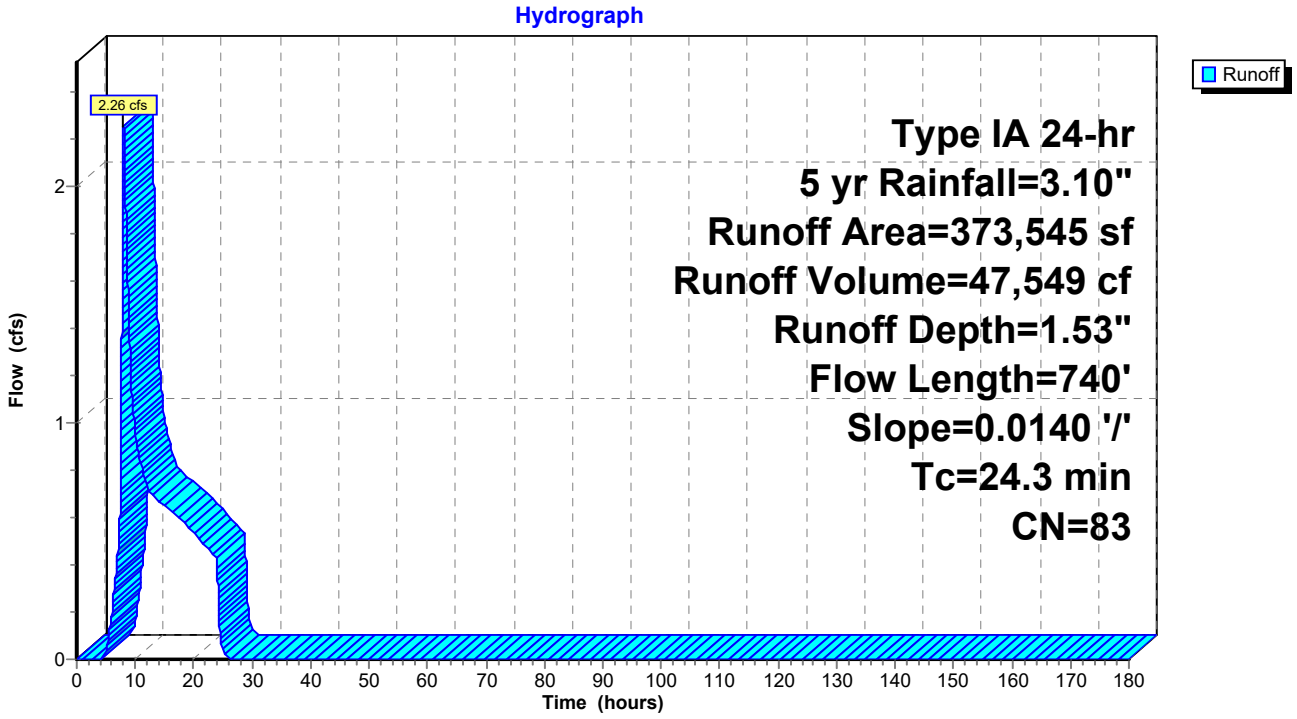
Runoff = 2.26 cfs @ 8.01 hrs, Volume= 47,549 cf, Depth= 1.53"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5 yr Rainfall=3.10"

Area (sf)	CN	Description
373,545	83	Small grain, straight row, Good, HSG C
373,545		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0140	0.15		**Sheet Flow,** Range n= 0.130 P2= 2.50"
12.9	640	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.3	740	Total			

Subcatchment 1: Existing Site Conditions



Summary for Subcatchment 2: Development Site

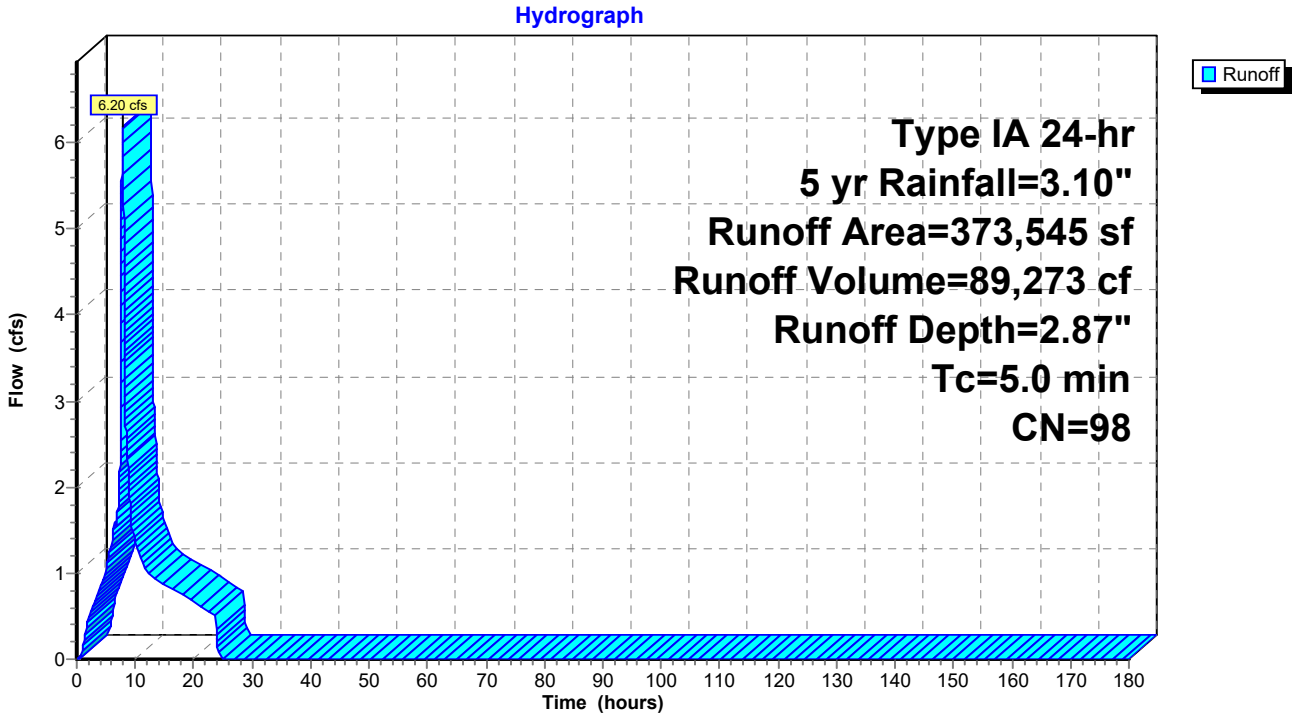
Runoff = 6.20 cfs @ 7.88 hrs, Volume= 89,273 cf, Depth= 2.87"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5 yr Rainfall=3.10"

Area (sf)	CN	Description
373,545	98	Paved parking & roofs
373,545		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2: Development Site



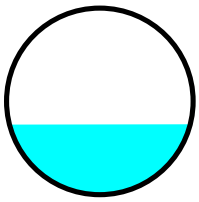
Summary for Reach 4: Discharge

Inflow Area = 373,545 sf, 0.00% Impervious, Inflow Depth = 1.53" for 5 yr event
Inflow = 2.26 cfs @ 8.01 hrs, Volume= 47,549 cf
Outflow = 2.25 cfs @ 8.08 hrs, Volume= 47,549 cf, Atten= 1%, Lag= 3.8 min

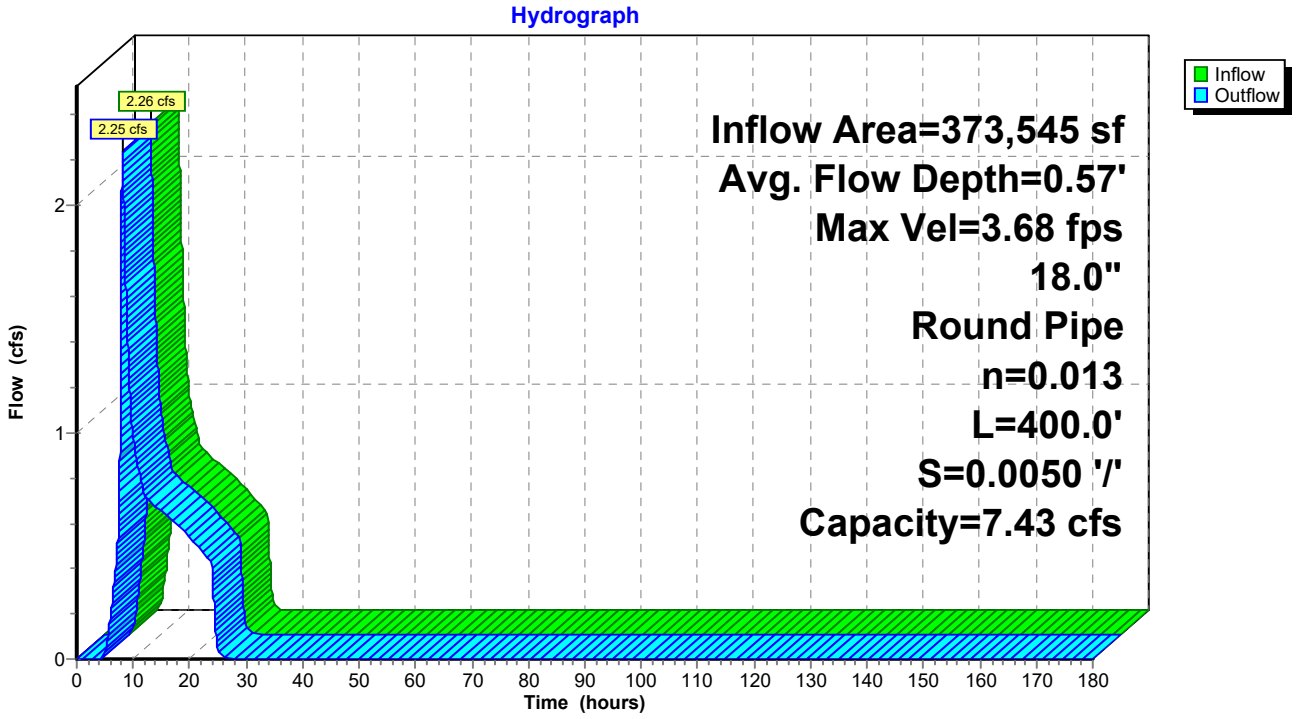
Routing by Stor-Ind+Trans method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.68 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 2.19 fps, Avg. Travel Time= 3.0 min

Peak Storage= 244 cf @ 8.05 hrs
Average Depth at Peak Storage= 0.57'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.43 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 167.20', Outlet Invert= 165.20'



Reach 4: Discharge



Summary for Pond 4P: Detention Piping and Pond

Inflow Area = 373,545 sf,100.00% Impervious, Inflow Depth = 2.87" for 5 yr event
Inflow = 6.20 cfs @ 7.88 hrs, Volume= 89,273 cf
Outflow = 1.16 cfs @ 11.12 hrs, Volume= 89,273 cf, Atten= 81%, Lag= 194.4 min
Primary = 1.16 cfs @ 11.12 hrs, Volume= 89,273 cf

Routing by Stor-Ind method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Peak Elev= 168.43' @ 11.12 hrs Surf.Area= 15,559 sf Storage= 33,339 cf

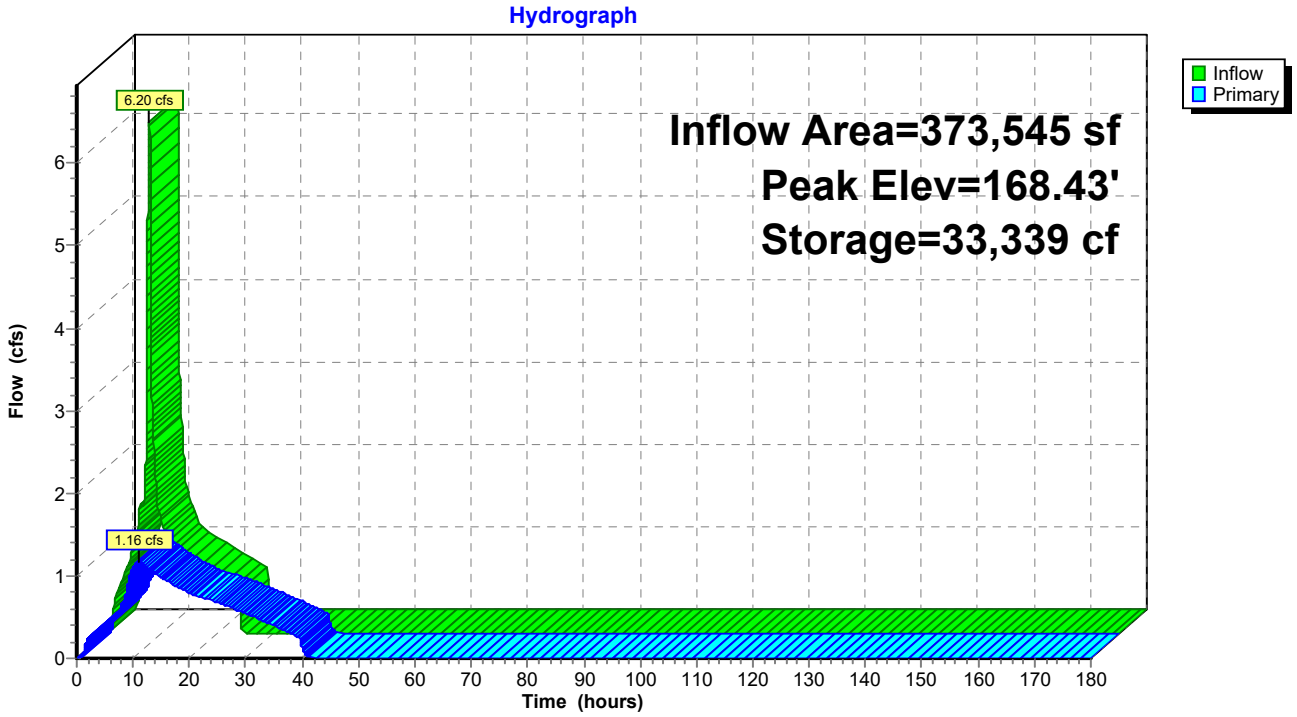
Plug-Flow detention time= 485.1 min calculated for 89,273 cf (100% of inflow)
Center-of-Mass det. time= 485.1 min (1,151.2 - 666.1)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	59,808 cf	**80.00'W x 150.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	165.75'	**18.0" Round Culvert** L= 20.0' Ke= 0.200 Inlet / Outlet Invert= 165.75' / 165.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	163.75'	**4.2" Vert. Orifice/Grate** C= 0.600
#3	Device 1	168.06'	**8.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.16 cfs @ 11.12 hrs HW=168.43' (Free Discharge)
└**1=Culvert** (Passes 1.16 cfs of 13.29 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.76 cfs @ 7.88 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.40 cfs @ 2.06 fps)

Pond 4P: Detention Piping and Pond



Time span=0.00-180.00 hrs, dt=0.01 hrs, 18001 points
Runoff by SBUH method, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Existing Site Conditions Runoff Area=373,545 sf 0.00% Impervious Runoff Depth=1.82"
Flow Length=740' Slope=0.0140 '/' Tc=24.3 min CN=83 Runoff=2.77 cfs 56,548 cf

Subcatchment2: Development Site Runoff Area=373,545 sf 100.00% Impervious Runoff Depth=3.22"
Tc=5.0 min CN=98 Runoff=6.92 cfs 100,130 cf

Reach 4: Discharge Avg. Flow Depth=0.63' Max Vel=3.89 fps Inflow=2.77 cfs 56,548 cf
18.0" Round Pipe n=0.013 L=400.0' S=0.0050 '/' Capacity=7.43 cfs Outflow=2.76 cfs 56,548 cf

Pond 4P: Detention Piping and Pond Peak Elev=168.58' Storage=35,760 cf Inflow=6.92 cfs 100,130 cf
Outflow=1.50 cfs 100,130 cf

Total Runoff Area = 747,090 sf Runoff Volume = 156,678 cf Average Runoff Depth = 2.52"
50.00% Pervious = 373,545 sf 50.00% Impervious = 373,545 sf

Summary for Subcatchment 1: Existing Site Conditions

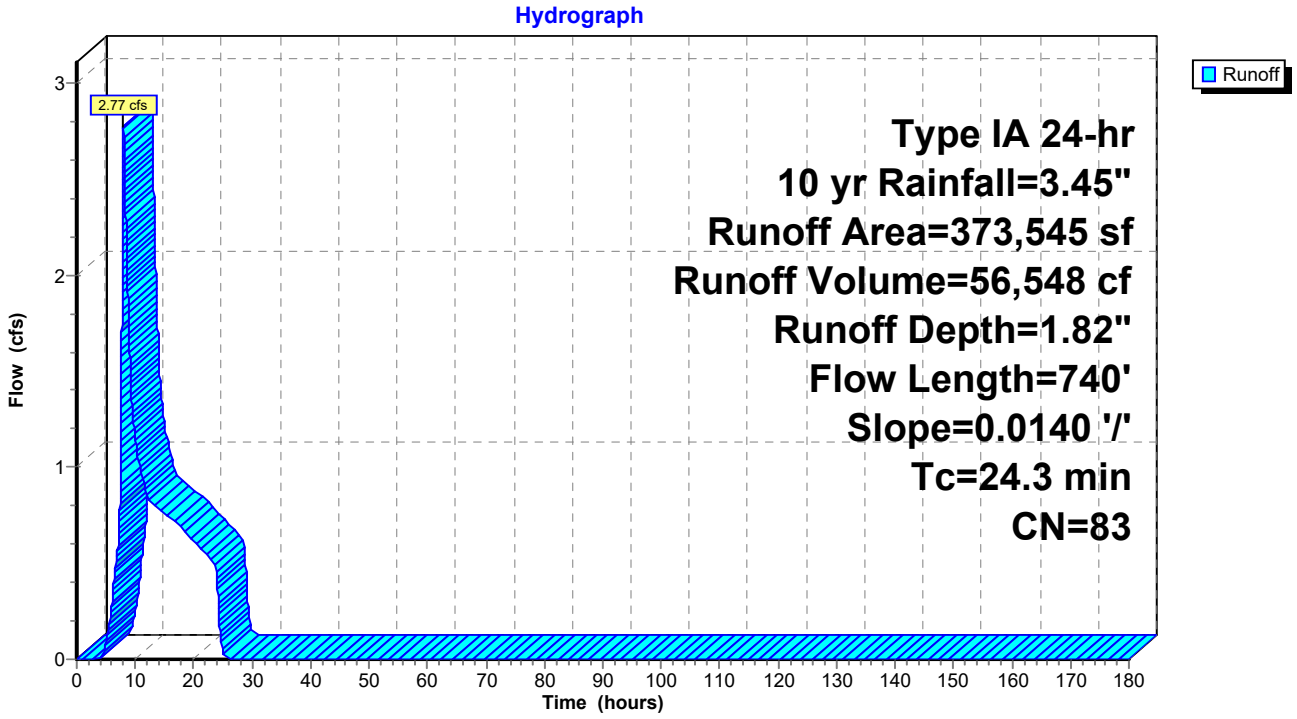
Runoff = 2.77 cfs @ 8.01 hrs, Volume= 56,548 cf, Depth= 1.82"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 yr Rainfall=3.45"

Area (sf)	CN	Description
373,545	83	Small grain, straight row, Good, HSG C
373,545		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0140	0.15		**Sheet Flow,** Range n= 0.130 P2= 2.50"
12.9	640	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.3	740	Total			

Subcatchment 1: Existing Site Conditions



Summary for Subcatchment 2: Development Site

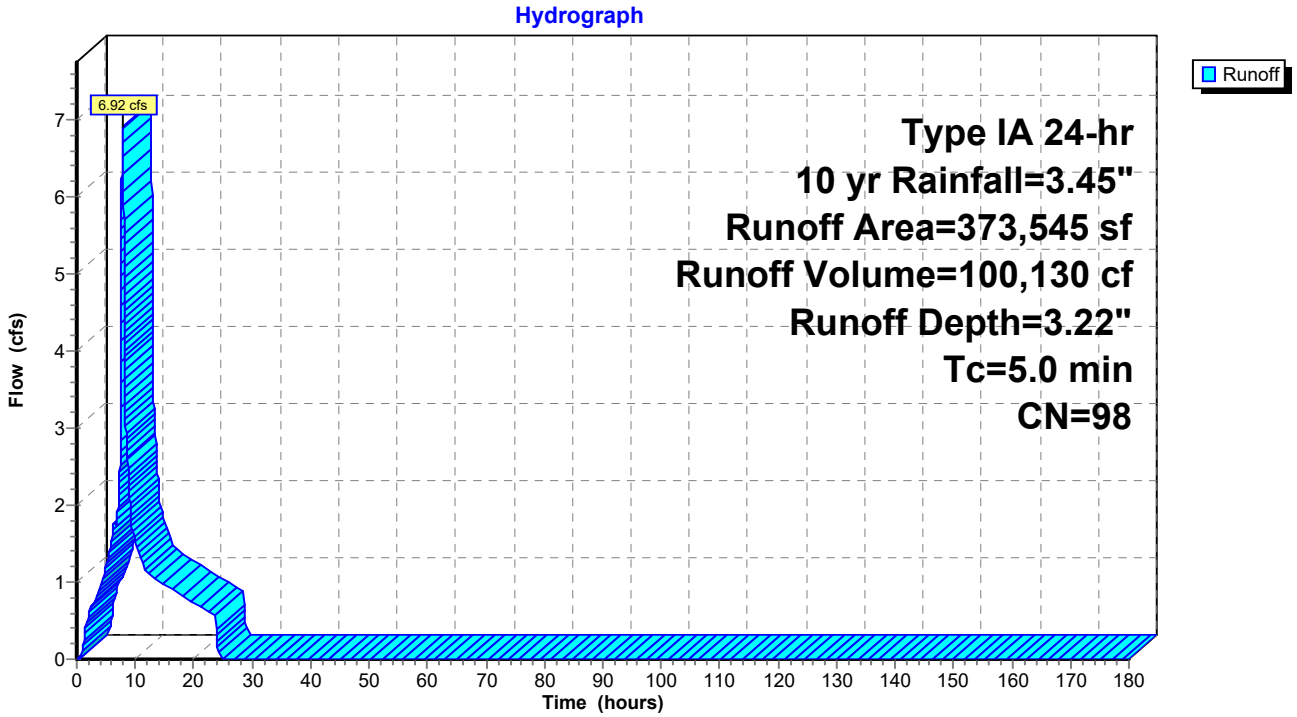
Runoff = 6.92 cfs @ 7.88 hrs, Volume= 100,130 cf, Depth= 3.22"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 yr Rainfall=3.45"

Area (sf)	CN	Description
373,545	98	Paved parking & roofs
373,545		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2: Development Site



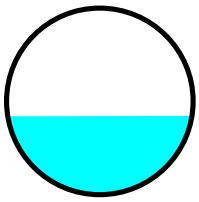
Summary for Reach 4: Discharge

Inflow Area = 373,545 sf, 0.00% Impervious, Inflow Depth = 1.82" for 10 yr event
Inflow = 2.77 cfs @ 8.01 hrs, Volume= 56,548 cf
Outflow = 2.76 cfs @ 8.07 hrs, Volume= 56,548 cf, Atten= 1%, Lag= 3.5 min

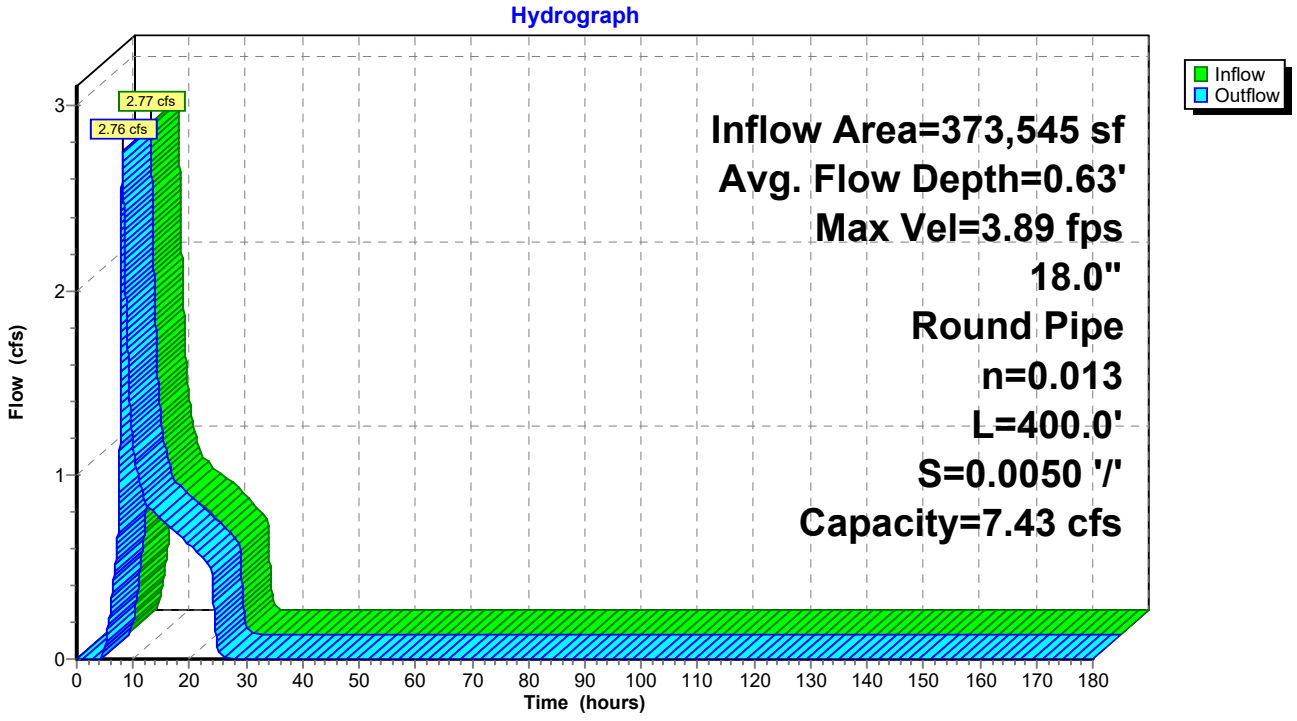
Routing by Stor-Ind+Trans method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.89 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 2.29 fps, Avg. Travel Time= 2.9 min

Peak Storage= 283 cf @ 8.04 hrs
Average Depth at Peak Storage= 0.63'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.43 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 167.20', Outlet Invert= 165.20'



Reach 4: Discharge



Summary for Pond 4P: Detention Piping and Pond

Inflow Area = 373,545 sf,100.00% Impervious, Inflow Depth = 3.22" for 10 yr event
Inflow = 6.92 cfs @ 7.88 hrs, Volume= 100,130 cf
Outflow = 1.50 cfs @ 10.09 hrs, Volume= 100,130 cf, Atten= 78%, Lag= 132.6 min
Primary = 1.50 cfs @ 10.09 hrs, Volume= 100,130 cf

Routing by Stor-Ind method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Peak Elev= 168.58' @ 10.09 hrs Surf.Area= 15,800 sf Storage= 35,760 cf

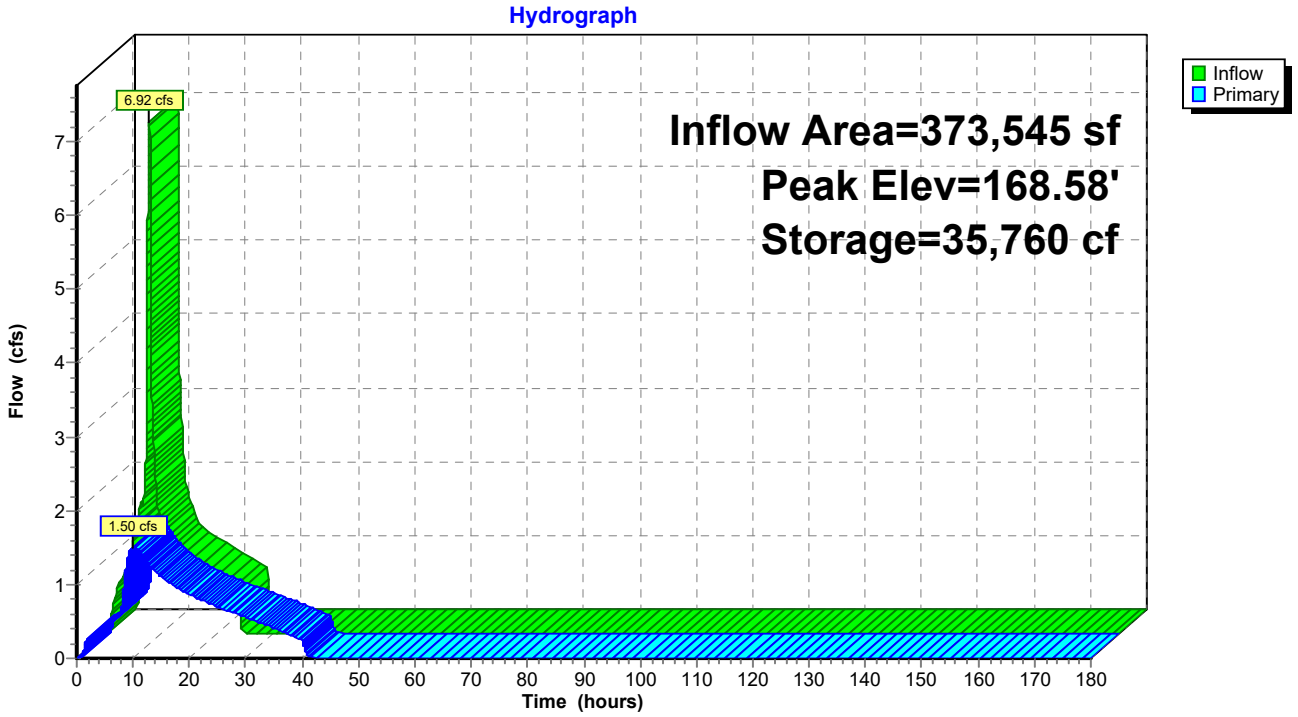
Plug-Flow detention time= 459.2 min calculated for 100,124 cf (100% of inflow)
Center-of-Mass det. time= 459.2 min (1,122.4 - 663.2)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	59,808 cf	**80.00'W x 150.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	165.75'	**18.0" Round Culvert** L= 20.0' Ke= 0.200 Inlet / Outlet Invert= 165.75' / 165.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	163.75'	**4.2" Vert. Orifice/Grate** C= 0.600
#3	Device 1	168.06'	**8.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.50 cfs @ 10.09 hrs HW=168.58' (Free Discharge)
└**1=Culvert** (Passes 1.50 cfs of 14.02 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.78 cfs @ 8.10 fps)
  └**3=Orifice/Grate** (Orifice Controls 0.72 cfs @ 2.46 fps)

Pond 4P: Detention Piping and Pond



Time span=0.00-180.00 hrs, dt=0.01 hrs, 18001 points
Runoff by SBUH method, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Existing Site Conditions Runoff Area=373,545 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=740' Slope=0.0140 '/' Tc=24.3 min CN=83 Runoff=3.46 cfs 68,471 cf

Subcatchment2: Development Site Runoff Area=373,545 sf 100.00% Impervious Runoff Depth=3.67"
Tc=5.0 min CN=98 Runoff=7.86 cfs 114,098 cf

Reach 4: Discharge Avg. Flow Depth=0.72' Max Vel=4.12 fps Inflow=3.46 cfs 68,471 cf
18.0" Round Pipe n=0.013 L=400.0' S=0.0050 '/' Capacity=7.43 cfs Outflow=3.44 cfs 68,471 cf

Pond 4P: Detention Piping and Pond Peak Elev=168.81' Storage=39,398 cf Inflow=7.86 cfs 114,098 cf
Outflow=1.89 cfs 114,098 cf

Total Runoff Area = 747,090 sf Runoff Volume = 182,569 cf Average Runoff Depth = 2.93"
50.00% Pervious = 373,545 sf 50.00% Impervious = 373,545 sf

Summary for Subcatchment 1: Existing Site Conditions

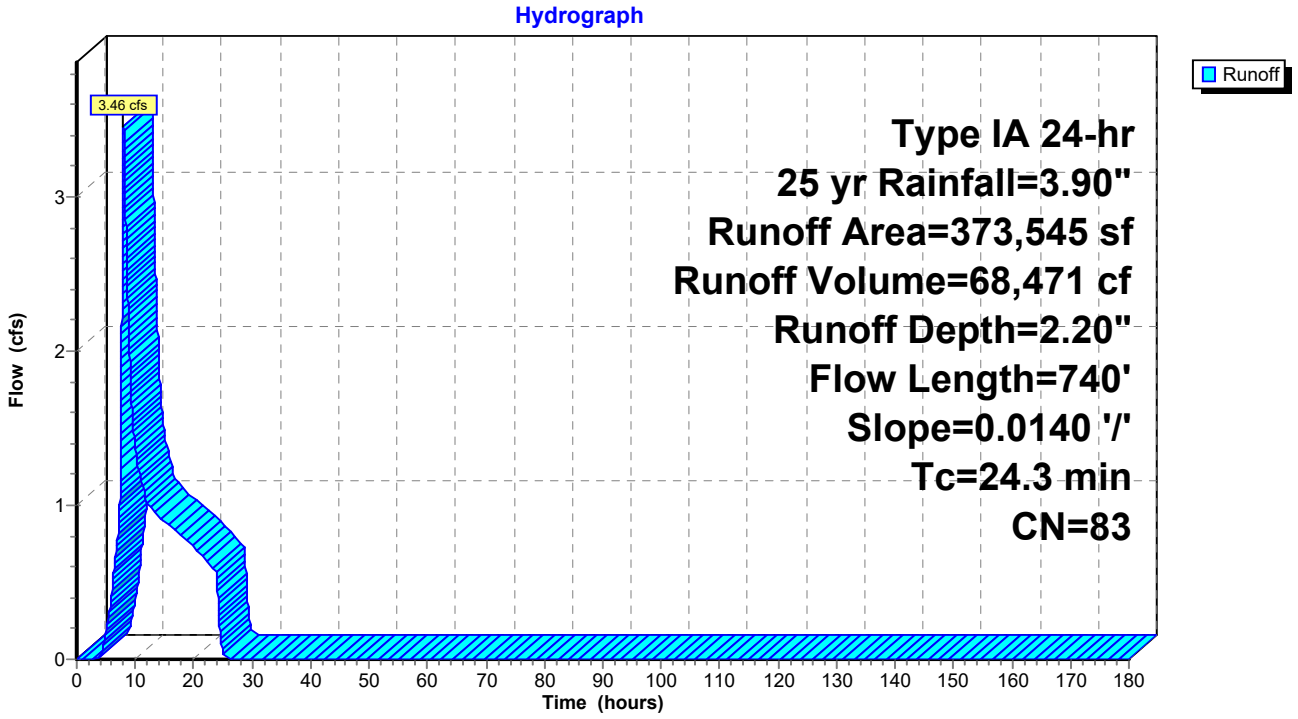
Runoff = 3.46 cfs @ 8.01 hrs, Volume= 68,471 cf, Depth= 2.20"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 yr Rainfall=3.90"

Area (sf)	CN	Description
373,545	83	Small grain, straight row, Good, HSG C
373,545		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.4	100	0.0140	0.15		**Sheet Flow,** Range n= 0.130 P2= 2.50"
12.9	640	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.3	740	Total			

Subcatchment 1: Existing Site Conditions



Summary for Subcatchment 2: Development Site

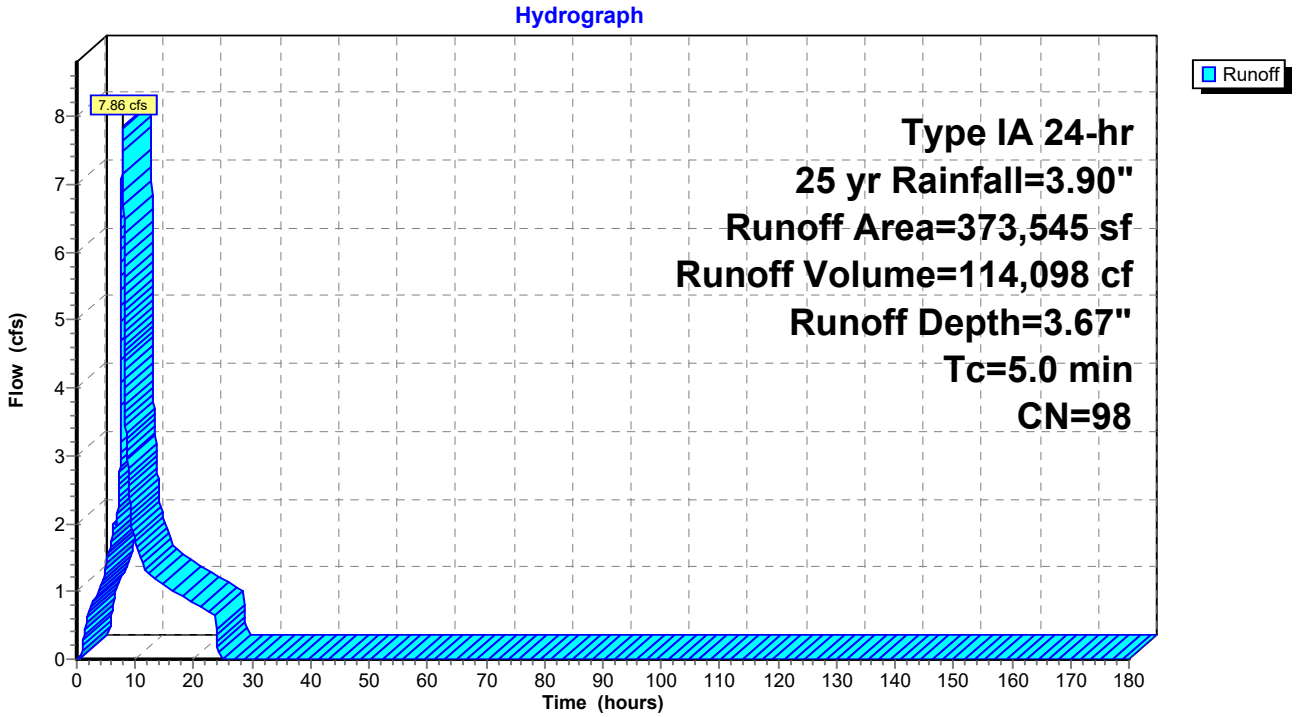
Runoff = 7.86 cfs @ 7.88 hrs, Volume= 114,098 cf, Depth= 3.67"

Runoff by SBUH method, Weighted-CN, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 yr Rainfall=3.90"

Area (sf)	CN	Description
373,545	98	Paved parking & roofs
373,545		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 2: Development Site



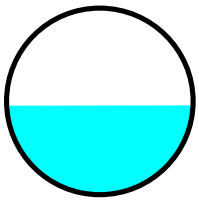
Summary for Reach 4: Discharge

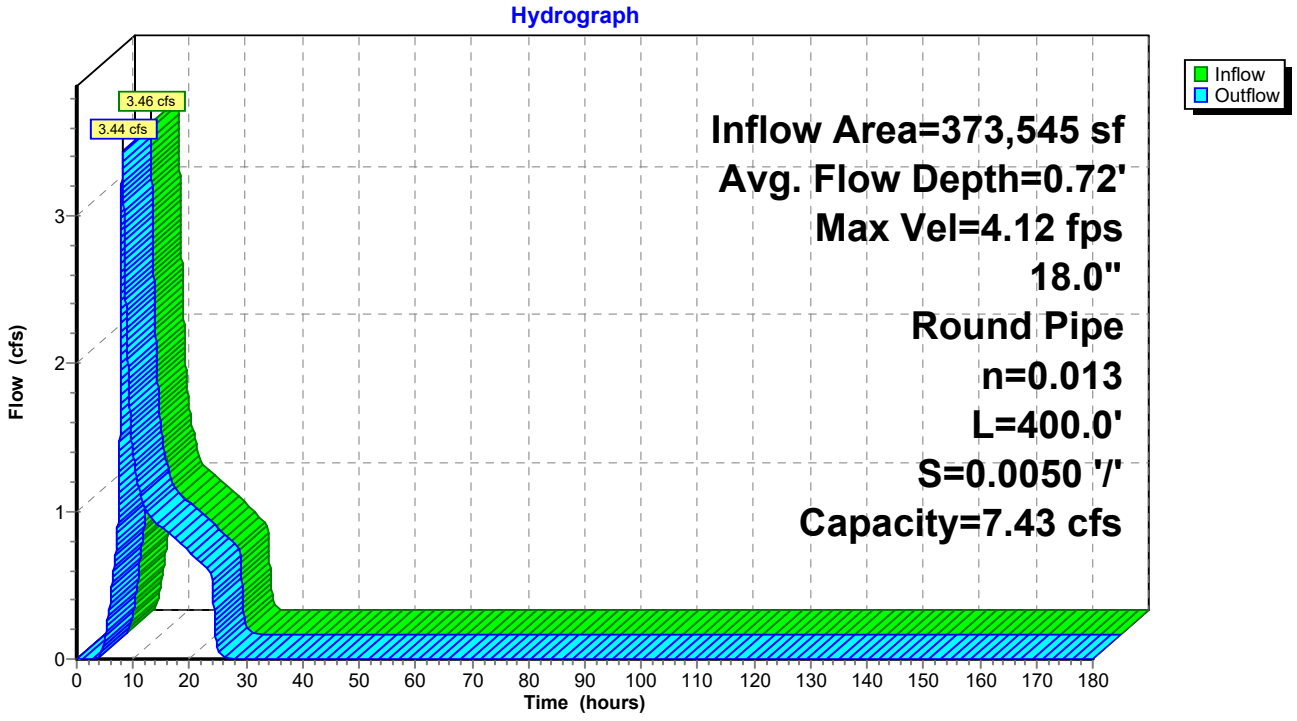
Inflow Area = 373,545 sf, 0.00% Impervious, Inflow Depth = 2.20" for 25 yr event
Inflow = 3.46 cfs @ 8.01 hrs, Volume= 68,471 cf
Outflow = 3.44 cfs @ 8.06 hrs, Volume= 68,471 cf, Atten= 1%, Lag= 3.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.12 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 2.40 fps, Avg. Travel Time= 2.8 min

Peak Storage= 334 cf @ 8.04 hrs
Average Depth at Peak Storage= 0.72'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 7.43 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 167.20', Outlet Invert= 165.20'





Summary for Pond 4P: Detention Piping and Pond

Inflow Area = 373,545 sf,100.00% Impervious, Inflow Depth = 3.67" for 25 yr event
Inflow = 7.86 cfs @ 7.88 hrs, Volume= 114,098 cf
Outflow = 1.89 cfs @ 9.48 hrs, Volume= 114,098 cf, Atten= 76%, Lag= 96.0 min
Primary = 1.89 cfs @ 9.48 hrs, Volume= 114,098 cf

Routing by Stor-Ind method, Time Span= 0.00-180.00 hrs, dt= 0.01 hrs
Peak Elev= 168.81' @ 9.48 hrs Surf.Area= 16,158 sf Storage= 39,398 cf

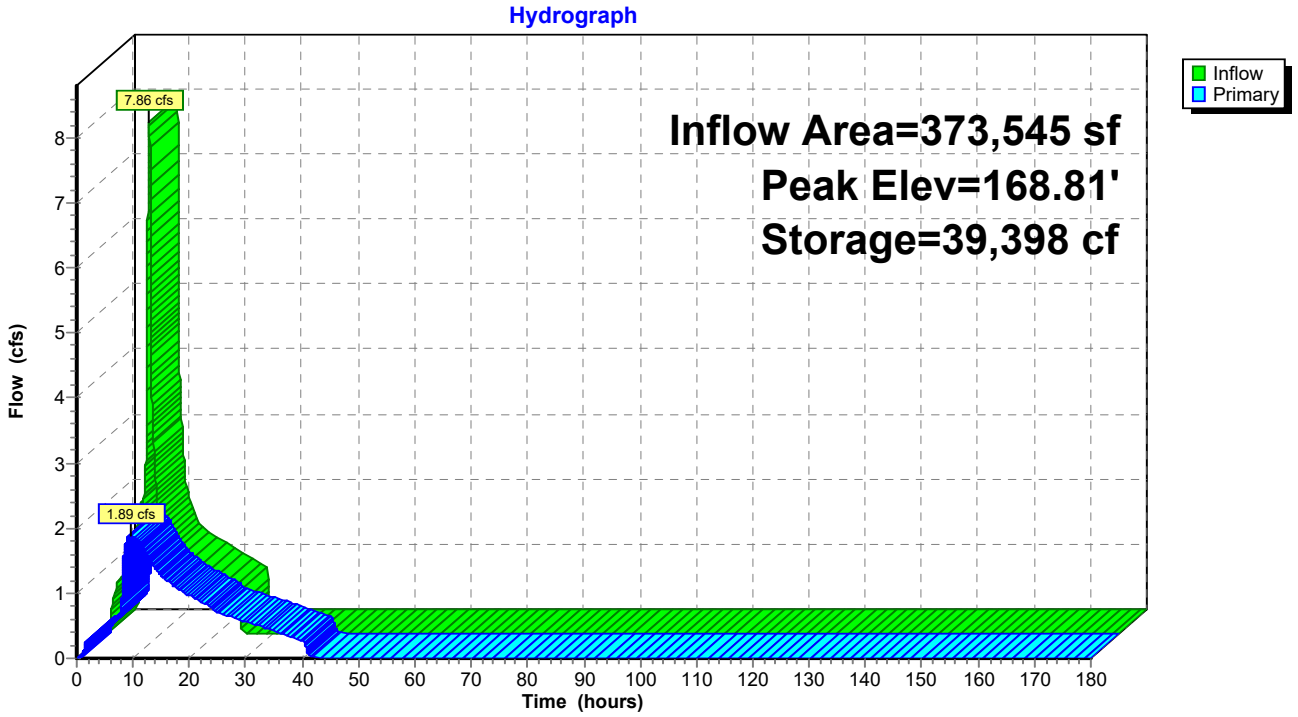
Plug-Flow detention time= 430.0 min calculated for 114,091 cf (100% of inflow)
Center-of-Mass det. time= 430.0 min (1,090.2 - 660.1)

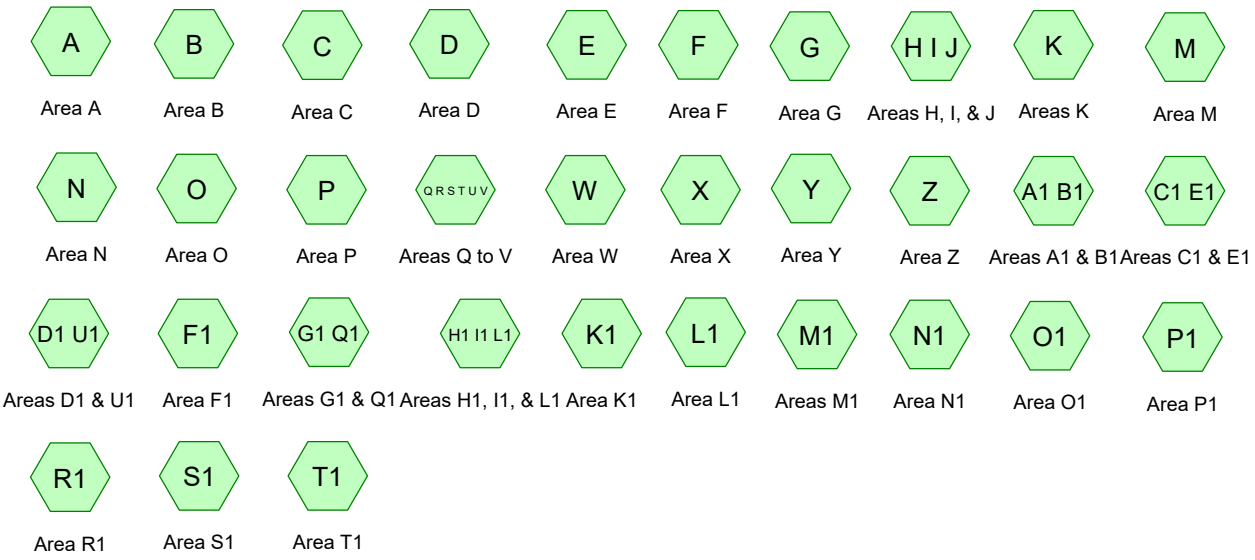
Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	59,808 cf	**80.00'W x 150.00'L x 4.00'H Prismatoid Z=3.0**

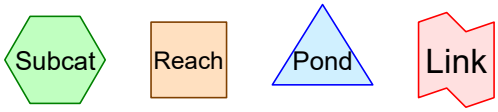
Device	Routing	Invert	Outlet Devices
#1	Primary	165.75'	**18.0" Round Culvert** L= 20.0' Ke= 0.200 Inlet / Outlet Invert= 165.75' / 165.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	163.75'	**4.2" Vert. Orifice/Grate** C= 0.600
#3	Device 1	168.06'	**8.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=1.89 cfs @ 9.48 hrs HW=168.81' (Free Discharge)
└**1=Culvert** (Passes 1.89 cfs of 15.03 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.81 cfs @ 8.42 fps)
  └**3=Orifice/Grate** (Orifice Controls 1.08 cfs @ 3.10 fps)

Pond 4P: Detention Piping and Pond







Routing Diagram for 2021-6-11 Pipe Sizing
Prepared by HP Inc., Printed 6/12/2021
HydroCAD® 10.00-22 s/n 02239 © 2018 HydroCAD Software Solutions LLC

Time span=0.10-80.00 hrs, dt=0.01 hrs, 7991 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentA: Area A Runoff Area=7,000 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.15 cfs 0.049 af

SubcatchmentA1 B1: Areas A1 & B1 Runoff Area=3,200 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.07 cfs 0.022 af

SubcatchmentB: Area B Runoff Area=4,600 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.10 cfs 0.032 af

SubcatchmentC: Area C Runoff Area=25,830 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.54 cfs 0.181 af

SubcatchmentC1 E1: Areas C1 & E1 Runoff Area=3,750 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.08 cfs 0.026 af

SubcatchmentD: Area D Runoff Area=4,080 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=10.0 min CN=0/98 Runoff=0.08 cfs 0.029 af

SubcatchmentD1 U1: Areas D1 & U1 Runoff Area=6,600 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.14 cfs 0.046 af

SubcatchmentE: Area E Runoff Area=4,000 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.08 cfs 0.028 af

SubcatchmentF: Area F Runoff Area=3,920 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=15.0 min CN=0/98 Runoff=0.07 cfs 0.027 af

SubcatchmentF1: Area F1 Runoff Area=7,155 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.15 cfs 0.050 af

SubcatchmentG: Area G Runoff Area=3,720 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.08 cfs 0.026 af

SubcatchmentG1 Q1: Areas G1 & Q1 Runoff Area=3,300 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.07 cfs 0.023 af

SubcatchmentH I J: Areas H, I, & J Runoff Area=6,960 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.15 cfs 0.049 af

SubcatchmentH1 I1 L1: Areas H1, I1, & L1 Runoff Area=14,000 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.29 cfs 0.098 af

SubcatchmentK: Areas K Runoff Area=19,700 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.41 cfs 0.138 af

SubcatchmentK1: Area K1 Runoff Area=7,500 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.16 cfs 0.053 af

SubcatchmentL1: Area L1 Runoff Area=14,310 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.30 cfs 0.100 af

SubcatchmentM: Area M Runoff Area=4,500 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.09 cfs 0.032 af

SubcatchmentM1: Areas M1 Runoff Area=7,000 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.15 cfs 0.049 af

SubcatchmentN: Area N Runoff Area=15,800 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.33 cfs 0.111 af

SubcatchmentN1: Area N1 Runoff Area=5,725 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.12 cfs 0.040 af

SubcatchmentO: Area O Runoff Area=7,000 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.15 cfs 0.049 af

SubcatchmentO1: Area O1 Runoff Area=900 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.02 cfs 0.006 af

SubcatchmentP: Area P Runoff Area=15,075 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.32 cfs 0.106 af

SubcatchmentP1: Area P1 Runoff Area=16,400 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.35 cfs 0.115 af

SubcatchmentQ R S T U V: Areas Q to V Runoff Area=10,500 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.22 cfs 0.074 af

SubcatchmentR1: Area R1 Runoff Area=9,600 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.20 cfs 0.067 af

SubcatchmentS1: Area S1 Runoff Area=3,170 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.07 cfs 0.022 af

SubcatchmentT1: Area T1 Runoff Area=5,080 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.11 cfs 0.036 af

SubcatchmentW: Area W Runoff Area=4,770 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.10 cfs 0.033 af

SubcatchmentX: Area X Runoff Area=13,230 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.28 cfs 0.093 af

SubcatchmentY: Area Y Runoff Area=3,900 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.08 cfs 0.027 af

SubcatchmentZ: Area Z Runoff Area=14,310 sf 100.00% Impervious Runoff Depth=3.67"
Flow Length=200' Tc=5.0 min CN=0/98 Runoff=0.30 cfs 0.100 af

Total Runoff Area = 6.350 ac Runoff Volume = 1.939 af Average Runoff Depth = 3.67"
0.00% Pervious = 0.000 ac 100.00% Impervious = 6.350 ac

Summary for Subcatchment A: Area A

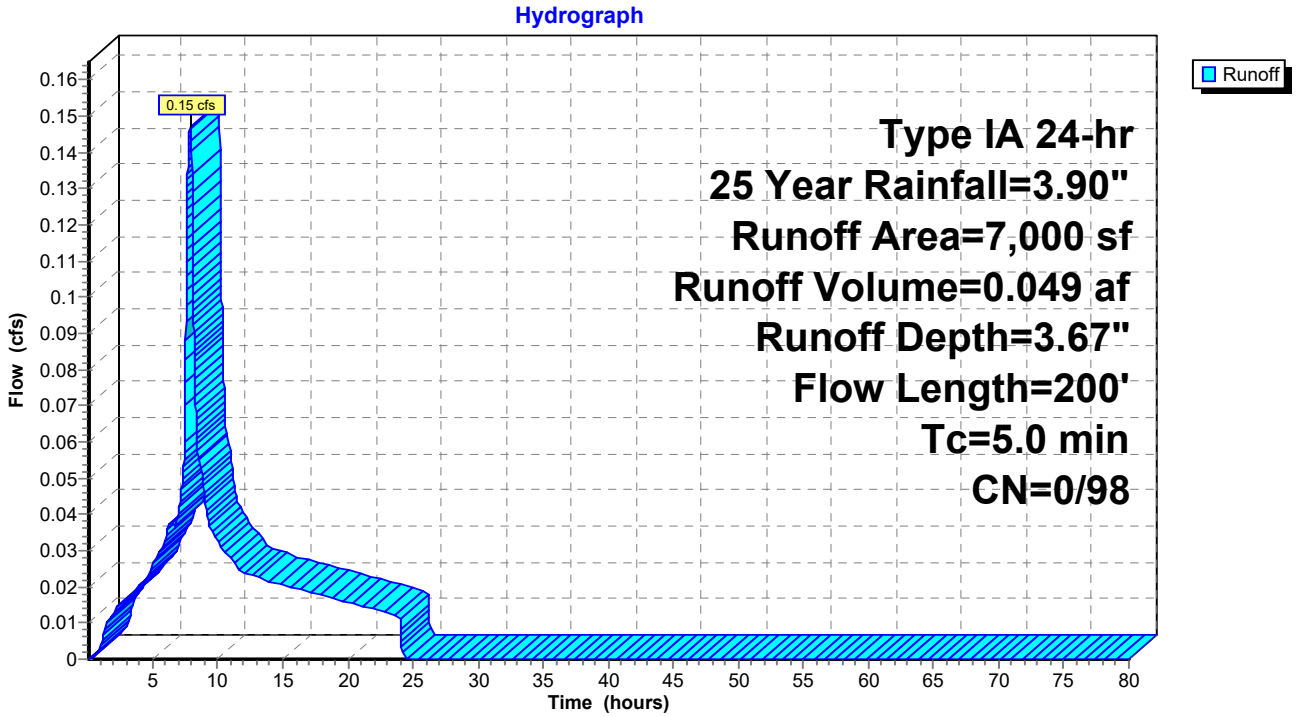
Runoff = 0.15 cfs @ 7.88 hrs, Volume= 0.049 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
7,000	98	Roofs, HSG C
7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment A: Area A



Summary for Subcatchment A1 B1: Areas A1 & B1

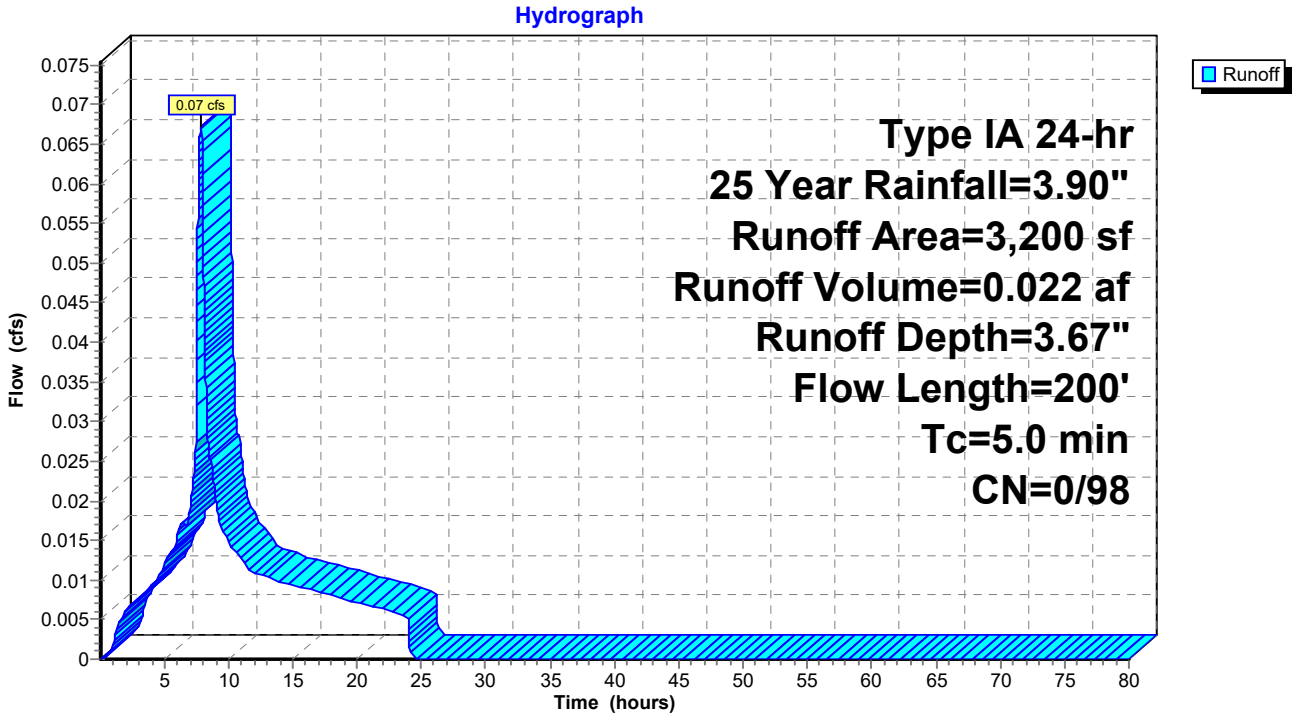
Runoff = 0.07 cfs @ 7.88 hrs, Volume= 0.022 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,200	98	Paved parking, HSG C
3,200		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment A1 B1: Areas A1 & B1



Summary for Subcatchment B: Area B

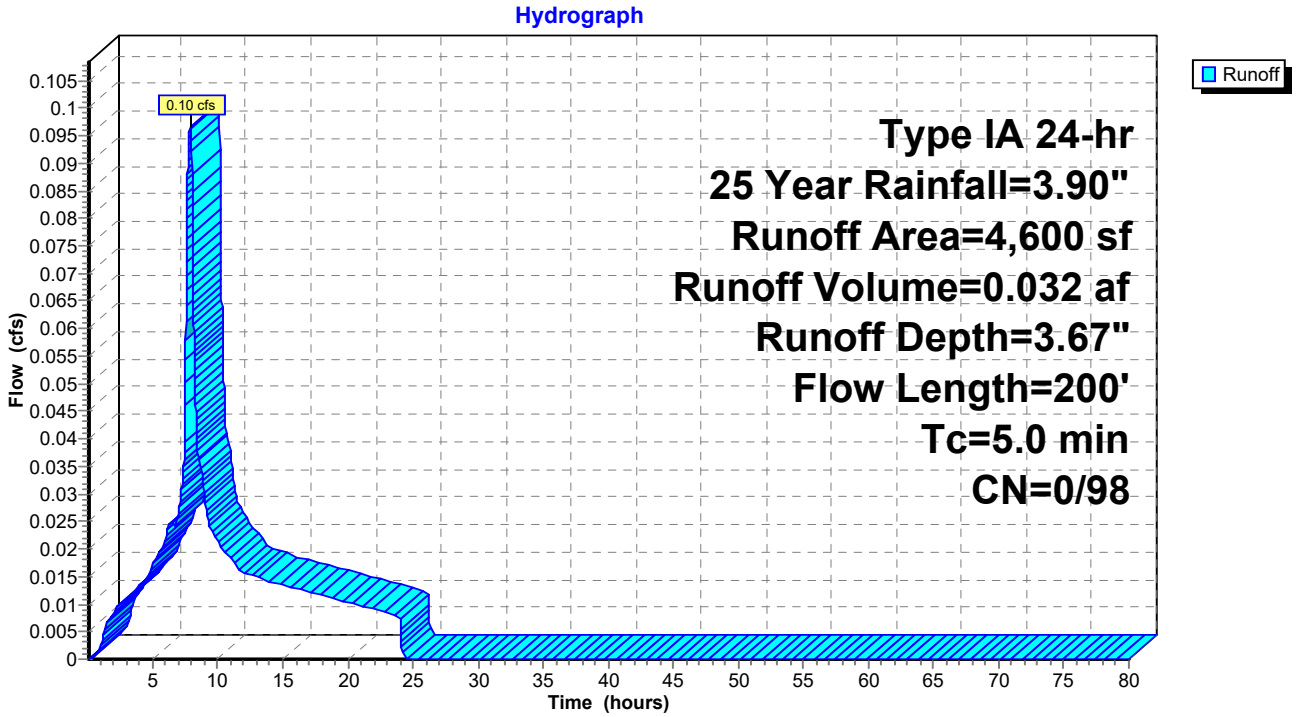
Runoff = 0.10 cfs @ 7.88 hrs, Volume= 0.032 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
4,600	98	Paved parking, HSG C
4,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment B: Area B



Summary for Subcatchment C: Area C

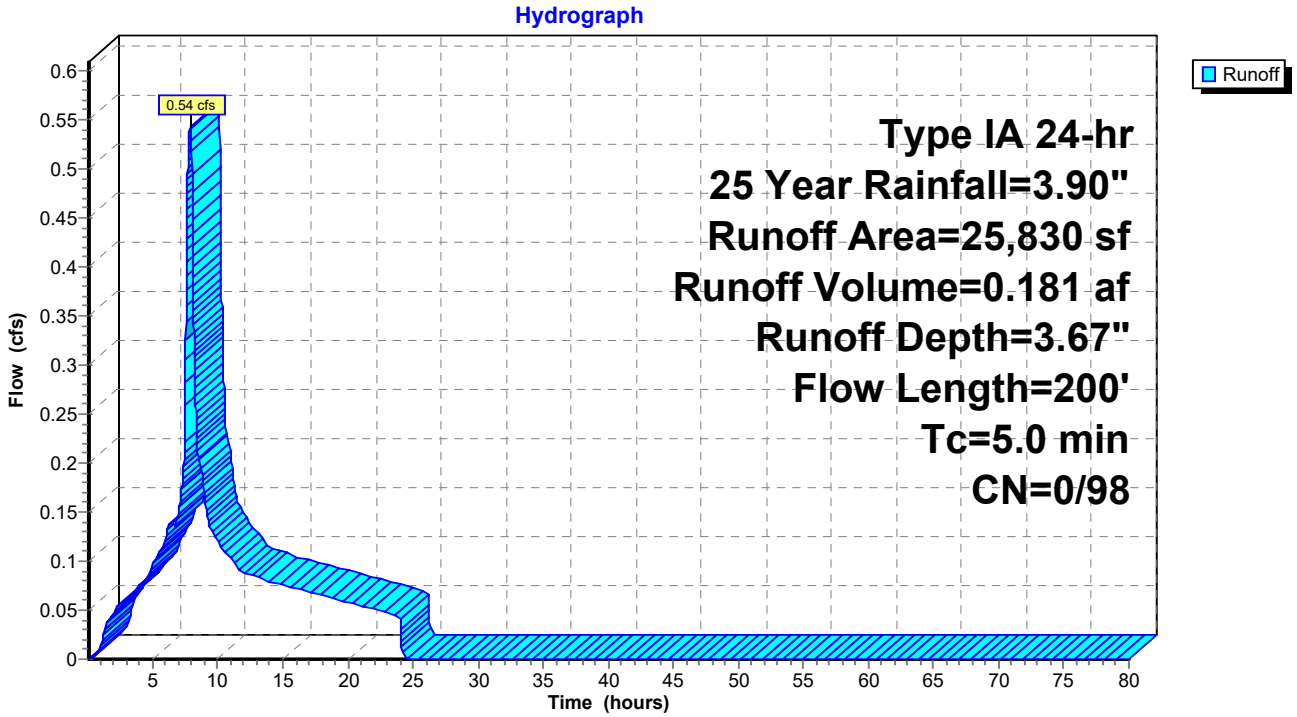
Runoff = 0.54 cfs @ 7.88 hrs, Volume= 0.181 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
25,830	98	Paved parking, HSG C
25,830		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment C: Area C



Summary for Subcatchment C1 E1: Areas C1 & E1

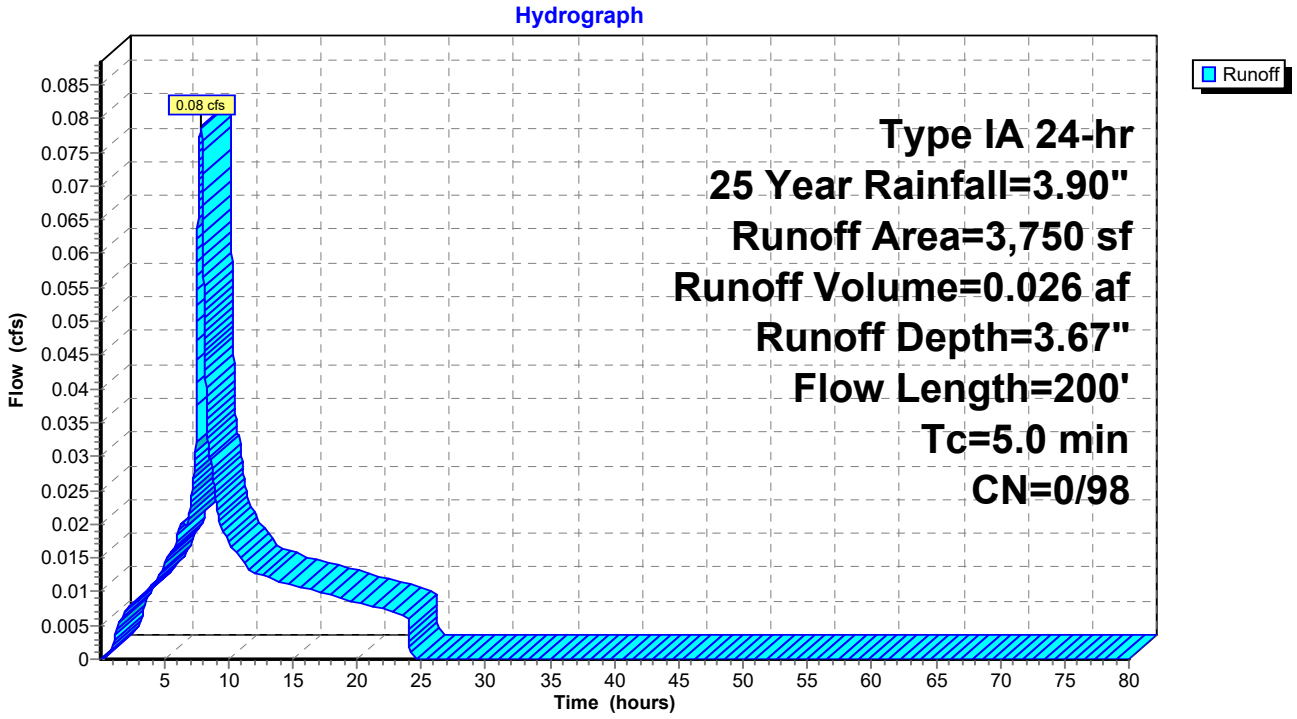
Runoff = 0.08 cfs @ 7.88 hrs, Volume= 0.026 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,750	98	Roofs, HSG C
3,750		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment C1 E1: Areas C1 & E1



Summary for Subcatchment D: Area D

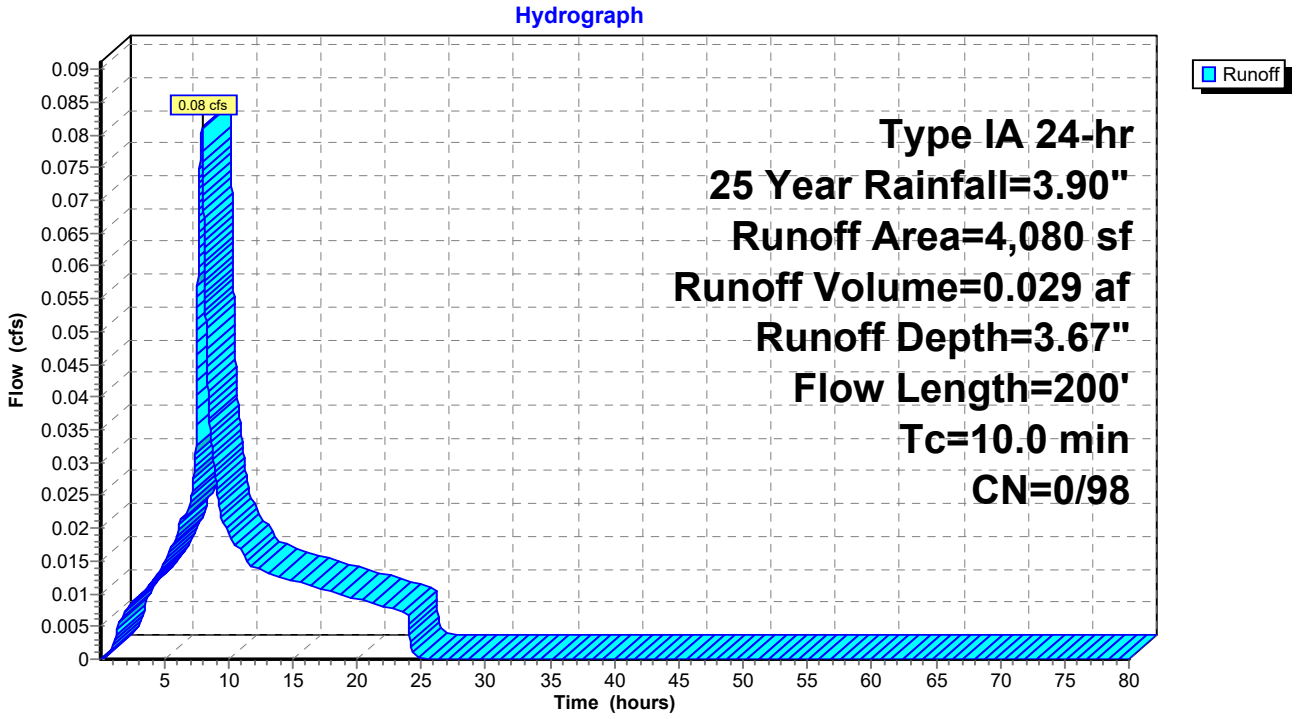
Runoff = 0.08 cfs @ 7.96 hrs, Volume= 0.029 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
4,080	98	Paved parking, HSG C
4,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	200		0.33		**Direct Entry, Sheet Flow**

Subcatchment D: Area D



Summary for Subcatchment D1 U1: Areas D1 & U1

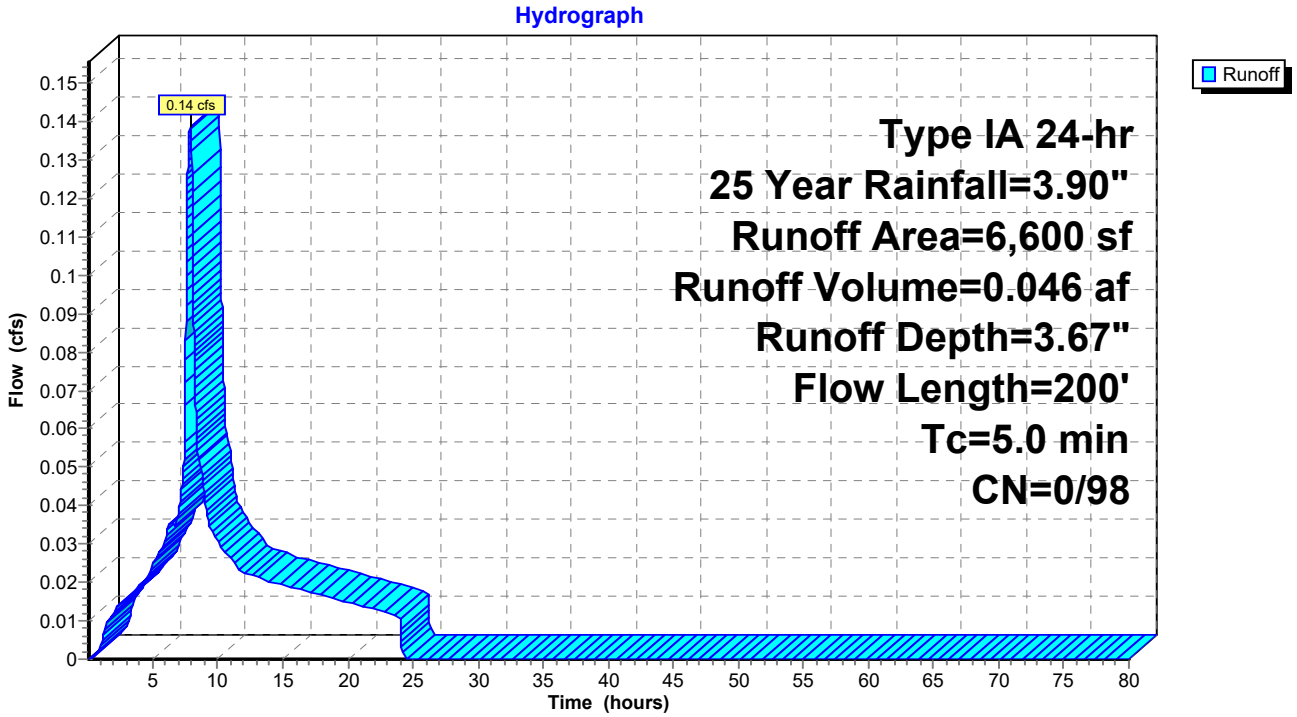
Runoff = 0.14 cfs @ 7.88 hrs, Volume= 0.046 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
6,600	98	Paved parking, HSG C
6,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment D1 U1: Areas D1 & U1



Summary for Subcatchment E: Area E

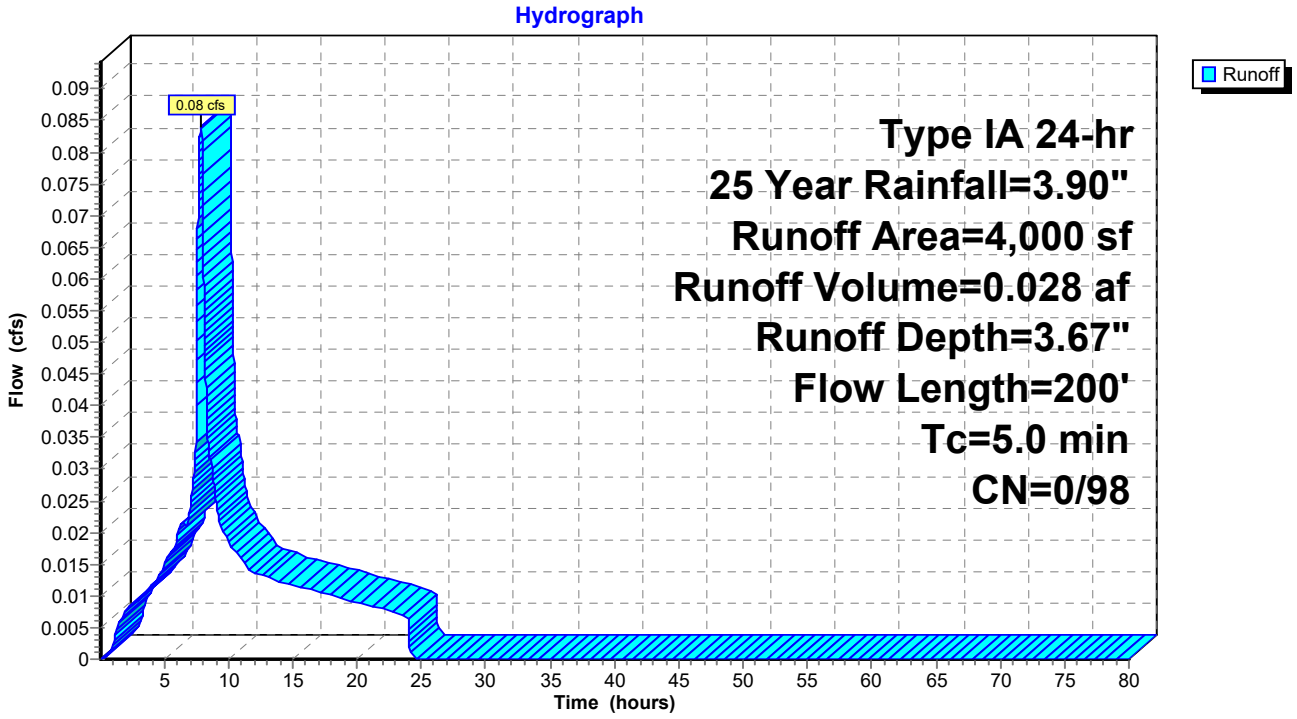
Runoff = 0.08 cfs @ 7.88 hrs, Volume= 0.028 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
4,000	98	Paved parking, HSG C
4,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment E: Area E



Summary for Subcatchment F: Area F

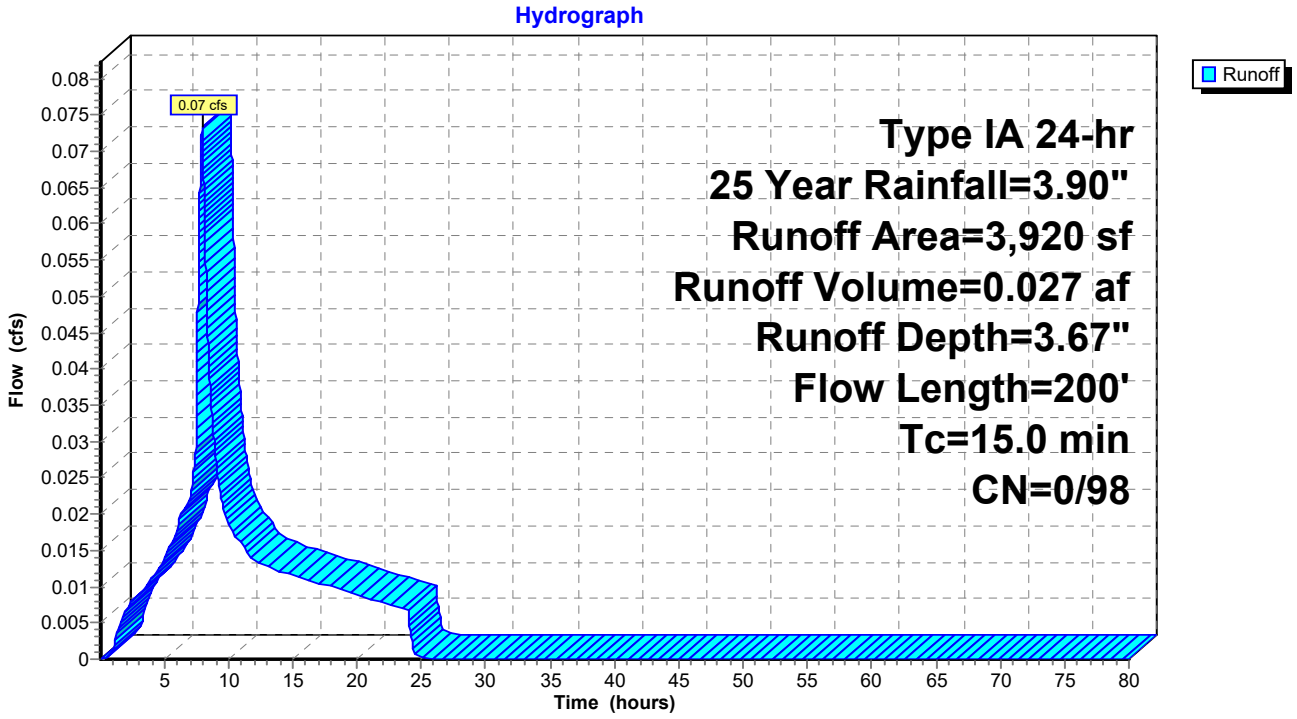
Runoff = 0.07 cfs @ 8.00 hrs, Volume= 0.027 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,920	98	Paved parking, HSG C
3,920		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	200		0.22		**Direct Entry, Sheet Flow**

Subcatchment F: Area F



Summary for Subcatchment F1: Area F1

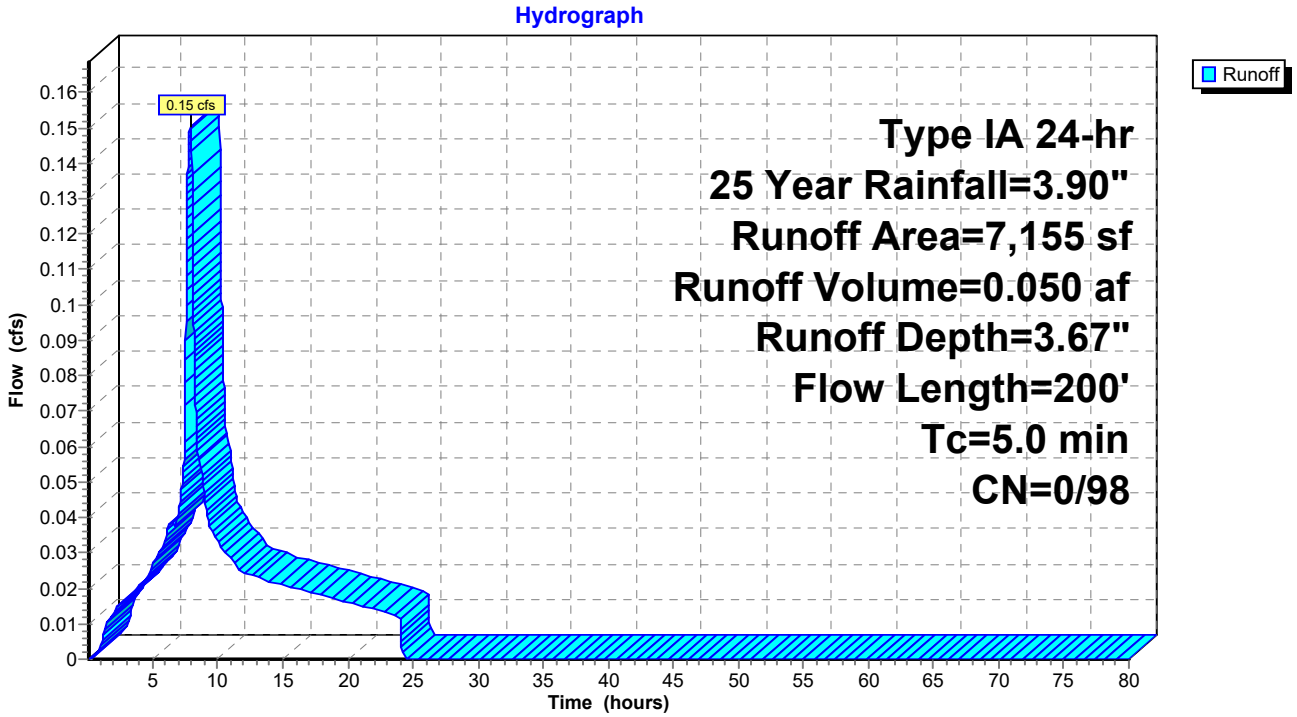
Runoff = 0.15 cfs @ 7.88 hrs, Volume= 0.050 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
7,155	98	Roofs, HSG C
7,155		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment F1: Area F1



Summary for Subcatchment G: Area G

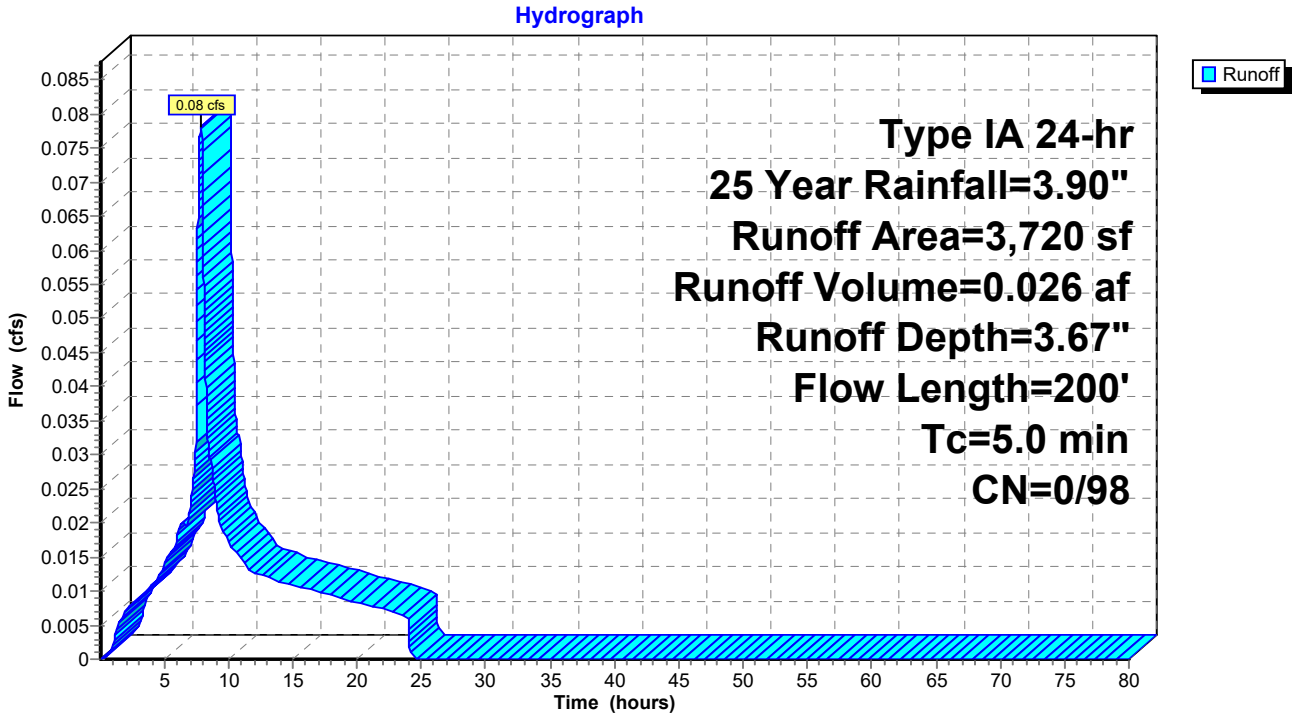
Runoff = 0.08 cfs @ 7.88 hrs, Volume= 0.026 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,720	98	Paved parking, HSG C
3,720		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment G: Area G



Summary for Subcatchment G1 Q1: Areas G1 & Q1

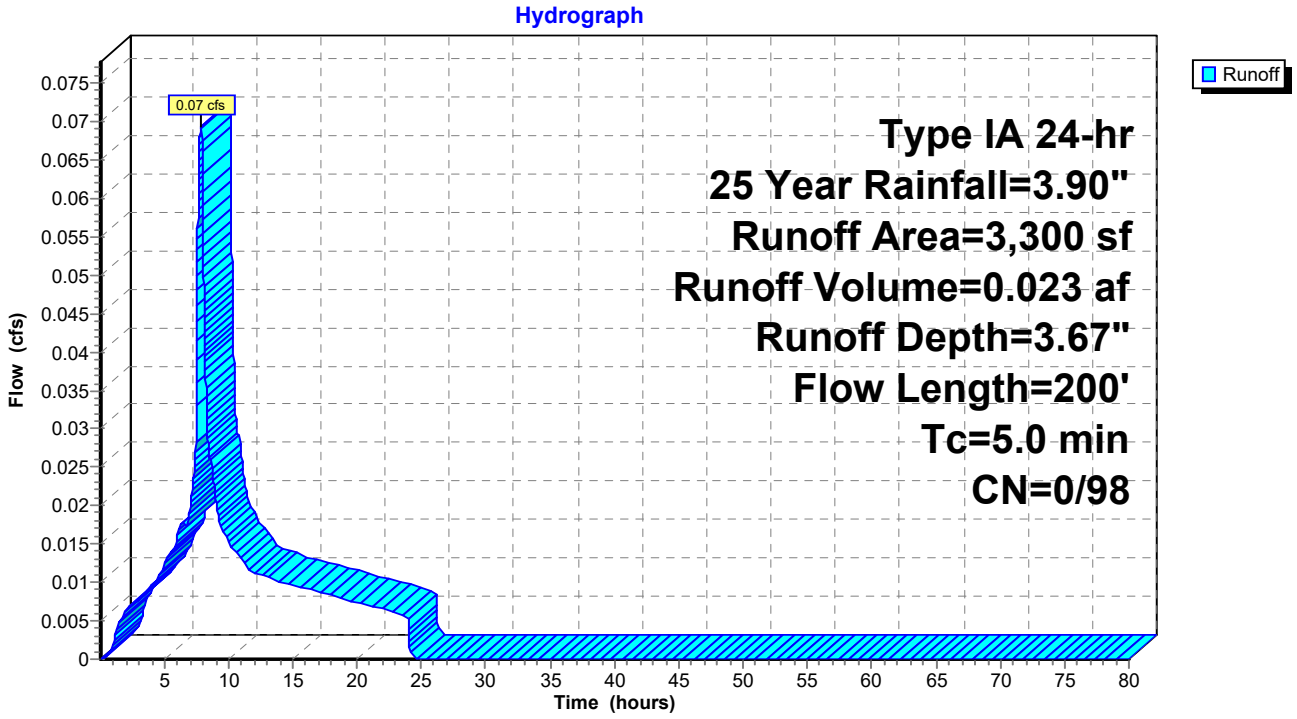
Runoff = 0.07 cfs @ 7.88 hrs, Volume= 0.023 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,300	98	Paved parking, HSG C
3,300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment G1 Q1: Areas G1 & Q1



Summary for Subcatchment H I J: Areas H, I, & J

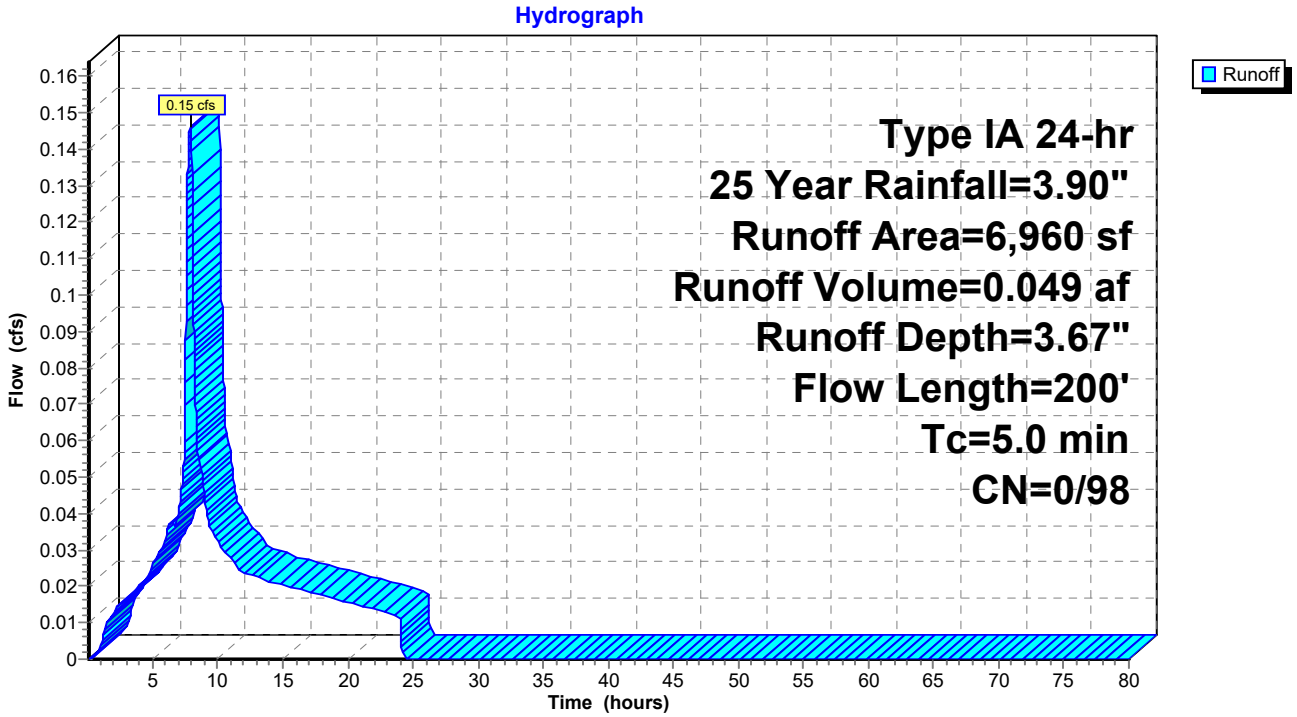
Runoff = 0.15 cfs @ 7.88 hrs, Volume= 0.049 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
6,960	98	Paved parking, HSG C
6,960		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment H I J: Areas H, I, & J



Summary for Subcatchment H1 I1 L1: Areas H1, I1, & L1

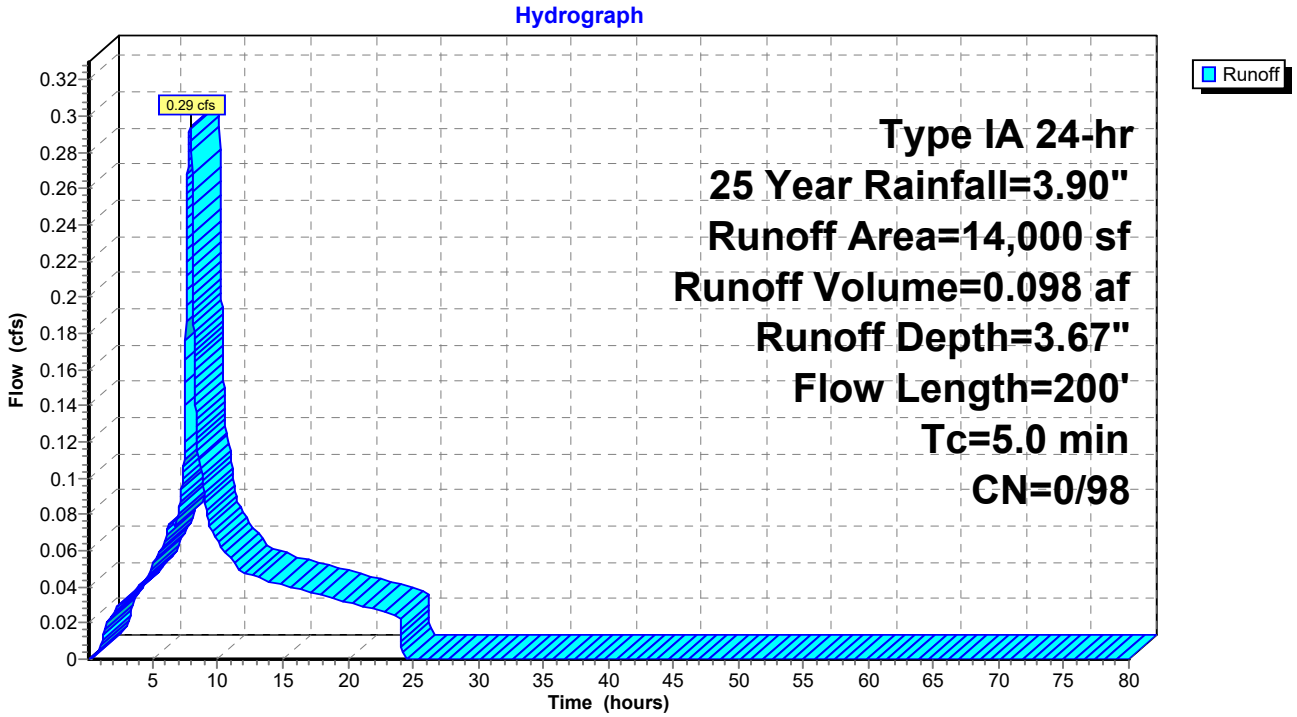
Runoff = 0.29 cfs @ 7.88 hrs, Volume= 0.098 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
14,000	98	Roofs, HSG C
14,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment H1 I1 L1: Areas H1, I1, & L1



Summary for Subcatchment K: Areas K

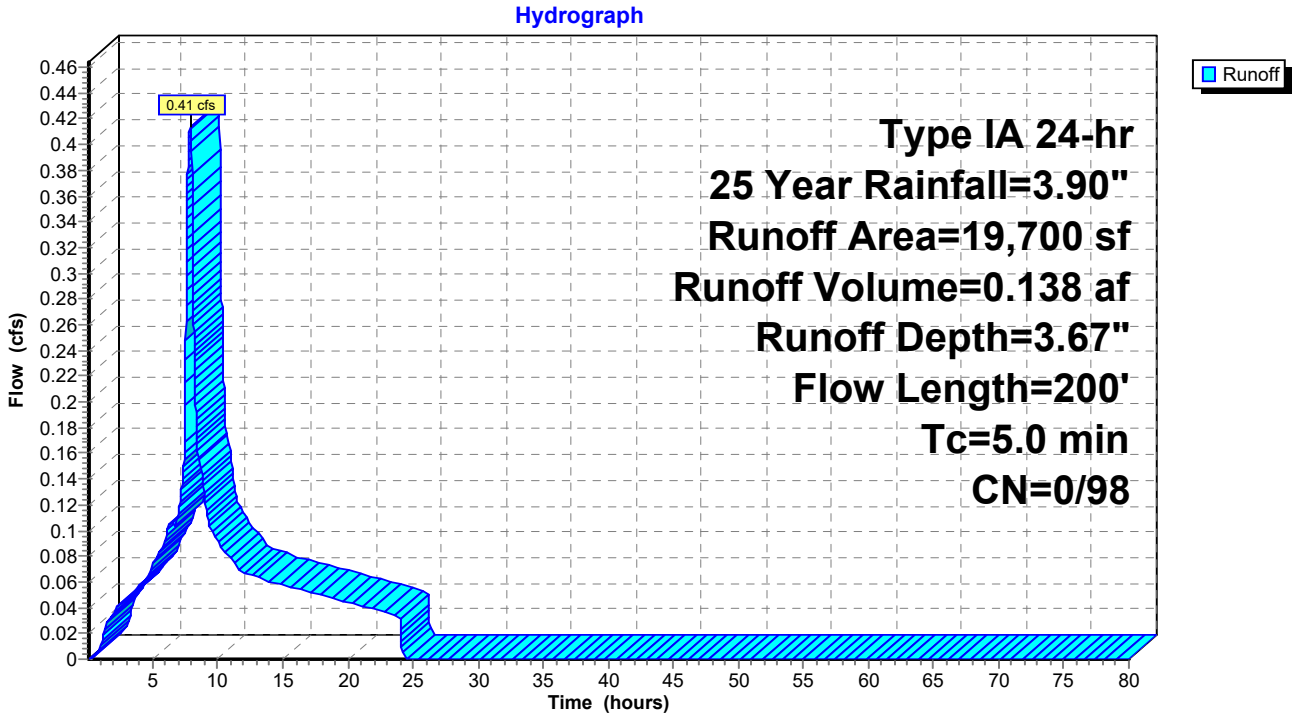
Runoff = 0.41 cfs @ 7.88 hrs, Volume= 0.138 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
19,700	98	Paved parking, HSG C
19,700		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment K: Areas K



Summary for Subcatchment K1: Area K1

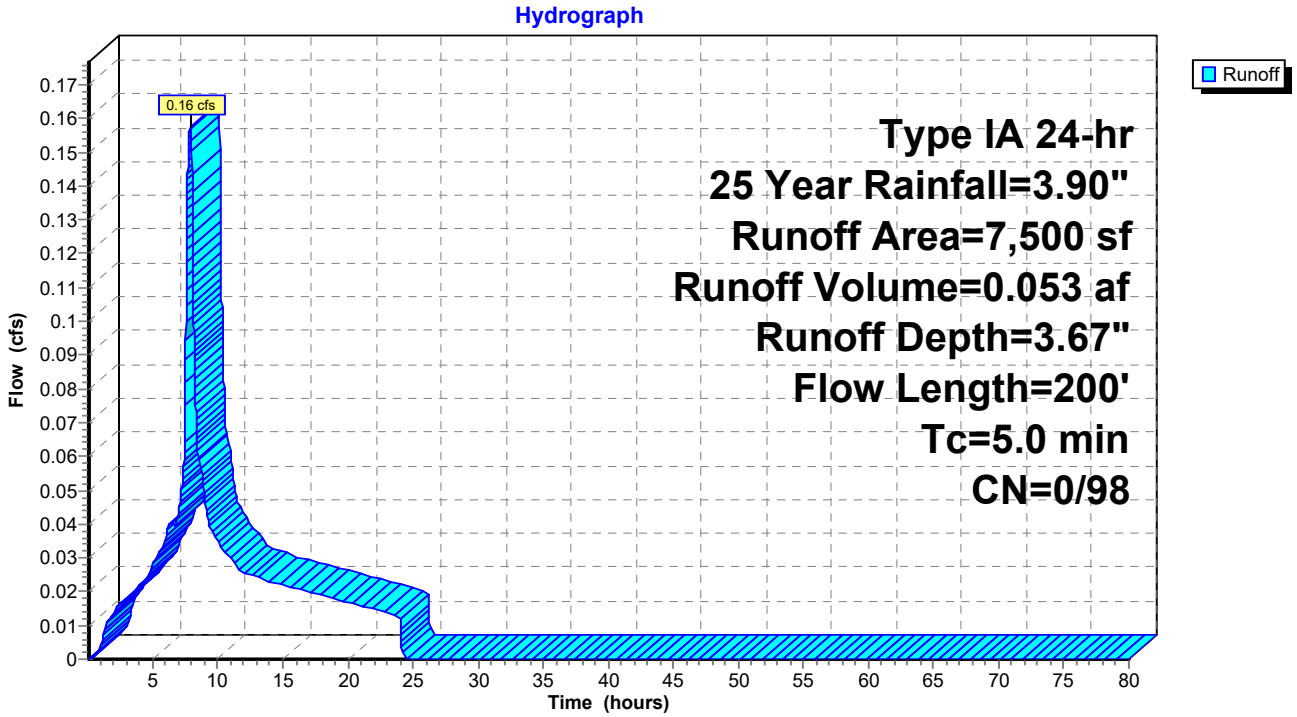
Runoff = 0.16 cfs @ 7.88 hrs, Volume= 0.053 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
7,500	98	Roofs, HSG C
7,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment K1: Area K1



Summary for Subcatchment L1: Area L1

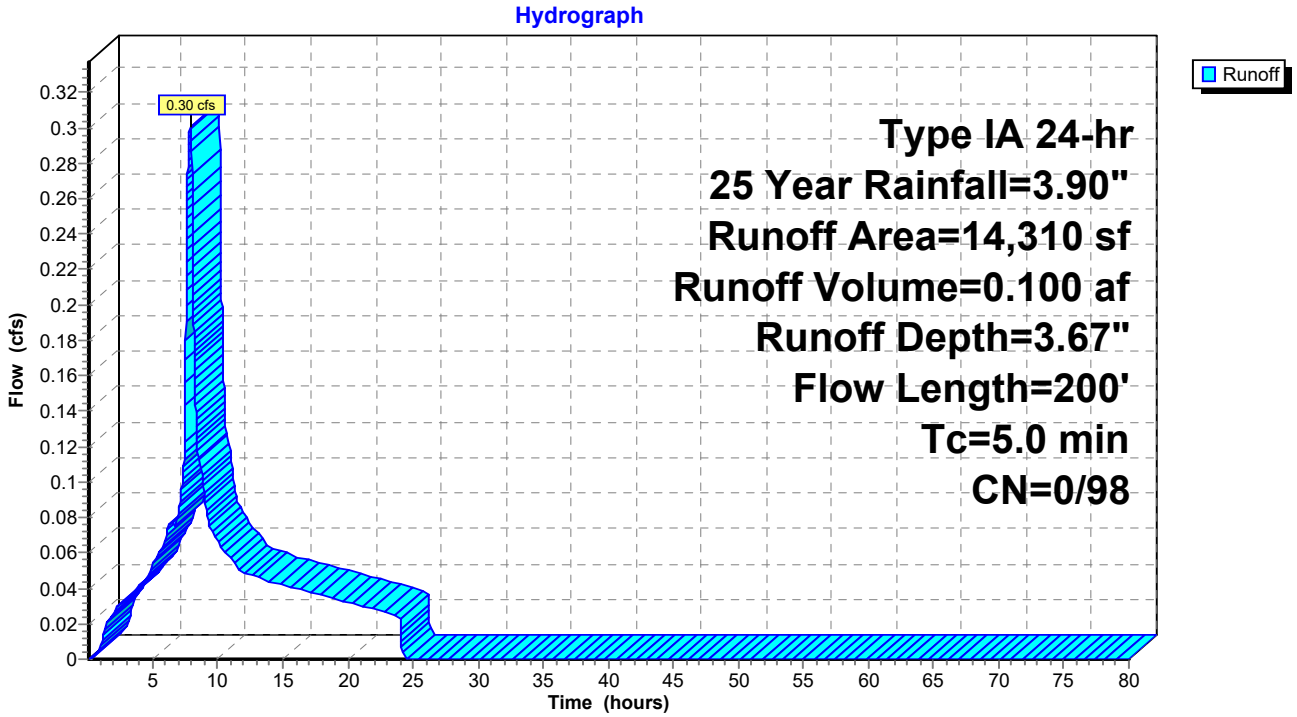
Runoff = 0.30 cfs @ 7.88 hrs, Volume= 0.100 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
14,310	98	Roofs, HSG C
14,310		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment L1: Area L1



Summary for Subcatchment M: Area M

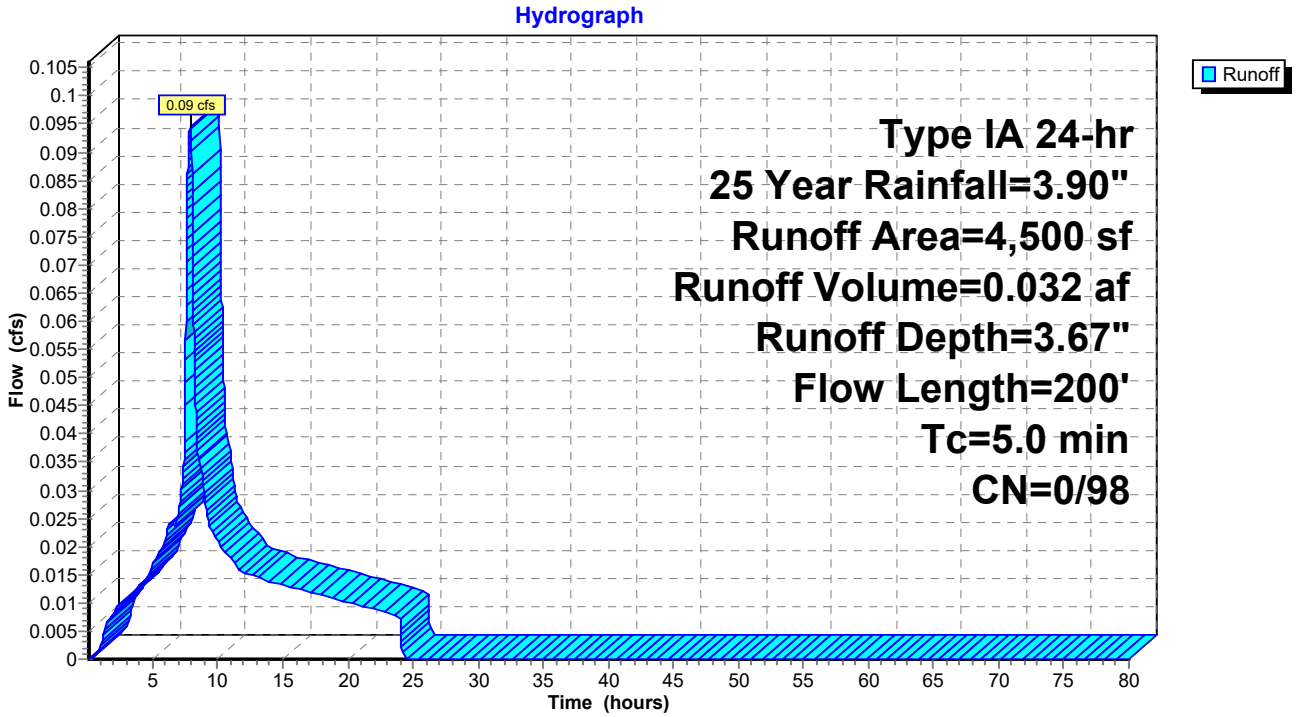
Runoff = 0.09 cfs @ 7.88 hrs, Volume= 0.032 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
4,500	98	Paved parking, HSG C
4,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment M: Area M



Summary for Subcatchment M1: Areas M1

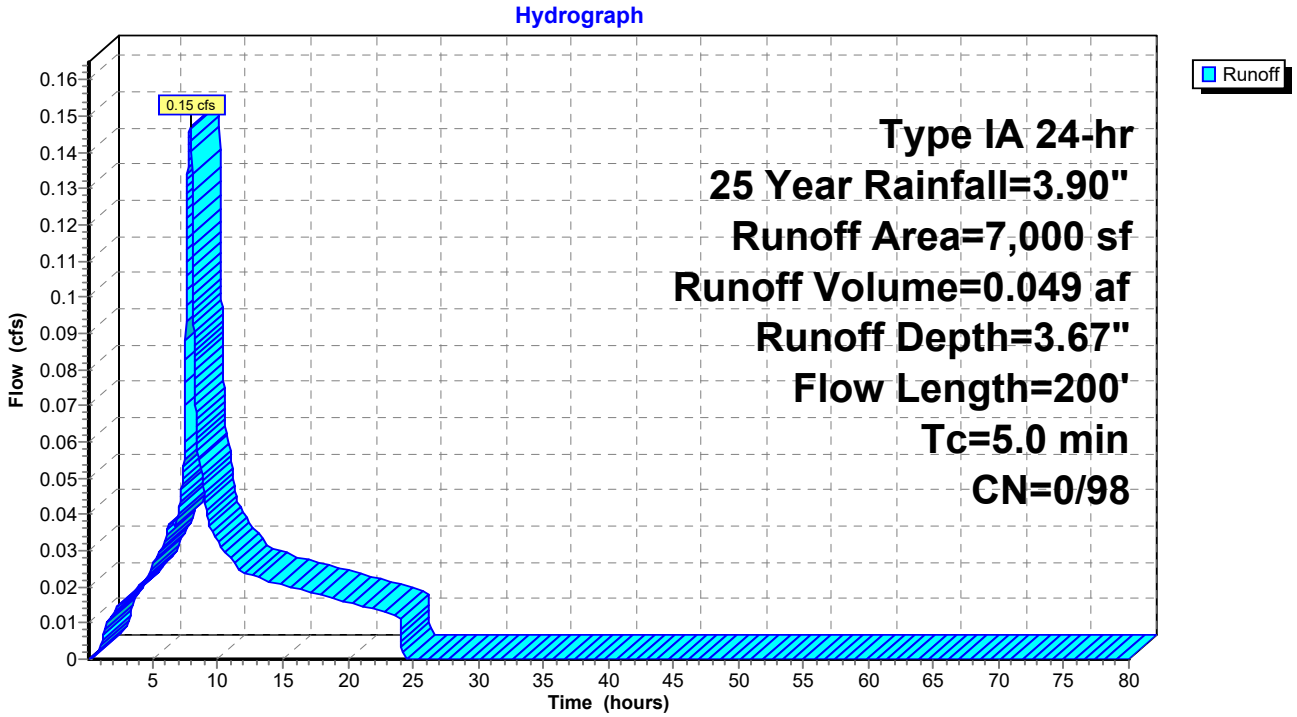
Runoff = 0.15 cfs @ 7.88 hrs, Volume= 0.049 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
7,000	98	Roofs, HSG C
7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment M1: Areas M1



Summary for Subcatchment N: Area N

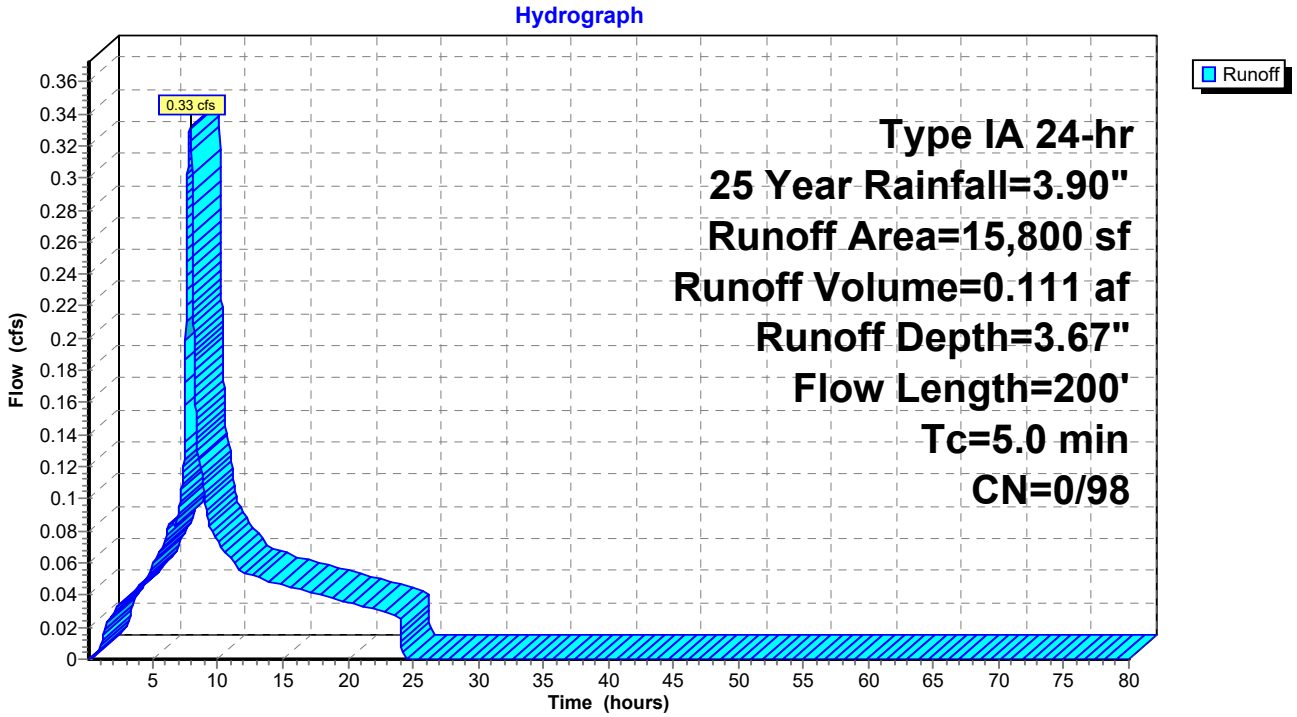
Runoff = 0.33 cfs @ 7.88 hrs, Volume= 0.111 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
15,800	98	Roofs, HSG C
15,800		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment N: Area N



Summary for Subcatchment N1: Area N1

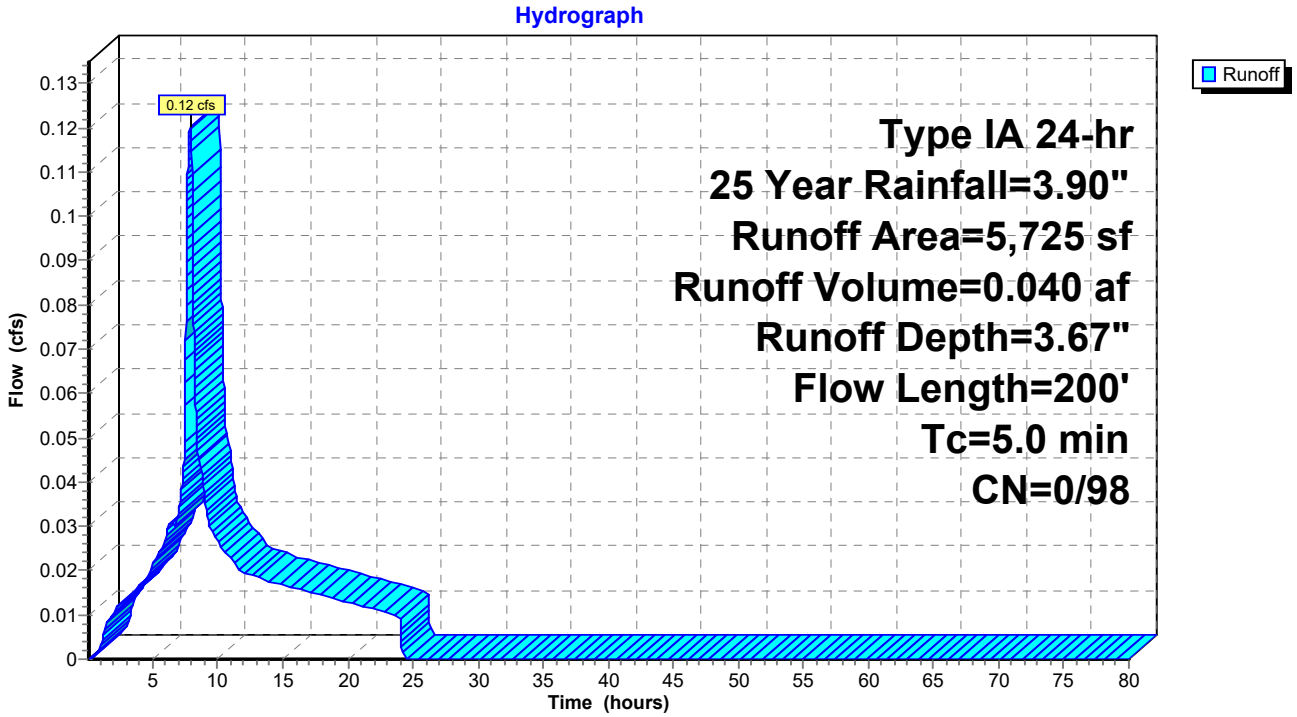
Runoff = 0.12 cfs @ 7.88 hrs, Volume= 0.040 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
5,725	98	Paved parking, HSG C
5,725		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment N1: Area N1



Summary for Subcatchment O: Area O

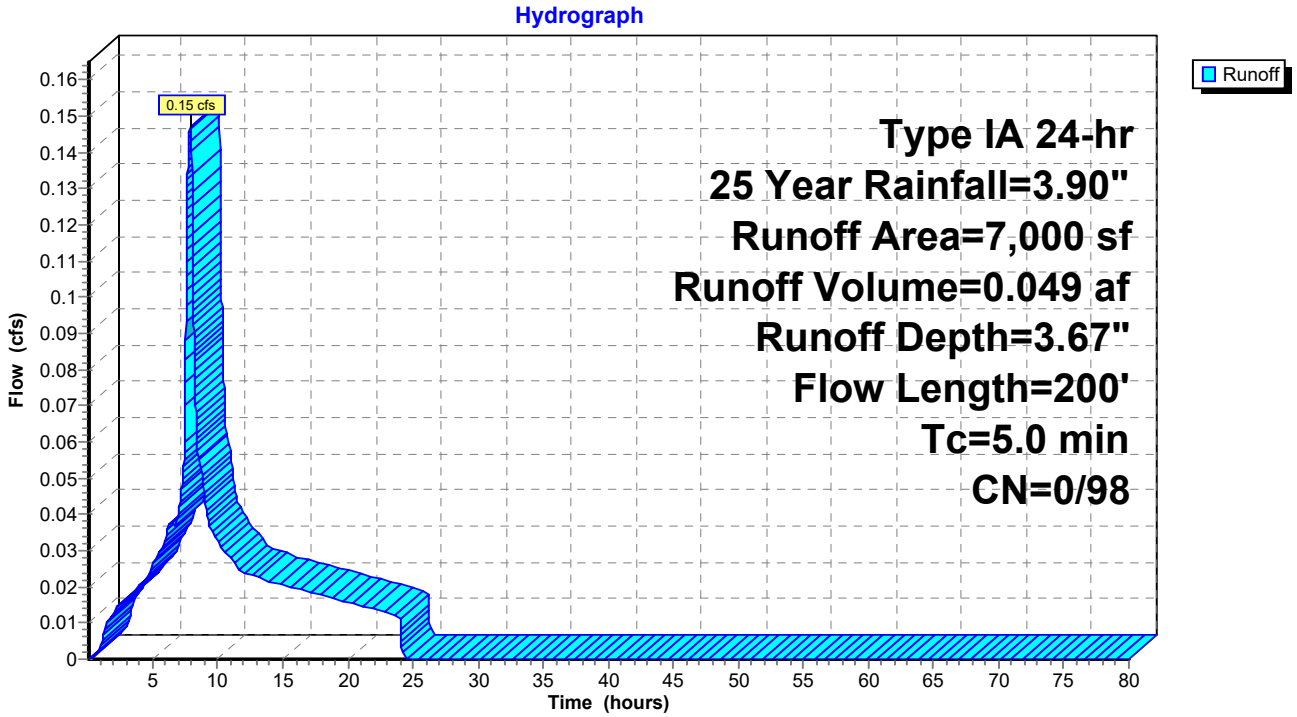
Runoff = 0.15 cfs @ 7.88 hrs, Volume= 0.049 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
7,000	98	Paved parking, HSG C
7,000		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment O: Area O



Summary for Subcatchment O1: Area O1

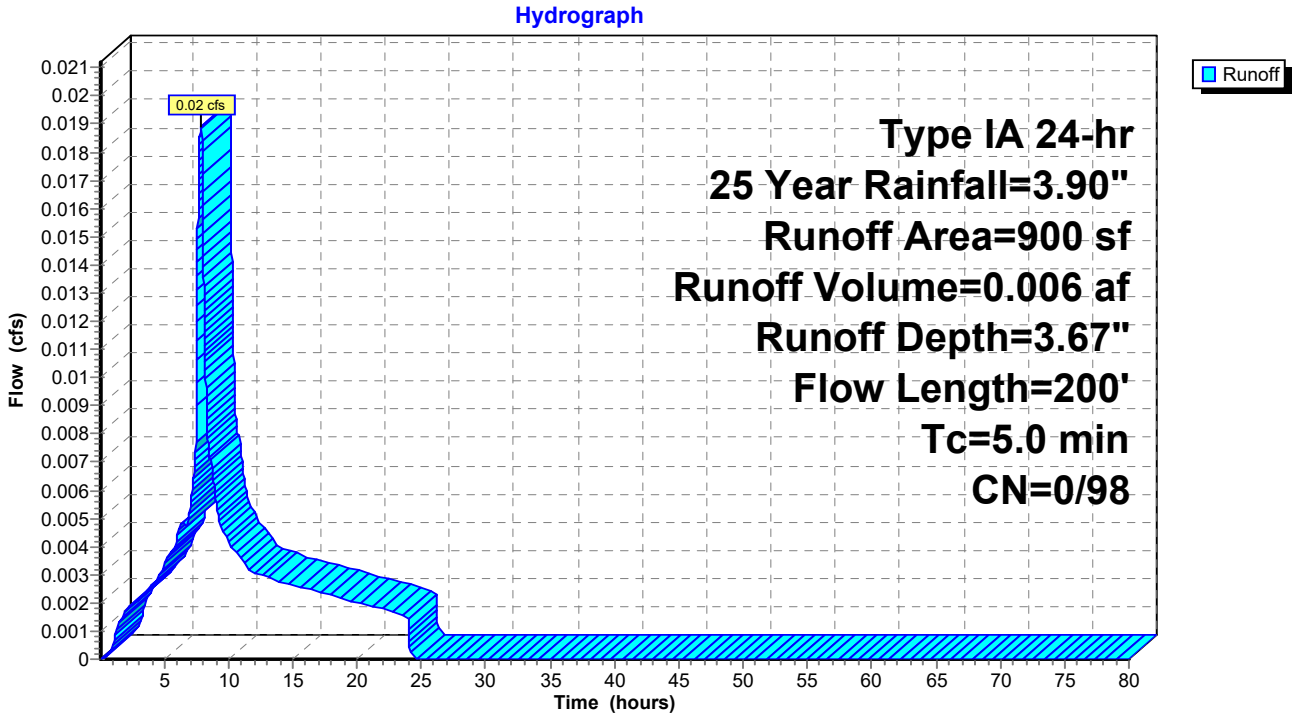
Runoff = 0.02 cfs @ 7.88 hrs, Volume= 0.006 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
900	98	Roofs, HSG C
900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment O1: Area O1



Summary for Subcatchment P: Area P

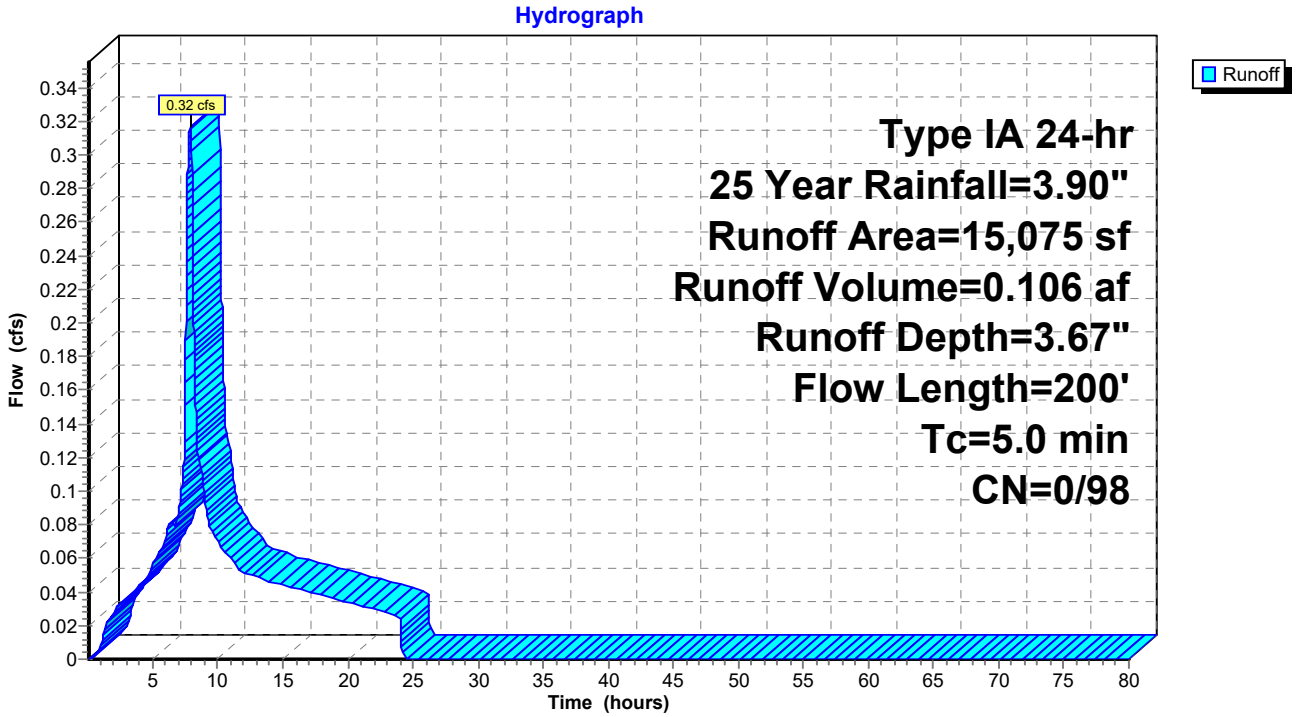
Runoff = 0.32 cfs @ 7.88 hrs, Volume= 0.106 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
15,075	98	Paved parking, HSG C
15,075		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment P: Area P



Summary for Subcatchment P1: Area P1

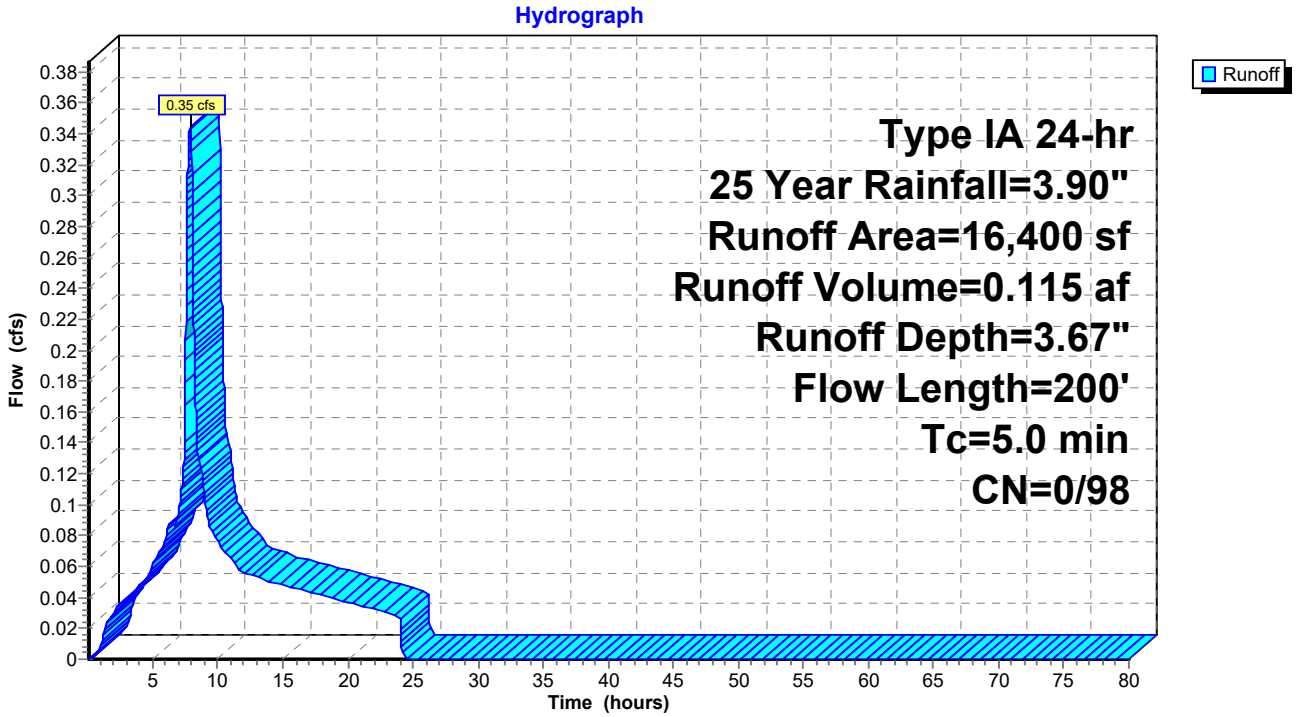
Runoff = 0.35 cfs @ 7.88 hrs, Volume= 0.115 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
16,400	98	Paved parking, HSG C
16,400		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment P1: Area P1



Summary for Subcatchment Q R S T U V: Areas Q to V

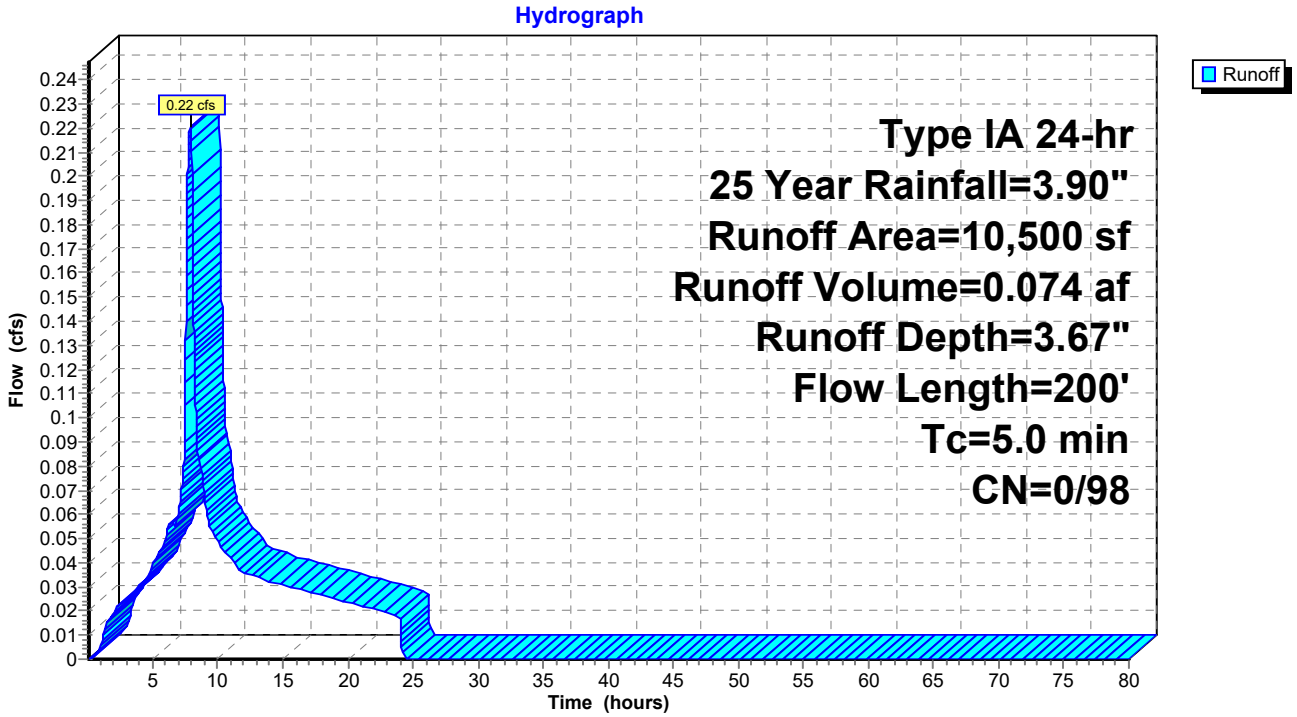
Runoff = 0.22 cfs @ 7.88 hrs, Volume= 0.074 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
10,500	98	Paved parking, HSG C
10,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment Q R S T U V: Areas Q to V



Summary for Subcatchment R1: Area R1

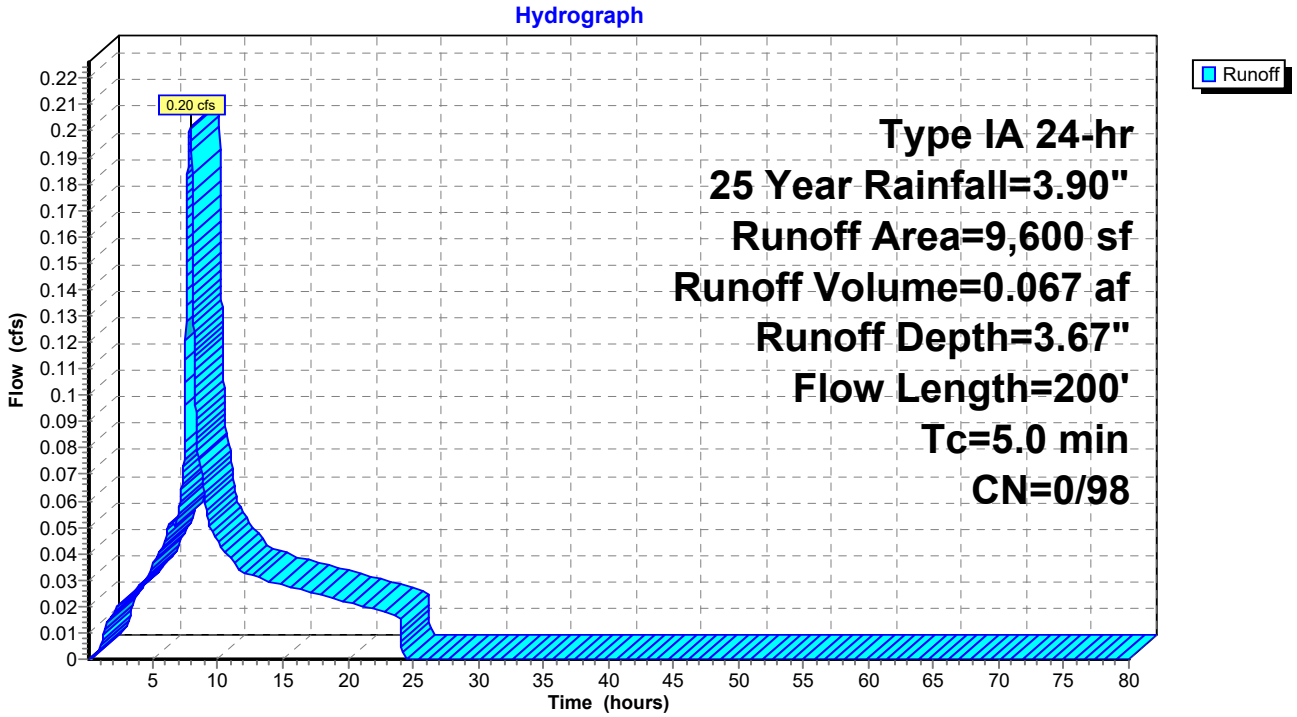
Runoff = 0.20 cfs @ 7.88 hrs, Volume= 0.067 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
9,600	98	Paved parking, HSG C
9,600		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment R1: Area R1



Summary for Subcatchment S1: Area S1

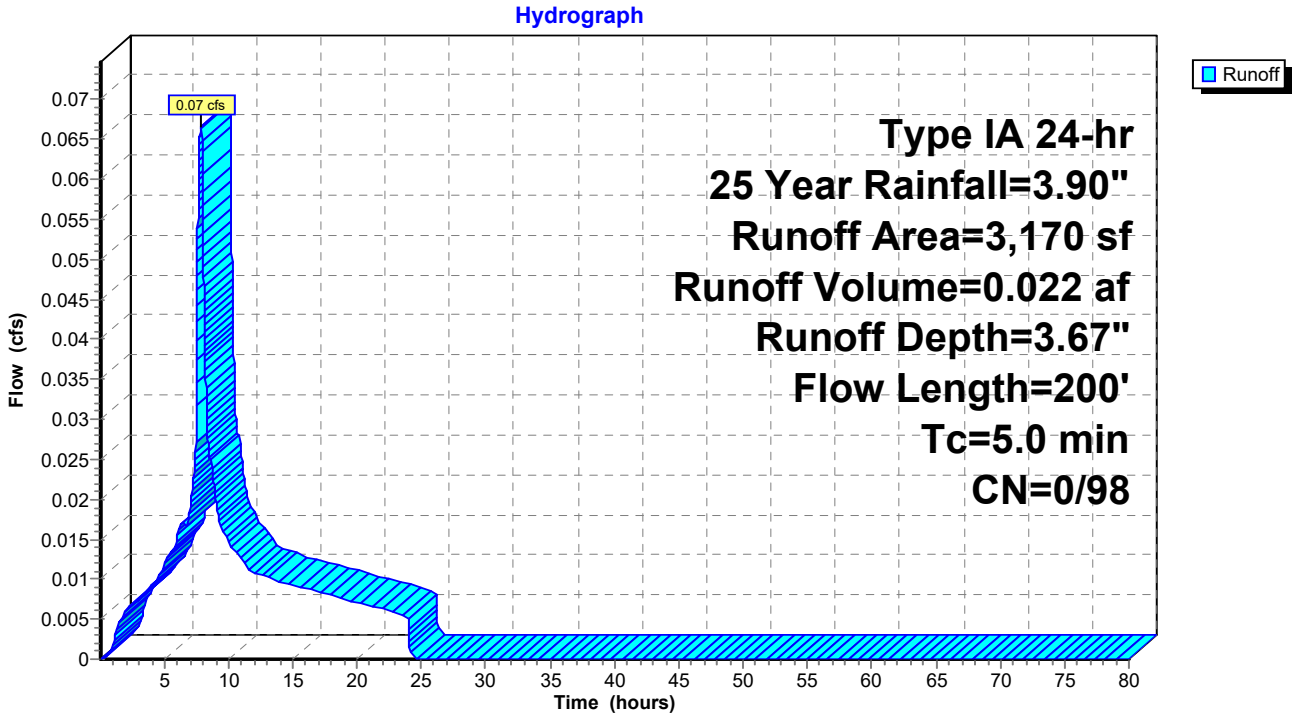
Runoff = 0.07 cfs @ 7.88 hrs, Volume= 0.022 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,170	98	Roofs, HSG C
3,170		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment S1: Area S1



Summary for Subcatchment T1: Area T1

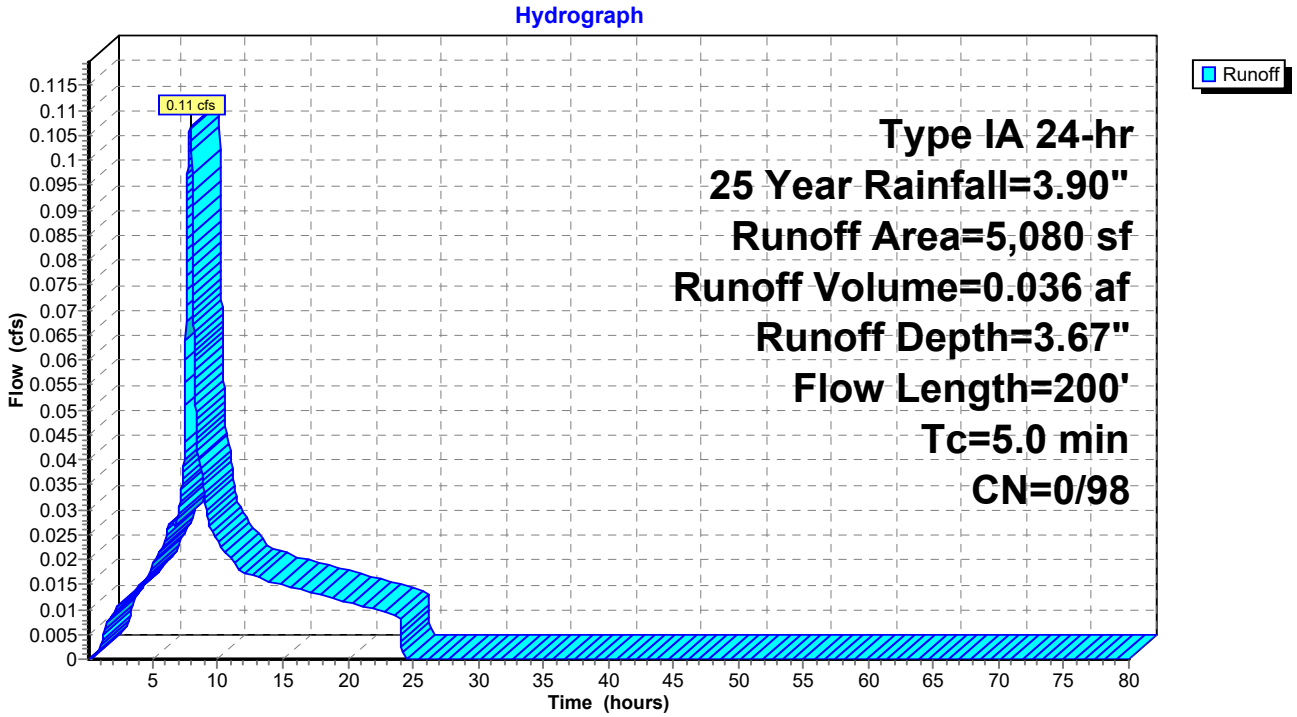
Runoff = 0.11 cfs @ 7.88 hrs, Volume= 0.036 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
5,080	98	Paved parking, HSG C
5,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment T1: Area T1



Summary for Subcatchment W: Area W

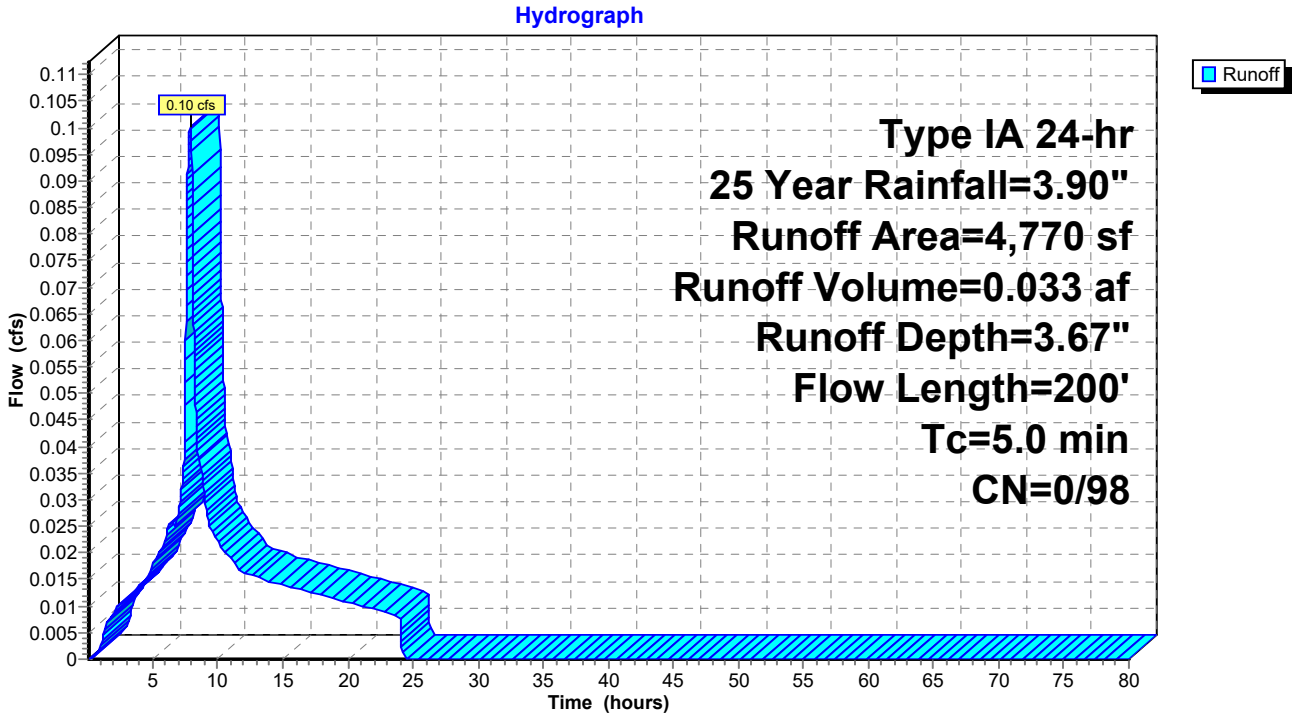
Runoff = 0.10 cfs @ 7.88 hrs, Volume= 0.033 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
4,770	98	Paved parking, HSG C
4,770		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment W: Area W



Summary for Subcatchment X: Area X

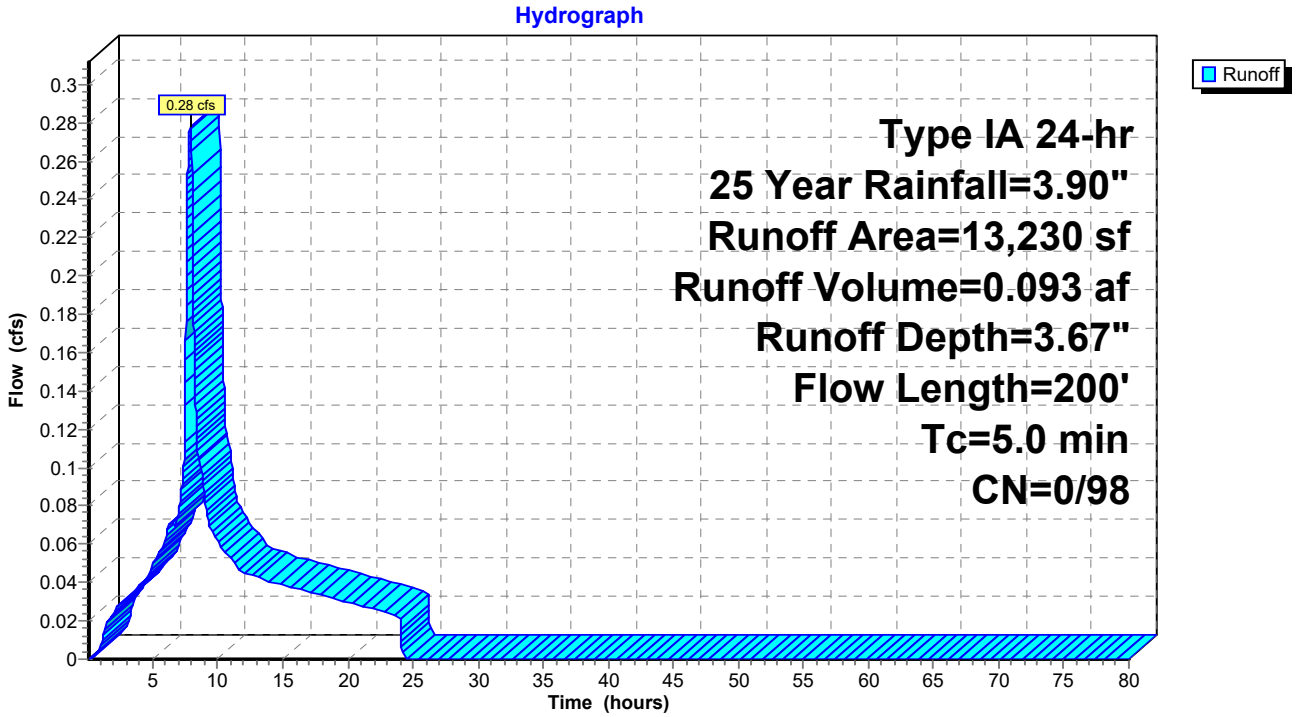
Runoff = 0.28 cfs @ 7.88 hrs, Volume= 0.093 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
13,230	98	Roofs, HSG C
13,230		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment X: Area X



Summary for Subcatchment Y: Area Y

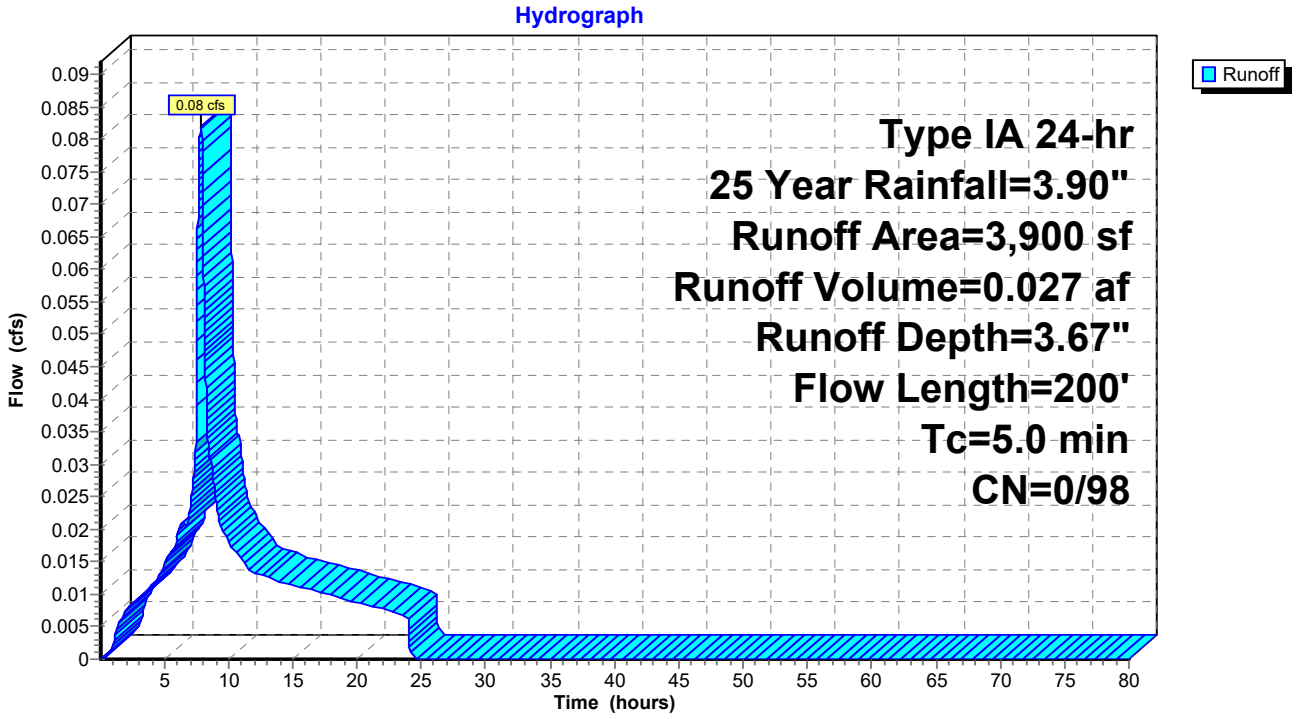
Runoff = 0.08 cfs @ 7.88 hrs, Volume= 0.027 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
3,900	98	Paved parking, HSG C
3,900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment Y: Area Y



Summary for Subcatchment Z: Area Z

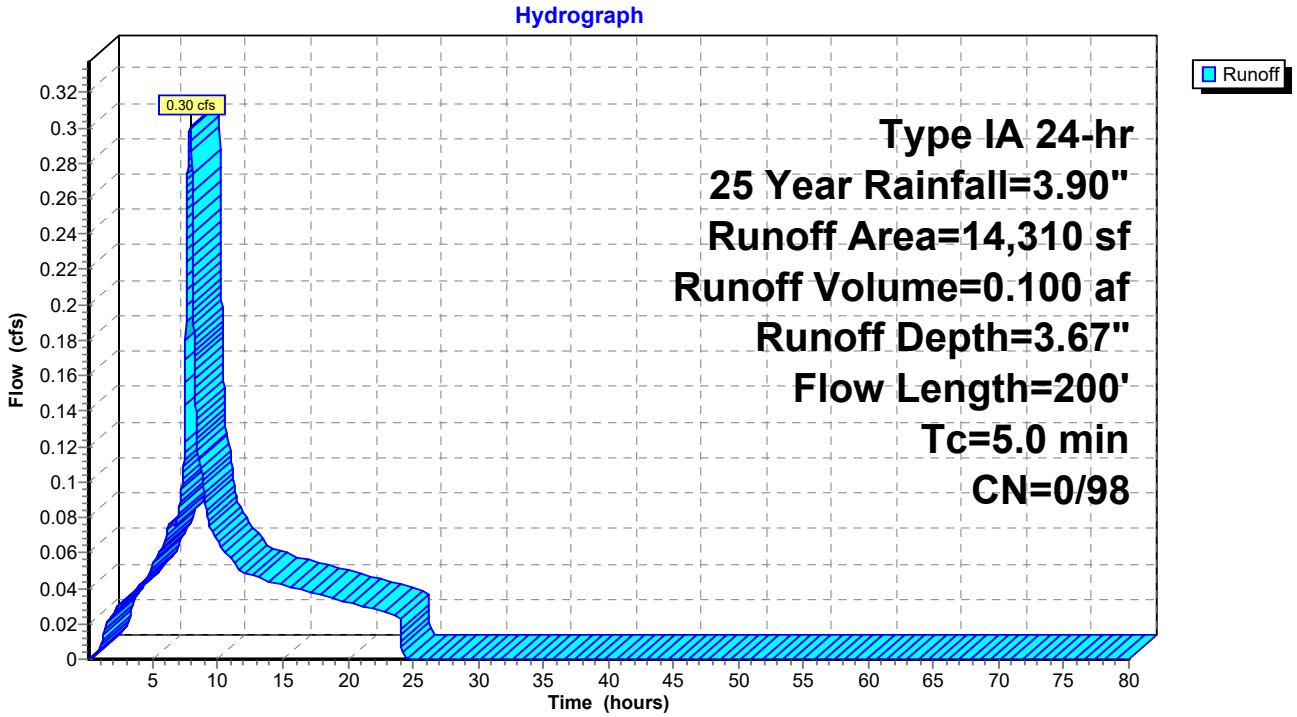
Runoff = 0.30 cfs @ 7.88 hrs, Volume= 0.100 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.10-80.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 Year Rainfall=3.90"

Area (sf)	CN	Description
14,310	98	Roofs, HSG C
14,310		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	200		0.67		**Direct Entry, Sheet Flow**

Subcatchment Z: Area Z



TM Rippey Consulting Engineers

STORM SEWER DESIGN FORM
Project Number: 21102
Rinchem Cornelius Site
June 11, 2021

Unit Conversion (acre/ft^2) 2.30E-05
Runoff Based on HydroCad
Rainfall 3.90 inches 25 Year event
Manning's Coefficient (n)= 0.013

7650 SW Beveland St
Suite 100
Tigard, Oregon 97223
Phone: 503 443 3900

DESIGN AREA	DRAINAGE BASIN PIPE #	AREA ft^2	AREA acres	Equiv. Area for 100% Runoff (C)(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	T_t	COMMENTS
A	1	7000.00	0.1607	0.145	0.1607	70	6	0.0050	0.150	0.400	2.67	3.11	Roof
B	2	4600.00	0.1056	0.095	0.1056	5	6	0.0100	0.100	0.566	5.66	0.47	Landscape
	3	11600.00	0.2663	0.240	0.2663	145	6	0.0050	0.250	0.400	1.60	3.87	
C	4	25830.00	0.5930	0.534	0.5930	15	6	0.0100	0.540	0.566	1.05	0.26	Paving
	5	37430.00	0.8593	0.773	0.8593	80	8	0.0050	0.790	0.862	1.09	1.46	
D	6	4080.00	0.0937	0.084	0.0937	100	6	0.0050	0.080	0.400	5.00	8.34	Paving
E	7	4000.00	0.0918	0.083	0.0918	5	6	0.0100	0.080	0.566	7.08	0.59	Paving
	8	8080.00	0.1855	0.167	0.1855	40	6	0.0100	0.160	0.566	3.54	2.36	
F	9	3920.00	0.0900	0.081	0.0900	90	6	0.0050	0.070	0.400	5.72	8.58	Paving
G	10	3720.00	0.0854	0.077	0.0854	5	6	0.0100	0.080	0.566	7.08	0.59	Paving
	11	7640.00	0.1754	0.158	0.1754	85	6	0.0050	0.150	0.400	2.67	3.78	
	12	15720.00	0.3609	0.325	0.3609	70	6	0.0070	0.310	0.474	1.53	1.78	
H	13	6960.00	0.1598	0.144	0.1598	120	6	0.0050	0.150	0.400	2.67	5.34	Paving
I	14	6960.00	0.1598	0.144	0.1598	120	6	0.0050	0.150	0.400	2.67	5.34	Paving
J	15	6960.00	0.1598	0.144	0.1598	5	6	0.0100	0.150	0.566	3.77	0.31	Paving

TM Rippey Consulting Engineers

STORM SEWER DESIGN FORM
Project Number: 21102
Rinchem Cornelius Site
June 11, 2021

Unit Conversion (acre/ft^2) 2.30E-05
Runoff Based on HydroCad
Rainfall 3.90 inches 25 Year event
Manning's Coefficient (n)= 0.013

7650 SW Beveland St
Suite 100
Tigard, Oregon 97223
Phone: 503 443 3900

DESIGN AREA	DRAINAGE BASIN PIPE #	AREA ft^2	AREA acres	Equiv. Area for 100% Runoff (C)(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	T_t	COMMENTS
	16	20880.00	0.4793	0.431	0.4793	60	6	0.0125	0.450	0.633	1.41	1.41	
	17	74030.00	1.6995	1.530	1.6995	125	10	0.0050	1.550	1.563	1.01	2.10	
K	18	19700.00	0.4522	0.407	0.4522	5	6	0.0100	0.410	0.566	1.38	0.12	:Paving
	19	93730.00	2.1517	1.937	2.1517	115	12	0.0050	1.960	2.542	1.30	2.49	
M	21	4500.00	0.1033	0.093	0.1033	20	6	0.0100	0.090	0.566	6.29	2.10	Paving
	22	98230.00	2.2551	2.030	2.2551	95	12	0.0133	2.050	4.145	2.02	3.20	
N	23	15800.00	0.3627	0.326	0.3627	60	6	0.0050	0.330	0.400	1.21	1.21	Roof& Paving
	24	114030.00	2.6178	2.356	2.6178	60	12	0.0050	2.380	2.542	1.07	1.07	
O	25	7000.00	0.1607	0.145	0.1607	15	6	0.0100	0.150	0.566	3.77	0.94	Paving
	26	121030.00	2.7785	2.501	2.7785	20	12	0.0050	2.530	2.542	1.00	0.33	
P	27	15075.00	0.3461	0.311	0.3461	60	6	0.0117	0.320	0.612	1.91	1.91	Roof & Paving
	28	136105.00	3.1245	2.812	3.1245	45	18	0.0050	2.850	7.494	2.63	1.97	
Q	29	10500.00	0.2410	0.217	0.2410	105	6	0.0050	0.220	0.400	1.82	3.18	Paving
R	30	10500.00	0.2410	0.217	0.2410	5	6	0.0100	0.220	0.566	2.57	0.21	Paving
	31	21000.00	0.4821	0.434	0.4821	105	8	0.0050	0.440	0.862	1.96	3.43	
S	32	10500.00	0.2410	0.217	0.2410	5	6	0.0100	0.220	0.566	2.57	0.21	Paving
	33	31500.00	0.7231	0.651	0.7231	105	8	0.0050	0.660	0.862	1.31	2.29	

TM Rippey Consulting Engineers

STORM SEWER DESIGN FORM
Project Number: 21102
Rinchem Cornelius Site
June 11, 2021

Unit Conversion (acre/ft^2) **2.30E-05**
Runoff Based on HydroCad
Rainfall 3.90 inches **25 Year event**
Manning's Coefficient (n)= **0.013**

7650 SW Beveland St
Suite 100
Tigard, Oregon 97223
Phone: 503 443 3900

DESIGN AREA	DRAINAGE BASIN PIPE #	AREA ft^2	AREA acres	Equiv. Area for 100% Runoff (C)(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	T_t	COMMENTS
T	34	10500.00	0.2410	0.217	0.2410	105	6	0.0050	0.220	0.400	1.82	3.18	Paving
U	35	10500.00	0.2410	0.217	0.2410	5	6	0.0100	0.220	0.566	2.57	0.21	Paving
	36	21000.00	0.4821	0.434	0.4821	105	8	0.0050	0.440	0.862	1.96	3.43	
V	37	10500.00	0.2410	0.217	0.2410	5	6	0.0100	0.220	0.566	2.57	0.21	Paving
	38	63000.00	1.4463	1.302	1.4463	80	8	0.0300	1.320	2.112	1.60	2.13	
	39	199105.00	4.5708	4.114	4.5708	50	18	0.0050	4.170	7.494	1.80	1.50	
W	40	4770.00	0.1095	0.099	0.1095	15	6	0.0100	0.100	0.566	5.66	1.42	Paving
X	41	13230.00	0.3037	0.273	0.3037	15	6	0.0100	0.280	0.566	2.02	0.51	Roof
Y	42	3900.00	0.0895	0.081	0.0895	5	6	0.0100	0.080	0.566	7.08	0.59	Paving
	43	17130.00	0.3933	0.354	0.3933	30	6	0.0050	0.360	0.400	1.11	0.56	
Z	44	14310.00	0.3285	0.296	0.3285	15	6	0.0100	0.300	0.566	1.89	0.47	Roof
A1	45	3200.00	0.0735	0.066	0.0735	5	6	0.0100	0.070	0.566	8.09	0.67	Paving
	46	17510.00	0.4020	0.362	0.4020	35	6	0.0050	0.370	0.400	1.08	0.63	
B1	46A	3200.00	0.0735	0.066	0.0735	5	6	0.0100	0.070	0.566	8.09	0.67	Paving

TM Rippey Consulting Engineers

STORM SEWER DESIGN FORM
Project Number: 21102
Rinchem Cornelius Site
June 11, 2021

Unit Conversion (acre/ft²) 2.30E-05
Runoff Based on HydroCad
Rainfall 3.90 inches 25 Year event
Manning's Coefficient (n)= 0.013

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DESIGN AREA	DRAINAGE BASIN PIPE #	AREA ft²	AREA acres	Equiv. Area for 100% Runoff (C)(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	T_t	COMMENTS
	47	37840.00	0.8687	0.782	0.8687	105	8	0.0050	0.800	0.862	1.08	1.89	
	48	241715.00	5.5490	4.994	5.5490	55	18	0.0050	5.070	7.494	1.48	1.35	
C1	49	3750.00	0.0861	0.077	0.0861	25	6	0.0100	0.080	0.566	7.08	2.95	Roof
	50	245465.00	5.6351	5.072	5.6351	40	18	0.0050	5.150	7.494	1.46	0.97	
D1	51	6600.00	0.1515	0.136	0.1515	15	6	0.0050	0.140	0.400	2.86	0.71	Paving
	52	252065.00	5.7866	5.208	5.7866	35	18	0.0050	5.290	7.494	1.42	0.83	
E1	53	3750.00	0.0861	0.077	0.0861	25	6	0.0100	0.080	0.566	7.08	2.95	Roof
	54	255815.00	5.8727	5.285	5.8727	25	18	0.0050	5.370	7.494	1.40	0.58	
F1	55	7155.00	0.1643	0.148	0.1643	20	6	0.0100	0.150	0.566	3.77	1.26	Roof
G1	56	3300.00	0.0758	0.068	0.0758	5	6	0.0100	0.070	0.566	8.09	0.67	Paving
	57	10455.00	0.2400	0.216	0.2400	105	6	0.0050	0.220	0.400	1.82	3.18	
	58	266270.00	6.1127	5.501	6.1127	65	18	0.0050	5.590	7.494	1.34	1.45	
H1	61	14000.00	0.3214	0.289	0.3214	30	6	0.0100	0.290	0.566	1.95	0.98	Roof
K1	62	7500.00	0.1722	0.155	0.1722	45	6	0.0050	0.160	0.400	2.50	1.88	Paving
	63	21500.00	0.4936	0.444	0.4936	60	8	0.0050	0.450	0.862	1.92	1.92	
I1	64	14000.00	0.3214	0.289	0.3214	20	6	0.0100	0.290	0.566	1.95	0.65	Roof
	65	35500.00	0.8150	0.733	0.8150	60	8	0.0050	0.740	0.862	1.16	1.16	

TM Rippey Consulting Engineers

STORM SEWER DESIGN FORM
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Rinchem Cornelius Site
June 11, 2021

Unit Conversion (acre/ft²) 2.30E-05
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Rainfall 3.90 inches 25 Year event
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DESIGN AREA	DRAINAGE BASIN PIPE #	AREA ft²	AREA acres	Equiv. Area for 100% Runoff (C)(A)	CUMULATIVE DRAINAGE AREA acres	PIPE LENGTH L	PIPE SIZE in	INVERT SLOPE ft/ft	DESIGN DISCHARGE cfs	FULL FLOW CAPACITY cfs	VELOC. @ Q/Qf V	T_t	COMMENTS
L1	66	14000.00	0.3214	0.289	0.3214	15	6	0.0100	0.290	0.566	1.95	0.49	Roof
	67	49500.00	1.1364	1.023	1.1364	50	10	0.0050	1.030	1.563	1.52	1.26	
N1	68	5725.00	0.1314	0.118	0.1314	10	6	0.0100	0.120	0.566	4.72	0.79	Paving
	69	55225.00	1.2678	1.141	1.2678	40	10	0.0050	1.150	1.563	1.36	0.91	
M1	70	7000.00	0.1607	0.145	0.1607	15	6	0.0100	0.150	0.566	3.77	0.94	Roof
	71	62225.00	1.4285	1.286	1.4285	65	10	0.0050	1.300	1.563	1.20	1.30	
O1	72	900.00	0.0207	0.019	0.0207	5	6	0.1200	0.020	1.961	98.05	8.17	Roof
	73	63125.00	1.4492	1.304	1.4492	75	10	0.0050	1.320	1.563	1.18	1.48	
P1	74	16400.00	0.3765	0.339	0.3765	5	6	0.0050	0.350	0.400	1.14	0.10	Paving
	75	79525.00	1.8256	1.643	1.8256	85	12	0.0050	1.670	2.542	1.52	2.16	
Q1	76	3300.00	0.0758	0.068	0.0758	50	6	0.0100	0.070	0.566	8.09	6.74	Roof
	77	82825.00	1.9014	1.711	1.9014	60	12	0.0050	1.740	2.542	1.46	1.46	
R1	78	9600.00	0.2204	0.198	0.2204	5	6	0.0100	0.200	0.566	2.83	0.24	Paving
	79	92425.00	2.1218	1.910	2.1218	40	12	0.0050	1.940	2.542	1.31	0.87	
S1	80	3170.00	0.0728	0.065	0.0728	50	6	0.0100	0.070	0.566	8.09	6.74	Roof
				.									
	81	95595.00	2.1946	1.975	2.1946	75	12	0.0050	2.010	2.542	1.26	1.58	
T1	82	5080.00	0.1166	0.105	0.1166	5	6	0.0100	0.110	0.566	5.15	0.43	Paving
	83	100675.00	2.3112	2.080	2.3112	90	12	0.0050	2.120	2.542	1.20	1.80	

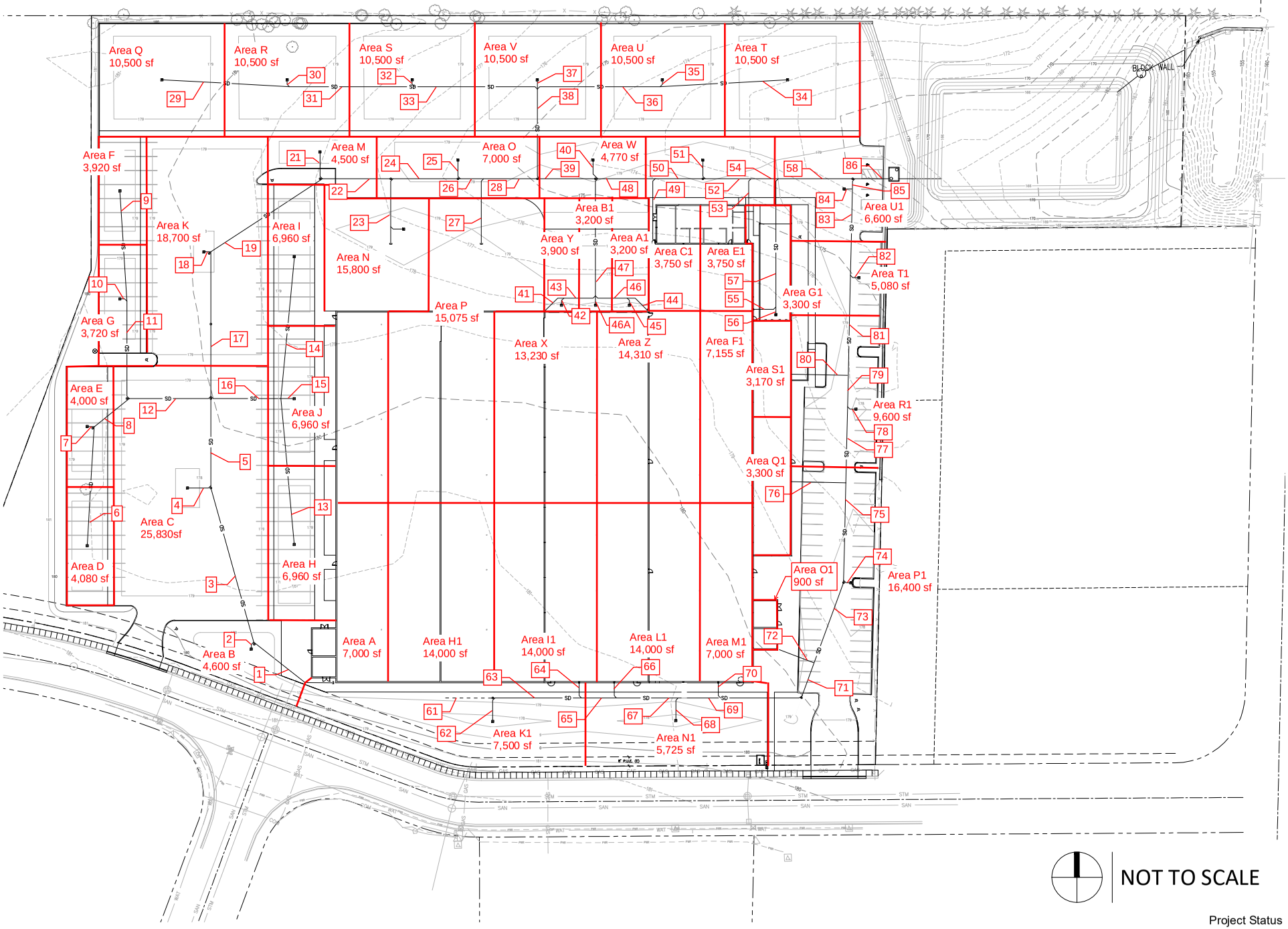
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STORM SEWER DESIGN FORM
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June 11, 2021

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U1	84	6600.00	0.1515	0.136	0.1515	5	6	0.0100	0.140	0.566	4.04	0.34	Paving
	85	107275.00	2.4627	2.216	2.4627	10	12	0.0050	2.260	2.542	1.12	0.19	
	86	373545.00	8.5754	7.718	8.5754	30	18	0.0100	7.850	10.598	1.35	0.68	To WQ Vault, Pond, and Outlet



Project Status

STORM

ARCHITECTURE | INTERIORS

4875 SW Griffith Drive Suite 300
Beaverton, OR, 97005
(503) 244-0552

Client/ Owner:

Rinchem Company

6133 Edith Blvd NE
Alburquerque, NM 87107

Project:

RINCHEM CORNELIUS

1N333DB00300-600
CORNELIUS Oregon
97113

Sheet Title:

STORM MAP

Revisions:

#	Description	Date

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Date:	Issue Date
Drawn by:	Checked by:
Author	Checker
Job Number:	21102
Sheet	

TM RIPPEY
CONSULTING ENGINEERS

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Tigard, Oregon 97223

Phone: 503 443 3900
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kkoroch@tmrippey.com

June 11, 2021

Rinchem Cornelius Site
Project Number: 21102

Storm Water Quality Treatment Sizing

Full Site

Impervious Area 373,545 ft^2

Water Quality Volume

$$WQV(cf) = \frac{0.36 \text{ in.} \times 373{,}545 \ ft^2}{12 \text{ (in/ft)}} = \mathbf{11{,}206 \ cf}$$

Water Quality Flow

$$WQF(cfs) = \frac{11{,}206 \text{ cf}}{14{,}400 \text{ sec}} = \mathbf{0.7782 \ cfs}$$

Cartridge Flow Rate 0.05013 cfs (22.5 gpm)

Cartridges Required 15.5248

Use 16 cartridges