



Planning and Development Services Department  
 15151 E Alameda Pkwy, 2nd Floor  
 Aurora, Colorado 80012  
 (303) 739-7217

Case Mgr KK  
 Case Number 1980-6021-09  
 Quarter Section 02N  
 Row ID 1586393

## MINOR AMENDMENT APPLICATION FORM

Available online at [www.auroragov.org](http://www.auroragov.org) > Departments > Planning Department > Application Forms & Instructions: **Last revised on: 01-6-2020**

### Applicant Information

Enter information for the person who will answer any questions regarding the application.

Name SGE Consulting Engineers Ed Alvarado  
 Address 2081 Business Center Dr., Suite 105  
Irvine, CA, 92612  
 Phone (949) 552-5244  
 Email pm@sgeconsulting.com  
ealvarado@sgeconsulting.com

### Property Owner

Enter information for the entity or person who is listed with the county as the owner of record.

Name 2780 North Tower Road LLC  
 Address 2780 Tower Rd, Aurora, CO 80011  
 Phone \_\_\_\_\_  
 Email \_\_\_\_\_

### Type of Application

- Site Plan Amendment  Site Plan Extension  
 Redevelopment Plan  Other: \_\_\_\_\_  
 Parking Plan

### Property Information

Address 2780 Tower Rd, Aurora, CO 80011  
 Existing Use Light Industrial - no change

### Proposed Changes

Installation of a 13,000-gallon liquid nitrogen tank

### Submittal Materials

Please email the amended Site Plan to [planning@auroragov.org](mailto:planning@auroragov.org) along with this completed application and a brief letter of introduction explaining the scope of the project. You may also provide electronic copies of files with a jump drive or CD. All plans must show redline changes to scale on existing drawings obtained from the Planning Department.

- Site Plan  Building Elevation(s)  
 Landscape Plan  Detail Drawing(s)  
 Other: \_\_\_\_\_

**Fee Payment:** See Payment section on Page 2

### Property Owner's Signature

Steven Fabos Digitally signed by Steven Fabos  
Date: 2021.10.28 12:25:59 -06'00' 10/28/2021  
 Property Owner's Signature \_\_\_\_\_ Date \_\_\_\_\_

**Notice to Applicants:** Use this form to apply for Minor Amendments to existing Site Plans, for minor Redevelopment Plans where no Site Plan was originally required, for Parking Plans, and for the extension of a site plan expiration. Payment may be made with a check made out to "City of Aurora" or online payment may be made after submission. **Be sure to discuss your application with a Planning Department representative prior to submitting the application.** If you are submitting from out of state, please email the application to [planning@auroragov.org](mailto:planning@auroragov.org).

### This Section for City Use Only

Site Plan ALBERTSON'S (MOUNTAIN STATES INDUSTRIAL)  
 Description Installation of a 13,000-gallon liquid nitrogen tank.

General Location NEC OF SMITH RD AND TOWER RD  
 Existing Zoning I-1 List all Wards II  
 Neighborhood Liaison \_\_\_\_\_

Need to be reviewed at SPA?  Yes  No  
**Date application received** 10-28-2021 by WB  
 Thursday application start date 11/4/2021

Amount of application fee paid  \$~~636~~ (1-2 Sheets) **\$654**  
 \$959 (3-5 Sheets)  \$1653 (Filed After Construction)

### Real Property Review

- Required  Not Required  
 No Encroachment  Easement encroachment

### (See opposite side for additional referrals)

### Planning Department Action

- Approved  Approved w/conditions  
 Denied  Withdrawn  Closed as Inactive  
 Referred to Planning Commission

*Steph...* 12/3/21

**Signed: Director of Planning or Representative Date**

### Conditions/Notes

Date File Retired \_\_\_\_\_

## Department, Community and Outside Agency Referrals for Minor Amendment Applications

<input checked="" type="checkbox"/> CITY USE ONLY: CHECK ALL APPROPRIATE REFERRALS NEEDED (Applicant supplies Abutter & HOA lists)		
<b>CITY OF AURORA DEPARTMENT REFERRALS</b>	<input type="checkbox"/> Library/Recreation	<input type="checkbox"/> Colorado Wildlife
<input type="checkbox"/> Building Dept	<input type="checkbox"/> ODA—(name):	<input type="checkbox"/> E-470 Authority
<input type="checkbox"/> City Attorney	<input type="checkbox"/> Original Aurora Renewal	<input type="checkbox"/> Federal Aviation Authority
<input type="checkbox"/> City Forester	<input type="checkbox"/> Police Dept	<input type="checkbox"/> Federal EPA
<input type="checkbox"/> Civil Engineering	<input type="checkbox"/> Aurora Marijuana Enforcement Division	<input type="checkbox"/> Fitzsimons Redevelopment Authority
<input type="checkbox"/> Traffic Engineering		<input type="checkbox"/> Gas Pipeline Co. (specify):
<input checked="" type="checkbox"/> Life Safety		<input type="checkbox"/> Metro District (specify):
<input type="checkbox"/> Neighborhood Liaison		<input type="checkbox"/> Public Service Co. - General Referral
<input type="checkbox"/> Parks Dept	<b>COMMUNITY REFERRALS</b>	<input type="checkbox"/> Public Service Co. - FDP/GDP -Tom Ashburn
<input type="checkbox"/> Plg Dept—Addressing – CD	<input type="checkbox"/> Neighborhood Referrals (attach list):	<input type="checkbox"/> Regional Transportation District
<input type="checkbox"/> Plg Dept—Architecture	<input type="checkbox"/> Abutting Property Owner Referrals (attach list):	<input type="checkbox"/> School Dist - Aurora (28J)
<input type="checkbox"/> Plg Dept—CASE MANAGER (secondary file)		<input type="checkbox"/> School Dist - Cherry Creek (5J)
<input type="checkbox"/> Plg Dept—Comp Planning	<b>OUTSIDE AGENCY REFERRALS</b>	<input type="checkbox"/> Telephone Company
<input type="checkbox"/> Plg Dept—Landscape	<input type="checkbox"/> Adams County	<input type="checkbox"/> Tri-County Health
<input type="checkbox"/> Plg Dept—MASTER FILE (main file)	<input type="checkbox"/> Arapahoe County	<input type="checkbox"/> Urban Drainage
<input type="checkbox"/> Public Art Plan	<input type="checkbox"/> Denver	<input type="checkbox"/> Water/Sanitation District (specify):
<input checked="" type="checkbox"/> Real Property	<input type="checkbox"/> Douglas County	<input type="checkbox"/> Xcel (or applicable utility provider):
<input type="checkbox"/> Revenue (Plats Only)	<input type="checkbox"/> Other Counties (specify):	
<input type="checkbox"/> Aurora Water	<input type="checkbox"/> City of Centennial	
<input type="checkbox"/> Aurora Small Business Development Center	<input type="checkbox"/> Airports (specify):	<input type="checkbox"/> Other (specify):
<input type="checkbox"/> City Council Member—Name:	<input type="checkbox"/> Aurora Post Office	
<input type="checkbox"/> Fire Department	<input type="checkbox"/> Cable Company	
<input type="checkbox"/> Golf	<input type="checkbox"/> CDOT Region 1	
<input type="checkbox"/> IT Public Safety/Communications	<input type="checkbox"/> Colorado Health Dept	

### Applicant Instructions for Minor Amendment Applications

1. Discuss your Minor Amendment application with a Planning Department representative (303.739.7217) for details on the Minor Amendment process, and to help you start your application and determine the application fee. No appointment is necessary during normal working hours. (If a Case Manager is already assigned to your case, it is advisable to call and make an appointment to meet with him or her directly.)
2. Staff will email electronic copies of your Site Plan on file in the Planning Department. Cloud the areas of change and redline the drawings to scale. New sheets may be provided if necessary; however, the original signed cover sheet must remain part of the set. These changes must correspond with the list of proposed changes shown on your application form. Applications will not be accepted without these redline changes. Additionally, please provide a letter of introduction explaining the scope of the project. If your property is an older one without a Site Plan, we will require you to submit a site survey or plot plan drawn to scale. Other materials may be required with the application.
3. **Payment:** Application fees may be made with a check or online payment. Checks may be made out to "City of Aurora". Online payment may be made at [www.aurora4biz.org](http://www.aurora4biz.org) by selecting AnyPayment, then Aurora Online Payment. Select Fee Search and find your application fee using the Invoice# listed on the invoice sent after the application has been processed on Thursday. Payment can be made on the following screen.
4. Special Requirements for Telecom Facilities:  
If your application involves installation of rooftop telecom facilities or changes to an existing telecom facility, you will be required to submit the additional information below as part of your application:
  - Photo simulations showing existing and proposed views of the facility from adjacent rights-of-way and/or open space.
  - Written response to the design and site selection criteria found in Section 146-3.3.5.JJ of the Unified Development Ordinance.
  - A completed Telecom Facilities Owner’s Responsibility Statement form.
4. The processing cycle starts every Thursday. Please submit your application a day or two early, so staff can look it over and be sure it’s complete. Incomplete applications will not be accepted. If an incomplete application is not "complete" by end of business Thursday, it will be moved to the following week processing cycle. All applications must contain a property owner’s signature and be easily readable. Faxed applications are not accepted.
5. Your amendment will be reviewed by a Planning Department Case Manager, any appropriate city departments, the Current Planning Manager, and the Director of Planning. Occasionally staff may determine that your application needs to be approved by the Planning & Zoning Commission or Board of Adjustment, rather than be processed administratively. If this is required, staff will notify you promptly and help you to prepare a full Development Application.
6. If staff encounter any problems with your proposal during our review, additional information or plan revisions may be required. In certain circumstances staff may also ask you to contact abutting neighbors. If staff does not hear from you within 30 days, we reserve the right to close your application as inactive. Once it is closed, you may re-open your case at any time by submitting a new application and fee.
7. Minor Amendment applications will not be approved prior to the approval of any associated drainage letters/reports, license agreements, or easement release/dedications.
8. Your Case Manager will notify you when your application is approved, approved with conditions, denied, or referred to Planning & Zoning Commission.
9. When your application is approved, staff will update the Site Plan drawings using the redlines provided in your application.



Planning Division  
15151 E. Alameda Parkway, Ste. 2300  
Aurora, Colorado 80012  
303.739.7250

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November 18, 2021

Ed Alvarado  
2081 Business Center Drive, Suite 105  
Irvine, CA 92612

**Re: Initial Submission Review: Albertson's (2780 N Tower Road) – Minor Site Plan Amendment**  
**Case Number: 1980-6021-09**

Dear Mr. Alvarado:

Thank you for your initial submission, which we started to process on November 4, 2021. We reviewed it and attached our comments along with this cover letter.

Since several issues still remain, you will need to make another submission. To stay within typical review timeframes, please revise your previous work and send us a new submission on or before November 29, 2021 (but you may still submit after this date).

Note that all our comments are numbered. When you resubmit, include a cover letter specifically responding to each item. The Planning Department reserves the right to reject any resubmissions that fail to address these items. If you have made any other changes to your documents other than those requested, be sure to also specifically list them in your letter.

If you have any comments or concerns, please don't hesitate to send an email or give me a call. I may be reached at [kkreimey@auroragov.org](mailto:kkreimey@auroragov.org) or 303-739-7126. Also, please contact each reviewer directly, their contact information is provided adjacent to the department comment.

Sincerely,

Kim Kreimeyer, Senior Planner II



## *Initial Submission Review*

### **1. Planning** (Kim Kreimeyer / 303-739-7126 / [kkreimey@auroragov.org](mailto:kkreimey@auroragov.org) / Comments in teal)

- 1A. Please provide information regarding the use of the above ground nitrogen. Is the nitrogen going to be used on-site for production or available for re-sale?
- 1B. Identify changes with a delta 22 and add amendment date and description on the site plan. See redlined pdf for more details.
- 1C. Please be sure any notes are not covering other site plan information.

### **2. Fire / Life Safety** (Mark Apodaca / 303-739-7656 / [mapodaca@auroragov.org](mailto:mapodaca@auroragov.org) / Comments in blue)

- 2A. Please identify the area to be revised by using red clouding and delta designation. Include the revision date and description in the title block. (Typical)
- 2B. Placement of stationary container shall meet the 2015 IFC table 5504.3.1.1 requirements. Please show the revised location and dimensions on the site plan.
- 2C. Shown and label physical protection bollards & fencing per 2015 IFC section 5503.5.
- 2D. Please show NFPA-704 signage placard on the site plan.
- 2E. This site plan amendment does not give approval for construction or installation of tank. This will require a separate building permit.

### **3. Real Property** (Maurice Brooks / 303-739-7294 / [mbrooks@auroragov.org](mailto:mbrooks@auroragov.org) / Comments in pink)

- 3A. No comments.



## PLANCHECK RESPONSES

Project Name: Steven Charles  
 Project Ref. Number: 521.043.380  
 Project Address: 2780 N Tower Rd, Aurora, CO 80011  
 Owner: 2780 North Tower Road LLC  
 Permit # 1980-6021-09  
 Department: Planning (1) & Fire/Life Safety (2)  
 Plan Checker: Kim Kreimeyer (1) & Mark Apodaca (2)  
 Date: 11/23/21  
 Responses by: SGE  
 Phone #: (949)552-5244

#	COMMENT	RESPONSE
1A	Please provide information regarding the use of the above ground nitrogen. Is the nitrogen going to be used on-site for production or available for re-sale?	The use of the above ground nitrogen will be used for onsite production, specifically it will be used for a spiral freezer inside the building.
1B	Identify changes with a delta 22 and add amendment date and description on the site plan. See redlined pdf for more details.	Acknowledged. See revised redlines.
1C	Please be sure any notes are not covering other site plan information.	Acknowledged. See revised redlines.
2A	Please identify the area to be revised by using red clouding and delta designation. Include the revision date and description in the title block. (Typical)	Acknowledged. See revised redlines.
2B	Placement of stationary container shall meet the 2015 IFC table 5504.3.1.1 requirements. Please show the revised location and dimensions on the site plan.	Revised - Please see delta 22 on the site plan redlines and on the referenced sheet SP-1 detail 2. Sheet SP-1, S-1, S-2, and P-1 have been reviewed and approved by building department under permit 2021-2055284.
2C	Shown and label physical protection bollards & fencing per 2015 IFC section 5503.5.	Revised - Please see delta 22 on the site plan redlines and on the referenced sheet SP-1 detail 2. Sheet SP-1, S-1, S-2, and P-1 have been reviewed and approved by building department under permit 2021-2055284.
2D	Please show NFPA-704 signage placard on the site plan.	Revised - Please see delta 22 on the site plan redlines and on the referenced sheet P-1. Sheet SP-1, S-1, S-2, and P-1, have been reviewed and approved by building department under permit 2021-2055284.
2E	This site plan amendment does not give approval for construction or installation of tank. This will require a separate building permit.	Acknowledged. Separate building permit was applied and reviewed under permit 2021-2055284

ADMINISTRATIVE AMENDMENT - APPROVED NOVEMBER 26, 1995  
 ADM. ADMT. DELETE LANDSCAPED ISLAND

ADMINISTRATIVE AMENDMENT - APPROVED JULY 21, 1995  
 SUBDIVISION OF ALBERTSONS FILING #1, BLOCK 1 INTO 2 LOTS

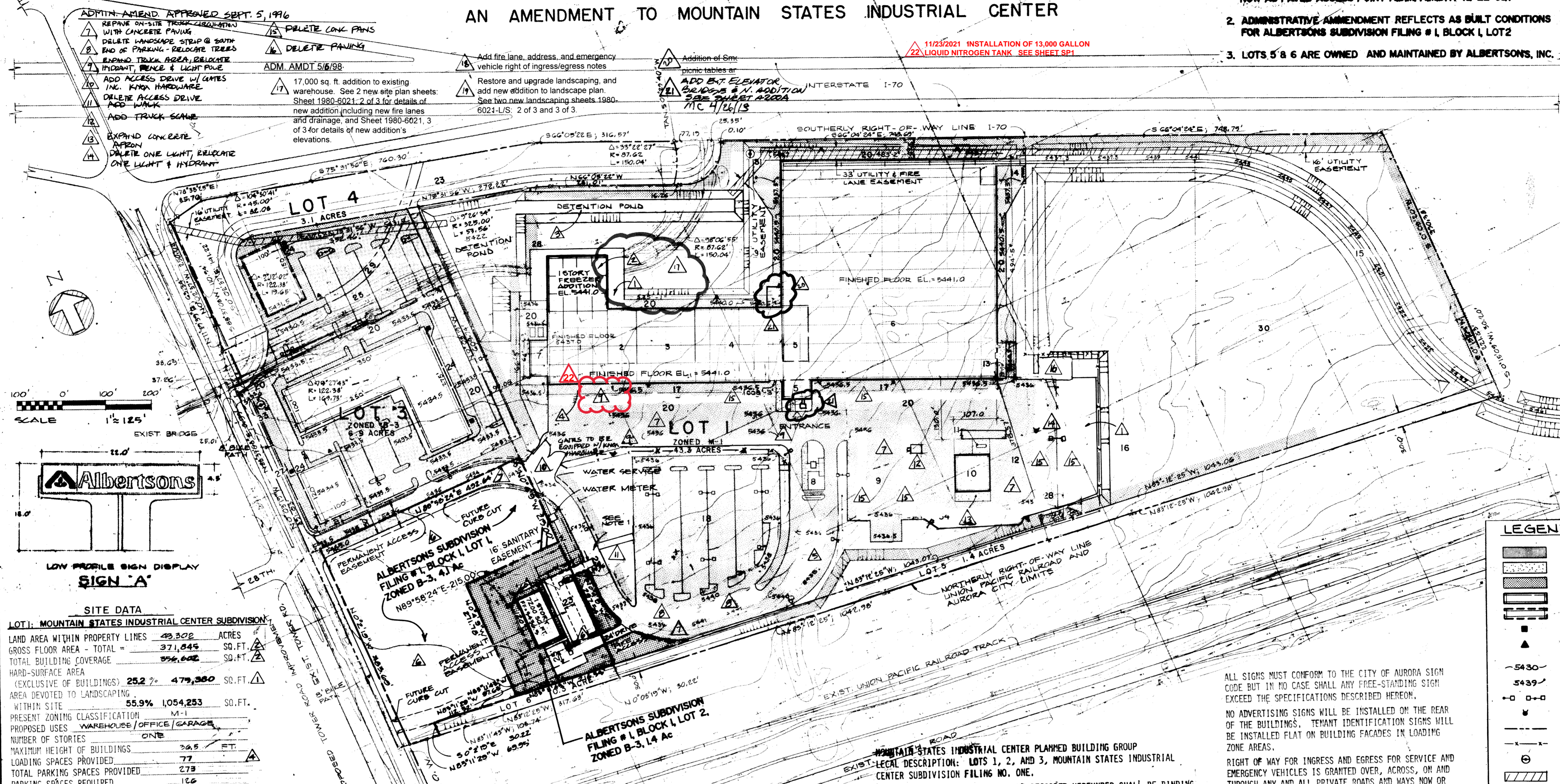
# ALBERTSONS, INC. - PLANNED BUILDING GROUP

## AN AMENDMENT TO MOUNTAIN STATES INDUSTRIAL CENTER

- NOTES:**
- MINOR TRAFFIC CIRCULATION REVISIONS WERE MADE TO DECREASE POTENTIAL OF FUTURE TRAFFIC CONGESTION AT NORTH ENTRY TO LOT 2. FIRE LANE ACCESS AT S.E. CORNER OF LOT 2 IS PLANNED NOW AS PAVED ACCESS POINT A.D.M. A.M.D.T. 12-22-82.
  - ADMINISTRATIVE AMENDMENT REFLECTS AS BUILT CONDITIONS FOR ALBERTSONS SUBDIVISION FILING #1, BLOCK 1, LOT 2
  - LOTS 5 & 6 ARE OWNED AND MAINTAINED BY ALBERTSONS, INC.

**NOTES**

- FREZZER.
- MEATS
- DEU
- PRODUCE
- OFFICE
- GROCERY WAREHOUSE
- REFRIGERATION/ELECT. EQUIPMENT ROOM
- GUARDHOUSE AND GATE
- TRAILER PARKING (50 SPACES)
- TRUCK MAINTENANCE BLDG. (GARAGE)
- FUEL ISLAND
- TRACTOR/TRAILER PARKING (25 SPACES)
- TRASH COMPACTOR
- RAILROAD GATE
- RAIL SPUR
- FUTURE TRUCK AREA
- TRUCK DOCKS (67 SPACES)
- AUTOMOBILE PARKING
- (DELETED)
- FIRE LANE
- (DELETED)
- EXISTING IRRIGATION CANAL
- PROPOSED CANAL RELOCATION
- LOADING ZONE (COMMERCIAL)
- AUTOMOBILE PARKING
- AUTOMOBILE PARKING
- 8'-0" HIGH PRIVACY FENCE
- 8'-0" HIGH CHAIN LINK FENCE
- 20' UTILITY EASEMENT
- UNDEVELOPED
- SIGN "A"
- SIGN "B", ALTERNATE LOCATION SIGN "A"
- ALTERNATE LOCATION SIGN "B"
- EXTERIOR TRUCK WASH



**SITE DATA**

LOT 1: MOUNTAIN STATES INDUSTRIAL CENTER SUBDIVISION

LAND AREA WITHIN PROPERTY LINES	49.302	ACRES
GROSS FLOOR AREA - TOTAL	371,845	SQ. FT.
TOTAL BUILDING COVERAGE	396,602	SQ. FT.
HARD-SURFACE AREA (EXCLUSIVE OF BUILDINGS)	252%	479,380 SQ. FT.
AREA DEVOTED TO LANDSCAPING WITHIN SITE	55.9%	1,054,253 SQ. FT.
PRESENT ZONING CLASSIFICATION	M-1	
PROPOSED USES	WAREHOUSE/OFFICE/GARAGE	
NUMBER OF STORIES	ONE	
MAXIMUM HEIGHT OF BUILDINGS	26.5	FT.
LOADING SPACES PROVIDED	77	
TOTAL PARKING SPACES PROVIDED	273	
PARKING SPACES REQUIRED	126	

**LOT 1: ALBERTSONS SUBDIVISION**

LAND AREA WITHIN PROPERTY LINES	4.107	ACRES
GROSS FLOOR AREA - TOTAL		SQ. FT.
TOTAL BUILDING COVERAGE	7%	
HARD-SURFACE AREA (EXCLUSIVE OF BUILDINGS)	4%	
AREA DEVOTED TO LANDSCAPING WITHIN SITE	2%	
PRESENT ZONING CLASSIFICATION	B-3	
PROPOSED USES		
NUMBER OF STORIES		
MAXIMUM HEIGHT OF BUILDINGS		
LOADING SPACES PROVIDED		
TOTAL PARKING SPACES PROVIDED		
PARKING SPACES REQUIRED		

**LOT 2: ALBERTSONS SUBDIVISION**

LAND AREA WITHIN PROPERTY LINES	1.405	ACRES
GROSS FLOOR AREA - TOTAL	7,200	SQ. FT.
TOTAL BUILDING COVERAGE	12%	
HARD-SURFACE AREA (EXCLUSIVE OF BUILDINGS)	23%	17,740 SQ. FT.
AREA DEVOTED TO LANDSCAPING WITHIN SITE	59%	36,262 SQ. FT.
PRESENT ZONING CLASSIFICATION	B-3	
PROPOSED USES	OFFICE	
NUMBER OF STORIES	ONE	
MAXIMUM HEIGHT OF BUILDINGS	15'	
LOADING SPACES PROVIDED	0	
TOTAL PARKING SPACES PROVIDED	50	
PARKING SPACES REQUIRED	24	

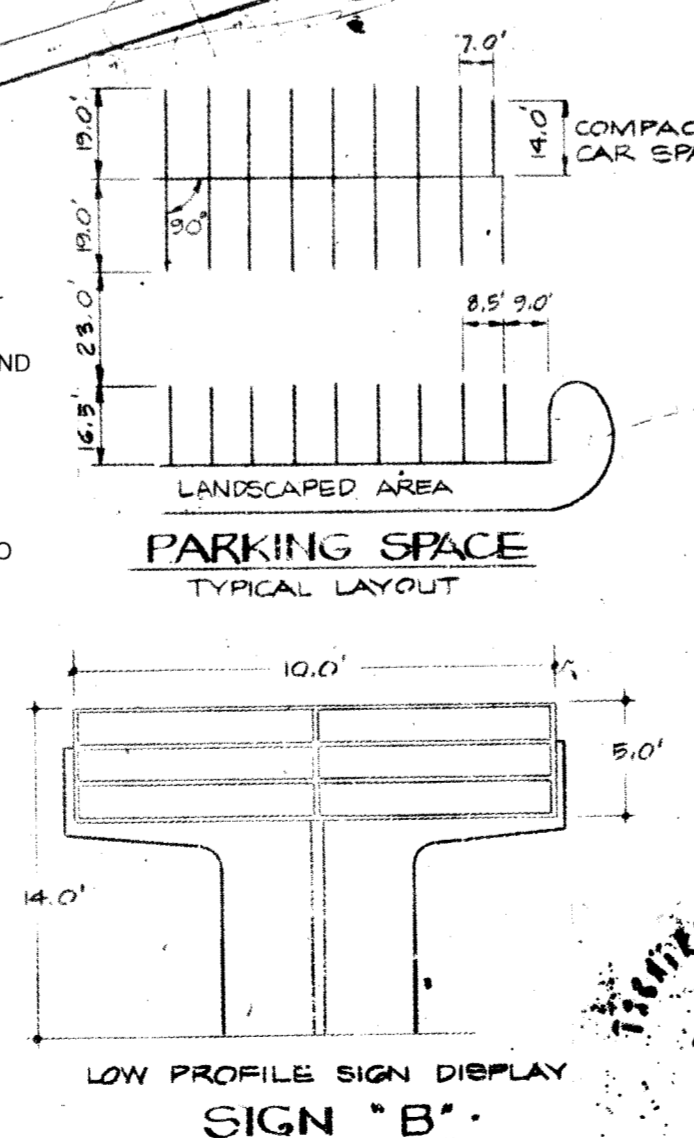
THE DEVELOPER, HIS SUCCESSORS AND ASSIGNS, INCLUDING THE HOMEOWNERS ASSOCIATION/MERCHANTS ASSOCIATION, SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF ALL FIRE LANE SIGNS AS REQUIRED BY THE CITY OF AURORA.

ALL BUILDING ADDRESS NUMBERS SHALL COMPLY WITH SECTIONS 126-271 AND 126-273 OF THE AURORA CITY CODE.

RIGHT-OF-WAY FOR INGRESS AND EGRESS FOR SERVICE AND EMERGENCY VEHICLES IS GRANTED OVER, ACROSS, ON AND THROUGH ANY AND ALL PRIVATE ROADS AND WAYS NOW OR HEREAFTER ESTABLISHED ON THE DESCRIBED PROPERTY, AND THE SAME ARE HEREBY DESIGNATED AS "SERVICE/EMERGENCY AND UTILITY EASEMENTS" AND SHALL BE POSTED "NO PARKING - FIRE LANE".

**LOT 3: MOUNTAIN STATES INDUSTRIAL CENTER SUBDIVISION**

LAND AREA WITHIN PROPERTY LINES	6.943	ACRES
GROSS FLOOR AREA - TOTAL	184,000	SQ. FT.
TOTAL BUILDING COVERAGE	20%	79,500 SQ. FT.
HARD-SURFACE AREA (EXCLUSIVE OF BUILDINGS)	32%	172,871 SQ. FT.
AREA DEVOTED TO LANDSCAPING WITHIN SITE	18%	45,462 SQ. FT.
PRESENT ZONING CLASSIFICATION	B-3	
PROPOSED USES	OFFICE - 60,000 FT <sup>2</sup> / RETAIL - 25,000 FT <sup>2</sup>	
NUMBER OF STORIES	ONE & TWO	
MAXIMUM HEIGHT OF BUILDINGS	15' & 26'	
LOADING SPACES PROVIDED	6	
TOTAL PARKING SPACES PROVIDED	487	
PARKING SPACES REQUIRED	482	



MOUNTAIN STATES INDUSTRIAL CENTER PLANNED BUILDING GROUP  
 LEGAL DESCRIPTION: LOTS 1, 2, AND 3, MOUNTAIN STATES INDUSTRIAL CENTER SUBDIVISION FILING NO. ONE.

ALL SPECIAL PLANS REGISTERED AND RECORDED HEREUNDER SHALL BE BINDING UPON THE APPLICANTS THEREFORE, THEIR SUCCESSORS AND ASSIGNS, SHALL LIMIT AND CONTROL THE ISSUANCE AND VALIDITY OF ALL BUILDING PERMITS AND SHALL RESTRICT AND LIMIT THE CONSTRUCTION, LOCATION, USE AND OPERATION OF ALL LAND AND STRUCTURES INCLUDED WITHIN SUCH PLANS TO ALL CONDITIONS AND LIMITATIONS SET FORTH IN SUCH PLANS.

IN WITNESS WHEREOF, ALBERTSONS, INC. HAS CAUSED THESE PRESENTS TO BE EXECUTED THIS 16th DAY OF July AD 19 81.

BY: *Michael E. Kelly* CORPORATE SEAL  
 NOTARIAL:  
 STATE OF Idaho SS  
 COUNTY OF Ada  
 THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS 16th DAY OF July AD 19 81 BY *Michael E. Kelly* NOTARY SEAL

WITNESS MY HAND AND OFFICIAL SEAL  
 NOTARY PUBLIC  
 MY COMMISSION EXPIRES *Sept 1981*  
 CITY OF AURORA APPROVAL FOR ADMINISTRATIVE AMENDMENT  
 PLANNING DIRECTOR: *[Signature]* DATE: 17 JULY 81

RECORDED'S CERTIFICATE:  
 ACCEPTED FOR FILING IN THE OFFICE OF THE CLERK AND RECORDER OF COUNTY, COLORADO AT O'CLOCK P.M.

CLERK AND RECORDER:  
 DEPUTY:

ALL SIGNS MUST CONFORM TO THE CITY OF AURORA SIGN CODE BUT IN NO CASE SHALL ANY FREE-STANDING SIGN EXCEED THE SPECIFICATIONS DESCRIBED HEREON.

NO ADVERTISING SIGNS WILL BE INSTALLED ON THE REAR OF THE BUILDINGS. TENANT IDENTIFICATION SIGNS WILL BE INSTALLED FLAT ON BUILDING FACADES IN LOADING ZONE AREAS.

RIGHT OF WAY FOR INGRESS AND EGRESS FOR SERVICE AND EMERGENCY VEHICLES IS GRANTED OVER, ACROSS, ON AND THROUGH ANY AND ALL PRIVATE ROADS AND WAYS NOW OR HEREAFTER ESTABLISHED ON THE DESCRIBED PROPERTY, AND THE SAME ARE HEREBY DESIGNATED AS FIRE LANES AND EMERGENCY AND SERVICE VEHICLE ROADS, AND SHALL BE POSTED "NO PARKING - FIRE LANE".

THE DEVELOPER, HIS SUCCESSORS AND ASSIGNS, SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE, AND REPLACEMENT OF ALL LANDSCAPING MATERIALS SHOWN OR INDICATED ON THE APPROVED SITE PLAN OR LANDSCAPE PLAN ON FILE IN THE PLANNING DEPARTMENT.

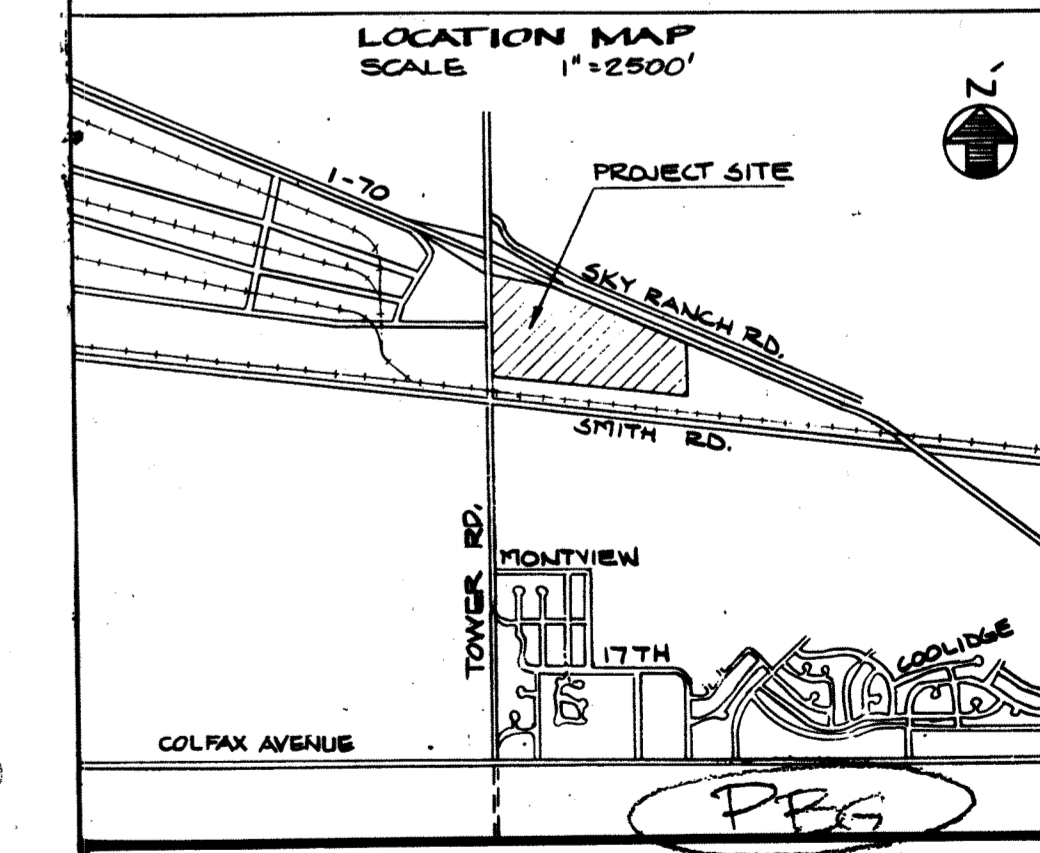
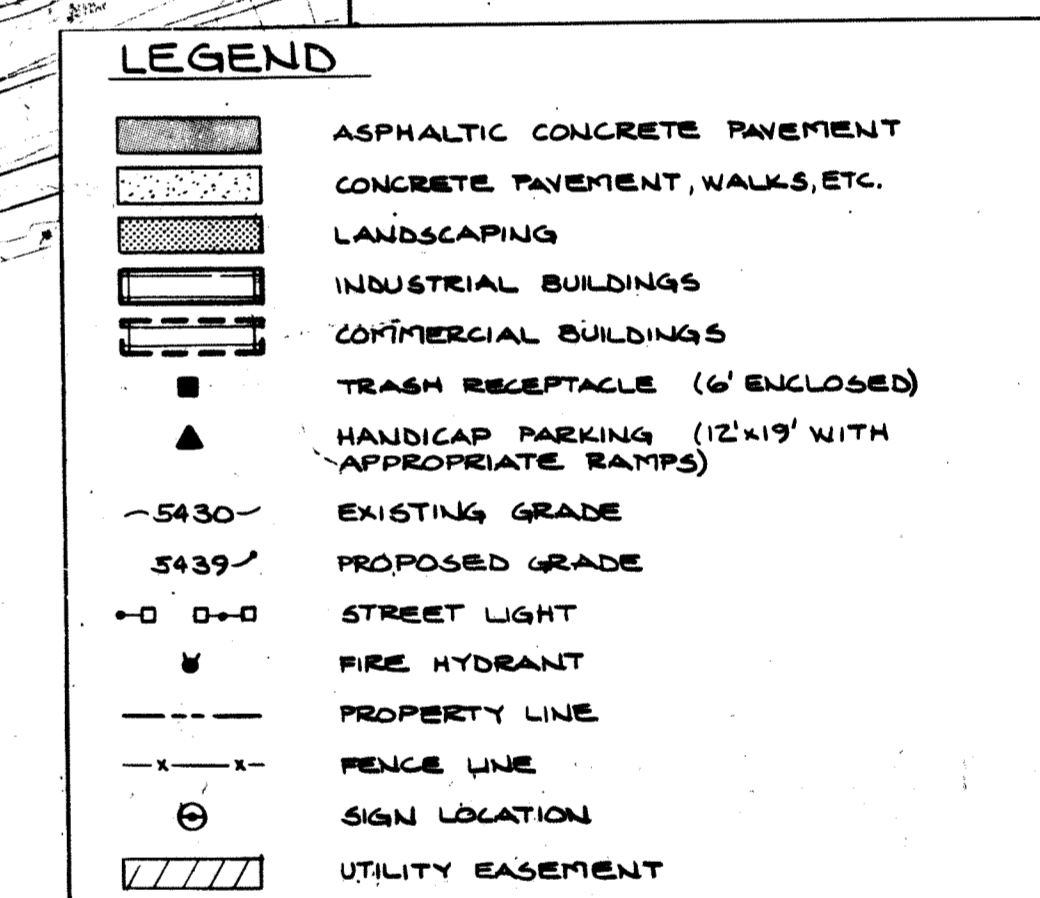
ALL ROOF TOP MECHANICAL UNITS SHALL BE SCREENED FROM VIEW WITH PAINTED SCREENS.

THE APPROVAL OF THIS DOCUMENT DOES NOT CONSTITUTE FINAL APPROVAL OF GRADING, DRAINAGE, UTILITIES AND PUBLIC IMPROVEMENTS. CONSTRUCTION PLANS MUST BE REVIEWED AND APPROVED BY THE DIRECTOR OF PUBLIC WORKS PRIOR TO ISSUANCE OF BUILDING PERMITS.

FIRE LANE AND UTILITY EASEMENTS SHOWN ON THE SUBDIVISION PLAT DATED JULY 1980, REVISED AUGUST 25, 1980, WILL BE VACATED IN EXCHANGE FOR FIRE LANE AND UTILITY EASEMENTS INDICATED PARTIALLY ON THIS AMENDED PLANNED BUILDING GROUP AND COMPREHENSIVELY ON THE FIRE LANE AND UTILITY EASEMENT DIAGRAM PREPARED BY C. R. MOORE & ASSOCIATES, INC., DATED APRIL 20, 1981, REVISED MAY 13, 1981.

**REVISIONS**

NO.	DATE	DESCRIPTION	BY
6	5/31/81	ADMINISTRATIVE AMENDMENT	TRP
5	8-1-81	ISSUED FOR REVIEW	
3	5-1-81	REVISED PER CITY OF AURORA LETTER DATED 4-22-81	DB
2	3-31-81	DELETED PUMP HOUSE PER CITY OF AURORA, REVISED PAVEMENT	DB
1	3-24-81	REVISED LOCATION OF PUMP HOUSE & FIRE RISERS AND FIRE LANE AS REQUESTED BY CITY OF AURORA.	DB



**DISTRIBUTION CENTER FOR ALBERTSONS, INC.**  
 1-70 AND TOWER ROAD  
 AURORA, COLORADO

PROJECT MANAGER	J. FABIN	APPROVAL
DESIGNER	R. JOHNSON	APPROVED FOR
CHECKER	V. LEGASPI	PREPARED BY
PROJECT NUMBER	0014	SHEET NUMBER
DATE	MAR. 8, 1981	SCALE
ENGINEERS	A. Epstein and Sons, Inc.	ARCHITECTS
REGISTERED PROFESSIONAL ENGINEERS	NO. 10001	REGISTERED ARCHITECTS
CHICAGO, ILL. 60611	TEL. 312-464-9900	CHICAGO, ILL. 60611

ADM. ADMTS: 11/26/85, 5/10/89, 5/31/95, 6/1/98, 7/15/05 MC 4/26/13

Albertson's 80-6021-2

CLIENT

STEVEN CHARLES

2780 TOWER RD,  
AURORA, CO 80011

INSTALLATION OF A 13,000-GAL LIN  
TANK

LOCATION  
Steven Charles  
2780 Tower Rd., Aurora, CO 80011

THESE PLANS WERE DEVELOPED RESTRICTIVELY FOR USE ON THE STRUCTURES AND BY PERSONS/COMPANY AS SPECIFIED IN THE TITLE BLOCK. ANY OTHER USE (INCLUDING, BUT NOT LIMITED TO, DISSEMINATION AND COPYING) OF THESE PLANS OR ANY USE OF THE PLANS BY ANY PARTY OR PARTIES OTHER THAN THE ONES SPECIFIED IN THE TITLE BLOCK ARE STRICTLY PROHIBITED UNLESS UNDER A WRITTEN PERMISSION BY SGE.



November 23, 2021

SGE JOB No. 521.043.380

STEVEN CHARLES

REVISIONS

ATTENTION: REFER TO LIST OF REVISIONS ON THIS SHEET. THE RELEASE OF THIS DRAWING WITH THE LATEST REVISION NUMBER AND DATE SUPERSEDES AND VOIDS ALL DOCUMENTS PREVIOUSLY ISSUED BY SGE FOR THE SUBJECT SITE.

REV	DATE	DESCRIPTION	BY	APP'D
11/23/2021	CLIENT REQUESTED		JT	VSG

DATE: September 3, 2021

DESIGNED BY JT

APPROVED BY VSG

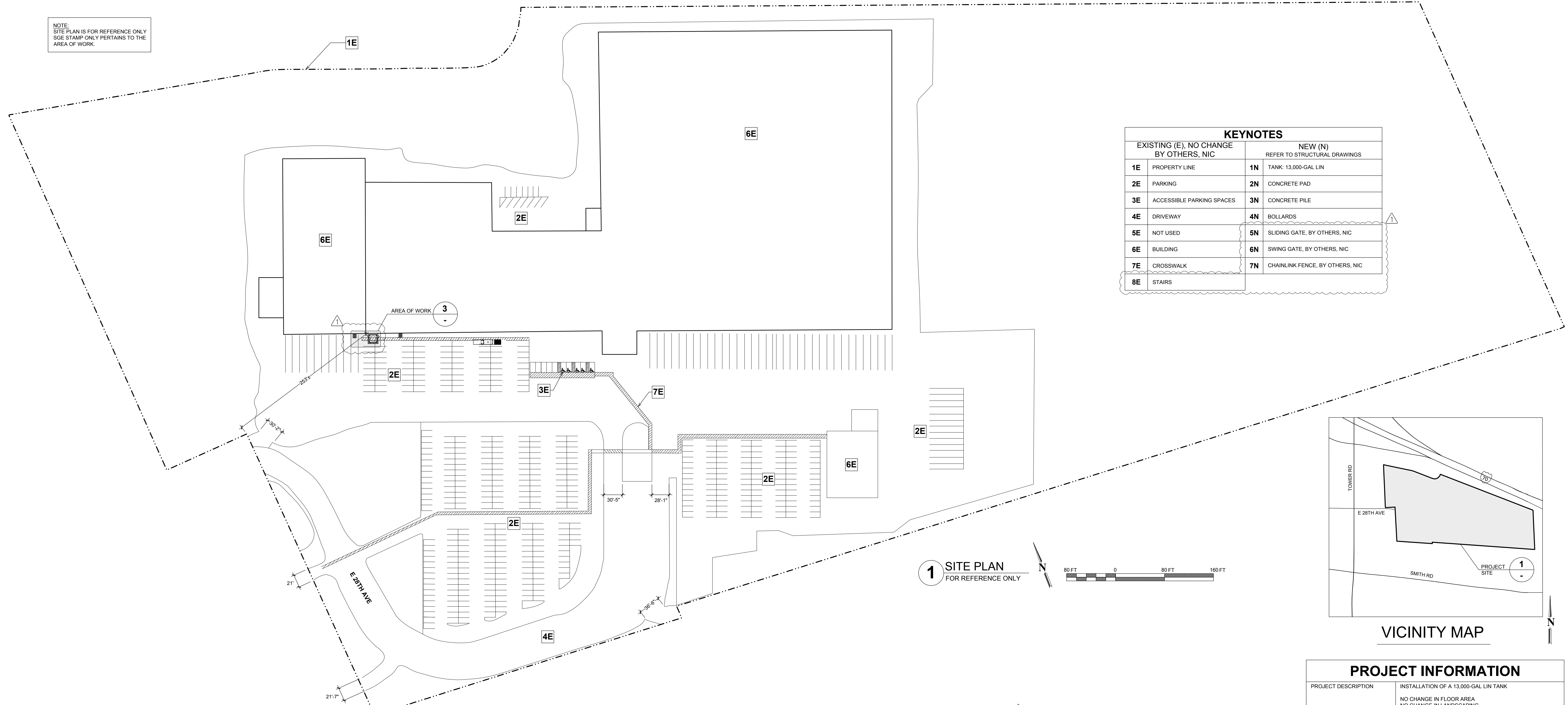
TOTAL SITE PLAN SHEETS - 1

SITE PLAN,  
NOTES &  
PROJECT  
INFORMATION

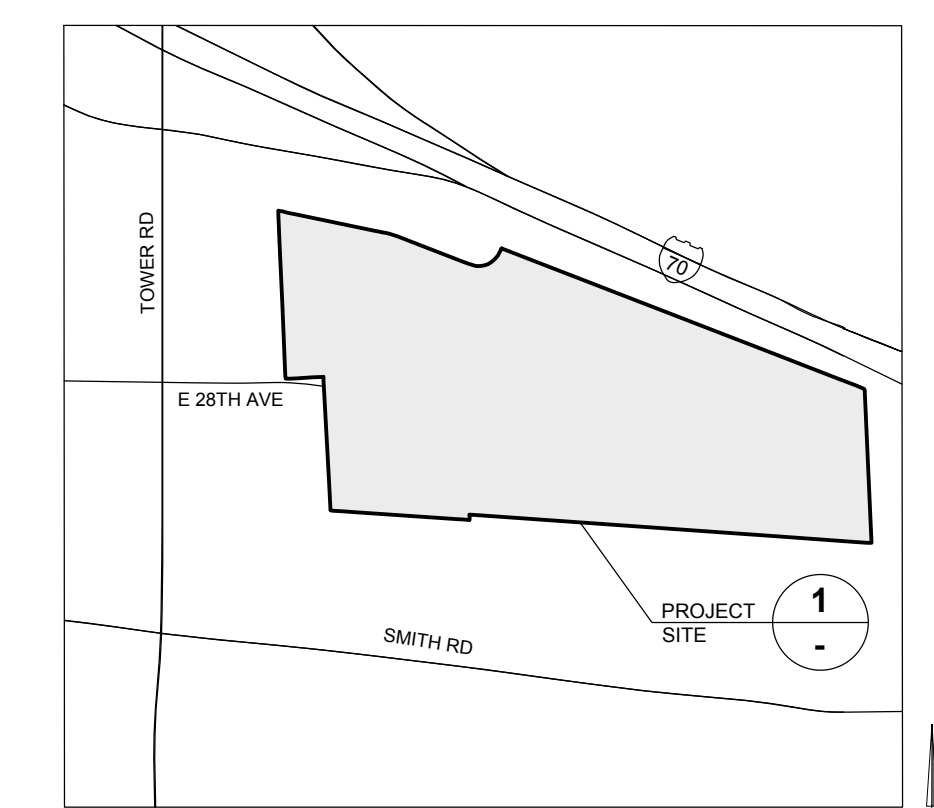
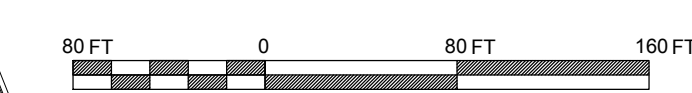
SP-1

KEYNOTES			
EXISTING (E), NO CHANGE BY OTHERS, NIC		NEW (N) REFER TO STRUCTURAL DRAWINGS	
1E	PROPERTY LINE	1N	TANK: 13,000-GAL LIN
2E	PARKING	2N	CONCRETE PAD
3E	ACCESSIBLE PARKING SPACES	3N	CONCRETE PILE
4E	DRIVEWAY	4N	BOLLARDS
5E	NOT USED	5N	SLIDING GATE, BY OTHERS, NIC
6E	BUILDING	6N	SWING GATE, BY OTHERS, NIC
7E	CROSSWALK	7N	CHAINLINK FENCE, BY OTHERS, NIC
8E	STAIRS		

NOTE:  
SITE PLAN IS FOR REFERENCE ONLY  
SGE STAMP ONLY PERTAINS TO THE  
AREA OF WORK



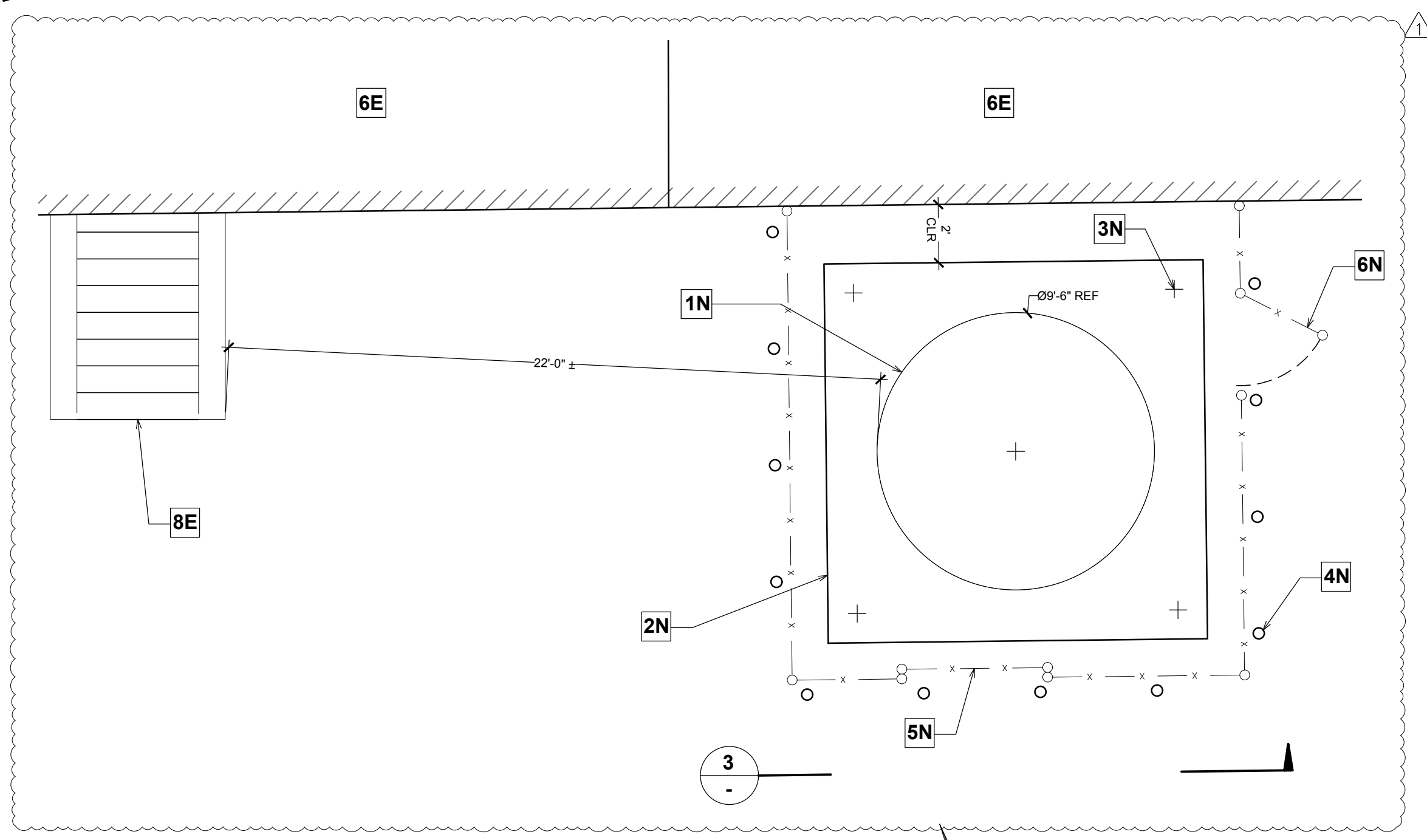
1 SITE PLAN FOR REFERENCE ONLY



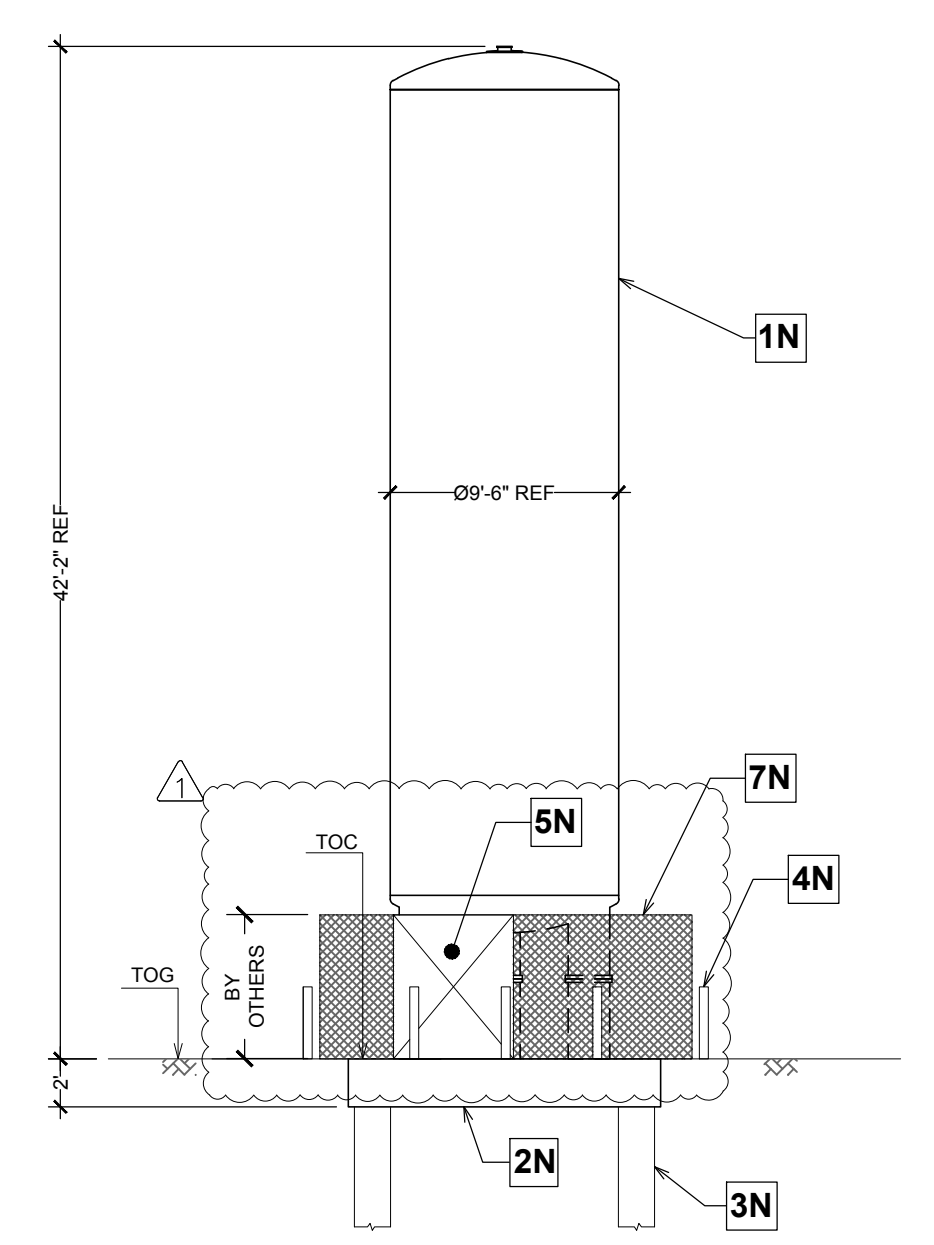
VICINITY MAP

### CONSTRUCTION NOTES

- GENERAL CONSIDERATIONS**
  - ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE LOCAL, STATE, AND NATIONAL CODES, AS WELL AS WITH THE PRINCIPLES OF GOOD CONSTRUCTION PRACTICE.
  - DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY (INCLUDING FIRE SAFETY) OF THE NEW, AS WELL AS EXISTING, STRUCTURES. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES THAT RESPONSIBILITY SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. ANY DEVIATION FROM SUCH ORDINANCES MUST BE REVIEWED AND APPROVED BY SGE PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR SHALL THOROUGHLY REVIEW THE PLANS AND CHECK ALL DIMENSIONS PRIOR TO COMMENCING THE WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF SGE AND RESOLVED BEFORE PROCEEDING WITH THE WORK.
  - THE CONTRACTOR SHOULD NOT PROCEED WITH CONSTRUCTION IN CASE OF CONFLICT(S) BETWEEN THE DETAILS, AND/OR BETWEEN THE DETAILS AND PLANS, AND/OR BETWEEN THE PLANS AND SCHEDULES. THE CONSTRUCTION SHALL RESUME ONLY UPON THE FULL RESOLUTION OF SUCH CONFLICT BY SGE.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF WORKING CONDITION OF ALL EXISTING COMPONENTS AND STRUCTURES AFFECTED BY THIS CONSTRUCTION. THE CONTRACTOR SHALL CONSTANTLY KEEP THE AREA OF CONSTRUCTION FROM ACCUMULATION OF WASTE MATERIALS AND DEBRIS.
  - AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY, ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN TRASH OR RECYCLE BINS. AT THE END OF WORK, THE CONTRACTOR SHALL REMOVE ALL WASTE, SURPLUS MATERIAL, TOOLS, AND EQUIPMENT.
  - THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THIS PROJECT EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.
  - DO NOT SCALE THESE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER ASSUMED OR SCALED DIMENSIONS.
  - ALL DIMENSIONS ARE TO FACE OF FINISHED SURFACES. LAYOUT OF STRUCTURES AND FOUNDATIONS MUST BE DETERMINED BY EXAMINATION OF PLANS, AND FINISH MATERIALS SELECTED AND SHALL NOT BE ASSUMED AS BEING EXPRESSED BY THE WRITTEN FINISHED SURFACE DIMENSIONS.
  - SITE DRAWINGS ARE BASED UPON THE PLANS OBTAINED FROM THE AUTHORITY HOLDING JURISDICTION (AHL), AND/OR PROVIDED BY THE PROPERTY OWNER, AND/OR AVAILABLE AERIAL IMAGES UNLESS NOTED OTHERWISE. NO TOPOGRAPHIC, BOUNDARY, OR LAND TITLE SURVEY WAS PERFORMED FOR THE PROJECT.
- STORMWATER, EROSION, AND ENVIRONMENTAL CONSIDERATIONS**
  - ALL CONSTRUCTION WORK SHALL FULLY COMPLY WITH ALL STORMWATER, EROSION, GRADING, AND ENVIRONMENTAL REQUIREMENTS OF THE LOCAL, STATE AND FEDERAL CODES—INCLUDING (BUT NOT LIMITED TO) THE FOLLOWING:
    - ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF, AND COMPLY WITH, THE AUTHORITY HOLDING JURISDICTION (AHL) BEST MANAGEMENT PRACTICES (BMP) AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
    - APPROPRIATE BMP FOR CONSTRUCTION-RELATED MATERIALS, WASTES, AND SPILLS SHALL BE IMPLEMENTED TO MINIMIZE TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTY BY WIND OR RUNOFF.
    - CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OF MATERIAL OTHER THAN STORMWATER ARE ALLOWED ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT: (A) CAUSE OR CONTRIBUTE TO A VIOLATION OF ANY WATER QUALITY STANDARD; (B) CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR NUISANCE; AND/OR (C) CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS OF PARTS 111 AND 302.
    - RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES UNLESS TREATED TO REDUCE OR REMOVE SEDIMENT OR OTHER POLLUTANTS.
    - POTENTIAL POLLUTANTS INCLUDE, BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS; WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIMES, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS; ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC FLUIDS; RADIATOR OR BATTERY FLUIDS; FERTILIZERS; VEHICLE EQUIPMENT WASH WATER AND CONCRETE WASH WATER; CONCRETE; DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/ EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING AND SUPERCHLORINATED POTABLE WATER LINE FLUSHING.
    - DURING CONSTRUCTION, THE DISPOSAL OF SUCH MATERIALS SHALL OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE, PHYSICALLY SEPARATED FROM STORMWATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
    - DEWATERING OF CONTAMINATED GROUND WATER OR DISCHARGING OF CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DEWATERING OF NON-CONTAMINATED GROUND WATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY BOARD.
    - SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING STRUCTURAL CONTROLS TO THE MAXIMUM PRACTICAL EXTENT.
    - STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO STREETS, DRAINAGE FACILITIES OR ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND.
    - GRADED AREAS ON THE PERMITTED AREA PERMETER MUST DRAIN AWAY FROM THE FACE OF THE SLOPES AND TOWARD DESILTING FACILITIES AT THE CONCLUSION OF EACH WORKING DAY.
    - THE PERMITEE AND THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE THE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.
    - THE PERMITEE AND THE CONTRACTOR SHALL ENSURE THAT THE EROSION CONTROL WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.



2 ENLARGED AREA OF WORK PLAN, SCALE: 1" = 4'-0"



3 (N) FOUNDATION AND (N) TANK ELEVATION, SCALE: 1" = 8'-0"

### PROJECT INFORMATION

PROJECT DESCRIPTION	INSTALLATION OF A 13,000-GAL LIN TANK
	NO CHANGE IN FLOOR AREA NO CHANGE IN LANDSCAPING
	CHANGES IN PARKING
PROJECT ADDRESS	2780 N TOWER RD, AURORA, CO 80011
PROJECT COORDINATES	39.755780°N, 104.768410°W
ASSESSOR PARCEL NUMBER	018212701003
ZONING	M-1 - LIGHT INDUSTRIAL DISTRICT
CODES	2015 INTERNATIONAL BUILDING CODE 2015 INTERNATIONAL MECHANICAL CODE 2015 INTERNATIONAL FIRE CODE AND LOCAL ORDINANCE
OCCUPANCY	IBC B/S-1/S-2/F
BUILDING CONSTRUCTION TYPE	UBC TYPE: V-N - SPK
TOTAL LOT SIZE	44.66 ACRES
BUILDING AREA	MEGA WAREHOUSE: 350,136 S.F. SHED - EQUIPMENT: 234 S.F. SERVICE GARAGE: 7,224 S.F. TOTAL: 357,597 S.F.

### PROJECT TEAM

OWNER	2780 NORTH TOWER ROAD LLC 2780 TOWER RD, AURORA, CO 80011-3534
TENANT	STEVEN CHARLES 2780 TOWER RD, AURORA, CO 80011 (303) 375-9925
CONSULTANT ENGINEERS	SGE CONSULTING STRUCTURAL ENGINEERS 2081 BUSINESS CENTER DR #105, IRVINE, CA 92612 (949) 552-5244
MECHANICAL ENGINEERS	JCC DESIGN, INC. MECHANICAL CONSULTING 270 ELDERBERRY STREET LA VERNE, CA 91750 (909) 394-5838
CONTRACTOR	TBD

DRAWING INDEX	
SP - 1	SITE PLAN, NOTES, & PROJECT INFORMATION
S-1	STRUCTURAL PLAN, NOTES & DETAILS
S-2	STRUCTURAL DETAILS
P-1	PIPING PLANS

# CONSTRUCTION NOTES

## 1. GENERAL

- A. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE PRINCIPLES OF GOOD CONSTRUCTION PRACTICE.
- B. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY (INCLUDING FIRE SAFETY) OF THE NEW, AS WELL AS EXISTING, STRUCTURES. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. ANY DEVIATION FROM SUCH ORDINANCES MUST BE APPROVED PRIOR TO ERECTION. THAT RESPONSIBILITY SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.
- C. THE CONTRACTOR SHALL CHECK ALL INFORMATION ON THE PLANS (INCLUDING DIMENSIONS) PRIOR TO COMMENCING THE WORK. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER, AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
- D. ALL CONSTRUCTION WORK (INCLUDING, BUT NOT LIMITED TO, MEANS, METHODS, SEQUENCES, TECHNIQUES, PROCEDURES, ETC) IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

- E. THE RECOMMENDATIONS (IF ANY) ON THESE PLANS REGARDING THE MEANS, METHODS, SEQUENCES, TECHNIQUES, PROCEDURES, ETC OF CONSTRUCTION SHALL BE CONSIDERED AS MINIMAL REQUIREMENTS. THE CONTRACTOR SHALL NOT DEVIATE FROM THESE RECOMMENDATIONS UNLESS SUCH DEVIATION IS TOWARD MORE STRINGENT REQUIREMENTS.
- F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF WORKING CONDITION OF ALL EXISTING COMPONENTS AND STRUCTURES AFFECTED BY THIS CONSTRUCTION. THE CONTRACTOR SHALL CONSTANTLY KEEP THE AREA OF CONSTRUCTION FROM ACCUMULATION OF WASTE MATERIALS AND DEBRIS. AT THE END OF WORK, THE CONTRACTOR SHALL REMOVE ALL WASTE, SURPLUS MATERIAL, TOOLS, AND EQUIPMENT.
- G. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THIS PROJECT EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER. ANY LIABILITY BY SGE AS RELATED TO THIS PROJECT IS LIMITED TO THE ENGINEERING FEES RECEIVED FOR THE SERVICES RENDERED.

- H. ALL MATERIALS, STRUCTURES, AND WORKMANSHIP SHALL CONFORM TO THESE PLANS, CALCULATIONS, AS WELL AS TO THE ESTABLISHED GUIDELINES SET FORTH BY THE LATEST ADOPTED EDITIONS OF 2015 IBC, ASCE MANUAL OF STEEL CONSTRUCTION, ACI 318, AND ALL OTHER APPLICABLE REGULATORY DOCUMENTS. IN CASE OF ANY CONFLICTS, THE CONTRACTOR SHALL CONTACT SGE.
- I. THESE PLANS AND CALCULATIONS ARE BASED UPON THE ASSIGNMENT FROM, AS WELL AS ON THE INFORMATION ABOUT THE NEW EQUIPMENT, AS PROVIDED BY STEVEN CHARLES (MR. JOE YEATTS, TEL. (720) 404-1899).
- J. THIS DESIGN SHALL BE USED EXCLUSIVELY BY STEVEN CHARLES, AS WELL AS THEIR CONTRACTORS. ANY OTHER USE (INCLUDING, BUT NOT LIMITED TO, REVIEW, DISSEMINATION, OR COPYING) OF THESE DESIGN MATERIALS AND ANY PORTION THEREOF, AS WELL AS AN USE OF THOSE MATERIALS BY ANY PARTY OR PARTIES OTHER THAN THE ONES SPECIFIED ABOVE, ARE STRICTLY PROHIBITED UNLESS UNDER A WRITTEN PERMISSION BY SGE.

- K. DO NOT SCALE THE PLANS.
- L. REFER TO SPECIAL INSPECTION SCHEDULE FOR ALL SPECIAL INSPECTION REQUIREMENTS.
- M. THESE PLANS SUPERSEDE ANY OTHER PLANS PREVIOUSLY ISSUED BY SGE FOR THE SUBJECT PROJECT.
- N. THE MEASUREMENTS SHOWN ON THE PLANS ARE BASED UPON THE CATALOGUED (IDEAL) DIMENSIONS OF THE EQUIPMENT. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS AGAINST THOSE OF THE TEMPLATE AND/OR OF THE ACTUAL EQUIPMENT PRIOR TO ANY CONSTRUCTION ACTIVITIES.

- O. THESE STRUCTURAL PLANS AND CALCULATIONS WERE DEVELOPED BY SGE RESTRICTIVELY IN REGARD TO THE INSTALLATION OF 13,000-GAL LIN TANK AT STEVEN CHARLES, 2780 TOWER ROAD, AURORA, CO 80011.
- P. THIS DESIGN DOES NOT CONSIDER THE STRUCTURAL ADEQUACY OF THE EQUIPMENT (LEGS, BASEPLATES, AND CONNECTIONS BETWEEN THESE MEMBERS BY OTHERS), FOR THE PURPOSES OF THIS DESIGN, ALL NEW EQUIPMENT WAS ASSUMED TO BE STRUCTURALLY ADEQUATE.

- Q. LOADS
- R. THESE STRUCTURAL PLANS AND CALCULATIONS WERE BASED UPON THE FOLLOWING MINIMAL LOADS COMPLIANT WITH CHAPTER 16 OF THE 2015 IBC AND ASCE 7 (REFER TO SEISMIC PARAMETER SCHEDULE).

- S. PROJECT INFORMATION:
  - 1. SITE LATITUDE, LONGITUDE, RISK CATEGORY: 39.756304, -104.7675006, II
  - 2. WIND DESIGN DATA: BASIC WIND SPEED, MPH: 115; WIND EXPOSURE: C
  - 3. EARTHQUAKE DESIGN DATA: SITE CLASS: D; SEISMIC DESIGN CATEGORY: B

- T. SPECTRAL RESPONSE ACCELERATION PARAMETERS:
  - 1. S<sub>1</sub>: 0.188
  - 2. S<sub>0.1</sub>: 0.055
  - 3. S<sub>0.2</sub>: 0.202
  - 4. S<sub>0.1</sub>: 0.088
- U. ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE

- V. CONCRETE
  - 1. ALL NEW REINFORCED CONCRETE SHALL BE OF NORMAL WEIGHT (145 PCF);
    - a. MINIMUM COMPRESSIVE STRENGTH OF IN 28 DAYS: 4,500 PSI ASTM C39;
    - b. PORTLAND CEMENT TYPE: IIA ASTM C150;
    - c. MAXIMUM AGGREGATE SIZE: 1" ASTM C33;
    - d. AIR ENTRAINED: 4% ± 1.5% ASTM C260;
    - e. MAXIMUM WATER-CEMENT RATIO: 0.45
  - 2. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF SEVEN (7) DAYS AFTER PLACEMENT. ALTERNATE METHODS WILL BE APPROVED IF SATISFACTORY PERFORMANCE CAN BE ASSURED.

- W. THE SURFACE OF ALL NEW CONCRETE SHALL BE FLAT (1/8" MAX. UNFLATNESS UNDER 10-FT STRAIGHTEDGE), AND SHALL HAVE ROUGH BROOM FINISH. FORM 3/4" CHAMFERS AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, THE SURFACE OF CONCRETE SHALL SLOPE AT 0.75% MAX. FOR DRAINAGE.
- X. CONTRACTOR SHALL ASSURE FULL AND UNIFORM CONTACT BETWEEN CONCRETE SURFACE AND EQUIPMENT BASEPLATES. IF NECESSARY, USE NON-SHRINK GROUTING UNDER BASEPLATES (SIKAGROUT 212 OR APPROVED EQUAL).

- Y. NEW CONCRETE MAY BE PROTECTED WITH SIKATOP SEAL 107 OR APPROVED EQUAL (BREATHABLE, EXTERIOR) SEALER.
- Z. UNLESS SPECIFICALLY AUTHORIZED BY SGE, INSTALLATION OF EQUIPMENT MAY BEGIN NOT EARLIER THAN 7 DAYS AFTER POURING OF CONCRETE.

- AA. CAST-IN PLACE DEEP FOUNDATION ELEMENTS
  - 1. THE DESIGN WAS BASED UPON THE GEOTECHNICAL REPORT FOR THE SUBJECT SITE BY CUSHMAN GEOSCIENCE LLC (PROJECT NO. 21-116 DATED JULY 12, 2021)
  - 2. ALL EARTHWORK SHALL BE BASED ON THE SPECIFICATIONS AND GUIDANCE BY THE SOIL ENGINEER OF RECORD. THESE SPECIFICATIONS SHALL COMPLY WITH OF 2015 IBC AND CITY OF AURORA AMENDMENTS AND ADDRESS THE REQUIREMENTS BELOW.
  - 3. THE SOIL ENGINEER OF RECORD SHALL OBSERVE, MONITOR, DOCUMENT, AND APPROVE THE INSTALLATION OF PILES.

- AB. THE SOIL ENGINEER OF RECORD SHALL ISSUE A MEMO REFLECTING THE RESULTS OF THE PILE OBSERVATION/MONITORING. THE MEMO SHALL BE PRESENTED FOR A REVIEW BY SGE.
- AC. ANY ACTUAL SOIL CONDITIONS DIFFERENT FROM THE THE GEOTECHNICAL REPORT SHOULD BE EXPEDITIOUSLY REPORTED TO SGE FOR ANALYSIS AND POSSIBLE REVISION OF THE STRUCTURAL DRAWINGS.
- AD. THE GEOTECHNICAL ENGINEER OF RECORD SHALL REVIEW AND APPROVE THESE PLANS. THE APPROVAL MEMO SHALL BE SUBMITTED TO SGE PRIOR TO CONSTRUCTION.

- AE. SPECIAL INSPECTION OF THE PILES IS REQUIRED. REFER TO SPECIAL INSPECTION SCHEDULE.

## 6. REINFORCING STEEL

- A. UNLESS NOTED OTHERWISE, ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A615 GRADE 60. ALL REBARS CONNECTED BY, OR SUBJECTED TO, WELDING SHALL BE OF ASTM SPECIFICATION A706.
- B. ALL REINFORCING STEEL SHALL BE SPLICED WITH CLASS B SPLICES. SPLICE LENGTHS SHALL BE AS FOLLOWS:

REBAR SIZE	MINIMUM SPLICE LENGTH		
	NWC f <sub>c</sub> = 4,500 PSI	TOP REBAR	BOTTOM REBAR
PAD THICKNESS	>12"	≤ 12"	ANY
#4	19"	15"	15"
#5	24"	18"	18"
#6	28"	22"	22"
#7	41"	32"	32"
#8	46"	35"	35"
#9	58"	45"	45"

REBAR SIZE	STANDARD HOOKS		
	TYP	RADIUS (R, IN.)	EXTENSION (EXT, IN.)
BEND	90°	180°	90°
#3	1 1/2"	6"	4"
#4	2"	8"	4 1/2"
#5	3"	10"	5"
#6	3 1/2"	12"	6"
#7	3 1/2"	14"	7"
#8	4"	16"	8"

- C. STANDARD HOOKS SHALL BE CONSTRUCTED AS FOLLOWS:
- D. REBARS SHALL BE HELD IN THE REQUIRED POSITION BY MEANS OF APPROVED DEVICES.
- E. REBAR SPACING SHOWN IS MAXIMUM DISTANCE BETWEEN REBAR CENTER LINES.
- F. REBARS SHALL BE CLEAN OF DIRT, OIL, SCALE, AND FOREIGN MATERIALS.
- G. ALL NEW STEEL SHALL BE SANDBLASTED, THOROUGHLY CLEANED, AND PAINTED.
- H. CORROSION PROTECTION:
  - a. PREP: SSPC SP 1 SOLVENT CLEAN AND SSPC 2 AND 3 HAND AND POWER TOOL CLEAN.
  - b. PRIME: MACROPOXY 646-100 5-10 MILS
  - c. INTERMEDIATE: MACROPOXY 646-100 5-10 MILS
  - d. FINISH: HI SOLIDS POLY 2-3 MILS

- I. POST-INSTALLED ANCHORS
  - A. ALL ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
  - B. UNLESS NOTED OTHERWISE, OTHER ANCHORAGE HARDWARE DOES NOT NEED TO BE PROVIDED, ALL VAPORIZER ANCHORAGE HARDWARE (THREADED RODS, NUTS, AND WASHERS) SHALL BE GALVANIZED.

- J. THE ANCHORAGE HARDWARE SHALL STRICTLY MEET THE NOTED ASTM SPECIFICATIONS, PARTICULARLY: THREADED RODS – F1554 GRADE AS SHOWN; NUTS – ASTM A194 GRADE 2H OR ASTM A563 GRADE DH; PLATE WASHERS – A36; CIRCULAR WASHERS – F436.
- K. STEELS OF HIGHER GRADES OR DIFFERENT ASTM SPECIFICATIONS SHALL NOT BE USED WITHOUT A REVIEW AND WRITTEN APPROVAL BY SGE.
- L. THE SET ANCHOR ROD SHOULD NOT BE DISTURBED OR LOADED DURING THE SPECIFIED CURING TIME.
- M. UNLESS SPECIFICALLY AUTHORIZED BY SGE, INSTALLATION OF THE ANCHORS AND EQUIPMENT MAY BEGIN NOT EARLIER THAN 7 DAYS AFTER POURING OF CONCRETE.

- N. USE HAMMER DRILL AND CARBIDE BITS TO DRILL ANCHOR HOLES.
- O. ABBREVIATIONS
 

AH	AUTHORITY HAVING JURISDICTION	MAX	MAXIMUM
BCD	BOLT CIRCLE DIAMETER	MIN	MINIMUM
BTM	BOTTOM	MIR	MIRROR
BW	BOTH WAYS	(N)	NEW COMPONENT
CIP	CAST IN PLACE	NIC	NOT IN THIS CONTRACT
CJ	CONTROL JOINT	NOM	NOMINAL
CL	CENTERLINE	NTS	NOT TO SCALE
CLR	CLEAR	NWC	NORMAL WEIGHT CONCRETE
CLSM	CONTROLLED LOW-STRENGTH MATERIAL	OC	CENTER-TO-CENTER
CONT	CONTINUOUS	OPP	OPPOSITE
CS	CARBON STEEL	PERM	PERIMETER
DIA	DIAMETER	PL	PLATE
EA	EACH	PSF	POUNDS PER SQUARE FOOT
EA	EACH	PSI	POUNDS PER SQUARE INCH
EJ	EXPANSION JOINT	REF	FOR REFERENCE ONLY
(E)	EXISTING COMPONENT	REINF	REINFORCEMENT
EOR	ENGINEER OF RECORD	RPT	REPORT
EXT	EXTENSION	SS	STAINLESS STEEL
(F)	FUTURE COMPONENT	STD	STANDARD
FC	FILL CONNECTION	T&B	TOP AND BOTTOM
GAL	GALVANIZED	TBD	TO BE DETERMINED
GALV	GALVANIZED	THK	THICKNESS
HORIZ	HORIZONTAL	TOC	TOP OF CONCRETE
L	LITER	TOG	TOP OF GRADE
LAR	LIQUID ARGON	TOS	TOP OF STEEL
LIN	LIQUID NITROGEN	TRANSV	TRANSVERSE
LNG	LIQUEFIED NATURAL GAS	TYP	TYPICAL
LONGIT	LONGITUDINAL	UNO	UNLESS NOTED OTHERWISE
LOX	LIQUID OXYGEN	VERT	VERTICAL
LWR	LENGTH OF REBAR WRAPPING		

- P. THE DESIGN WAS BASED UPON THE GEOTECHNICAL REPORT FOR THE SUBJECT SITE BY CUSHMAN GEOSCIENCE LLC (PROJECT NO. 21-116 DATED JULY 12, 2021)
- Q. ALL EARTHWORK SHALL BE BASED ON THE SPECIFICATIONS AND GUIDANCE BY THE SOIL ENGINEER OF RECORD. THESE SPECIFICATIONS SHALL COMPLY WITH OF 2015 IBC AND CITY OF AURORA AMENDMENTS AND ADDRESS THE REQUIREMENTS BELOW.
- R. THE SOIL ENGINEER OF RECORD SHALL OBSERVE, MONITOR, DOCUMENT, AND APPROVE THE INSTALLATION OF PILES.
- S. THE SOIL ENGINEER OF RECORD SHALL ISSUE A MEMO REFLECTING THE RESULTS OF THE PILE OBSERVATION/MONITORING. THE MEMO SHALL BE PRESENTED FOR A REVIEW BY SGE.
- T. ANY ACTUAL SOIL CONDITIONS DIFFERENT FROM THE THE GEOTECHNICAL REPORT SHOULD BE EXPEDITIOUSLY REPORTED TO SGE FOR ANALYSIS AND POSSIBLE REVISION OF THE STRUCTURAL DRAWINGS.
- U. THE GEOTECHNICAL ENGINEER OF RECORD SHALL REVIEW AND APPROVE THESE PLANS. THE APPROVAL MEMO SHALL BE SUBMITTED TO SGE PRIOR TO CONSTRUCTION.

- V. SPECIAL INSPECTION OF THE PILES IS REQUIRED. REFER TO SPECIAL INSPECTION SCHEDULE.

- W. SPECIAL INSPECTION OF THE PILES IS REQUIRED. REFER TO SPECIAL INSPECTION SCHEDULE.

- X. SPECIAL INSPECTION OF THE PILES IS REQUIRED. REFER TO SPECIAL INSPECTION SCHEDULE.

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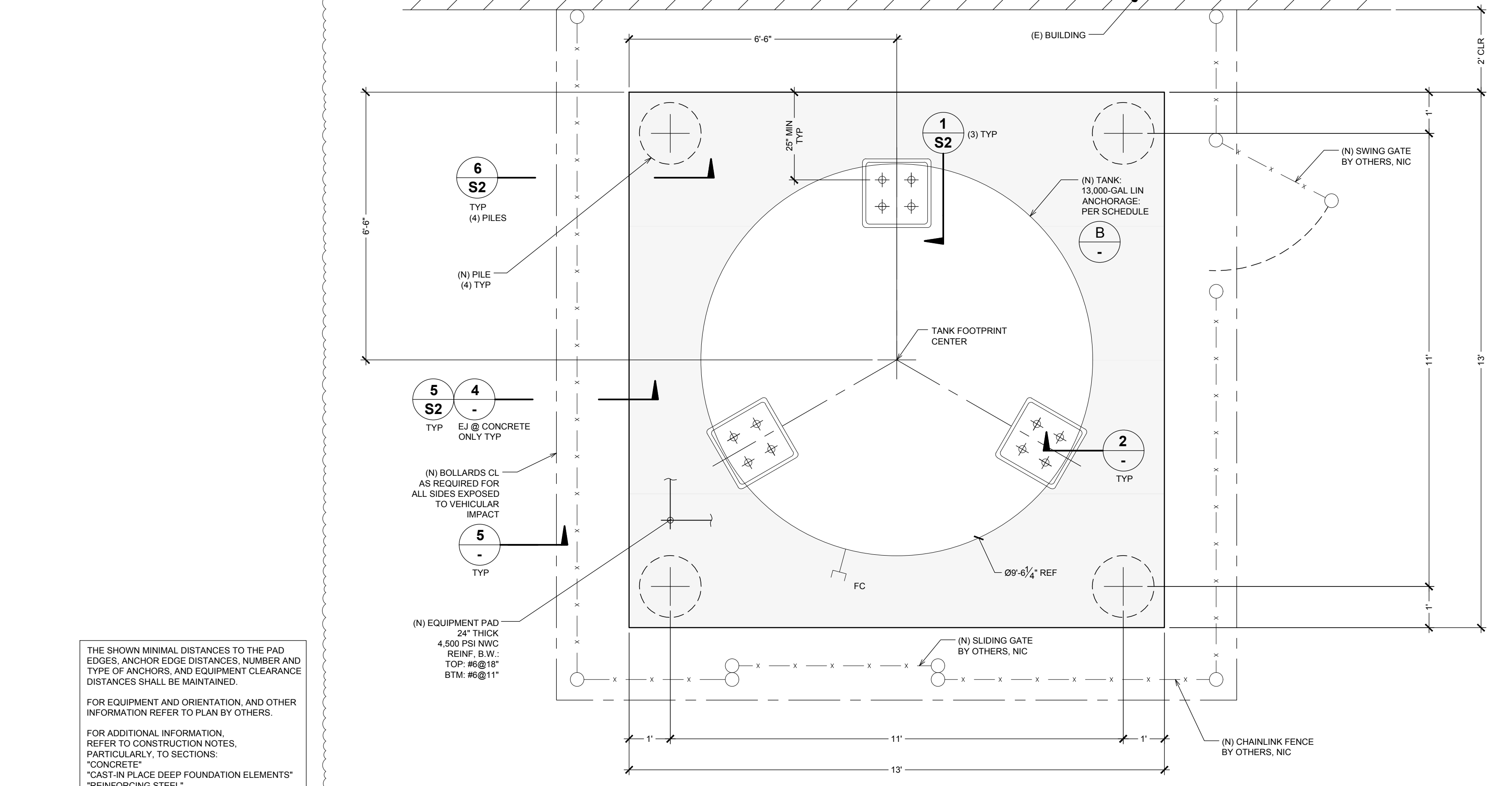
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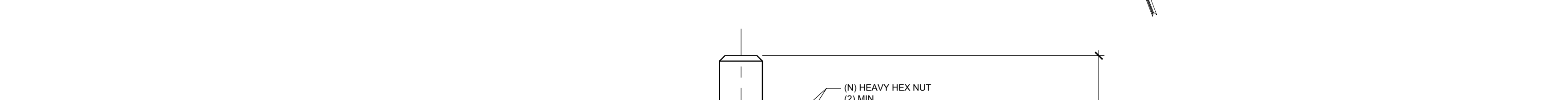
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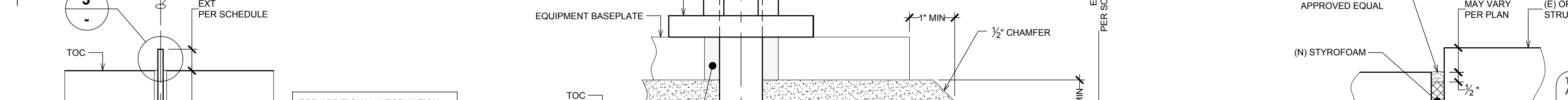
- AE. SPECIAL INSPECTION OF THE PILES IS REQUIRED. REFER TO SPECIAL INSPECTION SCHEDULE.



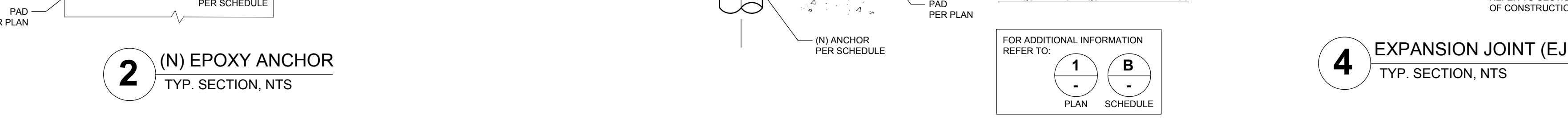
**1 (N) PAD AND (N) TANK LAYOUT**  
PLAN, SCALE: 1" = 2'-0"



**2 (N) EPOXY ANCHOR**  
TYP. SECTION, NTS



**3 (N) ANCHORAGE**  
TYP. SECTION, NTS



**4 EXPANSION JOINT (EJ)**  
TYP. SECTION, NTS

DESIGN PARAMETER	WEIGHT		HEIGHT FT	SEISMIC DESIGN DATA			
	EMPTY KIPS	FULL OR ICED KIPS		I	R	SEISMIC COEFF.	BASE SHEAR KIPS
(N) TANK: 13,000-GAL LIN	45.70	136.40	42.16	1.00	2	0.101	13.78

**A SEISMIC DESIGN PARAMETER SCHEDULE**

ANCHORAGE	EPOXY: HILTI HIT-HY 200 PER ICC ESR-3187				WASHERS (1) EACH ANCHOR			SPECIAL INSPECTION REQUIRED
	Ø IN	EMB IN	EXT IN	# PER LEG	SIZE IN	THK IN	HOLE Ø IN	
(N) TANK: 13,000-GAL LIN	1	8	6	36	4	12	3x3 3/8 MIN	A36

**B ANCHORAGE SCHEDULE**

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	REFERENCED STANDARD	REPORT
<b>CONCRETE</b>				
1. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	-	X	ACI 318: 17.8.2	UPON INSPECTION
2. INSPECTION OF CONCRETE CONSTRUCTION	-	-	IBC: 1705.3 EXCEPTION 2.3	-
<b>CAST-IN PLACE DEEP FOUNDATION ELEMENTS</b>				
1. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS OF EACH ELEMENT.	X	-	-	-
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS; CONFIRM ELEMENT DIAMETERS, BELL DIAMETER (IF APPLICABLE), LENGTHS, EMBEDMENT INTO BEDROCK (IF APPLICABLE) AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE OR GROUT VOLUMES.	-	X	-	UPON INSPECTION
3. FOR CONCRETE ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTION IN ACCORDING TO SECTION 1705.3 OF 2018 IBC.	-	-	-	-

**C SPECIAL INSPECTION SCHEDULE**

CLIENT

STEVEN CHARLES

2780 TOWER RD,  
AURORA, CO 80011

**INSTALLATION OF A 13,000-GAL LIN TANK**

LOCATION  
Steven Charles  
2780 Tower Rd, Aurora, CO 80011

THESE PLANS WERE DEVELOPED RESTRICTIVELY FOR USE ON THE STRUCTURES AND BY PERSONS/COMPANY AS SPECIFIED IN THE TITLE BLOCK. ANY OTHER USE (INCLUDING, BUT NOT LIMITED TO, DISSEMINATION AND COPYING) OF THESE PLANS OR ANY USE OF THE PLANS BY ANY PARTY OR PARTIES OTHER THAN THE ONES SPECIFIED IN THE TITLE BLOCK ARE STRICTLY PROHIBITED UNLESS UNDER A WRITTEN PERMISSION BY SGE.

**S. GORDIN STRUCTURAL DESIGN & ENGINEERING SERVICES (SGE) INC.**  
2081 Business Cr. Dr., Ste. 105, Inver, CA 95022  
TEL: (949) 552-5244 FAX: (949) 552-5243

Professional Engineer  
44753  
November 23, 2021  
SGE JOB No. 521.043.380  
STEVEN CHARLES

**REVISIONS**  
ATTENTION: REFER TO LIST OF REVISIONS ON THIS SHEET. THE RELEASE OF THIS DRAWING WITH THE LATEST REVISION NUMBER AND DATE SUPERSEDES AND VOIDS ALL DOCUMENTS PREVIOUSLY ISSUED BY SGE FOR THE SUBJECT SITE.

DATE: September 3, 2021  
DESIGNED BY: JT  
APPROVED BY: VSG  
TOTAL STRUCTURAL SHEETS - 2

**STRUCTURAL PLAN, NOTES & DETAILS**

**S-1**

CLIENT

STEVEN CHARLES

2780 TOWER RD,  
AURORA, CO 80011

# INSTALLATION OF A 13,000-GAL LIN TANK

LOCATION  
**Steven Charles**  
2780 Tower Rd, Aurora, CO 80011

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TEL: (949) 552-5244 FAX: (949) 552-5243



November 23, 2021

SGE JOB No. 521.043.380

STEVEN CHARLES

### REVISIONS

ATTENTION:  
REFER TO LIST OF REVISIONS ON THIS SHEET. THE RELEASE OF THIS DRAWING WITH THE LATEST REVISION NUMBER AND DATE SUPERSEDES AND VOIDS ALL DOCUMENTS PREVIOUSLY ISSUED BY SGE FOR THE SUBJECT SITE.

REV	DATE	DESCRIPTION	BY	APP'D
1	11/23/2021	NO CHANGES TO SHEET	JT	VSG

DATE: September 3, 2021

DESIGNED BY JT

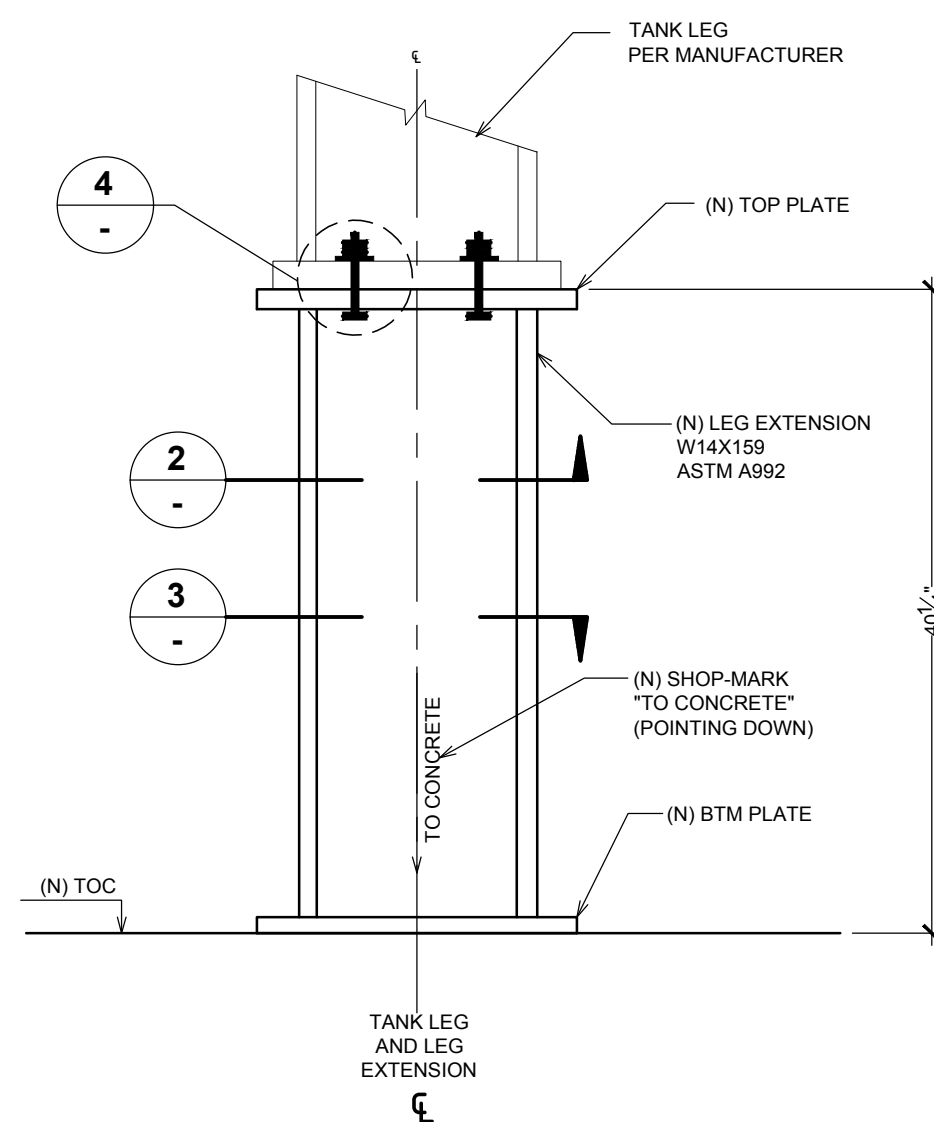
APPROVED BY VSG

TOTAL STRUCTURAL SHEETS - 2

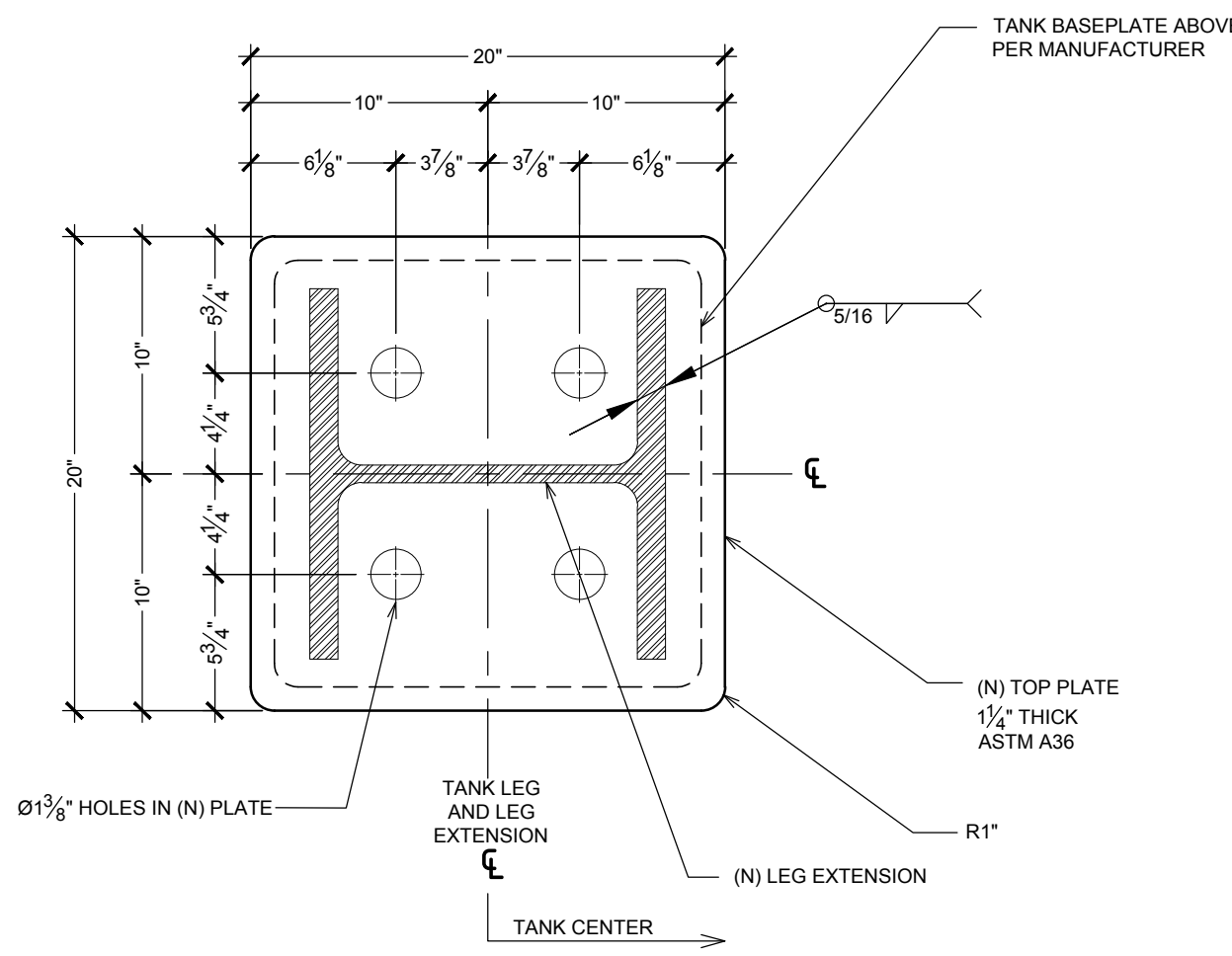
## STRUCTURAL DETAILS

22

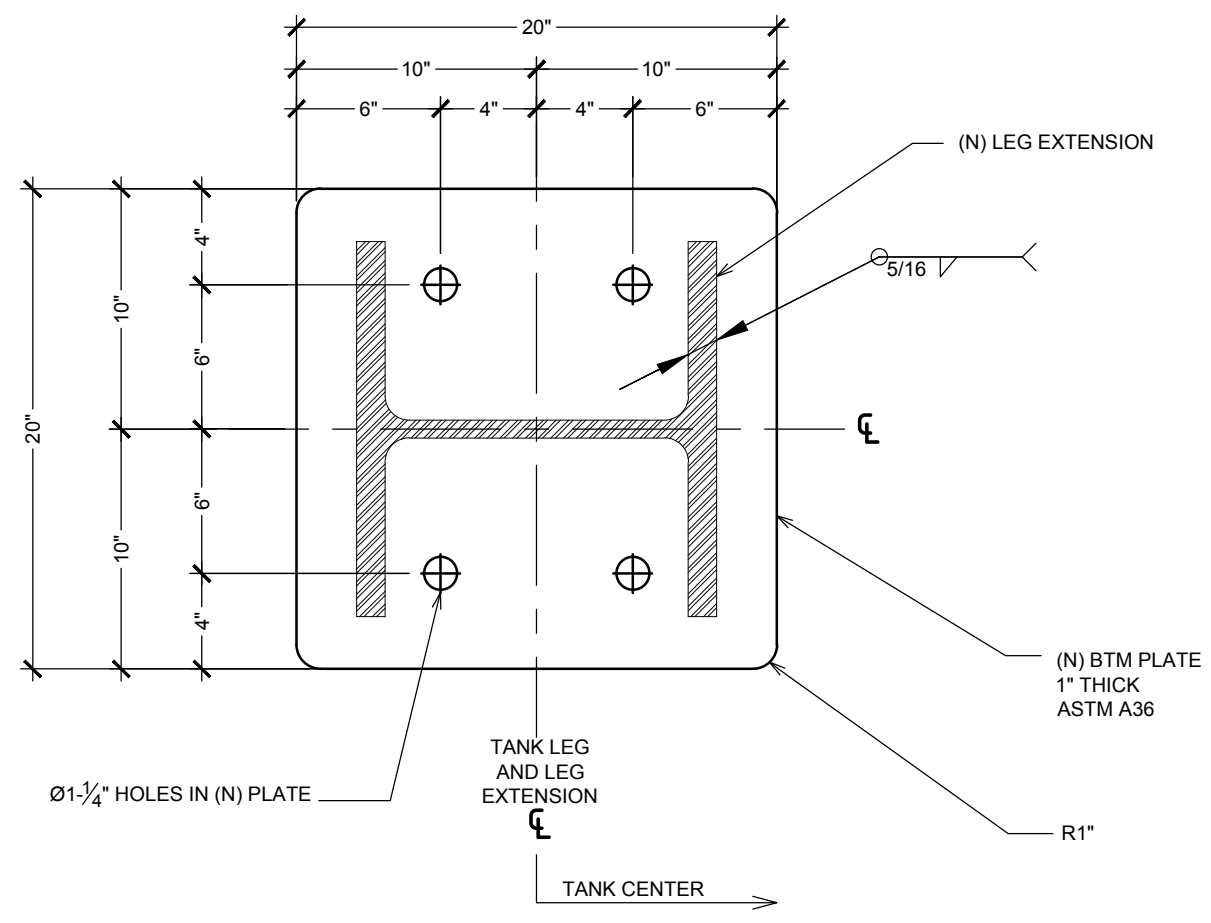
S-2



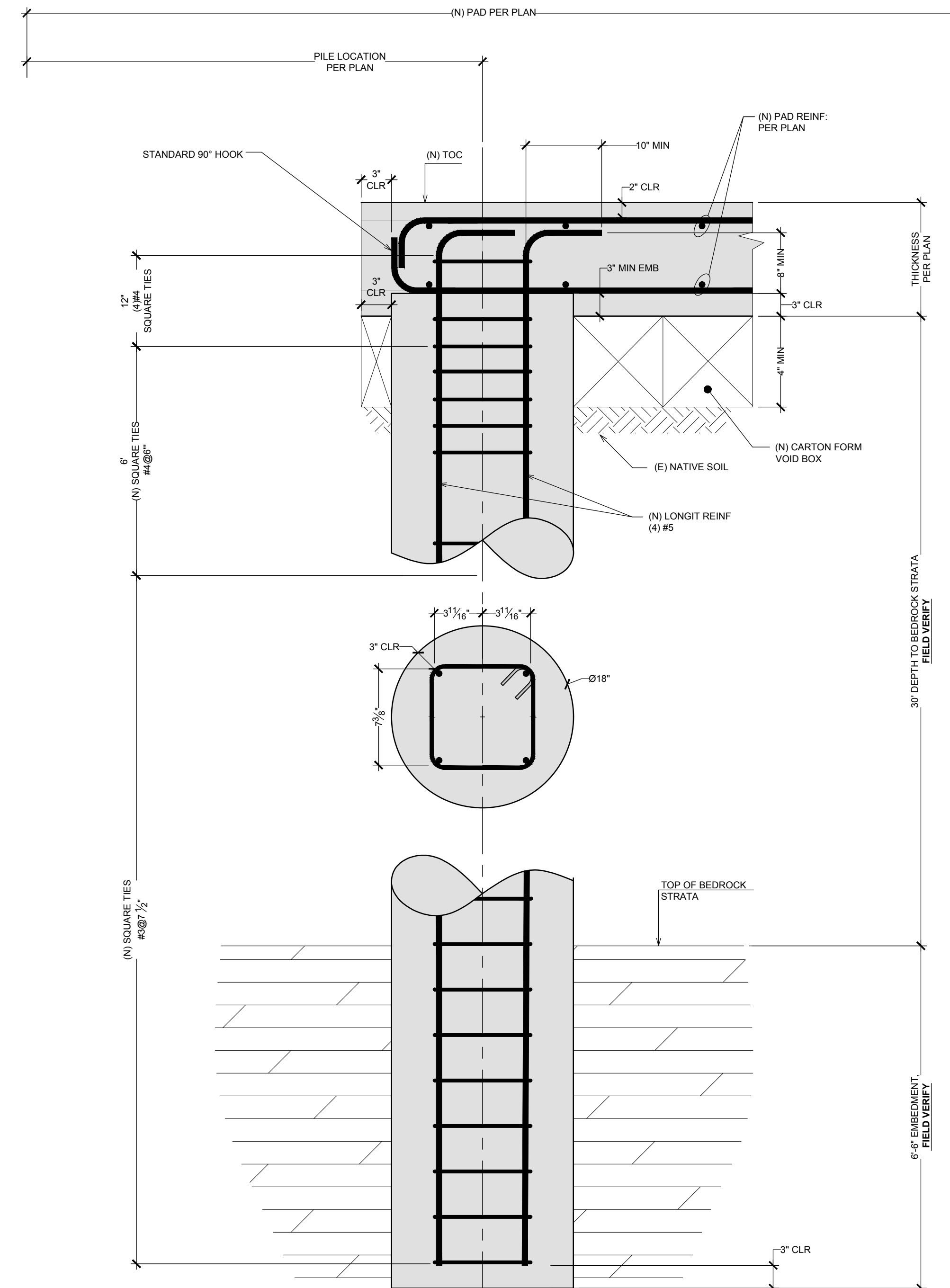
**1** (N) TANK LEG EXTENSION SECTION, SCALE: 1"=1'



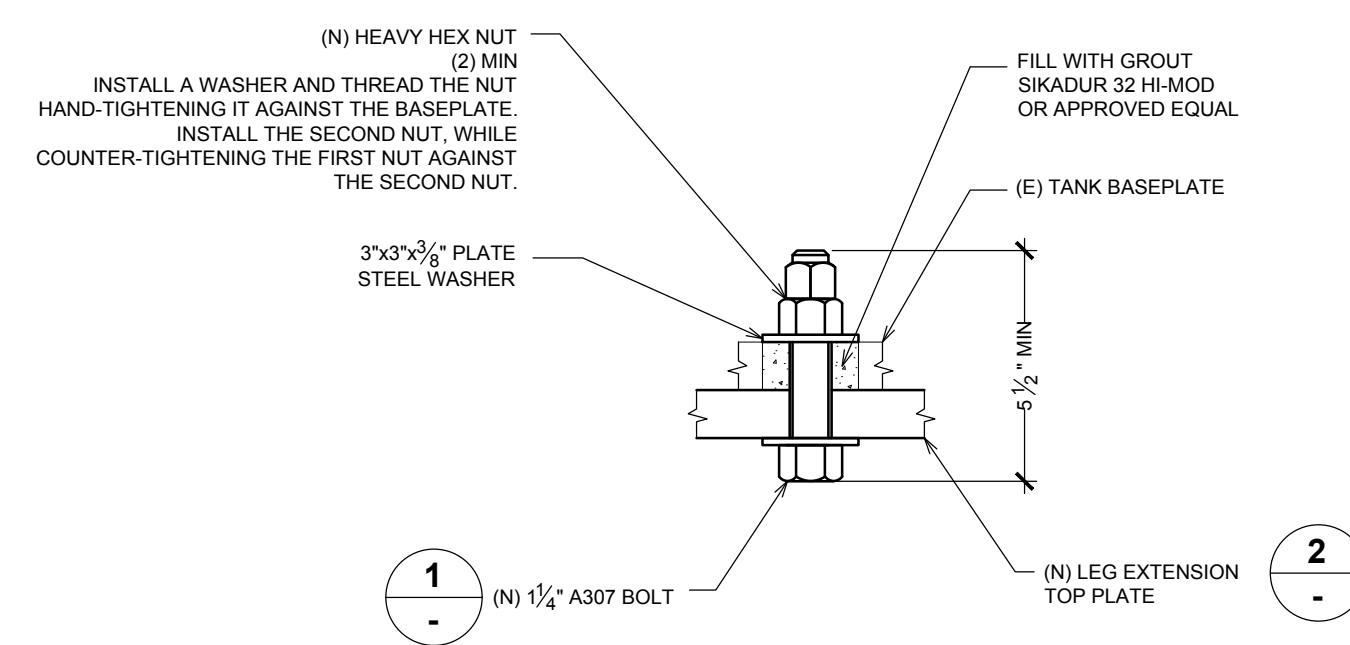
**2** (N) TANK LEG EXTENSION, TOP PLATE TYP. SECTION, NTS



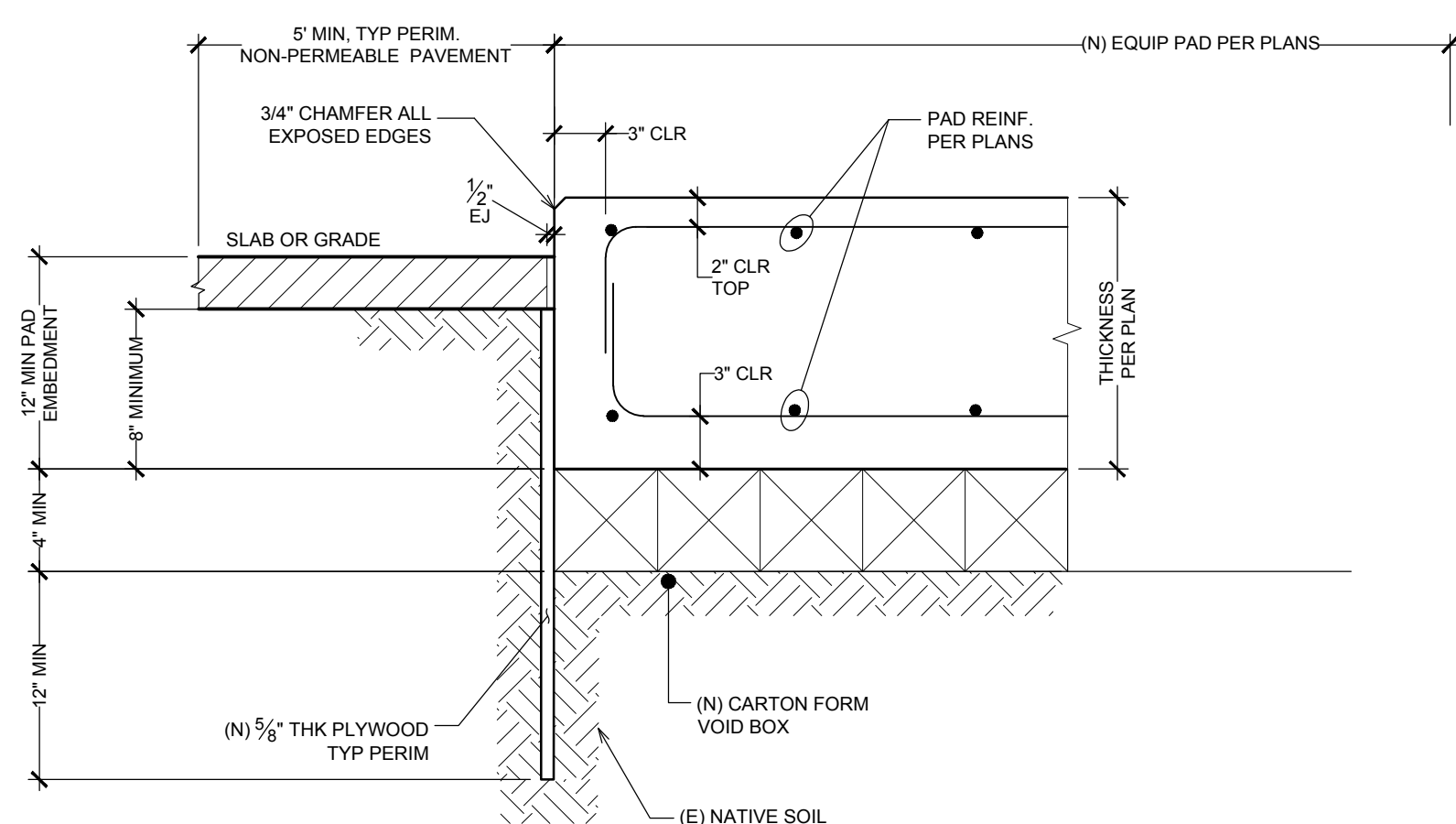
**3** (N) TANK LEG EXTENSION, BOTTOM PLATE TYP. SECTION, NTS



**6** (N) PILE TYP. SECTION, NTS



**4** (N) ANCHORAGE TYP. SECTION, NTS



**5** (N) PAD TYP. SECTION, NTS

SPECIAL NOTE TO OWNER

- CONTROL STATION AT FREEZER UNIT SHALL BE ATTENDED DURING OPERATION BY TRAINED PERSONNEL THAT CAN MONITOR ALARMS OR SUPERVISORY SIGNALS AND CAN TRIGGER EMERGENCY RESPONSES.

TESTING

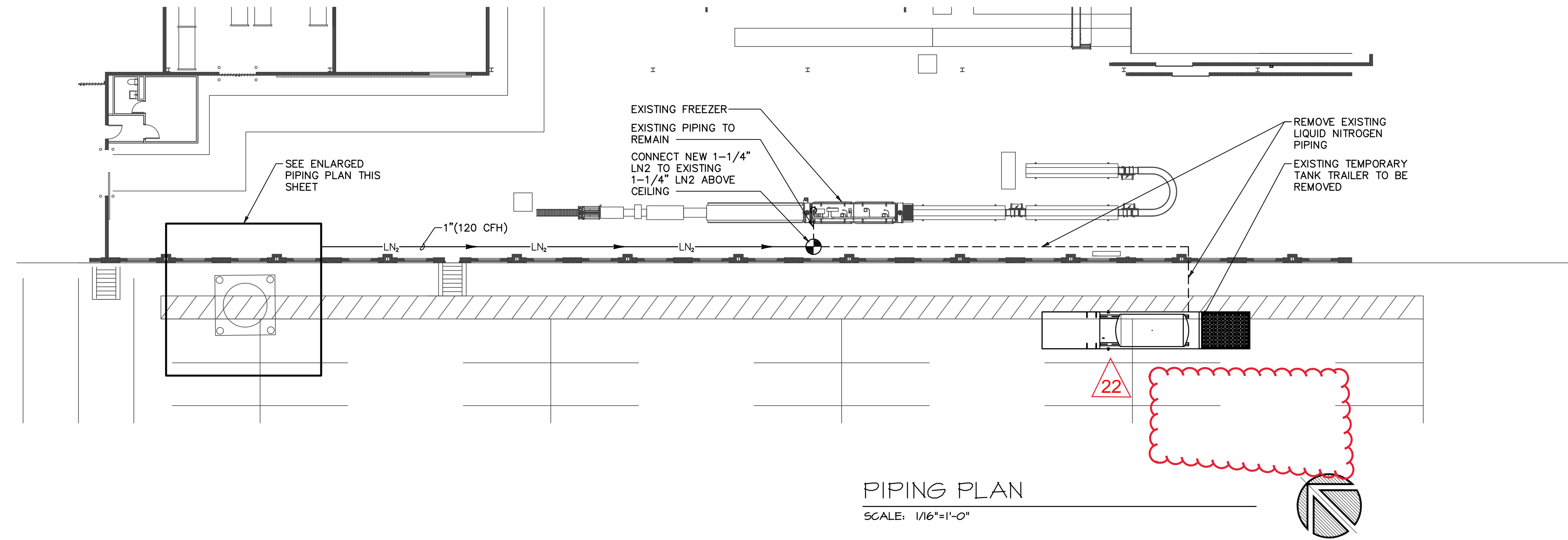
- TESTING SHALL BE PERFORMED BY A LICENSED MECHANICAL CONTRACTOR.
- IF THE SYSTEM CAN BE ISOLATED AT ALL ENDS, INCLUDING USE POINT DROPS, CRYOVENTS, BRANCHES, AND SUPPLY INLET, THEN PIPE CAN BE PRESSURE TESTED:
  - ISOLATE PIPE AT CONNECTION TO FREEZER AND CONNECTION TO LIQUID NITROGEN TANK.
  - ATTACH A CERTIFIED GAUGE TO THE PIPE WHERE APPROPRIATE FOR VIEWING USING A TEE.
  - INTRODUCE PRESSURE WITH NITROGEN GAS FROM A CYLINDER CONNECTED TO THE TEE.
  - INTRODUCE NITROGEN GAS TO THE LINES AT TEST PRESSURE OF 110% NORMAL WORKING PRESSURE.
  - DO NOT PRESSURE TEST WITHIN 10% OF MAXIMUM WORKING PRESSURE, AS THIS MAY BEGIN TO LIFT FACTORY SET SAFETY RELIEF DEVICES.
  - TEST SHALL BE WITNESSED BY AN APPROVED THIRD-PARTY TESTING FIRM (OR CITY INSPECTOR) PER CGA P-18 8.1.5 / CMC 1406.2.2.
  - LEAVE PRESSURE ON FOR NO LESS THAN (30) MINUTES, WHILE CHECKING FOR PRESSURE DROPS.

COMPRESSED GAS LEGEND

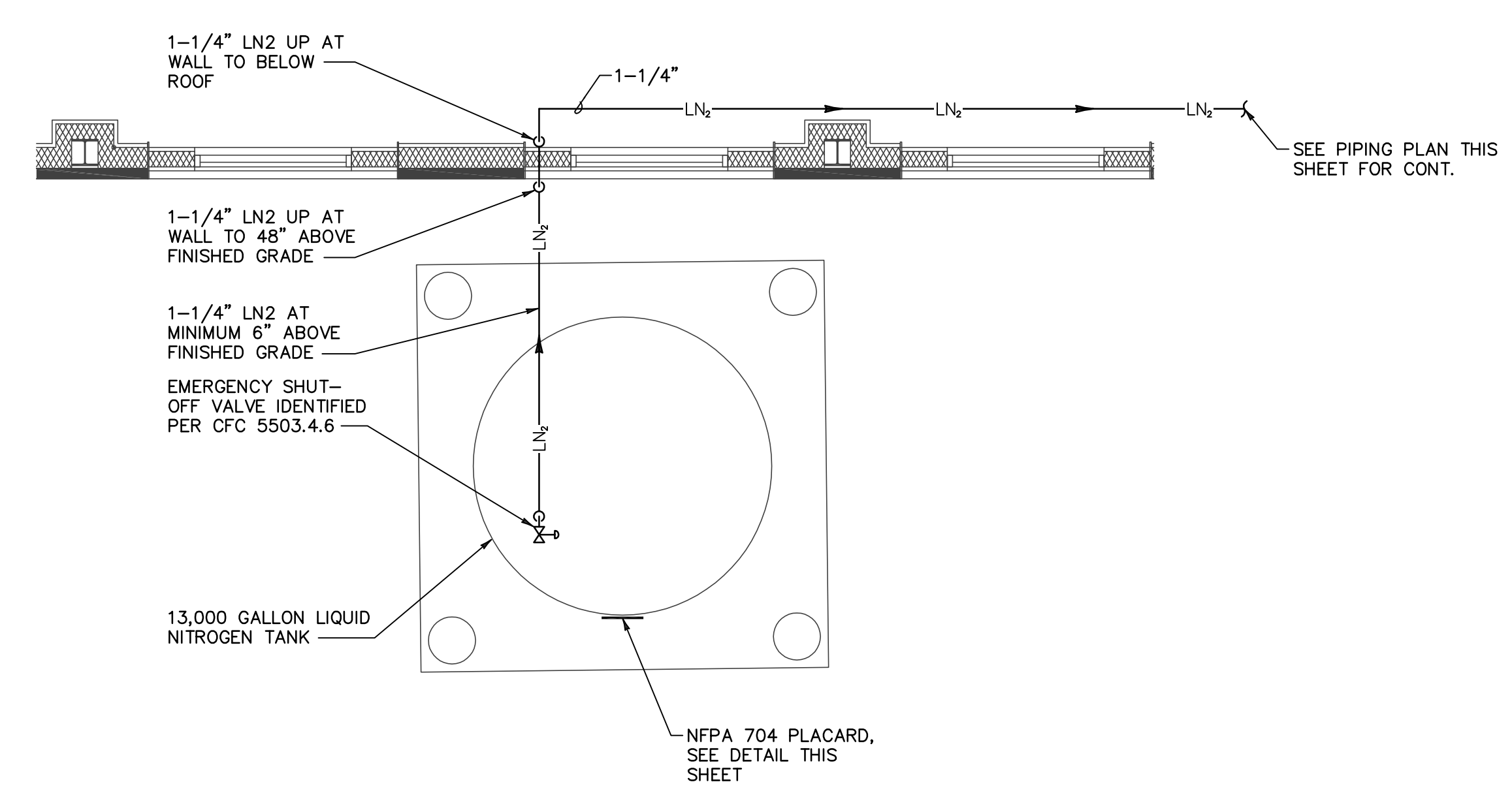
SYMBOL	ABBREVIATION	DESCRIPTION
LN <sub>2</sub>	LN2	LIQUID NITROGEN LINE
SOV	SOV	SHUT-OFF VALVE
CSV	CSV	CRYOGENIC SOLENOID VALVE
CV	CV	CRYOGENIC VALVE
---	---	CAP OR PLUG
○	---	RISE
○	---	DROP
○	---	BRANCH
RV	RV	RELIEF VALVE
POC	POC	POINT OF CONNECTION
BEL	BEL	BELOW
CLG	CLG	CEILING
DN	DN	DOWN
FLR	FLR	FLOOR

GENERAL NOTES

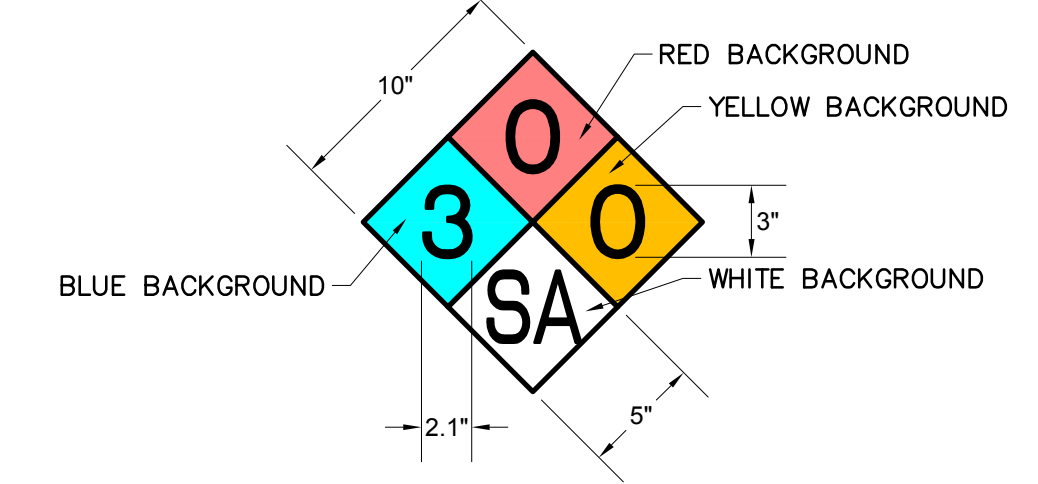
- CONTRACTOR SHALL IDENTIFY GAS PIPING AND TUBING TO INDICATE MATERIAL CONVEYED IN ACCORDANCE WITH NATIONALLY RECOGNIZED STANDARDS.
- EMERGENCY SHUTOFF VALVES SHALL BE IDENTIFIED AND THE LOCATION SHALL BE CLEARLY VISIBLE AND INDICATED BY MEANS OF A SIGN PER 2015 COLORADO FIRE CODE/INTERNATIONAL FIRE CODE SECTION 5503.4.6.
- CONTRACTOR SHALL IDENTIFY GAS STORAGE AND USE AREAS WITH SIGNAGE PER 2015 COLORADO FIRE CODE/INTERNATIONAL FIRE CODE SECTION 5503.4 INCLUDING NFPA 704 WARNING PLACARD VISIBLE FROM APPROACH, IDENTIFICATION OF CONTENTS, IDENTIFICATION OF CONTAINERS AND IDENTIFICATION OF CONTAINER CONNECTIONS, PIPING SYSTEMS & EMERGENCY SHUT-OFF VALVES.
- INSTALLATION OF COMPRESSED GAS / CRYOGENIC FLUID TANK AND SYSTEMS SHALL CONFORM TO THE 2015 COLORADO BUILDING CODE, 2015 COLORADO PLUMBING CODE, 2013 NFPA-55 AND ANSI/CGA P-18.
- COMPRESSED GAS / CRYOGENIC FLUID TANKS SHALL BE ASME LISTED PRESSURE VESSELS IN ACCORDANCE WITH CGA P-18.
- CRYOGENIC STORAGE TANK SHALL BE SECURED AGAINST UNAUTHORIZED ACCESS PER 2015 CFC SECTION 5503.5.
- CRYOGENIC TANK PRESSURE RELIEF VALVES SHALL BE OF THE DIRECT LIFT TYPE, 1/2" MPT INLET x 1/2" FPT OUTLET AND HAVE A PRESSURE SETTING OF 250 PSIG.
- BULK LIQUID NITROGEN TANK USE AREAS SHALL BE MECHANICALLY VENTILATED AT MINIMUM RATE OF ONE CFM PER SQUARE FOOT OF AREA.
- PROVIDE VEHICULAR PROTECTION PER NFPA 55, SECTION 4.11.
- A SHUT-OFF VALVE(S) SHALL BE PROVIDED, AND CLEARLY LABELED FOR PRODUCT SUPPLY PIPING AT OR NEAR TANKS. VALVES SHALL BE CLEARLY MARKED AND BE AT A READILY ACCESSIBLE HEIGHT / LOCATION (COLORADO FIRE CODE 5505.3.2 / COLORADO FIRE CODE 5503.4.6)
- PIPING MATERIAL SHALL BE VACUUM JACKETED, BENDABLE PIPE: "TECHNIGUARD B-SERIES."
- VACUUM JACKETED LIQUID NITROGEN PIPE AND FITTINGS SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI/ASME B31.3. FITTINGS, VALVES AND COUPLINGS SHALL BE OF THE BAYONET TYPE.
- VACUUM JACKETED LIQUID NITROGEN PIPE SHALL BE SUPPORTED AT ALL COUPLINGS, CHANGES OF DIRECTIONS AND EVERY 6' OF PIPING. PIPE SUPPORTS SHALL SUPPORT THE PIPE AND ALLOW FOR MOVEMENT OF PIPE DUE TO THERMAL EXPANSION.



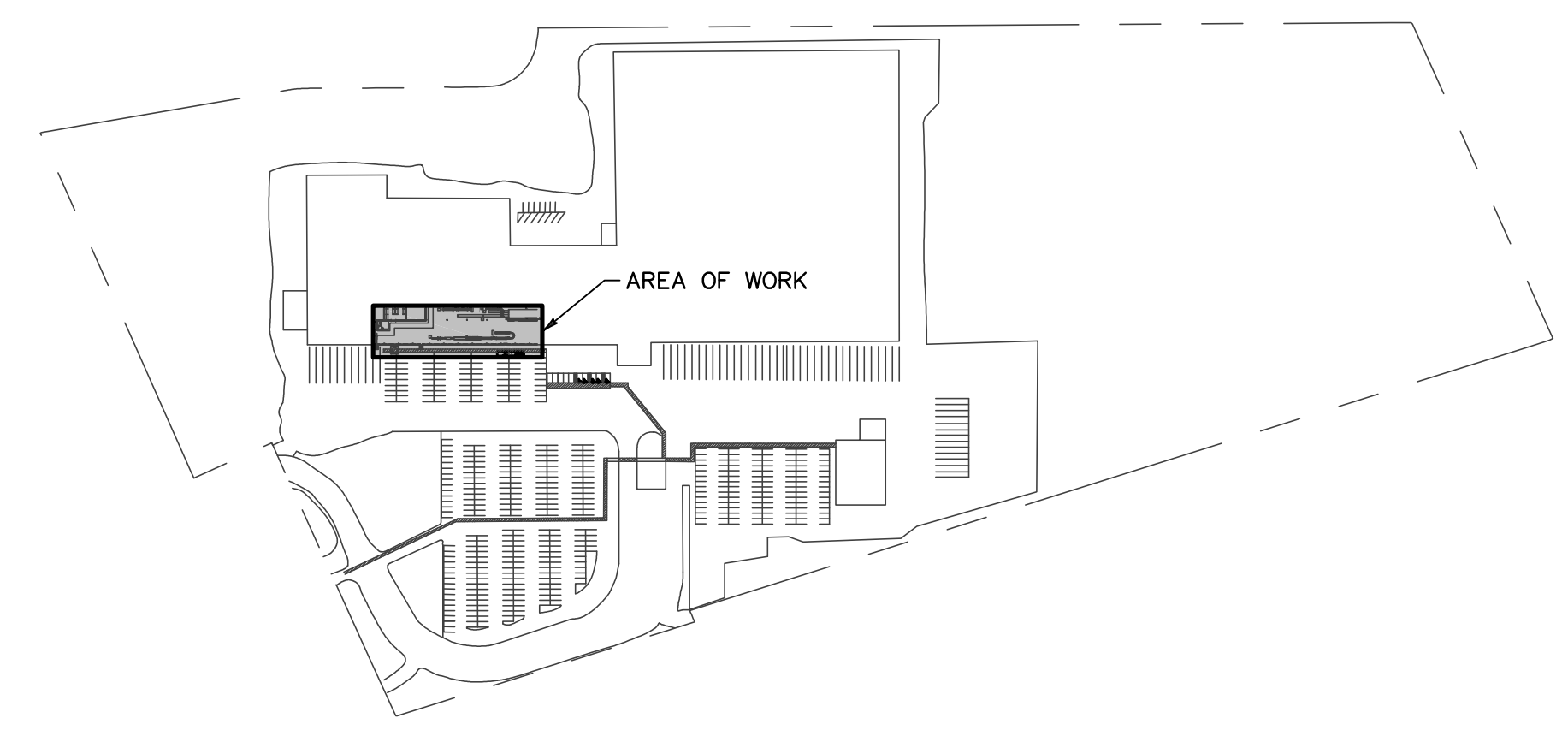
PIPING PLAN  
SCALE: 1/16"=1'-0"



ENLARGED PIPING PLAN  
SCALE: 1/4"=1'-0"



NFPA 704 PLACARD DETAIL  
SCALE: 1/8" = 1"



KEY PLAN  
SCALE: NONE

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JCC Design, Inc.  
Mechanical Consulting  
270 Elkberry Street  
La Verne, CA 91750  
Telephone: (909) 394-5838  
Facsimile: (909) 394-0203



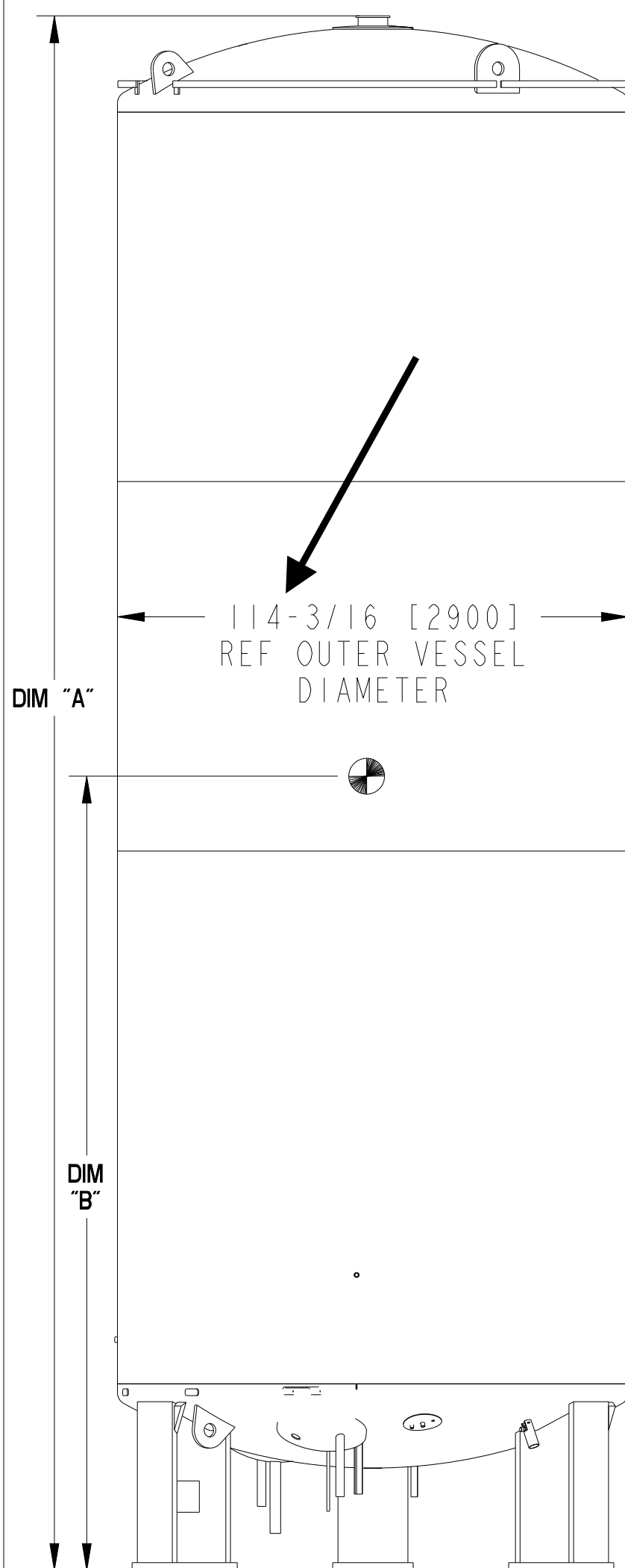
September 1, 2021  
SGE JOB No. 521.043.380  
STEVENCHARLES-PLBG

REV	DATE	DESCRIPTION	BY

DATE: August 19, 2021  
DESIGNED BY: JJ  
APPROVED BY: TH

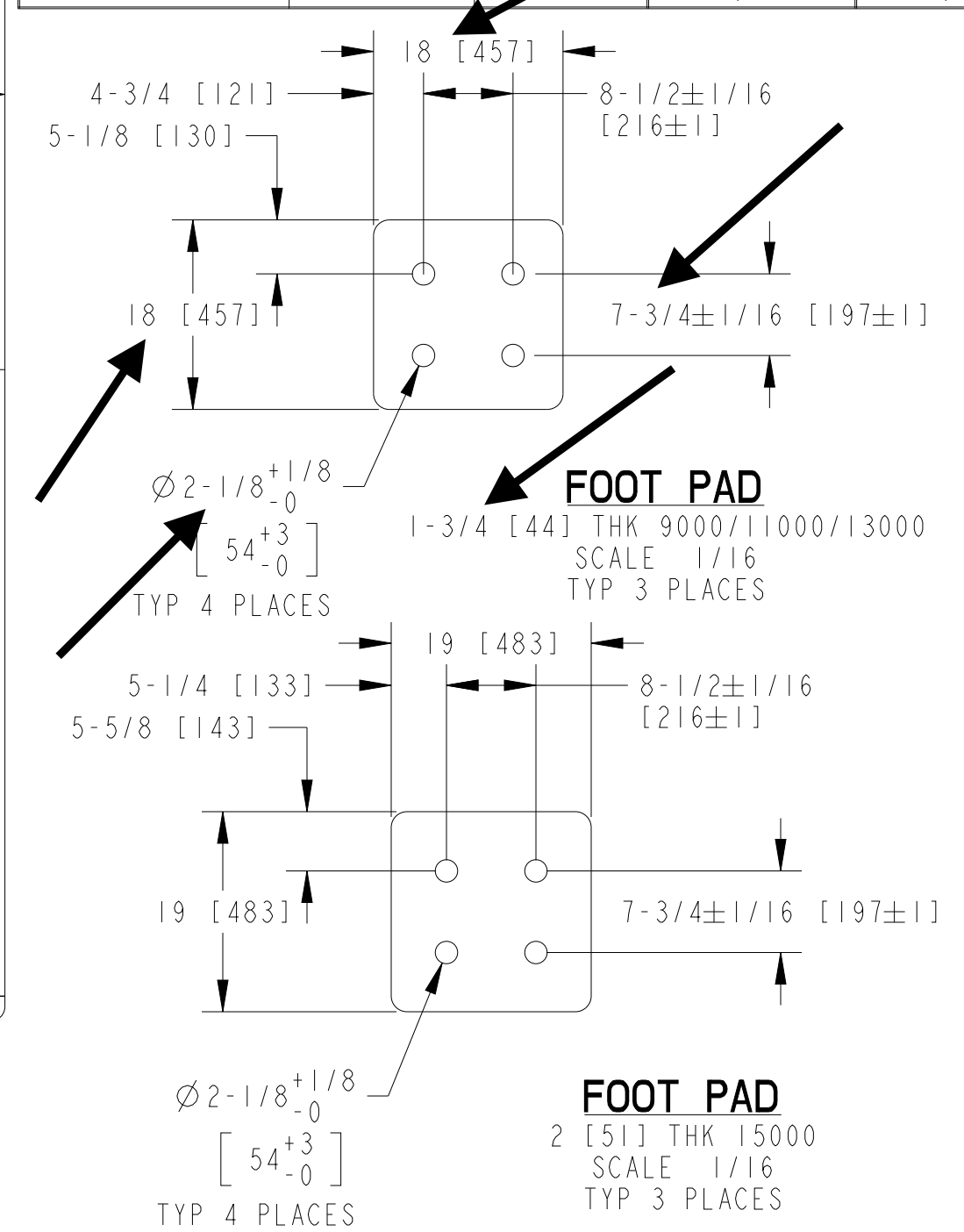
**WEIGHTS AND SHIPPING DATA**

MODEL:		VS-9000				VS-11000				VS-13000				VS-15000				
MAWP	PSIG	175	250	400	500	175	250	400	500	175	250	400	500	175	250	400	500	
	barg	12.07	17.24	27.58	34.47	12.07	17.24	27.58	34.47	12.07	17.24	27.58	34.47	12.07	17.24	27.58	34.47	
WEIGHT EMPTY	POUNDS	29,400	32,300	38,900	45,100	35,200	38,700	46,700	52,400	41,700	45,700	55,100	59,700	48,000	52,600	63,400	70,400	
	KILOGRAMS	13,364	14,682	17,645	20,457	16,000	17,591	21,183	23,768	18,955	20,773	24,993	27,079	21,818	23,909	28,758	31,933	
WEIGHT FULL	OXYGEN	POUNDS	117,400	120,300	127,000	133,200	142,700	146,100	154,100	159,800	169,800	173,900	183,200	187,800	195,800	200,400	211,100	215,600
		KILOGRAMS	53,364	54,682	57,606	60,419	64,864	66,409	69,899	72,484	77,182	79,045	83,098	85,185	89,000	91,091	95,753	95,937
	NITROGEN	POUNDS	91,700	94,600	101,300	107,500	111,300	114,800	122,800	158,500	132,400	136,400	145,800	150,400	152,700	157,200	168,000	173,200
		KILOGRAMS	41,682	43,000	45,949	48,761	50,591	52,182	55,701	58,287	60,182	62,000	66,134	68,220	69,409	71,455	76,204	770,432
	ARGON	POUNDS	136,800	139,800	146,400	152,600	166,400	169,900	177,900	183,500	198,100	202,100	211,500	216,100	228,400	233,000	243,700	247,700
		KILOGRAMS	62,182	63,545	66,406	69,218	75,636	77,227	80,694	83,234	90,045	91,864	95,935	98,021	103,818	105,909	110,540	1,101,824
SHIPPING DIMENSIONS	INCHES (L * W * H)	348 x 114.2 x 114.2				407 x 114.2 x 114.2				466 x 114.2 x 114.2				525 x 114.2 x 114.2				
	MM'S (L * W * H)	8,840 x 2,901 x 2,901				10,338 x 2,901 x 2,901				11,837 x 2,901 x 2,901				13,335 x 2,901 x 2,901				



MODEL:		VS-9000	VS-11000	VS-13000	VS-15000	
CAPACITY	GROSS GALLONS	9,360	11,410	13,470	15,520	
	(COLD) LITERS	35,431	43,192	50,989	58,750	
	NET GALLONS	8,990	10,960	13,060	15,060	
	(COLD) LITERS	34,031	41,488	49,437	57,008	
GASES EQUIVALENT AT 1 ATM AND 70°F / 1 ATM AND 0°C	OXYGEN	SCF	1,034,800	1,261,500	1,503,300	1,733,500
		NM3	29,302	35,722	42,569	49,087
	NITROGEN	SCF	837,100	1,020,500	1,216,100	1,402,300
		NM3	23,704	28,897	34,436	39,709
	ARGON	SCF	1,011,400	1,233,000	1,469,300	1,694,300
		NM3	28,640	34,915	41,606	47,977

INNER VESSEL DESIGN DATA					
Model:	VS-9000 THRU 15000				
MAWP:	PSIG	175	250	400	500
	barg	12.07	17.24	27.58	34.47
DESIGN PRESSURE	PSIG	213.5	288.5	438.5	579.5
	barg	14.72	19.89	30.23	39.95
CODE COMPLIANCE:	ASME SECTION VIII APPENDIX 44				
DESIGN TEMPERATURE	°F	-320° TO 120°			
	°C	-196° TO 49°			
MATERIAL OF CONSTRUCTION:	SA240 304 STAINLESS STEEL				
OUTER VESSEL DESIGN DATA					
CODE COMPLIANCE:	FULL VACUUM PER CGA-341				
DESIGN TEMPERATURE	°F	-20° TO 300°			
	°C	-29° TO 149°			
MATERIAL OF CONSTRUCTION:	A36 CARBON STEEL				
INSULATION TYPE:	VACUUM AND MULTILAYER INSULATION				
EVACUATION CONNECTION:	3-1/2" PUMPOUT PORT				
VACUUM GAUGE CONNECTION:	HASTINGS DVR6				
BUILDING CODE:	DESIGNED FOR CURRENT BUILDING CODE SEE CHART POLICY #NP-180				



TANK HEIGHT	
MODEL	DIM "A" REF
VS-9000	348 [8840]
VS-11000	407 [10338]
VS-13000	466 [11837]
VS-15000	525 [13335]

CG HEIGHT	
MODEL	DIM "B" REF
VS-9000	192 [4866]
VS-11000	221 [5615]
VS-13000	251 [6364]
VS-15000	280 [7117]

THIRD ANGLE PROJECTION

**Material Required**  
SEE B.O.M. UNLESS OTHERWISE STATED

VISIT US AT [CHARTINDUSTRIES.COM](http://CHARTINDUSTRIES.COM)  
OEM PARTS AT [CHARTPARTS.COM](http://CHARTPARTS.COM)

APPROVED	DATE
DRAWN BY JJC	10/07/08
CHK'D BY MMK	10/08/08
PROJ. ENGR. DML	10/22/08
QUAL. CONT. JK	10/13/08
MFG. ENGR. RC	10/08/08
MFG. SERV. KJR	10/15/08

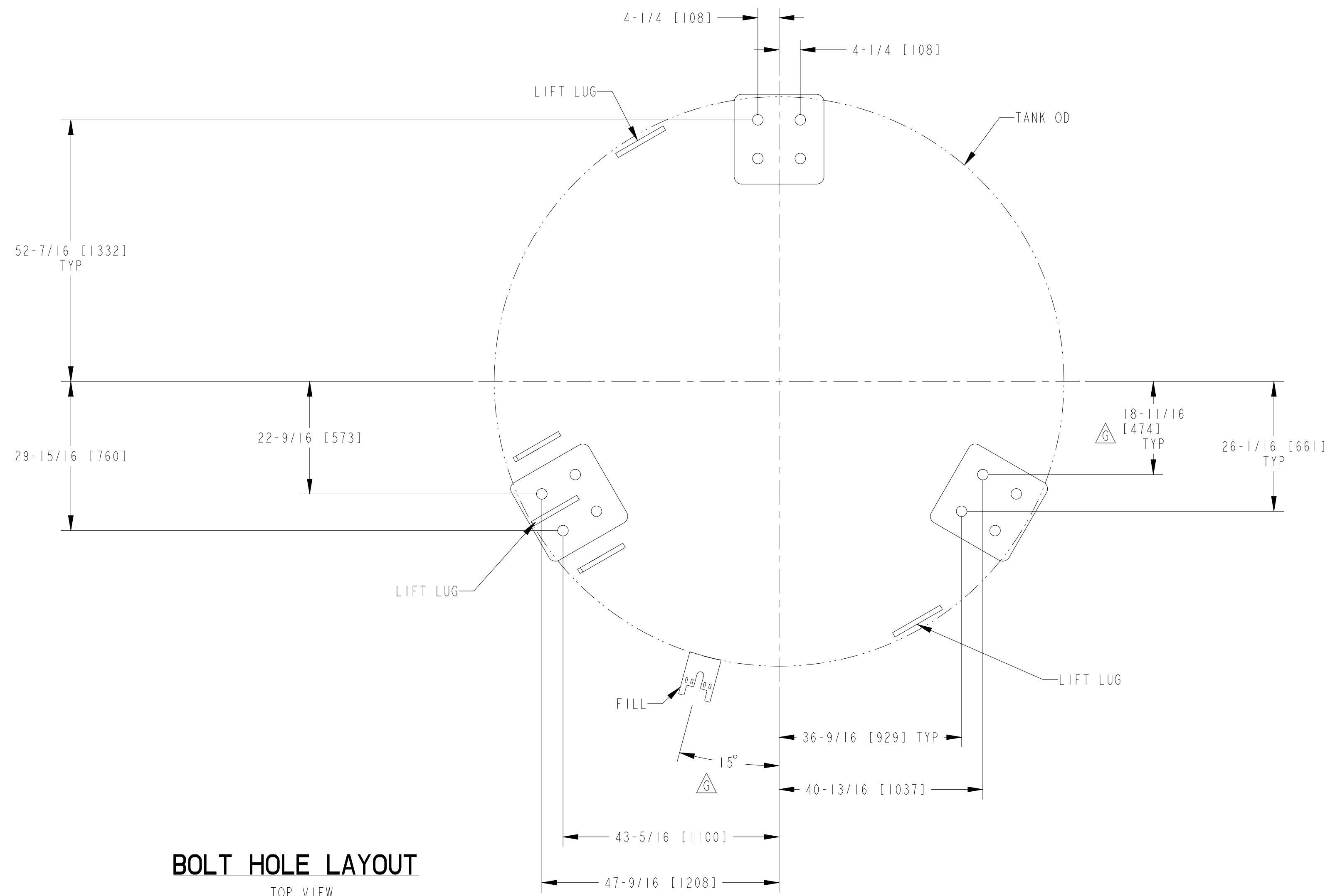
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.  
TOLERANCES:  
FRACTIONS ± 1/8  
ANGLES ± 1°  
2 PLACE DECIMALS ± NA  
3 PLACE DECIMALS ± NA

G	21460	ADD DIM PG 2	JSG	1/16/18
F	15874	ADDED DIM "B"	KRV	12/19/14
E	-	ADDED 500PSI INFO	JBR	11/24/14
D	14219	UPDATED WEIGHTS	JJC	10/20/09
C	14121	CHG FOOT PAD DETAILS	JJC	6/12/09
B	14101	1-3/4 PAD WAS 1-5/8	MMK	5/29/09
A	13909	CHG THK 15K FOOT PAD	JJC	1/09/09
REV	ECR NO	DESCRIPTION	BY	DATE


**CHART** Distribution & Storage, New Prague Operations  
Innovation. Experience. Performance.®

TITLE O&D VS-9000 THRU 15000 SS COLD  
STRETCH 175/250/400/500PSI

DRAWING NUMBER **C-14190888** Rev G  
SCALE 1/5"=1" PART NUMBER 14190888 SHEET 1 OF 2



**BOLT HOLE LAYOUT**  
TOP VIEW  
SCALE NA

VISIT US AT <a href="http://CHARTINDUSTRIES.COM">CHARTINDUSTRIES.COM</a>		APPROVED	DATE	 Distribution & Storage, New Prague Operations Innovation. Experience. Performance.®
OEM PARTS AT <a href="http://CHARTPARTS.COM">CHARTPARTS.COM</a>		DRAWN BY JJC	10/07/08	
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		FRACTIONS ± 1/8		DRAWING NUMBER <b>C-14190888</b>
		ANGLES ± 1°		SCALE 1/5"=1"
		2 PLACE DECIMALS ± NA		SHEET 2 OF 2
		3 PLACE DECIMALS ± NA		Rev <b>G</b>