

PROJECT RIO PRELIMINARY UTILITIES PLAN

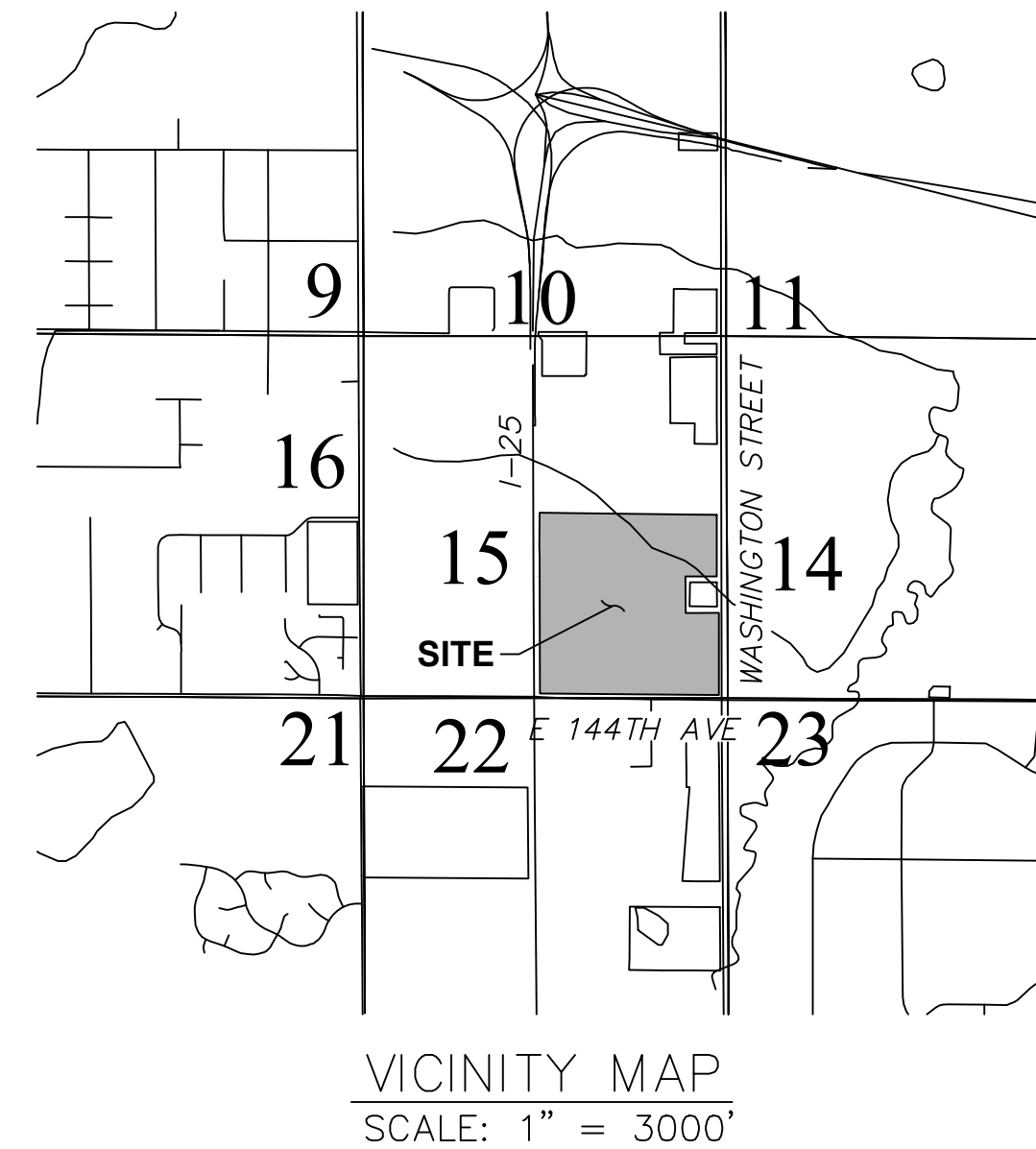
A PARCEL LOCATED IN THE SOUTHEAST QUARTER OF SECTION 15,
TOWNSHIP 1 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF THORNTON, COUNTY OF ADAMS, STATE OF COLORADO

SHEET INDEX

SHEET No.	DRAWING No.	DESCRIPTION	LAST REVISED
1	CU100	COVER SHEET	5/1/2017
2	CU101	PRELIMINARY WATER SERVICE PLAN	5/1/2017
3	CU102	PRELIMINARY SANITARY SEWER PLAN	5/1/2017

PLAN REFERENCES

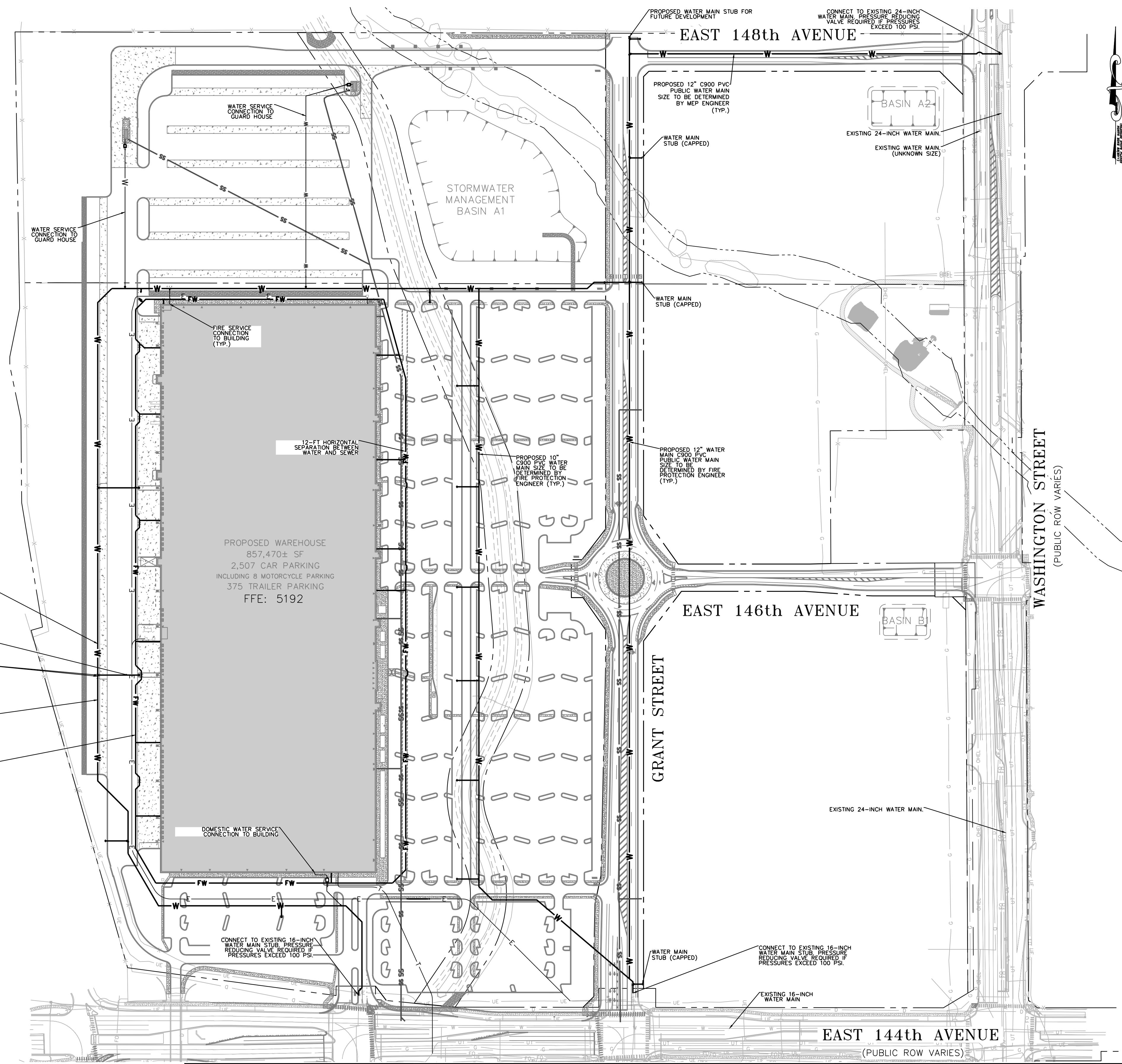
- BOUNDARY INFORMATION FROM:
 - A PLAN SET ENTITLED "ALTA/NSPS LAND TITLE SURVEY, SE 1/4 SEC 15, T1S, R68W, 6TH P.M. ADAMS COUNTY COLORADO" PREPARED BY AZTEC CONSULTANTS, INC. DATED 8/16/2016. (BULL CROSSING - PARCELS A & B).
 - A PLAN SET ENTITLED "ALTA/NSPS LAND TITLE SURVEY, SE 1/4 SEC 15, T1S, R68W, 6TH P.M. ADAMS COUNTY COLORADO" PREPARED BY AZTEC CONSULTANTS, INC. DATED 8/16/2016, LAST REVISED 9/16/2016. (THORNTON 40 - PARCELS C & D).
- TOPOGRAPHIC AND UTILITY INFORMATION FROM A CAD FILE RECEIVED ELECTRONICALLY FROM AZTEC CONSULTANTS, INC. ON 9/14/2016 AND 1/24/2017.
- FLOOD PLAIN INFORMATION FROM FEMA MAP NUMBER 08001C0303J (VERSION 2.3.2.2), REVISED TO REFLECT LOMR EFFECTIVE: NOVEMBER 25TH, 2016.
- WETLAND BOUNDARIES AS FIELD DELINEATED BY LANGAN ENGINEERING ON DECEMBER 8TH, 2016. PLANS SHOW APPROXIMATE LOCATION, DELINEATION PENDING JURISDICTIONAL DETERMINATION FROM USACE.



GENERAL NOTES

- ALL WATER LINES AND SANITARY SEWERS SHALL BE CONSTRUCTED PER THE CITY OF THORNTON STANDARDS AND SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PUBLIC IMPROVEMENTS AND ALL APPLICABLE MASTERPLANS IN EFFECT AT THE TIME OF DEVELOPMENT. LARGER LINES SHALL BE CONSTRUCTED IF NECESSARY TO SERVE THE DEVELOPMENT. LINE SIZES SHALL BE DETERMINED WITH THE APPROVAL OF THE FINAL UTILITY REPORT.
- ALL OFF-SITE EASEMENTS FOR THE CONSTRUCTION OF THE WATER AND SANITARY SEWER SYSTEMS SHALL BE ACQUIRED BY THE DEVELOPER PRIOR TO APPROVAL OF SUBDIVISION PLAT. THE RECEPTION NUMBERS FOR THESE EASEMENTS SHALL BE INCLUDED ON THE PLAT.
- ALL WATER LINES CONSTRUCTED SHALL BE LOOPED, AND SYSTEM PRESSURE REDUCING VALVES SHALL BE UTILIZED TO KEEP THE STATIC PRESSURES BELOW 100 PSI. A MINIMUM STATIC PRESSURE OF 40 PIS SHALL BE MAINTAINED ON THE SITE.
- COORDINATION IS REQUIRED FOR SERVING WATER AND SANITARY SEWER TO ADJACENT PROPERTY OWNERS. STUB-OUTS SHALL BE PROVIDED FOR FUTURE DEVELOPMENT OF THESE PROPERTIES.
- THE DEVELOPER IS RESPONSIBLE FOR ANY IMPROVEMENTS TO APPLICABLE LIFT STATIONS NECESSARY TO SERVE THIS DEVELOPMENT. IMPROVEMENTS WILL BE DETERMINED IN CONJUNCTION WITH THE FINAL UTILITY REPORT.
- A FINAL UTILITY REPORT WILL BE REQUIRED WITH THE DEVELOPMENT OF EACH PARCEL. ALL NECESSARY IMPROVEMENTS REQUIRED TO SERVE THE DEVELOPMENT ARE THE RESPONSIBILITY OF THE DEVELOPER.
- THE OWNER SHALL AGREE TO PARTICIPATE IN ALL REIMBURSEMENT AGREEMENTS ASSOCIATED WITH THE PROPERTY.
- ALL METERS MUST BE SIZED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE AND ALL ADOPTED APPENDICES IN EFFECT AT THE TIME OF APPROVAL.

<table border="1"> <thead> <tr> <th>Date</th> <th>Description</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td>5/1/17</td> <td>Revised per City comments</td> <td>1</td> </tr> </tbody> </table>			Date	Description	No.	5/1/17	Revised per City comments	1	SIGNATURE: RICHARD BURROW DATE SIGNED: _____ PROFESSIONAL ENGINEER CO Lic. No. PE.0050315		 300 Kimball Drive, Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901 www.langan.com Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A. Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CI, Inc. Langan International LLC Collectively known as Langan		Project: PROJECT RIO A PARCEL LOCATED IN THE SOUTHEAST QUARTER OF SECTION 15, TOWNSHIP 1 SOUTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF THORNTON ADAMS COUNTY STATE OF COLORADO		Drawing Title: PRELIMINARY UTILITY PLAN COVER SHEET		Project No. 100612301 Date: 1/27/2017 Scale: N/A Drawn By: DTF Checked By: MRG		Drawing No. CSP CU100 Sheet 1 of 3	
Date	Description	No.																		
5/1/17	Revised per City comments	1																		



LEGEND

- W PROPOSED WATER MAIN
- FW PROPOSED PRIVATE FIRE WATER LOOP
- SS PROPOSED SANITARY PIPE
- SS EXTENT OF SEWER SHED
- SS EXISTING SANITARY SEWER PIPE
- W EXISTING WATER MAIN

NOTES

PROPERTY IS LOCATED IN WATER ZONE 1 HGL(HIGH) IS 5375-FT
 HIGH SITE ELEVATION =5191.00
 LOW SITE ELEVATION =5160.00
 HIGH PRESSURE = 97 psi
 LOW PRESSURE =85 psi

ZONE 1 WATER MAINS EXIST WITHIN EAST 144TH STREET TO THE SOUTH AND WASHINGTON STREET TO THE EAST. A LOOPED WATER MAIN THROUGH THE SITE WILL PROVIDE DOMESTIC SERVICE TO THE WAREHOUSE. AT THE TIME OF CONSTRUCTION DRAWINGS, PRESSURE TESTS WILL BE COMPLETED AND THE NEED FOR PRESSURE REDUCING VALVES WILL BE DETERMINED.

A PRIVATE FIRE WATER LOOP, PRESSURIZED BY A FIRE PUMP INSIDE THE BUILDING, WILL PROVIDE WATER TO THE BUILDING'S FIRE SUPPRESSION SYSTEM.

INTERSTATE I-25
(PUBLIC ROW VARIES)

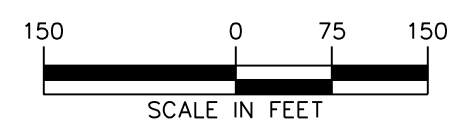
PROPOSED 12" C900 PVC WATER MAIN SIZE TO BE DETERMINED BY FIRE PROTECTION ENGINEER (TYP.)

PROPOSED 6-INCH C900 PVC LATERAL AND FIRE HYDRANT (TYP.)

POST INDICATOR VALVES (TYP.)

PROPOSED 12" C900 PVC PUBLIC WATER MAIN SIZE TO BE CONFIRMED BY MEP ENGINEER (TYP.)

PROPOSED 10" PRESSURIZED C900 PVC PRIVATE FIRE WATER LOOP SIZE TO BE CONFIRMED BY FIRE PROTECTION ENGINEER (TYP.)



Date	Description	No.
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REVISIONS		

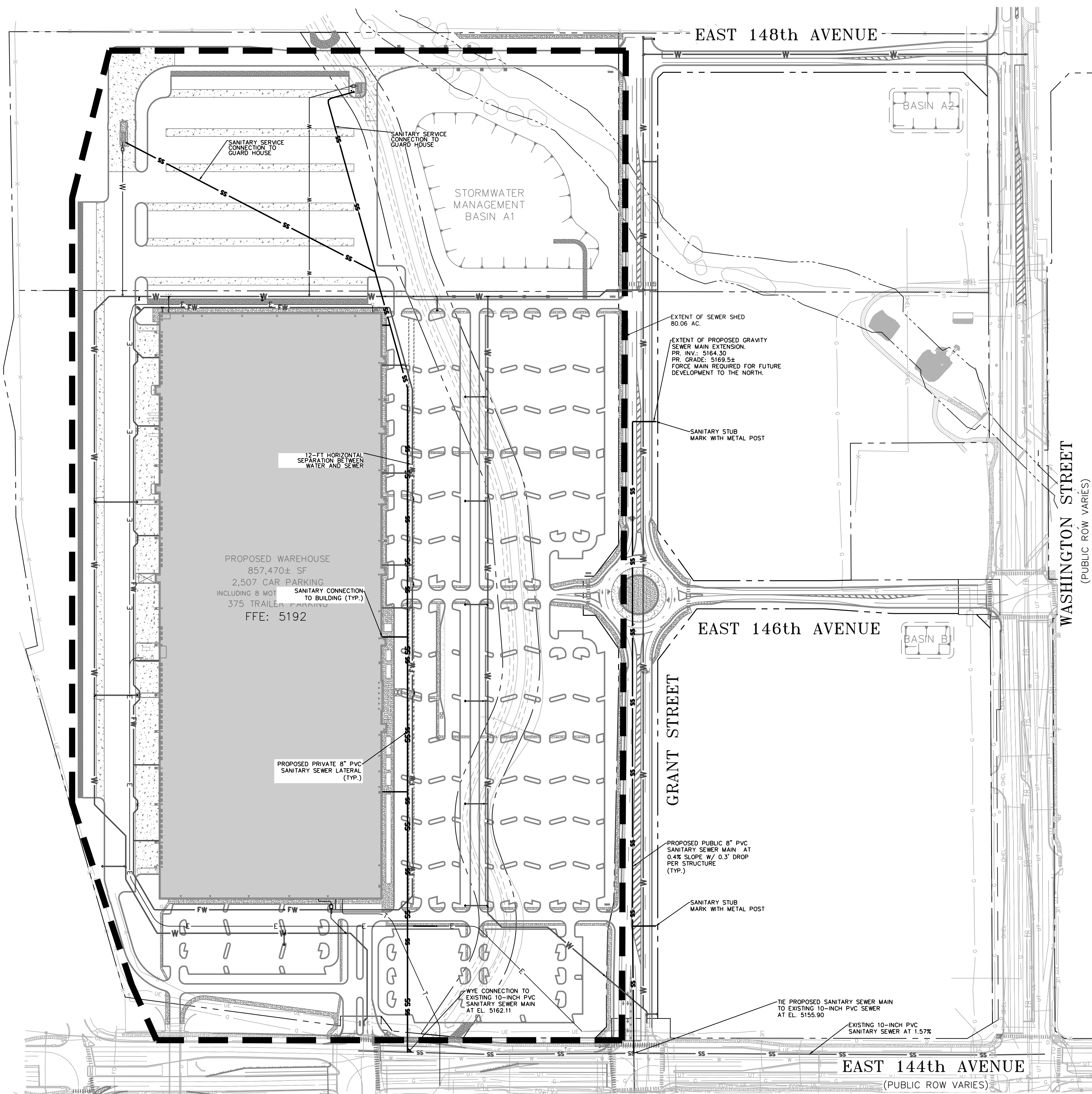
SIGNATURE	DATE SIGNED
RICHARD BURROW PROFESSIONAL ENGINEER CO Lic. No. PE.0050315	

LANGAN
 300 Kimball Drive, Parsippany, NJ 07054
 T: 973.560.4900 F: 973.560.4901 www.langan.com
 Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A.
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 Langan Engineering and Environmental Services, Inc.
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Project
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 CITY OF THORNTON
 ADAMS COUNTY STATE OF COLORADO

Drawing Title
PRELIMINARY WATER PLAN

Project No. 100612301	Drawing No. CSP CU101
Date 1/27/2017	
Scale 1" = 150'	
Drawn By DTF	Checked By MRG
Sheet 2 of 3	



LEGEND

- W — PROPOSED WATER MAIN
- FW — PROPOSED PRIVATE FIRE WATER LOOP
- SS — PROPOSED SANITARY PIPE
- SS --- EXTENT OF SEWER SHED
- SS — EXISTING SANITARY SEWER PIPE
- W — EXISTING WATER MAIN

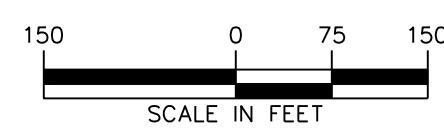
NOTES

AN EXISTING SANITARY SEWER MAIN IS LOCATED SOUTH OF THE SITE IN 144TH STREET.

THE ANTICIPATED SANITARY LOAD IS APPROXIMATELY 1,200,000 GALLONS PER MONTH (EQUIVALENT TO 40,000 GALLONS PER DAY) BASED ON RECORDS FROM SIMILAR FACILITIES.

INTERSTATE I-25
(PUBLIC ROW VARIES)

WASHINGTON STREET
(PUBLIC ROW VARIES)



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Drawing Title
PRELIMINARY SEWER PLAN

Project No. 100612301	Drawing No. CSP CU102
Date 1/27/2017	
Scale 1" = 150'	
Drawn By DTF	Checked By MRG
Sheet 3 of 3	