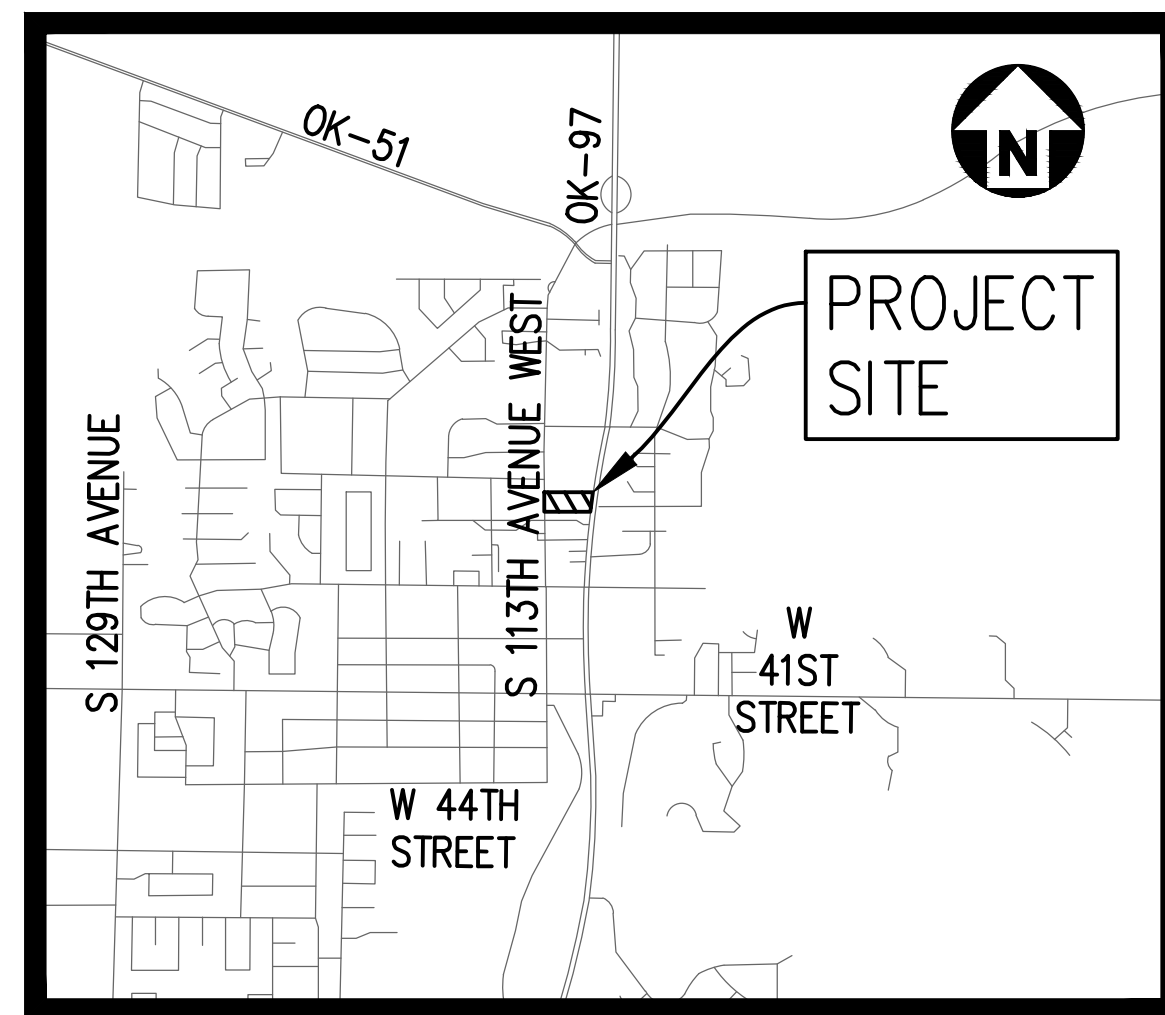


EXPRESS OIL - SAND SPRINGS, OK

3507 S 113TH AVENUE WEST
SAND SPRINGS
TULSA COUNTY, OKLAHOMA
LOT 10, BLOCK D GARDEN HEIGHTS ADDITION
1.58 ACRES
ZONING: COMMERCIAL GENERAL DISTRICT

CONSTRUCTION PLANS PROJECT NUMBER: EXO25009 DATE: APRIL 2026



VICINITY MAP
N.T.S.

Sheet List Table

C0.00	COVER SHEET
V0.00	ALTA SURVEY
C0.01	GENERAL NOTES
C1.00	EXISTING CONDITIONS & DEMOLITION PLAN
C2.00	SITE PLAN
C3.00	GRADING PLAN
C3.01	RETAINING WALL PLAN
C3.02	OFF-SITE EXISTING DRAINAGE AREA MAP
C3.03	ON-SITE EXISTING DRAINAGE AREA MAP
C3.04	PROPOSED DRAINAGE AREA MAP
C3.05	STORM DRAIN PLAN
C3.06	STORM PROFILES
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C3.08	OUTLET DETAILS
C4.00	WATER & SEWER PLAN
C4.01	FRANCHISE UTILITY PLAN
C5.00	GARBAGE TRUCK TURN EXHIBIT
C6.00	EROSION CONTROL PLAN
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C6.02	EROSION CONTROL DETAILS
C7.00	PAVING, STRIPING & SIGNAGE PLAN
C8.00	STANDARD CONSTRUCTION DETAILS
C8.01	STANDARD CONSTRUCTION DETAILS
C8.02	STANDARD CONSTRUCTION DETAILS
C8.03	STANDARD CONSTRUCTION DETAILS
C8.04	ADS UNDERGROUND DETENTION DETAILS
L0.00	LANDSCAPE GENERAL NOTES
L5.00	OVERALL LANDSCAPE PLAN
L5.01	LANDSCAPE PLAN
L5.02	LANDSCAPE PLAN
L5.03	LANDSCAPE DETAILS

JIM SPOON
MAYOR

CODY WORRELL
WARD 1

MATT BARNETT
WARD 2

MIKE BURDGE
WARD 3

ERIK STUCKEY
VICE MAYOR/WARD 4

BEAU WILSON
WARD 5

BRIAN JACKSON
WARD 6

THE CONTRACTOR SHALL KEEP ON SITE A CURRENT SET OF THE APPROVED CONSTRUCTION WORKING DRAWINGS AT ALL TIMES. THE CONTRACTOR SHALL MARK (IN RED INK) ALL APPROVED CHANGES INCURRED FOLLOWING PUBLIC WORKS DEPARTMENT APPROVAL OF THE INITIAL DRAWINGS. THESE CHANGES MAY BE INITIATED FROM FIELD CONDITIONS OR CHANGES MADE BY THE DESIGN ENGINEER OR THE PUBLIC WORKS ENGINEER. EXCEPT FOR MINOR FIELD ADJUSTMENTS, ALL CHANGES SHALL BE REVIEWED AND AGREED TO BY THE DESIGN ENGINEER AND THE PUBLIC WORKS ENGINEER PRIOR TO FINAL APPROVAL OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT THE WORKING DRAWINGS TO THE ENGINEER OF RECORD (DESIGN ENGINEER) AFTER FINAL INSPECTION OF PROJECT TO SERVE AS A BASIS FOR DEVELOPMENT OF FINAL AS-BUILT RECORD DRAWINGS.



McAdams

The John R. McAdams Company, Inc.
4400 State Highway 121, Suite 800
Lewisville, Texas 75056

phone 972. 436. 9712
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TBPE: F-19762 TBPELS: F-10194440
OK ENGINEERING FIRM #: 3597
www.mcadamsco.com

CONTACT

BRITTANY YOUNGBLOOD
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PHONE: 501. 840. 0001

CLIENT

TYLER HENDON
1880 SOUTHPARK DRIVE
BIRMINGHAM, AL 35244
PHONE: 205.906.2006



PROJECT DIRECTORY

GEOTECHNICAL
ECS SOUTHWEST, LLC
318 SEABOARD LANE
FRANKLIN, TN 37067
PHONE: 615.885.4983

ENGINEER OF RECORD MCADAMS
RAY WATSON
621 HILLSBOROUGH STREET, SUITE 500
RALEIGH, NC 27603
PHONE: 919.418.4715

THIS DOCUMENT IS
RELEASED ON 06. 22. 2026
FOR THE PURPOSE OF
OBTAINING PRELIMINARY
BID NUMBERS, AND ARE NOT
APPROVED FOR PERMITTING
OR CONSTRUCTION.

UNDER THE AUTHORITY OF
DARREN ANDREWS
LICENSE #25761
IT IS NOT TO BE USED FOR
CONSTRUCTION PURPOSES.

FINAL SIGNED AND SEALED
PLANS SHALL BE ISSUED
PRIOR TO THE RELEASE FOR
CONSTRUCTION.

REVISIONS

NO.	DATE	REVISIONS
1	04.17.2026	1ST SUBMITTAL
2	05.05.2026	2ND SUBMITTAL
3	06.22.2026	3RD SUBMITTAL
4		
5		
6		

CONSTRUCTION PLANS FOR:

EXPRESS OIL - SAND SPRINGS, OK
SAND SPRINGS, OKLAHOMA 74063
PROJECT NUMBER: EXO25009



Commercial Real Estate
Due Diligence Management
3465 South Arlington Road
Suite E #183
Akron, Ohio 44312
330.294.1077
www.amnational.net

ALTA/NSPS Land Title Survey

for
EOC - SAND SPRINGS
SURVEYOR'S CERTIFICATION
EXPRESS OIL
Project # 20252961 - Site # 1

3507 S 113TH AVE. WEST
Sand Springs, OK 74063
County of Tulsa

To: EXPRESS OIL CHANGE, LLC, A DELAWARE LIMITED LIABILITY COMPANY; AMERICAN NATIONAL, LLC; FIDELITY NATIONAL TITLE INSURANCE COMPANY.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standards Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 5, 6(a), 6(b), 7(a), 7(b)(1), 7(c), 8, 9, 10, 11(b), 13, 14, 16, 17, 19 & 20 of Table A thereof. The fieldwork was completed on NOVEMBER 25, 2025.

DATE OF PLAT OR MAP: DECEMBER 10, 2025

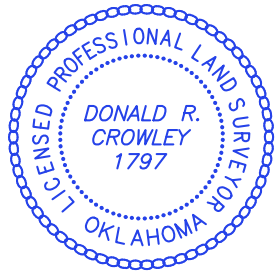
DATE OF LAST REVISION: DECEMBER 12, 2025

Donald R. Crowley 02/03/2026

DONALD R. CROWLEY, PLS 1797
CROWLEY SURVEYING, L.L.C.
117 WEST ARCHER STREET
JACKSBORO, TEXAS 76458
COA: 6545
(489) 850-2757 OFFICE
alta@crowleysurveying.com

NETWORK REFERENCE #20252961-1

For a Survey Update of this survey please contact: surveys@amnational.net
When providing survey comments regarding this survey please contact: clientcomments@amnational.net



Title Commitment Legal

Lot Ten (10), Block "D", GARDEN HEIGHTS ADDITION to the City of Sand Springs, Tulsa County, State of Oklahoma, according to the recorded Plat No. 795;

LESS AND EXCEPT the following tract, being more particularly described as follows to-wit:

BEGINNING at the Southeast corner of said Lot 10;

THENCE West along the South line of said Lot 10 a distance of 240.42 feet;

THENCE Northeasterly along a curve to the right having a back tangent of North 06°54'29" East and a radius of 9724.30 feet a distance of 164.13 feet to a point on the North line of said Lot 10;

THENCE East long said North line a distance of 212.78 feet to the Northeast corner of said Lot 10;

THENCE South along the East line of said Lot 10 a distance of 162.40 feet to the POINT OF BEGINNING, and LESS AND EXCEPT a parcel of land being the West 10.0 feet of Lot Ten (10), Block "D", GARDEN HEIGHTS ADDITION to the City of Sand Springs, Tulsa County, State of Oklahoma, according to the recorded Plat thereof.

The above described parcel(s) is the same as that described in FIDELITY NATIONAL TITLE INSURANCE COMPANY, Commitment No. N25-075-1, bearing an effective date of NOVEMBER 4, 2025 at 7:30 a.m.

General Notes

- (GN1) Bearings and distances are based on U.S. State Plane NAD 1983 Coordinates, Oklahoma North Zone (3501).
- (GN2) There is direct access to the subject property via South 113th Avenue west, a public right-of-way.
- (GN3) There are 0 regular parking spaces and 0 handicapped parking spaces for a total of 0 parking spaces on the subject property.
- (GN4) Parcel Number of subject site: R61650912301390
- (GN5) On the date of the field survey there was no observable evidence of earth moving work, building construction, or building additions within recent months.
- (GN6) Surveyor is unaware of any changes in street right of way lines, or evidence of recent street or sidewalk construction or repairs, either completed or proposed.
- (GN7) The posted address on site is 3507 S 113th Avenue West.
- (GN8) There is no visible evidence of cemeteries on the subject property.
- (GN9) 15. According to the U.S. Fish & Wildlife Service - National Wetlands Inventory website, the subject property Does Not fall in any designated wetlands. No markers were observed at the time this survey was performed.

Utility Notes

- (UN1) The location of utilities shown hereon are from observed evidence on, underground, or above ground appurtenances only observed in the process of conducting the fieldwork, which may indicate utilities located on, over or beneath the surveyed property.

Flood Zone

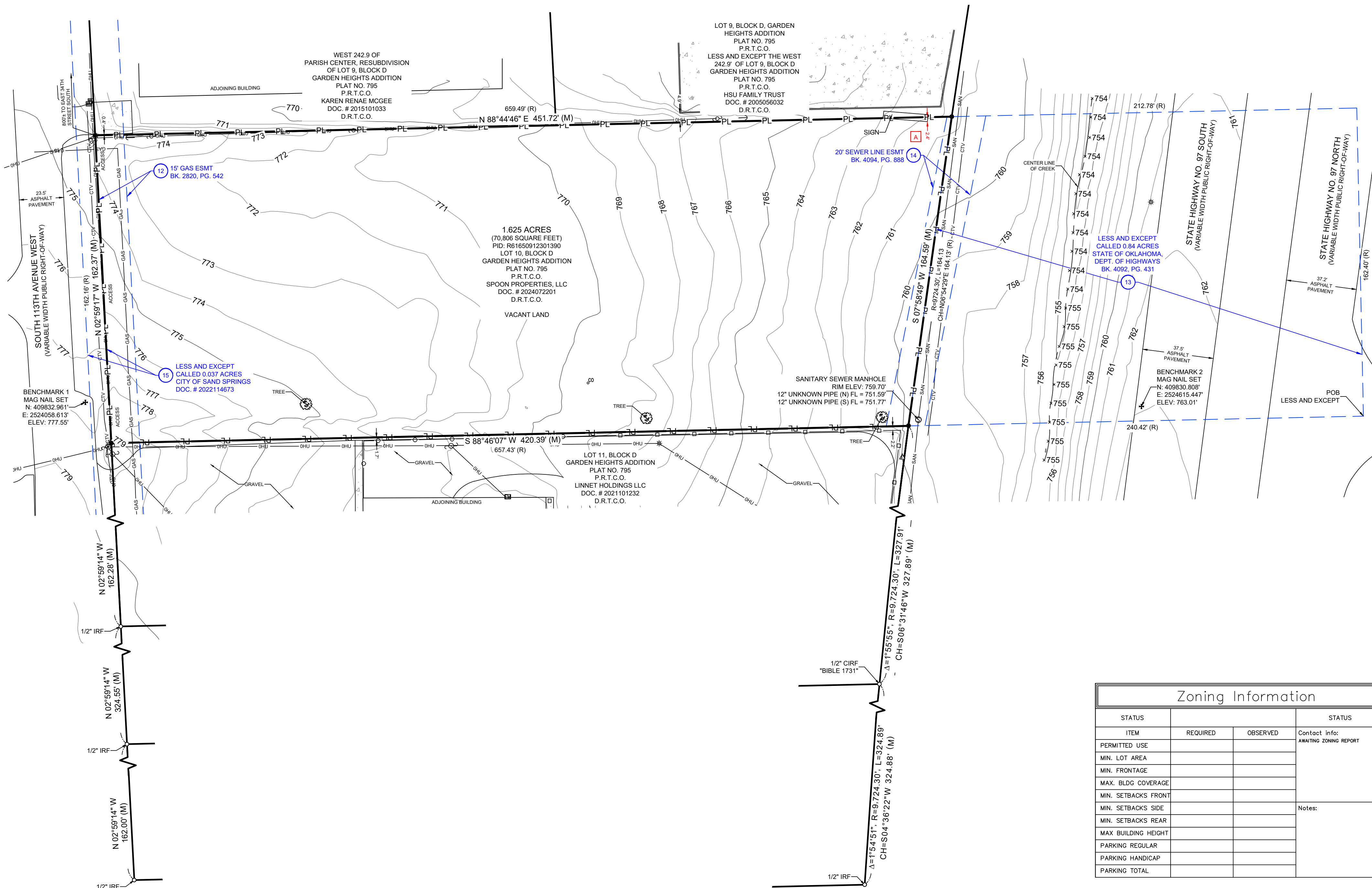
FLOOD NOTE: BASED ON MAPS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) AVAILABLE ONLINE AT: WWW.MSC.FEMA.GOV AND BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONE "X" ON FLOOD INSURANCE RATE MAP NUMBER 40143C 0326 L, WHICH BEARS AN EFFECTIVE DATE OF 10/16/2012 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA.

Legend of Symbols & Abbreviations

- UTILITY POLE
GUY ANCHOR
LIGHT POLE
ELECTRIC METER
CATV RISER
FIBER OPTIC MARKER SIGN
SANITARY SEWER MANHOLE
SEWER CLEAN OUT
- SIGN
WATER METER
MONUMENT FOUND (AS NOTED)
MONUMENT SET (AS NOTED)
MONUMENT NOT FOUND OR SET
RECORD CALL
MEASURED CALL
SPOT ELEVATION
CONCRETE
- ADJOINING PROPERTY LINE
BUILDING SETBACK LINE
EASEMENT LINE
PROPERTY LINE
CHAIN LINK FENCE
METAL PANEL FENCE
OVERHEAD UTILITY LINE
UNDERGROUND CABLE TV LINE
UNDERGROUND GAS LINE
UNDERGROUND STORM SEWER LINE
CONTOUR LINE

Encroachment Statement

A SIGN IS IN ADJOINER UP TO 2.4 FEET



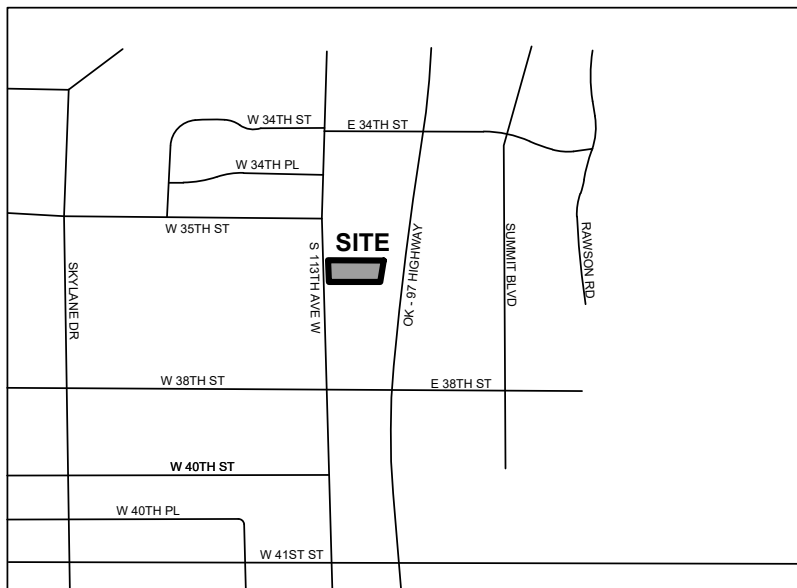
Notes Corresponding to Schedule B

Numbers correspond with Schedule B exceptions items contained in Fidelity National Title Insurance Company, Commitment No. N25-075-1, bearing an effective date of November 4, 2025, at 7:30 AM.

- (11) Covenants, Conditions, Restrictions, Easements, and building setback lines, as delineated on the plat of GARDEN HEIGHTS ADDITION, as Plat #795 in DOC# 324816 (Entry 128), and all amendments and supplements thereto, in the county plat records.
DOES AFFECT THE SUBJECT PROPERTY - NO PLOTTABLE ITEMS
- (12) Right-of-Way in favor of Oklahoma Natural Gas Co. recorded in book 2820, page 542 (Entry 168).
DOES AFFECT THE SUBJECT PROPERTY - PLOTTED HEREON
- (13) Dedication Deed in favor of State of Oklahoma, Dept of Highways, recorded in book 4092, page 431 (Entry 195).
DOES AFFECT THE SUBJECT PROPERTY - PLOTTED HEREON
- (14) Right-of-Way in favor of the City of Sand Springs, Oklahoma recorded in book 4094, page 888 (Entry 197).
DOES AFFECT THE SUBJECT PROPERTY - PLOTTED HEREON
- (15) Dedication Deed in favor of the City of Sand Springs, Oklahoma recorded in DOC #2022114673 (Entry 249).
DOES AFFECT THE SUBJECT PROPERTY - PLOTTED HEREON

Vicinity Map

MAP NOT TO SCALE



Z:\Drive\Projects\EX01\EX025009\04-Production\Engineering\Sheets\EX025009-GN1.dwg, 6/22/2026, Jessica Emeadi

GENERAL NOTES:

- THE TERM MUNICIPALITY REFERS TO THE CITY OF SAND SPRINGS, OKLAHOMA.
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MUNICIPALITY AND SHALL BE IN ACCORDANCE WITH THE MUNICIPAL STANDARD DETAILS AND SPECIFICATIONS FOR CONSTRUCTION. ALL WORK NOT COVERED IN THE CONTRACT DOCUMENTS AND MUNICIPAL STANDARD DETAILS AND SPECIFICATIONS FOR CONSTRUCTION SHALL BE GOVERNED BY THE ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS (ACOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- EXISTING UTILITY LOCATIONS SHOWN ARE GENERALLY SCHEMATIC IN NATURE AND MAY NOT ACCURATELY REFLECT THE SIZE AND LOCATION OF EACH PARTICULAR UTILITY. EXISTING UTILITIES SHOWN HAVE BEEN BASED ON AVAILABLE RECORD DRAWINGS AND SURFACE APPURTENANCE FIELD TIES ONLY. SOME UTILITY LINES AND SURFACE LOCATIONS MAY NOT BE SHOWN. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ACTUAL FIELD LOCATIONS AND PROTECTION OF EXISTING UTILITIES WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL ALSO ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING UTILITIES WHETHER SHOWN OR NOT, DAMAGED BY THE CONTRACTOR'S ACTIVITIES. DIFFERENCES IN HORIZONTAL OR VERTICAL LOCATIONS OF EXISTING UTILITIES SHALL NOT BE BASIS FOR ADDITIONAL COMPENSATIONS TO THE CONTRACTOR.
- THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY MONUMENTATION AND PRIMARY CONTROL. ANY SUCH POINTS WHICH THE CONTRACTOR BELIEVES WILL BE DESTROYED SHALL HAVE OFFSET POINTS ESTABLISHED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY MONUMENTATION DESTROYED BY THE CONTRACTOR SHALL BE REESTABLISHED AT CONTRACTORS EXPENSE BY A REGISTERED PROFESSIONAL LAND SURVEYOR.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO: A.) PREVENT ANY DAMAGES TO PRIVATE PROPERTY AND PROPERTY OWNER'S POLES, FENCES, SHRUBS, ETC. B.) PROTECT ALL UNDERGROUND UTILITIES. C.) NOTIFY ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH OKLAHOMA LAW. D.) FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES IN THE VICINITY OF CONSTRUCTION ACTIVITIES PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNIDENTIFIED POTENTIAL CONFLICTS THAT MAY EXIST BETWEEN THE EXISTING UTILITIES AND CONSTRUCTION PLANS.
- ANY DAMAGES THAT MAY OCCUR TO REAL PROPERTY OR EXISTING IMPROVEMENTS, INCLUDING EXISTING PRIVATE AND PUBLIC LANDSCAPE IRRIGATION SYSTEMS, SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE REAL PROPERTY OR EXISTING IMPROVEMENT WERE IN PRIOR TO THE DAMAGES. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE ADJUSTMENT OF SPRINKLER HEADS TO FINAL GRADE AND RELOCATION IF NECESSARY.
- THE CONTRACTOR SHALL MAINTAIN DRAINAGE AT ALL TIMES DURING CONSTRUCTION. THE PONDING OF WATER IN STREETS, DRIVES, TRENCHES, ETC, WILL NOT BE ALLOWED. THE CONTRACTOR SHALL MAINTAIN EXISTING DRIVEWAYS ACCESS AT ALL TIME.
- THE CONTRACTOR SHALL MAINTAIN EXISTING SANITARY SEWER AND WATER SERVICES AT ALL TIMES DURING CONSTRUCTION.
- AREAS OF THE SITE THAT WILL UNDERLIE FILL SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES, FILL SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN UNCOMPACTED THICKNESS. ALL FILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT FROM -3% TO +1% OF OPTIMUM OR PER GEOTECH RECOMMENDATION. FIELD DENSITY TESTS PER MUNICIPAL REQUIREMENTS.
- THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS GOVERNING EXCAVATION. THE CONTRACTOR SHALL PROVIDE DETAILED PLANS AND SPECIFICATION FOR TRENCH SAFETY SYSTEMS THAT COMPLY WITH APPLICABLE LAWS GOVERNING EXCAVATION. THESE PLANS SHALL BE SEALED BY AN ENGINEER EXPERIENCED IN THE DESIGN OF TRENCH SAFETY SYSTEM, REGISTERED IN THE STATE OF OKLAHOMA. THE CONTRACTOR SHALL SUBMIT COMPLETED TRENCH SAFETY PLANS TO THE MUNICIPALITY PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL ASPECTS OF WORK RELATED TO EXCAVATION. ALL EXCAVATIONS, TRENCHING AND SHORING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE U.S. DEPARTMENT OF LABOR, OSHA, "CONSTRUCTION SAFETY AND HEALTH REGULATIONS".
- WORK MAY NOT BE BACKFILLED OR COVERED UNTIL IT HAS BEEN INSPECTED BY THE MUNICIPALITY.
- ALL EXCAVATION ON THE PROJECT IS UNCLASSIFIED.
- ALL CURB AND GUTTER SHALL BE INTEGRAL WITH THE CONCRETE PAVEMENT.
- CONTRACTOR SHALL COORDINATE THE PROTECTION OF EXISTING FRANCHISE UTILITIES AND APPURTENANCES INCLUDING EXISTING UTILITY POLES IN THE VICINITY OF CONSTRUCTION OPERATIONS WHETHER UTILITIES ARE SHOWN ON PLANS OR NOT. ANY DAMAGE INCURRED TO EXISTING FRANCHISE UTILITIES, APPURTENANCES, UTILITY POLES, LIGHT STANDARDS, ETC., BY CONSTRUCTION RELATED ACTIVITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL LOCATE AND RECORD EXISTING IRRIGATION SYSTEMS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL TEMPORARILY REMOVE AND CAP IRRIGATION SYSTEM AS NECESSARY FOR CONSTRUCTION AND SHALL REPLACE THE PORTION REMOVED WITH EQUIVALENT SYSTEMS. CONTRACTOR SHALL COORDINATE ANY IRRIGATION WORK WITH THE MUNICIPALITY AND PROPERTY OWNER'S REPRESENTATIVES.
- THE CONTRACTOR MUST CEASE ALL CONSTRUCTION OPERATIONS IMMEDIATELY IF A SUSPECTED ARCHEOLOGICAL OBJECT/ARTIFACT IS UNCOVERED DURING CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY CONTACT THE OKLAHOMA HISTORICAL COMMISSION AND THE MUNICIPALITY. PROJECT WORK WILL NOT COMMENCE UNTIL PROPER PERMITS ARE IN PLACE AND PROVIDED TO THE MUNICIPALITY.
- ALL PAVING DIMENSIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE COMPLIANCE WITH ALL HANDICAPPED ACCESSIBILITY REQUIREMENTS INCLUDING SIGNAGE, TEXTURES, COLORING, MARKINGS, AND SLOPES OF ADA/TAS 2012

ACCESSIBLE ROUTES & RAMPS, AND PARKING SPACES.

- ALL PIPE LENGTHS MEASURED FROM STATION TO STATION BASED ON THE CENTER OF STRUCTURE UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL NOTIFY ENGINEER IF ANY DISCREPANCIES ARISE.
- THE OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT) MUST APPROVE ANY WORK TO BE DONE IN THE STATE HIGHWAY RIGHT-OF-WAY. AN APPLICATION AND APPROPRIATE PLANS MUST BE SUBMITTED DIRECTLY TO ODOT FOR REVIEW AND APPROVED BY THE MUNICIPALITY WHERE THE WORK WILL BE PERFORMED.
- THE LOCATION OF UNDERGROUND FACILITIES INDICATED ON THE PLANS IS TAKEN FROM PUBLIC RECORDS. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAKE ARRANGEMENTS WITH THE OWNERS OF SUCH UNDERGROUND FACILITIES PRIOR TO WORKING IN THE AREA TO CONFIRM THEIR EXACT LOCATION AND TO DETERMINE WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND FACILITIES. IF THE EXISTING UNDERGROUND UTILITIES ARE DAMAGED, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPAIRING THE UTILITY.
- WHERE EXISTING UTILITIES, SERVICE LINES OR IRRIGATION LINES ARE CUT, BROKEN OR DAMAGED, THE CONTRACTOR SHALL REPLACE OR REPAIR THE UTILITIES, SERVICE LINES OR IRRIGATION LINES WITH THE SAME TYPE OF ORIGINAL MATERIAL AND CONSTRUCTION, OR BETTER, UNLESS OTHERWISE SHOWN OR NOTED ON THE PLANS, AT HIS OWN COST AND EXPENSE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICTS IN GRADES AND ALIGNMENTS.
- ALL EXCAVATIONS, TRENCHING AND SHORING OPERATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE U.S. DEPARTMENT OF LABOR, OSHA, "CONST. SAFETY AND HEALTH REGULATIONS." VOL. 29, SUBPART P. PG. 128-137, AND ANY AMENDMENTS THERETO. THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A TRENCH SAFETY PLAN FOR THIS PROJECT.
- THE CONTRACTOR SHALL RESTORE ALL AREAS, ONSITE AND OFFSITE, DISTURBED BY CONSTRUCTION TO ORIGINAL CONDITION OR BETTER. RESTORED AREAS INCLUDE, BUT ARE NOT LIMITED TO: TRENCH BACKFILL, SIDE SLOPES, FENCES, CULVERT PIPES, DRAINAGE SWALES, STAGING AREAS, DRIVEWAYS, PRIVATE YARDS AND ROADWAYS. UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE DRAWINGS, RESTORATION SHALL INCLUDE HYDROMULCHING ALL DISTURBED AREAS WITH A SLOPE OF LESS THAN 20% (1:5) AND SODDING AREAS WITH A SLOPE OF 20% (1:5) OR GREATER. ESTABLISHMENT OF GRASS THROUGH PROPER WATERING IS LEFT UP TO THE CONTRACT'S MEANS AND METHODS, UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE/IRRIGATION DRAWINGS.
- THE CONTRACTOR SHALL KEEP RECORDS FOR AS-BUILTS DRAWINGS AND SHALL SUBMIT MARK-UPS TO THE MUNICIPALITY INSPECTOR PRIOR TO SCHEDULING A FINAL WALK THROUGH INSPECTION.
- PRIOR TO CONSTRUCTION, A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH REPRESENTATIVES FROM ALL CONTRACTORS, THE ENGINEER, AND THE MUNICIPALITY.
- ALL CONSTRUCTION MUST ADHERE TO THE TREE PRESERVATION REQUIREMENTS OF THE MUNICIPALITY.
- THE CONTRACTOR, AND HIS AGENTS, AND SUB-CONTRACTOR, ARE COMPLETELY RESPONSIBLE FOR THE VERIFICATION OF THE ACCURACY OF THE DIMENSION CONTROL FURNISHED HEREIN. THE OWNER, ENGINEER AND THEIR AGENTS, ARE NOT RESPONSIBLE FOR THE ACCURACY OF THE COORDINATES FURNISHED. THE CONTRACTOR IS REQUIRED TO VERIFY ALL COORDINATES FOR ACCURACY AND CONFIRM THE LOCATIONS OF ALL UTILITIES TO BE CONSTRUCTED, BOTH HORIZONTAL AND VERTICALLY. DISCREPANCIES FOUND BY THE CONTRACTOR SHALL BE REPORTED, IN WRITING, TO THE OWNER IMMEDIATELY FOR RECONCILIATION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIRED FOR THIS PROJECT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL PREPARE, IMPLEMENT AND MAINTAIN THE SWPPP IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT TCEQ AND NPDES GENERAL PERMIT AS DESCRIBED IN THE FEDERAL REGISTER, PAGES 36489 THROUGH 36519.

GENERAL NOTES FOR PAVING IMPROVEMENTS

- THE SUB GRADE SHALL BE PROOF ROLLED AND OBSERVED BY THE CONSTRUCTION INSPECTOR PRIOR TO AND AFTER SUB-GRADE STABILIZATION.
- INDIVIDUAL WATER AND SEWER SERVICES AND WATER VALVES SHALL BE MARKED IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
- THE CONTRACTOR SHALL PROCEED WITH PAVING NO MORE THAN SEVENTY-TWO (72) HOURS AFTER DENSITY/MOISTURE TESTS HAVE BEEN TAKEN AND PASSED BY A REGISTERED TESTING FIRM. COPIES OF THE TEST RESULTS SHALL BE FURNISHED TO THE MUNICIPALITY. IN THE EVENT PAVING OPERATIONS HAVE NOT COMMENCED WITHIN THE SEVENTY-TWO (72) HOUR LIMIT, A RETEST SHALL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.
- MANHOLE RIM ELEVATIONS, CLEAN-OUTS, VALVE BOXES, FIRE HYDRANTS, ETC. SHALL BE ADJUSTED TO FINISHED GRADE BY THE PAVING CONTRACTOR AT THE TIME OF PAVING.
- THE PAVING CONTRACTOR SHALL INSTALL A BLUE REFLECTOR IN THE STREET OR FIRE LANE CENTERLINE AT THE LOCATION OF EACH FIRE HYDRANT.
- THE CONTRACTOR SHALL PREPARE ALL TRAFFIC CONTROL PLANS AND SUBMIT TO THE MUNICIPALITY PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMITS FOR WORK WITHIN THE MUNICIPALITY. THE PLAN SHALL BE PREPARED IN ACCORDANCE WITH THE CURRENT EDITION OF THE M.U.T.C.D AND AS MODIFIED BY THE ODOT SUPPLEMENT TO THE M.U.T.C.D. THE PLAN SHALL ADDRESS THE REQUIREMENTS FOR ALL SIGNS, BARRICADES, FLAGMEN, LIGHTS, HOURS OF CONSTRUCTION, AND OTHER DEVICES AS NECESSARY FOR SAFE TRAFFIC CONTROL.

AMERICAN WITH DISABILITIES ACT REQUIREMENTS

- THE MAXIMUM ALLOWED CROSS SLOPE ON ANY PROPOSED SIDEWALK OR TRAIL IS 2%.
- THE MAXIMUM ALLOWED PATH OF TRAVEL SLOPE IS 5%, UNLESS OTHERWISE NOTED ON THESE PLANS. ANY SLOPE GREATER THEN 5%, AND LESS THAN 8.25%, MUST HAVE HANDRAILS. NO SLOPE GREATER THAN 8.25% SHALL BE ALLOWED.
- SLOPES BETWEEN 5% AND 8.25% ARE CONSIDERED RAMPS. NO RAMP CAN EXCEED 30' IN LENGTH AND NO RAMP CAN EXCEED A GRADE CHANGE OF MORE THAN 2'-6". LANDINGS ARE REQUIRED IF EITHER OF THESE ARE EXCEEDED.
- LANDINGS MAY NOT EXCEED 2% SLOPE IN ANY DIRECTION.
- RAILINGS, IF REQUIRED, ARE TO EXTEND A MINIMUM OF 1' INTO THE LANDING AREA.
- CURB RAMPS ARE REQUIRED AT THE END AT ALL CROSSWALKS. ALL CURB RAMPS ARE TO HAVE A MAXIMUM OF 6" OF RISE OVER THE 6' LENGTH OF THE RAMP. THE MAXIMUM ALLOWED CROSS SLOPE IS 2%.
- TRUNCATED DOMES ARE TO BE INSTALLED AT THE BOTTOM OF EACH RAMP. THE DOMES ARE TO EXTEND THE FULL WIDTH OF THE PROPOSED RAMP AND MUST BE OF A CONTRASTING COLOR TO THE RAMP PAVEMENT, SIMILAR COLORS WILL NOT BE ACCEPTED.
- ANY WALKWAY, SIDEWALK OR TRAIL, LESS THAN 5' IN WIDTH MUST HAVE A 5'X5' PASSING ZONE EVERY 200', OR LESS.
- A PAVED ACCESSIBLE PARKING SPACE MUST INCLUDE:
 - THE INTERNATIONAL SYMBOL OF ACCESSIBILITY PAINTED CONSPICUOUSLY ON THE SURFACE IN A COLOR THAT CONTRASTS THE PAVEMENT;
 - A SIGN IDENTIFYING THE CONSEQUENCES OF PARKING ILLEGALLY IN A PAVED ACCESSIBLE SPACE. THE SIGN MUST:
 - AT A MINIMUM STATE "VIOLATORS SUBJECT TO FINE AND TOWING" IN A LETTER HEIGHT OF AT LEAST ONE INCH;
 - BE MOUNTED ON A POLE, POST, WALL OR FREE STANDING BOARD;
 - BE NO MORE THAT EIGHT INCHES BELOW A SIGN REQUIRED BY THE OKLAHOMA ACCESSIBILITY STANDARDS, 502.6; AND
 - BE INSTALLED SO THAT THE BOTTOM EDGE OF THE SIGN IS NO LOWER THAN 48 INCHES AND NO HIGHER THAN 80 INCHES ABOVE GROUND LEVEL.



McAdams

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PHONE: 205.906.2006



EXPRESS OIL -
SAND SPRINGS, OK
CONSTRUCTION PLANS
3507 S 113TH AVENUE WEST
SAND SPRINGS, OKLAHOMA 74063

THIS DOCUMENT IS
RELEASED ON 06. 22. 2026
FOR THE PURPOSE OF
OBTAINING PRELIMINARY
BID NUMBERS, AND ARE NOT
APPROVED FOR PERMITTING
OR CONSTRUCTION.

UNDER THE AUTHORITY OF
DARREN ANDREWS
LICENSE #25761
IT IS NOT TO BE USED FOR
CONSTRUCTION PURPOSES.

FINAL SIGNED AND SEALED
PLANS SHALL BE ISSUED
PRIOR TO THE RELEASE FOR
CONSTRUCTION.

REVISIONS

NO.	DATE	DESCRIPTION
1	04. 17. 2026	1ST SUBMITTAL
2	05. 05. 2026	2ND SUBMITTAL
3	06. 22. 2026	3RD SUBMITTAL

PLAN INFORMATION

PROJECT NO.	EX025009
FILENAME	EX025009-GN1.DWG
CHECKED BY	BY
DRAWN BY	JE
SCALE	N.T.S.
DATE	04. 17. 2026

SHEET

GENERAL NOTES

C0.01

BENCHMARKS:

BM #1: N. 409832.961' E. 2524058.613' ; ELEV: 777.55'
BM #2: N. 409830.808' E. 2524615.447' ; ELEV: 763.01'

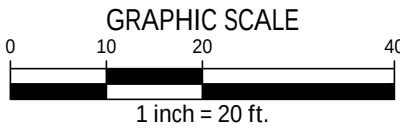
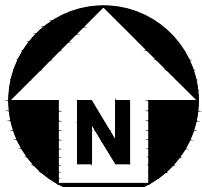
EXISTING CONDITIONS AND DEMOLITION PLAN NOTES:

- THIS IS AN EXISTING CONDITIONS PLAN PREPARED TO MEET ENTITLEMENTS AND PERMITTING REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND USED TO INFORM PRELIMINARY SITE DESIGN. IT IS NOT A TOPOGRAPHIC OR BOUNDARY SURVEY PREPARED AND SEALED BY A LICENSED PROFESSIONAL, UNLESS OTHERWISE INDICATED.
- EXISTING CONDITIONS WERE COMPILED FROM A SURVEY OF THE SITE PREPARED BY AMERICAN NATIONAL, DATED 12/12/2025. ALTHOUGH EFFORT HAS BEEN MADE TO ACCURATELY LOCATE EXISTING CONDITIONS, ACTUAL FIELD CONDITIONS MAY VARY. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE STARTING LAND DISTURBING ACTIVITY, DEMOLITION, OR CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ACTUAL CONDITIONS AS THEY EXIST ON SITE.
- UNDERGROUND UTILITIES MAY EXIST THAT ARE NOT SHOWN HEREIN, THE LOCATION OF UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE BASED ON INFORMATION PROVIDED BY OTHERS OR BY FIELD LOCATION. ACTUAL LOCATION, SIZE AND DEPTH OF LINE SHOULD BE VERIFIED WITH THE INDIVIDUAL UTILITY COMPANY PRIOR TO CONSTRUCTION.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL PUBLIC UTILITIES DURING THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEANOUTS, VALVE BOXES, FIRE HYDRANTS, ETC. MUST BE ADJUSTED TO PROPER LINE AND GRADE BY THE CONTRACTOR PRIOR TO AND AFTER PLACEMENT OF PERMANENT PAVING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING THE CONSTRUCTION OF THIS PROJECT.
- THIS PROPERTY IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN ZONE X AS DEFINED BY FEMA F.I.R.M. MAP NUMBER 40143C 0326 L, DATED 10/16/2012.
- SUE NOT PERFORMED OR VERIFIED BY MCADAMS.
- SIDEWALK RAMPS ARE TO BE DESIGNED AND INSTALLED SO THEY ARE IN COMPLIANCE WITH THE ADA AND OKLAHOMA ACCESSIBILITY STANDARDS.
- CONSTRUCTION SITE SHALL ADHERE TO THE CITY OF SAND SPRINGS REQUIREMENTS.

DISTURBED ACREAGE = 1.77 ACRES

LINETYPE LEGEND

---	PROPERTY LINE
---	SETBACK AND BUFFER LINES
- . . - . . -	WATER AND SANITARY SEWER EASEMENT
----	SAWCUT LINE
---	EXISTING CONTOUR
SS SS SS	EXISTING SANITARY SEWER LINE
V V V	EXISTING WATER LINE
SD SD	EXISTING STORM SEWER LINE
G G	EXISTING GAS LINE
OU OU	EXISTING OVERHEAD ELECTRIC LINE
---	EXISTING EDGE OF PAVEMENT
XXXX	SAWCUT AND REMOVAL HATCH

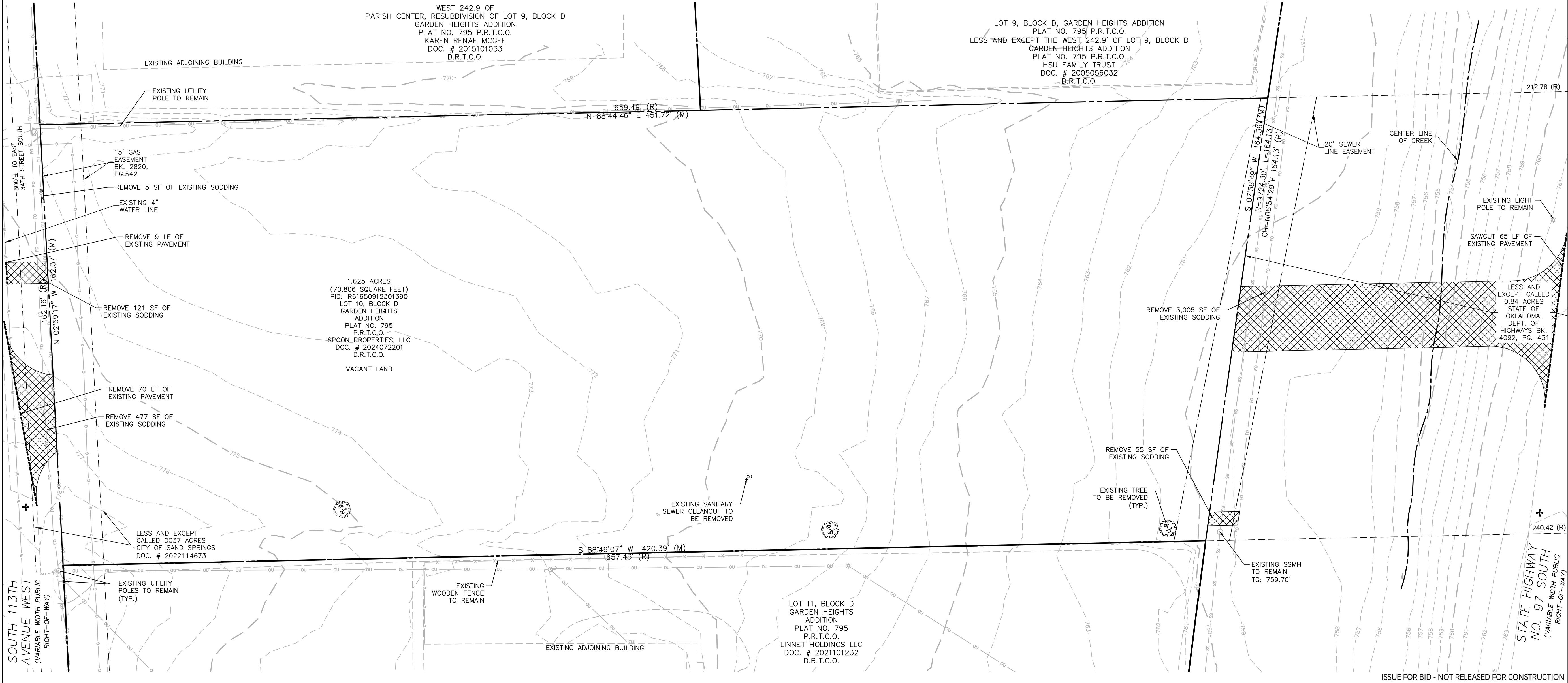


SYMBOL LEGEND

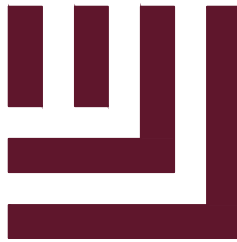
+	BENCHMARK LOCATIONS
⊕	EXISTING FIRE HYDRANT
WV	EXISTING WATER VALVE
⊕	EXISTING POWER POLE
⬠	EXISTING JUNCTION BOX
⊕	EXISTING SIGN
⬠	EXISTING GRATE INLET
⬠	EXISTING CURB INLET

ABBREVIATION LEGEND

R.O.W. OR R/W = RIGHT OF WAY



Z:\Drive\Projects\EX025009\04-Production\Engineering\Sheets\EX025009-XC1.dwg, 6/22/2026, Jessica Emeadi



McAdams

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4400 State Highway 121, Suite 800
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FILENAME EX025009-XC1.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 20'
DATE 04. 17. 2026

SHEET

EXISTING CONDITIONS
& DEMOLITION PLAN

C1.00

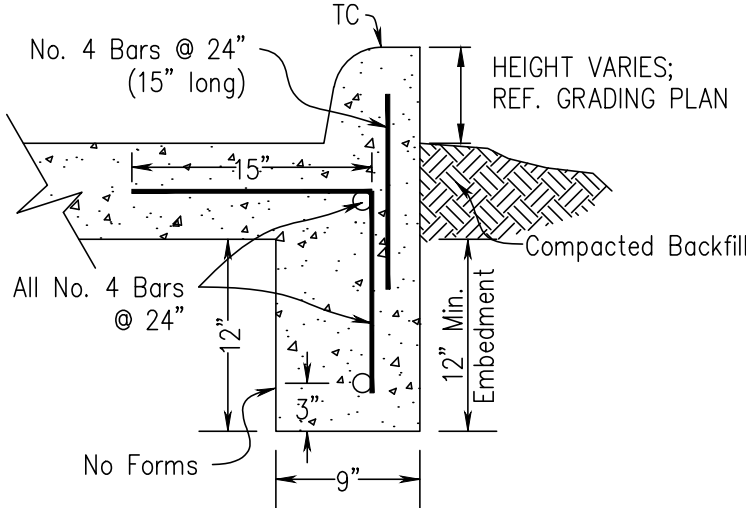
ISSUE FOR BID - NOT RELEASED FOR CONSTRUCTION

BENCHMARKS:

BM #1: N. 409832.961' E. 2524058.613' ; ELEV: 777.55'
BM #2: N. 409830.808' E. 2524615.447' ; ELEV: 763.01'

GRADING NOTES:

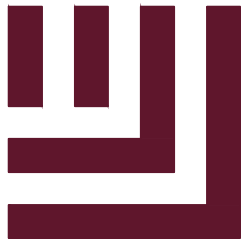
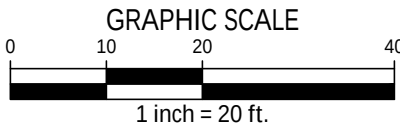
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION, FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29CFR PART 1926, SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH. EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER, PROVIDED BY CONTRACTOR RESPONSIBLE FOR EXCAVATION.
- PRIOR TO BEGINNING GRADING ACTIVITIES, THE GENERAL CONTRACTOR SHALL SCHEDULE AND ATTEND A PRE-CONSTRUCTION CONFERENCE WITH THE CITY STORMWATER PROJECT MANAGER, JULIANNE MONNOT, AT 918-246-2589 OR JULIANNE.MONNOT@SANDSPRINGSOK.GOV .
- AT CRITICAL LOCATIONS WHERE PROPOSED ELEMENTS TIE INTO EXISTING CONDITIONS, CONTRACTOR SHALL FIELD VERIFY THAT THE FIELD SURVEY MATCHES THE DESIGN SURVEY, REPORTING DISCREPANCIES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY. TIE-IN LOCATIONS TO FIELD VERIFY ARE INDICATED ON THE PLANS AND MAY INCLUDE BUT ARE NOT LIMITED TO UTILITY CONNECTIONS, PAVEMENT, WALLS, OR FOUNDATIONS.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS. ANY DEVIATION FROM THE GRADING PLAN THAT WAS NOT APPROVED BY OWNER'S REPRESENTATIVE THROUGH RFI'S, FIELD CHANGES, BULLETIN DRAWINGS, OR THROUGH OWNER REQUESTED CHANGES, THAT CAUSES WATER TO DRAIN TOWARDS THE BUILDING SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN COST.
- CONTRACTOR SHALL PROVIDE POSITIVE STORMWATER FLOW TO KEEP WATER FROM POOLING ALONG CURBS AND NON-PERVIOUS PAVED AREAS.
- CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF EXISTING MANHOLES, METERS, VALVES, ETC. AS REQUIRED TO MEET NEW FINISHED GRADES.
- ALL GRADIENT ON SIDEWALKS ALONG THE ADA ROUTE SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 5% (1:20) AND A MAXIMUM CROSS SLOPE OF 2% (1:48). RAMP CONDITIONS SHALL HAVE A MAXIMUM LONGITUDINAL SLOPE OF 8.33% (1:12) AND A MAXIMUM CROSS SLOPE OF 2% (1:48). ON CURVED SIDEWALKS AND RAMPS, MAXIMUM LONGITUDINAL SLOPE SHALL BE MEASURED USING THE INSIDE/MOST STRINGENT PART OF THE CURVE AND MAXIMUM LONGITUDINAL RUNS ON RAMPS SHALL BE MEASURED USING THE OUTSIDE PART OF THE CURVE. MAXIMUM SLOPE IN ANY DIRECTION ON AN ADA PARKING STALL OR ACCESS AISLE SHALL BE 2% (1:48). CONTRACTOR SHALL REVIEW AND VERIFY THE GRADIENT IN THE FIELD ALONG THE ADA ROUTES PRIOR TO PLACING CONCRETE OR BITUMINOUS PAVEMENT. CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL IMMEDIATELY IF THERE IS A DISCREPANCY BETWEEN THE GRADIENT IN THE FIELD VERSUS THE DESIGN GRADIENT. COORDINATE ALL WORK WITH PAVING CONTRACTOR.
 - 5'X5' LANDING WITH A MAXIMUM OF 2% SLOPE IN ANY DIRECTION AT ALL DOORS.
 - ALL ADA CROSSWALK TO BE A MAXIMUM OF 5% SLOPE LONGITUDINAL AND 2% SLOPE CROSS SECTION.
- PROVIDE A MINIMUM OF [0.5%] CROSS SLOPE AND [1.75%] MAXIMUM CROSS SLOPE ON WALKWAYS, LANDINGS, AND TRAILS IN A MANNER THAT ENSURES POSITIVE DRAINAGE AND AVOIDS POOLING ON, OR ADJACENT TO, THESE SURFACES.
- APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, WRITTEN PERMISSION AND TEMPORARY CONSTRUCTION EASEMENT MUST BE OBTAINED IN WRITING FROM THE AFFECTED PROPERTY OWNERS.
- SOIL UNDER BUILDINGS, PAVED AREAS AND WITHIN SLOPES GREATER THAN 3:1 (H:V) SHALL BE APPROVED, PLACED AND COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- ALL LANDSCAPE ISLANDS SHALL BE GRADED FOR POSITIVE DRAINAGE WITH NO LOW SPOTS ALLOWING WATER TO BE TRAPPED.
- TRANSFORMER POLES SHALL BE PROTECTED SUCH THAT NO GRADING OPERATIONS SHALL BE PERFORMED WITHIN [25'] OF A TRANSMISSION POLE AND CLEARANCE REQUIREMENTS ARE MET.
- CONTRACTOR TO FOLLOW DRAINAGE PATTERNS AND INSTALL SPILL CURB WHERE APPROPRIATE.
- ALL UNDERGROUND UTILITIES REQUIRE AS-BUILT SURVEY. GENERAL CONTRACTOR RESPONSIBLE TO COORDINATE WITH LOCAL AHJ ON AS-BUILT REQUIREMENTS.
- SEE SHEET C3.01 FOR RETAINING WALL INFORMATION.
- SEE SHEET C3.05 AND C3.07 FOR STORM SEWER INFORMATION.
- PROOF ROLLING MUST OCCUR UNDER THE AREA OF THE UNDERGROUND DRAINAGE SYSTEM.



SPECIAL CURB DETAIL

GRADING LEGEND

	BENCHMARK LOCATIONS
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	DRAINAGE DIVIDE
	TOP & BOTTOM CURB ELEVATIONS
	TOP OF WALL ELEVATION
	BOTTOM OF WALL ELEVATION (NOTE: BOTTOM OF WALL IS GROUND ELEVATION NOT WALL FOUNDATION)
	TOP OF PAVEMENT ELEVATION
	TOP OF GRATE ELEVATION
	TOP OF CURB ELEVATION
	FINISHED GRADE ELEVATION
	SPOT ELEVATION
	STORM DRAINAGE
	STORM SERVICE LINE
	CURB INLET
	GRATE INLET
	TRENCH DRAIN
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR



McAdams

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TBAE: BR3185
www.mcadamsco.com

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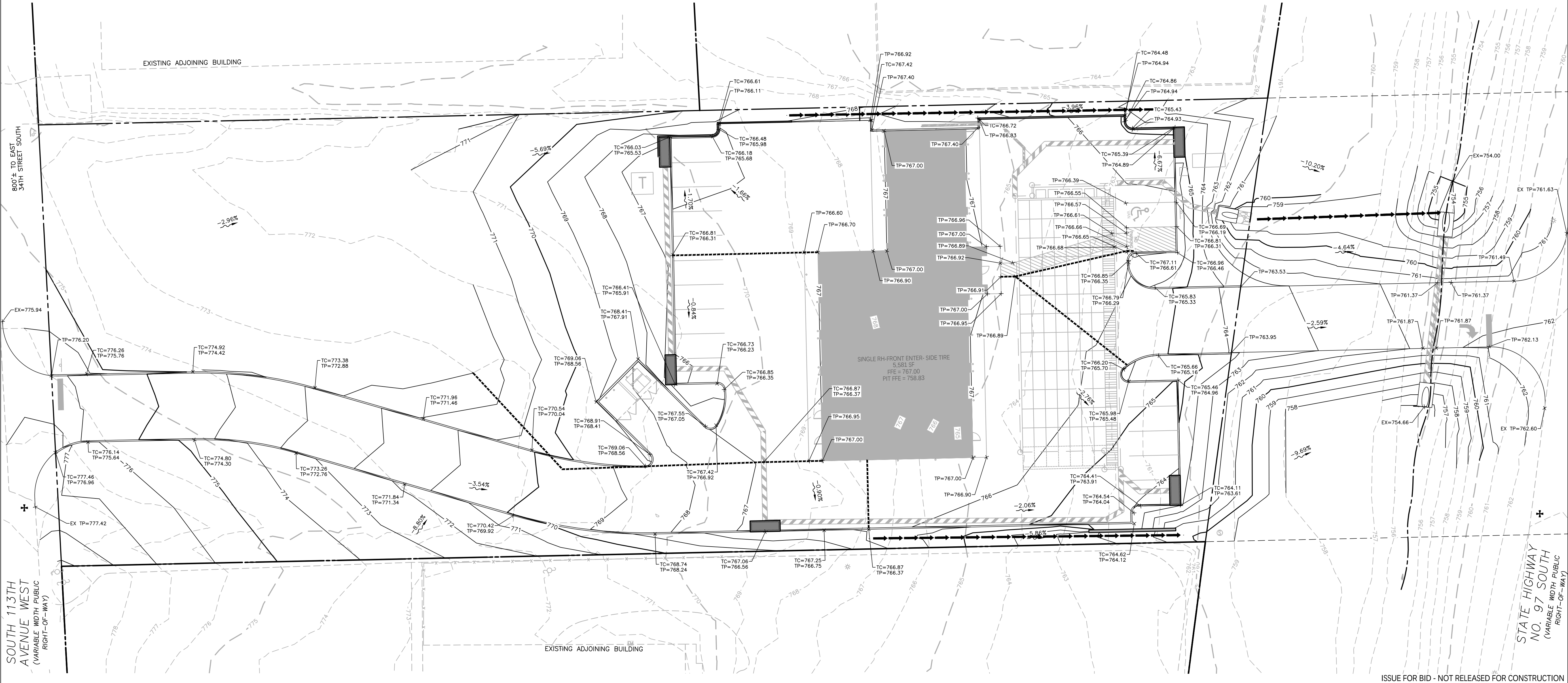
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PROJECT NO.	EXO25009
FILENAME	EXO25009-G1.DWG
CHECKED BY	BY
DRAWN BY	JE
SCALE	1" = 20'
DATE	04. 17. 2026

SHEET

GRADING PLAN

C3.00

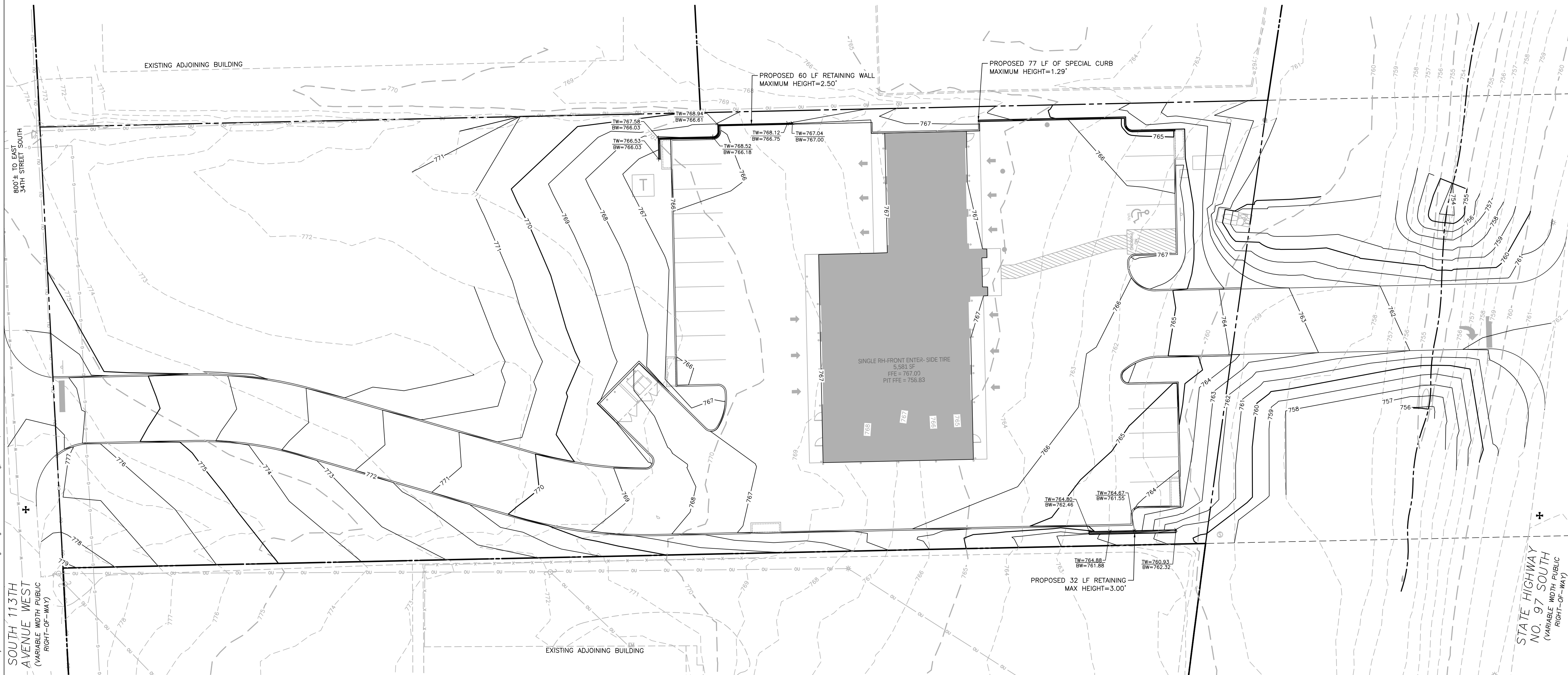
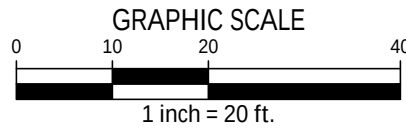


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BM #1: N. 409832.961' E. 2524058.613' ; ELEV: 777.55'
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1. RETAINING WALL PLANS SHOWN FOR HORIZONTAL AND VERTICAL ALIGNMENT ONLY.
2. RETAINING WALL TO BE DESIGNED BY THE CONTRACTOR AND PERMITTED BY PROJECT STRUCTURAL ENGINEER.
3. STRUCTURAL DESIGN OF RETAINING WALLS TO BE PREPARED BY OTHERS THAN MCADAMS. RETAINING WALL DESIGN SHALL INCLUDE GLOBAL STABILITY ANALYSIS AND DESIGN CONSIDERING ANY PROPOSED BUILDING OVERBURDEN.
4. RETAINING WALL PLANS TO BE SUBMITTED TO THE CITY OF SAND SPRINGS LAND DEVELOPMENT.
5. WHEN RETAINING WALL IS COMPLETED AN AS-BUILT WILL NEED TO BE COMPLETED AND SUBMITTED FOR THE RETAINING WALL AS WELL. A CO WILL NOT BE ISSUED UNTIL RETAINING WALL REQUIREMENTS ARE MET.

	BENCHMARK LOCATIONS
	CATCH BASIN
	DROP INLET
	JUNCTION BOX
	DRAINAGE FLOW ARROW
	TOP & BOTTOM CURB ELEVATIONS
	TOP OF WALL ELEVATION
	BOTTOM OF WALL ELEVATION
	(NOTE: BOTTOM OF WALL IS GROUND ELEVATION NOT WALL FOUNDATION)
	TOP OF PAVEMENT ELEVATION
	TOP OF GRATE ELEVATION
	TOP OF CURB ELEVATION
	FINISHED GRADE ELEVATION
	SPOT ELEVATION
	STORM DRAINAGE
	STORM SERVICE LINE
	CURB INLET
	GRATE INLET
	TRENCH DRAIN
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR



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PROJECT NO.	EXO25009
FILENAME	EXO25009-G2.DWG
CHECKED BY	BY
DRAWN BY	JE
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RETAINING WALL PLAN

C3.01

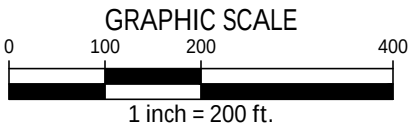
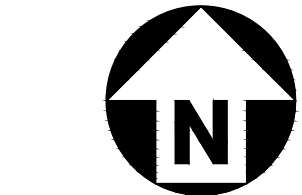


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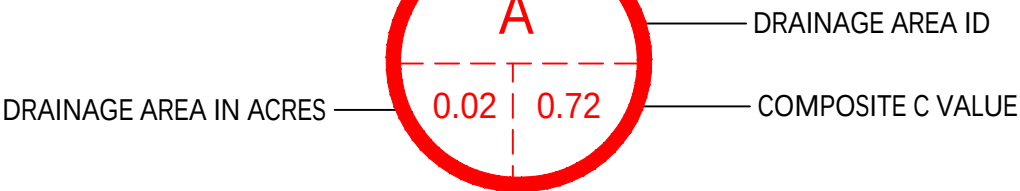
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NOTES:

1. THERE WILL BE NO INCREASE IN THE Q50 RUNOFF FROM THE DEVELOPMENT.
2. THIS SHEET IS FOR DESIGN OF CULVERT WITHIN ODOT ROW.

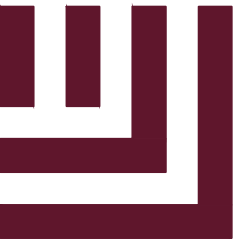


LEGEND



OFF-SITE EXISTING DRAINAGE CALCULATIONS (50 YEAR)							
Drainage Area	Area (Ac)	C	Adjusted C	Tc (min)	I (in/hr)	Q50 (cfs)	Comments
A	13.37	1.25	1.56	30	5.06	105.71	OFF-SITE FLOW DIRECTION TOWARDS SITE
TOTAL	13.37					105.71	

RAINFALL INTENSITY VALUES FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA) NATIONAL PRECIPITATION FREQUENCY DATA SERVER (PFDS) - 2023



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DRAWN BY JE
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DATE 04.17.2026

SHEET

OFF-SITE EXISTING
DRAINAGE AREA MAP
C3.02

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NOTES:

1. THERE WILL BE NO INCREASE IN THE Q100 RUNOFF FROM THE DEVELOPMENT.

ON-SITE EXISTING DRAINAGE CALCULATIONS (100 YEAR)							Comments
Drainage Area	Area (Ac)	C	Adjusted C	Tc (min)	I (in/hr)	Q100 (cfs)	
A	1.63	0.30	0.38	10	9.93	6.07	SHEET FLOW TO EXISTING CREEK
OS1	0.15	0.71	0.89	10	9.93	1.33	SHEET FLOW TO AREA A
OS2	0.11	0.40	0.49	10	9.93	0.54	SHEET FLOW TO AREA A
TOTAL	1.89					7.94	

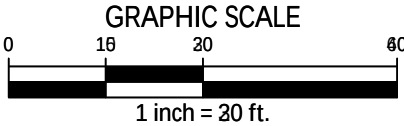
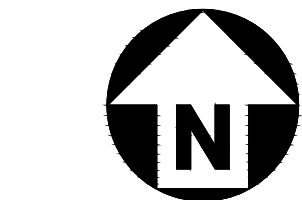
RAINFALL INTENSITY VALUES FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA) NATIONAL PRECIPITATION FREQUENCY DATA SERVER (PFDS) - 2023

ON-SITE EXISTING DRAINAGE CALCULATIONS (5 YEAR)							Comments
Drainage Area	Area (Ac)	C	Adjusted C	Tc (min)	I (in/hr)	Q5 (cfs)	
A	1.63	0.30	0.38	10	5.36	3.28	SHEET FLOW TO EXISTING CREEK
OS1	0.15	0.71	0.89	10	5.36	0.72	SHEET FLOW TO AREA A
OS2	0.11	0.40	0.49	10	5.36	0.29	SHEET FLOW TO AREA A
TOTAL	1.89					4.28	

RAINFALL INTENSITY VALUES FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA) NATIONAL PRECIPITATION FREQUENCY DATA SERVER (PFDS) - 2023

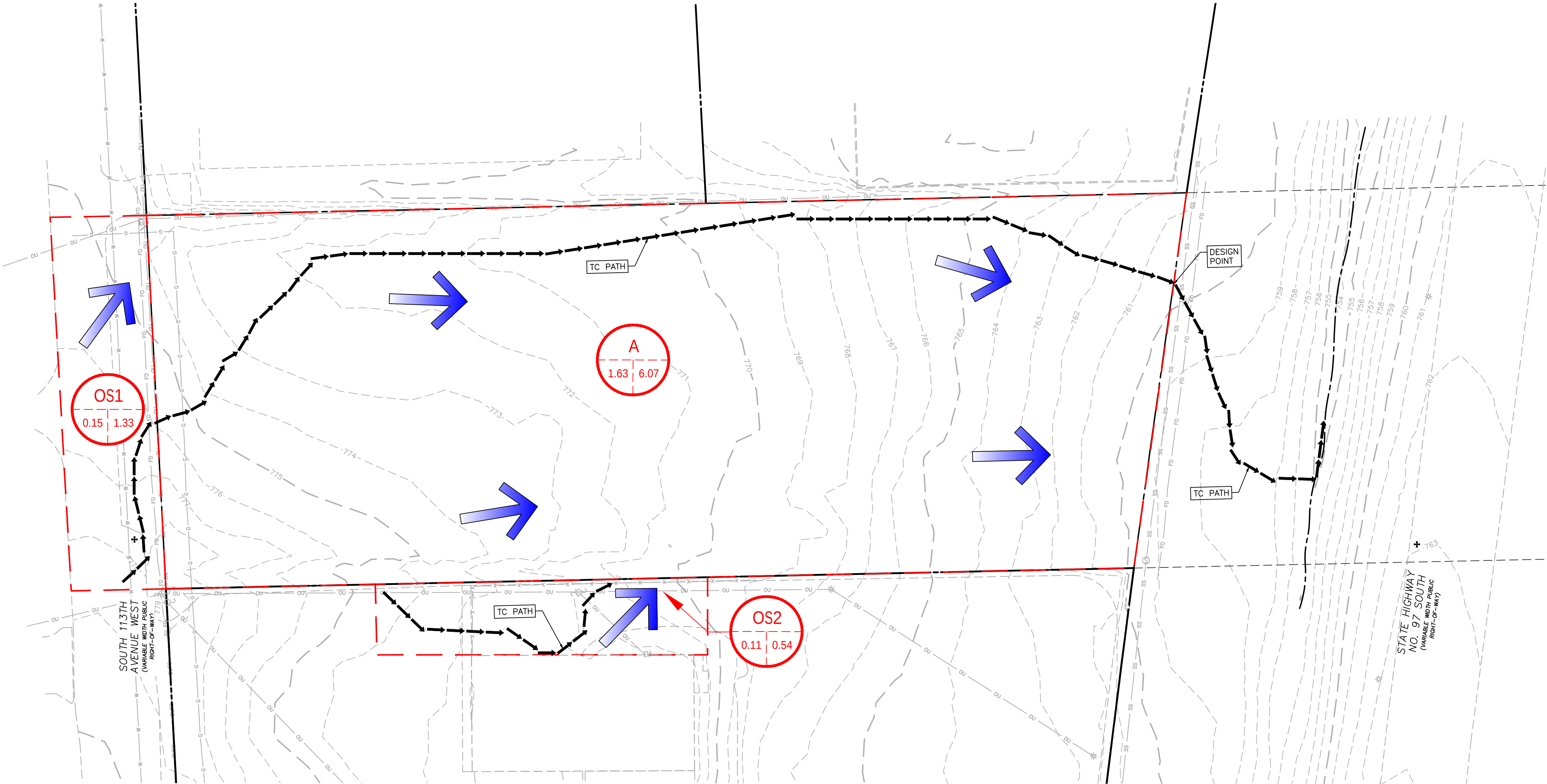
Weighted C Value				
Drainage Area	Grass (sf) 0.30	Pavement (sf) 0.95	Total Area (sf)	Weighted C Value
A	70800.85	0	70800.85	0.30
OS1	2357.49	4071.74	6429.23	0.71
OS2	3946.24	681.38	4627.62	0.40

Formula: $(\text{Grass SF} \times 0.30) + (\text{Building SF} \times 1.00) + (\text{Pavement SF} \times 0.95)$
Total Area SF



LEGEND

DRAINAGE AREA IN ACRES — 0.02 | 0.72 — RUNOFF IN CFS



ISSUE FOR BID - NOT RELEASED FOR CONSTRUCTION



McAdams

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1880 SOUTHPARK DRIVE
BIRMINGHAM, AL 35244
PHONE: 205.906.2006



EXPRESS OIL -
SAND SPRINGS, OK
CONSTRUCTION PLANS
3507 S 113TH AVENUE WEST
SAND SPRINGS, OKLAHOMA 74063

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RELEASED ON 06. 22. 2026
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UNDER THE AUTHORITY OF
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LICENSE #25761
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REVISIONS

NO.	DATE	DESCRIPTION
1	04. 17. 2026	1ST SUBMITTAL
2	05. 05. 2026	2ND SUBMITTAL
3	06. 22. 2026	3RD SUBMITTAL

PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-EDAM.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 30'
DATE 04. 17. 2026

SHEET

ON-SITE EXISTING
DRAINAGE AREA MAP

C3.03

BENCHMARKS:

BM #1: N. 409832.961' E. 2524058.613' ; ELEV: 777.55'
BM #2: N. 409830.808' E. 2524615.447' ; ELEV: 763.01'

NOTES:

1. THERE WILL BE NO INCREASE IN THE Q50 RUNOFF FROM THE DEVELOPMENT ONTO ODOT ROW.

PROPOSED DRAINAGE CALCULATIONS (100 YEAR)									Comments
Drainage Area (Ac)	Composite C	Adjusted C	C*A	Tc (min)	I (in/hr)	Q100 (cfs)			
OS1	0.13	0.69	0.86	0.11	5	13.60	1.55		SHEET FLOW TO A2
OS1A	0.02	0.85	1.00	0.02	5	13.60	0.30		SHEET FLOW TO A1
OS2	0.11	0.40	0.49	0.05	5	13.60	0.71		SHEET FLOW TO A1
A1	0.26	0.63	0.78	0.21	5	13.60	2.81		SHEET FLOW TO UNDER PAVEMENT CURB INLET
A2	0.61	0.40	0.49	0.30	5	13.60	4.09		SHEET FLOW TO CURB INLET
A3	0.23	0.67	0.84	0.19	5	13.60	2.64		SHEET FLOW TO CURB INLET
A4	0.13	0.97	1.00	0.13	5	13.60	1.80		SHEET FLOW TO CURB INLET
A5	0.11	0.98	1.00	0.11	5	13.60	1.49		SHEET FLOW TO UNDER PAVEMENT CURB INLET
B1	0.16	0.95	1.00	0.16	5	13.60	2.14		SHEET FLOW TO EXISTING CREEK
B2	0.03	0.30	0.38	0.01	5	13.60	0.14		SHEET FLOW TO EXISTING CREEK
B3	0.02	0.30	0.38	0.01	5	13.60	0.12		SHEET FLOW TO EXISTING CREEK
B4	0.05	0.30	0.38	0.02	5	13.60	0.24		SHEET FLOW TO EXISTING CREEK
B5	0.03	0.30	0.38	0.01	5	13.60	0.14		SHEET FLOW TO EXISTING CREEK
TOTAL	1.89			1.34		18.16			

PROPOSED DRAINAGE CALCULATIONS-ODOT ROW (100 YEAR)									Comments
Drainage Area (Ac)	Composite C	Adjusted C	C*A	Tc (min)	I (in/hr)	Q100 (cfs)			
B6	0.18	0.30	0.38	0.07	5	13.60	0.93		SHEET FLOW TO ODOT ROW
B7	0.07	0.95	1.00	0.07	5	13.60	0.94		SHEET FLOW TO ODOT ROW
B8	0.19	0.30	0.38	0.07	5	13.60	0.95		SHEET FLOW TO ODOT ROW
TOTAL	0.44			0.21		2.81			

ALLOWABLE OUTFLOW (100 YEAR)					Comments
Area (Ac)	Composite C	C*A	Q100 (cfs)		
1.61	0.70	1.13	5.16		SHEET FLOW TO ODOT ROW

RAINFALL INTENSITY VALUES FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA) NATIONAL PRECIPITATION FREQUENCY DATA SERVER (PFDS) - 2023

PROPOSED DRAINAGE CALCULATIONS (5 YEAR)										Comments
Drainage Area (Ac)	Composite C	Adjusted C	C*A	Tc (min)	I (in/hr)	Q5 (cfs)				
OS1	0.13	0.69	0.86	0.11	5	7.32	0.67			SHEET FLOW TO A2
OS1A	0.02	0.85	1.00	0.02	5	7.32	0.14			SHEET FLOW TO A1
OS2	0.11	0.40	0.49	0.05	5	7.32	0.31			SHEET FLOW TO A1
A1	0.26	0.63	0.78	0.21	5	7.32	1.21			SHEET FLOW TO UNDER PAVEMENT CURB INLET
A2	0.61	0.40	0.49	0.30	5	7.32	1.76			SHEET FLOW TO CURB INLET
A3	0.23	0.67	0.84	0.19	5	7.32	1.14			SHEET FLOW TO CURB INLET
A4	0.13	0.97	1.00	0.13	5	7.32	0.93			SHEET FLOW TO CURB INLET
A5	0.11	0.98	1.00	0.11	5	7.32	0.79			SHEET FLOW TO UNDER PAVEMENT CURB INLET
B1	0.16	0.95	1.00	0.16	5	7.32	1.09			SHEET FLOW TO EXISTING CREEK
B2	0.03	0.30	0.38	0.01	5	7.32	0.06			SHEET FLOW TO EXISTING CREEK
B3	0.02	0.30	0.38	0.01	5	7.32	0.05			SHEET FLOW TO EXISTING CREEK
B4	0.05	0.30	0.38	0.02	5	7.32	0.10			SHEET FLOW TO EXISTING CREEK
B5	0.03	0.30	0.38	0.01	5	7.32	0.06			SHEET FLOW TO EXISTING CREEK
TOTAL	1.89			1.34		8.30				

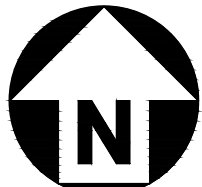
PROPOSED DRAINAGE CALCULATIONS - ODOT ROW (5 YEAR)										Comments
Drainage Area (Ac)	Composite C	Adjusted C	C*A	Tc (min)	I (in/hr)	Q5 (cfs)				
B6	0.18	0.30	0.38	0.07	5	7.32	0.40			SHEET FLOW TO ODOT ROW
B7	0.07	0.95	1.00	0.07	5	7.32	0.48			SHEET FLOW TO ODOT ROW
B8	0.19	0.30	0.38	0.07	5	7.32	0.41			SHEET FLOW TO ODOT ROW
TOTAL	0.44			0.21		1.29				

ALLOWABLE OUTFLOW (5 YEAR)					Comments
Area (Ac)	Composite C	C*A	Q5 (cfs)		
1.61	0.70	1.13	2.92		SHEET FLOW TO ODOT ROW

RAINFALL INTENSITY VALUES FROM NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S (NOAA) NATIONAL PRECIPITATION FREQUENCY DATA SERVER (PFDS) - 2023

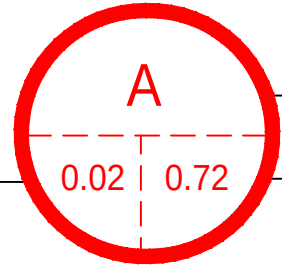
Weighted C Values					
Drainage Area	Grass 0.30	Building 1.00	Pavement 0.95	Total (sf)	Weighted C Value
OS1	2207.40	0	3233.26	5440.66	0.69
OS1A	150.09	0	838.48	988.57	0.85
OS2	3946.24	0	681.38	4627.62	0.40
A1	7034.36	0	7128.19	14162.55	0.63
A2	20323.03	46.68	3457.12	23826.83	0.40
A3	4470.11	1196.77	4446.28	10113.17	0.67
A4	0	1749.40	4011.40	5760.81	0.97
A5	0	2859.82	1909.54	4769.36	0.98
B1	0	0	6847.09	6847.09	0.95
B2	1160.81	0	0	1160.81	0.30
B3	1002.01	0	0	1002.01	0.30
B4	2079.72	0	0	2079.72	0.30
B5	1193.75	0	0	1193.75	0.30
B6	7911.69	0	0	7911.69	0.30
B7	0	0	3004.95	3004.95	0.95
B8	8077.56	0	0	8077.56	0.30

Formula: (Grass SF*0.40)+(Building SF*1.00)+(Pavement SF*0.95)
Total Area SF

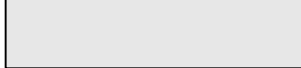


GRAPHIC SCALE
0 15 30 60
1 inch = 30 ft.

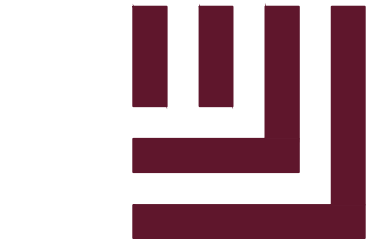
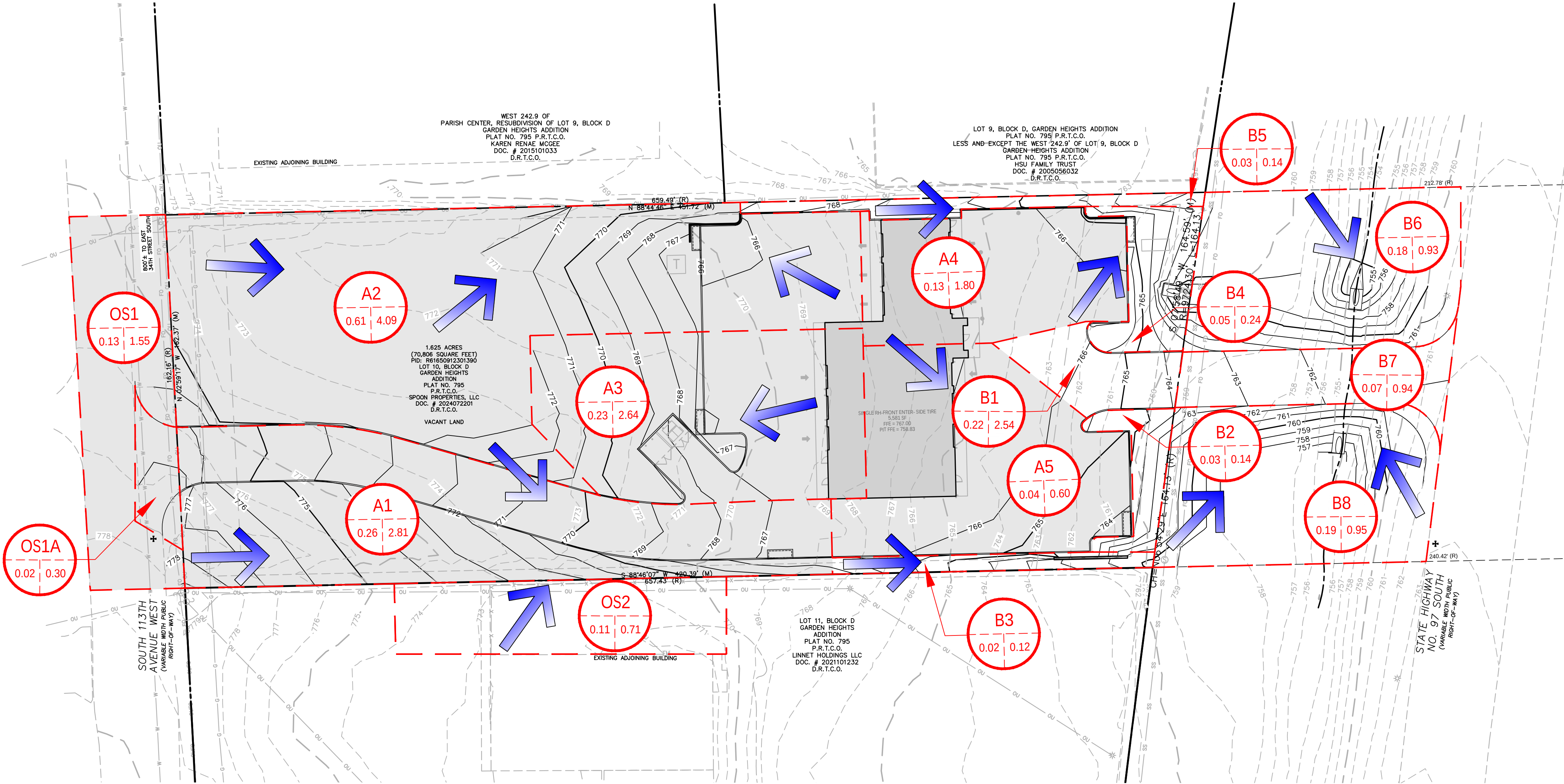
LEGEND



DRAINAGE AREA IN ACRES
RUNOFF IN CFS



POND DETENTION AREAS



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3	06.22.2026	3RD SUBMITTAL

PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-PDAM.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 30'
DATE 04. 17. 2026

SHEET

PROPOSED DRAINAGE
AREA MAP

C3.04

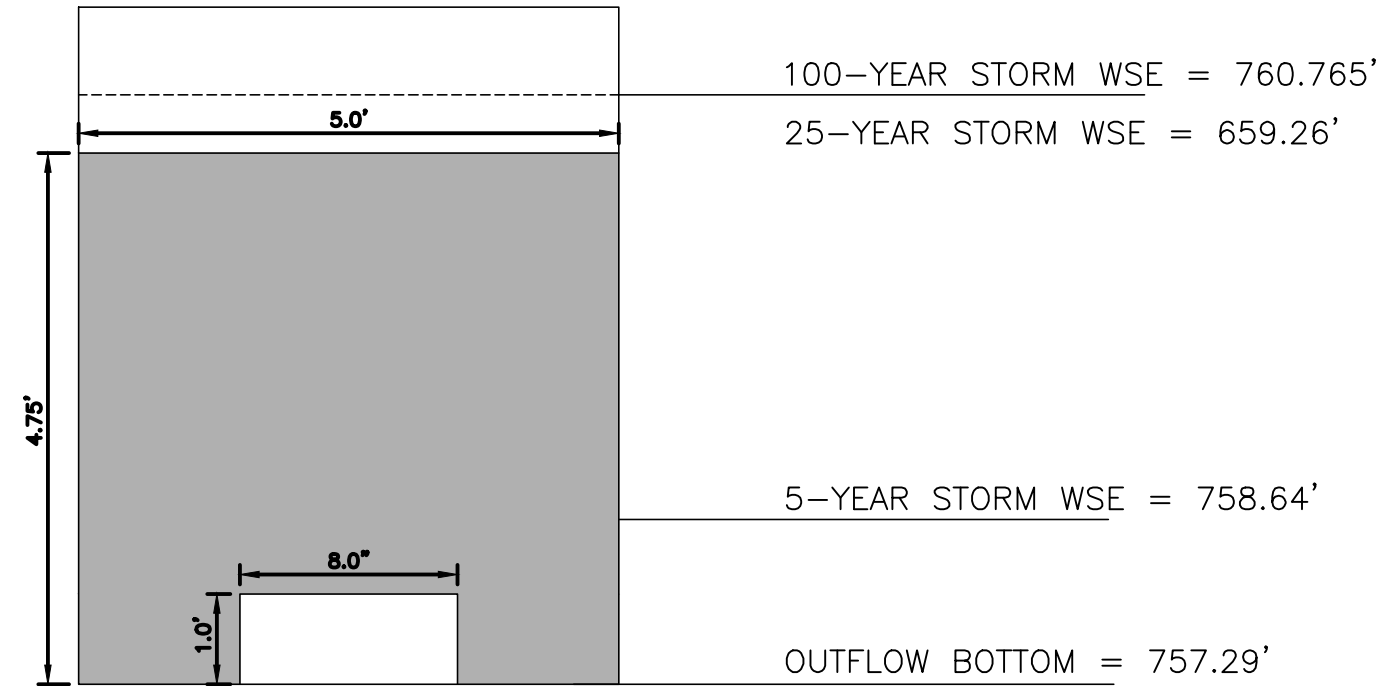
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BENCHMARKS:

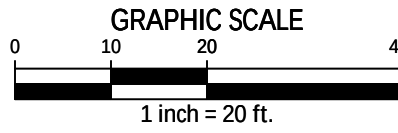
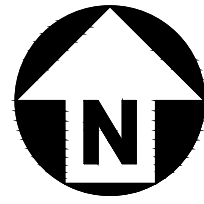
BM #1: N. 409832.961' E. 2524058.613'; ELEV: 777.55'
BM #2: N. 409830.808' E. 2524615.447'; ELEV: 763.01'

STORM NOTES:

- ALL UNDERGROUND UTILITIES INSTALLED SHALL BE ELECTRONICALLY LOCATABLE. CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE LOCAL AND STATE MUNICIPALITIES PUBLIC UTILITIES DEPARTMENT FOR DETAILS AND SPECIFICATIONS FOR MEETING THESE REQUIREMENTS.
- EXISTING UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL NOTIFY "OKIE811" (811) OR 405-840-9957 AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "OKIE811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- ALL UTILITY SLEEVES SHALL BE SCHEDULE 40 PVC AND INSTALLED WITH 2' MINIMUM COVER. BOTH ENDS SHALL BE CAPPED AND MARKED.
- VERIFY ELECTRICAL REQUIREMENTS OF ABOVE GROUND HEATED ENCLOSURES, SITE LIGHTS, SIGNS THAT REQUIRE ELECTRICAL SERVICE WITH ELECTRICAL PLANS AND NOTIFY PROJECT ELECTRICAL ENGINEER OF MISSING INFORMATION.
- CONTRACTOR TO CONFIRM LOCATION OF PROPOSED ELECTRICAL SERVICE, TRANSFORMER LOCATION, PAD CONSTRUCTION REQUIREMENTS AND CLEARANCES. LEAD TIMES WITH POWER COMPANY PRIOR TO CONSTRUCTION.
- CONTRACTOR TO CONFIRM WITH OWNER AND CONSTRUCTION REQUIREMENTS OF GAS, TELEPHONE, COMMUNICATIONS WITH OWNER AND UTILITY PROVIDER NOT SHOWN ON PLANS PRIOR TO ANY CONSTRUCTION.
- REFER TO OKDOT DETAIL R-63 ON C8.02 FOR PIPE BEDDING REQUIREMENTS. TYPE II BEDDING OR GREATER SHALL BE USED FOR ALL PVC SEWER PIPE, UNLESS CONDITIONS OF POOR (SATURATED) SOIL OR ROCK ARE PRESENT. TYPE III BEDDING SHALL BE USED FOR ALL PVC SANITARY SEWER, GRAVITY, AND FORCE MAIN PIPE, OR WHEN CONDITIONS OF POOR (SATURATED) SOIL OR ROCK ARE PRESENT WHEN INSTALLED LINES NORMALLY REQUIRING LESS BEDDING.
- RESTRAINED FITTINGS TO BE USED AT ALL BENDS. ADDITIONAL JOINTS UPSTREAM AND DOWNSTREAM OF FITTINGS ACCORDING TO CALCULATIONS DONE BY A LICENSED ENGINEER.
- STANDARD DEPTH OF COVER TO BE 3 FEET EXCEPT AT VALVE OR HYDRANT LOCATIONS OR OTHER SPECIAL SITUATIONS. COVER IS BASED ON ELEVATION BELOW EDGE OF PAVEMENT OR AS IS INDICATED ON THE PLANS.
- PROVIDE POURED IN PLACE CONCRETE PADS (18" x 18" x 6") AT ALL VALVE BOXES.
- ALL PAVEMENTS CUTS, CONCRETE, OR ASPHALT ARE TO BE REPLACED ACCORDING TO THE STANDARD DETAILS OR AS REQUIRED BY THE OKIE811.
- PAVEMENT CUTS ARE TO BE REPLACED IMMEDIATELY AFTER BACKFILLING OF INITIAL CUT EITHER WITH A PERMANENT REPLACEMENT OR A TEMPORARY REPLACEMENT OF 10" OF BASE IF CITY HAS BEEN CONTRACTED FOR PAVEMENT REPLACEMENT.
- REPAIRS TO MAIN BREAKS:
 - SOLID SLEEVES TO BE USED FOR CONNECTING SPIGOT ENDS SHALL BE OF THE LONG BODY TYPE.
 - ALL REPAIRS SHALL BE INSPECTED BY TOWN OF CHAPIN BEFORE BACKFILLING.
- IN ANY INSTANCE WHERE IT WILL BE NECESSARY TO HAVE THE WATER SHUT OFF ON EXISTING MAINS IN ORDER TO MAKE TIE-IN, THE WORK MUST BE DONE UNDER CITY SUPERVISION, AND SCHEDULED A MINIMUM OF 48 HOURS IN ADVANCE.
- ALL UNDERGROUND UTILITIES REQUIRE AS-BUILT SURVEY. GENERAL CONTRACTOR RESPONSIBLE TO COORDINATE WITH LOCAL AHJ ON AS-BUILT REQUIREMENTS.
- GROUNDWATER IS ABOUT 10 TO 15 FEET BELOW THE EXISTING GROUND SURFACE. BASED ON THE PLANNED BASEMENT EXCAVATION OF ABOUT 10 FEET, THERE IS A POTENTIAL OF ENCOUNTERING GROUNDWATER OR AT LEAST WET SOIL CONDITIONS AT THE BASE OF EXCAVATION AND STORM TRENCHES.
- GRADES SHOWN ARE PROPOSED ROUGHT GRADING AS PART OF AN OVERALL DEVELOPMENT AND CONTRACTOR TO CONFIRM ELEVATIONS PRIOR TO CONSTRUCTION.
- SUMP PUMP CONNECTION IS ONLY REGULATED TO CARRY GROUNDWATER FLOW ON THE OUTSIDE OF THE OIL CHANGE PIT. NO AUTOMOTIVE BY-PRODUCT IS ALLOWED IN THE STORMWATER SYSTEM AND MUST BE HANDLED BY AN ENVIRONMENTAL COMPANY CONTRACTED WITH EXPRESS OIL
- ALL CATCH BASINS TO HAVE FLEXSTORM PURE "PCP" INLET FILTERS. SEE DETAIL ON SHEET C8.04.
- SCM OPERATIONS AND MAINTENANCE AGREEMENT TO BE RECORDED AT END OF PROJECT. O&M AGREEMENT TO INCLUDE FILTER MAINTENANCE.

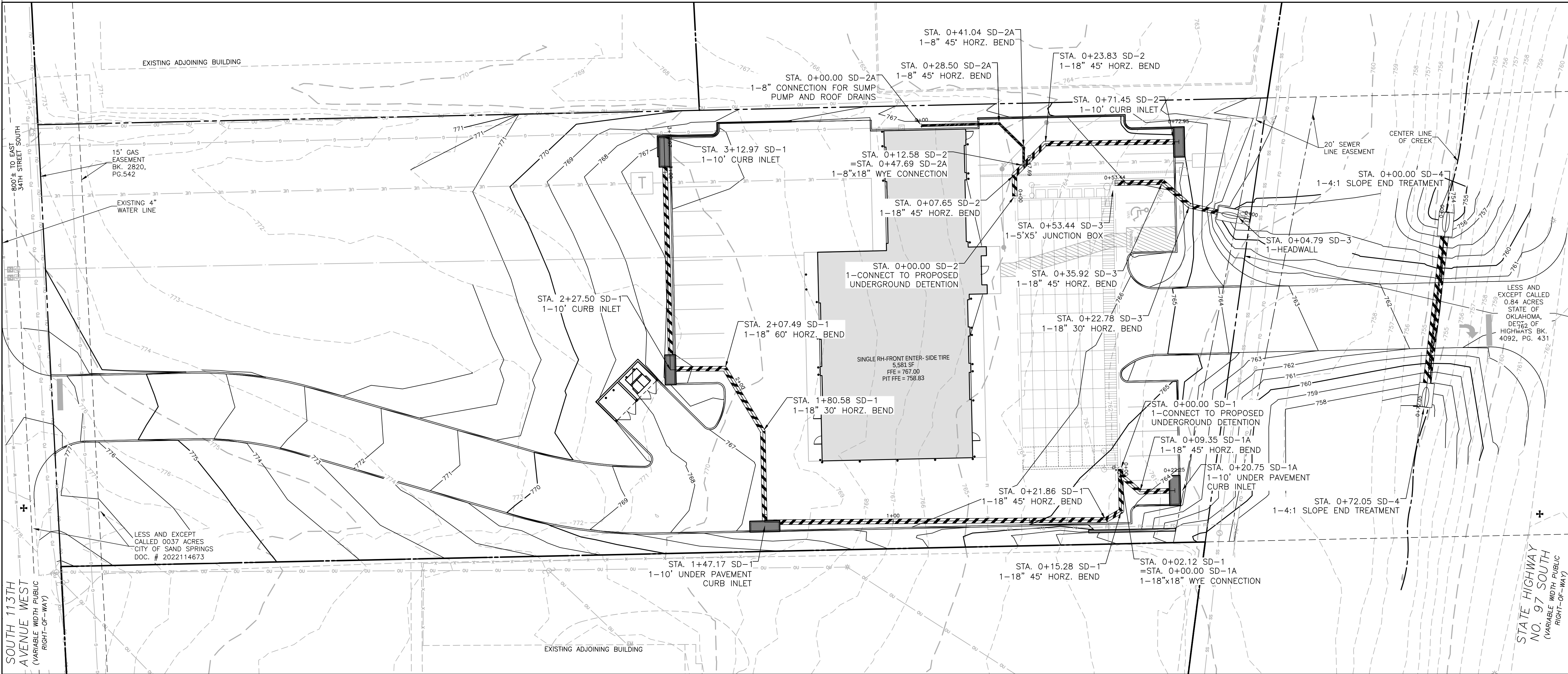


RESTRICTOR PLATE (N.T.S.)



STORM SEWER LEGEND

	CURB INLET
	GRATE INLET
	TRENCH DRAIN
	STORM DRAINAGE
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPERTY LINE
	EASEMENT LINE
	SETBACK AND BUFFER LINES



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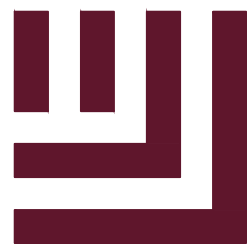
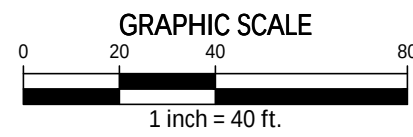
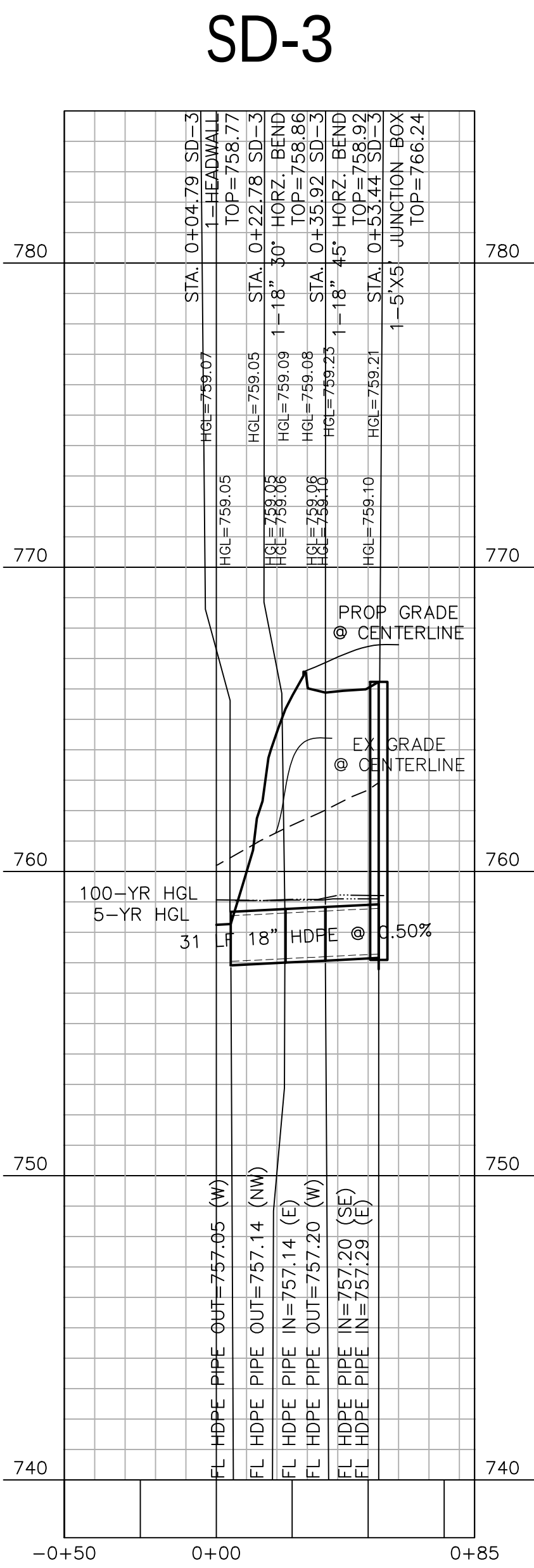
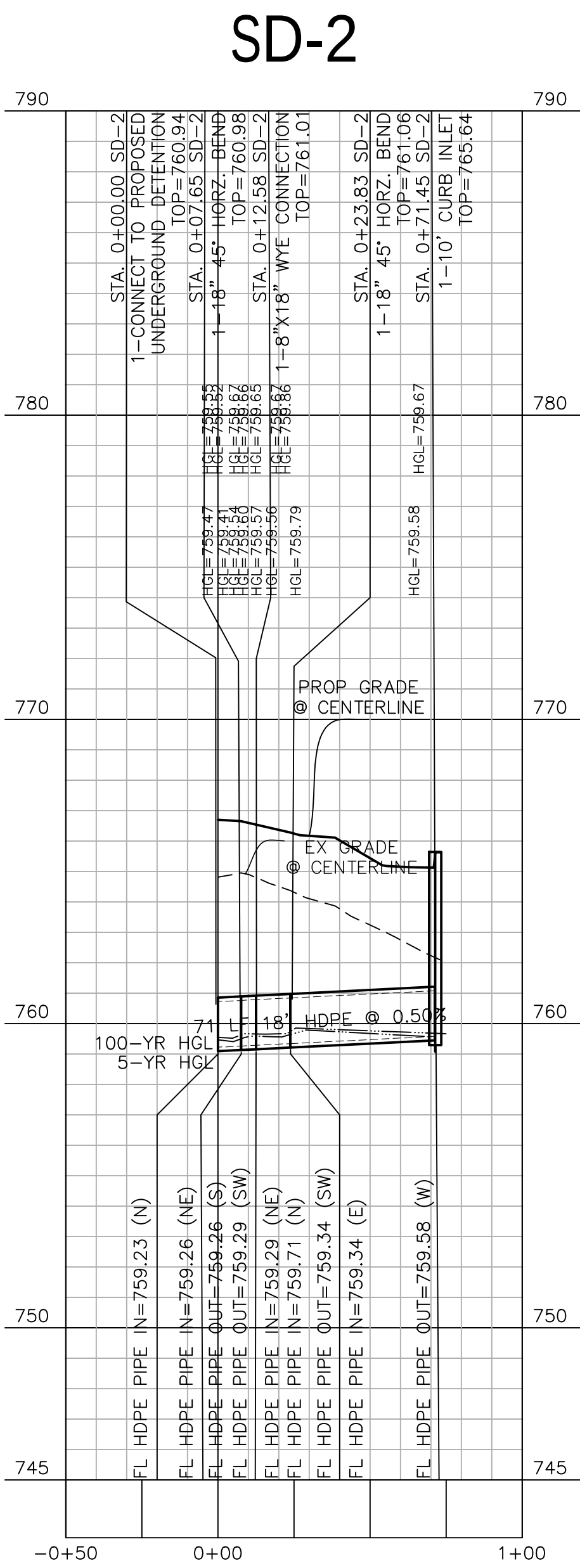
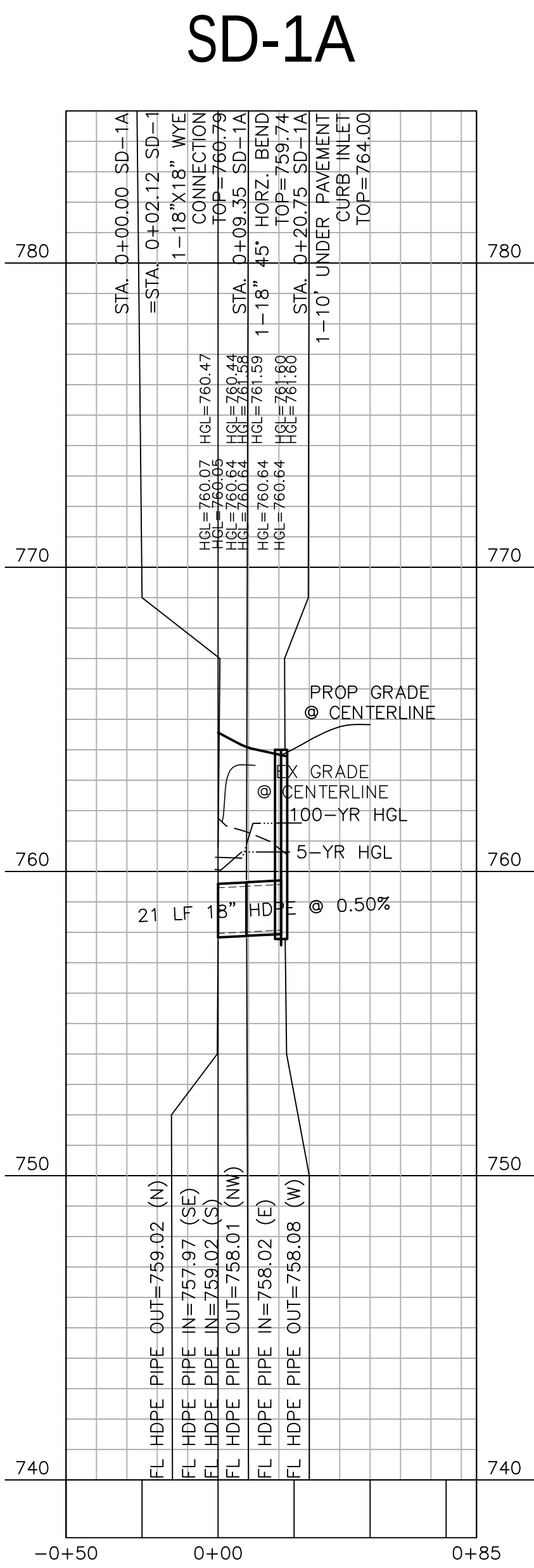
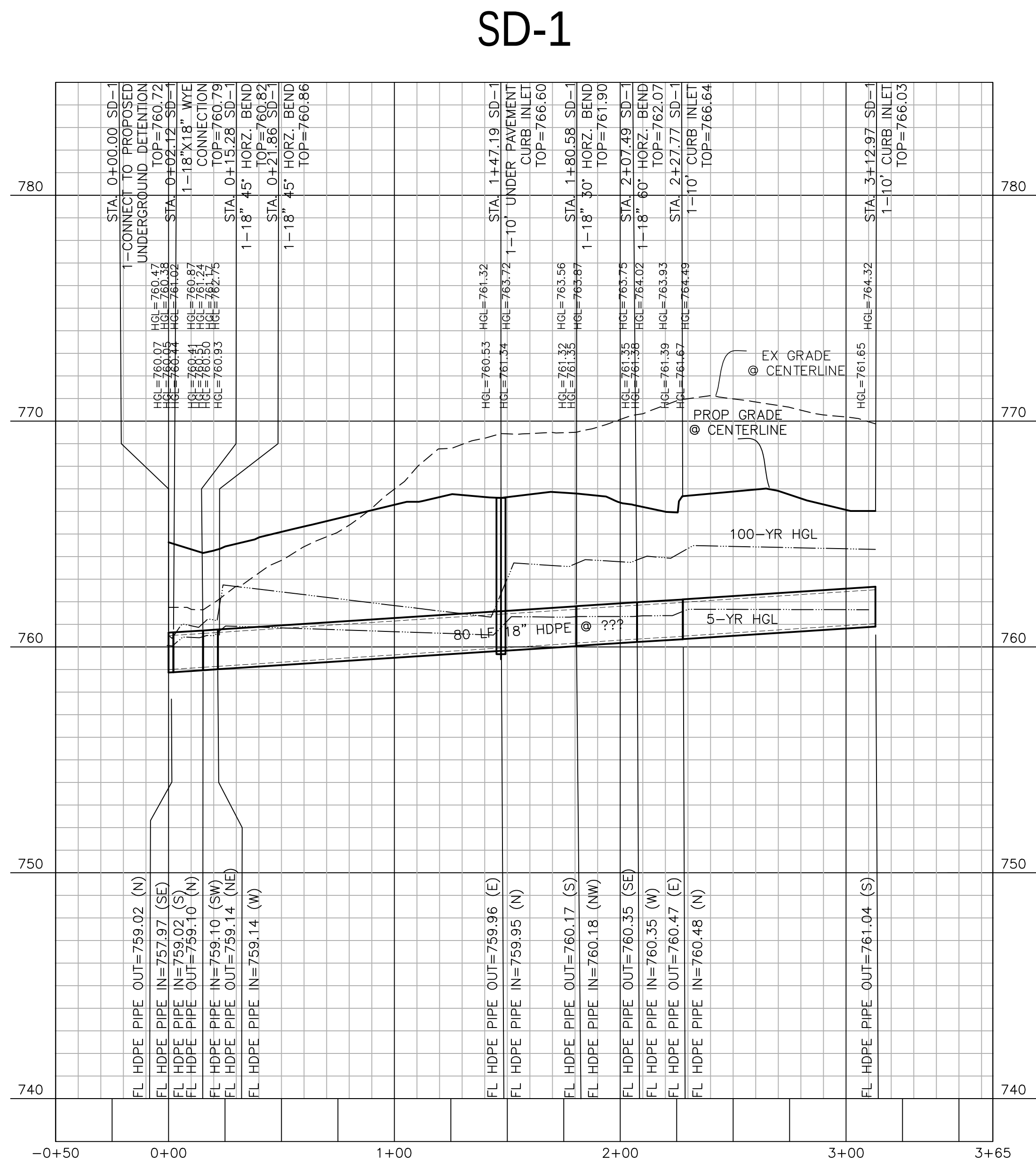
PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-SW1.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 20'
DATE 04.17.2026

SHEET

STORM DRAIN PLAN

C3.05



McADAMS

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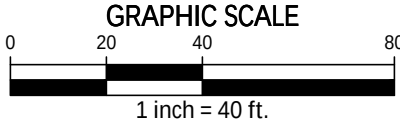
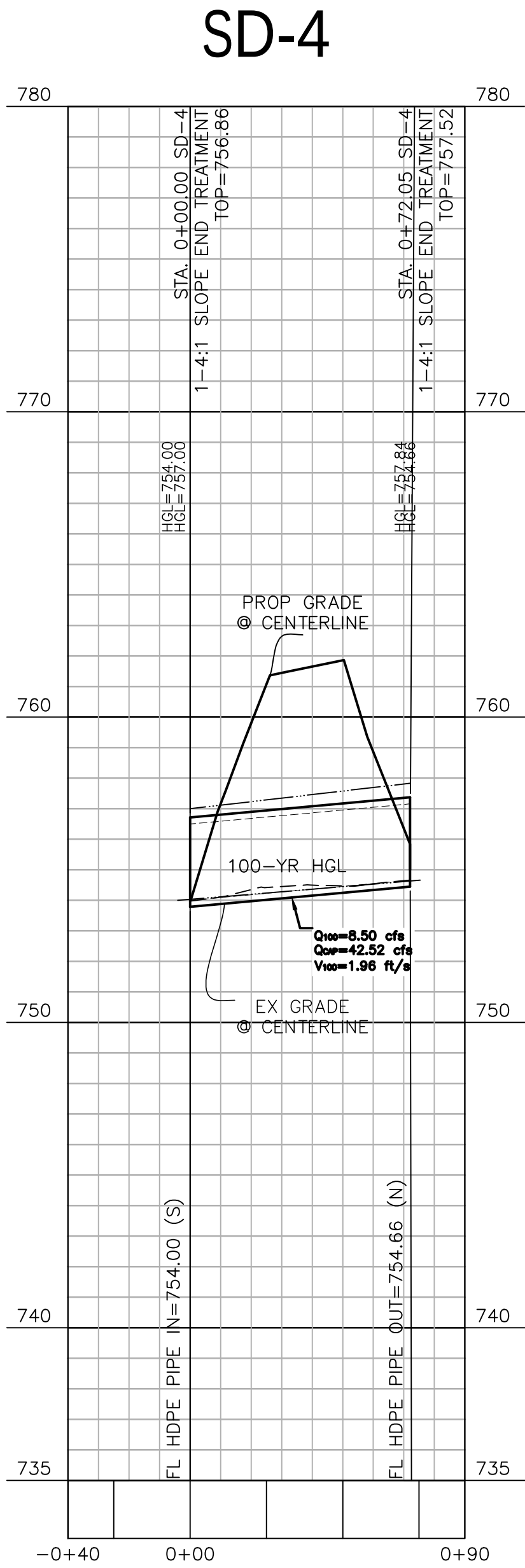
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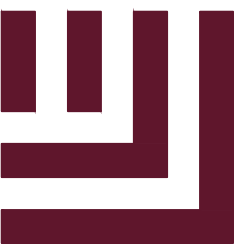
SHEET

STORM PROFILES

C3.06

Z:\Drive\Projects\EXO\EX025009\04-Production\Engineering\Sheets\EX025009-SW1.dwg, 4/23/2026, Jessica Eneadi





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NO.	DATE	DESCRIPTION
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2	05.05.2026	2ND SUBMITTAL
3	06.22.2026	3RD SUBMITTAL

PLAN INFORMATION

PROJECT NO.	EX025009
FILENAME	EX025009-SW1.DWG
CHECKED BY	BY
DRAWN BY	JE
SCALE	N.T.S.
DATE	04.17.2026

SHEET

STORM PROFILES

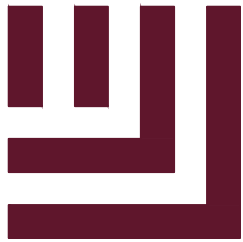
C3.07

Z:\Drive\Projects\EO\EO25009\04-Production\Engineering\Sheets\EO25009-SW1.dwg, 4/23/2026, Jessica Eneadi

EXPRESS OIL - SAND SPRINGS, OK DRAINAGE REPORT														
Pipe	Pipe	D (in)	Da (acres)	C	Tc (min)	I (in/hr)	n	A (ft2)	Wp (ft)	R	S (%)	Qpipe (cfs)	Q100 (cfs)	V100 (ft2)
1	18" HDPE	18	1.48	-	5	13.60	0.013	1.77	4.71	0.92	0.65	9.15	13.08	7.67
2	18" HDPE	18	1.35	-	5	13.60	0.013	1.77	4.71	0.92	0.65	9.18	11.45	6.48
3	18" HDPE	18	1.35	-	5	13.60	0.013	1.77	4.71	0.92	0.65	9.18	11.46	6.49
4	18" HDPE	18	1.35	0.73	5	13.60	0.013	1.77	4.71	0.92	0.65	9.17	11.73	6.64
5	18" HDPE	18	0.9	-	5	13.60	0.013	1.77	4.71	0.92	0.65	9.17	7.49	4.24
6	18" HDPE	18	0.9	-	5	13.60	0.013	1.77	4.71	0.92	0.65	9.17	7.53	4.26
7	18" HDPE	18	0.9	0.84	5	13.60	0.013	1.77	4.71	0.92	0.65	9.17	7.56	4.28
8	18" HDPE	18	0.67	0.56	5	13.60	0.013	1.77	4.71	0.92	0.65	9.17	5.09	2.88
9	18" HDPE	18	0.04	-	5	13.60	0.013	1.77	4.71	0.92	0.50	8.05	0.52	2.33
10	18" HDPE	18	0.04	-	5	13.60	0.013	1.77	4.71	0.92	0.20	5.12	0.53	1.87
11	18" HDPE	18	0.04	1	5	13.60	0.013	1.77	4.71	0.92	0.50	8.04	0.54	2.21
12	18" HDPE	18	0.13	-	5	13.60	0.013	1.77	4.71	0.92	0.50	8.05	1.76	0.99
13	18" HDPE	18	0.13	1	5	13.60	0.013	1.77	4.71	0.92	0.50	8.04	1.76	1.00
14	18" HDPE	18	0.87	0.72	5	13.60	0.013	1.77	4.71	0.92	0.92	42.52	8.50	1.96
15	18" HDPE	18	0.87	-	5	13.60	0.013	1.77	4.71	0.92	0.49	18.77	8.42	2.72
16	18" HDPE	18	0.87	-	5	13.60	0.013	1.77	4.71	0.92	0.51	19.11	8.46	2.81
17	18" HDPE	18	0.87	0.72	5	13.60	0.013	1.77	4.71	0.92	0.49	18.77	8.50	2.72

STAGE STORAGE				
Design Storm	Required Storage Volume (acre-ft)	WSF (ft)	Depth (ft)	Release Rate (cfs)
100-Year	8646.19	760.765	3.475	5.53
5-Year	4415.97	758.64	1.35	2.96
Detention Bottom		757.29		

DETENTION VOLUME		
	100-Year	5-Year
Draiange Area (acres)	1.61	1.61
Bypass Area (acres)	0.28	0.28
Bypass Flow (cfs)	2.77	1.37
Existing Flow at Design Point	18.16	8.30
Allowable Outflow (cfs)	5.16	2.92
Required Storage Volume (cfs)	8646.19	4415.97
Provided Storage Volume (cfs)	8712.69	4930.00



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EXPRESS OIL -
SAND SPRINGS, OK
CONSTRUCTION PLANS
3507 S 113TH AVENUE WEST
SAND SPRINGS, OKLAHOMA 74063

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PLAN INFORMATION

PROJECT NO.	EXO25009
FILENAME	EXO25009-SW1.DWG
CHECKED BY	BY
DRAWN BY	JE
SCALE	N.T.S.
DATE	04.17.2026

SHEET

OUTLET DETAILS

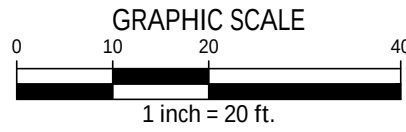
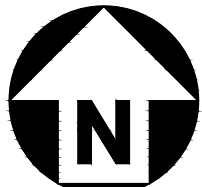
C3.08

BENCHMARKS:

BM #1: N. 409832.961' E. 2524058.613' ; ELEV: 777.55'
BM #2: N. 409830.808' E. 2524615.447' ; ELEV: 763.01'

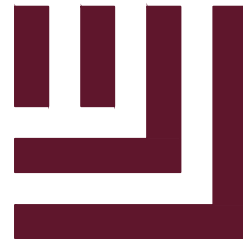
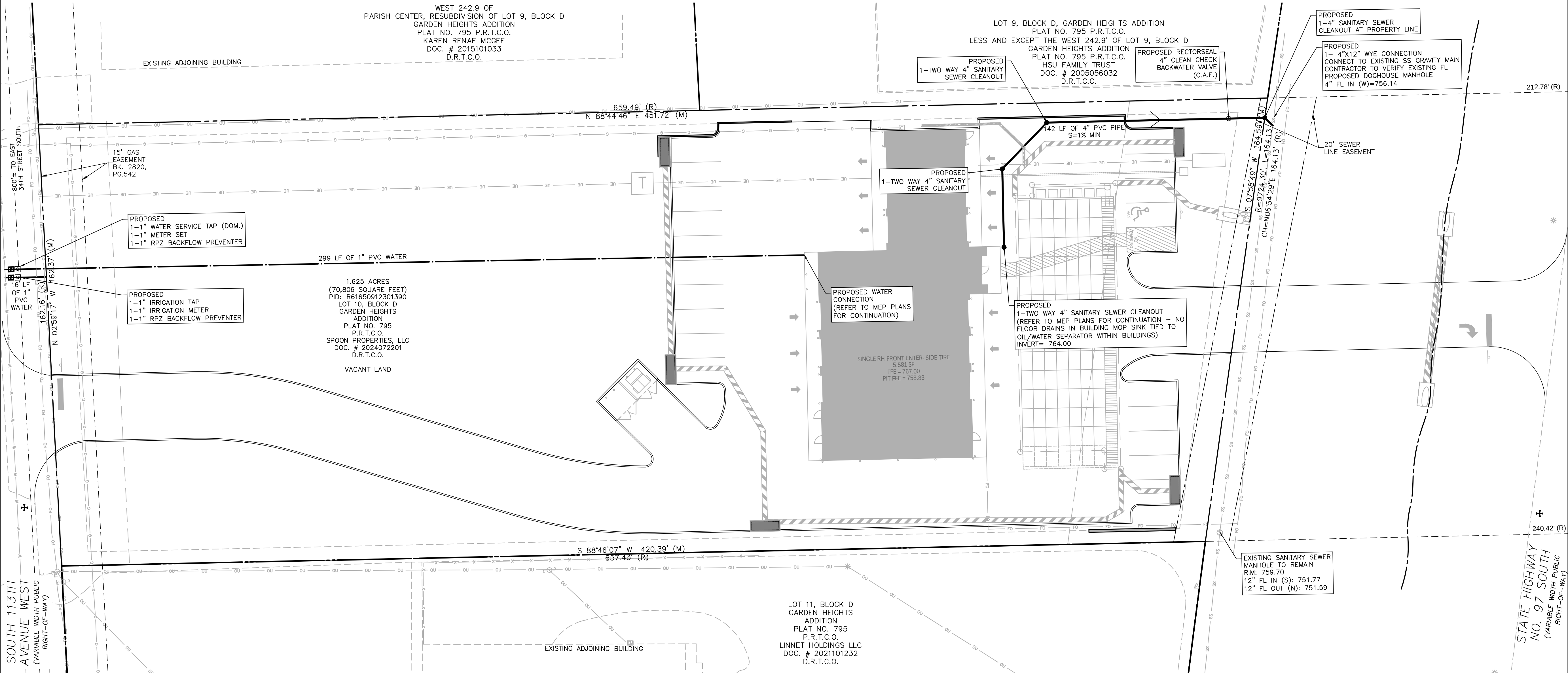
UTILITY NOTES:

- ALL SEWER MAINS SHALL BE EITHER PVC OR DUCTILE IRON PIPE AS SHOWN ON THE PLANS. ALL PIPE MATERIAL SHALL MEET LOCAL AND STATE STANDARDS AND SPECIFICATIONS.
- ALL UNDERGROUND UTILITIES INSTALLED SHALL BE ELECTRONICALLY LOCATABLE. CONTRACTOR SHALL COORDINATE DIRECTLY WITH THE LOCAL AND STATE MUNICIPALITIES PUBLIC UTILITIES DEPARTMENT FOR DETAILS AND SPECIFICATIONS FOR MEETING THESE REQUIREMENTS.
- EXISTING UTILITIES SHOWN ARE BASED ON FIELD SURVEYS AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL WATER AND SEWER MAINS NOT WITHIN PUBLIC EASEMENTS OR RIGHTS-OF-WAY TO BE PRIVATELY OWNED, OPERATED, AND MAINTAINED BY THE PROPERTY OWNER.
- CONTRACTOR SHALL NOTIFY "OKIE811" (811) OR 1-800-522-6543 AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "OKIE811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- ALL UTILITY SLEEVES SHALL BE SCHEDULE 40 PVC AND INSTALLED WITH 2' MINIMUM COVER. BOTH ENDS SHALL BE CAPPED AND MARKED.
- VERIFY ELECTRICAL REQUIREMENTS OF ABOVE GROUND HEATED ENCLOSURES, SITE LIGHTS, SIGNS THAT REQUIRE ELECTRICAL SERVICE WITH ELECTRICAL PLANS AND NOTIFY PROJECT ELECTRICAL ENGINEER OF MISSING INFORMATION.
- CONTRACTOR TO CONFIRM LOCATION OF PROPOSED ELECTRICAL SERVICE, TRANSFORMER LOCATION, PAD CONSTRUCTION REQUIREMENTS AND CLEARANCES. LEAD TIMES WITH POWER COMPANY PRIOR TO CONSTRUCTION.
- CONTRACTOR TO CONFIRM WITH OWNER AND CONSTRUCTION REQUIREMENTS OF GAS, TELEPHONE, COMMUNICATIONS WITH OWNER AND UTILITY PROVIDER NOT SHOWN ON PLANS PRIOR TO ANY CONSTRUCTION.
- RESTRAINED FITTINGS TO BE USED AT ALL BENDS. ADDITIONAL JOINTS UPSTREAM AND DOWNSTREAM OF FITTINGS ACCORDING TO CALCULATIONS DONE BY A LICENSED ENGINEER.
- EXTENSIONS FOR VALVE BOXES, WHEN REQUIRED, ARE TO BE VALVE BOXES.
- ALL PAVEMENTS CUTS, CONCRETE, OR ASPHALT ARE TO BE REPLACED ACCORDING TO THE STANDARD DETAILS OR AS REQUIRED BY CITY REQUIREMENTS.
- CONTRACTOR TO VERIFY THE SIZES AND LOCATIONS OF THE IRRIGATION TAP, METER AND BACKFLOW WITH THE IRRIGATION PLANS PROVIDED BY THE IRRIGATION DESIGNER PRIOR TO CONSTRUCTION.



UTILITY LEGEND

- | | |
|--------------------------|---------------------------------|
| --- | PROPERTY LINE |
| - - - - - | SANITARY SEWER EASEMENT |
| - - - - - | GAS EASEMENT |
| --- SS --- SS --- SS --- | EXISTING SANITARY SEWER LINE |
| --- W --- W --- W --- | EXISTING WATER LINE |
| --- G --- G --- | EXISTING GAS LINE |
| --- OU --- OU --- | EXISTING OVERHEAD ELECTRIC LINE |
| --- FO --- FO --- | EXISTING FIBER OPTIC CABLE LINE |
| - - - - - | EXISTING EDGE OF PAVEMENT |
| ⌂ | EXISTING POWER POLE |
| --- | SANITARY SEWER LINE |
| --- | WATER LINE |
| --- | GAS LINE |
| --- | UNDERGROUND ELECTRIC |
| ===== | UTILITY SLEEVES |
| □ | ELECTRIC PANEL |
| ⊠ | WATER METER |
| ⊠ | BACKFLOW PREVENTER |
| • | SEWER CLEAN-OUT |
| o | BACKWATER VALVE |
| > | SEWER FLOW DIRECTION ARROW |



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PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-U2.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 20'
DATE 04. 17. 2026

SHEET

WATER & SEWER PLAN

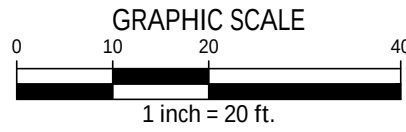
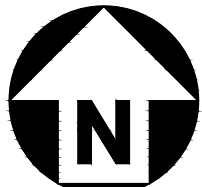
C4.00

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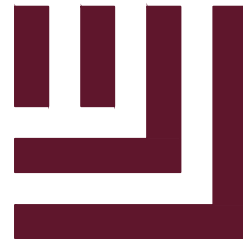
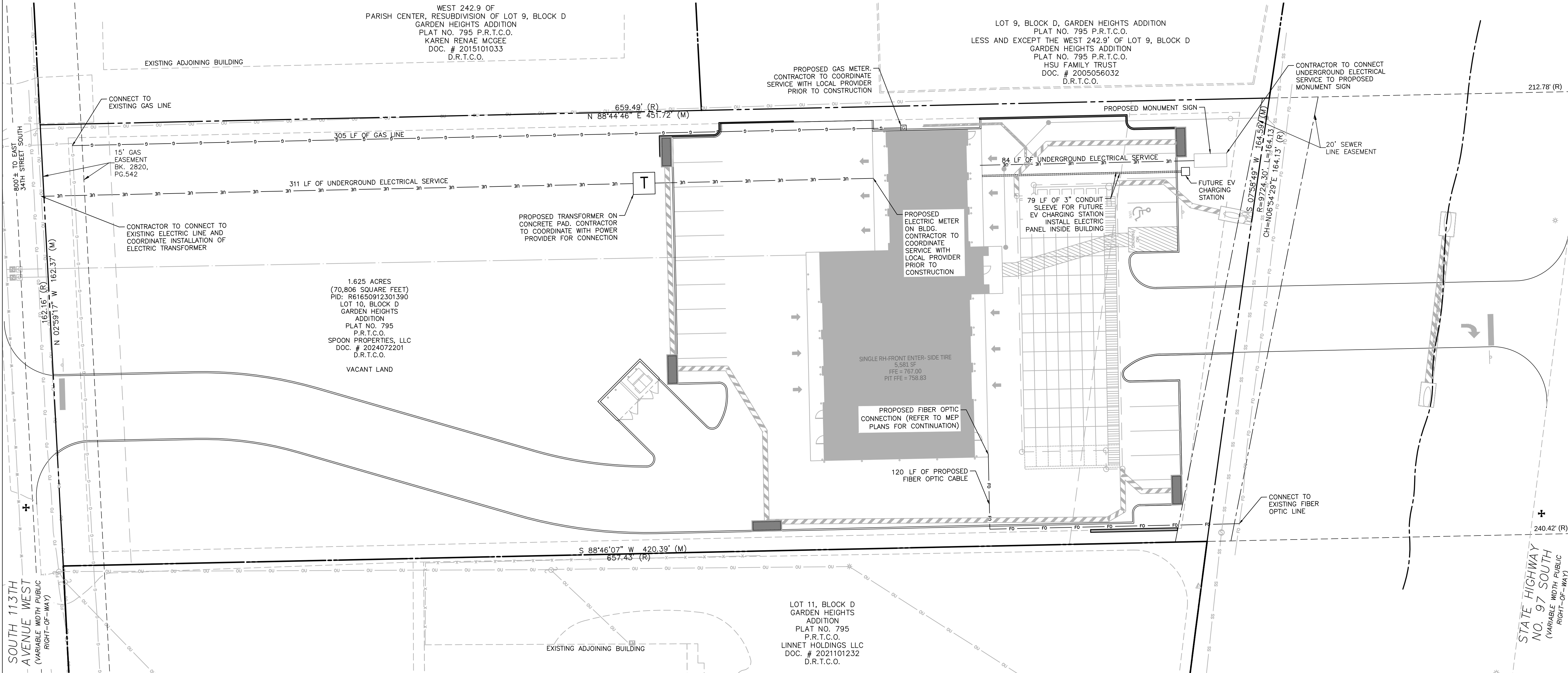
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	SANITARY SEWER EASEMENT
	GAS EASEMENT
	EXISTING SANITARY SEWER LINE
	EXISTING WATER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING FIBER OPTIC CABLE LINE
	EXISTING EDGE OF PAVEMENT
	EXISTING POWER POLE
	SANITARY SEWER LINE
	WATER LINE
	GAS LINE
	UNDERGROUND ELECTRIC LINE
	FIBER OPTIC CABLE LINE
	UTILITY SLEEVES
	ELECTRIC PANEL
	WATER METER
	BACKFLOW PREVENTER
	SEWER CLEAN-OUT
	BACKWATER VALVE
	SEWER FLOW DIRECTION ARROW



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PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-U1.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 20'
DATE 04. 17. 2026

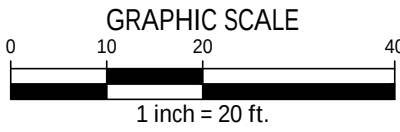
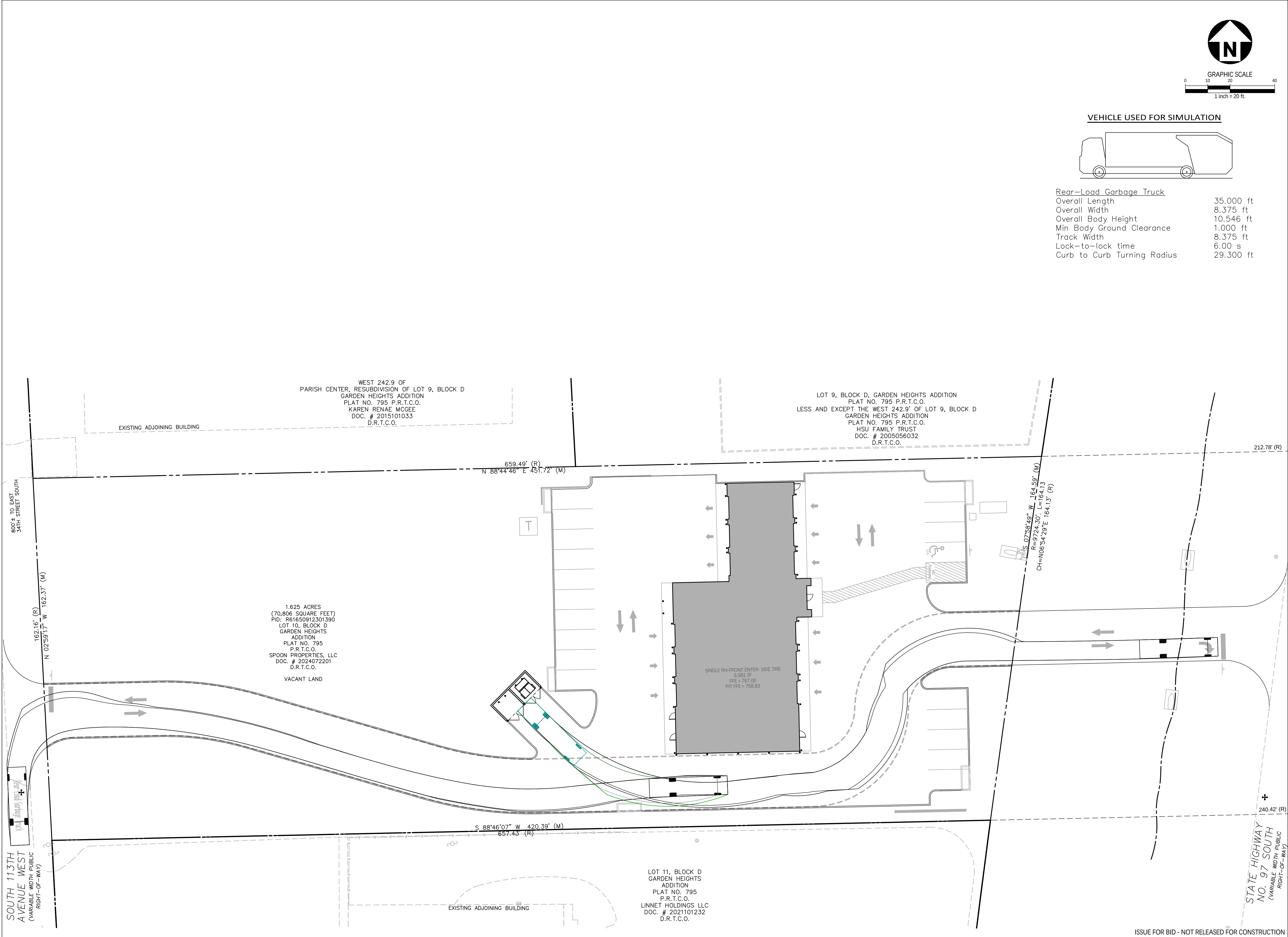
SHEET

FRANCHISE UTILITY
PLAN

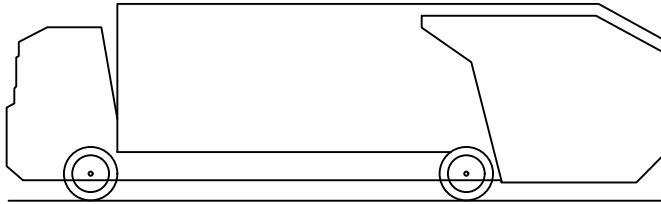
C4.01

ISSUE FOR BID - NOT RELEASED FOR CONSTRUCTION

Z:\2D\new\Projects\EX01\EX025009\04-Production\Engineering\Sheets\EX025009-E1.dwg, 6/23/2026, Jessica Emeodi



VEHICLE USED FOR SIMULATION



Rear-Load Garbage Truck	
Overall Length	35.000 ft
Overall Width	8.375 ft
Overall Body Height	10.546 ft
Min Body Ground Clearance	1.000 ft
Track Width	8.375 ft
Lock-to-lock time	6.00 s
Curb to Curb Turning Radius	29.300 ft



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DRAWN BY	JE
SCALE	1" = 20'
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SHEET

GARBAGE TRUCK
TURN EXHIBIT

C5.00

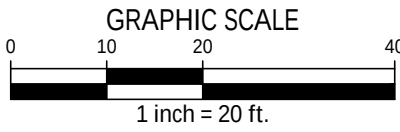
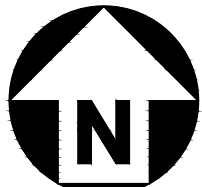
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EXISTING CONDITIONS AND DEMOLITION PLAN NOTES:

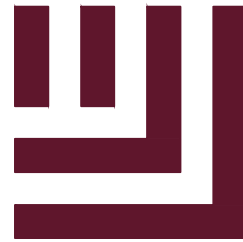
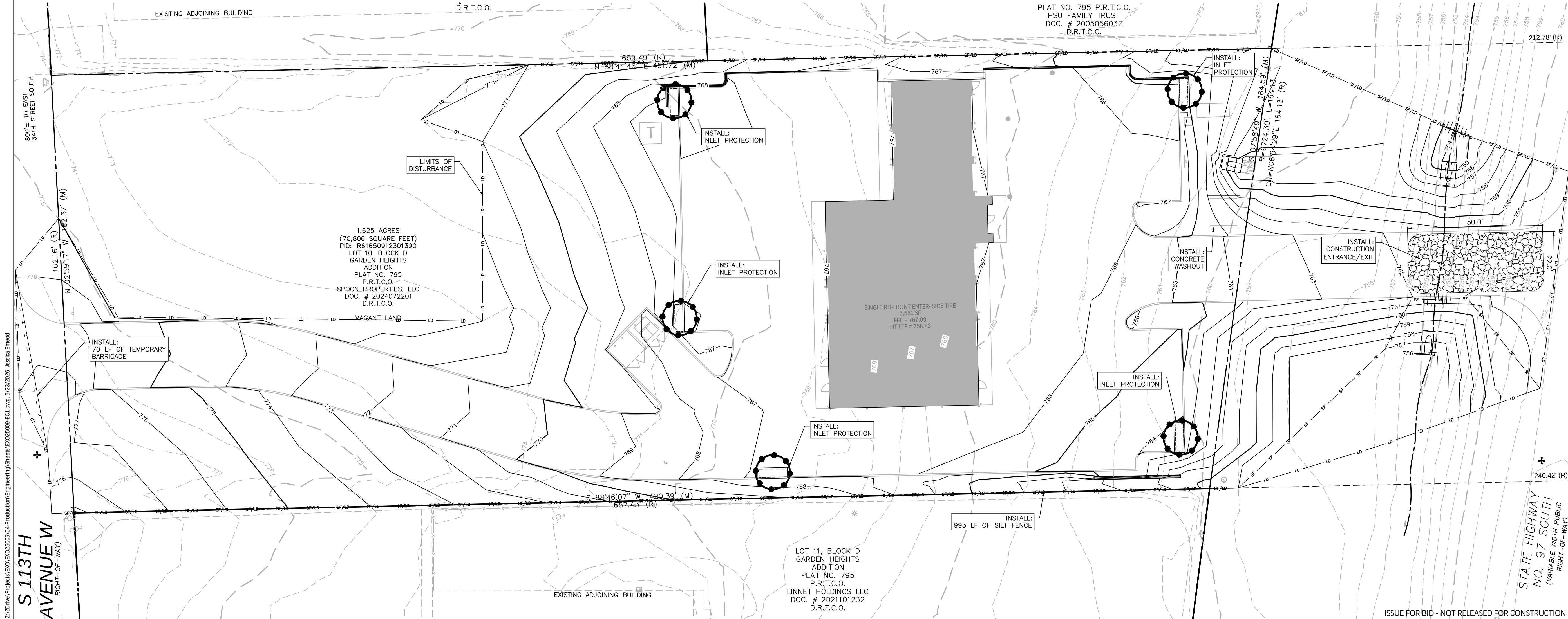
- NPDES STORMWATER CONSTRUCTION PERMIT - NOTICE OF INTENT/ NOTICE OF COVERAGE NEEDED FROM OKLAHOMA - OPERATORS OF CONSTRUCTION SITES INVOLVING CLEARING, GRADING OR EXCAVATION THAT RESULT IN AN AREA OF DISTURBANCE OF ONE OR MORE ACRES, AND ACTIVITIES THAT RESULT IN THE DISTURBANCE OF LESS THAN ONE ACRE IF IT IS PART OF A LARGER COMMON PLAN OF DEVELOPMENT OR SCALE.
- GRADING AND EROSION CONTROL METHODS SHALL ADHERE TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION (ODOT) STANDARDS AND SPECIFICATIONS, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY EROSION AND SEDIMENT CONTROL MANUAL AND STATE OF OKLAHOMA GENERAL PERMIT FOR SMALL CONSTRUCTION.
- FAILURE TO FOLLOW THE APPROVED PLAN SEQUENCE AND DETAILS COULD SUBJECT THE CONTRACTOR TO FINES AND PENALTIES ISSUED BY EITHER THE SAND SPRINGS EROSION CONTROL DEPARTMENT OR ODOT.
- CONTRACTOR SHALL SEED AND STABILIZE ALL STEEP SLOPES (STEEPER THAN 3H:1V OR GREATER THAN 50 FT IN LENGTH) WITHIN 7 DAYS, 14 DAYS FOR MODERATE SLOPES (3H:1V OR FLATTER).
- FOR ANY LAND-DISTURBING ACTIVITY WHERE GRADING ACTIVITIES HAVE BEEN COMPLETED, TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION SHALL BE PROVIDED AS SOON AS PRACTICAL, BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER COMPLETING THE WORK. STABILIZATION IS THE BEST FORM OF EROSION CONTROL. TEMPORARY SEEDING IS NECESSARY TO ACHIEVE EROSION CONTROL ON LARGE DENUDED AREAS AND ESPECIALLY WHEN SPECIFICALLY REQUIRED AS PART OF THE CONSTRUCTION SEQUENCE ON THE PLAN.
- NO DEBRIS SHALL BE TRACKED ONTO PUBLIC RIGHT OF WAY. IF THE SITUATION OCCURS WHERE MUD, ROCK AND DEBRIS IS TRACKED ONTO PAVEMENT, THE CONTRACTOR SHALL CLEAN THE PAVEMENT AND INSTALL ADDITIONAL MEASURES TO PREVENT THE FUTURE OCCURRENCE.
- THE EROSION CONTROL INSPECTOR MAY REQUIRE ADDITIONAL FIELD MEASURES AS NECESSARY TO PROVIDE ADEQUATE PROTECTION FROM RECEIVING WATER COURSES.
- EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED AND INSPECTED PRIOR TO ANY GRADING ON SITE. THE CONTRACTOR SHALL CALL FOR AN INSPECTION BY THE (MUNICIPAL) SEDIMENTATION AND EROSION CONTROL (SEC) ONCE INITIAL MEASURES ARE IN PLACE. (SEE CONSTRUCTION SEQUENCES)
- CONTRACTOR SHALL INSPECT ALL SEDIMENT/EROSION CONTROL DEVICES AFTER EACH STORM EVENT. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
- A COPY OF THE APPROVED EROSION CONTROL PLAN MUST BE ON FILE AT THE JOB SITE AT ALL TIMES.
- CONSTRUCTION, MAINTENANCE, AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GRADING CONTRACTOR UNLESS OTHERWISE NOTED.
- ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE CITY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
- ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF THE CITY ENGINEERING DEPARTMENT AND ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE STRIPPING OF TOPSOIL OR LOWERING OF EXISTING GRADE AROUND A TREE, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE OF THE TREE SAVE AREA AT THE SAME TIME AS OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED AREA AND SHALL BE POSTED ON THE PROTECTION FENCE. A PROTECTION FENCE CONSTRUCTED OF MATERIAL RESISTANT TO DEGRADATION BY SUN, WIND, AND MOISTURE FOR THE DURATION OF THE CONSTRUCTION, SHALL BE INSTALLED AT THE SAME TIME AS THE EROSION CONTROL MEASURES AND SHALL BE IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE.
- THE CONTRACTOR MAY BE ALLOWED, WITH PRIOR APPROVAL FROM THE OWNER, TO COORDINATE CHANGES TO THE PLAN WITH THE ON-SITE SEDIMENTATION & EROSION CONTROL INSPECTOR AND THE ENGINEER.
- PROVIDE INLET PROTECTION AROUND ALL SITE STORM INLETS. PROTECT OPEN PIPES UNDER CONSTRUCTION WITH EITHER PLYWOOD OR WITH MESH AND GRAVEL WEIRS. RUNOFF SHALL NOT BE ALLOWED IN ANY OPEN TRENCH.
- CONTRACTOR WILL FIELD LOCATE SILT FENCE OUTLETS AT LOW POINTS IN SILT FENCE AS REQUIRED TO PROVIDE RELIEF FROM CONCENTRATED FLOWS.
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- DISTURBANCE OUTSIDE OF THE SITE PROPERTY LIMITS OR PUBLIC RIGHT-OF-WAY SHALL ONLY BE AS ALLOWED BY SIGNED GRADING AGREEMENTS AND/OR EASEMENTS BETWEEN THE DEVELOPER AND THE OFFSITE PROPERTY OWNER.
- THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN SAFE OPEN ACCESS TO ALL PROPERTIES ALONG ADJACENT PROPERTIES DURING CONSTRUCTION PERIOD FOR IMPROVEMENTS.
- SEEDING TO BE PER OKLAHOMA DOT VEGETATION SCHEDULE, APPENDIX G, OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY HANDBOOK FOR EROSION CONTROL, SEDIMENT CONTROL AND STORM WATER MANAGEMENT ON CONSTRUCTION SITES AND URBAN AREAS LATEST EDITION.



EROSION CONTROL LEGEND

- SILT FENCE OVERFLOW STRUCTURE
- INLET PROTECTION
- LIMITS OF DISTURBANCE
- SILT FENCE/LIMITS OF DISTURBANCE
- SILT FENCE
- TEMPORARY BARRICADE
- CONSTRUCTION ENTRANCE/EXIT
- CONCRETE WASHOUT

DISTURBED ACREAGE = 1.77 ACRES



McAdams

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CONTACT

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PHONE: 501. 840. 0001

CLIENT

TYLER HENDON
1880 SOUTHPARK DRIVE
BIRMINGHAM, AL 35244
PHONE: 205.906.2006



EXPRESS OIL -
SAND SPRINGS, OK
CONSTRUCTION PLANS
3507 S 113TH AVENUE WEST
SAND SPRINGS, OKLAHOMA 74063

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REVISIONS

NO.	DATE	DESCRIPTION
1	04.17.2026	1ST SUBMITTAL
2	05.05.2026	2ND SUBMITTAL
3	06.22.2026	3RD SUBMITTAL

PLAN INFORMATION

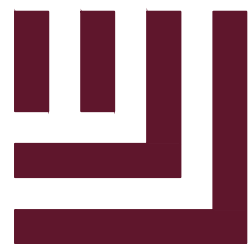
PROJECT NO. EXO25009
FILENAME EXO25009-EC1.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 20'
DATE 04.17.2026

SHEET

EROSION
CONTROL PLAN

C6.00

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PROJECT NO. EXO25009

FILENAME EXO25009-D1.DWG

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SCALE N.T.S.

DATE 04. 17. 2026

SHEET

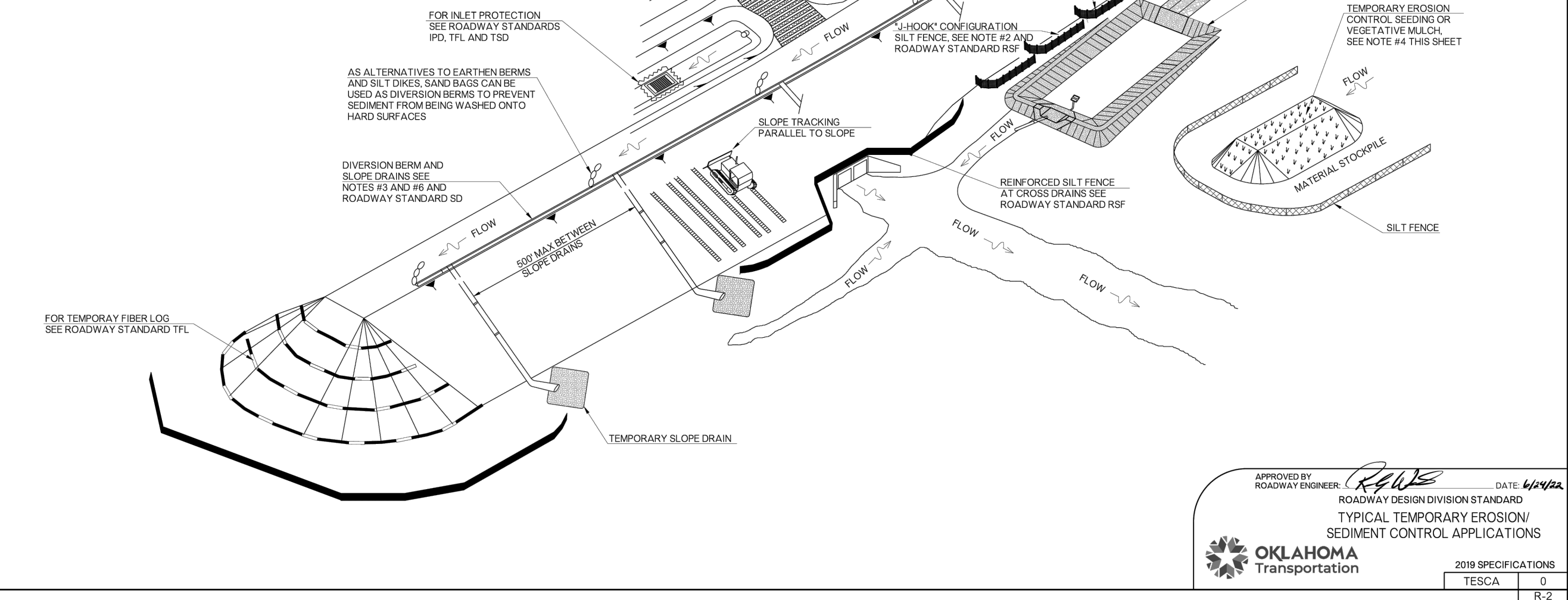
EROSION CONTROL
DETAILS

C6.01

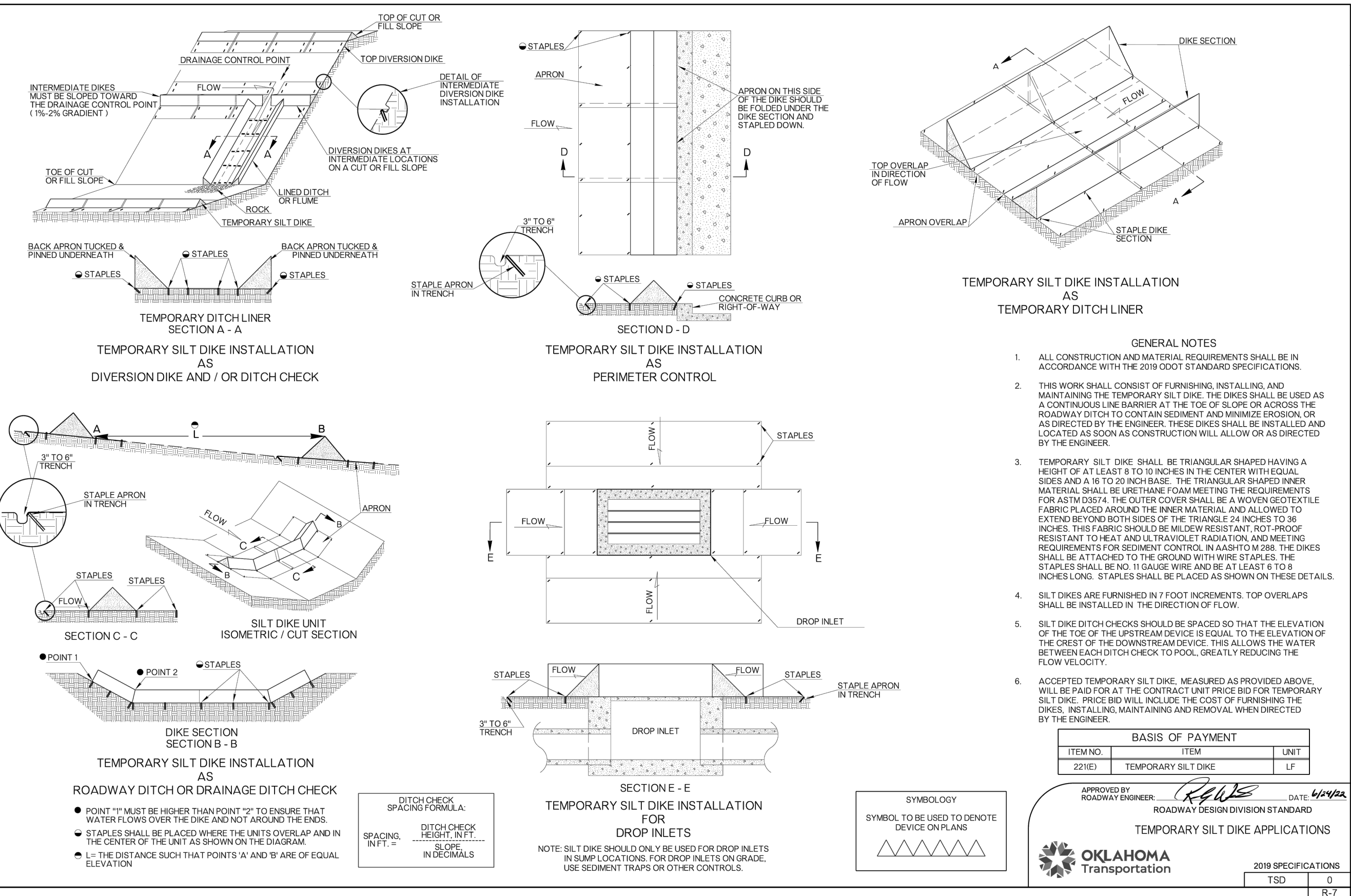
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GENERAL NOTES

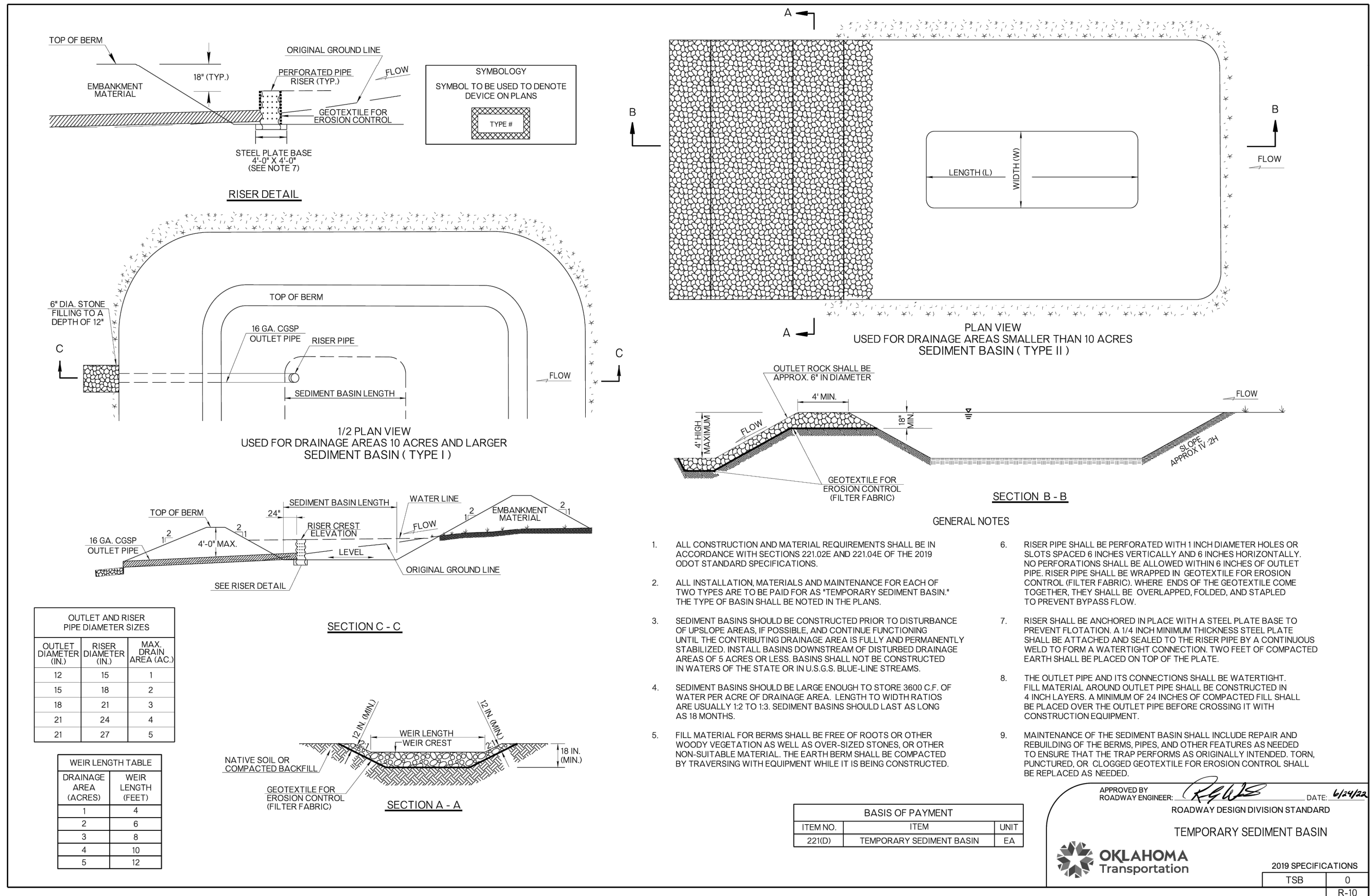
- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 2019 ODOT STANDARD SPECIFICATIONS.
- "J-HOOK" CONFIGURATION SILT FENCE APPLICATIONS ARE TO BE USED IN CONJUNCTION WITH PERIMETER SILT FENCE WHEN STORMWATER RUNOFF IS IN TWO DIRECTIONS DOWN A FILL SLOPE AND DOWN GRADIENT ALONG THE RIGHT-OF-WAY.
- FOR SHEET FLOW OR NON-CONCENTRATED FLOW, DIVERSION BERMS, AS PART OF SLOPE DRAINS, CAN BE USED TO SAFELY CONVEY STORMWATER AWAY FROM OR AROUND A DENIED AREA. THE DIVERSION BERMS CAN BE MADE OF SAND BAGS OR LOCAL SOIL. SEE ROADWAY STANDARD SD.
- ERODIBLE MATERIAL STOCKPILES, WHICH ARE STILL PRESENT AFTER 14 DAYS, SHALL BE STABILIZED WITH MULCHING AND/OR SEEDING.
- EROSION CONTROL / TURF REINFORCEMENT MATS OR HYDRAULIC MULCH MAY BE USED FOR EROSION PROTECTION AND VEGETATION ESTABLISHMENT ON 1V:2H OR STEEPER SOIL SLOPES WITH SLOPE LENGTH MORE THAN 15 FEET OR IN SENSITIVE AREAS WHEN DIRECTED BY THE ENGINEER. EROSION CONTROL / TURF REINFORCEMENT MATS MAY ALSO BE UTILIZED IN CHANNELS WHEN DIRECTED BY THE ENGINEER. SEE ROADWAY STANDARDS ECTRM1 AND ECTRM2.
- TEMPORARY SLOPE DRAINS MAY BE CONSTRUCTED USING PIPE OR EXCAVATED DITCH. SEE ROADWAY STANDARD SD.
- SHEET FLOW IS DEFINED AS THE FLOW OF WATER OVER A PLANE SURFACE AS A MORE OR LESS UNIFORMLY THICK FILM OR SHEET OF WATER.
- SHALLOW CONCENTRATED FLOW IS FLOW AT THE END OF SHEET FLOW. IT ACCUMULATES IN SMALL RILLS OR GULLIES AND SWALES. ITS DEPTH CAN RANGE FROM 1.5 TO 6 INCHES. IT IS NOT CONCENTRATED ENOUGH TO BE DEFINED AS CHANNEL.
- IF ANY BEST MANAGEMENT PRACTICE CREATES PONDING OF WATER, ENSURE THE PONDING DOESN'T CAUSE ANY ADVERSE IMPACTS.



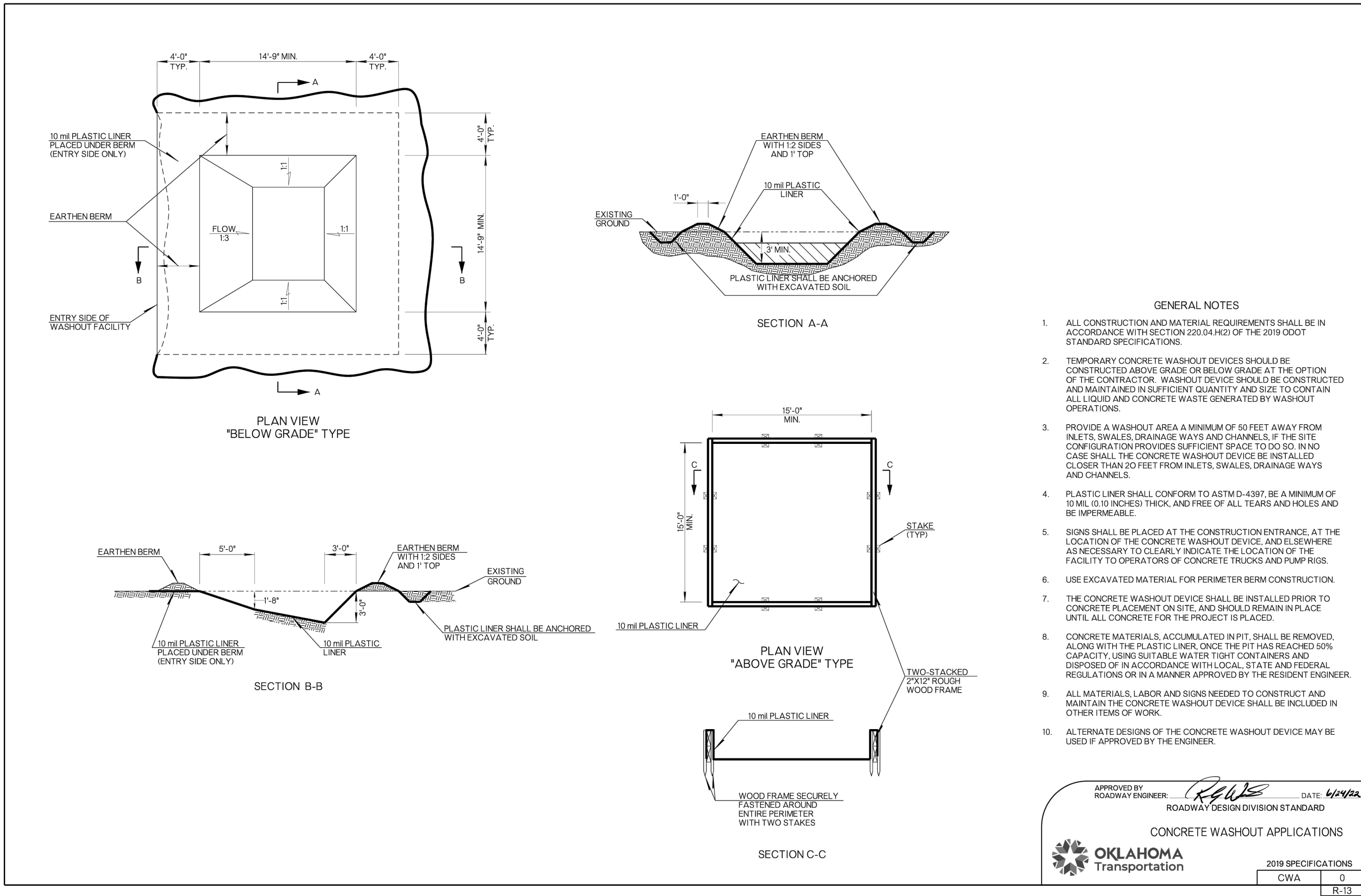
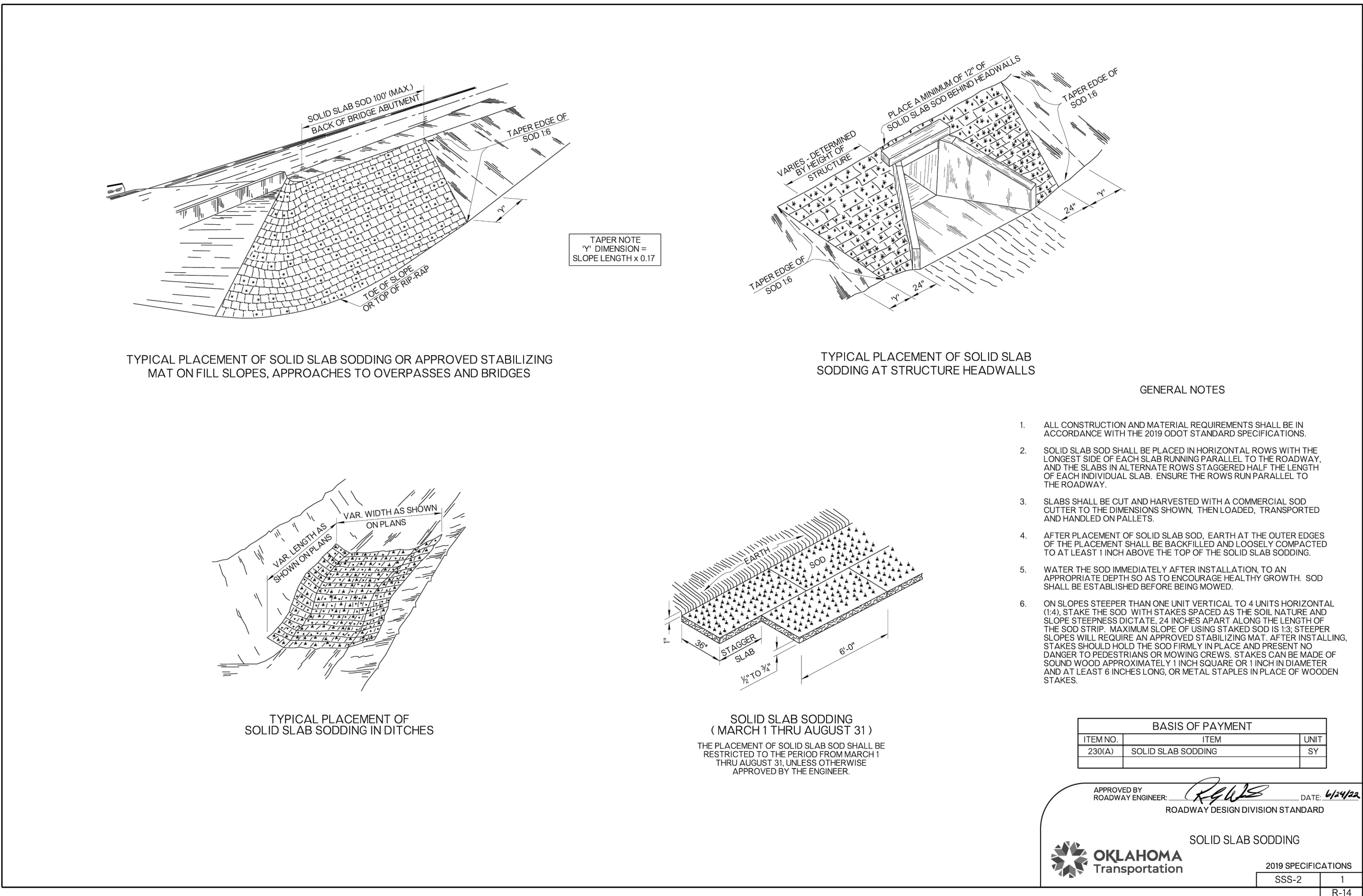
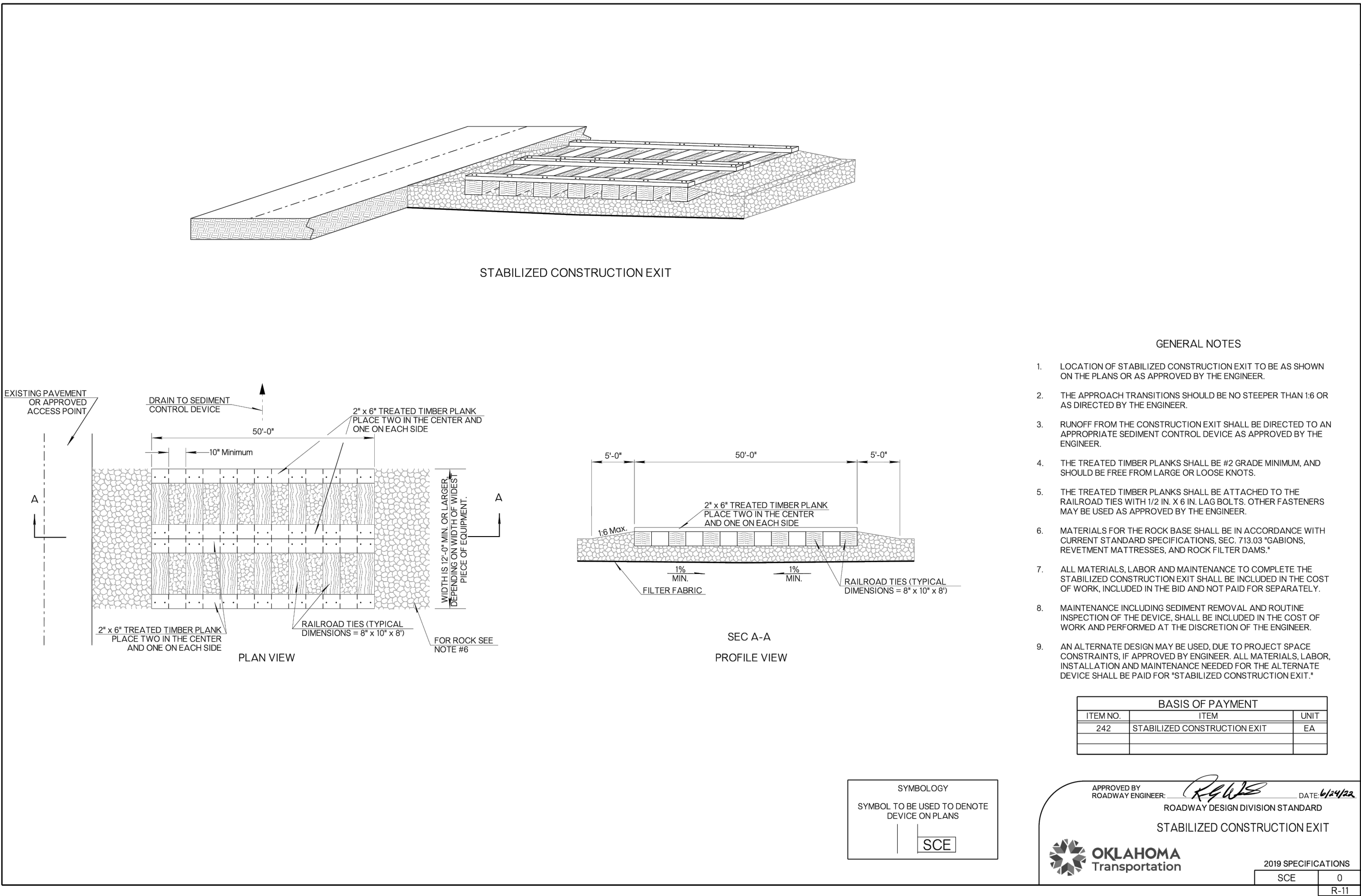
APPROVED BY
ROADWAY ENGINEER: *R. R. R.* DATE: 4/14/24
ROADWAY DESIGN DIVISION STANDARD
TYPICAL TEMPORARY EROSION/
SEDIMENT CONTROL APPLICATIONS
OKLAHOMA
Transportation
2019 SPECIFICATIONS
TESCA 0 R-2



APPROVED BY
ROADWAY ENGINEER: *R. R. R.* DATE: 4/14/24
ROADWAY DESIGN DIVISION STANDARD
TYPICAL TEMPORARY SILT DIKE APPLICATIONS
OKLAHOMA
Transportation
2019 SPECIFICATIONS
TSD 0 R-7



APPROVED BY
ROADWAY ENGINEER: *R. R. R.* DATE: 4/14/24
ROADWAY DESIGN DIVISION STANDARD
TYPICAL TEMPORARY SEDIMENT BASIN
OKLAHOMA
Transportation
2019 SPECIFICATIONS
TSB 0 R-10



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PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-D1.DWG
CHECKED BY BY
DRAWN BY JE
SCALE N.T.S.
DATE 04. 17. 2026

SHEET

EROSION CONTROL
DETAILS

C6.02

BENCHMARKS:

BM #1: N. 409832.961' E. 2524058.613' ; ELEV: 777.55'
BM #2: N. 409830.808' E. 2524615.447' ; ELEV: 763.01'

PAVING, STRIPING & SIGNAGE PLAN:

- CONTRACTOR TO VERIFY CONCRETE PAD FOR TRANSFORMER. TRANSFORMER PAD SHALL BE STANDARD LIGHT DUTY CONCRETE UNLESS OTHERWISE REQUIRED BY POWER COMPANY.
- ALL CONSTRUCTION SHALL CONFORM TO THE LATEST TULSA COUNTY AND ODOT STANDARDS AND SPECIFICATIONS AS APPLICABLE.
- EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER, BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.
- CONTRACTOR SHALL NOTIFY "OKIE811" (811) OR 1-800-522-6543 AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF OKIE811. REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE UTILITY COMPANIES FOR ANY REQUIRED RELOCATIONS (I.E. POWER POLES, TELEPHONE PEDESTALS, WATER METERS, ETC.).
- PRIOR TO BEGINNING CONSTRUCTION BEYOND EROSION CONTROL MEASURES, THE GENERAL CONTRACTOR SHALL SCHEDULE AND ATTEND A PRE-CONSTRUCTION CONFERENCE WITH THE LOCAL AND STATE MUNICIPALITY AND ODOT, AND A REPRESENTATIVE OF THE ENGINEER AND OWNER IF REQUIRED. THE PURPOSE OF THIS MEETING IS TO REVIEW THE SPECIFIC COMPONENTS OF THE PLAN AND OPERATION OF THE FACILITIES DURING CONSTRUCTION.
- ACCESSIBLE RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN, LOCAL AND STATE MUNICIPALITY AND ODOT.
- ALL SIDEWALKS THAT CONNECT TO THE PUBLIC RIGHT-OF-WAY MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. PEDESTRIAN EXISTING ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION WILL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- TYPICAL PAVEMENT SECTION DETAILS ARE SHOWN ARE INTENDED TO BE A MINIMUM PAVEMENT SECTION REQUIREMENTS. THE CURRENT GEOTECHNICAL REPORT SHALL OVER-RIDE ALL TYPICAL PAVEMENT SECTIONS SHOWN, IF THE GEOTECHNICAL ENGINEER DEEMS A HEAVIER SECTION IS REQUIRED.
- EQUIPMENT AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED PROVIDED APPROVAL HAS BEEN OBTAINED FROM THE OWNER IN WRITING PRIOR TO ORDERING OR INSTALLATION. THE CONTRACTOR SHALL WAIVE ANY CLAIM FOR ADDITIONAL COST RELATED TO SUBSTITUTION OF ALTERNATE EQUIPMENT.
- IF UNFORESEEN CONDITIONS DEVELOP DURING CONSTRUCTION, REFER TO THE LATEST VERSION OF THE LOCAL AND STATE MUNICIPALITY AND ODOT STANDARDS AND CONTACT PUBLIC WORKS STAFF FOR FURTHER GUIDANCE.
- EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- SOIL UNDER BUILDINGS, PAVED AREAS AND WITHIN SLOPES GREATER THAN 3:1 (H:V) SHALL BE APPROVED, PLACED AND COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- PREPARING, GRADING, SHAPING, AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH ODOT STANDARD SPECIFICATIONS. PREPARING, GRADING, SHAPING, AND COMPACTION OF AGGREGATE BASE COURSE (ABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH ODOT STANDARD SPECIFICATIONS. PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE ODOT STANDARD SPECIFICATIONS. PROPER SUBGRADE COMPACTION, ADHERENCE TO THE ODOT SPECIFICATIONS, AND COMPLIANCE WITH PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
- THE CONTRACTOR MAY CHOOSE TO INSTALL INTERMEDIATE COURSES OF PAVEMENT TO STABILIZE THE SITE DURING CONSTRUCTION AT NO ADDITIONAL COST. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ADEQUATE THICKNESS REQUIRED FOR INTERMEDIATE PAVING. INCREASES IN THE DESIGN PAVEMENT SECTION TO FACILITATE INTERMEDIATE PAVING SHALL BE PROVIDED AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS OR DAMAGE.
- THE CONTRACTOR SHALL ENSURE THAT THE POWER POLES ARE NOT DAMAGED DURING SIDEWALK INSTALLATION.
- SIGNAGE TO BE PERMITTED SEPARATELY BY SIGN COMPANY.
- ALL STRIPING IN OKIE811 ROW SHALL BE THERMOPLASTIC.
- REINFORCED CONCRETE PADS TO BE PROVIDED IN FRONT OF AND BENEATH TRASH RECEPTACLES. THE DUMPSTER TRUCK SHOULD BE PARKED ON THE RIGID CONCRETE PAVEMENT WHEN THE TRASH RECEPTACLES ARE LIFTED. THE CONCRETE PADS SHOULD BE A MINIMUM OF 7 INCHES THICKER AND PROPERLY REINFORCED.

PAVEMENT SECTIONS

PAVEMENT TYPE		LIGHT DUTY	HEAVY DUTY
FULL DEPTH ACC PER GEOTECH REPORT	ASPHALTIC CONCRETE	2.0" TYPE "B" 3.0" TYPE "A"	2.0" TYPE "B" 5.0" TYPE "A"
	MODIFIED SUBGRADE	8.0"	8.0"
	AGGREGATE BASE	6.0" TYPE "A"	6.0" TYPE "A"
PCC PER GEOTECH REPORT	CONCRETE	5.0"	6.0"
	MODIFIED SUBGRADE	8.0"	8.0"

PAVEMENT LEGEND

	CH	HEAVY DUTY CONCRETE PAVEMENT
	CS	LIGHT DUTY CONCRETE PAVEMENT
	AH	HEAVY DUTY ASPHALT PAVEMENT
	AS	LIGHT DUTY ASPHALT PAVEMENT
	OD	ODOT STANDARD ASPHALT PAVEMENT
		STANDARD CURB

PAVEMENT MARKING LEGEND

- LANE LINES/MARKINGS
- TA 4" WHITE
 - TO 8" WHITE CROSSWALK LINE
 - TI 2" WIDE X 12" HIGH WHITE NO PARKING
 - TZ 24" WHITE STOPBAR

- ARROWS/CHARACTERS
- UH HANDICAP PARKING
 - UC STRAIGHT ARROW
 - UR RIGHT ARROW

SIGN LEGEND

- 1 RESERVED PARKING VAN ACCESSIBLE
R7-8 18"x12" & R7-8A 18"x9"
- 2 STOP
MUTCD R1-1 36"x36"



GRAPHIC SCALE
0 10 20 40
1 inch = 20 ft.



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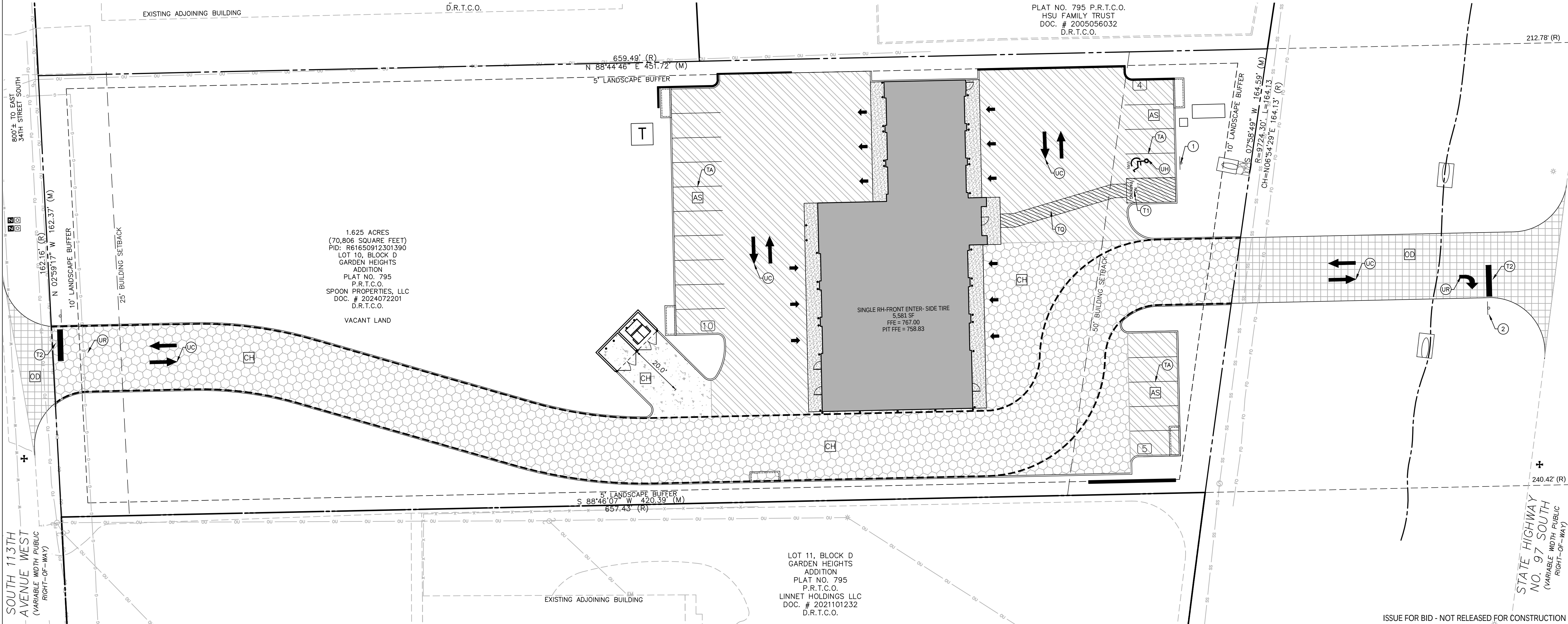
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FILENAME EXO25009-PV1.DWG
CHECKED BY BY
DRAWN BY JE
SCALE 1" = 20'
DATE 04. 17. 2026

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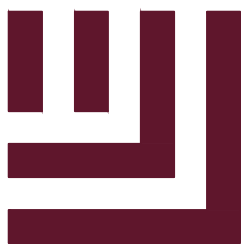
PAVING, STRIPING &
SIGNAGE PLAN

C7.00

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Z:\2026\Projects\EXO25009\04-Production\Engineering\Sheets\EXO25009-PV1.dwg, 6/23/2026, Jessica Emeadi



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FILENAME EXO25009-D2.DWG
CHECKED BY BY
DRAWN BY JE
SCALE N.T.S.
DATE 04. 17. 2026

SHEET

STANDARD
CONSTRUCTION DETAILS

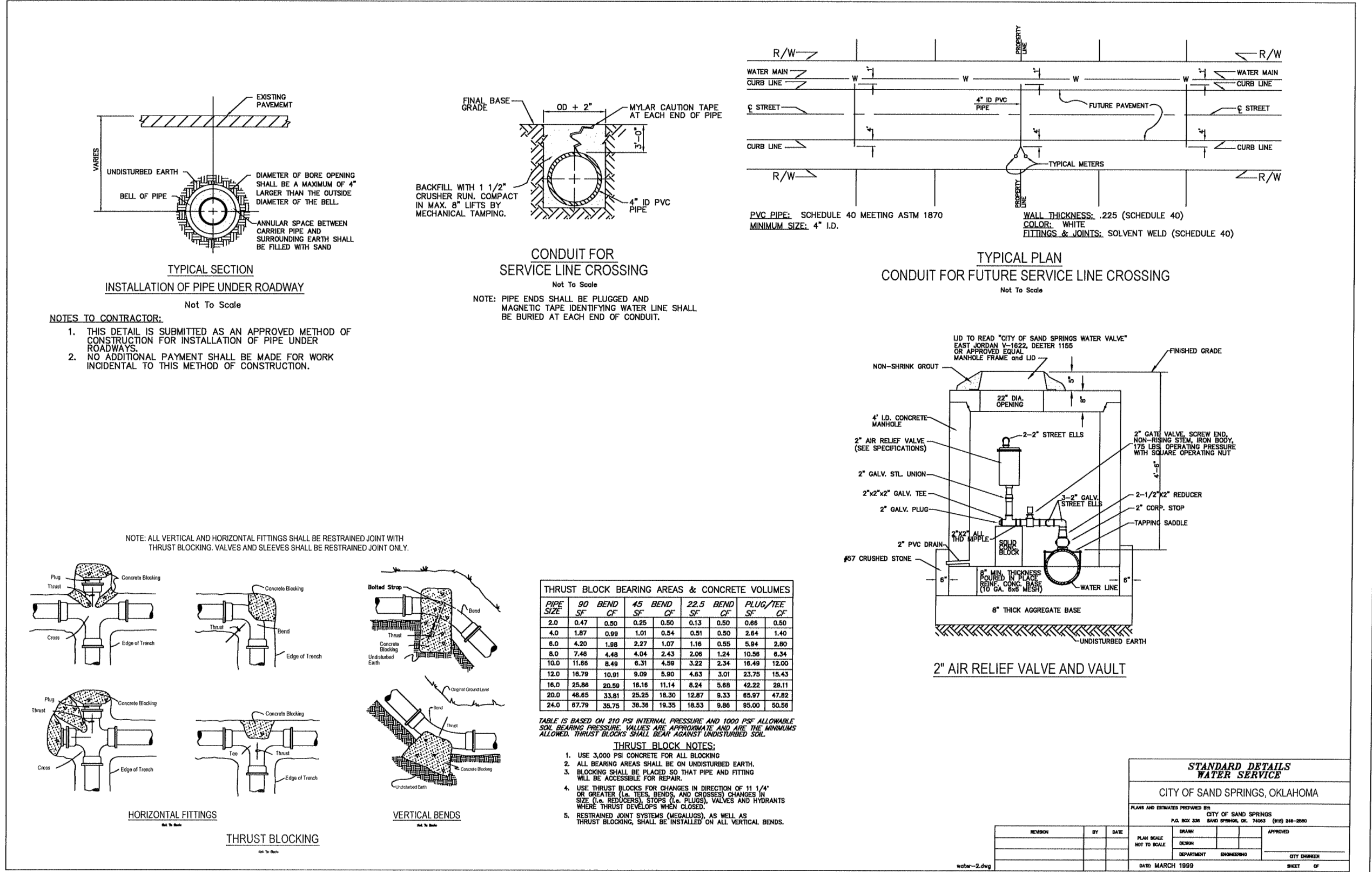
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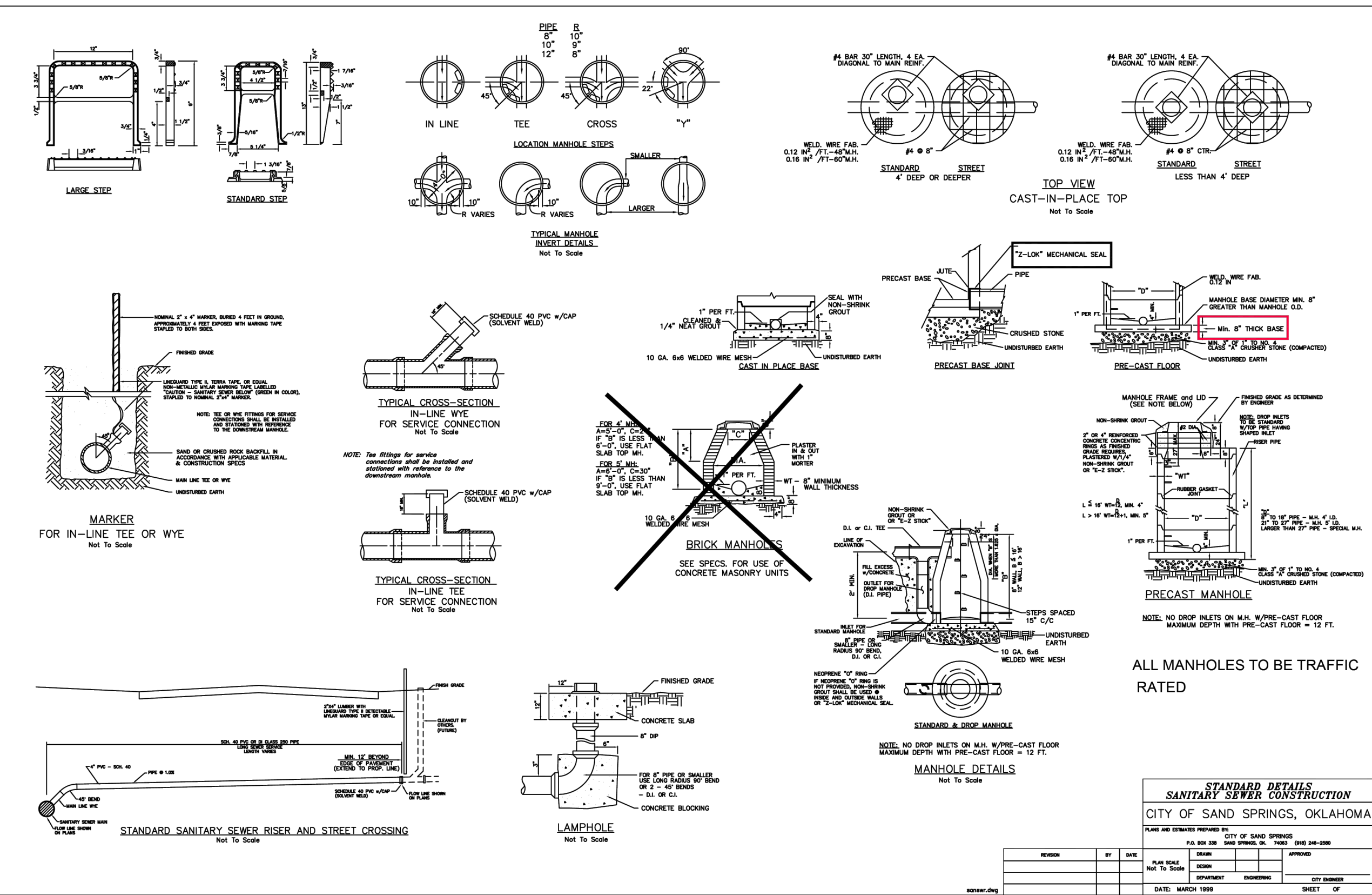
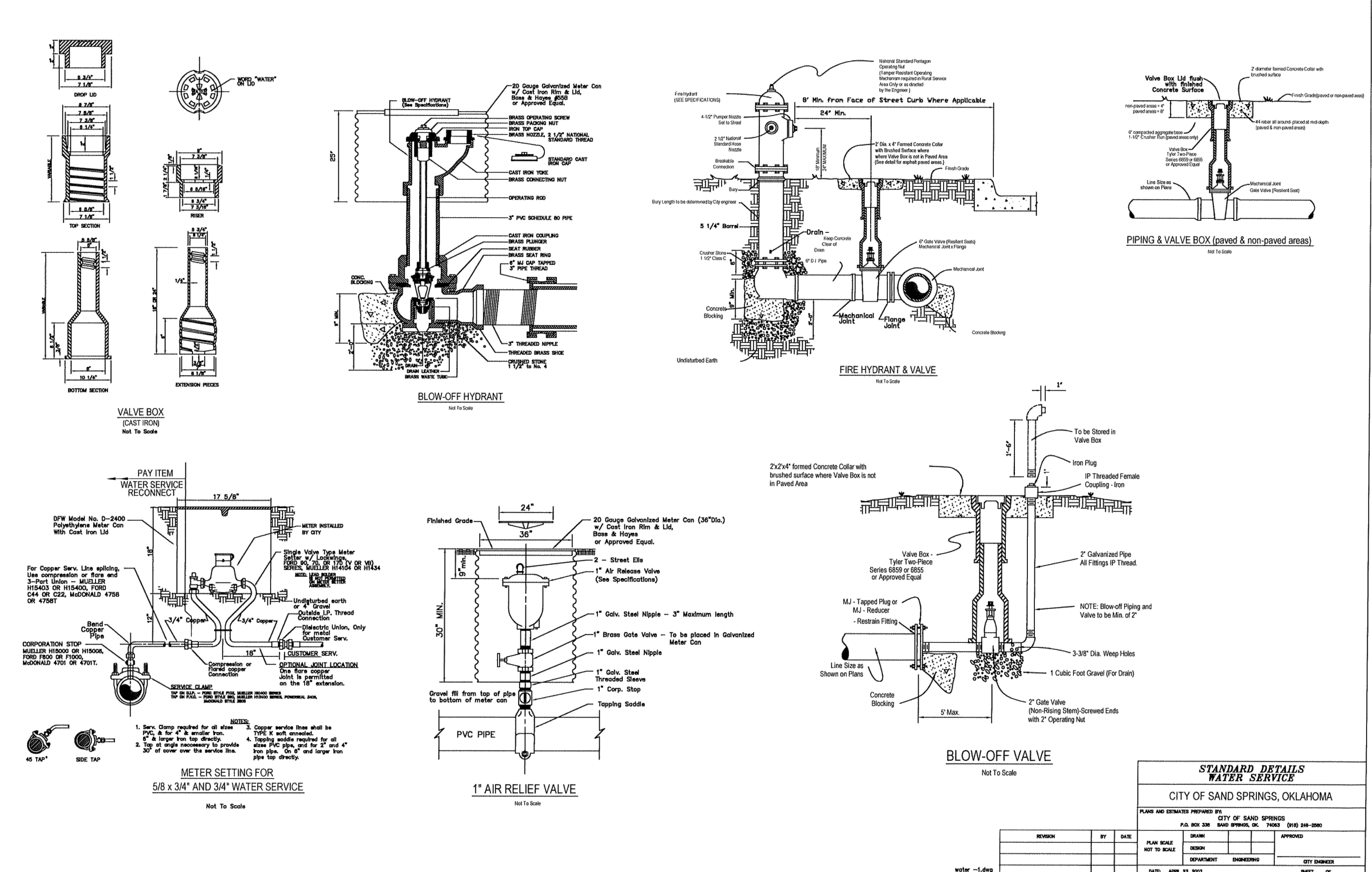
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Z:\Drawings\Projects\EXO\EXO25009\04-Production\Engineering\Sheets\EXO25009-D2.dwg 6/22/2026 Jessica Emeadi

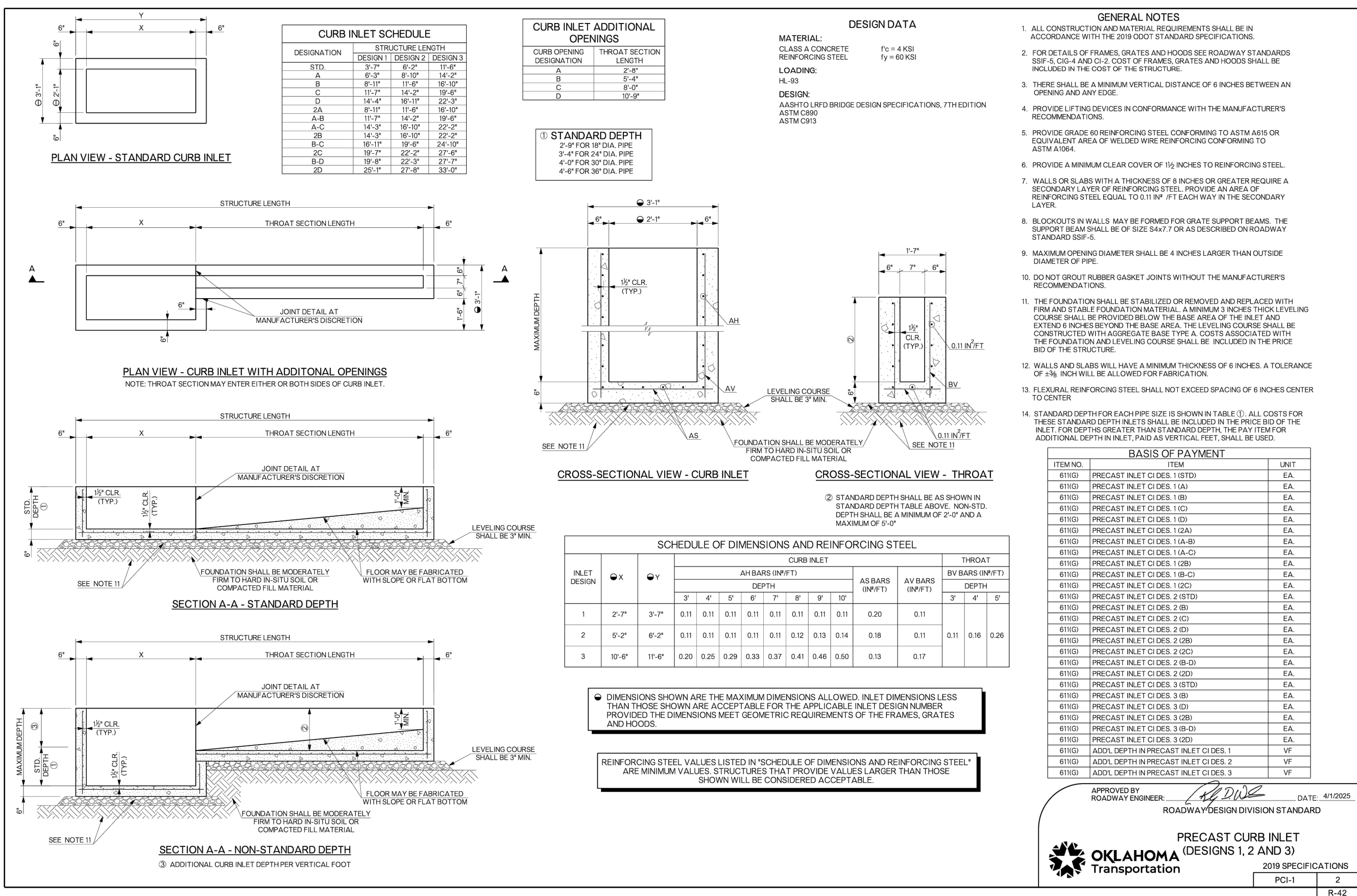
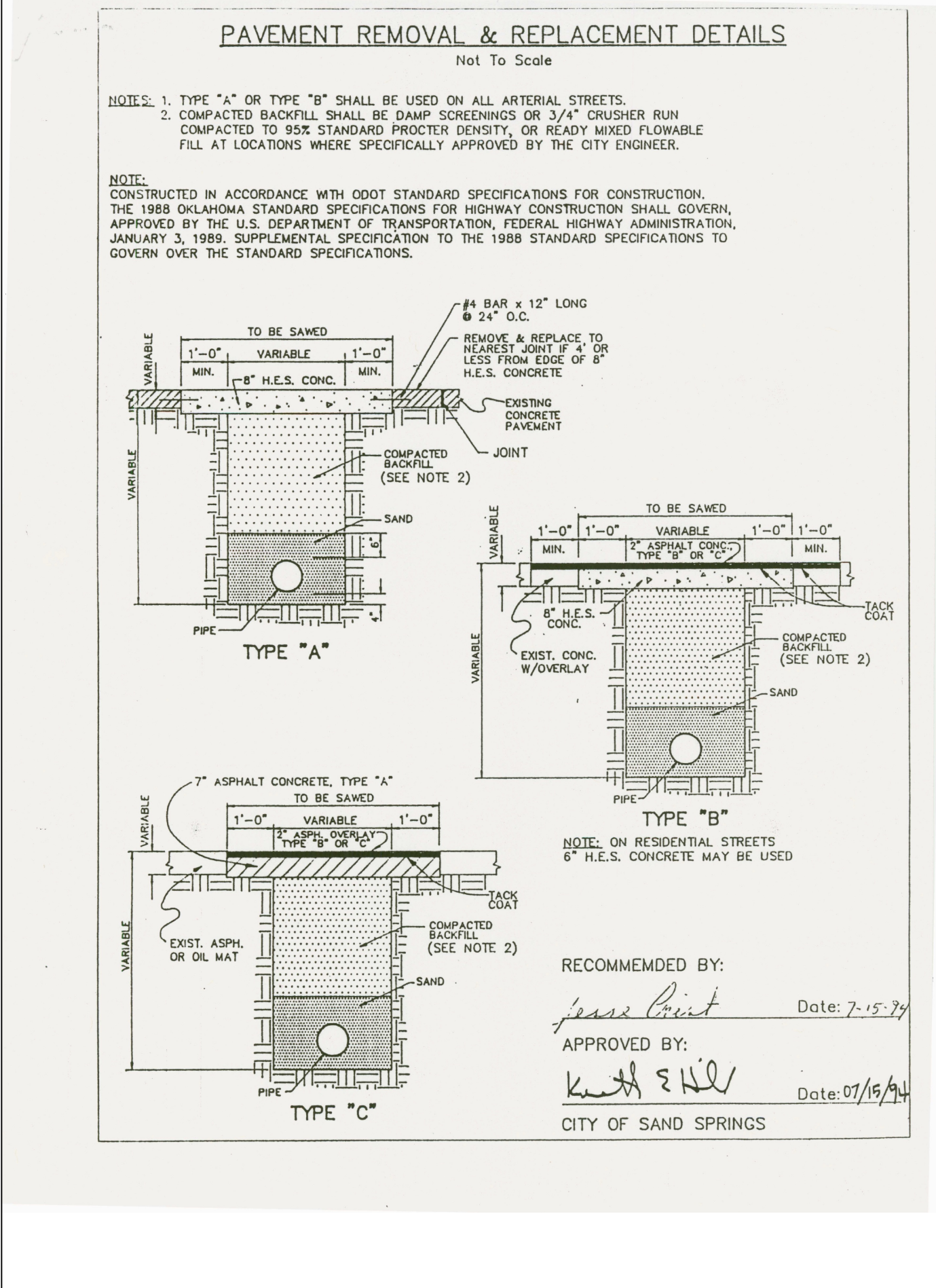


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EXPRESS OIL - SAND SPRINGS, OK
CONSTRUCTION PLANS
3507 S 113TH AVENUE WEST
SAND SPRINGS, OKLAHOMA 74063

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FINAL SIGNED AND SEALED PLANS SHALL BE ISSUED PRIOR TO THE RELEASE FOR CONSTRUCTION.

REVISIONS

NO.	DATE	DESCRIPTION
1	04. 17. 2026	1ST SUBMITTAL
2	05. 05. 2026	2ND SUBMITTAL
3	06. 22. 2026	3RD SUBMITTAL

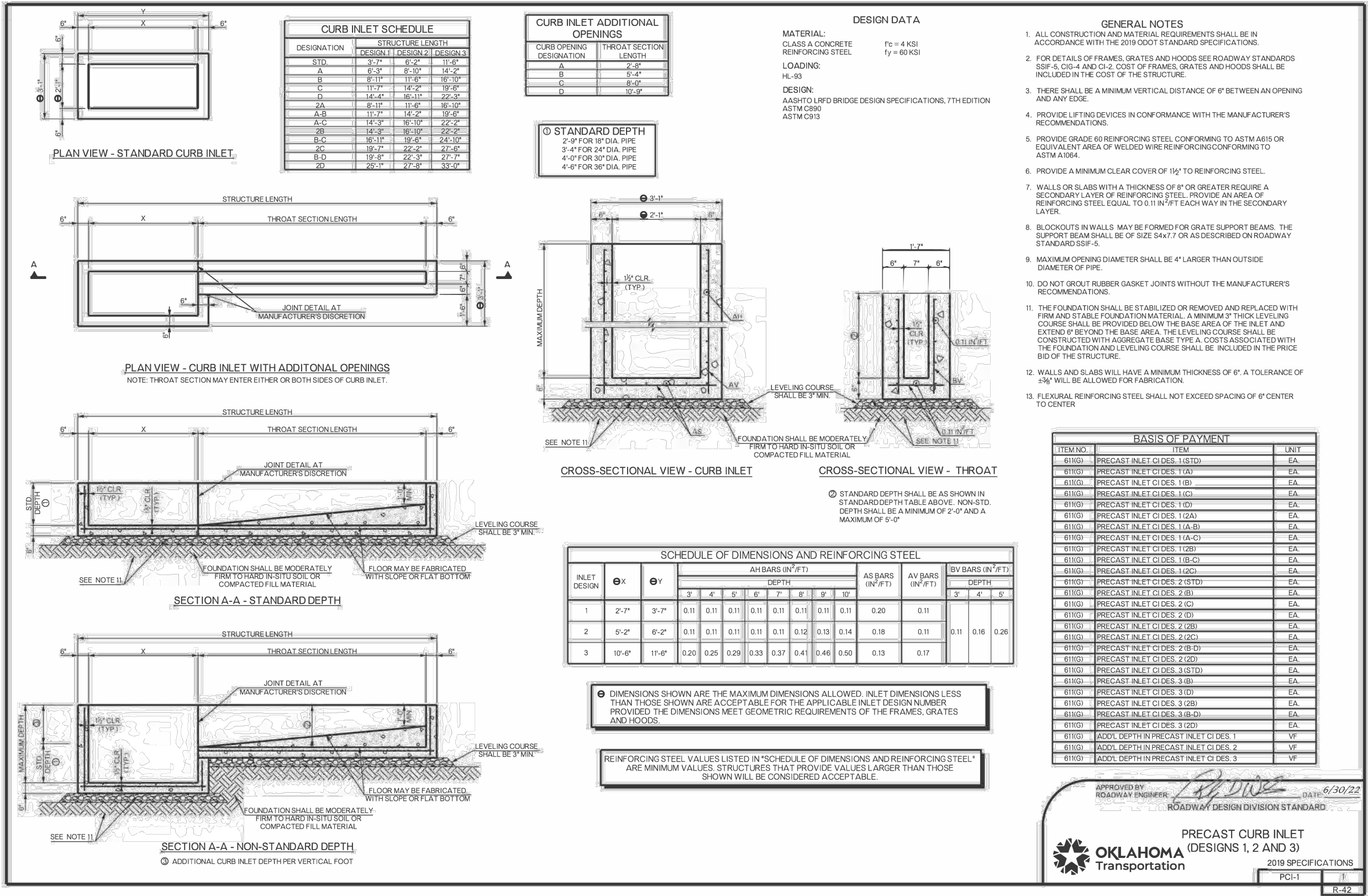
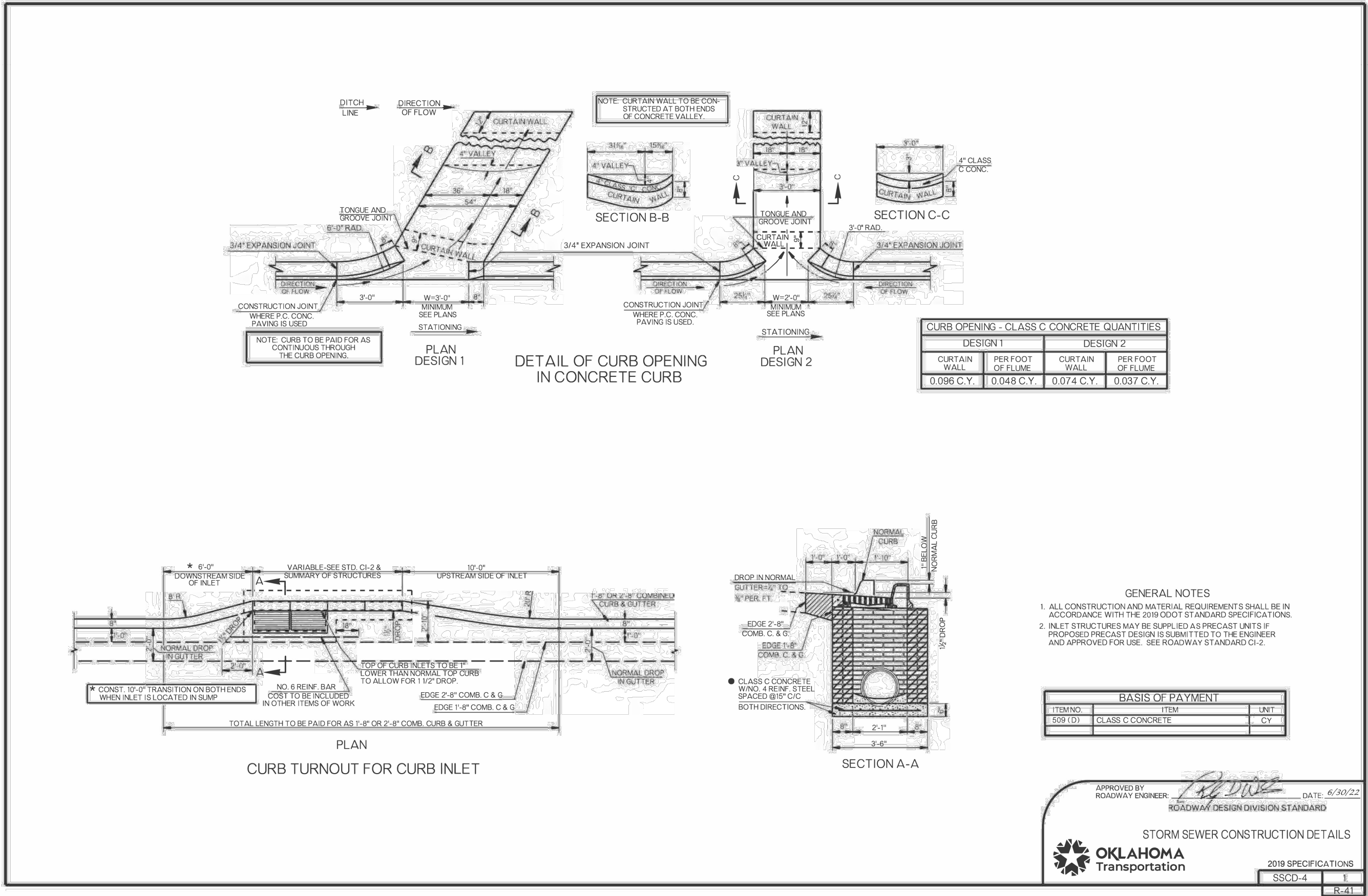
PROJECT NO. EXO25009
FILENAME EXO25009-D2.DWG
CHECKED BY BY
DRAWN BY JE
SCALE N.T.S.
DATE 04. 17. 2026

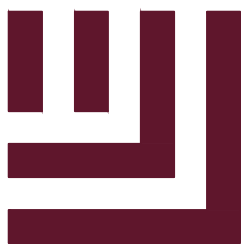
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STANDARD CONSTRUCTION DETAILS
C8.01

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McAdams

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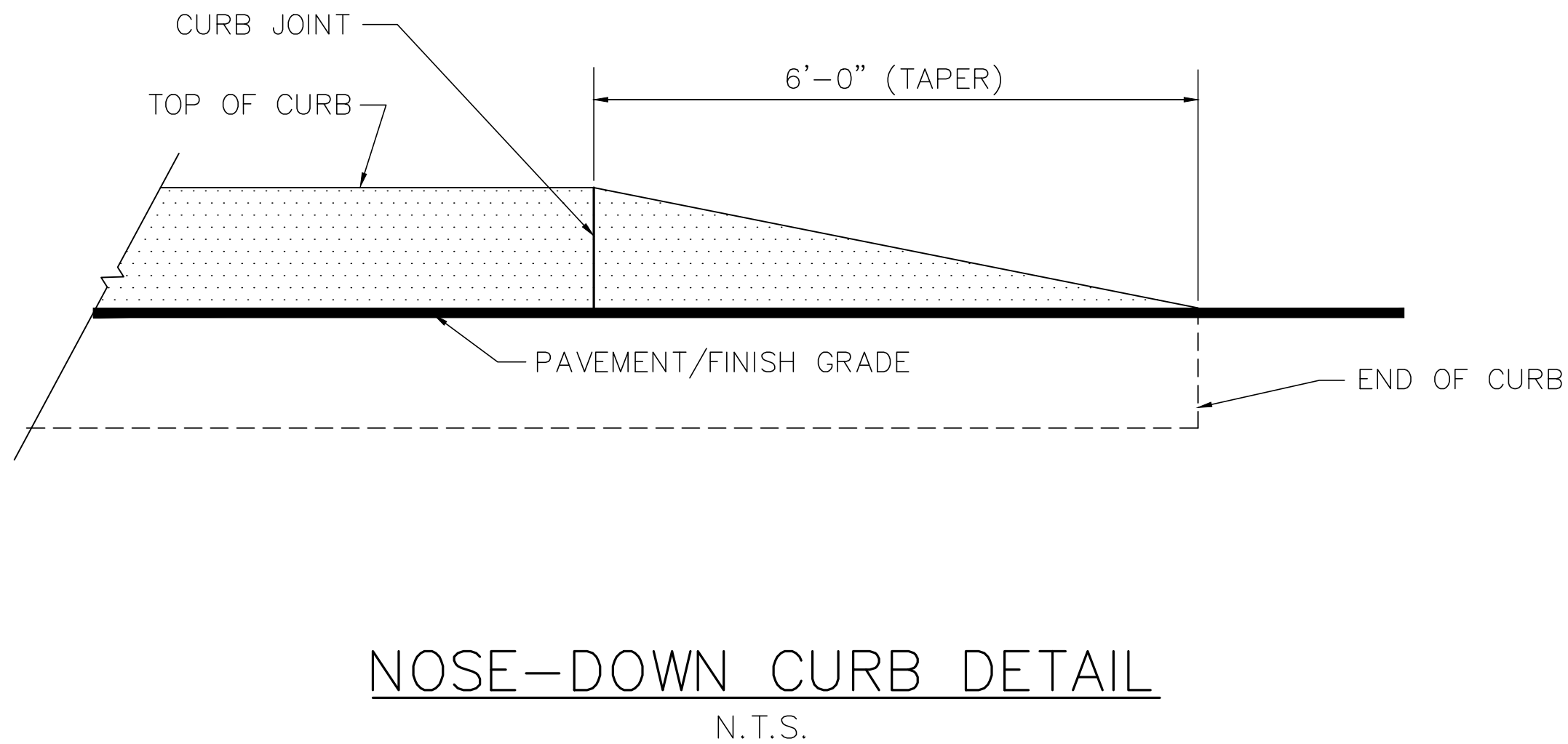
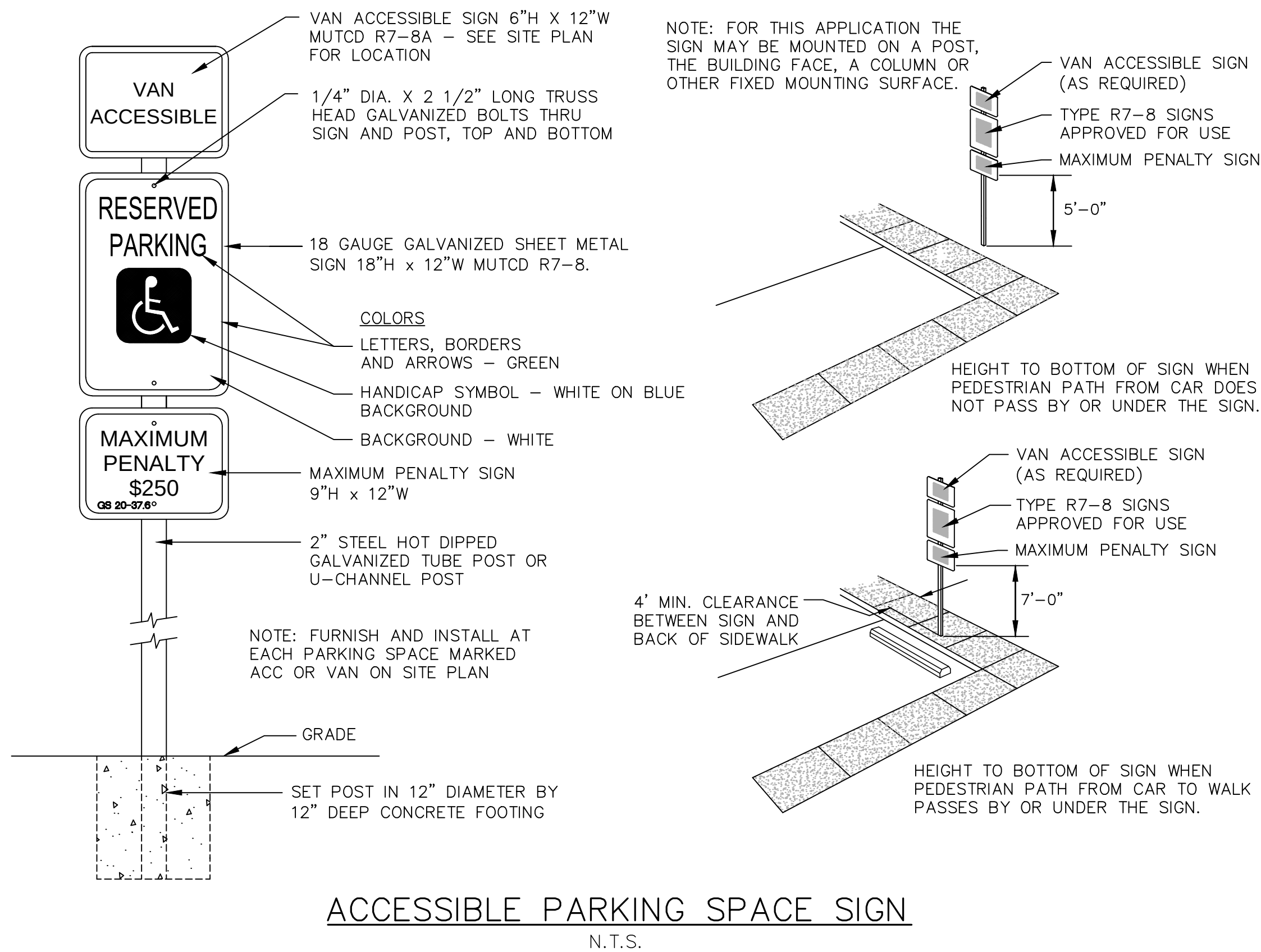
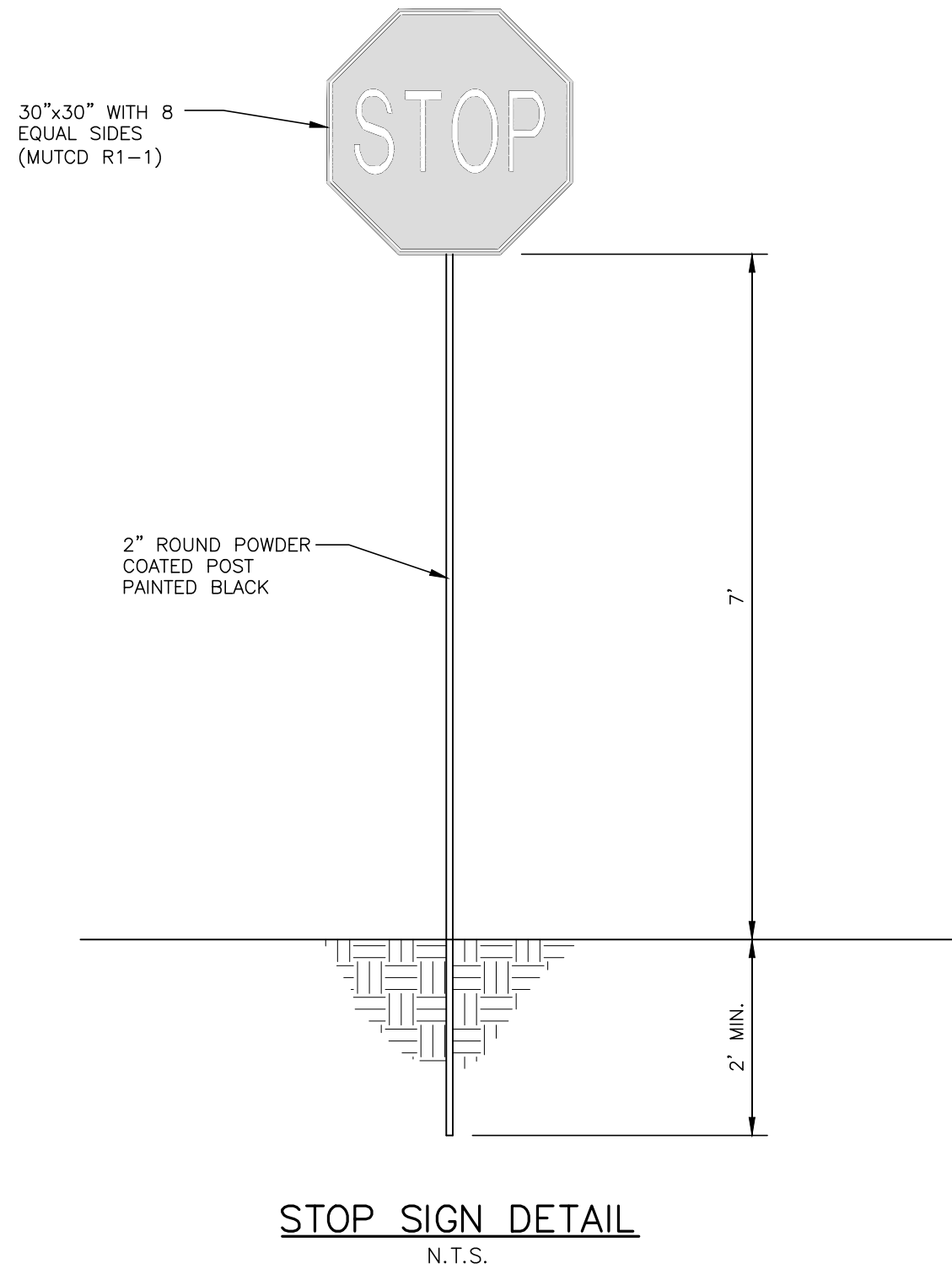
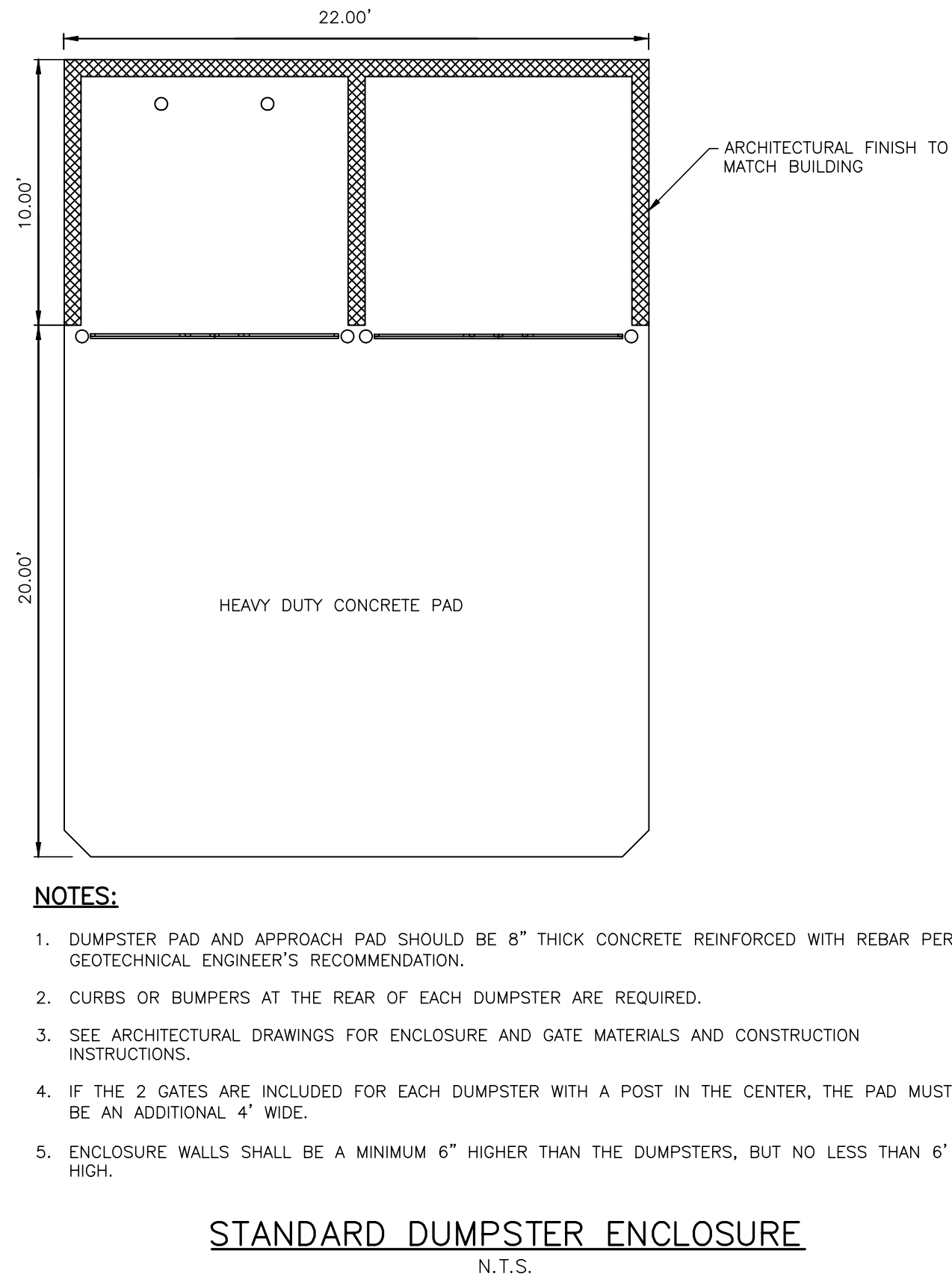
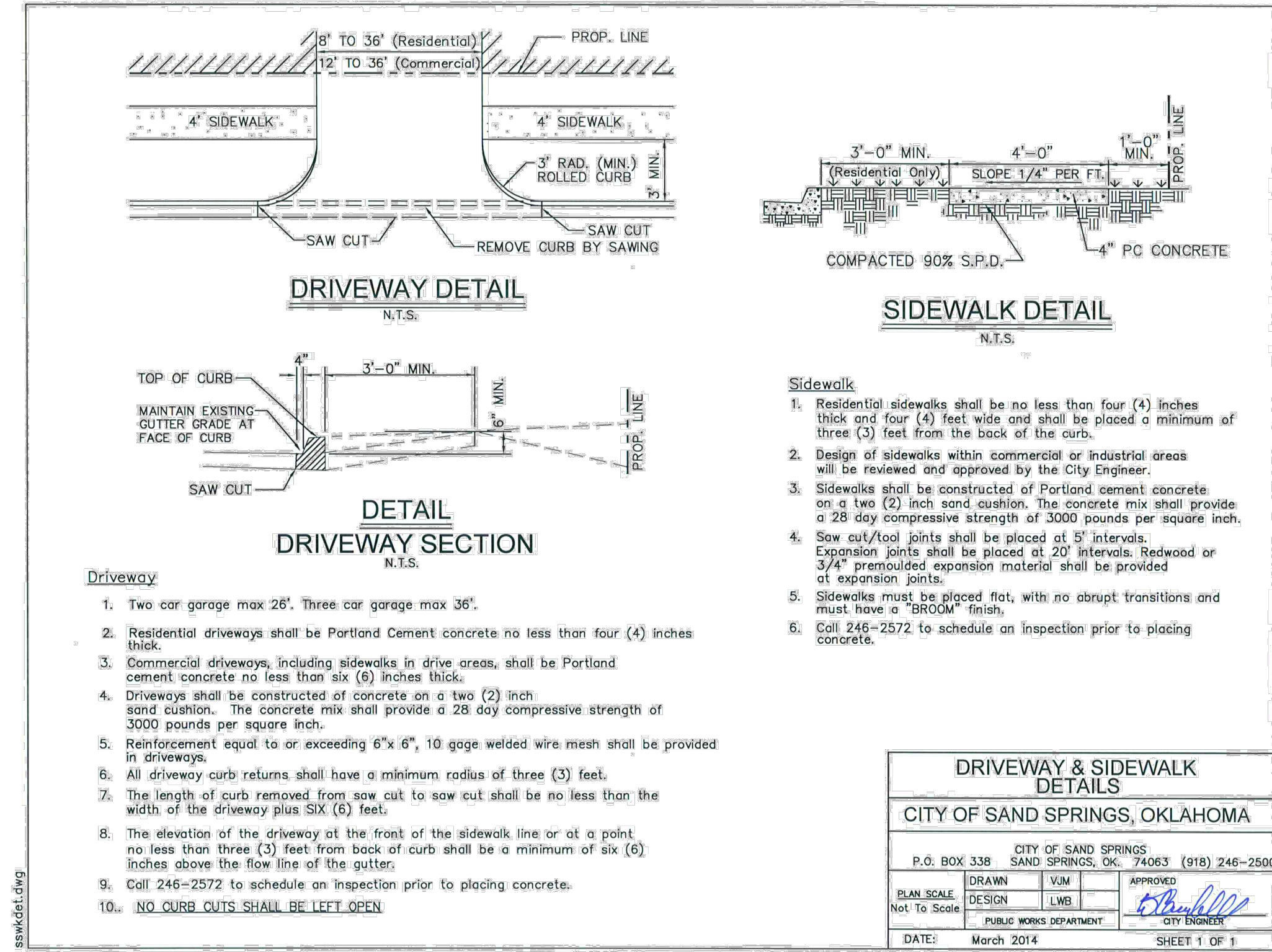
PLAN INFORMATION

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SHEET

STANDARD
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C8.03



PLANTING SPECIFICATIONS:

- GENERAL
- REFER TO CIVIL DRAWINGS FOR NOTES AND DETAILS ON SITE GRADING AND EROSION AND SEDIMENT CONTROL. REFER TO SEEDING AND SODDING NOTES FOR TURF GRASS INSTALLATION.
 - CONTRACTOR TO SUBMIT A LIST OF PLANT MATERIALS AND SOURCES FOR REVIEW BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE AND INSTALLATION. CONTRACTOR TO COORDINATE ANY DISCREPANCIES OR SUBSTITUTIONS WITH LANDSCAPE ARCHITECT.
 - DURING DELIVERY, STORAGE AND HANDLING, CONTRACTOR TO PROTECT AND MAINTAIN PLANT LIFE UNTIL PLANTED. PROVIDE PROTECTIVE COVERING OVER ALL PLANTINGS DURING TRANSPORT. ADEQUATELY PROTECT PLANTS FROM DRYING OUT, EXPOSURE OF ROOTS TO SUN, WIND OR EXTREMES OF HEAT AND COLD TEMPERATURES. IF PLANTING IS DELAYED MORE THAN 24 HOURS AFTER DELIVERY, STORE PLANTS IN LOCATION PROTECTED FROM SUN AND WIND AND PROVIDE ADEQUATE WATER TO THE ROOT BALL PACKAGE. PLANT MATERIAL DAMAGED AS A RESULT OF DELIVERY, STORAGE OR HANDLING WILL BE REJECTED.
 - PLANTS, INCLUDING TREES, SHRUBS, GROUNDCOVERS, VINES AND ORNAMENTAL GRASSES, TO BE INSTALLED BETWEEN THE FOLLOWING DATES:
SPRING PLANTING SEASON: MARCH 15 TO JUNE 1
FALL PLANTING SEASON: SEPTEMBER 15 TO DECEMBER 1
 - PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT. PLANT TREES AND SHRUBS AFTER FINISH GRADES ARE ESTABLISHED AND BEFORE PLANTING LAWNS. PROTECT LAWN AREAS TO REMAIN AND PROMPTLY REPAIR DAMAGE CAUSED BY PLANTING OPERATIONS.
 - CONTRACTOR SHALL CAREFULLY EXAMINE THE CIVIL, RECORD AND SURVEY DRAWINGS TO BECOME FAMILIAR WITH EXISTING UNDERGROUND CONDITIONS BEFORE DIGGING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF ALL SURFACE AND SUBSURFACE CONDITIONS, AND TO NOTIFY THE LANDSCAPE ARCHITECT OF ANY CIRCUMSTANCES THAT WOULD NEGATIVELY IMPACT UNDERGROUND CONDITIONS OR THE HEALTH OF THE PLANTINGS.

- PRODUCTS
- TREE AND SHRUB MATERIAL: FURNISH NURSERY-GROWN, TYPICAL OF THEIR SPECIES OR VARIETY, WITH NORMAL GROWTH HABIT, WELL-DEVELOPED BRANCH STRUCTURE, HEALTHY FOLIAGE, AND VIGOROUS ROOT SYSTEMS IN ACCORDANCE WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". PLANTS SHALL BE FREE FROM DEFECTS OR DAMAGE, INCLUDING BUT NOT LIMITED TO, DISGURGING KNOTS, SUNSCALD INJURIES, FROST CRACKS, ABRASION OF THE BARK, PLANT DISEASES, INSECT EGGS, BORERS, FIRE ANTS, AND ALL FORMS OF INFESTATION.
 - SOIL: ASTM D 5268 TOPSOIL, pH RANGE OF 5.5 TO 7, A MINIMUM OF 6 PERCENT ORGANIC MATERIAL CONTENT; FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH.
 - SOIL AMENDMENTS:
 - ORGANIC COMPOST: WELL-COMPOSTED, STABLE AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4" SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS.
 - INORGANIC SOIL AMENDMENTS: COMMERCIAL GRADE, FREE OF TOXIC MATERIALS.
 - FERTILIZER: GRANULAR OR PELLET SLOW-RELEASE FERTILIZER CONSISTING OF 50 PERCENT WATER-INSOLUBLE NITROGEN, PHOSPHOROUS AND POTASSIUM IN THE COMPOSITION AS DIRECTED BY SOIL ANALYSIS TESTING.
 - ORGANIC MULCH: SHREDDED HARDWOOD IN NATURAL BROWN COLOR; 3" MAXIMUM SIZE IN LONGEST DIMENSION; FREE FROM DELETERIOUS MATERIALS AND SUITABLE FOR A TOP DRESSING OF TREES AND SHRUBS.
 - STAKES AND GUYS: DEEPROOT ARBORTIE STAKING AND GUYING MATERIAL OR APPROVED EQUAL.

WARRANTY AND MAINTENANCE:

- WARRANTY
- INSTALLER SHALL REPAIR OR REPLACE ANY PLANTINGS THAT FAIL IN MATERIALS, WORKMANSHIP, OR GROWTH WITHIN ONE YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION. FAILURES INCLUDE BUT ARE NOT LIMITED TO:
- DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLIGENCE OR ABUSE BY OWNER, OR INCIDENTS THAT ARE BEYOND THE CONTRACTOR'S CONTROL.
 - STRUCTURAL FAILURES INCLUDING PLANTINGS FALLING OR BLOWING OVER.
- PLANTS THAT DO NOT MEET THESE REQUIREMENTS SHALL BE DEFINED AS DEFECTIVE. ANY DEFECTIVE PLANTS SHALL BE REMOVED IMMEDIATELY UPON NOTIFICATION BY THE LANDSCAPE ARCHITECT AND REPLACED WITHOUT COST TO THE OWNER AS SOON AS WEATHER CONDITIONS PERMIT AND WITHIN THE SPECIFIED PLANTING PERIOD.

- MAINTENANCE
- INITIAL MAINTENANCE SHALL BE PROVIDED IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL SUBSTANTIAL COMPLETION. UPON SUBSTANTIAL COMPLETION, MAINTENANCE FOR ALL PLANT MATERIAL SHALL BE PROVIDED FOR ONE YEAR AT A MINIMUM AND SHALL INCLUDE:
- TREE AND SHRUB MAINTENANCE: MAINTAIN PLANTINGS BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, AND RESETTling TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS. SPRAY OR TREAT AS REQUIRED TO KEEP TREES AND SHRUBS FREE TO INSECTS AND DISEASE. TREES AND SHRUBS TO BE PRUNED TO RESTORE NATURAL SHAPE TYPICAL OF THEIR SPECIES OR VARIETY IN ACCORDANCE WITH STANDARD HORTICULTURAL PRACTICES AND APPLICABLE REQUIREMENTS IN ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK".
 - GROUNDCOVER AND PLANT MAINTENANCE: MAINTAIN AND ESTABLISH PLANTINGS BY WATERING, WEEDING, FERTILIZING, MULCHING, AND OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE PLANTINGS.
 - PROTECT EXTERIOR PLANTS FROM DAMAGE DUE TO LANDSCAPE OPERATIONS, OPERATIONS BY OTHER CONTRACTORS AND TRADES, AND OTHERS. MAINTAIN PROTECTION DURING INSTALLATION AND MAINTENANCE PERIODS. TREAT, REPAIR OR REPLACE DAMAGED PLANTINGS.

PLANTING INSTALLATION:

- EXAMINATION AND PREPARATION
- INSTALLER TO EXAMINE AREAS TO RECEIVE EXTERIOR PLANTS FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
 - PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES, AND LAWNS AND EXISTING PLANTINGS FROM DAMAGE CAUSED BY PLANTING OPERATIONS. REFER TO CIVIL DRAWINGS FOR EROSION AND SEDIMENT CONTROL MEASURES.
 - LAY OUT INDIVIDUAL TREE AND SHRUB LOCATIONS PER PLANTING PLAN. OBTAIN LANDSCAPE ARCHITECT'S ACCEPTANCE OF LAYOUT BEFORE PLANTING AND MAKE MINOR ADJUSTMENTS AS NEEDED.

- PLANTING BED ESTABLISHMENT
- VERIFY SITE GRADING PRIOR TO DIGGING. LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 8 INCHES. REMOVE STONES LARGER THAN 1 INCH IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH AND OTHER EXTRANEIOUS MATTER. APPLY TOP SOIL, FERTILIZER, LIME AND SOIL AMENDMENTS AND THOROUGHLY BLEND PLANTING SOIL MIX TO CREATE ACCEPTABLE PLANTING SOIL AS DESCRIBED THROUGH ANLA.
 - EXCAVATE CIRCULAR PITS AND TRENCHES WITH SIDES SLOPED INWARD, LEAVING THE CENTER AREA RAISED SLIGHTLY TO SUPPORT THE ROOT BALL AND ASSIST IN DRAINAGE. EXCAVATE APPROXIMATELY THREE TIMES AS WIDE AS BALL DIAMETER FOR BALLED AND BURLAPPED AND CONTAINER-GROWN STOCK. SCARIFY PIT OR TRENCH WALLS.

- TREE, SHRUB, VINE, ORNAMENTAL GRASS AND GROUNDCOVER PLANTING
- SET BALLED AND BURLAPPED OR CONTAINER-GROWN STOCK PLUMBS AND CENTER OF PIT OR TRENCH WITH ROOT BALL 1 INCH ABOVE ADJACENT FINISHED GRADES.
 - REMOVE WIRE AND PALLETS ENTIRELY FROM ROOT BALL. REMOVE BURLAP FROM TOPS OF ROOT BALLS AND PARTIALLY FROM SIDES BUT DO NOT REMOVE FROM UNDER ROOT BALL.
 - PLACE PLANTING SOIL MIX AROUND ROOT BALL IN LAYERS, TAMPING TO SETTLE MIX AND ELIMINATE VOIDS AND AIR POCKETS. WHEN PIT IS APPROXIMATELY ONE-HALF BACKFILLED, WATER THOROUGHLY BEFORE PLACING REMAINDER OF BACKFILL. WATER AGAIN AFTER PLACING AND TAMPING FINAL LAYER OF PLANTING SOIL MIX.
 - APPLY 3-INCH MINIMUM AVERAGE THICKNESS OF ORGANIC MULCH EXTENDING 12 INCHES BEFORE EDGE OF PLANTING PIT OR TRENCH OR TO EDGE OF BEDLINE. DO NOT PLACE MULCH WITH 3 INCHES OF ROOT FLARE, TRUNK OR STEMS.
 - PRUNE, THIN AND SHAPE TREES AND SHRUBS ACCORDING TO STANDARD HORTICULTURAL PRACTICE AND TO RETAIN NATURAL CHARACTER. DO NOT CUT TREE LEADERS. REMOVE ONLY INJURED OR DEAD BRANCHES FROM FLOWERING TREES.
 - INSTALL GUYING AND STAKING PER MANUFACTURER'S SPECIFICATIONS. REMOVE GUY WIRES AND STAKES AFTER TWO PLANTING ESTABLISHMENT SEASONS.
 - DISPOSAL: REMOVE SURPLUS SOIL AND WASTE MATERIAL, INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

IRRIGATION SPECIFICATIONS:

- GENERAL
- PROVIDE A COMPLETE AND OPERATING LAWN SPRINKLER INSTALLATION AS SHOWN ON THE PLANS INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
 - PIPE AND FITTINGS
 - SPRINKLER HEADS
 - CONTROL SYSTEM AND CONNECTION TO ELECTRICAL SUPPLY
 - TRENCHING, INSTALLATION OF SYSTEM, CONNECTION TO WATER SOURCE, TESTING, AND BACKFILLING
- GENERAL CONDITIONS SPECIFICALLY FOR LANDSCAPE IRRIGATION
- THE CONTRACTOR WILL FLAG THE LOCATION OF ALL HEADS, ELECTRIC VALVES, QUICK COUPLER VALVES, GATE VALVES, AUTOMATIC CONTROLLERS, BACKFLOW PREVENTERS, ETC., PRIOR TO CONSTRUCTION FOR THE REPRESENTATIVE'S APPROVAL. THE CONTRACTOR SHALL REPORT TO THE REPRESENTATIVE ANY DEVIATIONS BETWEEN THE IRRIGATION PLAN, SPECIFICATIONS, AND TO THE SITE. FAILURE TO DO SO PRIOR TO THE INSTALLATION OF EQUIPMENT (WHICH SUBSEQUENTLY REQUIRES REPLACEMENT OR RELOCATION OF THE EQUIPMENT) WILL RESULT IN THE WORK BEING DONE AT THE CONTRACTOR'S EXPENSE.
 - ALL LOCAL, MUNICIPAL AND STATE LAWS, ORDINANCES, CODES AND REGULATIONS RELATING TO, OR GOVERNING OF ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND WILL BE CARRIED OUT BY THE CONTRACTOR. THE CONTRACTOR MUST HAVE A VALID LICENSE, AS ISSUED BY THE TEXAS BOARD OF IRRIGATORS, MUST CARRY SUFFICIENT INSURANCE COVERAGE, AND MUST BE ACTIVE IN IRRIGATION INSTALLATION FOR A MINIMUM OF 5 YEARS.
 - ANY PERMITS NEEDED FOR CONSTRUCTION OF THE WORK INCLUDED IN THIS CONTRACT, WHICH IS REQUIRED BY ANY LEGALLY CONSTITUTED AUTHORITY HAVING JURISDICTION, SHALL BE OBTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL PAY FOR ALL COSTS IN CONNECTION WITH ANY INSPECTIONS OR EXAMINATIONS REQUIRED BY THESE AUTHORITIES. THE REPRESENTATIVE WILL BE NOTIFIED WHEN THESE INSPECTIONS ARE REQUIRED. ANY NECESSARY WORK NEEDED TO BE DONE BY THE CONTRACTOR AS A RESULT OF THESE INSPECTIONS WILL BE PERFORMED AT THE CONTRACTOR'S EXPENSE. COPIES OF ALL PERMITS AND INSPECTIONS REPORTS SHALL BE FORWARDED TO THE REPRESENTATIVE.

- GUARANTEE AND MAINTENANCE
- MATERIAL AND WORKMANSHIP SHALL BE FULLY GUARANTEED FOR ONE YEAR AFTER THE DATE OF SUBSTANTIAL COMPLETION INSPECTION; REPLACEMENT OF DEFECTIVE MATERIAL OR REPAIR OF WORK SHALL BE DONE AT NO EXPENSE TO THE OWNER DURING THE FIRST YEAR, EXCEPT FOR REPAIRS OR REPLACEMENTS NECESSITATED BY DAMAGE OF ANY KIND NOT OF THE CONTRACTOR'S MAKING. ANY REIMBURSEMENT FOR REPAIRS MUST HAVE PRIOR APPROVAL OF THE REPRESENTATIVE.

- SUBSTITUTIONS
- THE SPRINKLER SYSTEM HAS BEEN DESIGNED ACCORDING TO THE OPERATING CHARACTERISTICS OF THE SPECIFIED EQUIPMENT. THEREFORE, NO SUBSTITUTIONS OF EQUIPMENT WILL BE ALLOWED EXCEPT WITH WRITTEN APPROVAL.

- PRODUCTS
- POLYVINYL CHLORIDE PIPE
- THE SPRINKLER PIPE (HEREINAFTER REFERRED TO AS PVC PIPE) SHALL HAVE BEEN MANUFACTURED IN ACCORDANCE WITH THE PRODUCT STANDARDS AS FOLLOWS: PRODUCT STANDARD PS-22-10 SHALL APPLY AND BE THE GOVERNING AUTHORITY AS APPLICABLE TO MAIN LINE PIPING AND SHALL BE SDR-21 (CLASS 200) SPECIFICATION. 2 1/2" AND SMALLER MAIN LINE AND LATERAL LINE PIPING WILL BE SOLVENT WELD JOINTS.

- PIPE FITTINGS
- 2 1/2" AND SMALLER PIPE FITTINGS SHALL BE PVC SCHEDULE 40, AS MANUFACTURED BY THE LASCO COMPANY, OR EQUAL. ALL PVC FITTINGS SHALL BE OF THE SAME MATERIAL AS THE PVC PIPE SPECIFIED AND SHALL BE COMPATIBLE WITH THE PVC PIPE FURNISHED. ONLY SOLVENT RECOMMENDED BY THE MANUFACTURER OF THE PVC PIPE AND THE MANUFACTURER OF THE PVC FITTINGS SHALL BE USED.

- WIRE
- ALL VALVE WIRING SHALL BE 14 GAUGE COPPER SINGLE-CONDUCTOR WIRE WITH 4/64" VINYL INSULATION AS APPROVED FOR DIRECT UNDERGROUND BURIAL IN 30 VOLT AC OR LESS SERVICE BY THE NATIONAL ELECTRICAL CODE. WHERE VALVE WIRED FROM TWO OR MORE CONTROLLERS ARE IN THE SAME DITCH, WIRE ARE TO BE COLOR CODED. THIS COLOR CODING TO BE NOTED ON RECORD DRAWINGS.

- EXPANSION COILS
- EXPANSION COILS, WHICH ARE TO CONSIST OF APPROXIMATELY 10 'WRAPS OF WIRE AROUND 1" PIPE, WILL BE PROVIDED ON EACH WIRE APPROXIMATELY EVERY 100 FEET. WIRES ARE TO BE BUNDLED AND TAPED TOGETHER EVERY 10 FEET. PROVIDE EXPANSION COIL AT EACH ELECTRIC VALVE INSIDE THE VALVE BOX.

- WIRE SPLICES
- ALL WIRE SPLICES SHALL BE MADE WITH A MECHANICAL CONNECTOR AND WATERPROOFED ACCORDING TO THE MANUFACTURER'S SPECIFICATION. THE WIRE SPLICE SHALL BE SPEARS "DRY SPLICE", 3M "SCOTCH LOCK", OR 3M DBY WIRE SPLICE. ALL WIRE SPLICES SHALL BE IN VALVE BOXES, AND NO DIRECTLY BURIED OR UNDERGROUND SPLICES WILL BE ACCEPTED.

- EXECUTION
- INSTALLATION GENERAL
- BEFORE INSTALLATION IS STARTED, THE CONTRACTOR SHALL PLACE A FLAG WHERE EACH SPRINKLER HEAD, QUICK COUPLER VALVE, AND ELECTRIC VALVES ARE TO BE LOCATED IN ACCORDANCE WITH THE PLANS. THE FLAGGING SHALL BE APPROVED BY THE REPRESENTATIVE BEFORE THE INSTALLATION IS STARTED. SHOULD A DISCREPANCY IN THE PLANS BECOME APPARENT AT THIS TIME, SUCH DISCREPANCY SHALL BE POINTED OUT TO THE REPRESENTATIVE. WORK MUST NOT PROCEED UNTIL THE REPRESENTATIVE APPROVES ANY DESIGN CHANGES MADE NECESSARY BY SUCH DISCREPANCY. SHOULD SUCH CHANGES CREATE EXTRA COST TO THE CONTRACTOR, APPROVAL FOR EXTRA COMPENSATION SHALL BE OBTAINED IN WRITING FROM THE REPRESENTATIVE BEFORE COMMENCING WORK. SHOULD SUCH CHANGES CREATE A SAVINGS IN COST TO THE CONTRACTOR, A WRITTEN REDUCTION IN THE CONTRACT PRICE SHALL BE APPROVED BY THE REPRESENTATIVE IN WRITING BEFORE COMMENCING WORK.
 - THE CONTRACTOR IS CAUTIONED TO PROVIDE ADEQUATE PROTECTION TO THOSE USING THE SITE. PROVIDE BARRICADES AS NECESSARY.
 - ALL MATERIAL SHALL BE INSTALLED IN STRICT ACCORDANCE TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS THAT SHALL BE CONSIDERED A SUPPLEMENT TO THESE SPECIFICATIONS.
 - PIPING LAYOUT INDICATED IS DIAGRAMMATIC ONLY. ROUTE PIPING TO AVOID PLANTS AND STRUCTURES. PROVIDE FULL AND COMPLETE COVERAGE.
 - REVIEW LAYOUT REQUIREMENTS WITH OTHER EFFECTED WORK. COORDINATE LOCATIONS OF SLEEVES (UNDER PAVING) TO ACCOMMODATE SYSTEM.

- EXCAVATION, BACKFILL, AND PROTECTION OF PLANT MATERIALS
- ALL EXCAVATION IN THIS CONTRACT SHALL BE UNCLASSIFIED AND IS TO INCLUDE EARTH, LOOSE ROCK, ROCK, OR ANY COMBINATION THEREOF, IN WET OR DRY STATE. ALL TRENCHES SHALL BE BACKFILLED WITH THE MATERIAL REMOVED, EXCEPT THAT NO ROCK OR DEBRIS THAT CAUSE DAMAGE TO THE PIPE SHALL BE USED AS BACKFILL. IN THIS CASE, THE SPECIAL BACKFILL SPECIFICATIONS SHALL TAKE PRECEDENCE OVER THIS GENERAL SPECIFICATION (SEE 3.07). ALL TRENCH BACKFILL SHALL BE WATER SETTLED AND COMPACTED IN ORDER TO PREVENT AFTER SETTTLING. USE ONLY THE MINIMUM AMOUNT OF WATER NECESSARY TO SETTLE DITCHES. FLOODING DITCHES WITHOUT COMPACTION WILL NOT BE PERMITTED.
- ALL TRENCHES AND ADJOINING AREAS SHALL BE HAND RAKED TO FINISH GRADE. REMOVE ROCKS, EXCESS DIRT, AND DEBRIS FROM THE SITE.

- PIPE INSTALLATION
- MAIN LINE PIPING: PIPE SHALL BE INSTALLED IN A 4" WIDE (MINIMUM) TRENCH WITH A MINIMUM OF 18" COVER.
 - LATERAL PIPING: ALL PVC LATERAL LINE PIPING SHALL BE SOLVENT WELD TYPE. INSTALL IN 4" WIDE (MINIMUM) TRENCH DEEP ENOUGH TO ALLOW FOR INSTALLATION OF SPRINKLER HEADS AND VALVES, BUT IN NO CASE LESS THAN 12" OF COVER FOR ROTARY AND JOR SPRAY ZONE LATERALS.
 - PVC PIPE INSTALLATION: ALL LUMBER, RUBBISH, AND LARGE ROCKS (OVER 2" IN DIAMETER) SHALL BE REMOVED FROM THE LINE TO PREVENT UNEVEN SETTLEMENT. PIPE SHALL HAVE A FIRM UNIFORMED BEARING FOR THE ENTIRE LENGTH OF EACH PIPE LINE TO PREVENT UNEVEN SETTLEMENT. WEDGING OR BLOCKING OF PIPE WILL NOT BE PERMITTED. PAD THE TRENCHES WITH SAND IF THE TRENCH IS ROCKY. NEVER LAY PVC PIPE WHERE THERE IS WATER IN THE TRENCH. NEVER LAY PVC PIPE WHEN THE TEMPERATURE IS 32 DEGREES F. OR BELOW. MAXIMUM 2 PIPES PER TRENCH, WITH 1' HORIZONTAL CLEARANCE BETWEEN PIPES.
 - PVC PIPE AND FITTING ASSEMBLY
CONTRACTOR SHALL USE ONLY THE SOLVENT SUPPLIED AND RECOMMENDED BY THE MANUFACTURER OF THE PVC PIPE TO BE INSTALLED ON THIS PROJECT SITE TO MAKE ANY SOLVENT WELDED JOINTS. THE PIPE AND FITTINGS SHALL BE THOROUGHLY CLEANED OF DIRT, DUST AND MOISTURE BEFORE APPLYING SOLVENT. PVC PIPE AND FITTINGS SHALL BE CLEANED WITH PVC PRIMER OR SANDED WITH PLUMBER'S CLOTH BEFORE SOLVENT WELDING. THE CONTRACTOR SHALL MAKE SOLVENT WELDS WITH A NON-SYNTHETIC BRISTLY BRUSH. WHERE THREADED PVC CONNECTIONS ARE REQUIRED, USE THREADED PVC ADAPTERS INTO WHICH THE PIPE MAY BE WELDED. TEFLON TAPE WILL BE USED ON THREADS.

- AUTOMATIC CONTROLLER
- AUTOMATIC CONTROLLER SHALL BE SUPPLIED IN ACCORDANCE WITH THE MATERIALS LIST AND SHALL BE LOCATED AS SHOWN ON THE PLAN. CONTRACTOR SHALL PROVIDE SERVICE INTO THE CONTROLLERS AS PART OF THIS CONTRACT.

- ELECTRIC VALVES
- ELECTRIC REMOTE VALVES SHALL BE SUPPLIED IN ACCORDANCE WITH THE SPECIFICATIONS. VALVES SHALL BE INSTALLED DEEP ENOUGH SO THAT THERE WILL BE AT LEAST 10" OF COVER FOR THE VALVE SUPPLIED SHALL BECOME PART OF THESE SPECIFICATIONS. A GREEN PLASTIC TOP SHALL BE INSTALLED ON THE VALVE BOX FLUSH WITH THE FINAL GRADE. PLACE 6" OF GRAVEL UNDER EACH VALVE BEFORE INSTALLING VALVE BOX.

- HEAD INSTALLATION
- IMPORTANT: BACKFILL SHALL BE SPECIALLY TAMPED UNDER THE HEAD FLANGE AND AROUND THE HEAD FOR A DISTANCE OF ONE FOOT BY A SUITABLE MEANS, AFTER TRENCH BACKFILL HAS DRIED FROM WATER SETTTLING. THE PURPOSE IS TO ELIMINATE LOOSE HEADS IN THE GROUND THAT WOULD MOVE WHEN RUN OVER WITH MOWERS THEREBY CREATING A POSSIBLE SOURCE OF DAMAGE. ALL SPRINKLER HEADS SHALL BE LOCATED 4" FROM BACK OF VEHICULAR CURB USING A FULL SWING JOIN WITH SCHEDULE 40 PVC THREADED FITTINGS AND SCHEDULE 80 PVC NIPPLES. THE TOP OF THE HEAD SHALL BE NO MORE THAN 1/4" ABOVE FINISHED GRADE. ADJUST PARTIAL CIRCLE ARCS AS REQUIRED TO COMPLETE COVERAGE.

- FINAL CLEAN-UP
- UPON COMPLETION OF THE WORK AND BEFORE ACCEPTANCE AND FINAL PAYMENT WILL BE MADE, THE CONTRACTOR SHALL CLEAN AND REMOVE FROM THE SITE OF THE WORK, HIS SURPLUS AND DISCARDED MATERIALS, TEMPORARY STRUCTURES AND DEBRIS OF EVERY KIND. HE SHALL LEAVE THE SITE OF THE WORK IN A NEAT AND ORDERLY CONDITION EQUAL THE SITE SHALL BE DISPOSED AT LOCATIONS SATISFACTORY TO THE REPRESENTATIVE.

- SYSTEM DEMONSTRATION
- INSTRUCT OWNER'S PERSONNEL IN OPERATION AND MAINTENANCE OF SYSTEM, INCLUDING ADJUSTING OF SPRINKLER HEADS. USE OPERATION AND MAINTENANCE MATERIAL AS BASIS FOR DEMONSTRATION.

PERMANENT SODDING SCHEDULE:

SEEDING DATE	SOD MIXTURE	PAD SIZES
AUG 25 - OCT (BEST)	LOCALLY GROWN	MIN. 48 INCHES x 30 INCHES
FEB - APR 15 (POSSIBLE)	BUFFALO GRASS	MAX. 5% DEVIATION IN SIZE BROKEN PADS UNACCEPTABLE

- PRODUCT
- PROVIDE STRONGLY ROOTED SOD, FREE OF WEEDS AND UNDESIRABLE NATIVE GRASSES. MACHINE CUT TO PAD THICKNESS OF 3/4 INCH, EXCLUDING TOP GROWTH AND THATCH. SOD SHALL BE HEALTHY AND GREEN WITH NO DEAD OR DISCOLORED SPOTS LARGER THAN 6".

- SUBMITTALS
- SUBMIT DATA FOR SOD AND SOURCE.

- DELIVERY, STORAGE, HANDLING
- DELIVER SOD ON PALLETS IN ROLLS. DO NOT DELIVER MORE SOD THAN CAN BE LAID WITH 24 HOURS.

- SOIL AMENDMENTS
- FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 1000 LB/AC 10-10-10 FERTILIZER.

- MAINTENANCE
- INSPECT AND REPAIR SOD AS NEEDED. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 LB/AC 10-10-10 FERTILIZER. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

PERMANENT SODDING INSTALLATION:

- EXAMINATION AND PREPARATION
- INSTALLER TO EXAMINE AREAS TO RECEIVE PERMANENT SEEDING FOR COMPLIANCE WITH REQUIREMENTS AND CONDITIONS AFFECTING INSTALLATION AND PERFORMANCE. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
 - REFER TO CIVIL DRAWINGS FOR EROSION AND SEDIMENT CONTROL MEASURES.

- SOD BED ESTABLISHMENT
- VERIFY SITE GRADING PRIOR TO INSTALLATION. ELIMINATE UNEVEN AREAS AND LOW SPOTS AND ENSURE POSITIVE DRAINAGE.
 - LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 4 TO 6 INCHES. REMOVE STONES LARGER THAN 1 INCH IN ANY DIMENSION AND STICKS, ROOTS, RUBBISH AND OTHER EXTRANEIOUS MATTER. APPLY TOP SOIL, FERTILIZER, LIME AND SOIL AMENDMENTS AND THOROUGHLY BLEND PLANTING SOIL MIX TO CREATE ACCEPTABLE PLANTING SOIL AS DESCRIBED THROUGH ANLA.
 - RAKE SOIL SURFACE SMOOTH PRIOR TO SODDING. SOIL SURFACE SHALL BE REASONABLE FREE OF LARGE CLODS, STONES GREATER THAN 3/4 INCH IN THE LONGEST DIMENSION, AND OTHER MATERIAL WHICH WILL INTERFERE WITH PLANT ESTABLISHMENT.
 - INSTALL EDGING AT PERIPHERY OF SODDED AREAS IN STRAIGHT LINES TO CONSISTENT DEPTH.

- LAYING SOD
- MOISTEN PREPARED SURFACE IMMEDIATELY PRIOR TO LAYING SOD.
 - LAY SOD WITHIN 24 FROM TIME OF STRIPING.
 - LAY SOD TIGHT TO FORM A SOLID MASS WITH NO OPEN JOINTS VISIBLE AND NO STRETCHING OR OVERLAPPING. STAGGER END JOINTS 12 INCHES MINIMUM. LEAVE A 36 INCH RADIUS AROUND ALL TREE TRUNKS FOR MULCH. WORK SIFTED SOIL INTO MINOR CRACKS BETWEEN PIECES OF SOD. REMOVE EXCESS TO AVOID SMOTHERING OF ADJACENT GRASS.
 - SOD ROLL LENGTH SHALL RUN PERPENDICULAR TO ALL SLOPE FALL LINES. PIN OR STAKE SOD STRIPS THAT ARE PLANTED ON SLOPES GREATER THAN 3:1 (33 PERCENT).
 - SOD SHALL LAY FLUSH WITH PAVING, CURBS AND IRRIGATION HEADS AND ONE INCH BELOW THE TOP OF STEEL EDGING.
 - WATER SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING.
 - AFTER SECOND WATERING AND WHEN SOIL AND SOD ARE MOIST, ROLL SOD LIGHTLY AS SOON AS POSSIBLE AFTER ITS LAID.
 - ADD TOPSOIL ALONG EXPOSED EDGES TO MATCH ADJACENT GRADE. FEATHER TOPSOIL OUT APPROXIMATELY ONE FOOT FROM EDGE OF SOD.

- SOD MAINTENANCE
- MOW GRASS AT REGULAR INTERVALS. DO NOT CUT MORE THAN 1/3 OF GRASS BLADE AT EACH MOWING. PERFORM FIRST MOWING WHEN SEEDLINGS ARE 40 PERCENT HIGHER THAN DESIRED HEIGHT.
 - IMMEDIATELY REMOVED CLIPPINGS AFTER MOWING. DO NOT LET CLIPPINGS LAY IN CLUMPS.
 - WATER TO PREVENT SOD AND SOIL FROM DRYING OUT.
 - INSPECT AND REPAIR ACCORDING TO THE SOD SCHEDULE.



McADAMS

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OBPE: F-3597, TBPELS: F-10194440
TBAE: BR3185
www.mcadamsco.com

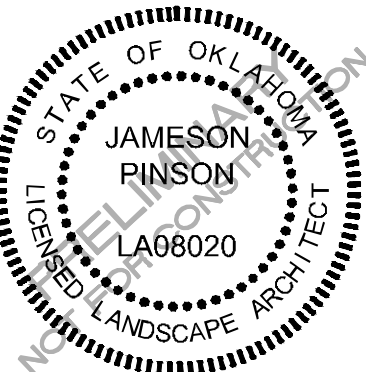
CONTACT

BRITTANY YOUNGBLOOD
BYOUNGBLOOD@MCADAMSCO.COM
PHONE: 501. 840. 0001

CLIENT

TYLER HENDON
1880 SOUTH PARK DRIVE
BIRMINGHAM, AL 35244
PHONE: 205.906.2006

EXPRESS OIL -
SAND SPRINGS, OK
CONSTRUCTION PLANS
3507 S 113TH AVENUE WEST
SAND SPRINGS, OKLAHOMA 74063



REVISIONS

NO.	DATE	DESCRIPTION
1	04. 17. 2026	1ST SUBMITTAL
2	05. 05. 2026	2ND SUBMITTAL
3	06. 22. 2026	3RD SUBMITTAL

PLAN INFORMATION

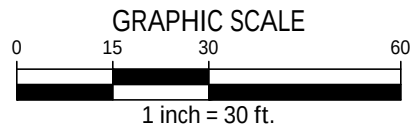
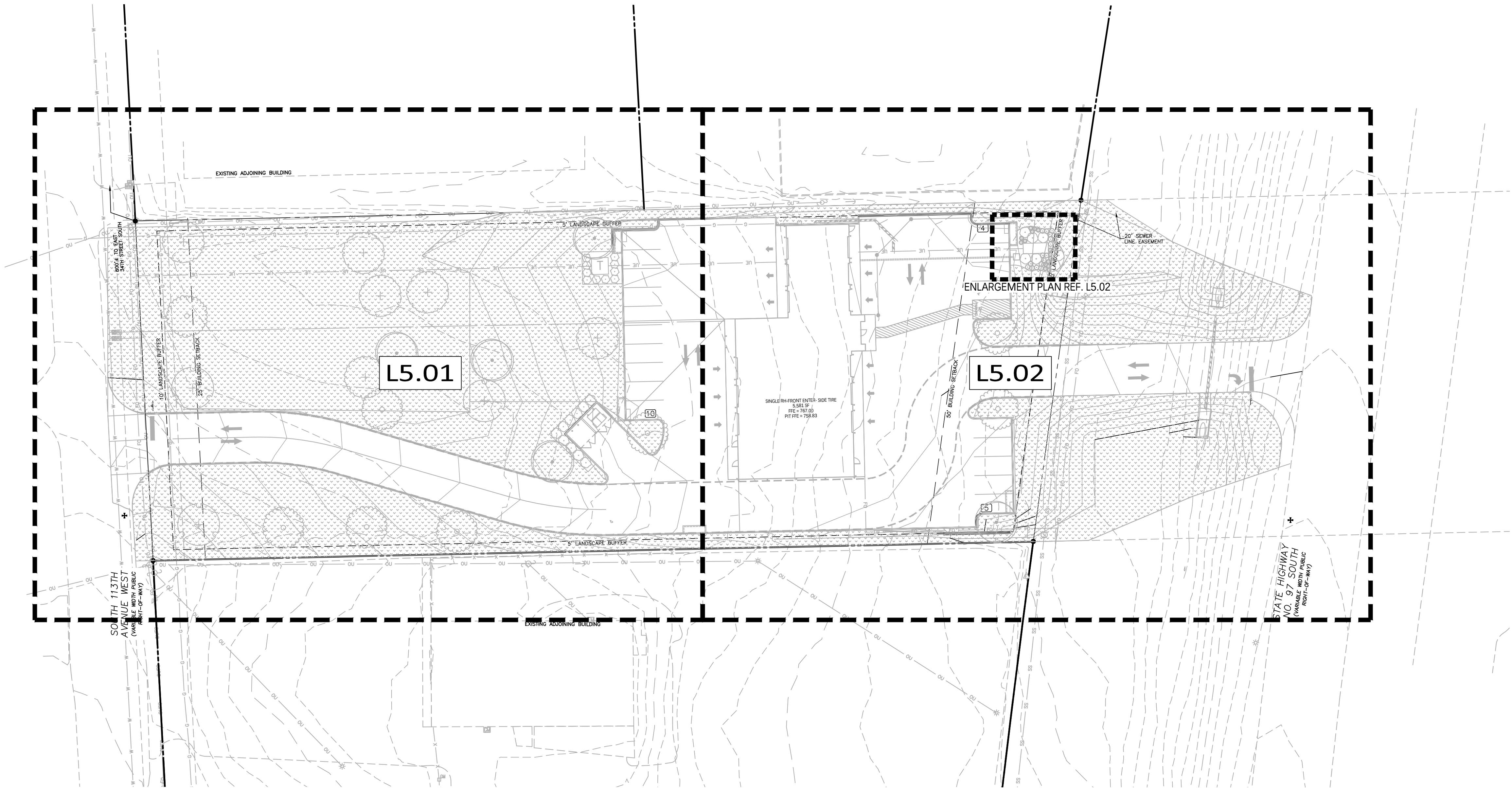
PROJECT NO. EXO25009
FILENAME EXO25009-LS1.DWG
CHECKED BY JEB
DRAWN BY RJS
SCALE
DATE 04. 17. 2026

SHEET

LANDSCAPE GENERAL
NOTES

LO.00

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ISSUE FOR BID - NOT RELEASED FOR CONSTRUCTION



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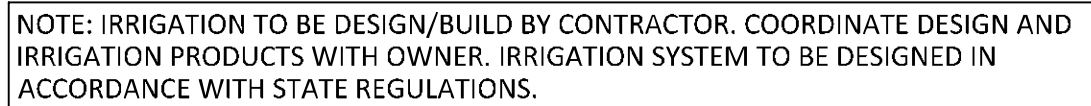
PLAN INFORMATION

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FILENAME EXO25009-LS1.DWG
CHECKED BY JEB
DRAWN BY RJS
SCALE 1" = 30'
DATE 04. 17. 2026

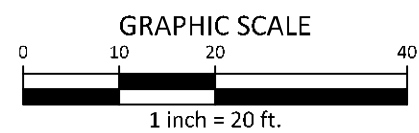
SHEET

OVERALL LANDSCAPE
PLAN

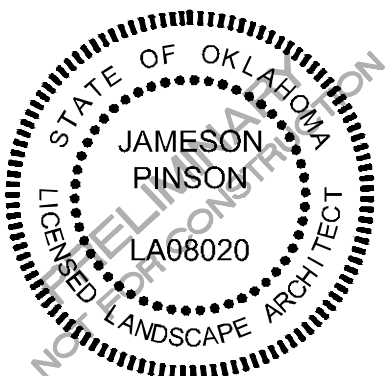
L5.00



PLANT SCHEDULE

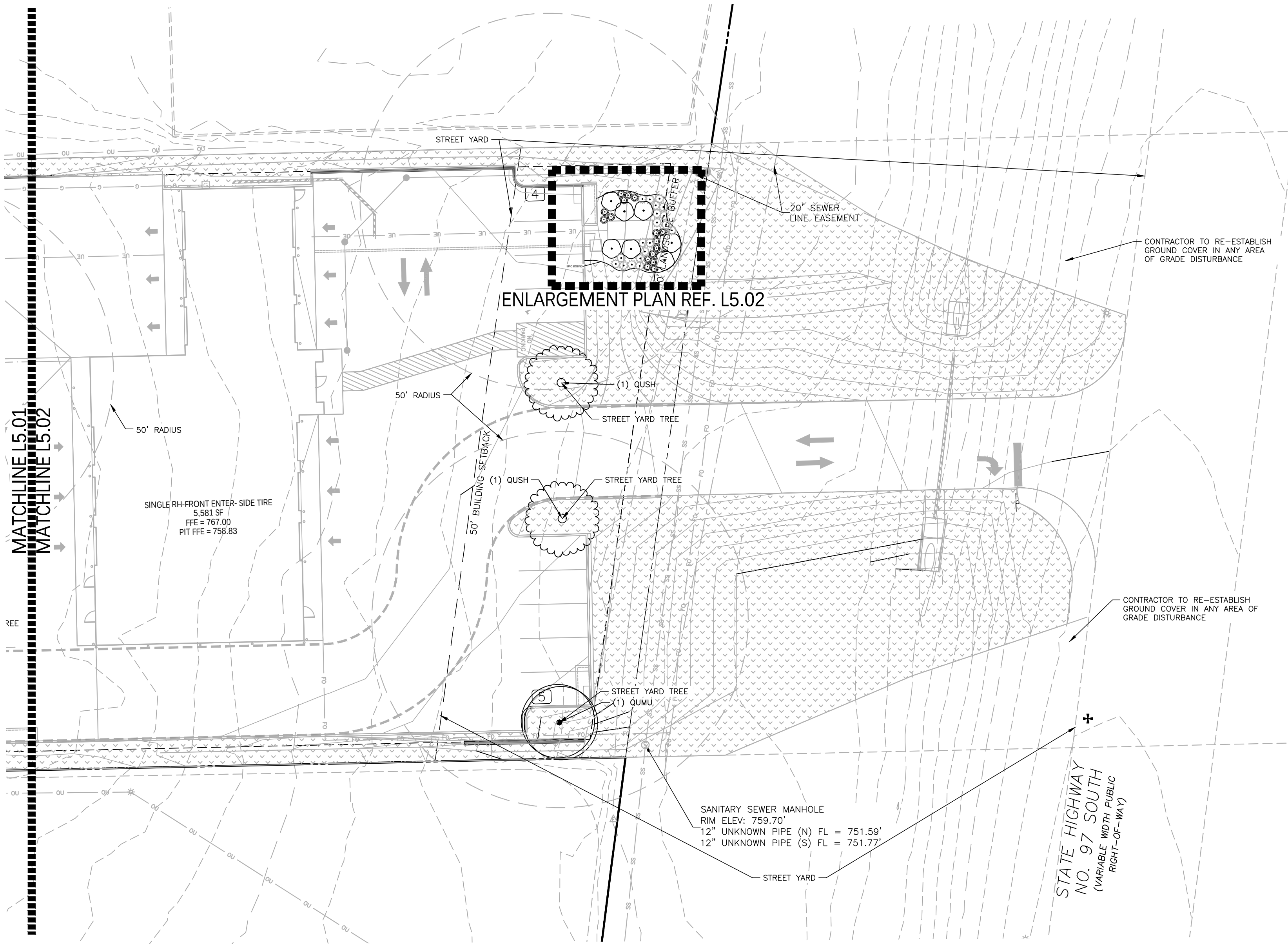


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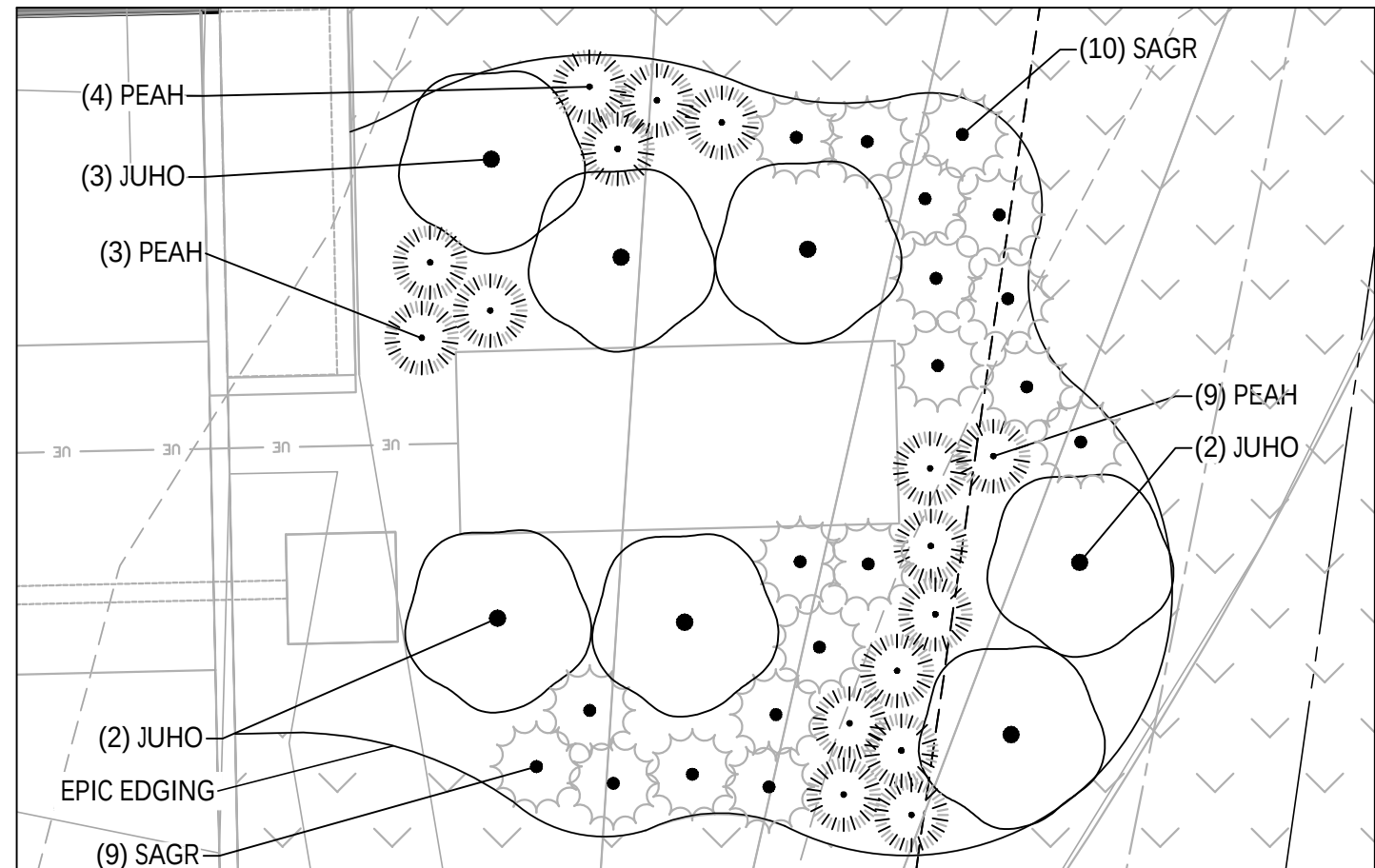


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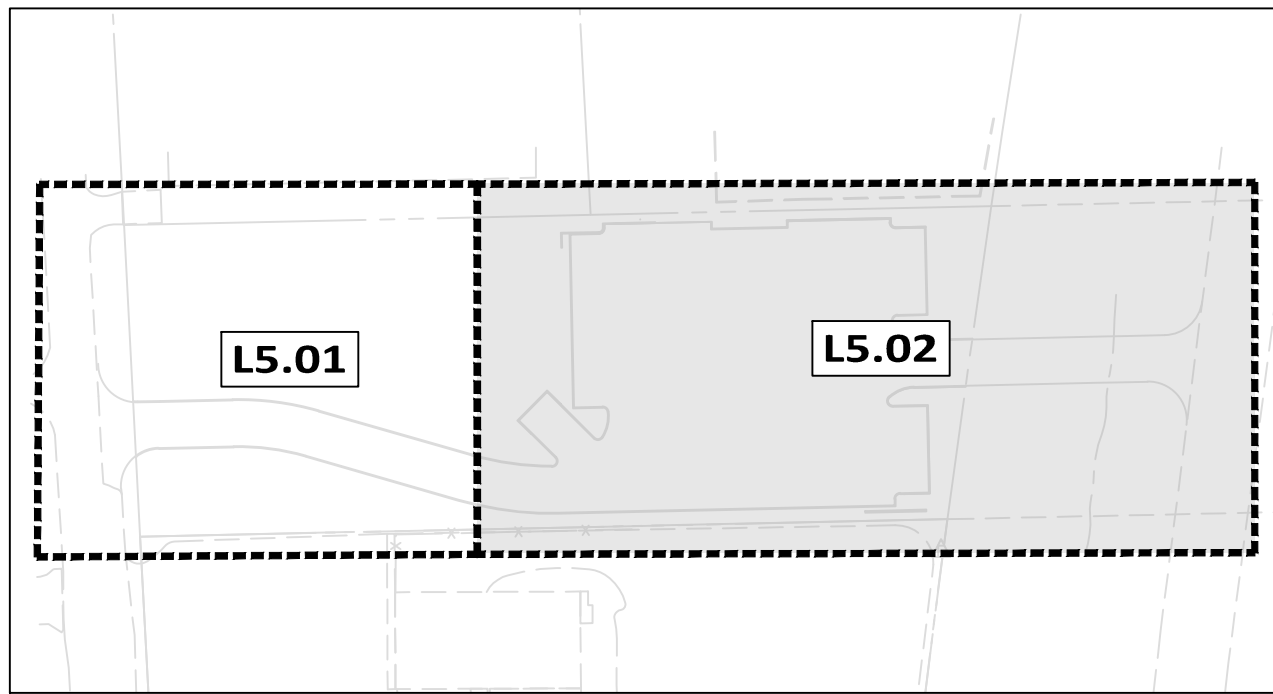
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NOTE: IRRIGATION TO BE DESIGN/BUILD BY CONTRACTOR. COORDINATE DESIGN AND IRRIGATION PRODUCTS WITH OWNER. IRRIGATION SYSTEM TO BE DESIGNED IN ACCORDANCE WITH STATE REGULATIONS.



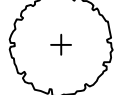
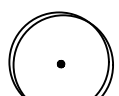
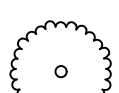
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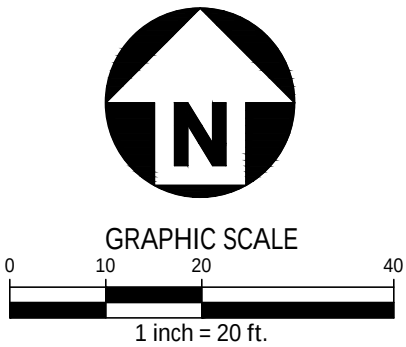


CONTEXT MAP
LANDSCAPE REQUIREMENT COMPLIANCE
CITY OF SAND SPRINGS, OKLAHOMA
EXPRESS OIL

STREET YARD LANDSCAPING			
STANDARD	TOTAL STREET YARD (SQUARE FEET)	REQUIRED	PROVIDED
Min. 15% of street yard	S. 113TH AVE W. 5,092	764	3,639
	STATE HWY 97 S. 23,570	3,536	15,397
STREET YARD TREES			
STANDARD	TOTAL STREET YARD (SQUARE FEET)	REQUIRED	PROVIDED
1 Tree for each 1,500sf of required area.	S. 113TH AVE W. 5,092	4	4
	STATE HWY 97 S. 23,570	16	16 TOTAL 3 TREES NEAR SH-97 & 13 IN ALT. LOCATION (AVOID ODOT R.O.W.)
OFF STREET PARKING AREAS			
STANDARD	REQUIRED BUFFER WIDTH	PROVIDED	
Off street parking areas shall be separated from adjacent residential districts by at least 10 ft of landscaping	10 ft.	10 ft	
PARKING AREA LANDSCAPING			
**All parking spaces to be located within 50 ft. of min. 30 sf landscape area, with a 3' min. width or diameter.		Provided	
PARKING AREA TREES			
STANDARD	# OF PARK. SPACES	REQUIRED	PROVIDED
1 per 10 parking spaces	19	2	2
PARKING AREA SCREENING			
STANDARD			PROVIDED
Outdoor storage ares for trash, equipment, or other materials, must be screened by a decorative fence or by solid plantings, predominately of evergreen			Solid planting of evergreen shrubs

PLANT SCHEDULE

<u>SYMBOL</u>	<u>CODE</u>	<u>QTY</u>	<u>BOTANICAL / COMMON NAME</u>	<u>CAL</u>	<u>HEIGHT</u>	<u>REMARKS</u>	
<u>SHADE TREE</u>							
	CAIL	6	CARYA ILLINOENSIS PECAN	3" MIN	12'-14'	FULL AND MATCHED SIZE WITH STRONG CENTRAL LEADER	
	GLTI	3	GLEDITSIA TRIACANTHOS F. INERMIS THORNLESS HONEY LOCUST	3" MIN	12'-14'	FULL AND MATCHED SIZE WITH STRONG CENTRAL LEADER	
	QUMU	5	QUERCUS MUEHLENBERGII CHINKAPIN OAK	3" MIN	12'-14'	FULL AND MATCHED SIZE WITH STRONG CENTRAL LEADER	
	QUSH	8	QUERCUS SHUMARDII SHUMARD OAK	3" MIN	12'-14'	FULL AND MATCHED SIZE WITH STRONG CENTRAL LEADER	
<u>SYMBOL</u>	<u>CODE</u>	<u>QTY</u>	<u>BOTANICAL / COMMON NAME</u>	<u>CONT</u>	<u>HEIGHT</u>	<u>SPREAD</u>	<u>REMARKS</u>
<u>SHRUBS</u>							
	ILCB	10	ILEX CORNUTA 'BURFORDII NANA' DWARF BURFORD HOLLY	5 GAL	18" - 24"	24" - 36"	
	ILVN	10	ILEX VOMITORIA 'NANA' DWARF YAUPOIN HOLLY	5 GAL	18" - 24"	24" - 36"	
	JUHO	7	JUNIPERUS HORIZONTALIS CREEPING JUNIPER	3 GAL	6" - 12"	12" - 18"	
	PEAH	16	PENNISETUM ALOPECUROIDES 'HAAMELN' HAAMELN FOUNTAIN GRASS	1 GAL	12" - 18"	6" - 12"	
	SAGR	19	SALVIA GREGGII AUTUMN SAGE	3 GAL	12" - 18"	12" - 18"	
<u>SYMBOL</u>	<u>CODE</u>	<u>QTY</u>	<u>BOTANICAL / COMMON NAME</u>	<u>CONT</u>		<u>SPACING</u>	<u>REMARKS</u>
<u>GROUND COVERS</u>							
	BUDS	48,065 SF	BUCHLOE DACTYLOIDES BUFFALO GRASS	SOD			



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EXPRESS OIL -
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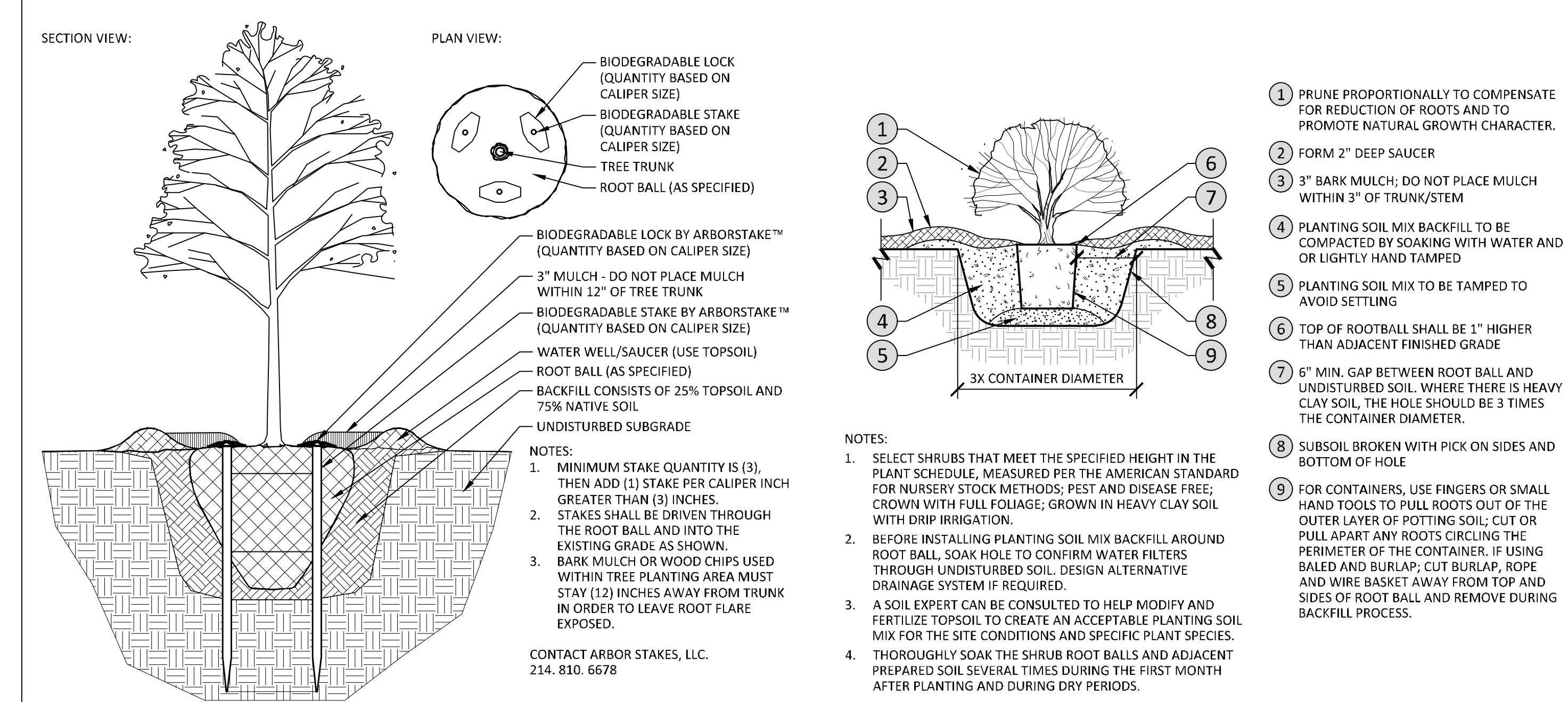
PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-LS1.DWG
CHECKED BY JEB
DRAWN BY RJS
SCALE 1" = 20'
DATE 04. 17. 2026

SHEET

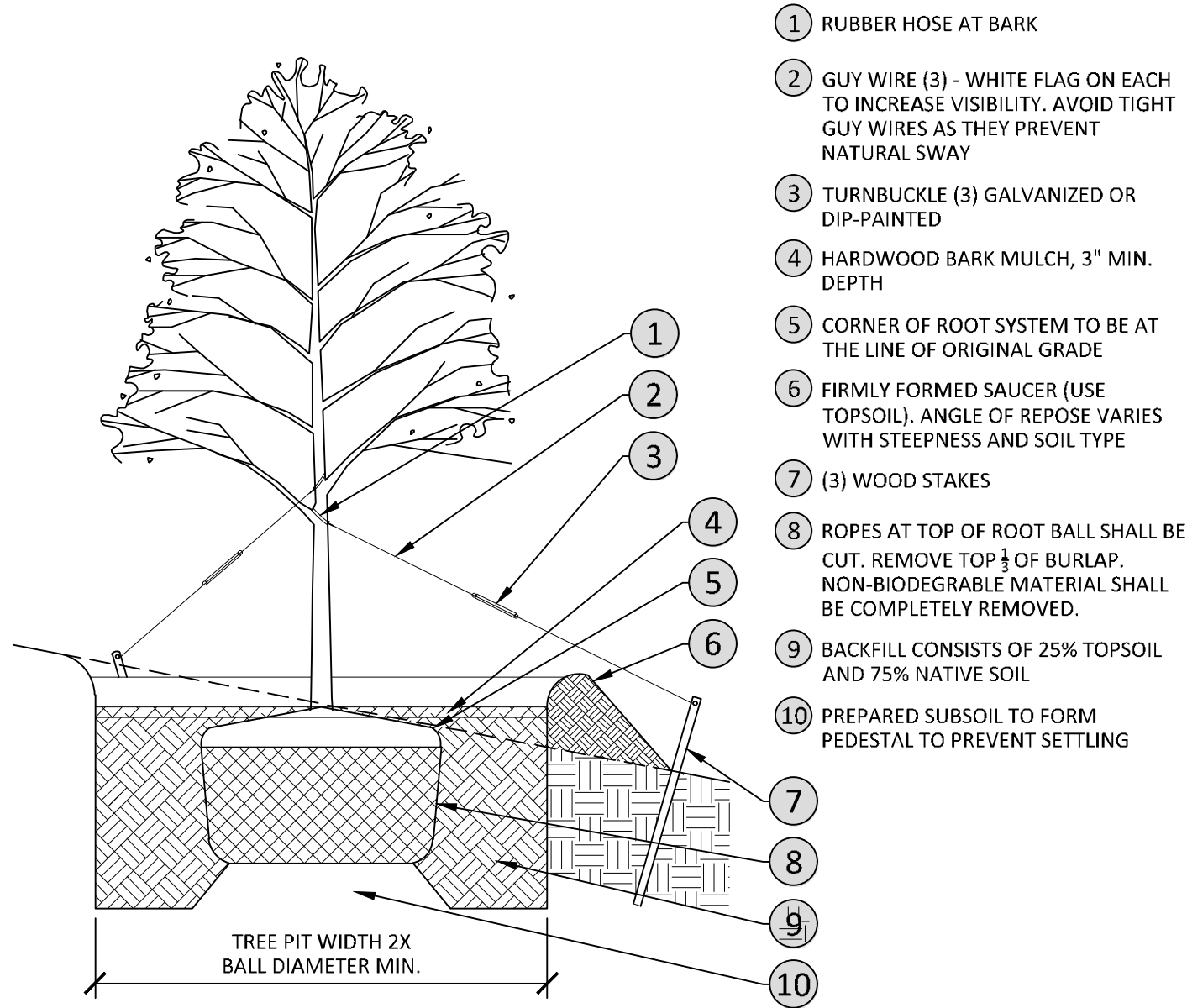
LANDSCAPE PLAN

L5.02



01 BELOW-GROUND TREE STAKING

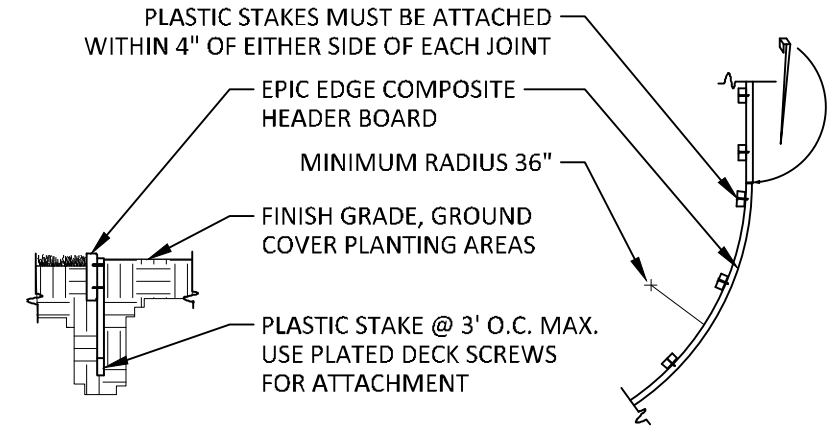
SCALE: 1/4" = 1'-0"



04 TREE PLANTING ON A SLOPE

SCALE: 1/4" = 1'-0"

NOTE: IRRIGATION TO BE DESIGN/BUILD BY CONTRACTOR. COORDINATE DESIGN AND IRRIGATION PRODUCTS WITH OWNER. IRRIGATION SYSTEM TO BE DESIGNED IN ACCORDANCE WITH STATE REGULATIONS.



SECTION VIEW:			PLAN VIEW:	
HDR. SIZE	ACTUAL DIMENSIONS	MIN. RADIUS POSSIBLE	NOTE:	
1X6	5 7/16" X 9 1/16" X 20'	36"	1. USE COARSE WOOD WORKING TOOLS FOR CUTTING & DRILLING.	

EPIC EDGE CHART
COLOR OPTIONS: CARAMEL BROWN
MANUFACTURED BY: EPIC PLASTICS, 104 E. TURER RD., LODI, CA 95240
URL ADDRESS: WWW.EPICPLASTICS.COM

03 EPIC EDGE COMPOSITE HEADER BOARD

SCALE: 1/4" = 1'-0"

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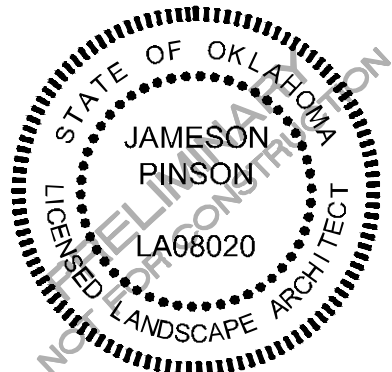
CONTACT

BRITTANY YOUNGBLOOD
BYOUNGBLOOD@MCADAMSCO.COM
PHONE: 501. 840. 0001

CLIENT

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EXPRESS OIL -
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REVISIONS

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PLAN INFORMATION

PROJECT NO. EXO25009
FILENAME EXO25009-LS1.DWG
CHECKED BY JEB
DRAWN BY RJS
SCALE
DATE 04. 17. 2026

SHEET

LANDSCAPE DETAILS

L5.03

EXPRESS OIL CHANGE & TIRE ENGINEERS

SINGLE BUILDING / RIGHT HAND OIL CHANGE / FRONT ENTER / SIDE TIRE STORAGE

OK-97

SAND SPRINGS, OKLAHOMA 74063

ATTENTION AUTHORITY HAVING JURISDICTION

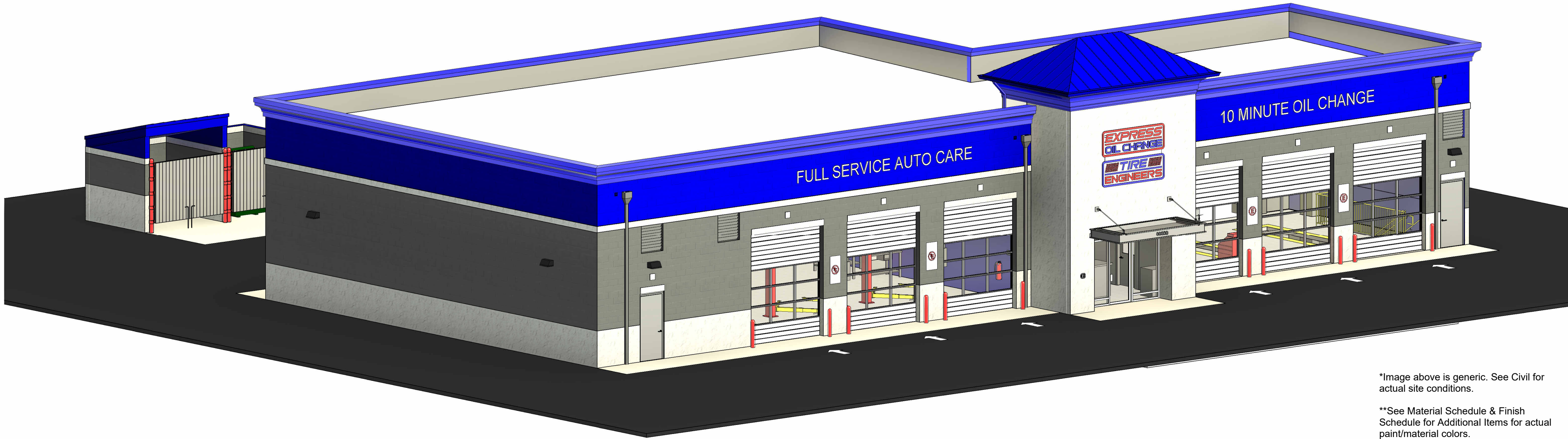
Notice is hereby given that Aho Architects, a sole proprietorship, the Architect of Record on the above referenced project, will be providing construction administration services on a limited basis, supplemented by a third-party independent engineering consulting service as described below.

This project has been designed by the Architect and Engineers ("Design Team") for its specific location, or adapted from prototypical designs, to comply with the following codes, ordinances, and similar requirements adopted by the Authority Having Jurisdiction ("AHJ"):

- See codes listed on Sheet LS100.

- During the Construction Administration Phase of the Project:
- General: The Design Team will respond to inquiries or requests from the Owner or Contractor, specifically related to documents prepared by the Design Team. As is standard in Construction Law and Professional Service Agreements, the Design Team shall not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Project(s), nor shall the Architect be responsible for the Owner's or Contractor's failure to perform the work in accordance with the requirements of the Permit Set Documents. The Architect shall be responsible for the Architect's negligent acts or omissions, but shall not have control over or charge of, and shall not be responsible for, acts or omissions of the Owner, Contractor, or of any other persons or entities performing portions of the work.
 - Experienced Contractor: The Owner will use experienced and licensed Contractors familiar with the construction of Projects of this type and in similar locations, and experienced with the applicable building codes, selection of materials and systems, and methods of installation and construction; and able to implement the Permit Set Documents through completion of the Project(s).
 - Submittals: The Design Team's Basic Construction Administration Services include review of critical submittals (e.g. shop drawings) by engineering disciplines (Structural). The Design Team shall also review, approve or take other appropriate action on any submittal for which the AHJ requires approval by the Architect/Engineer, as Additional Services.
 - Site Visits: The Architect and Design Engineers typically will not be making any site visits unless specifically required to do so.
 - The Owner has been advised and acknowledges that some States and AHJs require the Architect to perform at least some site visits or provide a notice such as this statement.
 - In consideration of this, the Owner will provide site visits, observation, testing, and related work by a third party independent engineering consulting service:
 - The Owner has an agreement with Terracon, a provider of geotechnical, environmental, construction materials and facilities engineering
 - Experienced Professional Engineers or field technicians under the responsible control of a Professional Engineer will perform site observation, construction materials testing, and required Special Inspections (per IBC Chapter 17; see Schedule of Special Inspections on structural drawings provided) including review of construction for conformance with the permit drawings, supplemental drawings, shop drawings/submittals, and similar relevant documents. Written reports shall be provided, with the Design Team included on the distribution list and involved in resolving any deficiencies noted or other items requiring the Design Team's input.
 - If the above provisions are not acceptable to the AHJ and the AHJ gives notice requiring the Architect to make site visit(s), the Owner has agreed to authorize the Architect's Additional Services and Reimbursable Expenses to comply with the AHJ's requirements.

If you have any questions, or if there is anything else we can do for you, please do not hesitate to contact April Cain, the project manager or Tim Aho, Architect at the address/phone listed below, or by email at HYPERLINKmailto:acain@ahoarch.com acain@ahoarch.com or HYPERLINKmailto:taho@ahoarch.com taho@ahoarch.com. Thank you very much, and we appreciate the opportunity to be involved in this project in your jurisdiction.



Note: See G300.

Owner responsible for reviewing all non-structural submittals / shop drawings.GC shall send the following submittals / shop drawings to the Structural Engineer for review:

Structural Steel (not including stairs)
Bar Joist
Rebar
Metal Deck
Concrete Mix Design

Note:

Full exterior wall mock-up required for Owner's approval prior to ordering materials. No exceptions.

*Image above is generic. See Civil for actual site conditions.

**See Material Schedule & Finish Schedule for Additional Items for actual paint/material colors.

ARCHITECT

AHO ARCHITECTS, A SOLE PROPRIETORSHIP
1855 DATA DRIVE, SUITE 150
HOOVER, ALABAMA 35244
205-983-6000

CIVIL ENGINEER

McADAMS
THE JOHN McADAMS COMPANY, INC.
4400 STATE HIGHWAY 121, SUITE 800
LEWISVILLE, TEXAS 75056
469-240-9624

STRUCTURAL ENGINEER

JOHN JONES, PE, SE
125 18TH STREET NORTH
PELL CITY, ALABAMA 35125
205-884-5334

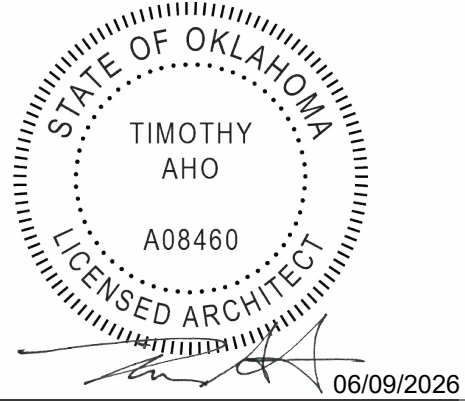
MECHANICAL / PLUMBING ENGINEER

PINNACLE ENGINEERING, INC.
2031 SHADY CREST DRIVE
HOOVER, ALABAMA 35216
205-733-6912

ELECTRICAL ENGINEER

GIDEON WAMAE, P.E.
4120 OVERLOOK CIRCLE
TRUSSVILLE, ALABAMA 35173
205-413-4112

FINAL



Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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Title Sheet	
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
T100	
Scale	12" = 1'-0"

SUMMARY OF CHANGES

PROTOTYPE CHANGES

NO.	DESCRIPTION	NO.	DESCRIPTION
1.	No Pit Ladder		
2.	Pipe downspouts to storm, because of cold climate		
3.	Unit heaters		

ISSUE FOR PERMIT CHANGES

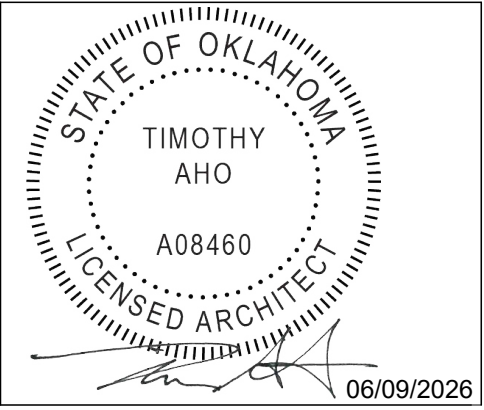
ISSUED	REVISION #	DESCRIPTION	REVISED SHEETS	ISSUED	REVISION #	DESCRIPTION	REVISED SHEETS
04/17/2026	IPB-0	Issued for Bid	None				

ISSUE FOR BID CHANGES

ISSUED	REVISION #	DESCRIPTION	REVISED SHEETS	ISSUED	REVISION #	DESCRIPTION	REVISED SHEETS
			None				

ISSUE FOR CONSTRUCTION CHANGES

ISSUED	REVISION #	DESCRIPTION	REVISED SHEETS	ISSUED	REVISION #	DESCRIPTION	REVISED SHEETS
06/25/2026	IPC-0	Issued for Construction	P3.01				



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

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2026
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Summary of Changes

Project number25048

Date04/17/2026

Drawn byMB

Checked byARC

G100

Scale12" = 1'-0"

GENERAL PROJECT NOTES

1. These documents are considered accurate and true to the best knowledge of the Architect at this time, but do not necessarily represent, nor are they intended to represent, actual existing conditions, dimensions, and tolerances. Contractor shall field-verify existing conditions including, but not limited to materials, construction, elevations, and dimensions prior to bidding and undertaking the work. Items of concern shall be brought to the attention of the Architect. Submittal of a proposal (bid) by a Contractor and their Subcontractors shall constitute an acknowledgement and confirmation of having complied with these requirements.
2. All work shall comply with all applicable local, state, and national codes, rules, ordinances and regulations and authorities having jurisdiction.
3. The Contractor shall comply with all applicable provisions of the specifications, including, but not limited to all general conditions, supplementary general conditions, special conditions, and material and construction provisions, which apply to materials or construction methods required by this project.
4. Where warranties are concerned, Contractor shall follow manufacturer’s standards and recommendations unless specifically directed otherwise. Any conditions which might negatively affect the warranty shall be brought to the attention of the Architect in advance.
5. The Owner and Contractor shall promptly report to the Architect any defects, suspected defects, or discrepancies in the Architect ’s work or services of which the Owner or Contractor may become aware, so that the Architect may take measures to minimize the consequences of such a defect. Failure to notify the Architect shall relieve the Architect of costs of remedying the defects above the sum such remedy would have cost had prompt notification been given.
6. Neither the professional activities of the Architect, nor the presence of the Architect or its employees and consultants at a construction site shall relieve the Contractor or others of their obligations, duties, and responsibilities including, but not limited to: construction means and methods, sequence, techniques, or procedures necessary for performing, superintending, or coordinating all portions of the work in accordance with the contract documents and any health and safety precautions required by agencies having jurisdictional authority over the project. The Architect and its personnel have no authority to exercise control over any Contractor or other entity or their employees in connection with their means, methods, or safety precautions. The Contractor is solely responsible for jobsite safety. The Owner, Architect, and their Consultants shall be indemnified and shall be made additional insureds under the Contractor’s general liability insurance policy.
7. All work, unless specifically indicated otherwise, shall be the responsibility of the General Contractor and shall be performed by the tradesmen skilled in the required field.
8. “Provide” shall mean to furnish and install, complete and ready for intended use.
9. Provide pressure treated wood where in contact with concrete or masonry.
10. The Contractor shall be responsible for all cutting, fitting, and patching that may be required to complete the work.
11. Dimensions of existing construction and repetitive dimensions are sometimes omitted. Detailed dimensions not indicated may be found on large-scale drawings of the same areas. Drawings are intended to reflect the existing conditions as closely as possible, however, the Contractor shall field verify and accept all existing conditions and dimensions. Notify Architect of any discrepancies affecting the work.
12. Provide all temporary services required to facilitate the work indicated, including but not limited to the following: power, lighting, heat, and water.
13. The Contractor(s) shall provide all barriers, shoring, warning lights, etc. as required to conduct the work and maintain the site in a safe condition consistent with good construction practices and with all applicable rules and regulations.
14. All exist. utility services including domestic water, sanitary sewer, electricity, fuel oil and/or gas shall be disconnected and made safe prior to any demolition work. Any work which might require interruption of utility services to Owner or other tenants, shall be approved and coordinated beforehand with the Owner.
15. It is the intent of the bid and construction documents to indicate complete and fully operational systems (i.e. structural, HVAC, plumbing, electrical, roofing, etc.). The Contractor shall provide operational systems and testing which comply with applicable codes, regulations, and requirements of authorities having jurisdiction.
16. Any work or utility outages which might disrupt the operations of the Owner or others shall be approved and coordinated in advance with the Owner and the Architect. The Contractor shall give the Owner and Architect at least three days advance notice prior to undertaking work which might cause disruption. Activities which produce utility outages, excessive noise, dust and other disruption shall be coordinated with the Owner and Architect. Some of these activities may need to occur at “off hours” to minimize disruption of the Owner’s operations.
17. All wood blocking, trim, decking, etc. shall be decay-resistant treated, or as specified.
18. To prepare substrate for all wall mounted items, wall fixture, toilet accessories, etc. - fill all voids in the CMU surface to provide a sound base (provide blocking in stud walls) for all new wall mounted items, fixtures, etc. Install per manufacturer's specifications and recommendations.
19. Do not paint any caulking or sealants which are subject to movement. Control joints shall be caulked after paint and special coating applications. Provide caulking or sealants in colors which match adjacent finished surface as approved by the Architect.
20. Bidders shall be responsible for obtaining a copy of the Geotech Report from the Owner.
21. The project may include some items that are delegated design. Bidders shall ensure these items are covered in their base bid.
22. All questions that affect cost, time, etc. shall be presented in the form of RFI's to the Architect prior to bid.

ENERGY CODE EXEMPTION

Per 2018 International Energy Conservation Code:

C402.1.1 Low Energy Buildings. The following low-energy buildings, or portions thereof, separated from the remainder of the building by building thermal envelope assemblies complying with this section, shall be exempt from the building thermal envelope provisions of Section C402:

1. Those with a peak design rate of energy usage less than 3.4 Btu/h x ft2 or 1.0 watt/ft2 of floor area for space conditioning purposes.
2. Those that do not contain "conditioned space".
3. Greenhouses

Per Chapter 2:

Definition of Conditioned Space: An area, room or space that is **enclosed** within the building thermal envelope and is directly or indirectly heated or cooled. Spaces are indirectly heated or cooled where they communicate through openings with conditioned spaces, where they are separated from conditioned spaces by uninsulated walls, floors, or ceilings, or where they contain uninsulated ducts, piping or other sources of heating or cooling.

While the Oil Change & Service areas do have radiant heaters, during normal operations, the Oil Change, Service, and Pit areas are **not enclosed** and are outside the building thermal envelope assembly. These areas are separated from the remainder of the building by building thermal envelope assemblies complying with this code. Section C403.12.1 allows radiant heating outside the building. Therefore, these areas shall be exempt from the building thermal envelope provisions of this code.

GENERAL ACCESSIBILITY NOTES

1. All door hardware shall be accessible type per section 404 of the 2017 ICC A117.1 / 2010 ADA Standards.
2. All walking surfaces shall have a maximum slope of 1:20 per section 405 of the 2017 ICC A117.1 / 2010 ADA Standards
3. All floor or ground surfaces shall be stable, firm, and slip resistant per section 302 of the 2017 ICC A117.1 / 2010 ADA Standards
4. Changes in level of 1/4" high maximum shall be permitted to be vertical per section 303 of the 2017 ICC A117.1 / 2010 ADA Standards
5. Provide maneuvering clearances at manual swinging doors per section 404 of the 2017 ICC A117.1 / 2010 ADA Standards
6. ADA mounting heights, dimensions, tolerances, etc. shall apply to all construction and the location of all fixtures, etc. unless specifically noted otherwise.

GENERAL INTERIOR NOTES

1. Quantities (area, perimeter, etc.) shown on finish schedule are approximate and are provided as a convenience to the Contractor. Actual quantities may vary and it is the responsibility of the Contractor to field verify.
2. Anything specified with a directional pattern (e.g. brushed aluminum, wood grain laminate, etc.) the pattern shall go in the same direction as directed by Architect.
3. The Contractor shall provide all necessary blocking in walls for support of all equipment, shelving, accessories, grab bars, wall hung lavatories, and other required elements.
4. Provide pressure treated wood where in contact with concrete or masonry.
5. Ease all edges on casework to prevent sharp corners.
6. Paint all HVAC wall grilles to match adjacent surface color unless otherwise noted or instructed by the Architect.
7. Use moisture resistant gypsum board at all walls subject to moisture unless wall will be subject to standing water or frequent wetting in which case you shall use cementitious backer.
8. Provide thresholds where required. All shall be ADA compliant.
9. All gypsum board to have a level 4 finish unless otherwise indicated.

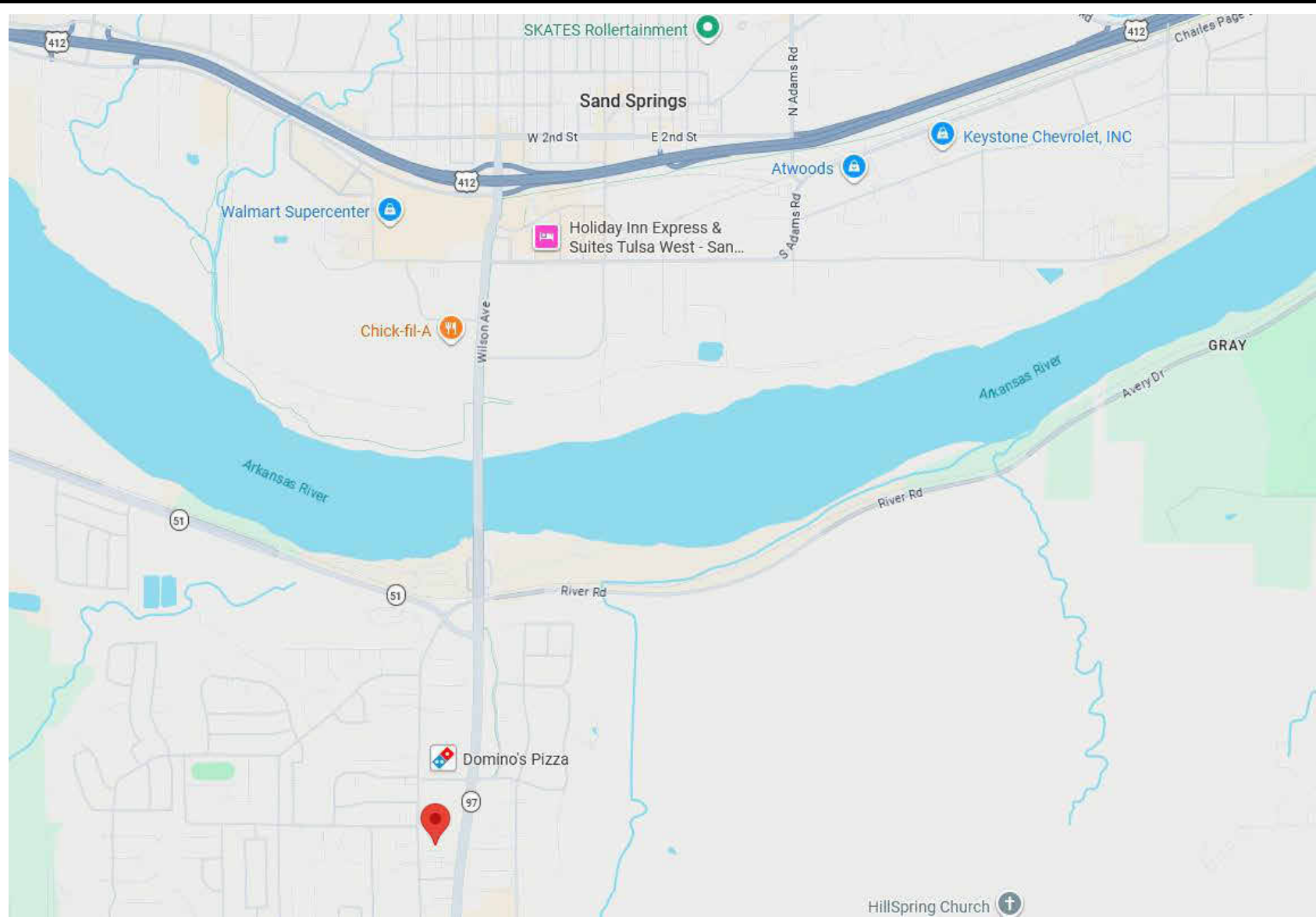
BIDDING INQUIRES

Company:
Contact:
E-Mail:
Phone:

Express Oil Change
Chris Plummer
chris.plummer@expressoil.com
205-945-1771

Note:

Sub-contractors to call bidding General Contractor for questions

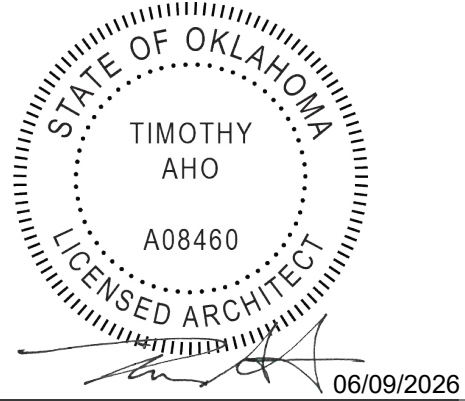


Express Oil Change & Tire Engineers
Near 3507 South 113th West Avenue
Sand Springs, Oklahoma 74063



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G202	Architectural Specifications
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P0.03	Plumbing Specifications
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Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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General Information

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

G101

Scale 12" = 1'-0"

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL ENSURE EACH OF THE FOLLOWING HAVE BEEN REVIEWED BY THE MANUFACTURER FOR COMPLIANCE WITH LOCAL CONDITIONS/REQUIREMENTS PRIOR TO BIDDING / INSTALLING: ROOFING, DOORS, WINDOWS / STOREFRONT, GLAZING, DOOR HARDWARE, PAINT, AND FIRE EXTINGUISHERS.
2. GENERAL CONTRACTOR SHALL PROVIDE SUBMITTALS / SHOP DRAWINGS FOR EACH PRODUCT LISTED UNDER ARCHITECTURAL SPECIFICATIONS. ALL SUBMITTALS / SHOP DRAWINGS ARE TO BE APPROVED BY THE OWNER AND / OR THE A/E PRIOR TO ORDERING.
3. PROVIDE MANUFACTURER'S STANDARD WARRANTY FOR ALL SPECIFIED PRODUCTS.
4. ALL EXTERIOR SIGNAGE AND SCONCES BY OTHERS.
5. ALL FURNITURE AND EQUIPMENT BY OTHERS. COORDINATE PLACEMENT WITH OWNER PRIOR TO ROUGHING IN REQUIRED UTILITIES.
6. ALL COMPARABLE PRODUCTS TO BE REVIEWED AND APPROVED BY THE OWNER PRIOR TO BID.
7. GC SHALL BE RESPONSIBLE FOR CHECKING WITH THE LOCAL AHJ ON ANY DEFERRED SUBMITTALS THAT MAY BE REQUIRED TO BE APPROVED BY THE AHJ PRIOR TO CONSTRUCTION.

DIVISION 4 - MASONRY

042200 - Concrete Unit Masonry

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Echelon, An Oldcastle Company or a comparable product by an approved manufacturer.

Products:

- A. Concrete Masonry Units
- Finish: Smooth and split-face
 - Min. Compressive Strength: See Structural
 - Density Classification: See Structural
 - Provide types, shapes and sizes as indicated
 - Integral Water Repellent: Provide RainBloc 80 by ACM Chemistries or a comparable product by an approved manufacturer.

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Argos or an approved comparable product by an approved manufacturer.

Products:

- B. Mortar
- Type: See Structural
 - Color: Standard Gray.
 - Liquid Mortar Additive: Provide RainBloc for Mortar or a comparable product by an approved manufacturer.

Subject to compliance with requirements, provide products indicated below:

Products:

- C. Joint Reinforcement
- Type: Hot dipped galvanized, carbon steel (ladder)
 - Size: 0.187" diameter
 - Length: Not less than 10'

*Provide full exterior wall mock-up for Owner's Approval prior to ordering. No Exceptions.

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Mortar Net Solutions or an approved comparable products by an approved manufacturer.

Subject to compliance with requirements, provide products indicated below:

- D. Single Wythe Concrete Masonry Unit Drainage System
- BlockFlash

055113- Metal Pan Stairs

Delegated Design: Engage a qualified professional engineer to design stairs and railings and provide sealed calculations and drawings.

Products:

- A. Metal Pan Stairs
- Steel Sheet Thickness: 0.067" minimum
 - Uniform Load: 100 lbf/sf
 - Concentrated Load: 300 lbf applied on an area of 4 sq. in.
 - Finish: Painted (See Finish Schedule)
 - Uniform and concentrated loads need not be assumed to act concurrently.
 - Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.
- B. Stair Tread Bar Ribbed Abrasive Nosing
- Basis of Design: Nystrom Model V951
 - Extents: Install Nosing to the full length of steps
 - Color: Safety Yellow
 - Type: Short Nose, Aluminum Extruded Anchor
- C. Stair Railings
- Rails and Posts: 1 5/8" diameter
 - Picket Infill: 1/2" round pickets spaced less than 4 inches clear.
- D. Installation: Install per manufacturer's standard written instructions.
- E. Warranty: Provide manufacturer's standard material warranty.

055213- Pipe and Tube Railings

Delegated Design: Engage a qualified professional engineer to design stairs and railings and provide sealed calculations and drawings.

- A. Handrails & Top Rails of Guards
- Rails and Posts: 1 1/2" diameter
 - Uniform Load: 50lbf/ft in any direction.
 - Concentrated Load: 200 lbf applied in any direction
 - Uniform and concentrated loads need not be assumed to act concurrently.
 - Type: F or S
 - Material: Schedule 40
 - Finish: Painted (See Finish Schedule)
 - Seismic Performance: See Structural
- B. Infill of Guards
- Concentrated Load: 50 lbf applied horizontally on an area of 1 SF.
 - Infill load and other loads need not be assumed to act concurrently.

Installation: Install stairs and railings according to manufacturers' written instructions and with welded connections.

DIVISION 6 - WOOD, PLASTICS AND COMPOSITES

061000- Rough Carpentry

Products:

- A. Framing with Dimensional Lumber (Interior Non-Load-Bearing)
- Thoroughly Dried
 - No. 2 Southern Yellow Pine or No. 2 Douglas Fir
 - Of sizes, shapes, and lengths required.
 - Moisture content shall not exceed 19% at time of installation
- B. Miscellaneous Lumber (e.g. Blocking, Furring, etc.)
- Thoroughly Dried
 - No. 2 Southern Yellow Pine or No. 2 Douglas Fir
 - Of sizes, shapes, and lengths required.
 - Moisture content shall not exceed 19% at time of installation
- C. Temporary Bracing, Shoring, etc. as required
- Thoroughly Dried
 - No. 2 Southern Yellow Pine or No. 2 Douglas Fir
 - Of sizes, shapes, and lengths required.
 - Moisture content shall not exceed 19% at time of installation
- D. Plywood decking (Platform)
- Plywood Type: Exposure 1
 - Plywood Grade: BC
 - Thickness: As indicated on drawings
 - Square Edge
 - Class: C Fire Rating
 - Flame Spread Rating 76-200 / Smoke Developed Index <450
- E. Plywood decking (Dumpster Roof and Sheathing)
- Plywood Type: Exposure 1
 - Plywood Grade: BC
 - Thickness: As indicated on drawings
 - Square Edge

Note:

- All plywood which has any edge or surface permanently exposed to the weather shall be of the exterior type.
- All wood exposed to weather and/or in contact with masonry or concrete shall be pressure-treated lumber.

061533- Composite Decking

Products

- A. Plastic Decking for Dumpster Enclosure Doors
- Composite plastic lumber
 - Solid shapes made from a mixture of cellulose fiber and polyethylene or polypropylene.
 - Surface Texture: Smooth.
 - Color: See Finish Schedule.
 - Size: See dumpster details.

Installation: Install plastic decking according to manufacturers' written instructions.

Warranty: Provide manufacturer's standard material warranty.

066400 Plastic Paneling (Fiberglass Reinforced Panels)

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Marlite Wall Systems, or a comparable product by one of the following:

- Kal-Lite
- Crane Composites
- Panolam

Product Requirements:

- A. Provide standard FRP (Fiber Reinforced Plastic) panels in 4' x 8' textured panels.
- B. Color: As indicated on the Finish Schedule.
- C. Conform to all building code requirements for interior finish for smoke and flame spread requirements tested in accordance with ASTM 84
- D. Wall required Rating - Class A

Submittals: Submit shop drawings (elevations of each wall) showing location of paneling and trim members.

Installation: Install per manufacturer's written standards.

Warranty: Provide manufacturer's standard warranty.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

071900- Water Repellents

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Ghostshield or a comparable product from an approved manufacturer.

Products

- A. Water Repellant
- ISO-Tek 8540
 - Color: Clear

Installation: Install water repellents according to manufacturers' written instructions.

Warranty: Provide manufacturers' standard product warranty.

072100- Thermal Insulation

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Owens Corning, or a comparable product by one of the following:

- Johns Manville
- CertainTeed

Products:

- A. Kraft Faced (Vapor Retarder) Batt Insulation:
- EcoTouch PINK Fiberglass Insulation
 - R-20 & R-38; where indicated

Installation: Install insulation and accessories according to manufacturers' written instructions.

Warranty: Provide manufacturers' standard material warranty.

072400 Exterior Insulation and Finish System

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Dryvit Systems, Inc. or a comparable product by an approved manufacturer.

Products: Dryvit Systems, Inc., One Energy Way, West Warwick, RI 02893, 800-556-7752, HYPERLINK "http://www.dryvit.com" www.dryvit.com.

- A. Molded, (Expanded) Rigid Cellular Polystyrene Board Insulation (Pre-Wrapped / Pre-base coated Architectural Shapes): Comply with ASTM E 2430/E 2430M.

Provide pre-coated architectural shapes which include base coat and reinforcing mesh provided.

- Cornice Shape: Product number 205C166 604
- Trim: Product number 205T154 604

System Description:

- A. The Dryvit Direct Apply is an Exterior Insulation and Finish System (EIFS):
- Water-resistive barrier membrane (for use at EIFS only): Basis-of-Design: Backstop NTX
 - Adhesive: Basis-of-Design, as per Manufacturer's recommendation: Chemex-Pro. Installed in vertical ribbons to facilitate egress of incidental moisture
 - Rigid expanded polystyrene insulation board.
 - Base Coat (included in pre-coated shapes)
 - Reinforcing Mesh (included in pre-coated shapes)
 - Finish Coat
 - Flashing materials
- B. Pre-Installation Requirement: Contractor is to provide a mock-up of EIFS Finish for Owner's approval. This is required. No Exceptions.
- C. Installation:
- Install on clean and dry unpainted brick, concrete or masonry, free of loose material and irregularities in accordance with ASTM C1397 and the Exterior Insulation and Finish System manufacturer's application instructions.
 - Contractor's Option: Install EIFS system using Pre-buck Engineered Framing system for Parapet Cap in lieu of wood framing and plywood as shown in section detail drawing. If using Pre-Buck system, contractor must install per manufacturer's written installation instructions/ requirements.
- C. Finish:
- Freestyle: Fine Texture
 - Color (See Finish Schedule)

Warranty: Provide manufacturer's standard warranty.

072600 Vapor Retarders

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Reef Industries, or a comparable product by an approved manufacturer.

Products:

- A. Reinforced Under Slab Vapor Retarder:
- Griffolyn 10 Mil Green
 - Thickness: 10 mil
 - Max Perm Rating: 0.1 perm
 - Lap: 12" and tape with manufacturer recommended tape

Installation: Install vapor retarders according to manufacturers' written instructions.

Warranty: Provide manufacturers' standard product warranty.

072715 - Self-Adhesive Membrane Air Barrier

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by W.R. Meadows, or a comparable product by an approved manufacturer.

Products:

- A. Self-Adhesive Air Barrier Sheet Membrane: Fully adhered, sheet membrane, vapor permeable air and water resistive barrier.
- Air-Shield SMP

Installation: Install self adhered membrane air barriers according to manufacturers' written instructions.

Warranty: Provide manufacturer's standard product warranty.

072726- Fluid-Applied Membrane Air Barrier

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by W.R. Meadows, or a comparable product by an approved manufacturer.

Products:

- A. Liquid Membrane Air/Vapor & Liquid Moisture Barrier
- Air-Shield LMP

Installation: Install fluid applied membrane air barriers according to manufacturers' written instructions.

Warranty: Provide manufacturer's standard product warranty.

074113.16- Standing-Seam Metal Roof Panels (Standard)

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Berridge Manufacturing Co. or comparable product by an approved manufacturer.

Products:

- A. Metal Panel: Cee-Lock
- Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592.
 - Wind Loads: See Structural.
 - Other Design Loads: See Structural.
 - Deflection Limits: See Structural.
 - Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft when tested according to ASTM E 1680 and ASTM E 283 at the following test-pressure difference:
 - Test-Pressure Difference: 6.24 lbf/sq.ft.

074113.16- Standing-Seam Metal Roof Panels (Standard) (continued):

- Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 1646 and ASTM E 331 at the following test-pressure difference:
 - Test-Pressure Difference: 15 lbf/sq.ft.
 - Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - Uplift Rating: UL 90.
 - Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.

Material: Metallic coated steel
 - Nominal Thickness: 24 gauge
 - Finish: Two-coat fluoropolymer.
 - Color: See Finish Schedule (verify sample with Owner prior to ordering)
 - Panel Coverage: 16.5 inches
 - Panel Height: 1.5 inches
 - Slope: As indicated
- B. Underlayment
- Two layers of 15# felt.
- C. Snowguards
- Provide snowguards if required by AHJ.
- D. Ridge/Hip Cap
- Provide preformed ridge/hip cap by roofing manufacturer.
 - Color: Match Roof Color.
 - Material: Match Roof.

Installation: Install metal panels, underlayment, vents, and accessories according to manufacturers' written instructions.

Warranty: Provide manufacturers' standard material and product warranties.

074293 Soffit Panels (Standard)

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by James Hardie Building Products, Inc. or a comparable product by an approved manufacturer.

Products:

- A. Smooth Vented Soffits
- Structural Performance: Provide soffit systems capable of withstanding the effects of the following loads:
 - Wind Loads: See Structural.
 - Deflection Limits: See Structural.
 - Net Free Area: 5 sq. in. per linear foot.
 - Width: 12"
 - Thickness: 0.25"
 - Color: Painted, (See Finish Schedule)
 - Jointing: Provide paintable PVC "H" Jointer between panels.

Installation: Install soffit panels and accessories according to manufacturers' written instructions.

Warranty: Provide manufacturers' standard material warranty.

075423- Thermoplastic Polyolefin (TPO) Roofing:

Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Versico or comparable product by an approved manufacturer.

Products:

- A. VersiWeld 60 mil TPO fully adhered.
- ASTM D6878
- Please Note: System must be selected based on design pressures per Structural drawing sheet S0.2.
- B. Underlayment: 1/2" Securock Gypsum Fiber Cover Board
- C. Polyisocyanurate Insulation
- Thickness: R-25ci
- D. Roof Walkways (if required)
- VersaWeld Heat Weldable Walkway Rolls
 - Color: White
 - Thickness: 180 mils
 - As an option, walkway rolls may be fully adhered to the membrane surface with QA Seam Tape/ TPO Primer.

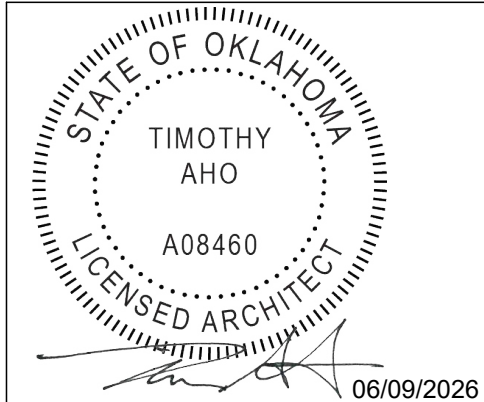
Installation: Install TPO, underlayment, insulation, vents, accessories, etc., according manufacturer's published installation instructions.

Warranty: Provide 20 Year NDL Manufacturers full system warranty

076200 - Sheet Metal Flashing and Trim (Standard)

Provide products indicated for formed low-slope roof sheet metal fabrications:

- A. Copings: Fabricate in minimum 96-inch-long, but not exceeding 12-foot-long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and interior leg. Miter corners, fasten and seal to be watertight. Shop fabricate interior and exterior corners.
- Form sheet metal to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view. Form seams and seal joints as required by manufacturer for watertight construction.
- Fabricate from one of the Following Materials:
 - Galvanized Steel: 0.040 inch thick.
 - Aluminum-Zinc Alloy-Coated Steel: 0.040 inch
 - Fabricate coping cap to include :
 - Face Dimension: 6 inches minimum (Building)
 - Back Dimension: 6 inches minimum (Building)
- A. Performance Requirements:
- Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
 - Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
 - SPRI Wind Design Standard: Manufacture and install copings and roof edge flashings tested according to SPRI ES-1 and capable of resisting the design pressure as specified on sheets S0.1 and S0.3
 - Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 - Temperature Change: 120 deg. F., ambient; 180 deg. F, material surfaces
- B. Quality Assurance:
- Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 - For copings and roof edge flashings that are SPRI ES-1 tested, shop shall be listed as able to fabricate required details as tested and approved.
- C. Sheet Metals:
- Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet according to ASTM A 653/ A 653M, G90 coating designation or aluminum-zinc alloy-coated steel sheet according to ASTM A 792/ A 792M, Class AZ50 coating designation, Grade 40; prepainted by coil-coating process to comply with ASTM A 755/A 755M.
 - Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - Color: See Finish Schedule
- C. Warranty:
- Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - Finish Warranty Period: 10 years from date of Substantial Completion.



Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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Architectural Specifications	
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
G200	
Scale	12" = 1'-0"

087100- Door Hardware (Standard Single Bldg. w/ Side Tire Storage)			
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by the following manufacturers, or approved equal:			
1.	MK- McKinney		
2.	AD- Adams Rite		
3.	YA- Yale		
4.	RO-Rockwood		
5.	NO-Norton		
6.	PE- Pemko		
General Notes: 1. Hardware listed for design criteria, confirm with specific door manufacturer. 2. Finishes for all door hardware are to be as indicated on Finish Schedule.			
Hardware Sets:			
Set: 1.0 Doors: 1 Description: EXT - ALUM			
1	Continuous Hinge	MCK-25HD	MK
1	Deadlatch	4900 x 4591	AD
1	Cylinder	Mort/ Cyl as required	YA
2	Pull	BF168	RO
1	Surface Closer	CLP8501	NO
1	Mtg Plate	as required	NO
1	Threshold	271A Pemkote MSES25SS	PE
1	Gasketing	by door / frame mfg	
1	Sweep	315CN	PE
Set: 2.0 Doors: 2, 3, 22, 23 Description: BAYS			
4	Hinge	TA2714 4-1/2" x 4-1/2"	MK
1	Cylindrical Lock (classroom)	PB 5408LN	YA
1	Surface Closer	8501 Reg / PA	NO
1	Kick Plate	K1050 8" X 2" LDW 4BE CSK	RO
1	Door Stop	409 / 446 [as required]	RO
1	Gasketing	S773D	PE
Set: 3.0 Doors: 4 Description: WAITING - ALUM			
1	Continuous Hinge	MCK-25HD	MK
2	Door Pull	BF168	RO
1	Surface Closer	8501 Reg / PA	NO
1	Door Stop	409 / 446 [as required]	RO
1	Gasketing	by door / frame mfg	
Set: 3.1 Doors: 9, 20, 21, 24 Description: EXT - BAYS			
4	Hinge (heavy weight)	T4A3386 NRP 4-1/2" x 4-1/2"	MK
1	Exit Device (rim, nightlatch)	7150 WS PB627F	YA
1	Cylinder	Mort/ Cyl as required	YA
1	Surface Closer	CLP8501	NO
1	Threshold	271A Pemkote MSES25SS	PE
1	Gasketing	S773D	PE
1	Rain Guard	346C x LAR	PE
1	Sweep	315CN	PE
Set 3.2 Door: 14 Description: Pit Ladder			
4	Hinge (heavy weight)	T4A3386 NRP 4-1/2" x 4-1/2"	MK
1	Exit Device (rim, nightlatch)	7150 WS PB627F	YA
1	Cylinder	Mort/ Cyl as required	YA
1	Surface Closer	CLP8501	NO
Set: 4.0 Doors: 5 Description: TOILET			
4	Hinge	TA2714 4-1/2" x 4-1/2"	MK
1	Cylindrical Lock (privacy)	PB 5402LN	YA
1	Mop Plate	K1050 4" X 1" LDW 4BE CSK	RO
1	Door Stop	409 / 446 [as required]	RO
1	Gasketing	S773D	PE
1	Surface Closer	8501 Reg / PA	NO
Set: 5.0 Doors: 13 Description: OFFICE			
4	Hinge	TA2714 4-1/2" x 4-1/2"	MK
1	Cylindrical Lock (entry)	PB 5407LN	YA
1	Door Stop	409 / 446 [as required]	RO
1	Threshold	271A Pemkote MSES25SS	PE
1	Gasketing	S773D	PE
1	Sweep	315CN	PE
1	Surface Closer	8501 Reg / PA	NO
Set: 6.0 Doors: 15 Description: BREAK			
4	Hinge	TA2714 4-1/2" x 4-1/2"	MK
1	Passage Set	PB 5401LN	YA
1	Surface Closer	8501 Reg / PA	NO
1	Mop Plate	K1050 4" X 1" LDW 4BE CSK	RO
1	Kick Plate	K1050 8" X 2" LDW 4BE CSK	RO
1	Door Stop	409 / 446 [as required]	RO
1	Gasketing	S773D	PE
Set: 7.0 Doors: 16 Description: SHOP TOILET			
4	Hinge	TA2714 4-1/2" x 4-1/2"	MK
1	Cylindrical Lock (privacy)	PB 5402LN	YA
1	Mop Plate	K1050 4" X 1" LDW 4BE CSK	RO
1	Door Stop	409 / 446 [as required]	RO
1	Threshold	271A Pemkote MSES25SS	PE
1	Gasketing	S773D	PE
1	Sweep	315CN	PE
1	Surface Closer	8501 Reg / PA	NO
Set: 8.0 Doors: 6, 7, 8, 10, 11, 12, 17, 18, 19, 25, 26, 27 Description: OH DOOR			
1	Hardware	By door mfg	
Installation: Install door hardware according to manufacturers' written instructions. All door hardware (Interior and Exterior) to be keyed alike.			
Warranty: Provide manufacturers' standard product warranty.			

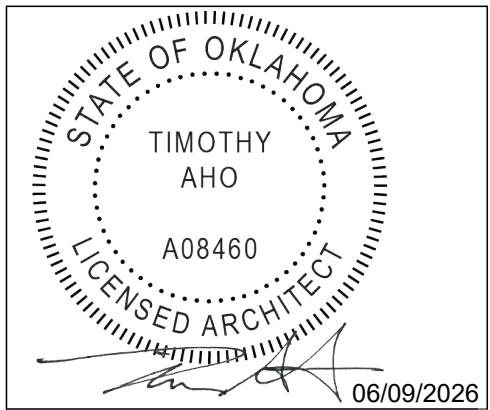
098000- Glazing (IGU) Standard and Hurricane Non-Impact	
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Vitro</u> , or a comparable product by one of the following:	
1.	Guardian Industries Corp.
2.	Or Approved equal
Products:	
Notes: 1.) All glazing to have proper labels as required by local AHJ and building codes. 2.) All glazing shall be reviewed and approved by the local distributor to meet the requirements for the region in which the glazing is being installed. Any issues with items specified shall be brought to the attention of the Architect prior to bid.	
A.	GL-1 Insulated Glass Unit Double Glazed Clear Solar Control Insulating Glass Unit Solarban® 90 on Clear 6mm (2) Air 1/2" (12.7mm) Clear 6mm 1. Conformance: ASTM E 2190 2. Outdoor Lite: Clear Float Glass as manufactured by Vitro Architectural Glass a. Conformance: ASTM C 1036, Type 1, Class 1, Quality q3. b. Glass Thickness: 6mm (1/4") c. Magnetic Sputter Vacuum Deposition Coating (MSVD): ASTM C 1376. d. Coating: Solarban® 90 on Surface # 2 e. Heat-Treatment: Tempered; ASTM C 1048, Kind FT; Safety Glazing meets ANSI Z97.1 and CPSC 16CFR-1201 3. Interspace Content: Air 1/2" (12.7mm) 4. Indoor Lite: Clear float glass as manufactured by Vitro Architectural Glass a. Conformance: ASTM C 1036, Type 1, Class 1, Quality q3. b. Heat-Treatment: Tempered; ASTM C 1048, Kind FT; Safety Glazing meets ANSI Z97.1 and CPSC 16CFR-1201 c. Glass Thickness: 6mm (1/4") 5. Performance Requirements: a. Visible Light Transmittance: 51 percent minimum. b. Winter Nighttime U-Factor: 0.29 (Btu/hr*°F) maximum. c. Summer daytime U-Factor: 0.27 (Btu/hr*°F) maximum. d. Shading Coefficient: 0.27 maximum. e. Solar Heat Gain Coefficient: 0.23 maximum. f. Outdoor Visible Light Reflectance: 12 percent maximum.
B.	GL-2 Monolithic Single-Glaze Float-Glass: Monolithic Clear Glass Clear 6mm 1. Clear float glass as manufactured by Vitro Architectural Glass a. Conformance: ASTM C 1036, Type 1, Class 1, Quality q3. b. Heat-Treatment: Tempered; ASTM C 1048, Kind FT; Safety Glazing meets ANSI Z97.1 and CPSC 16CFR-1201 c. Glass Thickness: 6mm (1/4") 2. Performance Requirements: a. Visible Light Transmittance: 89 percent minimum. b. Winter Nighttime U-Factor: 1.02 (Btu/hr*°F) maximum. c. Summer daytime U-Factor: 0.92 (Btu/hr*°F) maximum. d. Shading Coefficient: 0.94 maximum. e. Solar Heat Gain Coefficient: 0.82 maximum. f. Outdoor Visible Light Reflectance: 8 percent maximum.
C.	Glazing Installation 1. Install per manufacturers' standard written instructions.
D.	Glazing warranty 1. Provide manufacturers' standard product warranty.
DIVISION 9 - FINISHES	
092900- Gypsum Board	
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Lafarge</u> unless otherwise indicated, or a comparable product by one of the following:	
1.	Georgia-Pacific
2.	USG
3.	National Gypsum
Products:	
A.	Moisture and Mold-Resistant Type: Mold Defense 1. Thickness: 1/2 inch 2. Long Edges: Tapered 3. Finish: Level 4 in areas exposed to view. Level 1 in concealed areas.
B.	Water-resistant Type: Watercheck (@ Toilet Rooms and behind plumbing fixtures) 1. Thickness: 1/2 inch 2. Long Edges: Tapered 3. Finish: Level 4 4. Cuts: All cuts in board shall be covered with special waterproofing sealant as recommended by the manufacturer.
C.	Type X: Firecheck (As Required) 1. Thickness: 5/8" 2. Long Edges: Tapered 3. Finish: Level 4 4. All penetrations and joints to be sealed with fire caulk as recommended by the manufacturer.
Installation: Install gypsum board and accessories according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	
095000- Acoustical Tile Ceiling	
Manufacturer:	
Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Armstrong World Industries, Inc.</u>	
Products:	
A.	Acoustical Ceiling Panels 1. Style: 1775 Dune 2. Surface Texture: Fine Texture 3. Composition: Mineral Fiber 4. Color: White 5. Size: 24 inch x 24 inch 6. Edge Profile: Square Lay-in
B.	Metal Suspension Systems 1. Suprafine XL 9/16" Exposed Tee Grid and Edge Molding 2. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.
Installation: Install suspension system and panels in accordance with manufacturers' written instructions, and in compliance with ASTM C 636.	
Warranty: Provide manufacturers' standard product warranty.	

096513- Resilient Base and Accessories	
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Roppe</u> , or a comparable product by one of the following:	
1.	Johnsonite, a Tarkett Company
2.	Armstrong World Industries
3.	Or Approved equal
Products:	
A.	Rubber Base: Pinnacle Rubber by Roppe 1. Height: 4" 2. Length: Coils in manufacturer's standard length 3. Outside Corners: Job formed 4. Inside Corners: Job formed 5. Color as indicated on finish schedule.
B.	Reducer Strip: Roppe Reducer Strip #22 1. Color as indicated on finish schedule.
C.	Adhesives: As recommended by the manufacturer
Installation: Install resilient base and reducer according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	
096519- Resilient Tile Flooring	
Manufacturers: Subject to compliance with requirements, provide product indicated below by <u>Tarkett</u> .	
Products:	
A.	LVT 1. Color / Style: Color as indicated on finish schedule. 2. Size: 12" x 36" planks 3. Overall thickness: .120" (3 mm) 4. Wear layer Thickness: 32 mil (0.8 mm)
B.	Adhesives: As recommended by the manufacturer
Installation: Install resilient floor tile according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	
099113- Exterior Painting	
Manufacturer: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Sherwin Williams</u> .	
Products:	
A.	Masonry: 1.) Primer: SW Pro Industrial Heavy Duty Block Filler B42W150 2.) Finish Coats: SW Latitude Exterior Acrylic in Satin Finish K62-Series
B.	Steel: 1.) Primer: SW Pro Industrial Pro-Cryl Universal Primer B66-1300 Series 2.) Finish Coats: SW Pro Industrial Urethane Alkyd Enamel B54-Series
C.	Wood: 1.) Primer: SW Exterior Latex Wood Primer B42W8141 2.) Finish Coats: SW Latitude Exterior Acrylic in Satin Finish K62-Series
D.	Aluminum: Pro Industrial Urethane Alkyd Enamel Gloss, B54-150 Series 1.) Primer: SW Pro Industrial Pro-Cryl Universal Primer B66-1300 Series 2.) Finish Coats: SW Pro Industrial Sher-Cryl High Performance Acrylic Semi-Gloss B66-1350 Series
Note: Use 1 coat primer as recommended by manufacturer and 2 finish coats unless otherwise recommended by the manufacturer.	
Installation: Install exterior paint according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	
099123- Interior Painting	
Manufacturer: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Sherwin Williams</u> .	
Products:	
A.	Masonry: 1.) Primer: SW Pro Industrial Heavy Duty Block Filler B42W150 2.) Finish Coats: SW Pro Industrial Pre-Catalyzed Epoxy Semi-Gloss K46-Series
B.	Steel: 1.) Primer: SW Pro Industrial Pro-Cryl Universal Primer B66-1300 Series 2.) Finish Coats: Pro Industrial Urethane Alkyd Enamel Gloss, B54-150 Series
C.	Interior Wood: 1.) Primer: SW PrepRite ProBlock Interior/ Exterior Latex Primer- Sealer B51-600 Series 2.) Finish Coats: SW Pro Industrial Acrylic Semi-Gloss B66-650 Series
D.	Gypsum Board in Office Area: 1.) Primer: ProMar 200 Zero VOC Interior Latex Primer B28W12600 2.) Finish Coats: ProMar 200 Zero VOC Interior Latex Egshel, B20W2600 Series. Use extreme bond primer at vinyl graphics.
E.	Gypsum Board in Bay Area: 1.) Primer: ProMAR 200 Zero VOC Interior Latex Primer B28W12600 2.) Finish Coats: SW Pro Industrial Catalyzed Epoxy B73-Series. Use extreme bond primer at vinyl graphics.
F.	Gypsum Board Ceilings: 1.) Primer: ProMar 200 Zero VOC Interior Latex Primer B28W12600 2.) Finish Coats: ProMar 200 Zero VOC Interior Latex Flat, B30W2650 Series
G.	Sealed Concrete Floors: ArmorSeal Rextthane I Floor Coating + SharkGrip Slip-Resistant Additive (1000 HS primer)
Note: Use 1 coat primer as recommended by manufacturer and 2 finish coats unless otherwise recommended by the manufacturer.	
Installation: Install interior paint according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	
DIVISION 10 - SPECIALTIES	
101419- Dimensional Letter Signage - By others.	
101423.13 Room-Identification Signage See drawing on A602.	

102600 - Wall and Door Protection	
Manufacturer:	
Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>InPro Corporation</u> :	
Products:	
A.	Stainless Steel Flush Mount Corner Guards
B.	Corner Radius: 1/8"
C.	Height: 4'-0"
D.	Width: 1 1/2"
E.	Materials: Stainless Steel: Type 430, 16 gauge
F.	Attachment: Pre-drilled beveled holes and Phillips head screws.
G.	Finish: Stainless Steel No. 4 satin finish.
H.	Location: As indicated on drawings.
J.	Installation: Install per manufacturer's standard written instructions.
K.	Warranty: Provide manufacturers' standard product warranty.
102800- Toilet, Bath, and Laundry Accessories	
The following list of accessories is essentially complete; however, the Contractor shall examine the drawings carefully and shall supply such items not specifically called for to provide a complete installation.	
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Bradley Corporation</u> or a comparable product by one of the following:	
1.	Bobrick Washroom Equipment, Inc.
2.	American Specialties, Inc.
3.	Or Approved Equal
Products:	
A.	Robe Hook: Bradley Model 915.
B.	Grab Bars: Bradley Model 812-001-42, Model 812-001-36, and Model 812-001-24
C.	Toilet Tissue Dispenser: Bradley Model 5425 (By Others)
D.	Mirror: Bradley Model 780-2436
E.	Soap Dispenser: Bradley Model 6563 (By Others)
F.	Paper Towel Dispenser: Bradley Model 2494 (By Others)
G.	Under Lavatory Guard: Truebro Lav Guard 2 by IPS Corporation
H.	Baby Changing Station: Bradley Model 9631 (Light Gray)
Installation: 1. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and heights indicated.	
2. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.	
Warranty: Provide manufacturers' standard product warranty.	
104413- Fire Department Lock Box	
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Knox</u> , or a comparable product by one of the following:	
1.	Kidde
2.	Or Approved Equal
Products:	
A.	Lock Box: 3200 Series Hinged Door Surface Mount i. Color: As indicated on Finish Schedule
Installation: 1. Install fire department lock box in location and height as required by the authorities having jurisdiction. 2. Install per manufacturer's written installation instructions.	
Warranty: Provide manufacturers' standard product warranty.	
104416- Fire Extinguishers	
Manufacturers: Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Amerex Corporation</u> , or a comparable product by one of the following:	
1.	Larsens Manufacturing Company
2.	JL Industries
3.	Or Approved Equal
Products:	
A.	ABC Dry Chemical Extinguisher: Amerex Model B456
B.	Wall Bracket: Amerex Model 0546 Wall
C.	UL and ULC Rating: 4A-80BC
Installation: 1. Install fire extinguishers in locations and heights indicated and in compliance with requirements of authorities having jurisdiction. 2. Install fire extinguishers and brackets according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	
DIVISION 12- FURNISHINGS	
123623.13 Plastic-Laminate-Clad Countertops	
Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by <u>Wilsonart</u> .	
Products:	
A.	Plastic Laminate #1 i. High pressure decorative laminate: NEMA LD3 ii. Grade: HGS iii. Color: 4880-38 Carbon Mesh
B.	Adhesives: as recommended by the manufacturer
Installation: Install plastic laminate according to manufacturers' written instructions.	
Warranty: Provide manufacturers' standard product warranty.	



www.ahoarch.com



Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

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Architectural Specifications

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

G202

Scale 12" = 1'-0"

7/2/2026 8:42:41 AM

DIVISION 31- EARTHWORK 313116- Termite Control Provide EPA Registered termiticide acceptable to authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation.
DIVISION 33 - UTILITIES 334600- Subdrainage Basis-of-Design Product: Subject to compliance with requirements, provide products indicated below by Carlisle. Products: A. CCW MiraDrain 6200 and 9800 B. CCW MiraStop BW C. CCW MiraClay Woven and Non-woven Geotextile D. CCW MiraClay Granules or Mastic Installation: Install subdrainage products according to manufacturers' written instructions.

REQUIRED SUBMITTALS

REQUIRED SUBMITTALS	SPECIFICATION SECTION	SUBMIT TO
Cast-In-Place Concrete / Rebar	See Structural Drawings	Structural Engineer / Architect / Owner
Unit Masonry	042200 Masonry	Structural Engineer / Architect / Owner
Structural Steel Framing	See Structural Drawings	Structural Engineer / Architect / Owner
Steel Joist Framing	See Structural Drawings	Structural Engineer / Architect / Owner
Steel Decking	See Structural Drawings	Structural Engineer / Architect / Owner
Ladders	055133 Ladders	Owner
Metal Copings & Canopies	077100 Roof Specialties & Drawings	Owner
EIFS Cornice	072400 EIFS	Owner
TPO Roofing	075423 TPO Roofing	Owner
Standing Seam Metal Roofing	074113.16 SSMR	Owner
Roof Specialities	077100 Roof Specialties	Owner
Aluminum Framed Entrances & Storefronts	084113 Storefront	Owner
Aluminum Windows	084113 Storefront	Owner
Hollow Metal Doors & Frames	081113 HM Doors & Frames	Owner
Interior Wood Doors	081416 Interior Wood Doors	Owner
Overhead Doors	083613 Sectional Doors	Owner
Door Hardware	087100 Door Hardware	Owner
Glazing	088000 Glazing	Owner
Exterior Paint	099113 Exterior Paint	Owner
Interior Paint	099123 Interior Paint	Owner
Fire Extinguishers	104416 Fire Extinguishers	Owner
Termite Control	313116 Termite Control	Owner
Foundation Waterproofing	334600 Subdrainage	Owner
Smoke Vent	See Mechanical Drawings	Owner
Exhaust Fans in Shop	See Mechanical Drawings	Owner
Radiant Heaters / Gas Fired Unit Heaters	See Mechanical Drawings	Owner
Heat Pump / Gas Fired Furnace	See Mechanical Drawings	Owner
Sump Pump	See Keynote #35	Owner
Water Heater / Recirculating Pump	See Plumbing Drawings	Owner
Oil Water Separator	See Plumbing Drawings	Owner
Plumbing Fixtures	See Plumbing Drawings	Owner
Fire Suppression (If Required)	See Fire Suppression Drawings	Owner
Electrical Panels	See Electrical Drawings	Owner
Electrical Fixtures	See Electrical Drawings	Owner
Signage	See Signage Package	Owner
Underground Piping Materials	See Civil Drawings	Civil Engineer / Owner
Underground Water Retention System	See Civil Drawings	Civil Engineer / Owner
Sewer Pump / Grinder Pump	See Civil Drawings	Civil Engineer / Owner

EXPRESS OIL CHANGE & TIRE ENGINEER STANDARDS - EXTERIOR		
PAINTED GRAY BRICK Painted buildings include all of the same specs as the RED BRICK buildings except the red brick is painted Summit Gray. Coverspouts are painted to match the background of the building. Must have a Gray, Black, or Blue Roof   4	EXTERIOR AWNING The new metal awning adds a nice modern, industrial look to the buildings and features built-in lighting for customers entering and exiting in late afternoons. Standard size is 12' for most buildings.  9 Awnings by General Contractor. See Details	BRANDED SCNCES 48"x24" aluminum sconces light up your building from top to bottom with a glowing logo in center. E sconces are to be placed on oil change side. TE sconces are to be placed on mechanical side. Sconces to be evenly spaced between the bay doors, and vertically centered with the bay doors.  10 Branded Sconces by Others
	CHANNEL LETTERS White channel letters with 3" depth. Channel letter sizing is dictated by space and also may change due to the local sign regulations. In most cases, these letters are treated as directional signage. In most cases, sizes vary from 18" to 24". FONT Interstate Bold Condensed - 50pt tracking LETTERING FOR FRONT BUILDING 10 MINUTE OIL CHANGE FULL SERVICE AUTO CARE TIRE CENTER LETTERING FOR BACK BUILDINGS TIRES ALIGNMENT ROTATE & BALANCE DIAGNOSTICS A/C BRAKES 6 Letters by Others	Note: Items shown on this page are EOC standards. See Finish Schedule for actual materials to be used on this project.

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

Architectural Specifications & EOC Standards - Exterior	
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
G300	
Scale	12" = 1'-0"

EXPRESS OIL CHANGE & TIRE ENGINEERS STANDARDS - INTERIOR

INTERIOR

INTERIOR PAINT
Adding two-toned blue walls to the interior creates a bold look that is consistent with EOC&TE branding. The vinyl graphics add an extra communication element.



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IN-BAY MEDIA

In-Bay Media steps all EOC&TE services to the customer with powerful animated, custom messages. The video is currently over 7 minutes long, allowing some messages to be viewed more than once.



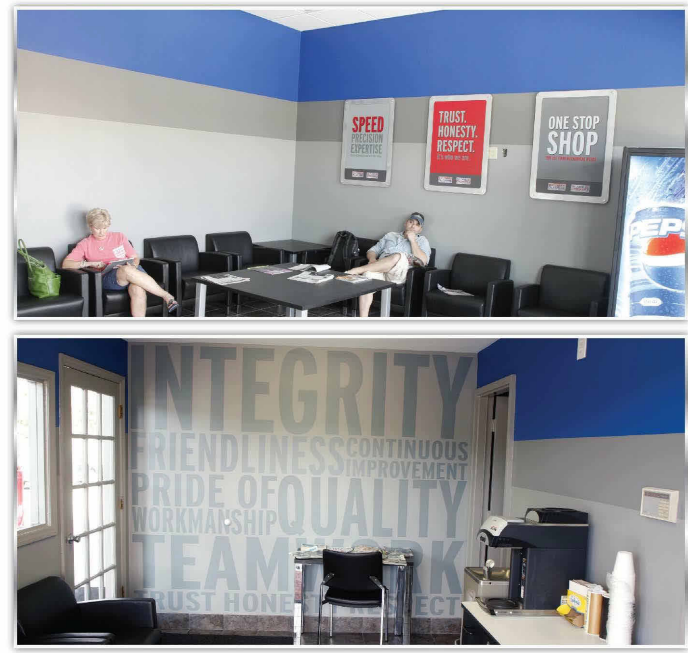
14

In Bay Media by Others

LOBBY

PAINT SCHEME

Paint 2 color stripes on all walls, except the "Word Wall" if permitted. The "Word Wall" will be painted Summit Gray and the vinyl words will be applied to it. For the "Word Wall", choose a blank wall or a wall that has the most blank coverage for the vinyl.



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BRANDED POSTERS

The new posters deliver powerful messages, and include a new design of the EOC&TE mission statement. Each poster is 36" x 48". Order on www.expressoilprint.com



POSTER FRAMES, MAGAZINE AND ACE CARD HOLDERS
These frames and holders are made of aluminum to match the branding of EOC&TE.



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Branded Posters by Others.

LOBBY

CHAIRS

There are two options for chairs. Global Lounge large chairs for larger spaces and Europa Guest Chairs for smaller spaces. These chairs are heavy duty and come with a warranty. They are both black leather with metal accents.

Global Lounge Chair - Large

Europa Guest Chair - Small



TILE

All tile must be replaced unless it is in good shape and is a gray color. Replacement is Use-Tile HeatShield HDS Anilox with 6" wall base and Dark Grout.

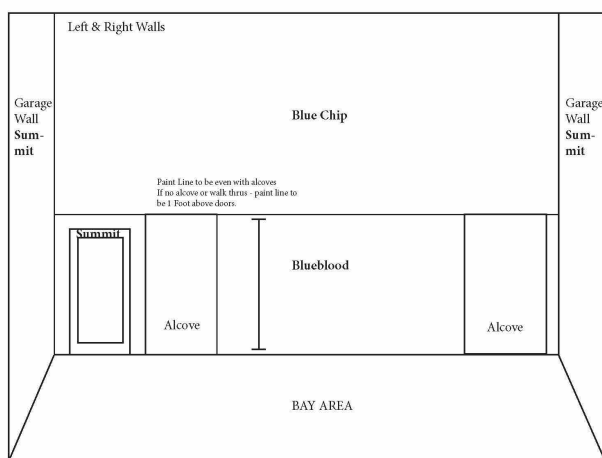


17

Furniture by Others

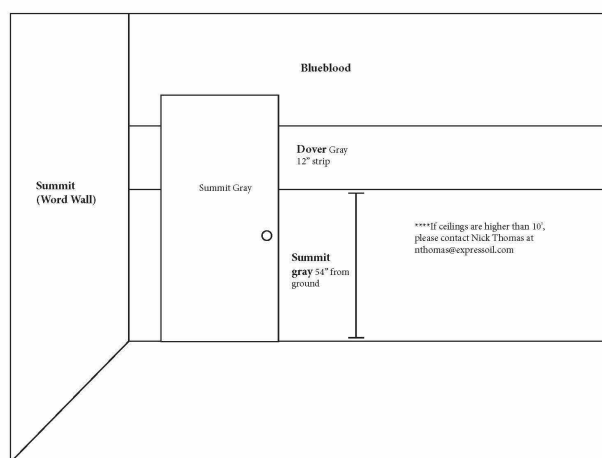
PAINT SCHEDULE

BAY AREA



25

LOBBY



26

See Finish Schedule for Paint Selections

VINYL SCHEDULE

The vinyl is fully customizable as far as size and layout. Each location is different. It is best to send the vendor clear measurements of the lobby wall and of the bay walls so they can size appropriately. Please be aware of piping or shelving, or anything else that may be in the way. PLEASE ALLOW 1 WEEK FOR PAINT TO CURE BEFORE APPLYING VINYL.

Bay Area - Avery 700 Medium Gray and Rubber Ducks
Lobby Word Wall - Onical B31 Gray 071



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Wall Graphics by Others

CONSTRUCTION AND MATERIAL NOTES:

Construction

1.) Cabinets:

3/4" plywood with plastic laminate at exposed surfaces, black melamine at semi-exposed surfaces, and 3MM PVC edgebanding to match the adjacent laminate / melamine color

2.) Door Fronts:

3/4" plywood with plastic laminate with 3MM PVC edgebanding to match the adjacent laminate color

3.) Shelf:

3/4" plywood with black melamine at semi-exposed surfaces with 3MM PVC edgebanding to match the adjacent melamine color

4.) CounterTops:

3/4" plywood with plastic laminate with 3MM PVC Edgebanding to match the adjacent laminate color

Materials

1.) Cabinets:

Wilsonart 4880-38 Carbon Mesh

2.) Drawer Fronts:

Wilsonart 4880-38 Carbon Mesh

3.) Shelf:

Black Melamine

4.) Countertops:

Wilsonart 4830K-18 Satin Stainless

5.) Adjustable Shelf Supports:

Standard Euro Style 5MM Pin System.

5.) Hinges:

European 120 Degree Concealed / Supports - 90 Degree Angle Brackets

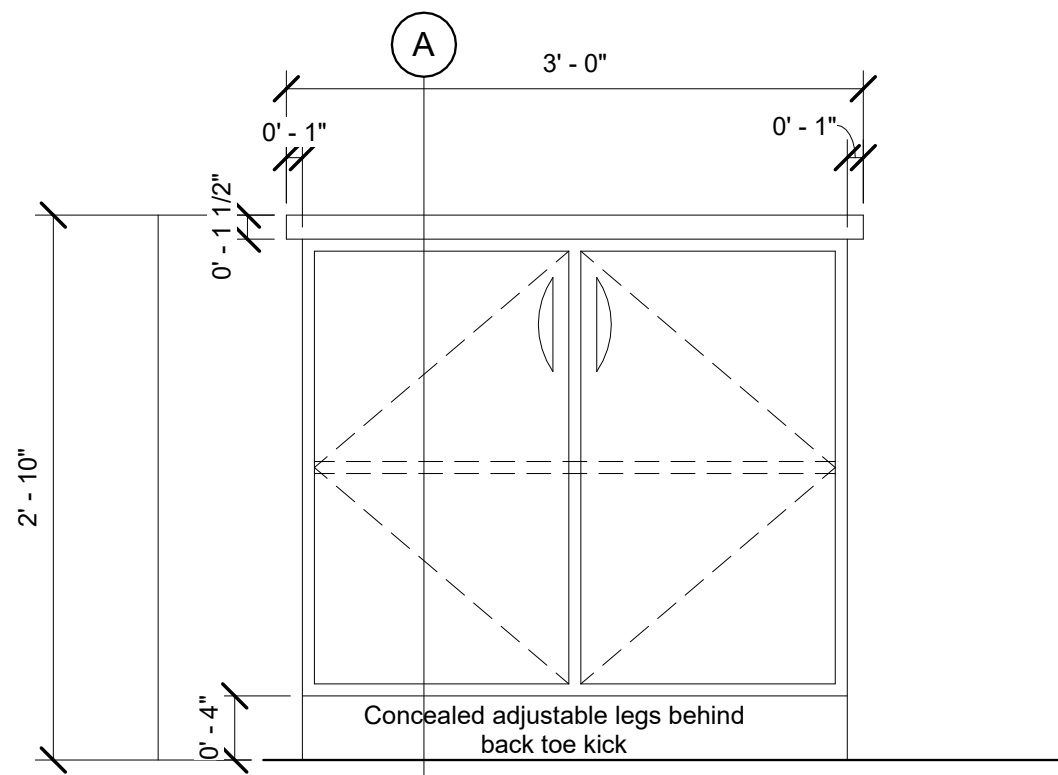
6.) Legs:

1" -2" Concealed Adjustable. / Legs - 5" to 6" Aluminum or Chrome Adjustable

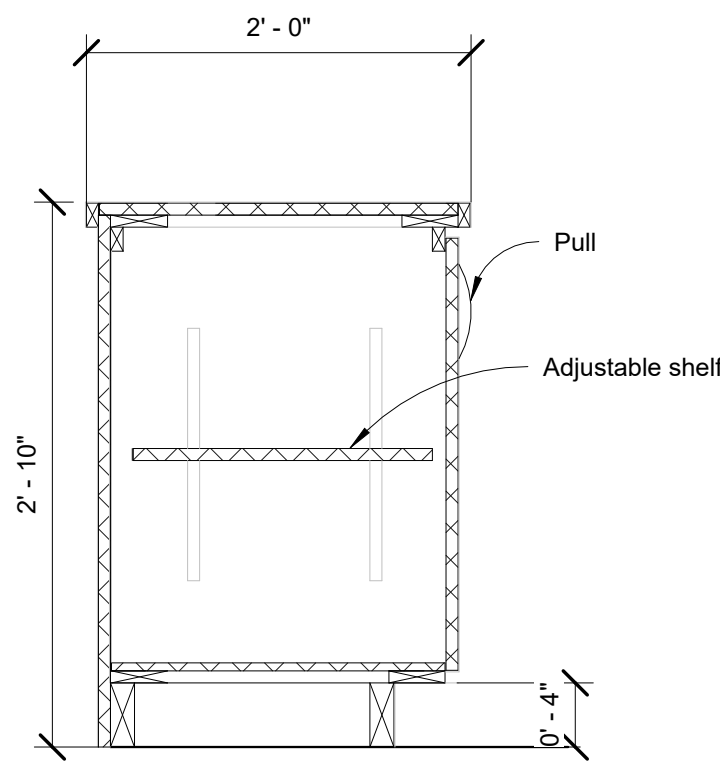
7.) Finger Pulls:

Amerock Current 3 inch Modern Polished Chrome Edge Cabinet Pull

Coffee Cabinet Detail



FRONT ELEVATION



SECTION A

CONSTRUCTION AND MATERIAL NOTES:

Construction

1.) Cabinets:

3/4" plywood with plastic laminate at exposed surfaces, black melamine at semi-exposed surfaces, and 3MM PVC edgebanding to match the adjacent laminate / melamine color

2.) Door and Drawer Fronts:

3/4" plywood with plastic laminate with 3MM PVC edgebanding to match the adjacent laminate color

3.) Drawer Box:

1/2" plywood with black melamine at semi-exposed surfaces with 3MM PVC edgebanding to match the adjacent melamine color

4.) CounterTops:

3/4" plywood with plastic laminate with 3MM PVC Edgebanding to match the adjacent laminate color

Materials

1.) Cabinets:

Wilsonart 4880-38 Carbon Mesh

2.) Drawer and Drawer Fronts:

Wilsonart 4880-38 Carbon Mesh

3.) Drawer Box:

Black Melamine

4.) Countertops:

Wilsonart 4830K-18 Satin Stainless

5.) Adjustable Shelf Supports:

Standard Euro Style 5MM Pin System.

5.) Hinges:

European 120 Degree Concealed / Supports - 90 Degree Angle Brackets

6.) Legs:

1" -2" Concealed Adjustable. / Legs - 5" to 6" Aluminum or Chrome Adjustable

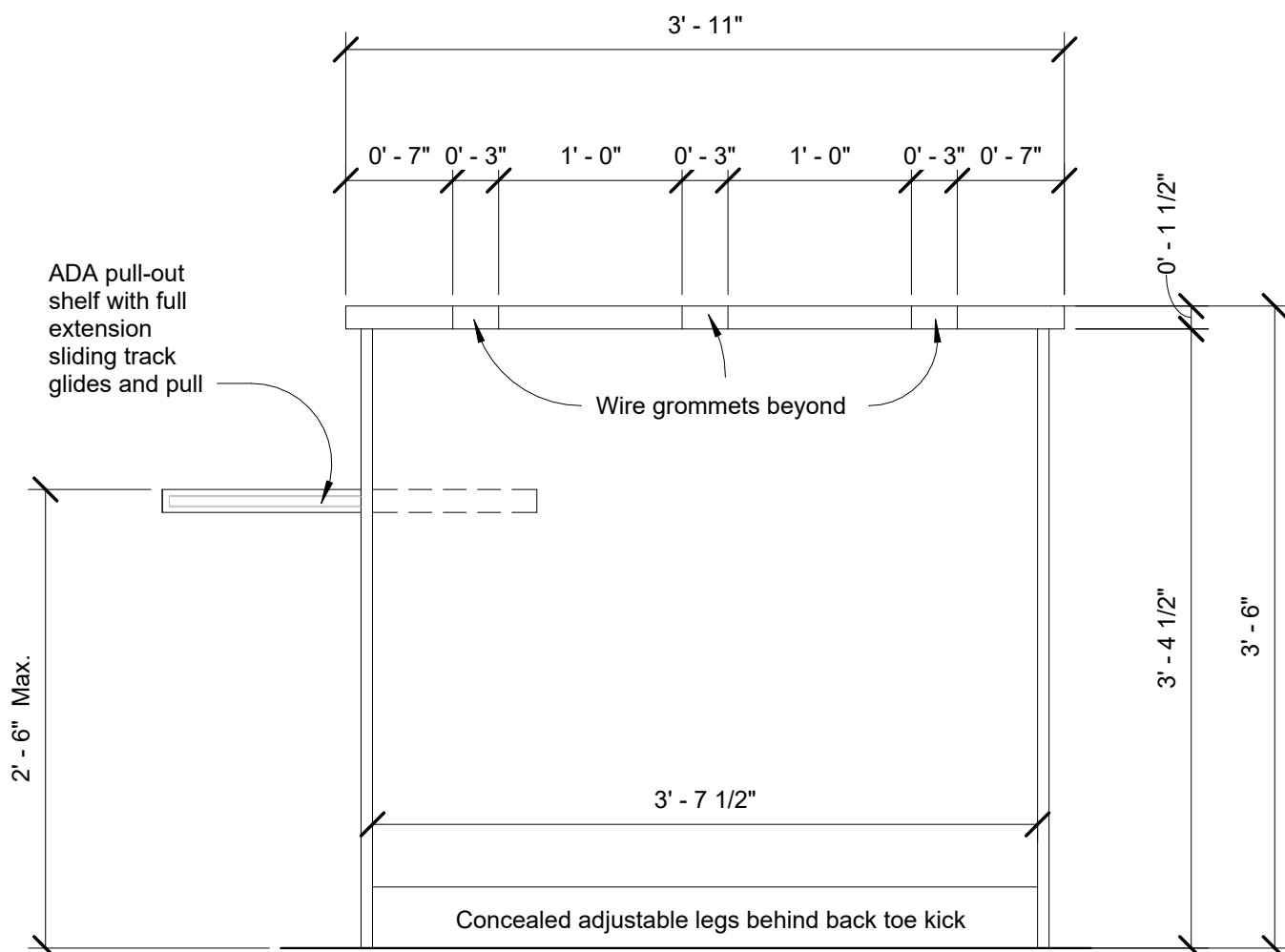
7.) Finger Pulls:

Amerock Current 3 inch Modern Polished Chrome Edge Cabinet Pull

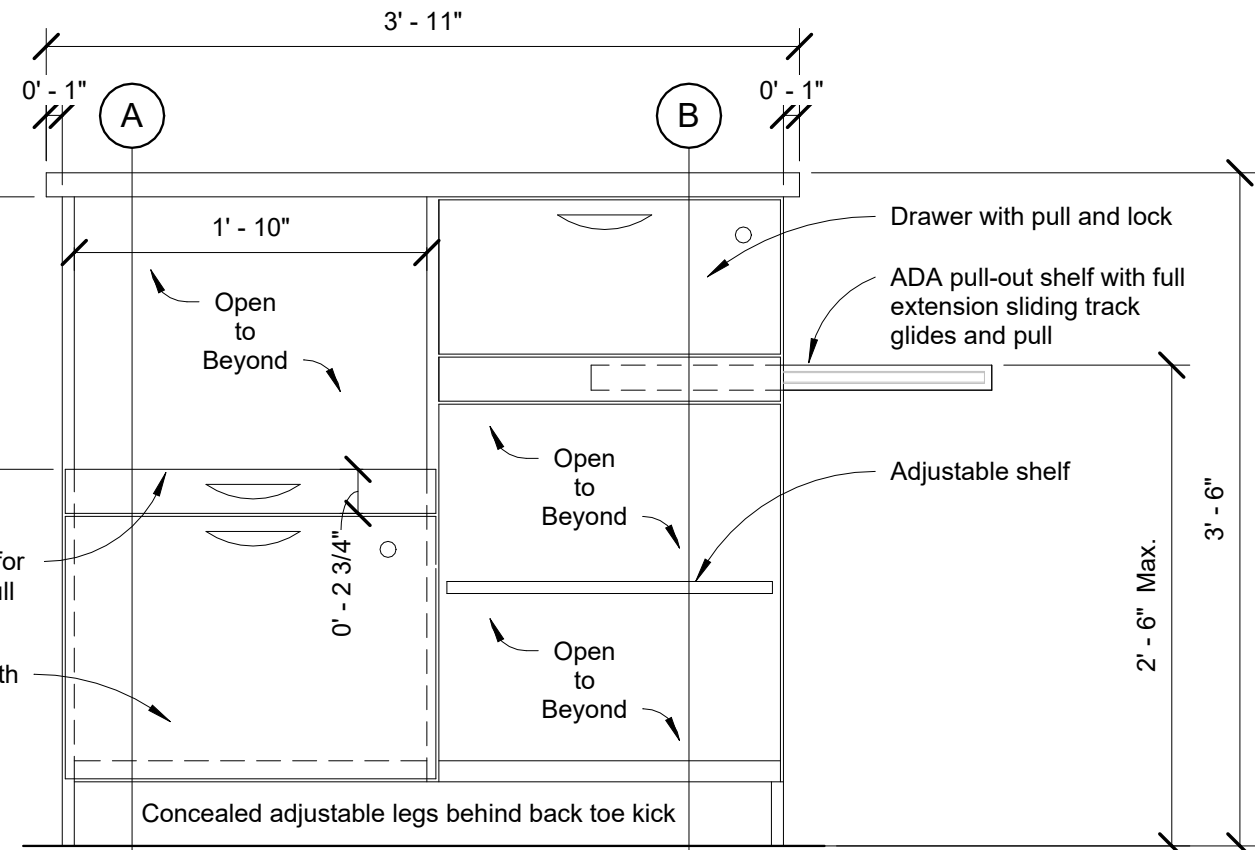
8.) Locks:

Manufacturer standard

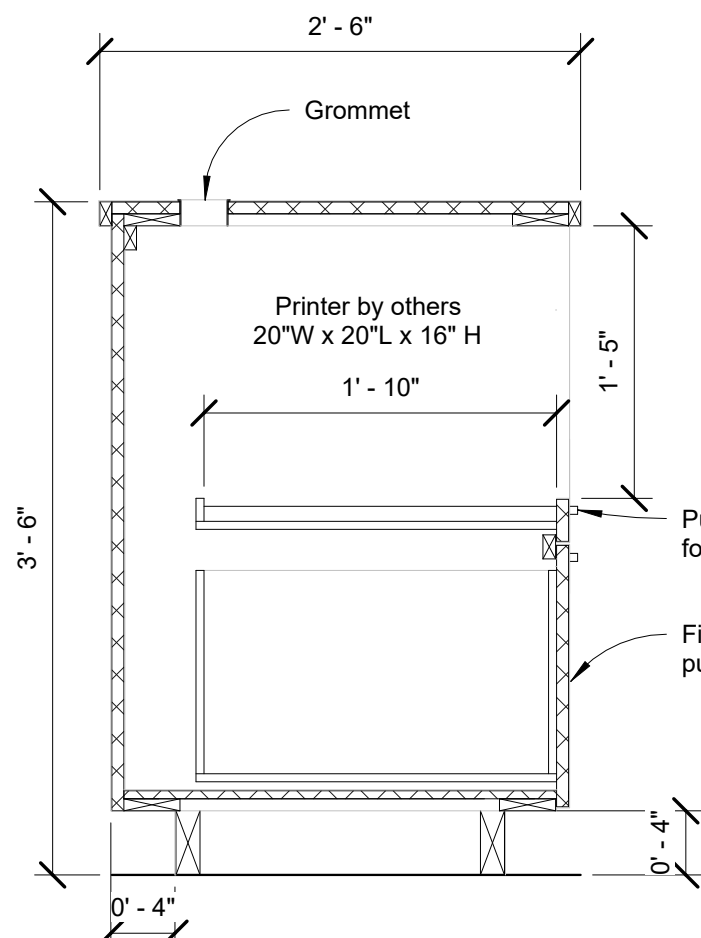
Service Desk Details



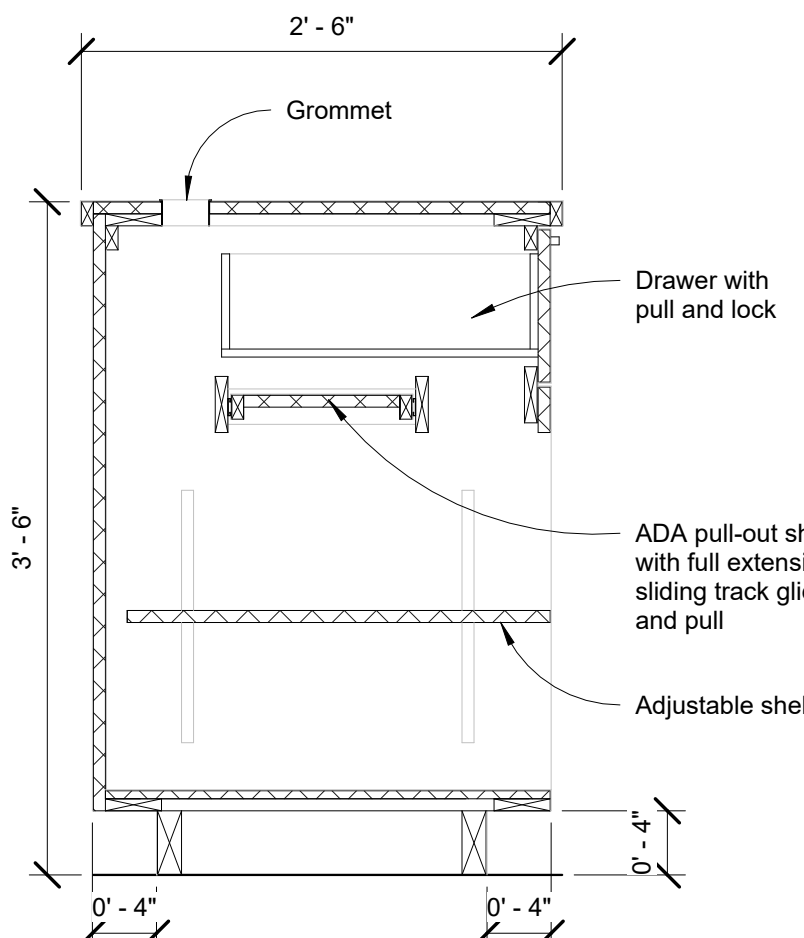
FRONT ELEVATION



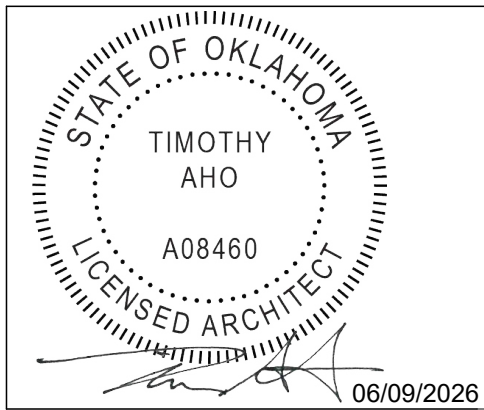
BACK ELEVATION



SECTION A



SECTION B



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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EOC Standards -
Interior

Project number 25048
Date 04/17/2026

Drawn by ARC

Checked by N/A

G301

Scale As indicated

COMcheck Software Version COMcheckWeb
Envelope Compliance Certificate

Project Information
Energy Code: 2018 IECC
Project Title: 25048_EOC Sand Springs, OK
Location: Sand Springs, Oklahoma
Climate Zone: 3A
Project Type: New Construction
Vertical Glazing / Wall Area: 3%

Construction Site: South 113th West Avenue
Sand Springs, Oklahoma 74063
Owner/Agent: Tyler Hendon
Exterior Oil Change & Tire Engineers
1880 Southpark Drive
Birmingham, Alabama 35244
tyler.hendon@gmail.com
Designer/Contractor: Aho Architects, LLC
1855 Data Drive
Hoover, Alabama 35244
mhouson@aearch.com

Additional Efficiency Package(s)

Credits: 1.0 Insulated 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Building Area	Floor Area
1-Automotive Facility - Nonresidential	573

Envelope Assemblies	Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor _{min}
Roof: Insulation Entirely Above Deck 3-Year-Aged Solar Reflectance Index = 70.05 Thermal Emittance = 0.90 (a), (Bldg. Use 1 - Automotive Facility) Floor: Unheated Slab-On-Grade, (Bldg. Use 1 - Automotive Facility) (c)		573	---	---	0.039	0.039
WALLS Ext. Wall: Wood-Framed, 16in. o.c., (Bldg. Use 1 - Automotive Facility) Door #2: Wood, Swinging, (Bldg. Use 1 - Automotive Facility) Door #13: Wood, Swinging, (Bldg. Use 1 - Automotive Facility)		996	20.0	0.0	0.064	0.064
BASE Ext. Wall (innermost): Wood-Framed, 16in. o.c., (Bldg. Use 1 - Automotive Facility) Door #15: Wood, Swinging, (Bldg. Use 1 - Automotive Facility) Ext. Wall (Outermost): Wood-Framed, 16in. o.c., (Bldg. Use 1 - Automotive Facility) Door #1: Glass (over 50% glazing): Metal Frame, Entrance Door #1: Glass (over 50% glazing): Metal Frame, Entrance Door #1: Glass (over 50% glazing): Metal Frame, Entrance Window B: Metal Frame with Thermal Break: Fixed, Perf. Spec., Product ID Solution 90 on Clear, SHGC 0.23, PF 0.63, (Bldg. Use 1 - Automotive Facility) (b) Window B: Metal Frame with Thermal Break: Fixed, Perf. Spec., Product ID Solution 90 on Clear, SHGC 0.23, PF 0.63, (Bldg. Use 1 - Automotive Facility) (b)		315	20.0	0.0	0.064	0.064
GLAZING Ext. Wall: Wood-Framed, 16in. o.c., (Bldg. Use 1 - Automotive Facility)		996	20.0	0.0	0.064	0.064

Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 1 of 9

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.3.5 (E1247)	Star and elevator shaft vents have	Complies	
C403.2.4 (E1257)	motivated dampers that automatically close. Reference section C403.1.7 for operational details.	Does Not Comply	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 6 of 9

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor _{min}
Facility) Door #3: Wood, Swinging, (Bldg. Use 1 - Automotive Facility) Door #16: Wood, Swinging, (Bldg. Use 1 - Automotive Facility)	21	---	---	0.000	0.010
WALL Ext. Wall (Outermost): Wood-Framed, 16in. o.c., (Bldg. Use 1 - Automotive Facility) Ext. Wall (Innermost): Wood-Framed, 16in. o.c., (Bldg. Use 1 - Automotive Facility)	315	20.0	0.0	0.064	0.064

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.
(d) High albedo roof requirement options: 1) 3-year aged solar reflectance index >= 55.0 thermal emittance >= 0.75, 2) 3-year aged solar reflectance index >= 64.0, 3) initial year aged solar reflectance >= 0.75, 4) initial year aged solar reflectance index >= 52.0.

Envelope PASSED: Design 8% better than code

Envelope Compliance Statement
Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Marie C. Brown
Name - Title Signature Date 04/17/2026

Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 2 of 9

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C403.6 (E1247)	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C403.6.	Complies	
C405.7 (E1277)	Electric motors meet the minimum efficiency requirements of Tables C402.7.1 through C402.7.14; efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided to motor manufacturer (where certification programs do not exist).	Does Not Comply	
C405.8.2 (E1287)	Elevators and moving walks comply with ASME A17.1 L2014 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1 L2014 B.4 or applicable local code when not conveying passengers.	Does Not Comply	
C405.9 (E1297)	Total voltage drop across the combination of feeders and branch circuits <= 3%.	Does Not Comply	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
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COMcheck Software Version COMcheckWeb
Inspection Checklist
Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software. Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 (F0247)	Plans and/or specifications provide information with which compliance can be determined for the building envelope and document where deviations to the standard are claimed.	Complies	
C402.4.1 (F1111)	The skylight area <= 3 percent of the gross roof area.	Complies	
C402.4.1 (F1121)	Vertical Fenestration Area Allowance: A maximum of 40 percent of gross above-grade wall area is permitted to >= 50 percent of the conditioned floor area within a daylight zone, provided responsive controls are installed, and glazing assemblies within the scope of NFRC 200 have visible transmittance >= 1.1 times SHGC.	Complies	
C402.4.2 (F1141)	In enclosed spaces > 2,500 ft ² directly under a roof with ceiling height > 5 ft, and used as an office, lobby, atrium, concourse, corridor, storage, gymnasium/exercise center, convention center, automotive service, manufacturing, non-refrigerated warehouse, retail store, distribution/wharfing area, transportation, or workshop, the glazing requirements apply: (a) the skylight area shall not be > half the floor area; (b) the skylight area to daylight zone >= 3 percent with a skylight VT >= 0.40; or (c) minimum skylight effective aperture >= 1 percent.	Complies	
C406 (F1191)	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	Complies	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 3 of 9

Section # & Req.ID	Insulation Inspection	Complies?	Comments/Assumptions
C203.1 (I011)	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the roof slope is <= 3 in 12.	Complies	
C402.2.1 (I0217)	Insulation installed on a suspended ceiling having ceiling tiles is not permitted for roof-ceiling assemblies. Continuous insulation board installed 1/2" or more gaps with edge joints offset between layers.	Complies	
C403.8 (I0107)	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.	Complies	
C203.2 (I007)	Above-grade wall insulation installed per manufacturer's instructions.	Complies	
C105 (I061)	Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	Complies	
C402.2.3 (I0417)	Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	Complies	
C402.2.6 (I0417)	Radiant panels and associated components, designed for heat transfer from the panel surfaces to the occupants or interior space, are insulated with a minimum of R-3.5.	Complies	
C402.3 (I051)	High-albedo roof safety over of the following: 3-year aged solar reflectance >= 55.0 and thermal emittance >= 0.75 or 3-year aged solar reflectance index >= 64.0.	Complies	
C105 (I061)	Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection.	Complies	
C402.3.1 (I061)	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor-permeable wrapping material to minimize air leakage.	Complies	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 8 of 9

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C203.1.3 (F0117)	Slab edge insulation installed per manufacturer's instructions.	Complies	
C203.2.1 (F0217)	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.	Complies	
C105 (F0317)	Installed slab-on-grade insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.	Complies	
C402.4.3 (F0217)	Slab edge insulation depth/length. Slab insulation extending away from building is covered by placement or >= 10 inches of soil.	Complies	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 4 of 9

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C402.3.4 (F1217)	Weatherstrials installed on all loading dock cargo door openings and provide direct contact along the top and sides of vehicles parked in the doorway.	Complies	
C402.3.4 (F1221)	Weatherstrials in thermal envelope to limit infiltration and be fitted and labeled "Self between" interior finish and luminaires housing.	Complies	
C402.1.1 (F1317)	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of fastening to owner how building equipment and systems are intended to be installed, maintained, and operated.	Complies	

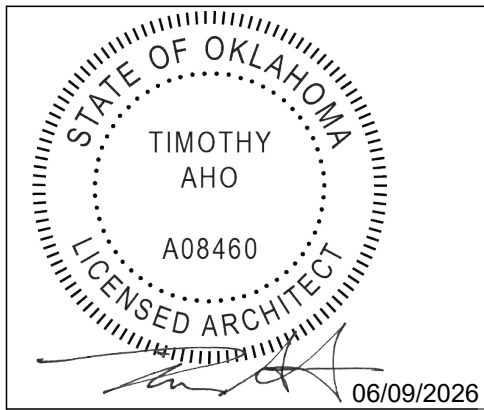
Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 9 of 9

Section # & Req.ID	Framing / Rough-In Inspection	Complies?	Comments/Assumptions
C203.1.3 (F0117)	Fenestration products rated in accordance with NFRC.	Complies	
C203.1.3 (F0117)	Fenestration products are certified as to performance labels or certificates provided.	Complies	
C402.4.3 (F1017)	Vertical fenestration SHGC value.	Complies	
C402.4.3 (F1017)	Installed vertical fenestration U-factor and SHGC consistent with label specifications and as reported in plans and COMcheck reports.	Complies	
C402.5.1 (F1617)	The building envelope contains a continuous air barrier that is sealed in an approved manner and either constructed or sealed in an approved manner. Air barrier penetrations are sealed in an approved manner.	Complies	
C402.5.1 (F1617)	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	Complies	
C402.5.1 (F1617)	Weatherstrials are installed on all building entrances. Doors have self-closing devices.	Complies	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: 25048_EOC Sand Springs, OK
Data Filename: Report date: 04/17/26
Page: 5 of 9



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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Building
COMCheck

Project number 25048
Date 04/17/2026
Drawn by ARC
Checked by N/A

G400

Scale

1 General Information

PROJECT INFORMATION

Name of Project:

Single Building / Right Hand Oil Change/ Front Enter

Client:

Express Oil Change & Tire Engineers

Location:

Sand Springs, OK

City: Sand Springs

County: Tulsa

State: N/A

Square Footage / Stories / Height:

Main Level G.S.F. = 5,662

Pit Level G.S.F. = 1,381

Total G.S.F. = 7,043

Stories = 1 + Pit

Height = 28'- 6"

PROJECT TYPE

☒ New Construction

☐ Addition

☐ Other

☐ Alteration

☐ Change of Occupancy

BUILDING USE

☐ Single Use

☐ Mixed Use (Separated)

☒ Mixed Use (Non-Separated)

Description: Automotive repair garage used for general service on automobiles.

SPRINKLERED

☐ Yes

☐ Partial

☒ No

4 Special Detailed Requirements Based On Use and Occupancy (2018 IBC)

406.8 Repair Garages

☒ Project complies with 406.8 through 406.8.3

413 Combustible Storage

413.1 High-piled storage of combustible materials over 12'-0" or high-hazard commodities over 6'-0"

☒ Yes

☐ No

413.2 Storage of combustible materials in attics, under-floor, and concealed spaces

☐ Yes

☒ No

414 Hazardous Materials

☒ Project complies with 414.2.1 through 414.2.5 (IFC)Control Areas

☒ Number of Control Areas Provided: Entire Building is one control area

Location

☒ Inside

☐ Outside

Use

☒ Open

☐ Closed

☒ Storage Only

Types of Hazardous Materials (Table 307.1.(1) of IBC and 3206.2 of IFC)

☒ Class IIIB Liquids

☒ Class IA Flammable Liquids

☒ Class IB Flammable Liquids

☒ High-Hazard Commodities per IFC 2021 3203.6 / 3206.2 (Rubber Tires)

☒ Allowable Quantity: 0-500 s.f.

☒ Actual Storage per control area: 4040.13 gallons

☒ Actual Storage per control area: 0.94 gallons

☒ Actual Storage per control area: 3.25 gallons

☒ Actual Quantity: X≤500 s.f.

7 Fire And Smoke Protection Systems (2018 IBC)

718.4 Draftstopping in Attics

☐ Yes

☐ No

☒ Not Required

☐ Openings in the partitions shall be protected by self-closing doors with automatic latches constructed as required for the partitions.

☐ Installed in attics and concealed roof spaces such that any horizontal area does not exceed 3,000 s.f.

8 Interior Finishes (2018 IBC)

Table 803.13 Interior Wall and Ceiling Finish Requirements by Occupancy

Group	Exit Enclosures and Exit Passageways	Corridors	Rooms and Enclosed Spaces
S-1	B	B	C
B	A	B	C

804.4.2 Minimum Critical Radiant Flux

☐ Class I

☒ Class II

2 Codes

☒ 2018 International Building Code

☒ 2018 International Plumbing Code

☒ 2018 International Energy Conservation Code

☒ 2017 ICC/ANSI 117.1

☒ 2018 International Fire Code

☒ 2020 National Electrical Code

☒ 2018 International Fuel Gas Code

☒ 2018 International Mechanical Code

5 General Building Heights and Areas (2018 IBC)

504 Building Height and Areas and 506 Building Area (Per Table 504.3, 504.4, and 506.2)

☐ Allowable Building Height = 40'-0"

☐ Allowable Number of Stories Above Grade Plane = 1

☐ Allowable Area Factor = 9,000 s.f.

☒ Actual Building Height = 28'- 6"

☒ Actual Number of Stories Above Grade Plane = 1

☒ Actual Area = 7043 s.f. (5662 Main Level + 1381 Pit)

505.3 Equipment Platforms

☒ Project complies with 505.3 through 505.3.3

508 Mixed Use and Occupancy

☐ Mixed Use Occupancy (Separated)

☒ Mixed Use Occupancy (Non-Separated)

☐ Does not apply

No separation required between Group B and Group S-1 Occupancies

9 Fire Protection Systems (2018 IBC)

903 Automatic Sprinkler Systems

903.2.9.1 Repair Garages

☐ Yes

☐ Partial

☒ Not Required

906 Portable Fire Extinguishers

☒ Yes

☐ No

☒ Project complies with 906.1 through 906.10

☒ Project complies NFPA 10

907 Fire Alarm and Detection System

☐ Yes

☒ Not Required

3 Use and Occupancy Classification(s) (2018 IBC)

☐ Assembly Group A-1

☐ Assembly Group A-2

☐ Assembly Group A-3

☐ Assembly Group A-4

☐ Assembly Group A-5

☒ Business Group B

☐ Educational Group E

☐ Factory Group F-1

☐ Factory Group F-2

☐ High-Hazard Group H-1

☐ High-Hazard Group H-2

☐ High-Hazard Group H-3

☐ High-Hazard Group H-4

☐ High-Hazard Group H-5

☐ Institutional Group I-1

☐ Institutional Group I-2

☐ Institutional Group I-3

☐ Institutional Group I-4

☐ Mercantile Group M

☐ Residential Group R-1

☐ Residential Group R-2

☐ Residential Group R-3

☐ Residential Group R-4

☒ Storage Group S-1

☐ Storage Group S-2

☐ Utility & Misc Group U

6 Types of Construction (2018 IBC)

601 General and 602 Construction Classification

☐ Type IA

☐ Type IIB

☐ Type IIB

☐ Type IIIA

☐ Type IB

☐ Type IV

☐ Type VA

☒ Type VB

Table 601 Fire Resistance Rating Requirements for Building Elements

Building Elements	Hours Required	Hours Provided
Primary Structural Frame	0	0
Bearing Walls (Exterior)	0	0
Bearing Walls (Interior)	0	N/A
Nonbearing Walls & Partitions (Exterior)	0	0
Nonbearing Walls & Partitions (Interior)	0	0
Floor Construction & Associated Secondary Members	0	0
Roof Construction & Associated Secondary Members	0	0

Table 705.5 Fire Resistance Requirements for Exterior Walls Based on Fire Separation Distance

Fire Separation Distance	Rear (West)	Right (North)	Front (East)	Left (South)
X < 5				
5 ≤ X < 10				
10 ≤ X < 30		10'		
X ≥ 30	>30'		>30'	>30'

X≥30' for Group B and S-1 = 0 hours

10≤X<30' for Group B and S-1 = 0 hours

10 Means of Egress (2018 IBC)

DT_2018 IBC Table 1004.5 Maximum Floor Area Allowance Per Occupant (Group S-1)

Occupancy Classification	Name	Number	Area	S.F. Per Occupants	No. of Occupants
S-1	Oil Change	5	1264 SF	200	6.32
S-1	Corridor	6	129 SF	200	0.65
S-1	Service	9	2477 SF	200	12.38
S-1	Storage	10	188 SF	300	0.63
S-1	Pit	11	1218 SF	200	6.09
S-1	Storage	12	258 SF	300	0.86
S-1	Storage	13	500 SF	300	1.67
Subtotal			6035 SF		28.60

Please Note: The Group H-5 Fabrication and Manufacturing Load Factor of 200 square foot per occupant for manufacturing function of space was used for some of the above calculations because there is not a function of space occupant load factor for Repair Garages.

DT_2018 IBC Table 1004.5 Maximum Floor Area Allowance Per Occupant (Group B)

Occupancy Classification	Name	Number	Area	S.F. Per Occupants	No. of Occupants
B	Service Writing	1	139 SF	150	0.93
B	Waiting Room	2	127 SF	150	0.85
B	Toilet	3	47 SF	150	0.31
B	Manager	4	48 SF	150	0.32
B	Break Room	7	61 SF	150	0.41
B	Toilet	8	45 SF	150	0.30
Subtotal			467 SF		3.11

10 Means of Egress (2018 IBC)

DT_2018 IBC Sections 1005.3.1 & 1005.3.2 Egress width Stairways and Other Egress Components (Group S-1)

Occupancy Classification	Name	Room Number	No. of Occupants	Egress - Stairways	Required Stairway Width	Other Egress Components	Required Capacity in Inches
S-1	Oil Change	5	6.32			0.2	1.26
S-1	Corridor	6	0.65			0.2	0.13
S-1	Service	9	12.38			0.2	2.48
S-1	Storage	10	0.63			0.2	0.13
S-1	Pit	11	6.09	0.3	1.83	0	0.00
S-1	Storage	12	0.86			0.2	0.17
S-1	Storage	13	1.67			0.2	0.33
Subtotal			28.60		1.83		4.50

DT_2018 IBC Table 1005.3.2 Egress width Other Egress Components (Group B)

Occupancy Classification	Name	Room Number	No. of Occupants	Other Egress Components	Required Capacity in Inches
B	Service Writing	1	0.93	0.2	0.19
B	Waiting Room	2	0.85	0.2	0.17
B	Toilet	3	0.31	0.2	0.06
B	Manager	4	0.32	0.2	0.06
B	Break Room	7	0.41	0.2	0.08
B	Toilet	8	0.30	0.2	0.06
Subtotal			3.11		0.62

Tables 1006.2.1 Spaces with One Exit or Exit Access Doorway

Occupancy	Max Occupant Load	Max Occupant Load Provided	Number of Exits Required	Number of Exits Provided	Max. Common Path of Travel Allowable (Nonsprinkled)	Max. Provided Common Path of Travel (Nonsprinkled)
S-1	29	28.60	1	4	100'-0"	≤ 100' -0"
B	49	3.11	1	1	100'-0"	≤ 100' -0"

Table 1006.3.3 Minimum Number of Exits or Access to Exits Per Story

Occupant Load Per Story	Minimum Number of Exits or Access to Exits from Story	Number of Exits or Access to Exits from Story Provided
1-500	2	5

Table 1017.2 Exit Access Travel Distance

Occupancy	Without Sprinkler System (Feet)	With Sprinkler System	Max Travel Distance Provided (Feet)
S-1	200	N/A	71'-1"
B	200	N/A	90'-7"

12 Interior Environment (2018 IBC)

1208.1 Minimum Room Widths

Habitable spaces are not less than 7 feet in any plan dimension

☒ Yes

☐ No

1208.2 Minimum Ceiling Heights

Occupiable spaces, habitable spaces, and corridors have a ceiling height of not less than 7 feet 6 inches. Bathrooms, toilet rooms, kitchens, storage rooms, and laundry rooms have a ceiling height of not less than 7 feet.

☒ Yes

☐ No

1209.2 Attic spaces

Opening not less than 20 inches by 30 inches is provided for attic area with clear height over 30 inches. 30" headroom provided at or above access opening

☒ Yes

☐ Not Required

Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

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No.	Description	Date
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IFC-0	Issued for Construction	06/25/2026

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Life Safety / Code Summary

Project number

25048

Date

04/17/2026

Drawn by

ARC

Checked by

N/A

LS100

Scale

12" = 1'-0"

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29 Plumbing Systems (2018 IBC)

Table 2902.1 Minimum Number of Required Plumbing Fixtures

DT_Plumbing Fixture_Group S-1												
Total Occupant Load	Male	Female	Required Water Closets		Water Closets Provided	Required Lavatories		Lavatories Provided	Required Drinking Fountains	Drinking Fountains Provided	Required Service Sinks	Service Sinks Provided
			Male	Female		Male	Female					
28.60	14.30	14.30	0.14	0.14	1	0.14	0.14	1	0.03	1	1	1

DT_Plumbing Fixture_Group B												
Total Occupant Load	Male	Female	Required Water Closets		Water Closets Provided	Required Lavatories		Lavatories Provided	Required Drinking Fountains	Drinking Fountains Provided	Required Service Sinks	Service Sinks Provided
			Male	Female		Male	Female					
3.11	1.555	1.555	0.06	0.06	1	0.04	0.04	1	0.03	1	1	1

2902.2 Separate Facilities

Separate facilities provided for each sex

☐ Yes ☒ Not Required per 2902.2 Exception 2

2902.2.1 Family or assisted use toilet facilities serving as separate facilities

☒ Yes ☐ No ☐ Not Required

2902.3 Employee and public toilet facilities

☒ Employee toilet combined with public toilet facilities

Plumbing Fixture Notes:

(1) High / Low drinking fountain provided for the entire building.

(1) Service Sink provided for the entire building.

(2) Family Assisted-Use Toilet Room each containing (1) lavatory and (1) water closet provided for the entire building.

2902.3.1 Access

Route to public toilet facilities does not pass through kitchens, storage rooms, or closets and is accessible.

☒ Yes ☐ No

2902.3.3 Location of toilet facilities in occupancies other than covered mall buildings

Located not more than one story above or below the space required to be provided with toilet facilities

☒ Yes ☐ No

Path of travel to such facilities does not exceed 500 feet

☒ Yes ☐ No

2902.4 Signage

☒ Yes ☐ No

Legible sign designating the sex provided in visible location near entrance to toilet facility

☐ Yes ☒ Not Required per 2902.2.1

32 High Piled Combustible Storage (2018 IFC)

3203.6 High-hazard commodities

☒ Yes ☐ No

☒ Project does contain high-hazard commodities (Rubber Tires)

Definitions per Chapter 2 of the International Fire Code

High-piled Combustible Storage. Storage of combustible materials in closely packed piles or combustible materials on pallets, in racks or on shelves where the top of storage is greater than 12'-0" in height. When required by the fire code official, high-piled combustible storage also includes certain high-hazard commodities, such as rubber tires, Group A plastics, flammable liquids, idle pallets, and similar commodities, where the top of storage is greater than 6'-0" in height.

☒ Project does contain high piled combustible storage over 6'-0" (<500 s.f. of rubber tire storage over 6 feet high).

Table 3206.2 General Fire Protection and Life Safety Requirements

Commodity Class	Size of High Piled Storage Area	All Storage Areas			
		Automatic Fire Extinguishing System	Fire Detection System	Building Access	Smoke and Heat Removal
High Hazard	0-500 s.f.	Not Required	Not Required	Not Required	Not Required

Solid-Piled Storage, Shelf Storage and Palletized Storage			
Max. Pile Dimension (Feet)	Max. Permissible Storage Height (Feet)	Max. Pile Volume (Cubic Feet)	
60 feet	Not Required	Not Required	

5 Fire Service Features (2018 IFC)

505.1 Address Identification

☒ Yes ☐ No ☐ Not Required

☒ Project complies 505.1 Address Identification

506 Key Boxes

☒ Yes ☐ No ☐ Not Required

☒ Project complies 506.1 Where Required

23 Motor Fuel-Dispensing Facilities and Repair Garages (2018 IFC)

2311.2.2 Waste oil, motor oil and other Class IIIB Liquids

☒ Project complies with 2311.2.2 Waste oil, motor oil and other Class IIIB liquids.

2311.2.2.1 Tank Location

☒ Project complies with 2311.2.2.1 tank location ☐ Not Applicable

2311.2.3 Drainage and disposal of liquid and oil-soaked waste

☐ Yes ☐ No ☒ Not Required

☒ Garage floors do not contain floor drains.

2311.4 Below-grade areas

☒ Project complies with 2311.4.1 through 2311.4.3 ☐ Not Applicable

2311.7 Fire Extinguishers

☒ Project complies with 2311.7 fire extinguishers (See Section 9 Fire Protection Systems)

34 Tire Rebuilding and Tire Storage (2018 IFC)

3409 Indoor Storage Arrangement

☒ Project complies with 3409.1 Pile Dimensions

☒ Pile dimension less than 50'-0" in direction of wheel hole.

☒ Tires stored adjacent to or along one wall shall not extend more than 25'-0" from that wall.

50 Hazardous Materials - General Provisions (2018 IFC)

Table 5003.1.1 (1) Maximum Allowable Quantity Per Control Area of Hazardous Materials Posing a Physical Hazard

☒ Project complies with Table 5003.1.1 (1).

☒ Project contains Class IIIB Liquid Storage that does not exceed 13,200 liquid gallons per control area.

☒ Project contains Class IIIB Liquid Open-System that does not exceed 3,300 liquid gallons per control area.

☒ Project contains Flammable Liquid IA Storage that does not exceed 30 liquid gallons per control area.

☒ Project contains Flammable Liquid IA Open System that does not exceed 10 liquid gallons per control area.

☒ Project contains Flammable Liquid IB Storage that does not exceed 120 liquid gallons per control area.

☒ Project contains Flammable Liquid IB Open System that does not exceed 30 liquid gallons per control area.

☒ Project complies 5003.8.3.1 through 5003.8.3.4

☒ Entire building is one single control area.

57 Flammable and Combustible Liquids (2018 IFC)

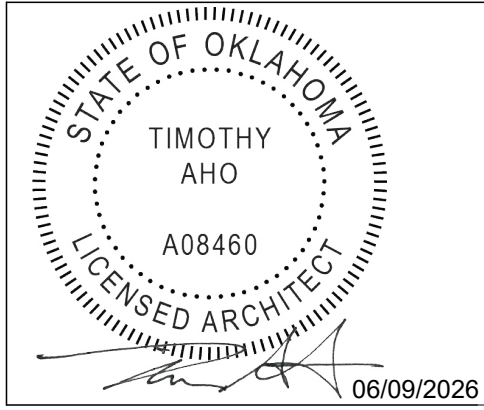
5703.2 Fire Protection

☒ Project complies with 5703.2.1 portable fire extinguishers an hose lines. (See Section 9 Fire Protection Systems).

5703.4 Spill Control and Secondary Containment

☒ Not required. Project does not exceed maximum allowable quantity per control area.

☒ Though not required, the pit itself acts as a secondary containment. There are no drains in the pit.



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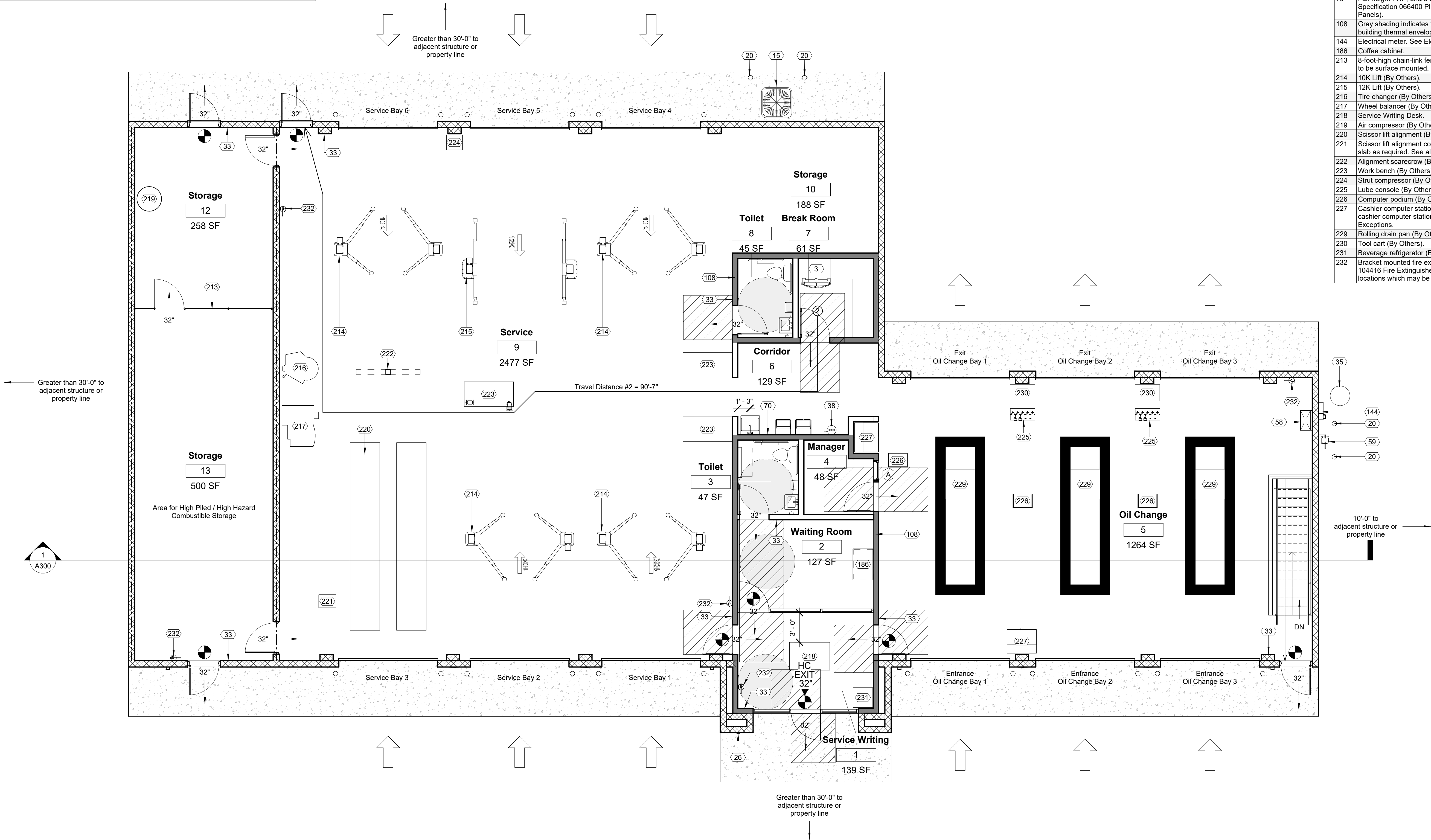
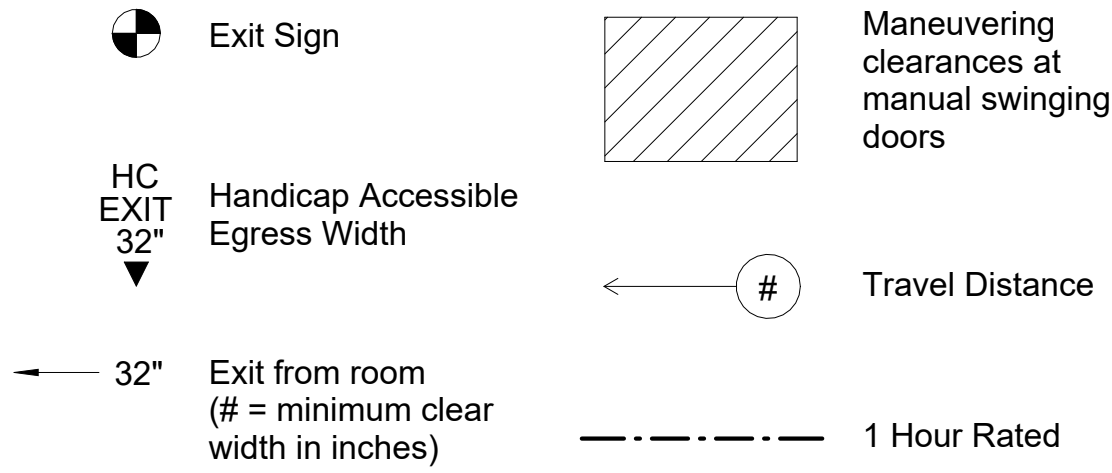
No.	Description	Date
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Life Safety / Code Summary

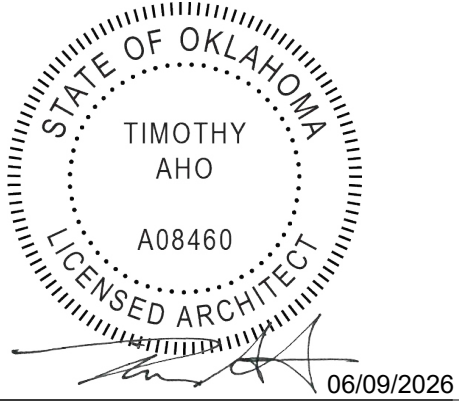
Project number	25048
Date	04/17/2026
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Checked by	N/A
LS101	
Scale	12" = 1'-0"

LIFE SAFETY SYMBOL LEGEND



Keynote Schedule

Tag	Text
3	Location of 30" wide refrigerator (By Others).
15	HVAC condensing unit. See Mechanical.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
33	ADA compliant room / exit sign. See Details.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
58	Eyewash station. See Plumbing.
59	Gas meter. See Plumbing.
70	Full-height FRP, entire wall, unless otherwise noted. See Specification 066400 Plastic Paneling (Fiberglass Reinforced Panels).
108	Gray shading indicates these walls are the boundaries for the building thermal envelope assembly.
144	Electrical meter. See Electrical.
186	Coffee cabinet.
213	8-foot-high chain-link fence with 3'-0"x7'-0" gate. Fence poles to be surface mounted.
214	10K Lift (By Others).
215	12K Lift (By Others).
216	Tire changer (By Others).
217	Wheel balancer (By Others).
218	Service Writing Desk.
219	Air compressor (By Others).
220	Scissor lift alignment (By Others).
221	Scissor lift alignment console (By Others). Provide conduit in slab as required. See alignment lift specifications (By Others).
222	Alignment scarecrow (By Others).
223	Work bench (By Others).
224	Strut compressor (By Others).
225	Lube console (By Others).
226	Computer podium (By Others).
227	Cashier computer station (By Others). Clear opening for cashier computer station must be 38 1/2" wide minimum. No Exceptions.
229	Rolling drain pan (By Others).
230	Tool cart (By Others).
231	Beverage refrigerator (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.



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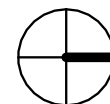
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Life Safety Plan -
Main

Project number	25048
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LS102

Scale As indicated



LIFE SAFETY SYMBOL LEGEND

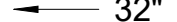
 Exit Sign

 Maneuvering clearances at manual swinging doors

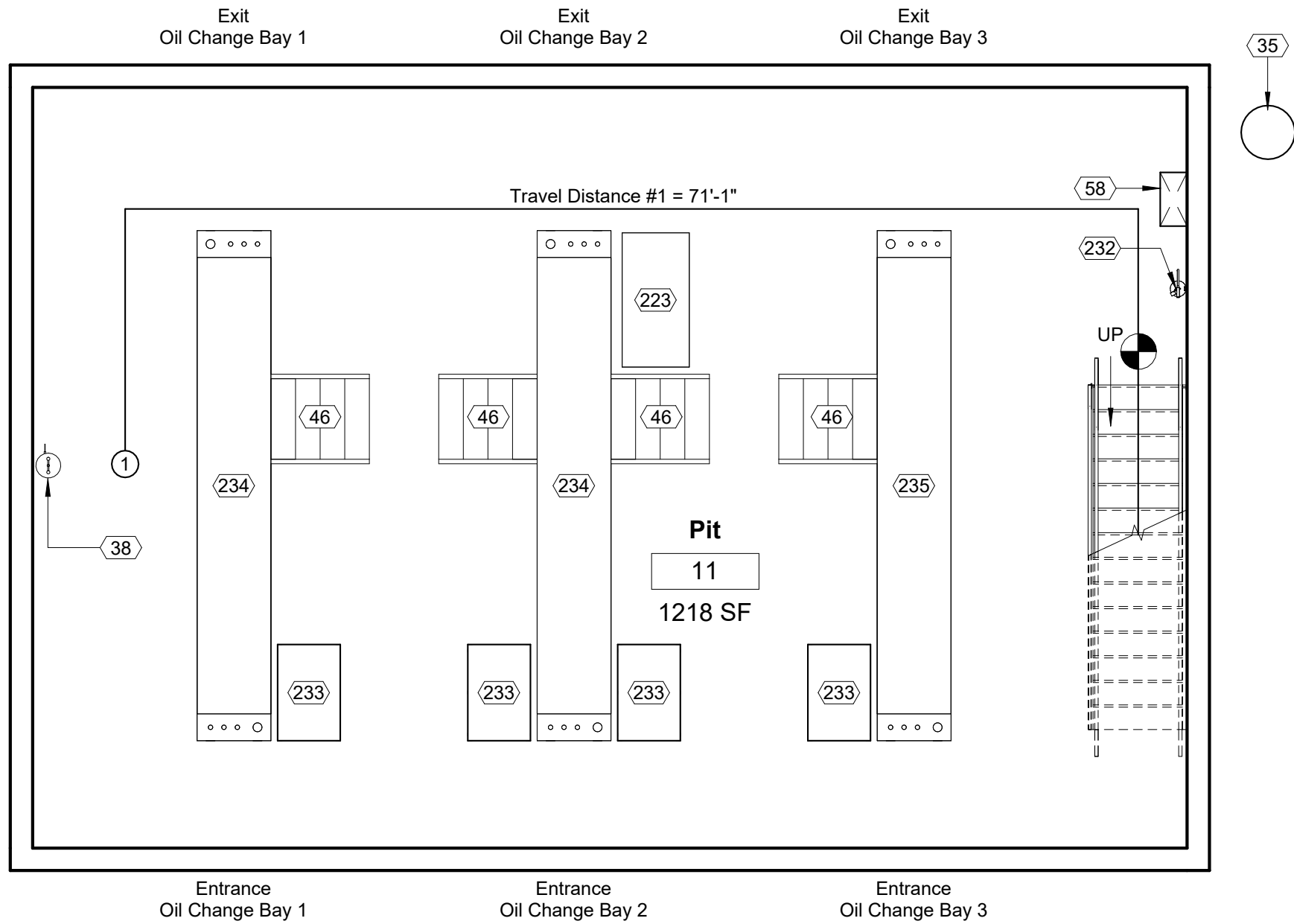
HC
EXIT
32"
▼

Handicap Accessible
Egress Width

 Travel Distance

 32" Exit from room
(# = minimum clear width in inches)

 1 Hour Rated

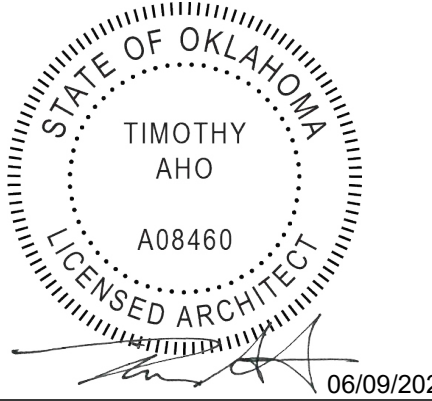


① 04 Life Safety Plan Pit
3/16" = 1'-0"

Keynote Schedule	
Tag	Text
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
38	Eyewash station. See Plumbing.
46	Oil tank stairs (By Others).
58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.
223	Work bench (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.
233	275-gallon Class IIIB new oil tank (By Others).
234	928-gallon Class IIIB new oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.
235	928-gallon Class IIIB waste oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.



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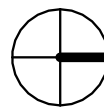
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IFC-0	Issued for Construction	06/25/2026

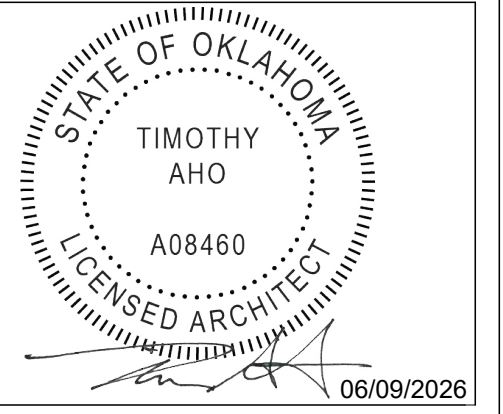
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Life Safety - Pit

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
LS103	
Scale	As indicated



THIS PLAN IS TO SHOW THE BUILDING AS IT RELATES TO THE SITE. A COMPLETE SET OF CIVIL DRAWINGS ARE TO BE SUBMITTED TO THE AHJ INDEPENDENT OF THIS SUBMITTAL. REFER TO THOSE DRAWINGS FOR ACTUAL INFORMATION.



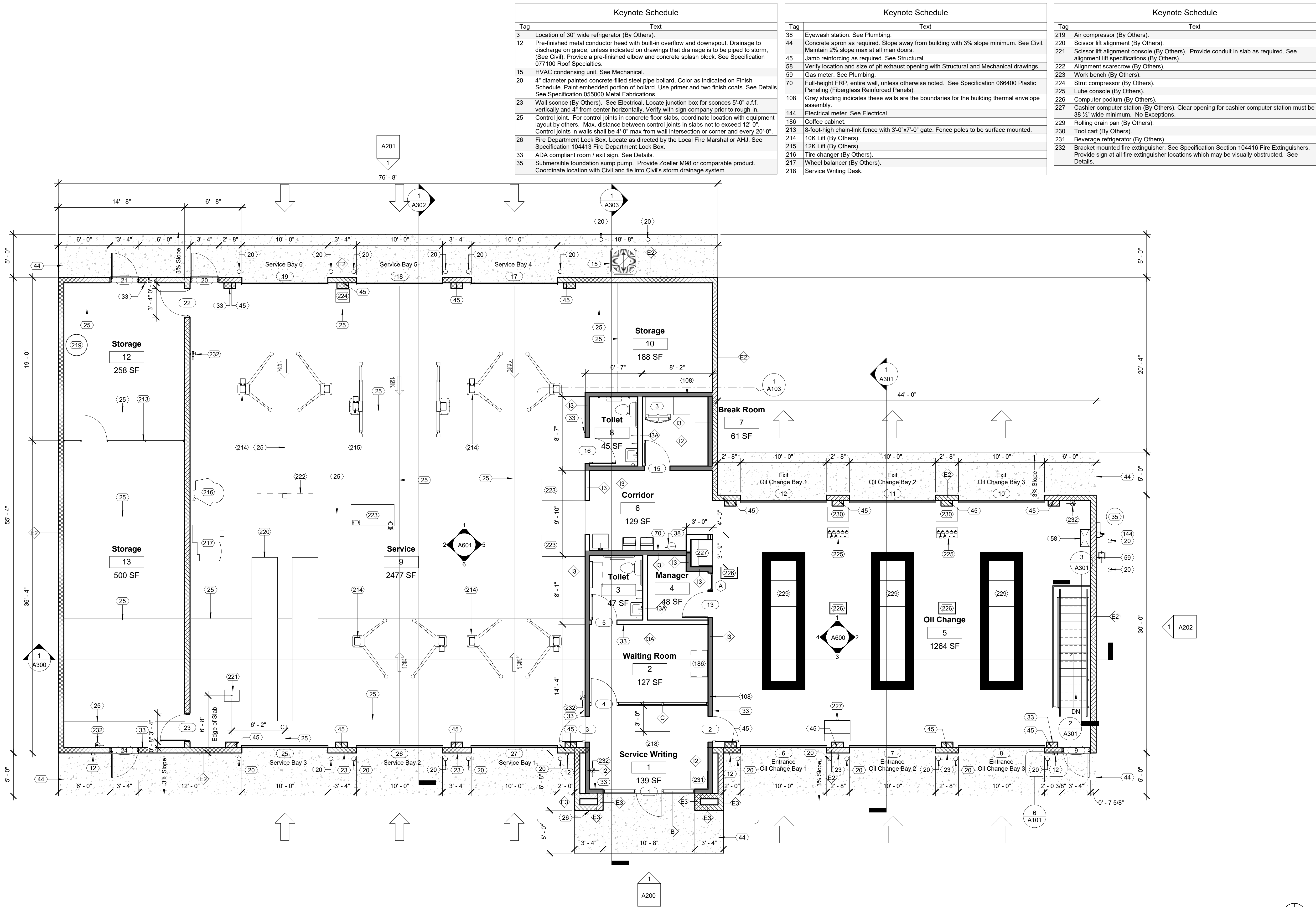
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Architectural Site
Plan

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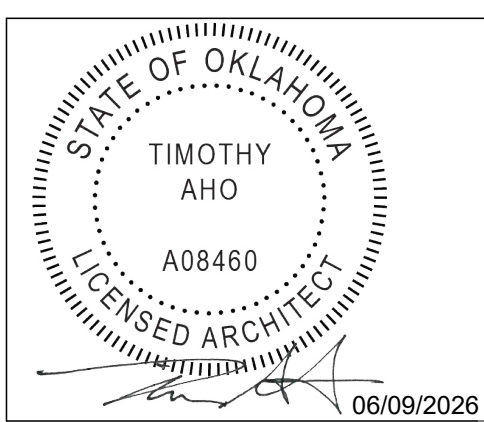


Keynote Schedule	
Tag	Text
3	Location of 30" wide refrigerator (By Others).
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm, (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
15	HVAC condensing unit. See Mechanical.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
23	Wall sconce (By Others). See Electrical. Locate junction box for sconces 5'-0" a.f.f. vertically and 4" from center horizontally. Verify with sign company prior to rough-in.
25	Control joint. For control joints in concrete floor slabs, coordinate location with equipment layout by others. Max. distance between control joints in slabs not to exceed 12'-0". Control joints in walls shall be 4'-0" max from wall intersection or corner and every 20'-0".
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
33	ADA compliant room / exit sign. See Details.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.

Keynote Schedule	
Tag	Text
38	Eyewash station. See Plumbing.
44	Concrete apron as required. Slope away from building with 3% slope minimum. See Civil. Maintain 2% slope max at all man doors.
45	Jamb reinforcing as required. See Structural.
58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.
59	Gas meter. See Plumbing.
70	Full-height FRP, entire wall, unless otherwise noted. See Specification 066400 Plastic Paneling (Fiberglass Reinforced Panels).
108	Gray shading indicates these walls are the boundaries for the building thermal envelope assembly.
144	Electrical meter. See Electrical.
186	Coffee cabinet.
213	8-foot-high chain-link fence with 3'-0"x7'-0" gate. Fence poles to be surface mounted.
214	10K Lift (By Others).
215	12K Lift (By Others).
216	Tire changer (By Others).
217	Wheel balancer (By Others).
218	Service Writing Desk.

Keynote Schedule	
Tag	Text
219	Air compressor (By Others).
220	Scissor lift alignment (By Others).
221	Scissor lift alignment console (By Others). Provide conduit in slab as required. See alignment lift specifications (By Others).
222	Alignment scarecrow (By Others).
223	Work bench (By Others).
224	Strut compressor (By Others).
225	Lube console (By Others).
226	Computer podium (By Others).
227	Cashier computer station (By Others). Clear opening for cashier computer station must be 38 1/2" wide minimum. No Exceptions.
229	Rolling drain pan (By Others).
230	Tool cart (By Others).
231	Beverage refrigerator (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.

1 01 Floor Plan Main
3/16" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

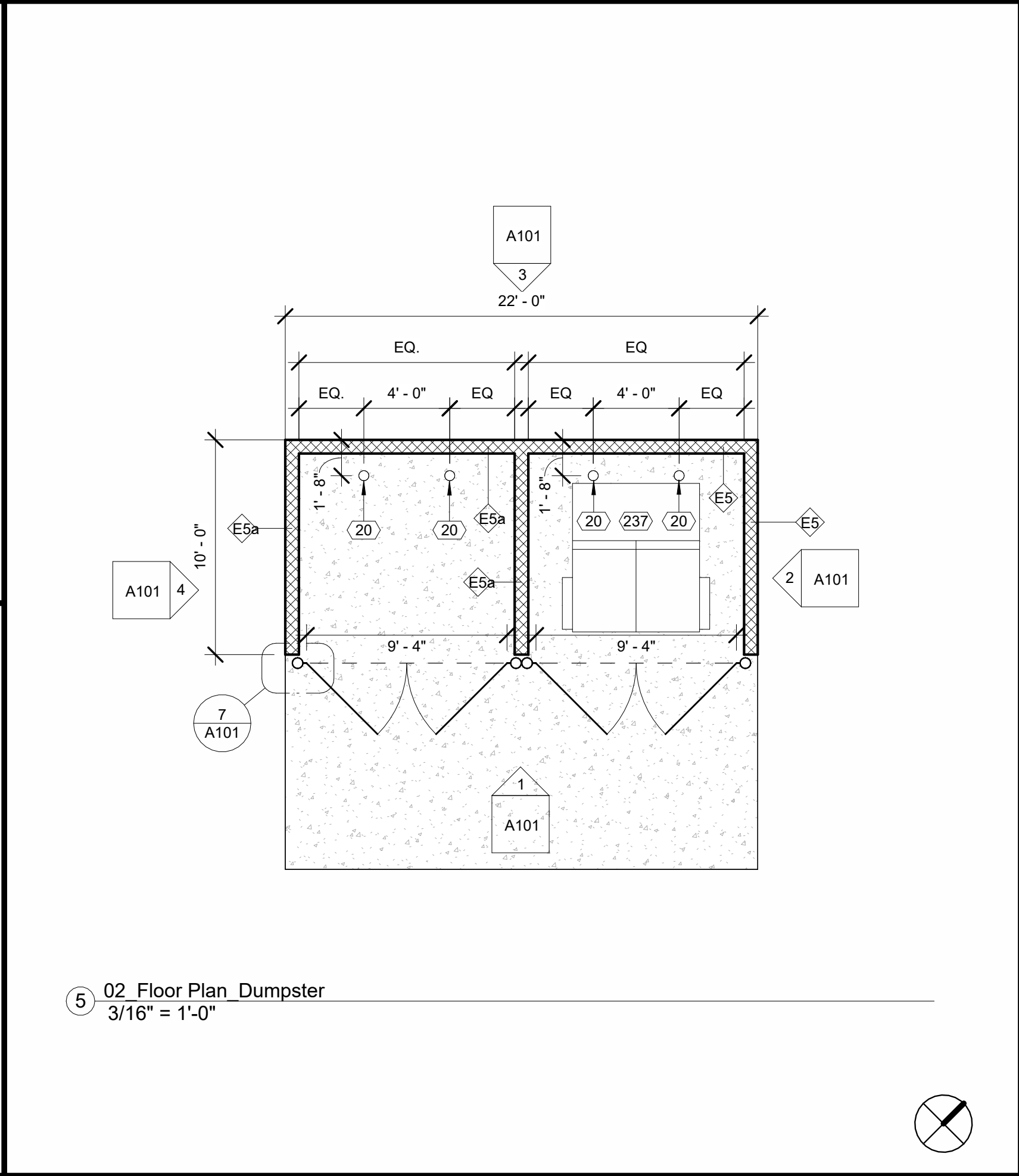
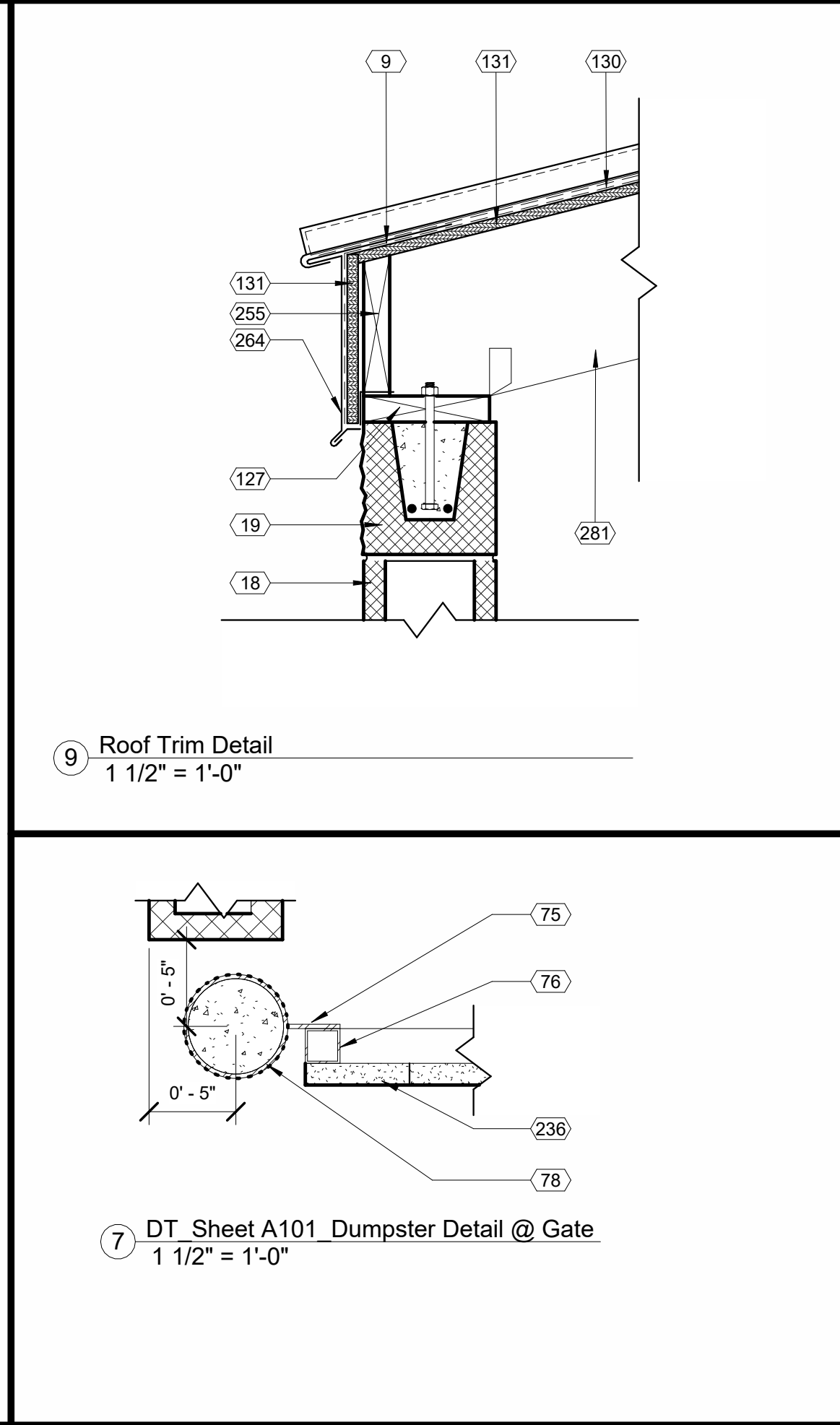
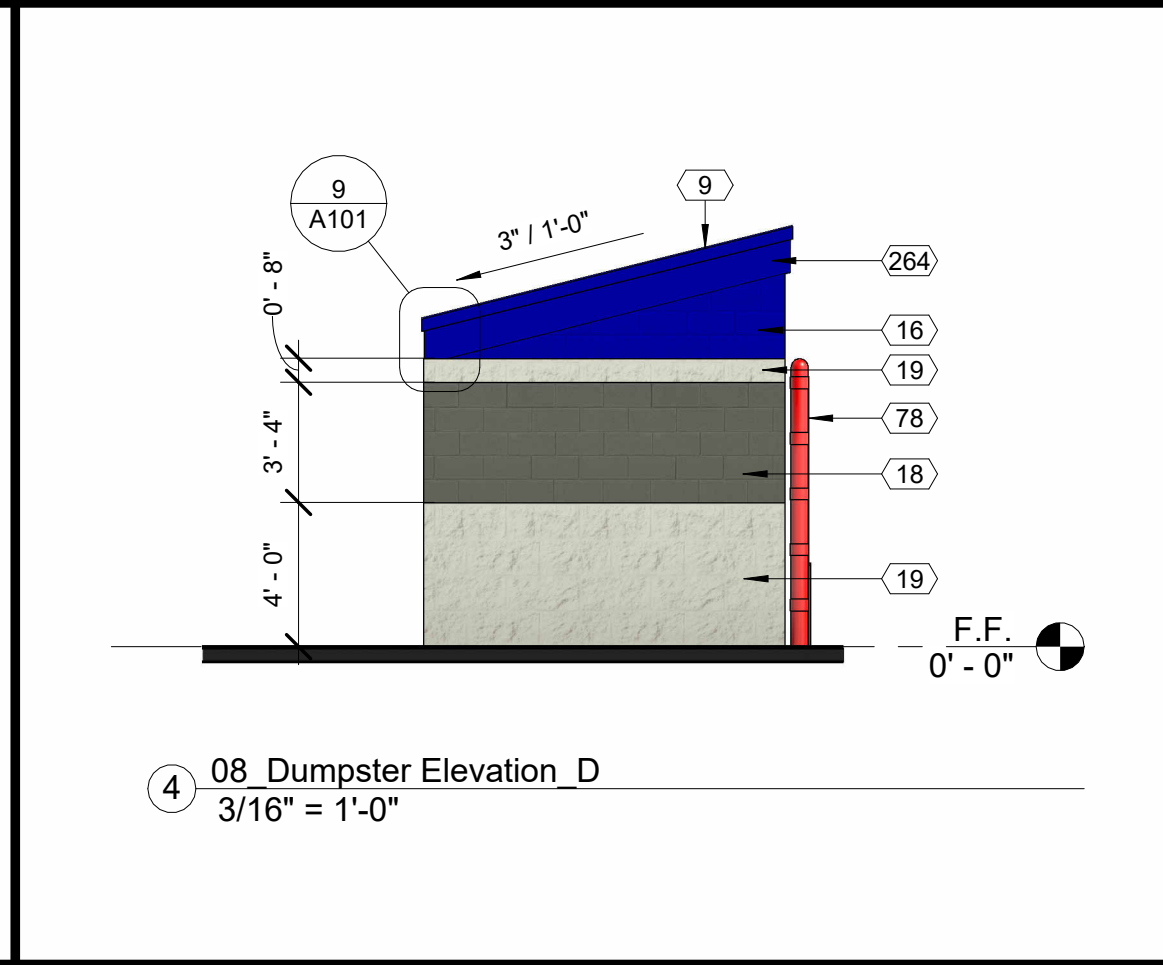
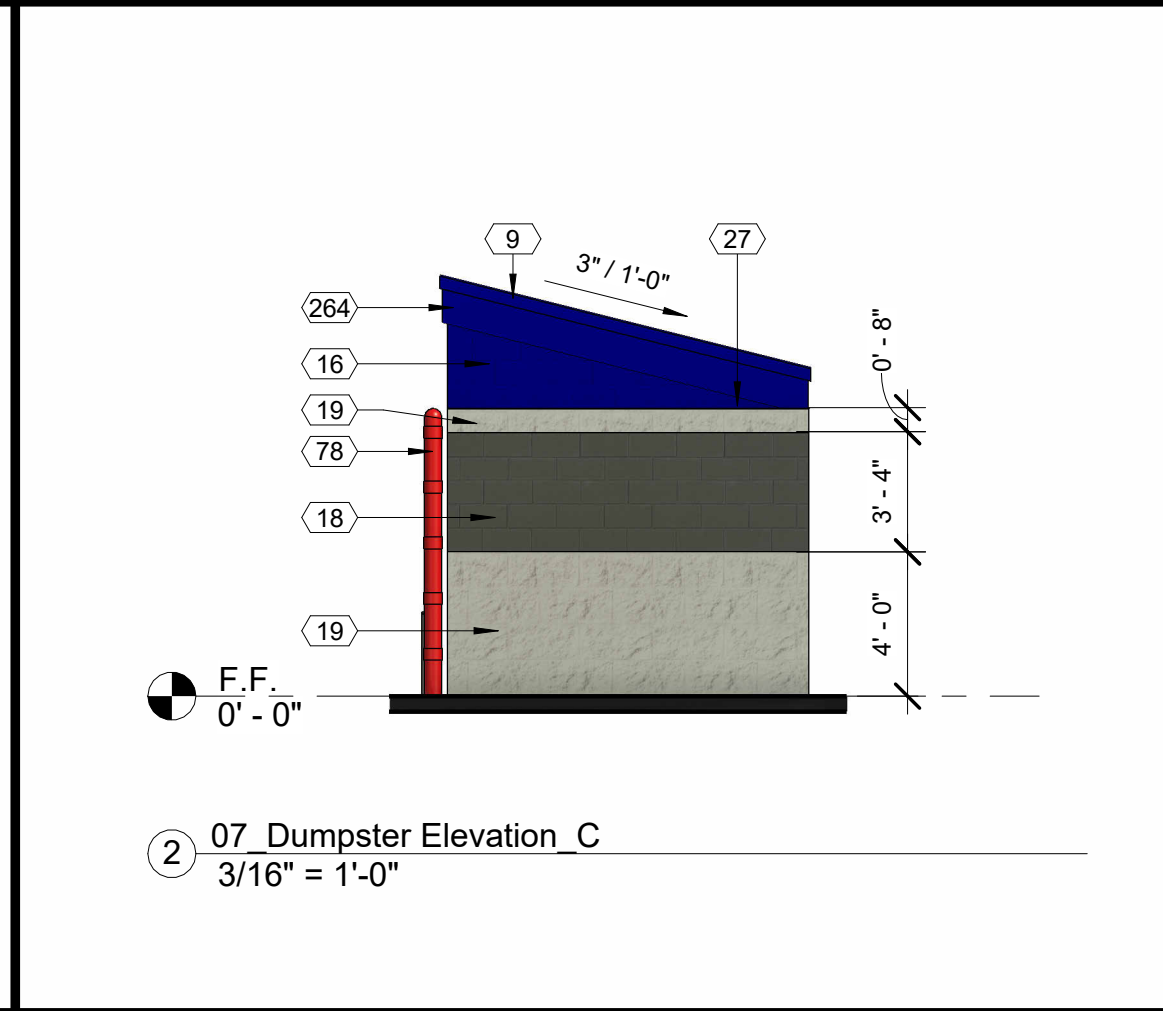
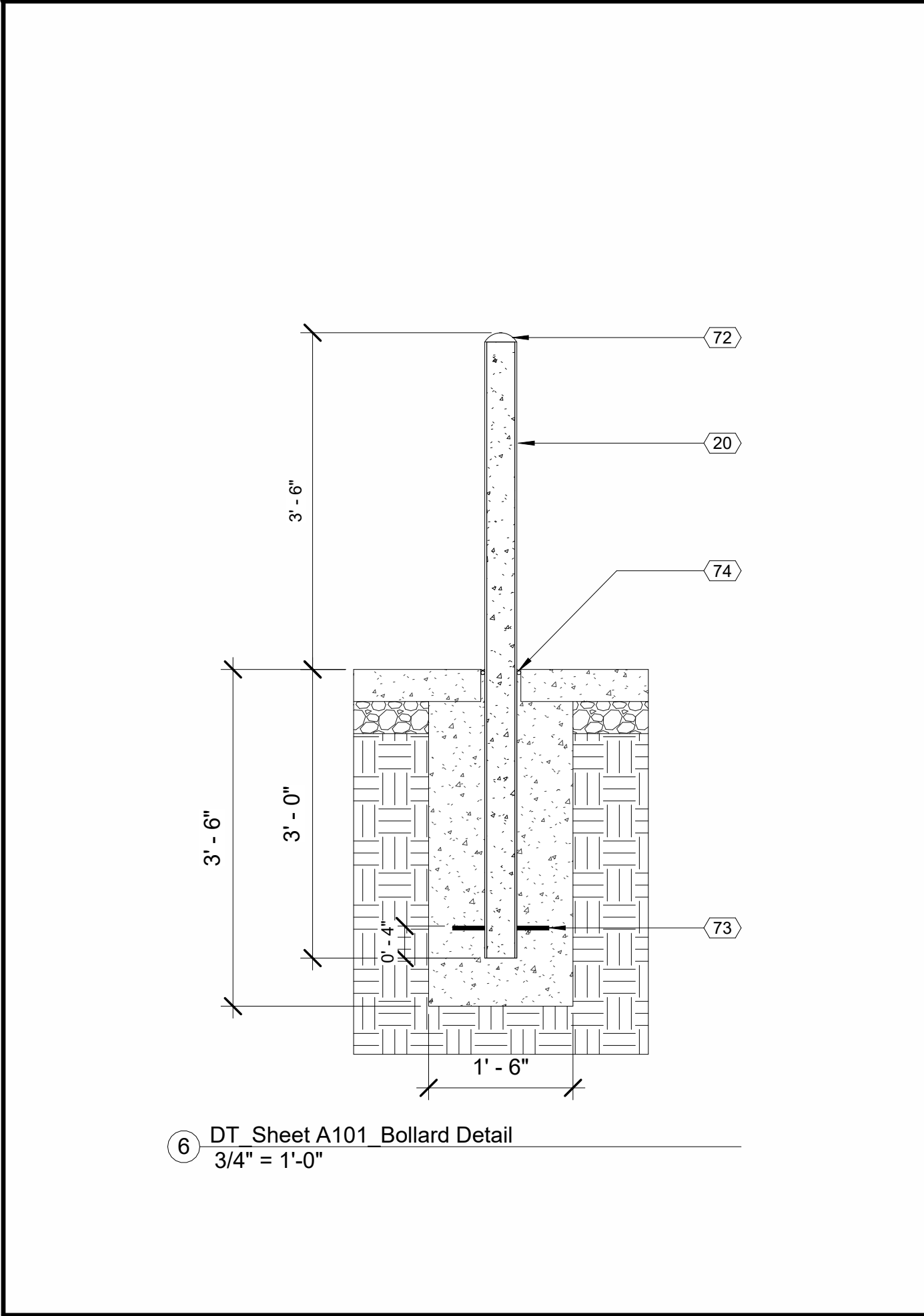
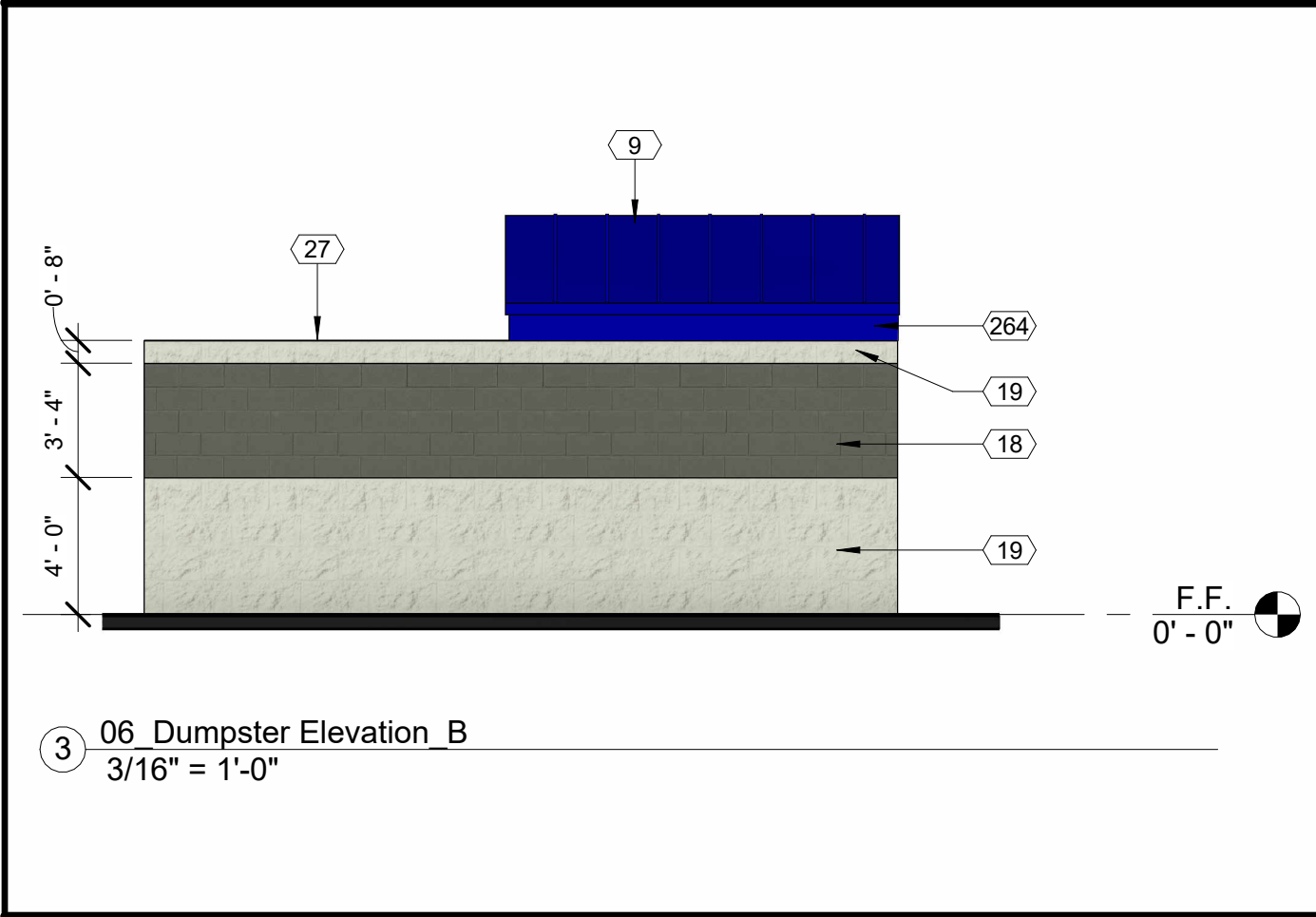
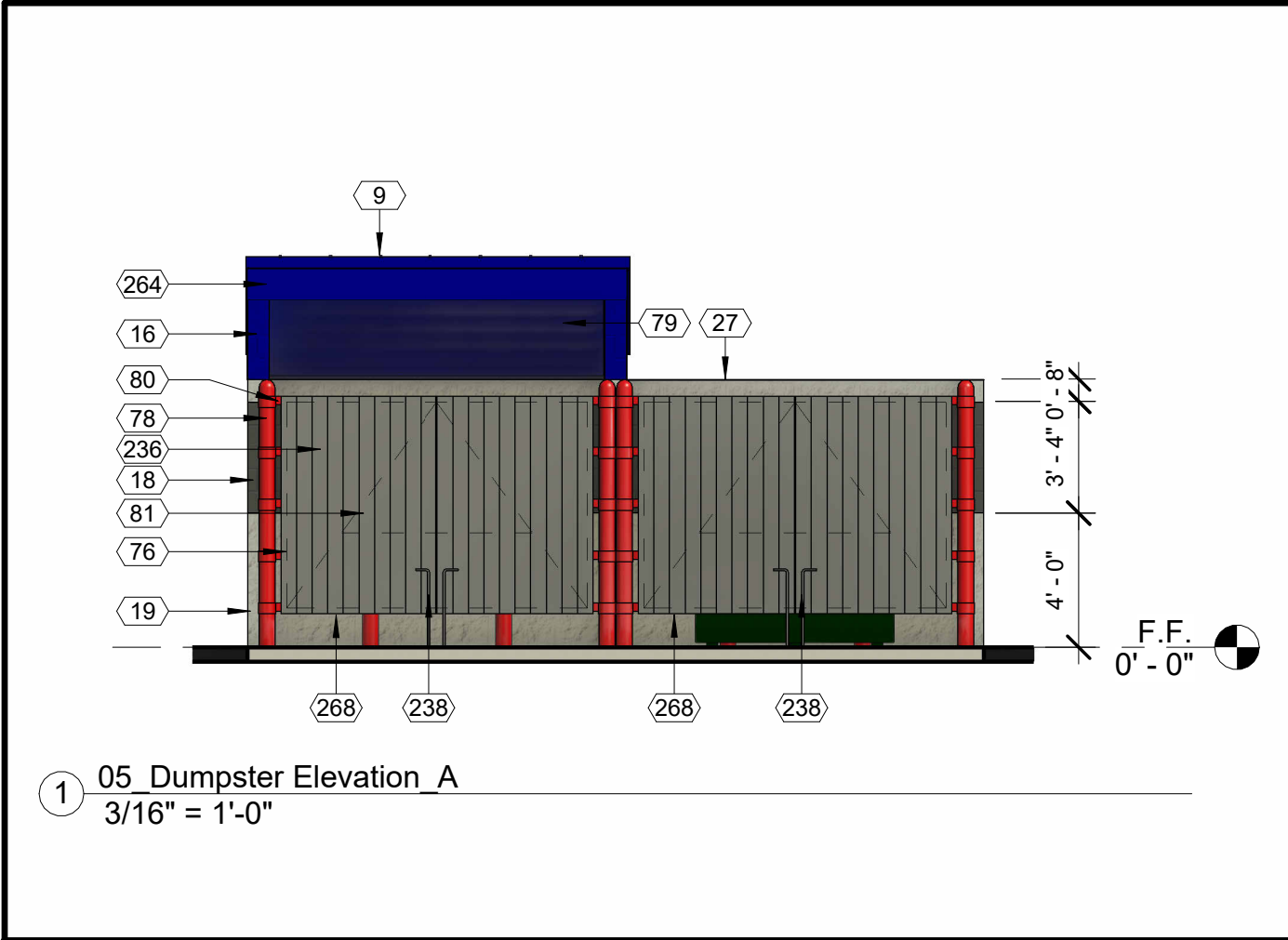
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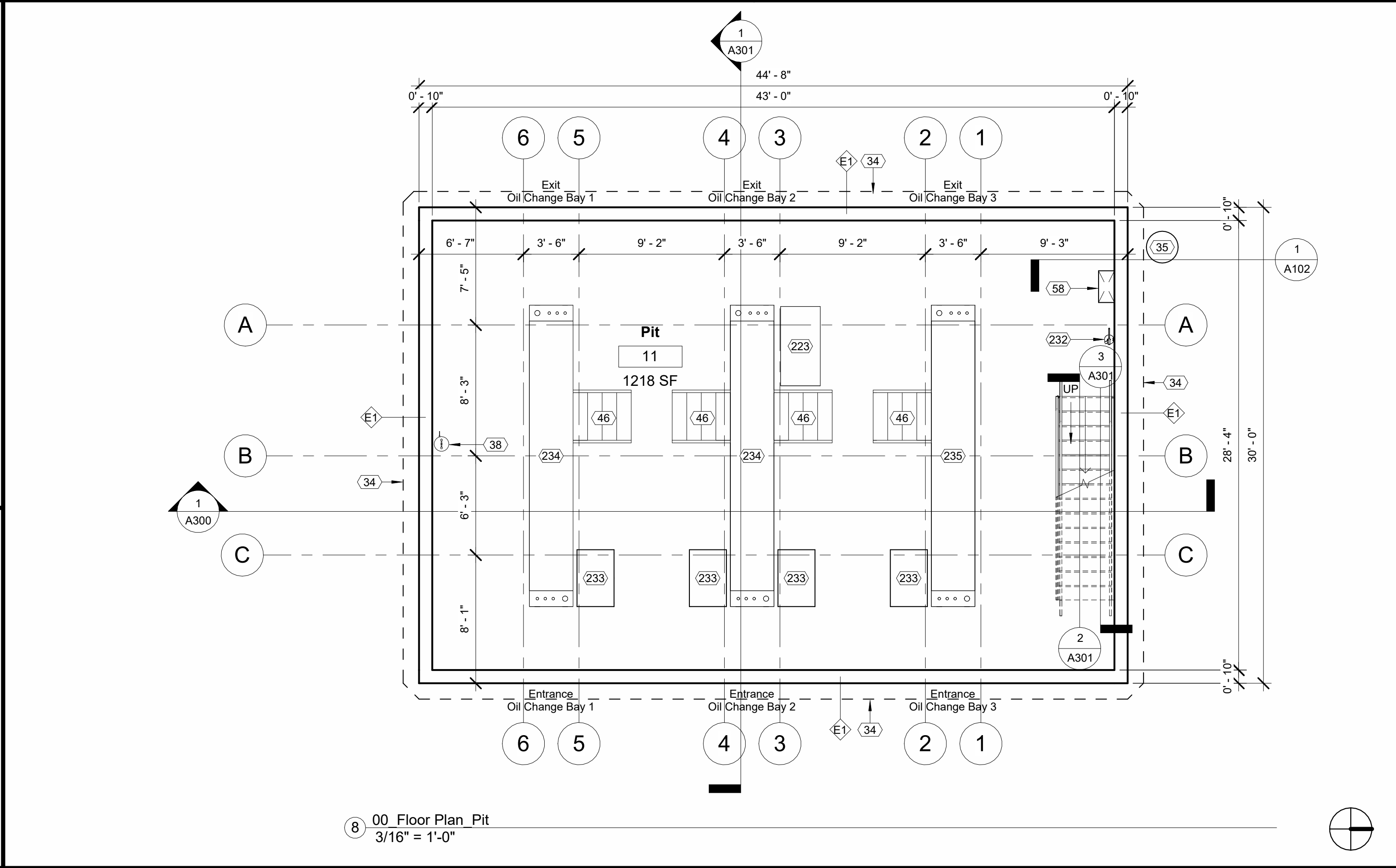
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Floor Plan - Main	
Project number	25048
Date	04/17/2026
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A100	
Scale	3/16" = 1'-0"

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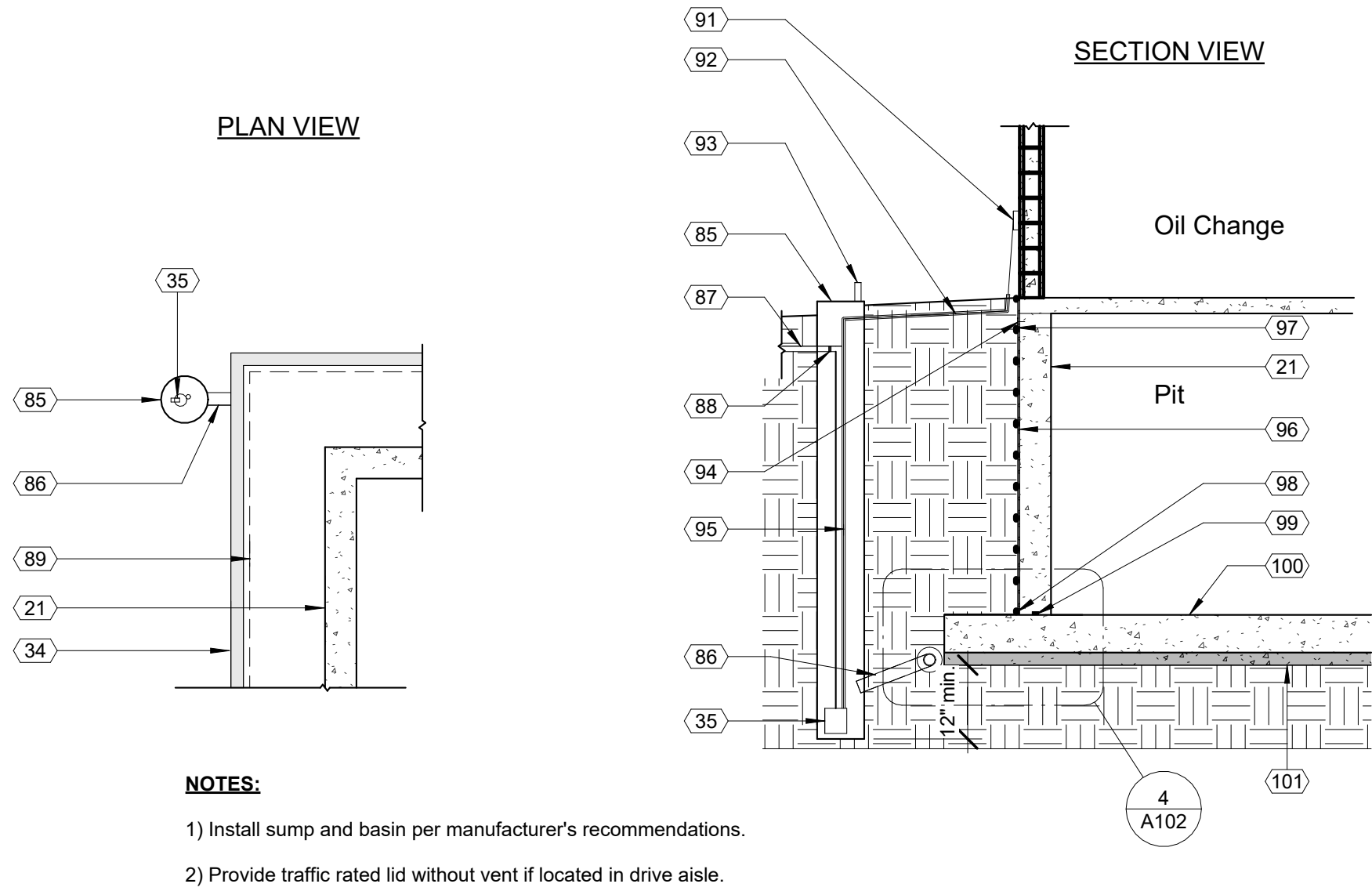
Keynote Schedule	
Tag	Text
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
34	4" perforated perimeter drain with silt filtration fabric. See Details.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
38	Eyewash station. See Plumbing.
46	Oil tank stairs (By Others).
58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.
72	Painted concrete cap for pipe bollard. Color as indicated on Finish Schedule.
73	1/2" diameter x 4" long metal studs. Provide a total of 4.
74	1/2" expansion joint with backer rod and sealant.
75	1/4" x 6" painted steel bracket with continuous fillet weld to painted steel collar hinge and frame. Color as indicated on Finish Schedule.
76	2" x 2" x 1/4" painted steel gate frame with welded connections. Color as indicated on Finish Schedule.
78	6" diameter painted steel dumpster post. Color as indicated on Finish Schedule.
79	Wrap front face and underside of dumpster roof joists with prefinished metal panels (on 5/8" plywood) to match standing seam metal roof. Install and fasten prefinished metal panels per manufacturer's written standards to ensure a weathertight construction.
80	Hinge collar with grease fitting. Collar welded all around to post. Typical.
81	2" x 2" x 1/4" painted steel cross bracing with horizontal bracing in thirds (beyond). Color as indicated on Finish Schedule.
127	2x pressure treated wood nailer.
130	2 layers of #15 roofing felt.
131	5/8" pressure treated plywood decking. See Structural.
223	Work bench (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.
233	275-gallon Class IIIB new oil tank (By Others).
234	928-gallon Class IIIB new oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.
235	928-gallon Class IIIB waste oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.
236	1x6 painted Trex slats secured to frame. See Finish Schedule for color.
237	Dumpster (By Others).
238	Cane bolts with stops.
255	2x pressure treated wood blocking. Use barrier to prevent corrosion between wood and metal.
264	Prefinished metal fascia / trim, with hemmed drip edge, to match standing seam metal roof.
268	Hold bottom of gate above grade as necessary to clear adjacent curb height to ensure gates can swing 180 degrees. Coordinate with Civil drawings for clearance needed.
281	2x P.T. joists. See Structural.



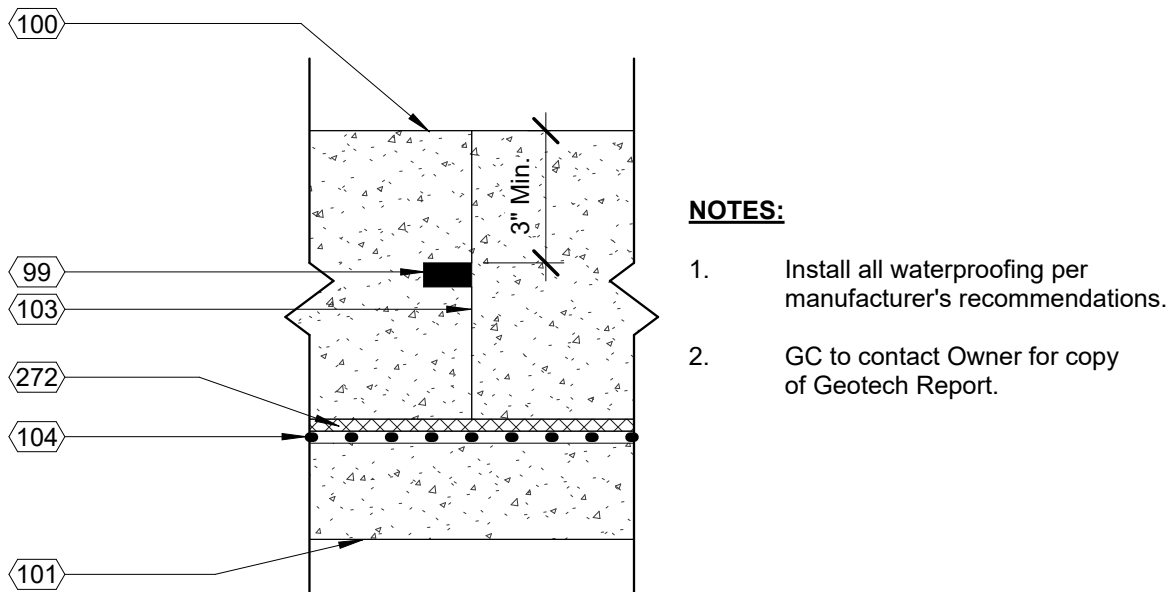
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Pit Floor Plan and Site Details	
Project number	25048
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A101	
Scale	As indicated

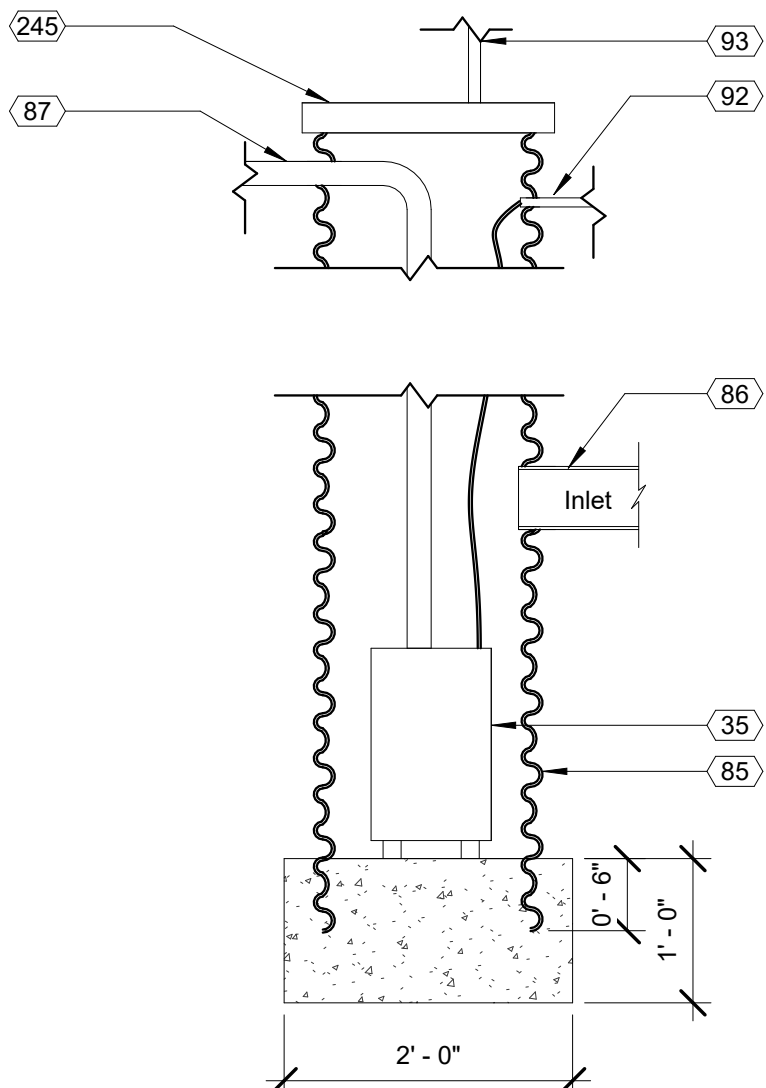


1 DT_Sheet A102_Sump Pump Detail w/ Mud Slab
1/4" = 1'-0"

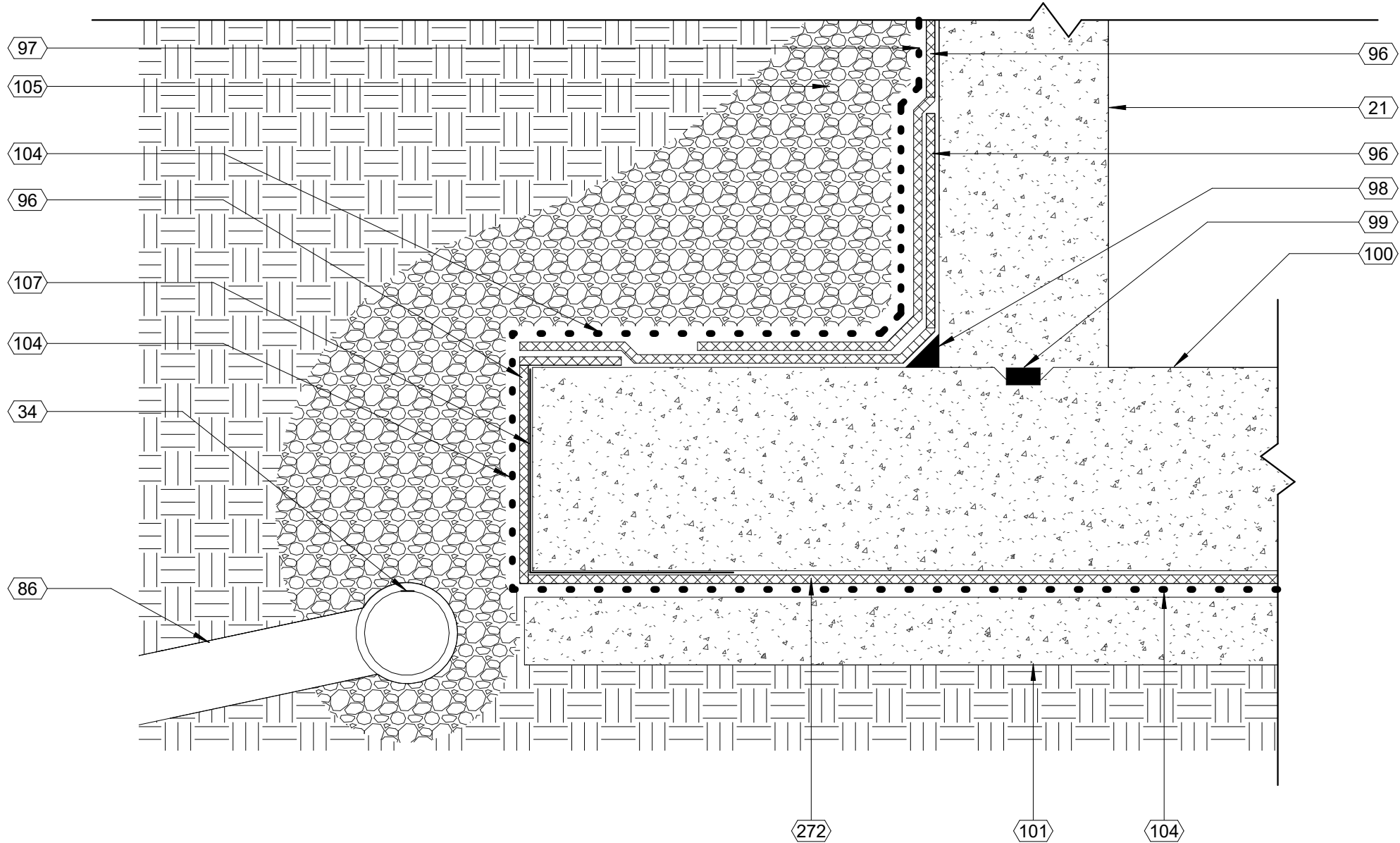


2 DT_Sheet A102_Foundation Construction Joint w/ Mud Slab
1 1/2" = 1'-0"

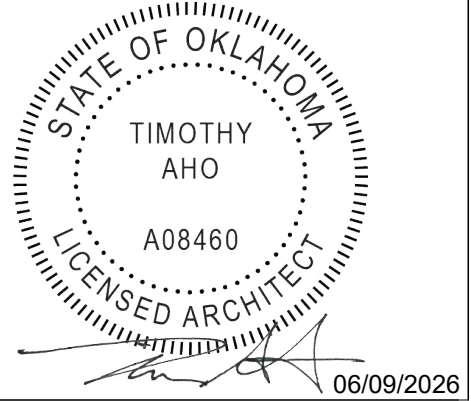
Keynote Schedule	
Tag	Text
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
34	4" perforated perimeter drain with silt filtration fabric. See Details.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
85	18" diameter black corrugated pipe with inlet fittings and solid heavy duty corrugated locking pipe cover set in concrete with power grommet, or Nyloplast drain basin with inlet fittings and lockable cover and power grommet. Contractor's Option. Set pipe in concrete 2'x2'x1'. Embed pipe 6" into concrete.
86	4" discharge pipe to sump pump.
87	2" discharge pipe from sump pump to storm drainage system. Coordinate with Civil.
88	Install union at serviceable depth.
89	Concrete foundation. See Structural.
91	Provide power for sump pump. See Electrical.
92	Power cord for sump pump to be run in conduit from outlet to sump below grade.
93	2" - 3" vent pipe
94	Fasteners at 12" max o.c. for securing subdrainage to pit wall. Follow manufacturer's installation instructions.
95	Pull rope or wire for submersible sump pump.
96	CCW MiraClay woven geotextile against wall/slab.
97	CCW MiraDrain 6200.
98	CCW MiraClay granules or CCW MiraClay mastic.
99	CCW MiraStop BW.
100	Concrete slab. See Structural.
101	4" mud slab if required. See Structural.
103	Construction joint.
104	CCW MiraDrain 9800.
105	3" washed #57 stone wrapped in silt filtration fabric.
107	CCW MiraClay 12" Reinforcing Angle Strip at all outside corners.
245	Lockable cover @ sump pump.
272	CCW MiraClay non-woven geotextile side up.



3 DT_Sheet A102_Sump Pump Section
3/4" = 1'-0"



4 DT_Sheet A102_Foundation Waterproofing with Gravel Fill w/ Mud Slab
1 1/2" = 1'-0"



Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

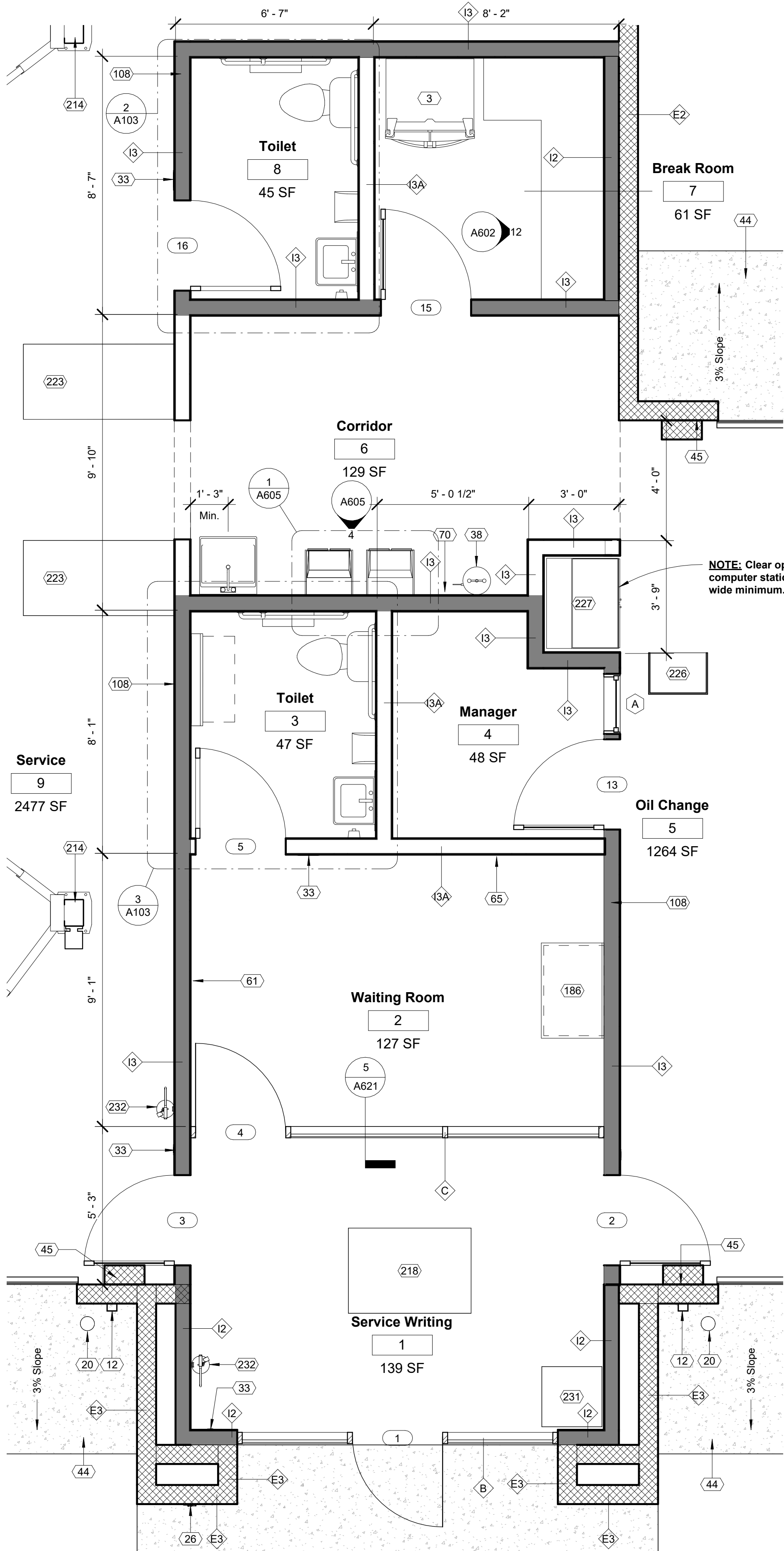
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Foundation Details

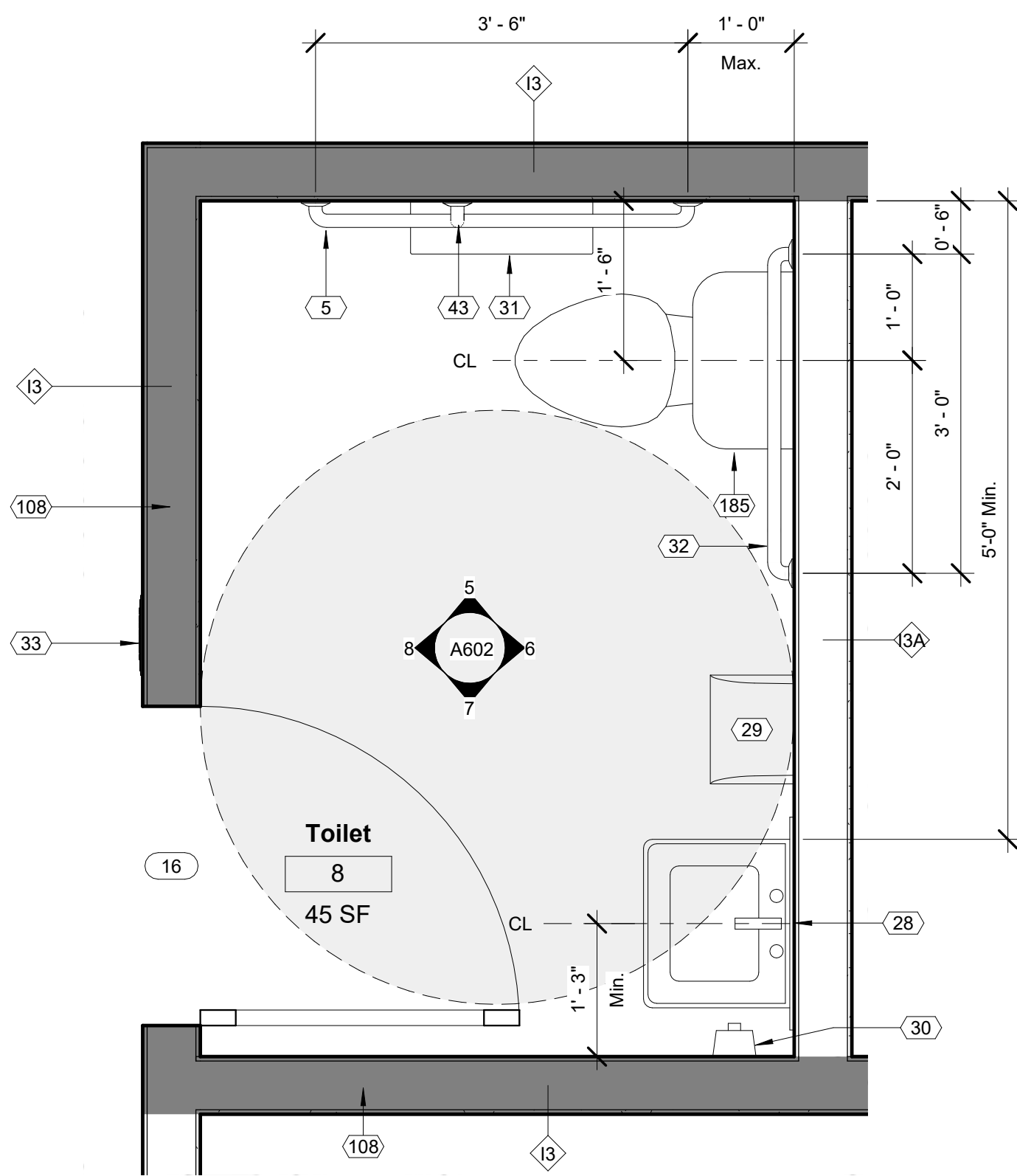
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A102

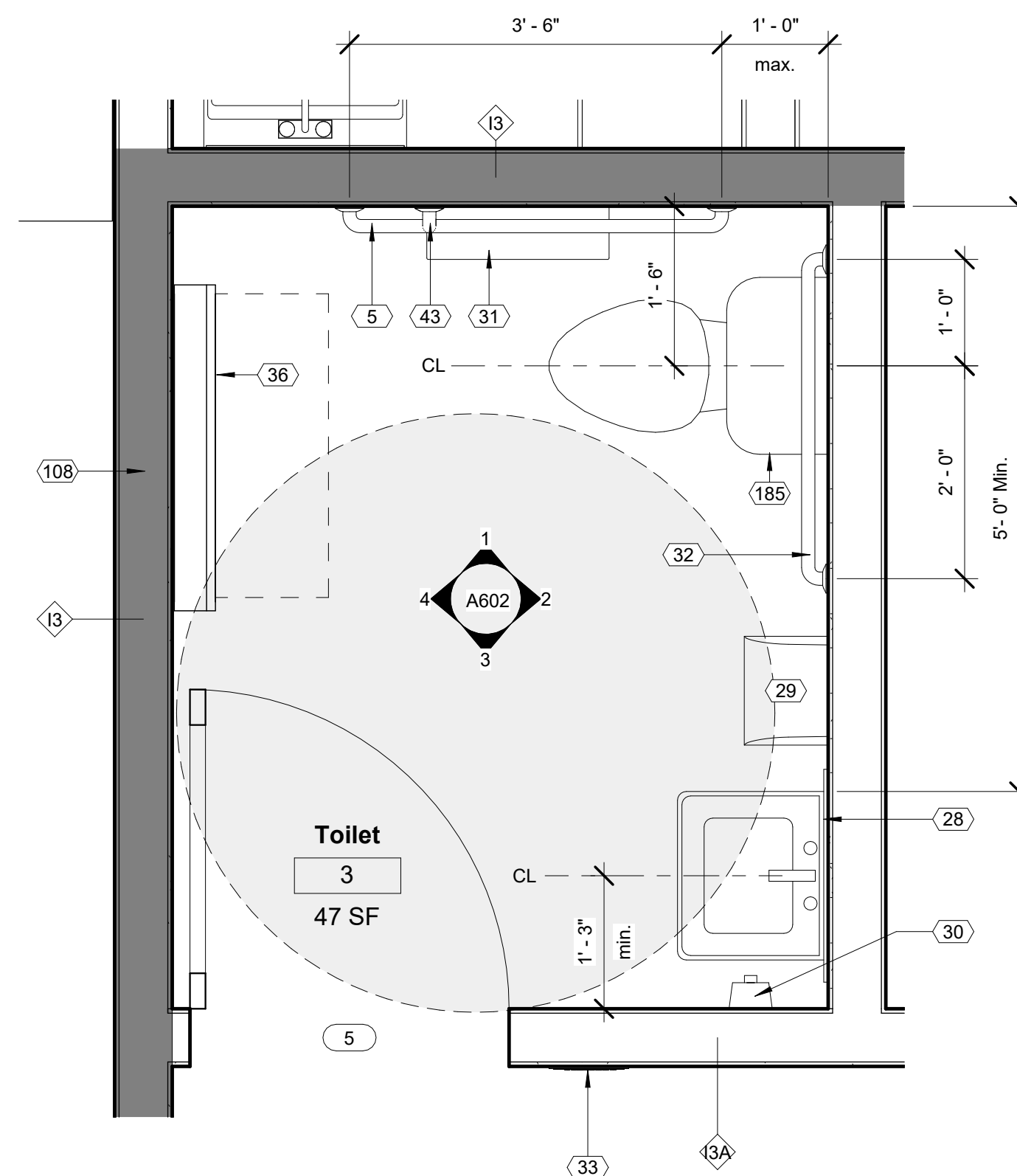
Scale As indicated



1 08 Enlarged Plan Main
3/8" = 1'-0"

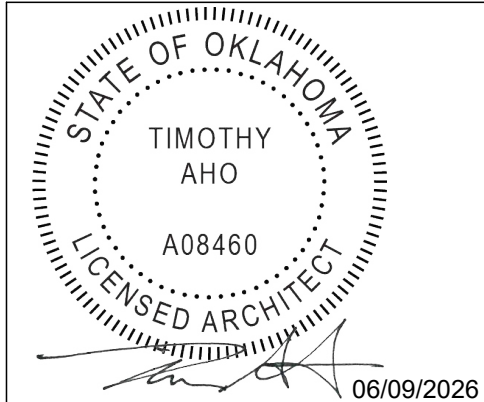


2 10 Enlarged Plan Toilet 8
3/4" = 1'-0"



3 09 Enlarged Plan Toilet 3
3/4" = 1'-0"

Keynote Schedule	
Tag	Text
3	Location of 30" wide refrigerator (By Others).
5	42" grab bar with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm, (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
28	Framed mirror. See Specification 102800 Toilet, Bath, and Laundry Accessories.
29	Automatic Towel Dispenser (By others). Provide blocking in wall as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
30	Wall mounted soap dispenser (By Others). Provide blocking in wall as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
31	Jumbo Dual Roll Toilet Tissue dispenser (By Others). Provide blocking in wall as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
32	36" grab bar with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
33	ADA compliant room / exit sign. See Details.
36	Surface mounted baby changing station with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
38	Eyewash station. See Plumbing.
43	24" vertical grab bar with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
44	Concrete apron as required. Slope away from building with 3% slope minimum. See Civil. Maintain 2% slope max at all man doors.
45	Jamb reinforcing as required. See Structural.
61	Wall mounted T.V. by others. See Electrical.
65	Word Wall. Use extreme bond primer. Graphics (By Others).
70	Full-height FRP, entire wall, unless otherwise noted. See Specification 066400 Plastic Paneling (Fiberglass Reinforced Panels).
108	Gray shading indicates these walls are the boundaries for the building thermal envelope assembly.
185	Flush valve on transfer side of water closet.
186	Coffee cabinet.
214	10K Lift (By Others).
218	Service Writing Desk.
223	Work bench (By Others).
226	Computer podium (By Others).
227	Cashier computer station (By Others). Clear opening for cashier computer station must be 38 1/2" wide minimum. No Exceptions.
231	Beverage refrigerator (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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IFC-0	Issued for Construction	06/25/2026

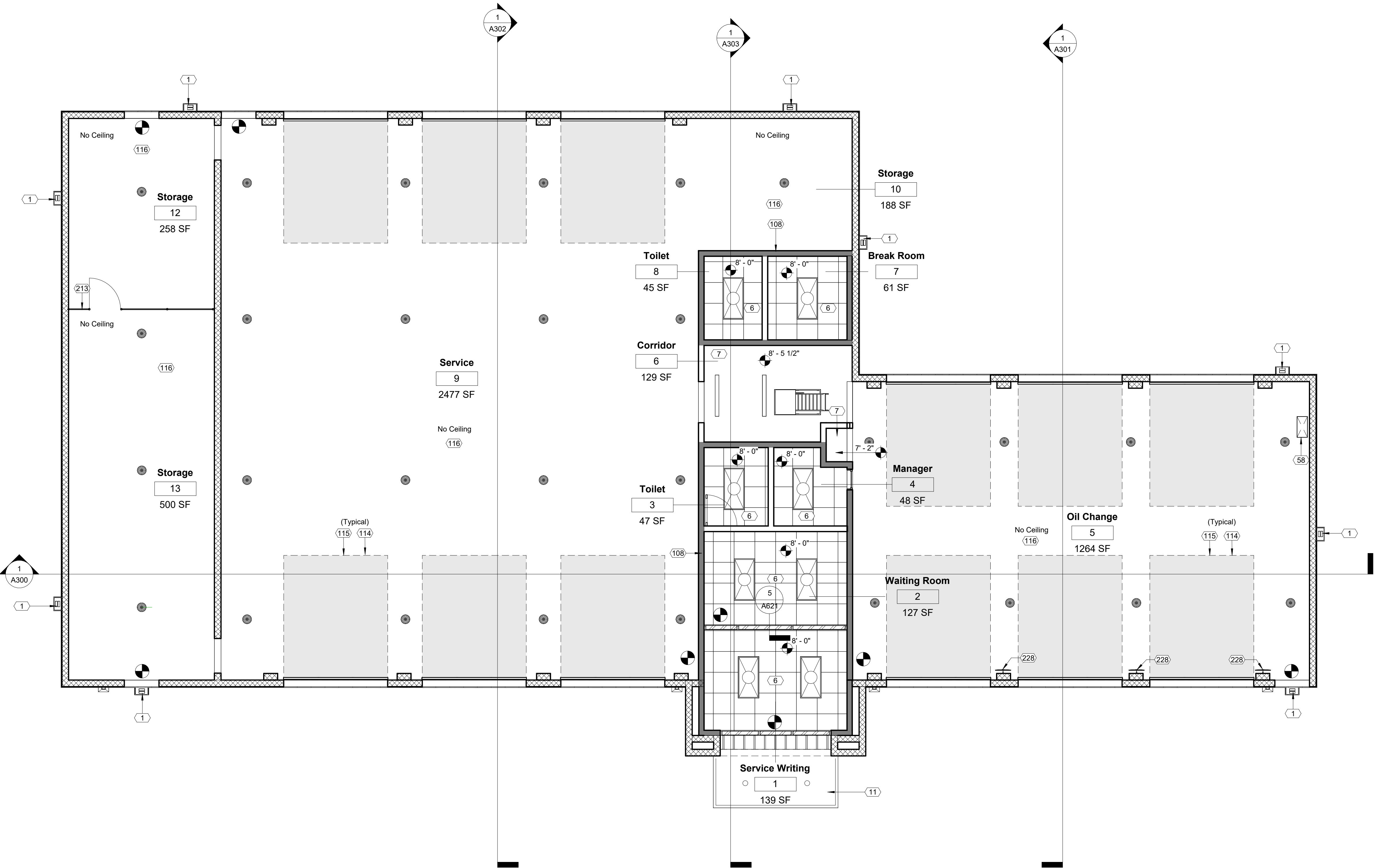
2026
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Enlarged Floor
Plans and Details

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

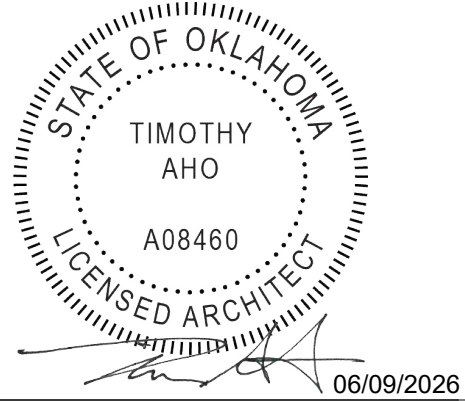
A103

Scale As indicated



NOTE: Bar joists not shown for clarity.

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
6	Lay-in acoustical ceiling tile and grid, supported from structure.
7	Painted 1/2" gypsum board ceiling secured to structure above. 5/8" Type X where indicated. See Details for # of layers.
11	Pre-finished metal canopy. See Details.
58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.
108	Gray shading indicates these walls are the boundaries for the building thermal envelope assembly.
114	Contractor to ensure overhead door, track, etc. meets the minimum vertical clearance required for equipment (By Others). Typical.
115	Dashed line indicates extent of overhead doors. Typical.
116	See Engineering drawings for Mechanical/Electrical/Plumbing fixtures and equipment. Typical.
213	8-foot-high chain-link fence with 3'-0"x7'-0" gate. Fence poles to be surface mounted.
228	Convex mirrors (By Others).



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IFC-0	Issued for Construction	06/25/2026

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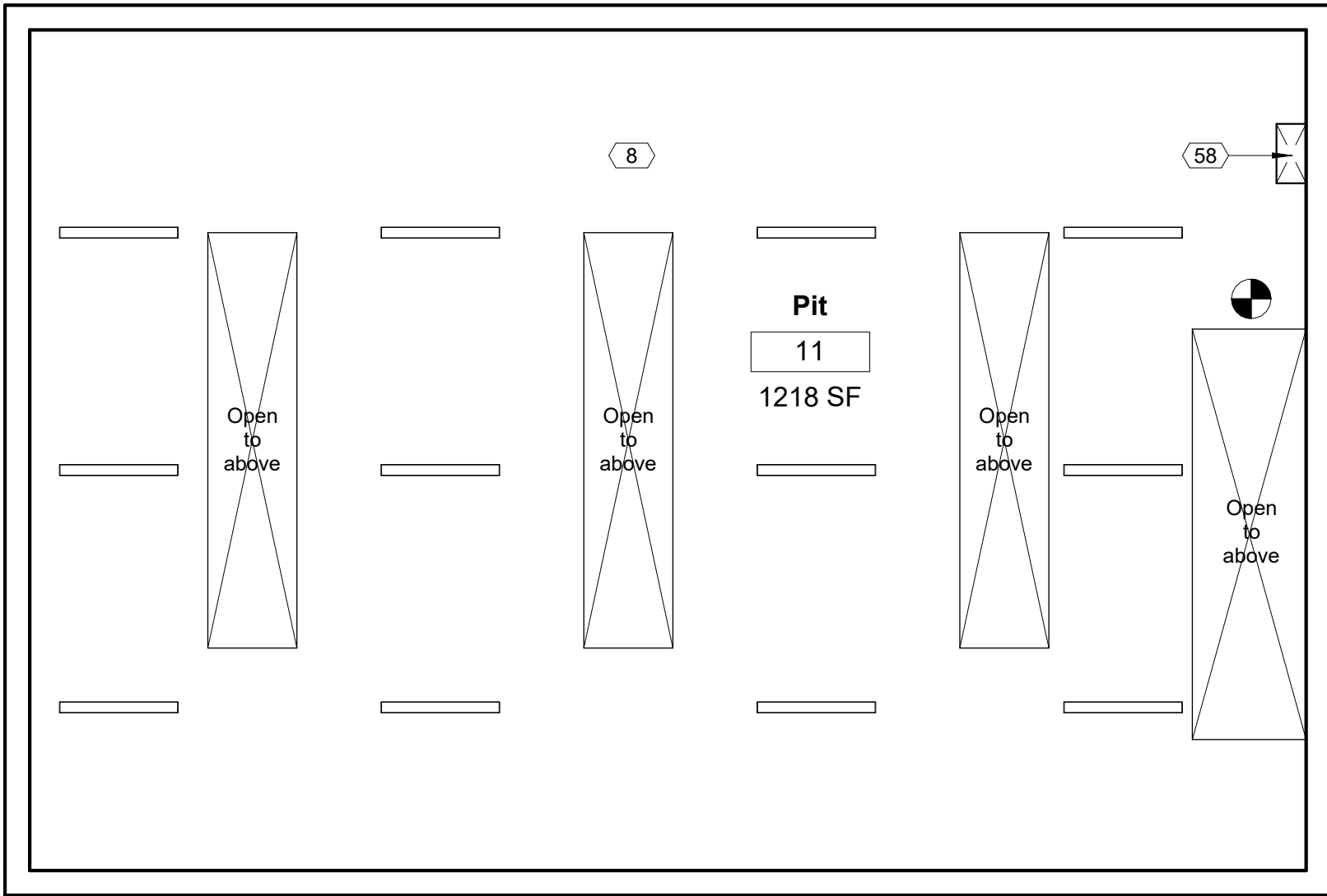
Reflected Ceiling
Plan - Main

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

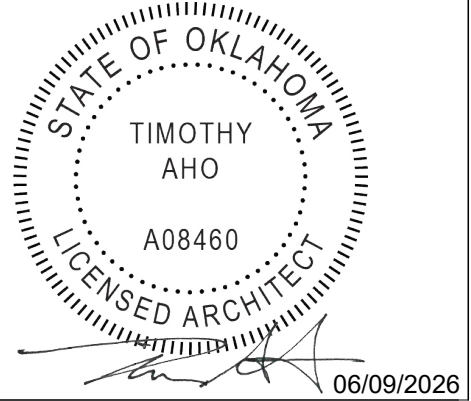
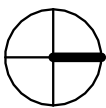
A104

Scale 3/16" = 1'-0"

Keynote Schedule	
Tag	Text
8	Exposed to structure above.
58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.



① 00_RCP_Pit
3/16" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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IFC-0	Issued for Construction	06/25/2026

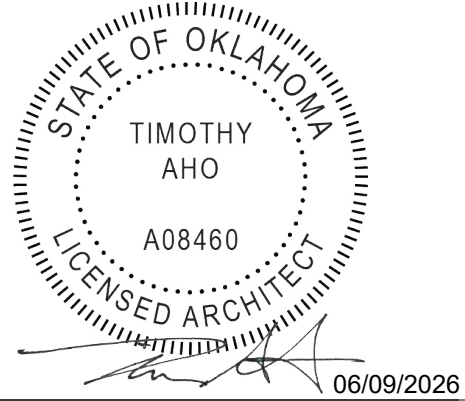
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Reflected Ceiling
Plan - Pit

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A105

Scale 3/16" = 1'-0"



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IFC-0	Issued for Construction	06/25/2026

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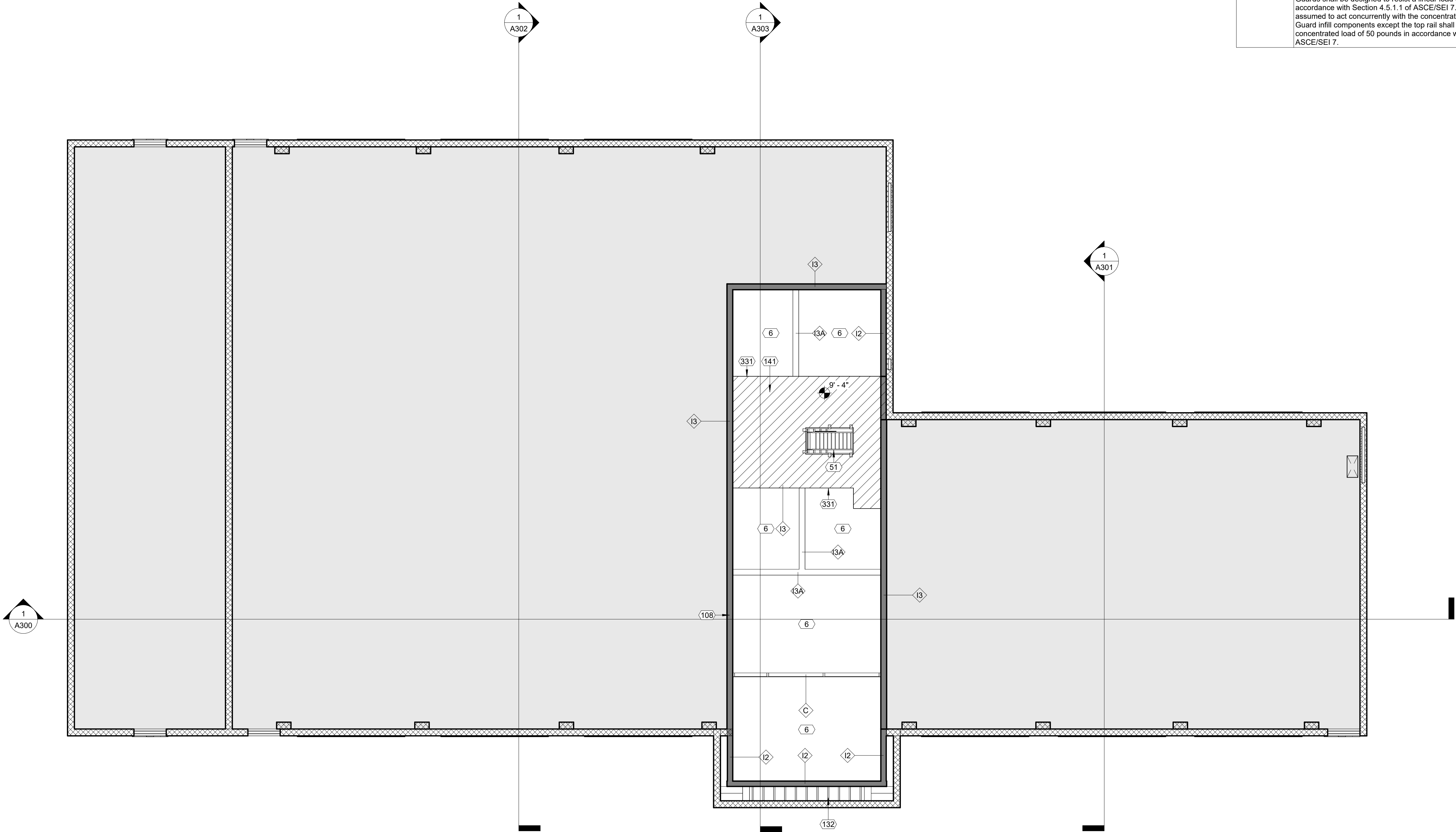
Floor Plan - Platform

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

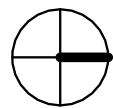
A106

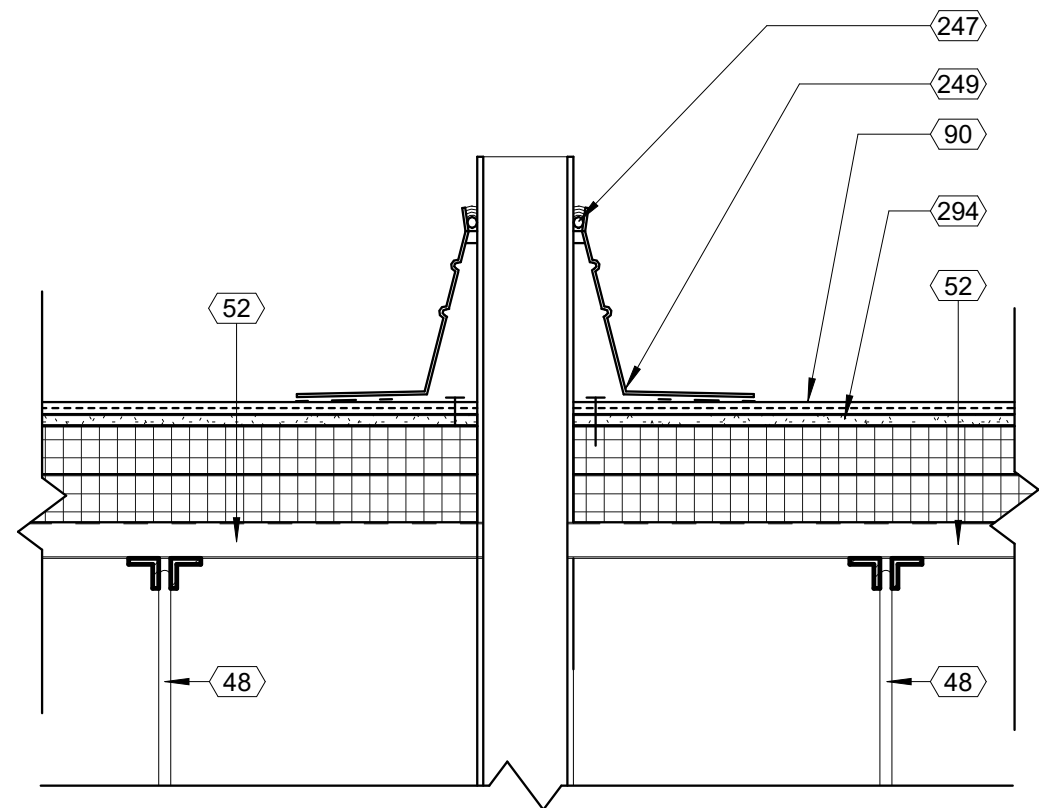
Scale 3/16" = 1'-0"

Keynote Schedule	
Tag	Text
6	Lay-in acoustical ceiling tile and grid, supported from structure.
51	Attic access ladder.
108	Gray shading indicates these walls are the boundaries for the building thermal envelope assembly.
132	2x wood framing @ 16" o.c. with kraft face R-38 batt insulation in between. Kraft face in contact with substrate.
141	3/4" tongue and groove plywood on 2x10 wood joists @ 12" o.c. Provide R-38 batt kraft face insulation in between joists. Kraft face in contact with substrate. (If applicable, it shall be the Contractor's option to provide plywood attached to bottom of joists for insulation to rest on or secure insulation to joists without the need for the plywood bottom).
331	Provide 42" guards at all exposed edges of above ceiling platforms. Concentrated Load: Guards shall be designed to resist a concentrated load of 200 pounds in accordance with Section 4.5.1 of ASCE/SEI 7. Uniform Load: Guards shall be designed to resist a linear load of 50 pounds per linear foot in accordance with Section 4.5.1.1 of ASCE/SEI 7. This load need not be assumed to act concurrently with the concentrated load specified above. Guard infill components except the top rail shall be designed to resist a concentrated load of 50 pounds in accordance with Section 4.5.1.2 of ASCE/SEI 7.

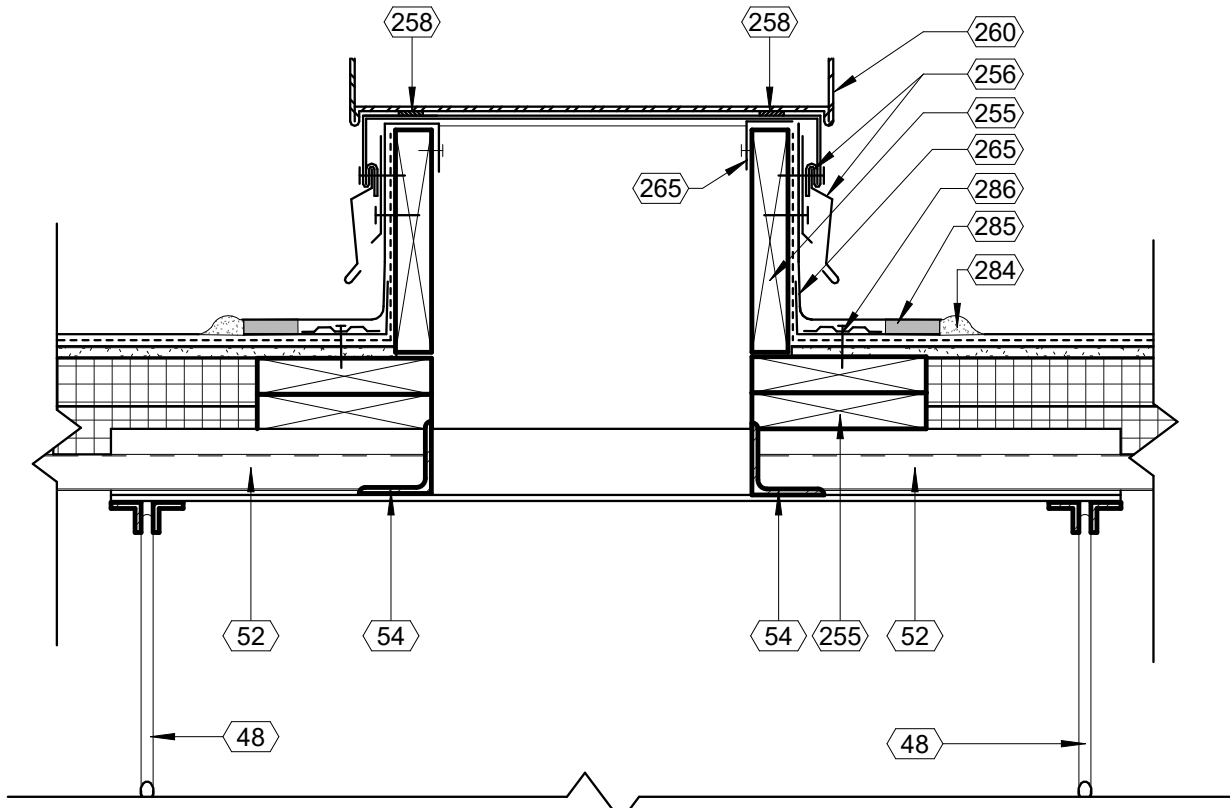


1 11_Floor Plan_Platform
3/16" = 1'-0"



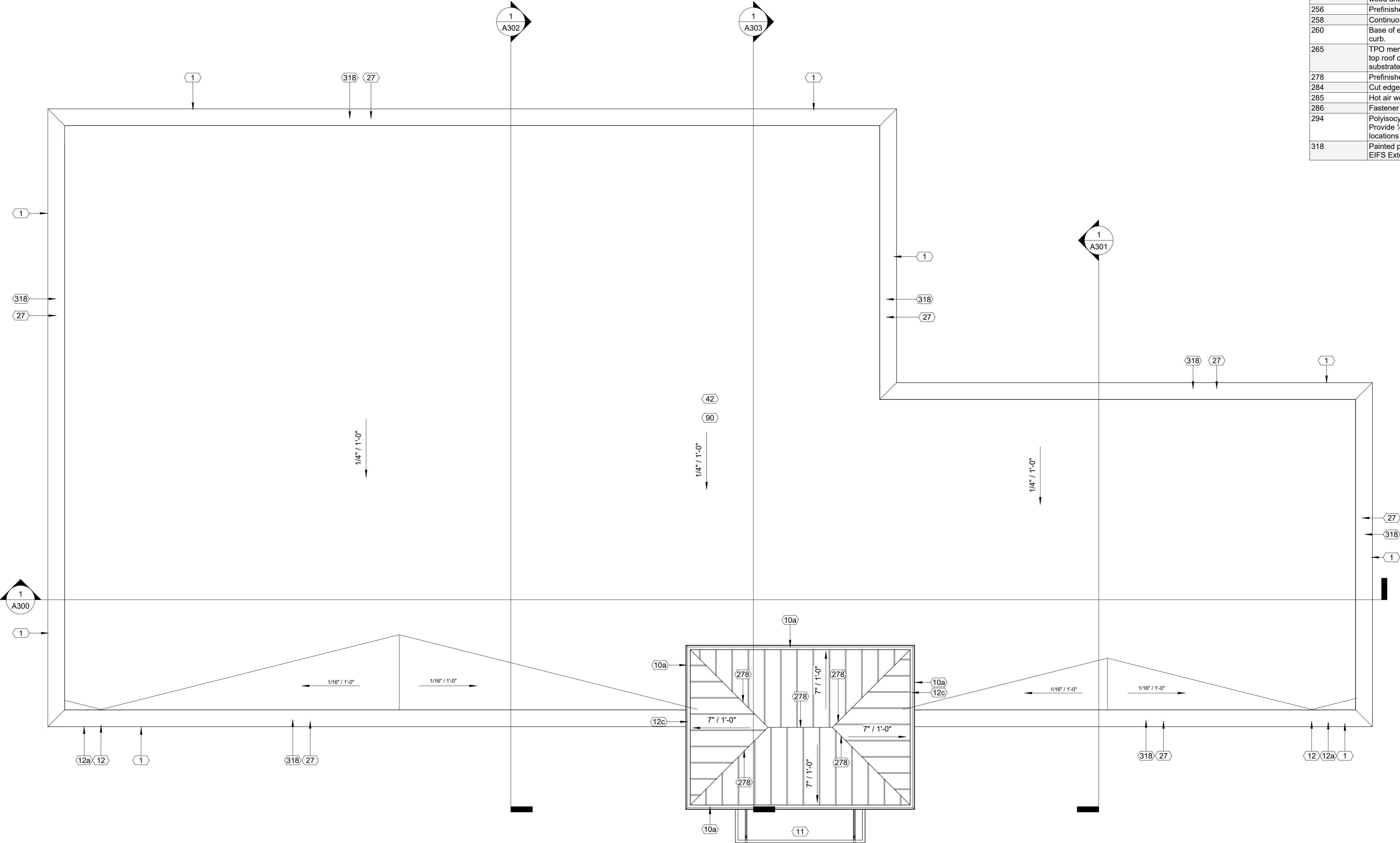


2 DT. Sheet A107. TPO Roof Penetration Detail
1 1/2" = 1'-0"

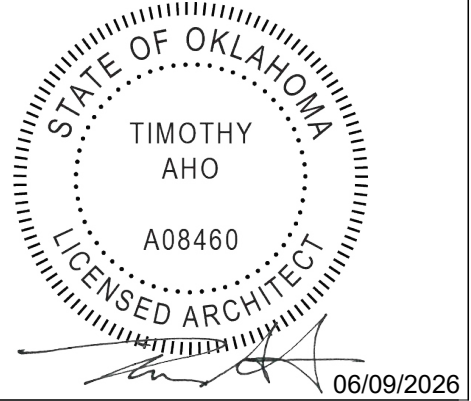


3 DT. Sheet A107. TPO Roof Curb Detail
1 1/2" = 1'-0"

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
10a	Prefinished metal gutter. Match SSMR color.
11	Pre-finished metal canopy. See Details.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm. (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
12a	Emergency roof drain scupper. Locate adjacent to conductor head and 2 inches higher than downspout scupper location. See Specification 077100 Roof Specialties.
12c	Prefinished metal downspout. Match SSMR color. Discharge on TPO roof below.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
42	Paint all roof penetrations to match roof color.
48	Bar joist. See Structural.
52	Galvanized metal roof deck. See Structural.
54	Steel angle. See Structural.
90	Fully adhered TPO membrane roofing installed per manufacturer's written instructions. See Specification 075423 Thermoplastic Polyolefin (TPO) Roofing.
247	Sealant compatible with water block sealant.
249	TPO pre-molded vent boot with pre-manufactured TPO membrane flashing by TPO manufacturer.
255	2x pressure treated wood blocking. Use barrier to prevent corrosion between wood and metal.
256	Prefinished metal flashing and counterflashing.
258	Continuous sealant around perimeter.
260	Base of equipment to extend 1/2" minimum beyond and down over top of roof curb.
265	TPO membrane turned vertically up the wall and fastened to wood blocking at top roof curb, or top of wall framing per detail. Adhere TPO membrane to wall substrate with manufacturer approved bonding adhesive.
278	Prefinished metal ridge/hip cap by metal roofing manufacturer.
284	Cut edge sealant at TPO roof membrane flashing.
285	Hot air weld at TPO membrane and membrane flashing.
286	Fastener and seam fastening plate.
294	Polyisocyanurate insulation board (See TPO Spec for required R-value). Provide 1/2" cover board, mechanically fastened, over the top of insulation in locations where membrane roofing is to be applied.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.



1 03 Roof Plan
3/16\"/>



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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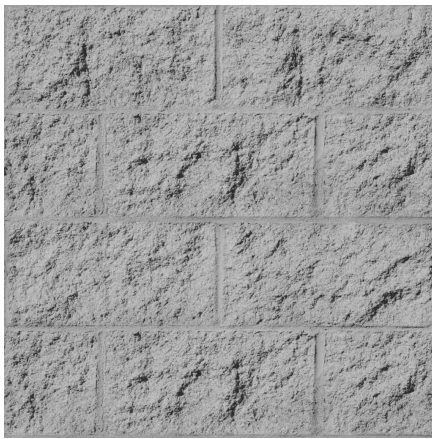
No.	Description	Date
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Roof Plan

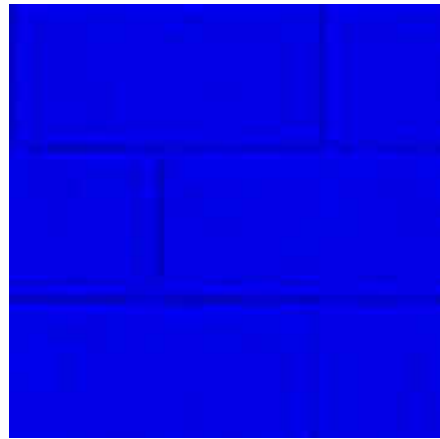
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
A107	
Scale	As indicated

EXTERIOR FINISH MATERIAL LEGEND



PAINTED SPLIT-FACE CMU

Color: SW7669 Summit Gray
Manuf: Sherwin Williams
Keynote: 19



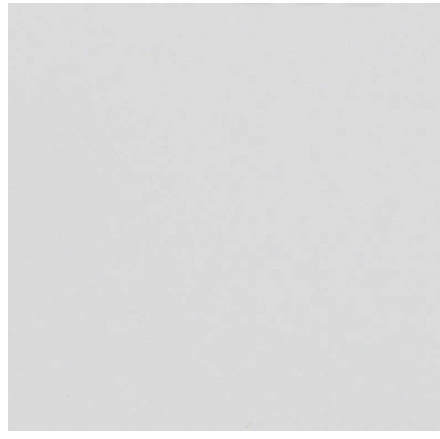
PAINTED SMOOTH-FACE CMU

Color: SW6966 Blueblood
Manuf: Sherwin Williams
Keynote: 16



PAINTED SMOOTH-FACE CMU

Color: SW7075 Web Gray
Manuf: Sherwin Williams
Keynote: 18



HM DOORS

Color: SW7669 Summit Gray
Manuf: Sherwin Williams



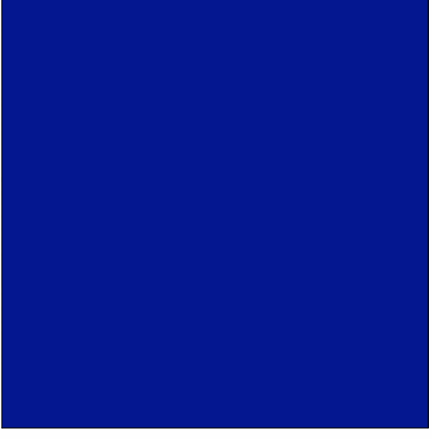
STOREFRONT DOORS/WINDOWS

Color: Clear Anodized Aluminum
Manuf: YKK



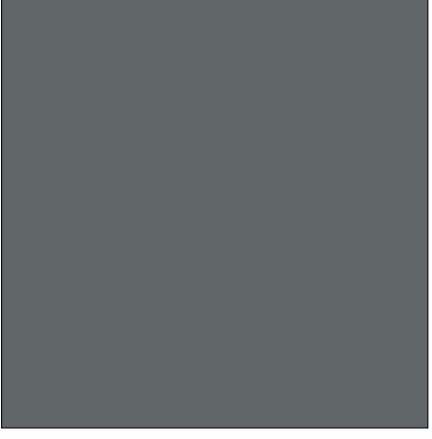
BOLLARDS

Color: Safety Red
Manuf: Sherwin Williams



STANDING SEAM METAL ROOF

Color: Royal Blue
Manuf: Berridge



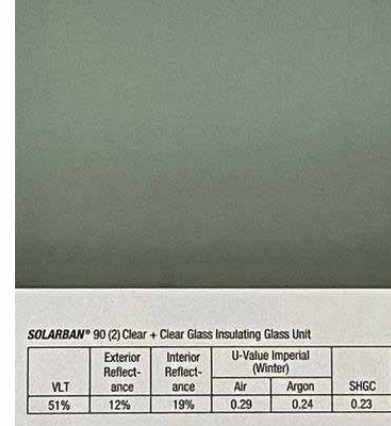
CONDUCTOR HEADS / DOWNSPOUTS

Color: Match SW7075 Web Gray
Manuf: Sherwin Williams



OVERHEAD DOORS

Color: White
Manuf: Overhead Door Co.



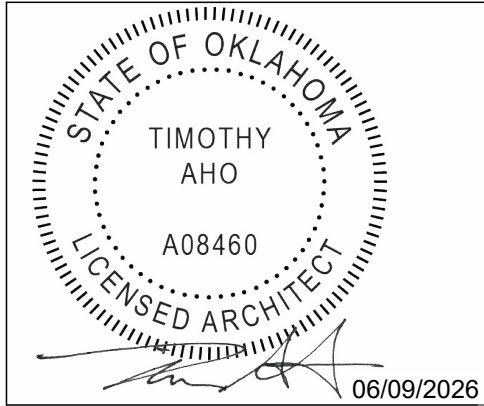
TINTED GLAZING

Color: Solarban 90 on Clear
Manuf: Vitro Architectural Glass

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Prefinished metal gutter. Match SSMR color.
11	Pre-finished metal canopy. See Details.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm. (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
12a	Emergency roof drain scupper. Locate adjacent to conductor head and 2 inches higher than downspout scupper location. See Specification 077100 Roof Specialties.
12c	Prefinished metal downspout. Match SSMR color. Discharge on TPO roof below.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
22	Signage (By Others). See Electrical.
23	Wall sconce (By Others). See Electrical. Locate junction box for sconces 5'-0" a.f.f. vertically and 4" from center horizontally. Verify with sign company prior to rough-in.
25	Control joint. For control joints in concrete floor slabs, coordinate location with equipment layout by others. Max. distance between control joints in slabs not to exceed 12'-0". Control joints in walls shall be 4'-0" max from wall intersection or corner and every 20'-0".
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
47	Provide address identification as directed by the Local Fire Marshal or AHJ, but letter size shall not be less than 4 inches high.
53	Conduit to be centered horizontally for lights in canopy. Verify with sign company prior to rough-in.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
59	Gas meter. See Plumbing.
144	Electrical meter. See Electrical.
278	Prefinished metal ridge/hip cap by metal roofing manufacturer.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.



01_ Exterior Elevation_Front (East)
3/16" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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IFC-0	Issued for Construction	06/25/2026

2026
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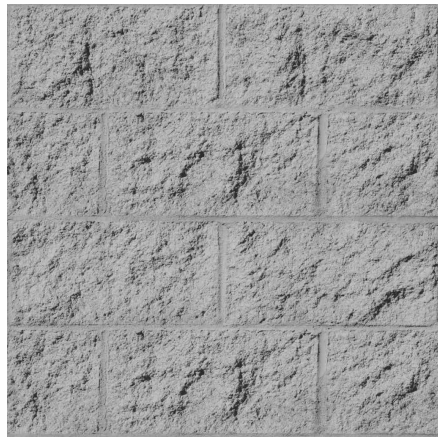
Exterior Elevation -
Front (East)

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A200

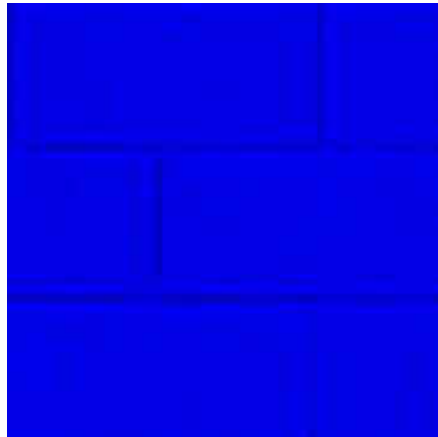
Scale 3/16" = 1'-0"

EXTERIOR FINISH MATERIAL LEGEND



PAINTED SPLIT-FACE CMU

Color: SW7669 Summit Gray
Manuf: Sherwin Williams
Keynote: 19



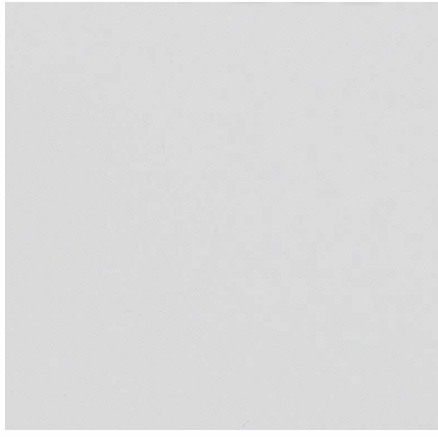
PAINTED SMOOTH-FACE CMU

Color: SW6966 Blueblood
Manuf: Sherwin Williams
Keynote: 16



PAINTED SMOOTH-FACE CMU

Color: SW7075 Web Gray
Manuf: Sherwin Williams
Keynote: 18



HM DOORS

Color: SW7669 Summit Gray
Manuf: Sherwin Williams



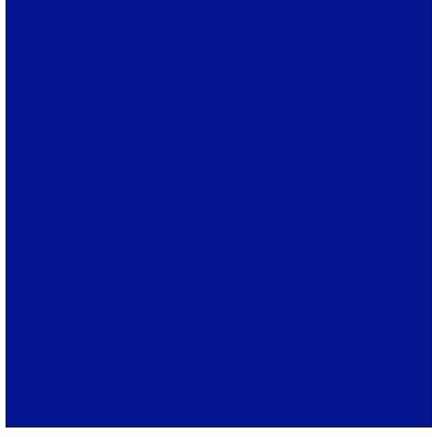
STOREFRONT DOORS/WINDOWS

Color: Clear Anodized Aluminum
Manuf: YKK



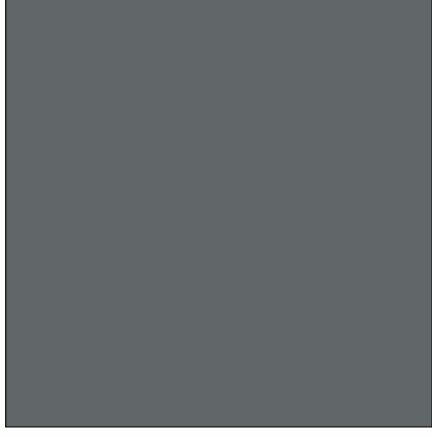
BOLLARDS

Color: Safety Red
Manuf: Sherwin Williams



STANDING SEAM METAL ROOF

Color: Royal Blue
Manuf: Berridge



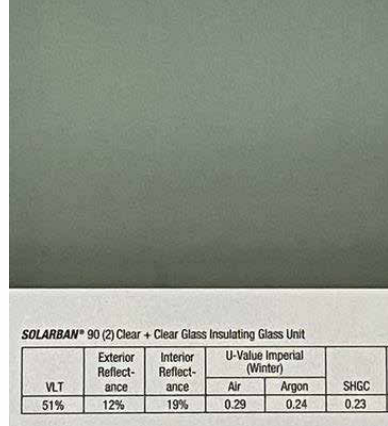
CONDUCTOR HEADS / DOWNSPOUTS

Color: Match SW7075 Web Gray
Manuf: Sherwin Williams



OVERHEAD DOORS

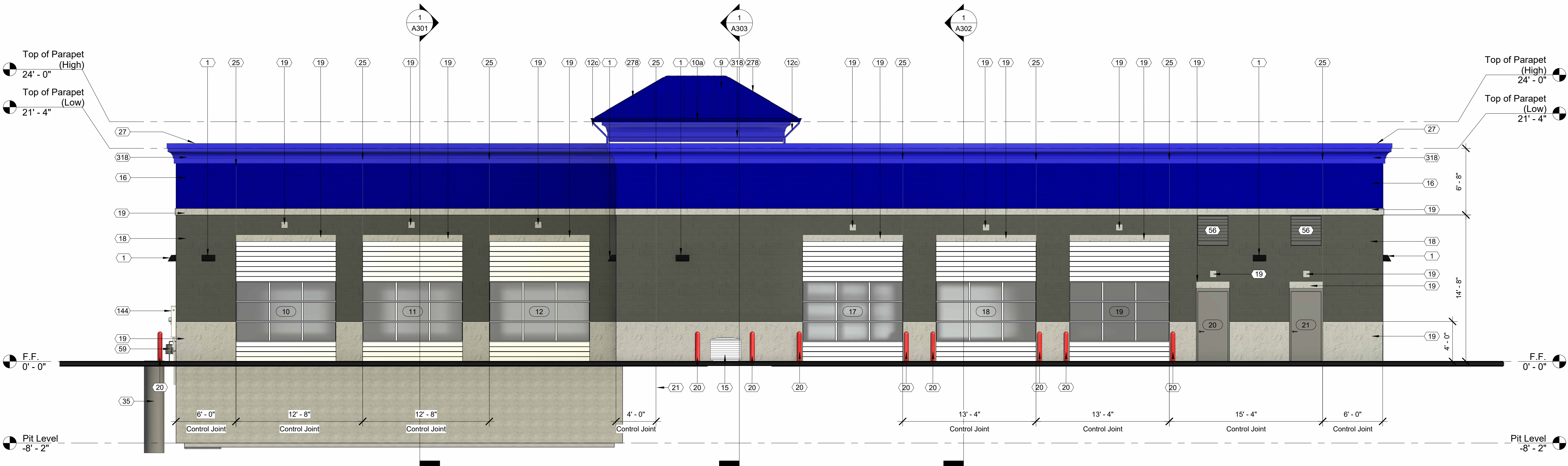
Color: White
Manuf: Overhead Door Co.



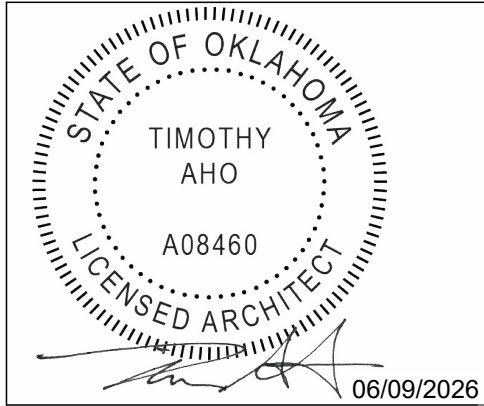
TINTED GLAZING

Color: Solarban 90 on Clear
Manuf: Vitro Architectural Glass

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Prefinished metal gutter. Match SSMR color.
12c	Prefinished metal downspout. Match SSMR color. Discharge on TPO roof below.
15	HVAC condensing unit. See Mechanical.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
25	Control joint. For control joints in concrete floor slabs, coordinate location with equipment layout by others. Max. distance between control joints in slabs not to exceed 12'-0". Control joints in walls shall be 4'-0" max from wall intersection or corner and every 20'-0".
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
59	Gas meter. See Plumbing.
144	Electrical meter. See Electrical.
278	Prefinished metal ridge/hip cap by metal roofing manufacturer.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.



02_ Exterior Elevation_ Rear (West)
3/16" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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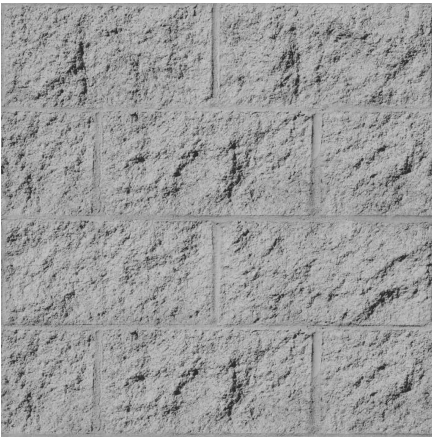
Exterior Elevation -
Rear (West)

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A201

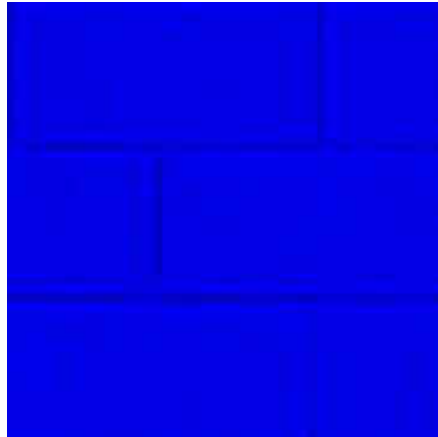
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EXTERIOR FINISH MATERIAL LEGEND



PAINTED SPLIT-FACE CMU

Color: SW7669 Summit Gray
Manuf: Sherwin Williams
Keynote: 19



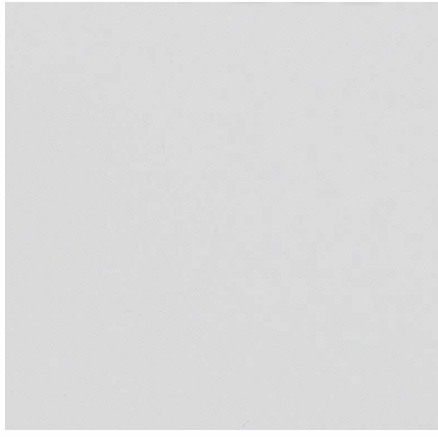
PAINTED SMOOTH-FACE CMU

Color: SW6966 Blueblood
Manuf: Sherwin Williams
Keynote: 16



PAINTED SMOOTH-FACE CMU

Color: SW7075 Web Gray
Manuf: Sherwin Williams
Keynote: 18



HM DOORS

Color: SW7669 Summit Gray
Manuf: Sherwin Williams



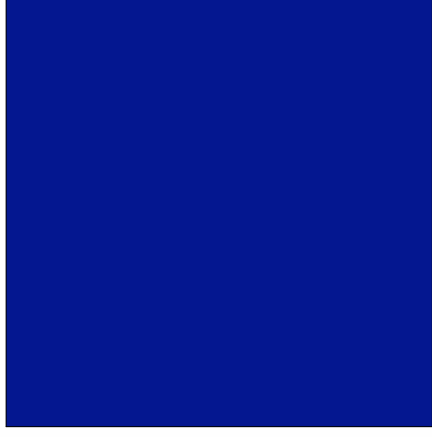
STOREFRONT DOORS/WINDOWS

Color: Clear Anodized Aluminum
Manuf: YKK



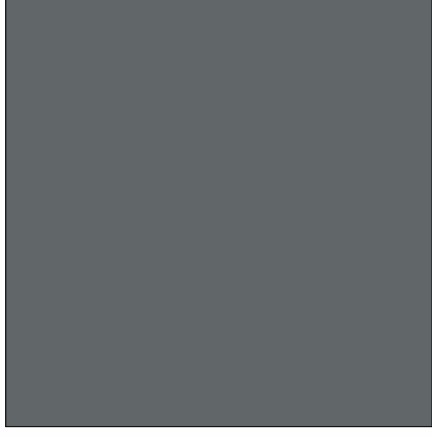
BOLLARDS

Color: Safety Red
Manuf: Sherwin Williams



STANDING SEAM METAL ROOF

Color: Royal Blue
Manuf: Berridge



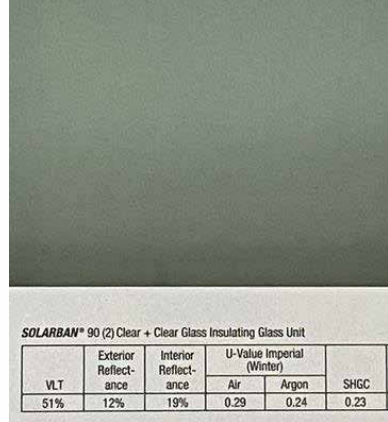
CONDUCTOR HEADS / DOWNSPOUTS

Color: Match SW7075 Web Gray
Manuf: Sherwin Williams



OVERHEAD DOORS

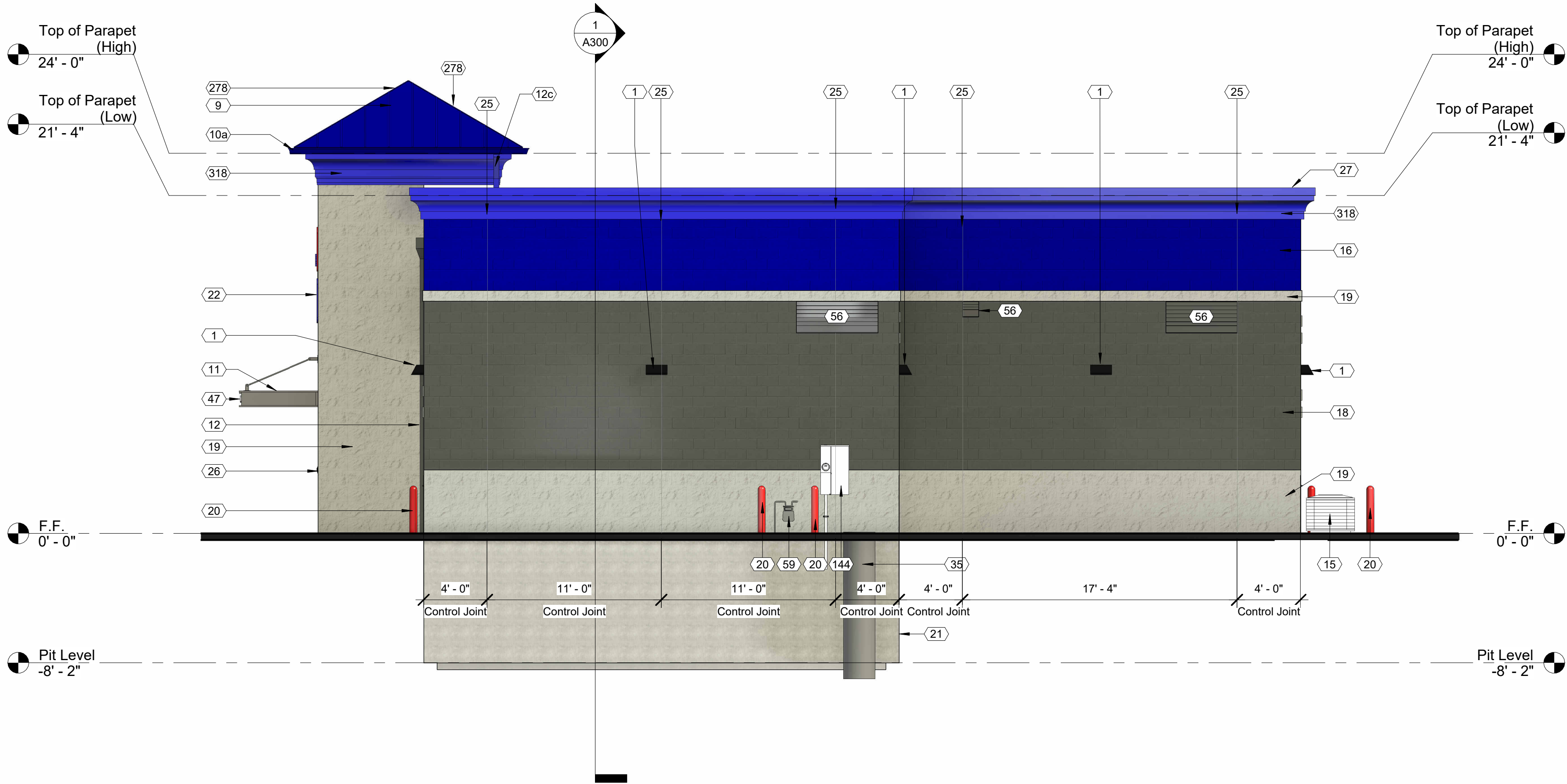
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Manuf: Overhead Door Co.



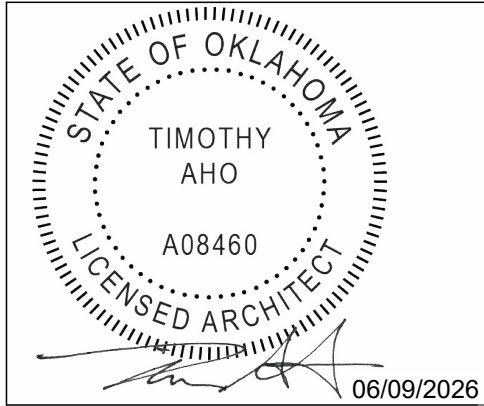
TINTED GLAZING

Color: Solarban 90 on Clear
Manuf: Vitro Architectural Glass

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Prefinished metal gutter. Match SSMR color.
11	Pre-finished metal canopy. See Details.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm. (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
12c	Prefinished metal downspout. Match SSMR color. Discharge on TPO roof below.
15	HVAC condensing unit. See Mechanical.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
22	Signage (By Others). See Electrical.
25	Control joint. For control joints in concrete floor slabs, coordinate location with equipment layout by others. Max. distance between control joints in slabs not to exceed 12'-0". Control joints in walls shall be 4'-0" max from wall intersection or corner and every 20'-0".
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.
47	Provide address identification as directed by the Local Fire Marshal or AHJ, but letter size shall not be less than 4 inches high.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
59	Gas meter. See Plumbing.
144	Electrical meter. See Electrical.
278	Prefinished metal ridge/hip cap by metal roofing manufacturer.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.



① 03 Exterior Elevation_Right (North)
3/16" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

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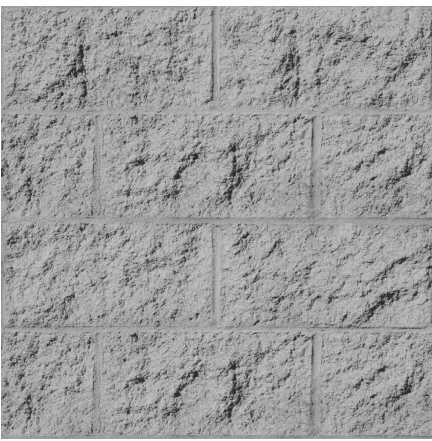
Exterior Elevation -
Right (North)

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A202

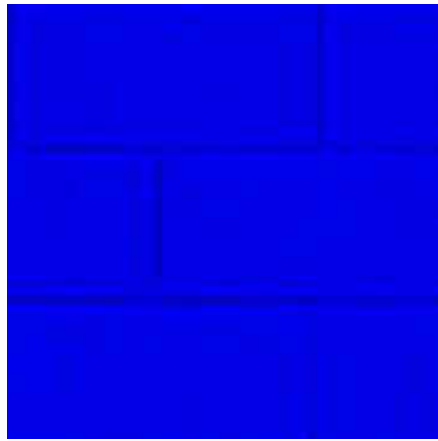
Scale 3/16" = 1'-0"

EXTERIOR FINISH MATERIAL LEGEND



PAINTED SPLIT-FACE CMU

Color: SW7669 Summit Gray
Manuf: Sherwin Williams
Keynote: 19



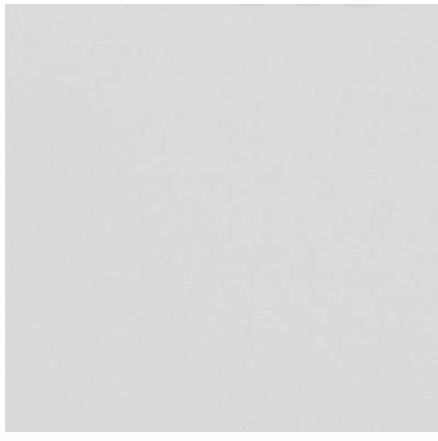
PAINTED SMOOTH-FACE CMU

Color: SW6966 Blueblood
Manuf: Sherwin Williams
Keynote: 16



PAINTED SMOOTH-FACE CMU

Color: SW7075 Web Gray
Manuf: Sherwin Williams
Keynote: 18



HM DOORS

Color: SW7669 Summit Gray
Manuf: Sherwin Williams



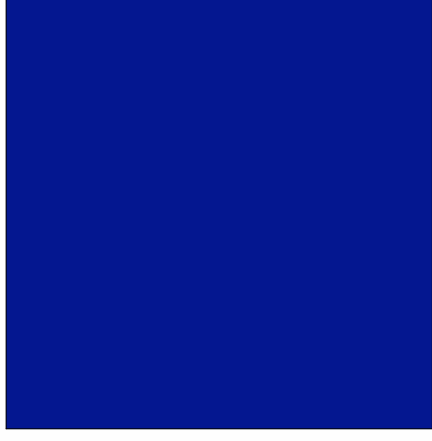
STOREFRONT DOORS/WINDOWS

Color: Clear Anodized Aluminum
Manuf: YKK



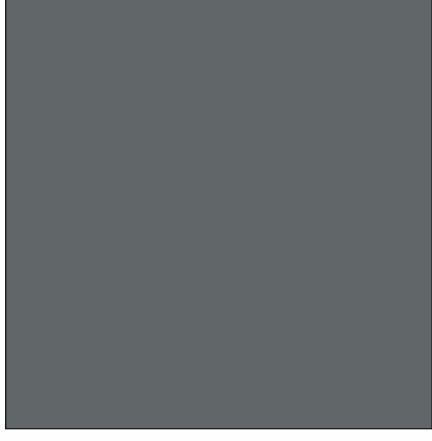
BOLLARDS

Color: Safety Red
Manuf: Sherwin Williams



STANDING SEAM METAL ROOF

Color: Royal Blue
Manuf: Berridge



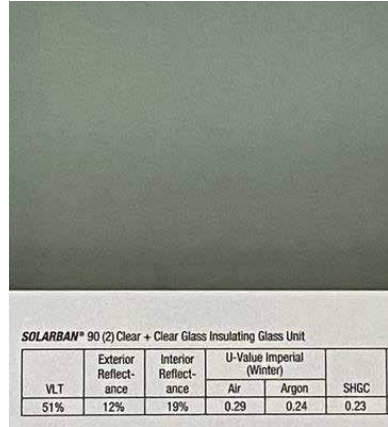
CONDUCTOR HEADS / DOWNSPOUTS

Color: Match SW7075 Web Gray
Manuf: Sherwin Williams



OVERHEAD DOORS

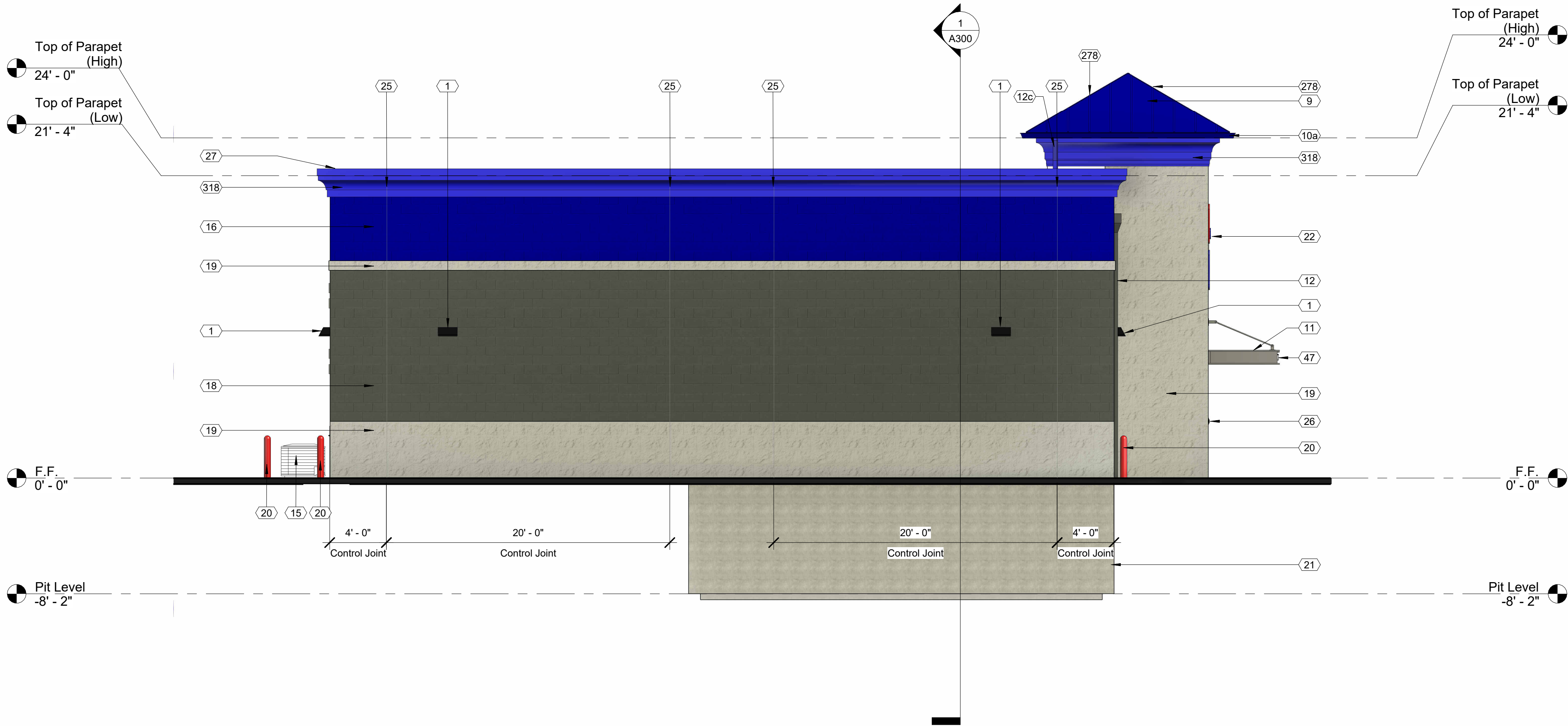
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Manuf: Overhead Door Co.



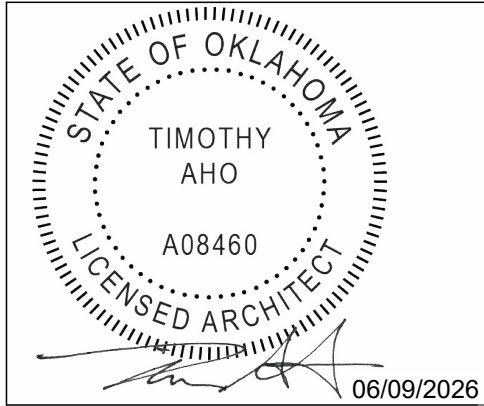
TINTED GLAZING

Color: Solarban 90 on Clear
Manuf: Vitro Architectural Glass

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Prefinished metal gutter. Match SSMR color.
11	Pre-finished metal canopy. See Details.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm. (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
12c	Prefinished metal downspout. Match SSMR color. Discharge on TPO roof below.
15	HVAC condensing unit. See Mechanical.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
22	Signage (By Others). See Electrical.
25	Control joint. For control joints in concrete floor slabs, coordinate location with equipment layout by others. Max. distance between control joints in slabs not to exceed 12'-0". Control joints in walls shall be 4'-0" max from wall intersection or corner and every 20'-0".
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
47	Provide address identification as directed by the Local Fire Marshal or AHJ, but letter size shall not be less than 4 inches high.
278	Prefinished metal ridge/hip cap by metal roofing manufacturer.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.



04 Exterior Elevation Left (South)
3/16" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

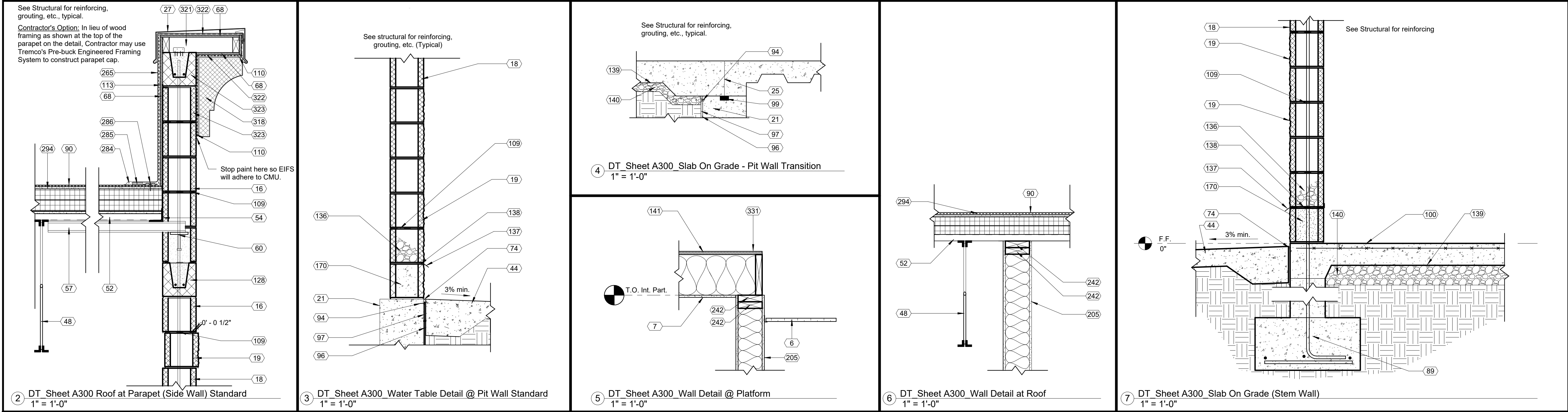
2026
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Exterior Elevation -
Left (South)

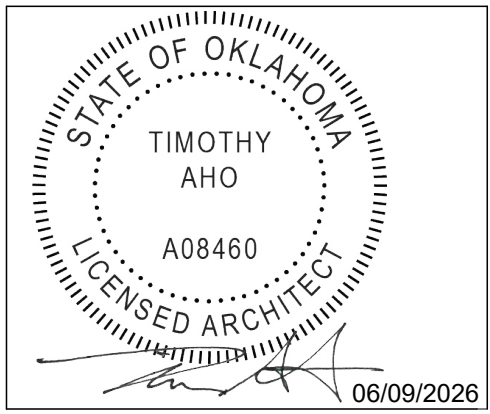
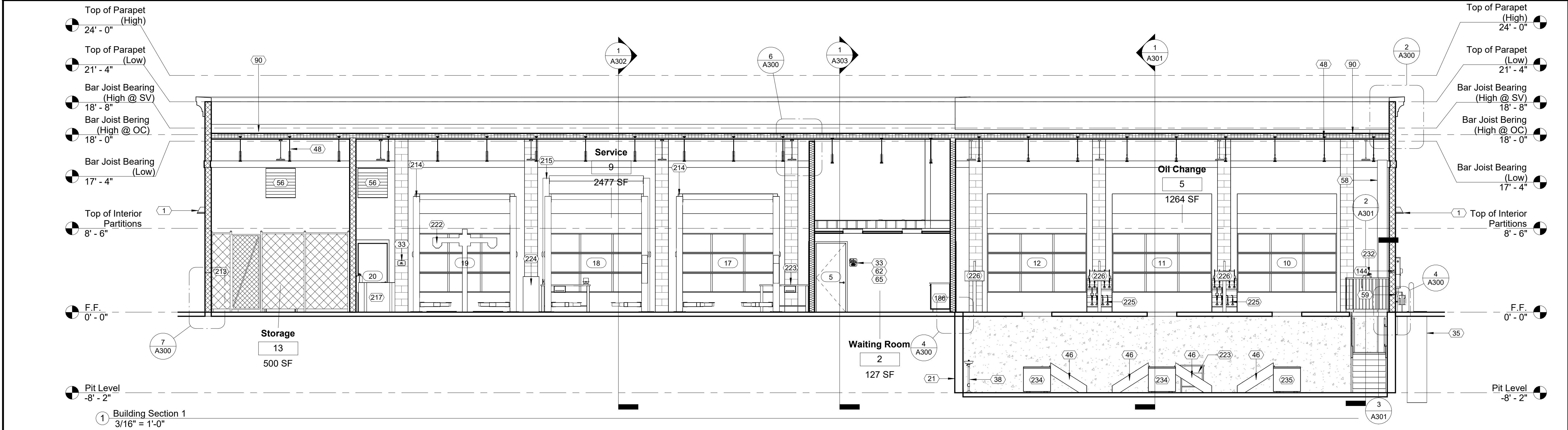
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A203

Scale 3/16" = 1'-0"



Keynote Schedule		Keynote Schedule		Keynote Schedule		Keynote Schedule		Keynote Schedule	
Tag	Text	Tag	Text	Tag	Text	Tag	Text	Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.	38	Eyewash station. See Plumbing.	96	CCW MiraClay woven geotextile against wall/slab.	186	Coffee cabinet.	284	Cut edge sealant at TPO roof membrane flashing.
6	Lay-in acoustical ceiling tile and grid, supported from structure.	44	Concrete apron as required. Slope away from building with 3% slope minimum. See Civil. Maintain 2% slope max at all man doors.	97	CCW MiraDrain 6200.	205	1 layer of 1/2" painted gypsum board on both sides of 2"x6" wood studs at 16" o.c. Infill with kraft-faced R-20 batt insulation. Kraft in contact with gypsum board.	285	Hot air weld at TPO membrane and membrane flashing.
7	Painted 1/2" gypsum board ceiling secured to structure above. 5/8" Type X where indicated. See Details for # of layers.	46	Oil tank stairs (By Others).	99	CCW MiraStop BW.	213	8-foot-high chain-link fence with 3'-0"x7'-0" gate. Fence poles to be surface mounted.	286	Fastener and seam fastening plate.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.	48	Bar joist. See Structural.	100	Concrete slab. See Structural.	214	10K Lift (By Others).	294	Polyisocyanurate insulation board (See TPO Spec for required R-value). Provide 1/2" cover board, mechanically fastened, over the top of insulation in locations where membrane roofing is to be applied.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.	52	Galvanized metal roof deck. See Structural.	109	Horizontal joint reinforcement at 16" o.c. vertical.	215	12K Lift (By Others).	318	Painted preformed EIFS cornice and trim, See Specification Section 072400 EIFS Exterior Insulation and Finish System.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.	54	Steel angle. See Structural.	110	Sealant with backer rod.	217	Wheel balancer (By Others).	321	2x pressure treated wood framing spaced at 2'-0" o.c. minimum. Anchor 2x framing into grouted masonry cells using Simpson Strong Tie A23 angle ties. Secure angle ties on each side of framing members using 4 concrete screws on each side.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.	56	Metal louver or vent. Color to match adjacent surface. See Mechanical.	113	Fluid applied vapor permeable air barrier. See Specification 072726 Fluid Applied Membrane Air Barrier.	222	Alignment scarecrow (By Others).	322	Vapor permeable air and water resistive barrier membrane. See Specification Section 072400 EIFS Exterior Insulation and Finish System.
25	Control joint. For control joints in concrete floor slabs, coordinate location with equipment layout by others. Max. distance between control joints in slabs not to exceed 12'-0". Control joints in walls shall be 4'-0" max from wall intersection or corner and every 20'-0".	57	Joist extension. See Structural.	128	Painted smooth-face 8" concrete-filled "U" block bond beam. Condition varies. See Structural.	223	Work bench (By Others).	323	Unpainted smooth-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.	58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.	136	Pea gravel above through wall flashing.	225	Lube console (By Others).	331	Provide 42" guards at all exposed edges of above ceiling platforms. Concentrated Load: Guards shall be designed to resist a concentrated load of 200 pounds in accordance with Section 4.5.1 of ASCE/SEI 7. Uniform Load: Guards shall be designed to resist a linear load of 50 pounds per linear foot in accordance with Section 4.5.1.1 of ASCE/SEI 7. This load need not be assumed to act concurrently with the concentrated load specified above. Guard infill components except the top rail shall be designed to resist a concentrated load of 50 pounds in accordance with Section 4.5.1.2 of ASCE/SEI 7.
33	ADA compliant room / exit sign. See Details.	59	Gas meter. See Plumbing.	137	Flashing between first and second course to utilize BlockFlash in addition to the pea gravel specified. Provide a drainage mat in open masonry cell directly above the BlockFlash pan.	226	Computer podium (By Others).		
35	Submersible foundation sump pump. Provide Zoeller M98 or comparable product. Coordinate location with Civil and tie into Civil's storm drainage system.	60	Steel plate with headed studs. See Structural.	138	Drainable weeps at every third mortar joint.	232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.		
		62	4" high stainless steel chair rail (By Others).	139	10 mil vapor barrier. See Specification 072600 Vapor Retarders.	234	928-gallon Class IIIB new oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.		
		65	Word Wall. Use extreme bond primer. Graphics (By Others).	140	Porous fill. See Geotechnical Report.	235	928-gallon Class IIIB waste oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.		
		68	1/2" exterior plywood sheathing.	141	3/4" tongue and groove plywood on 2x10 wood joists @ 12" o.c. Provide R-38 batt kraft face insulation in between joists. Kraft face in contact with substrate. (If applicable, it shall be the Contractor's option to provide plywood attached to bottom of joists for insulation to rest on or secure insulation to joists without the need for the plywood bottom).	242	2x pressure treated wood top plate. Use barrier to prevent corrosion between wood and metal.		
		74	1/2" expansion joint with backer rod and sealant.	144	Electrical meter. See Electrical.	265	TPO membrane turned vertically up the wall and fastened to wood blocking at top roof curb, or top of wall framing per detail. Adhere TPO membrane to wall substrate with manufacturer approved bonding adhesive.		
		89	Concrete foundation. See Structural.	170	Fill first course of CMU with grout.				
		90	Fully adhered TPO membrane roofing installed per manufacturer's written instructions. See Specification 075423 Thermoplastic Polyolefin (TPO) Roofing.						
		94	Fasteners at 12" max o.c. for securing subdrainage to pit wall. Follow manufacturer's installation instructions.						



Express Oil Change & Tire Engineers

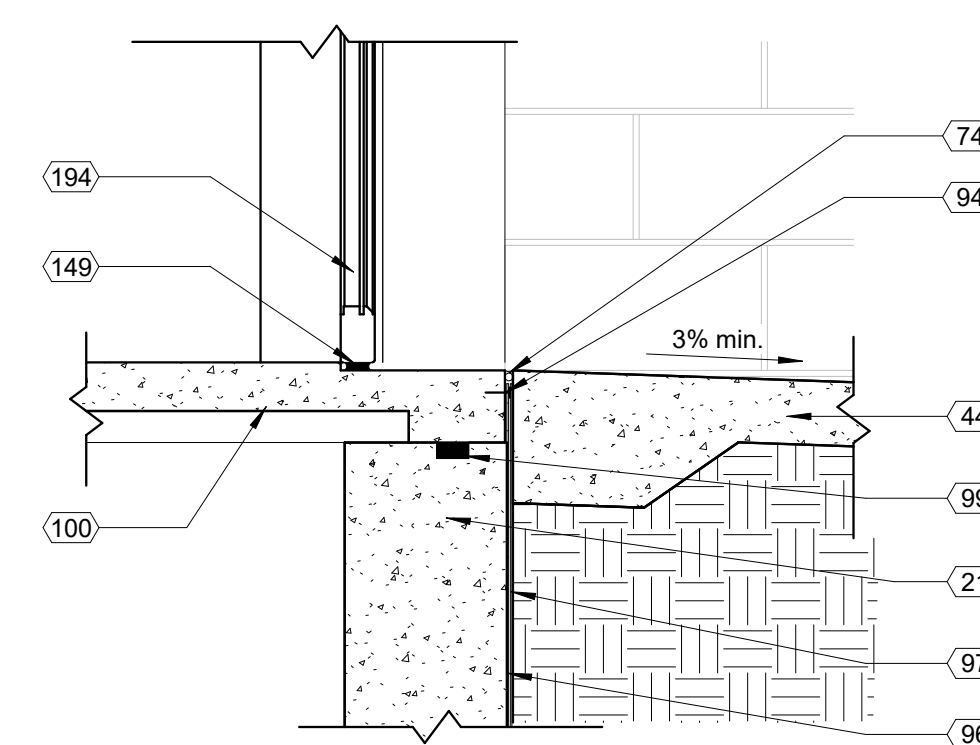
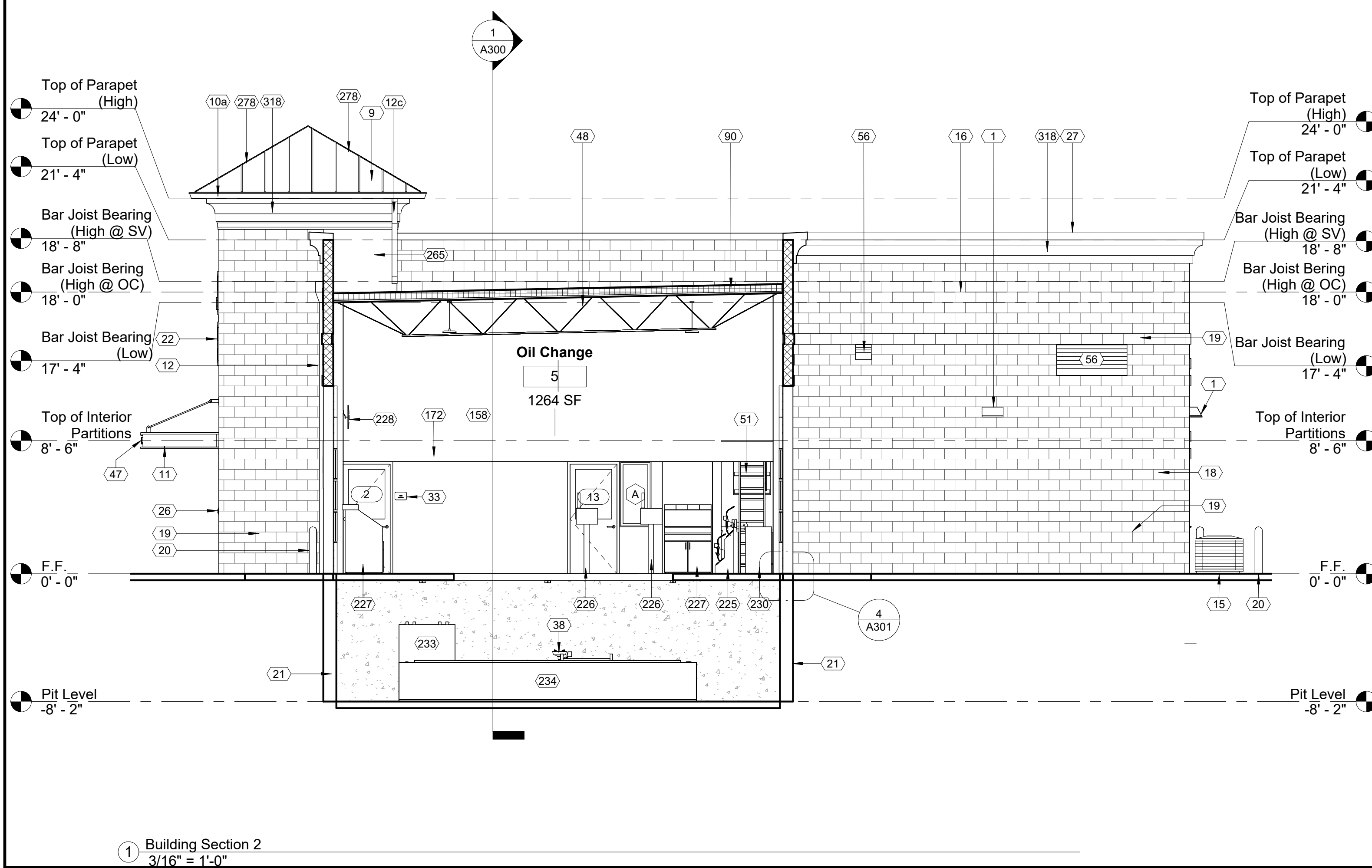
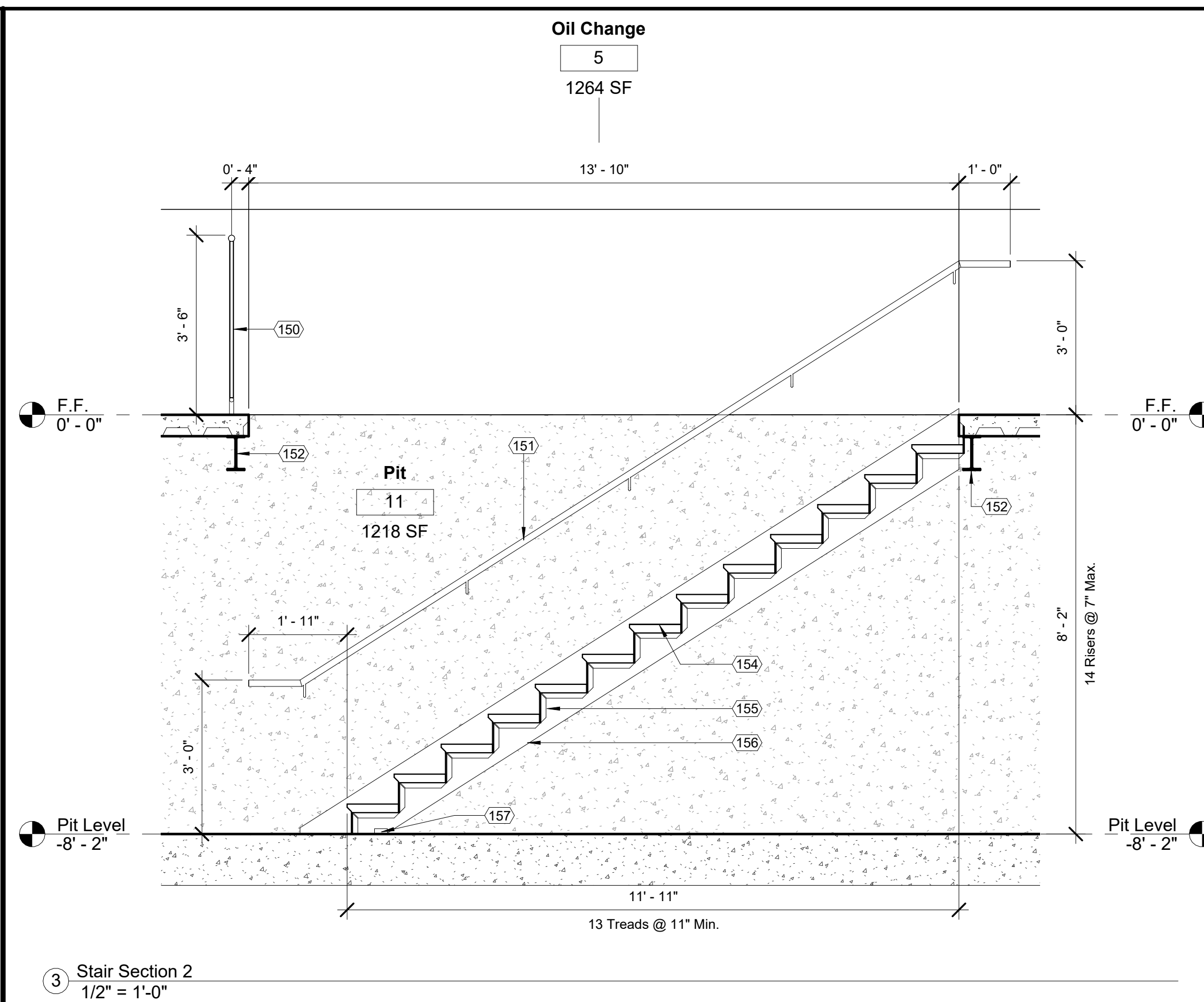
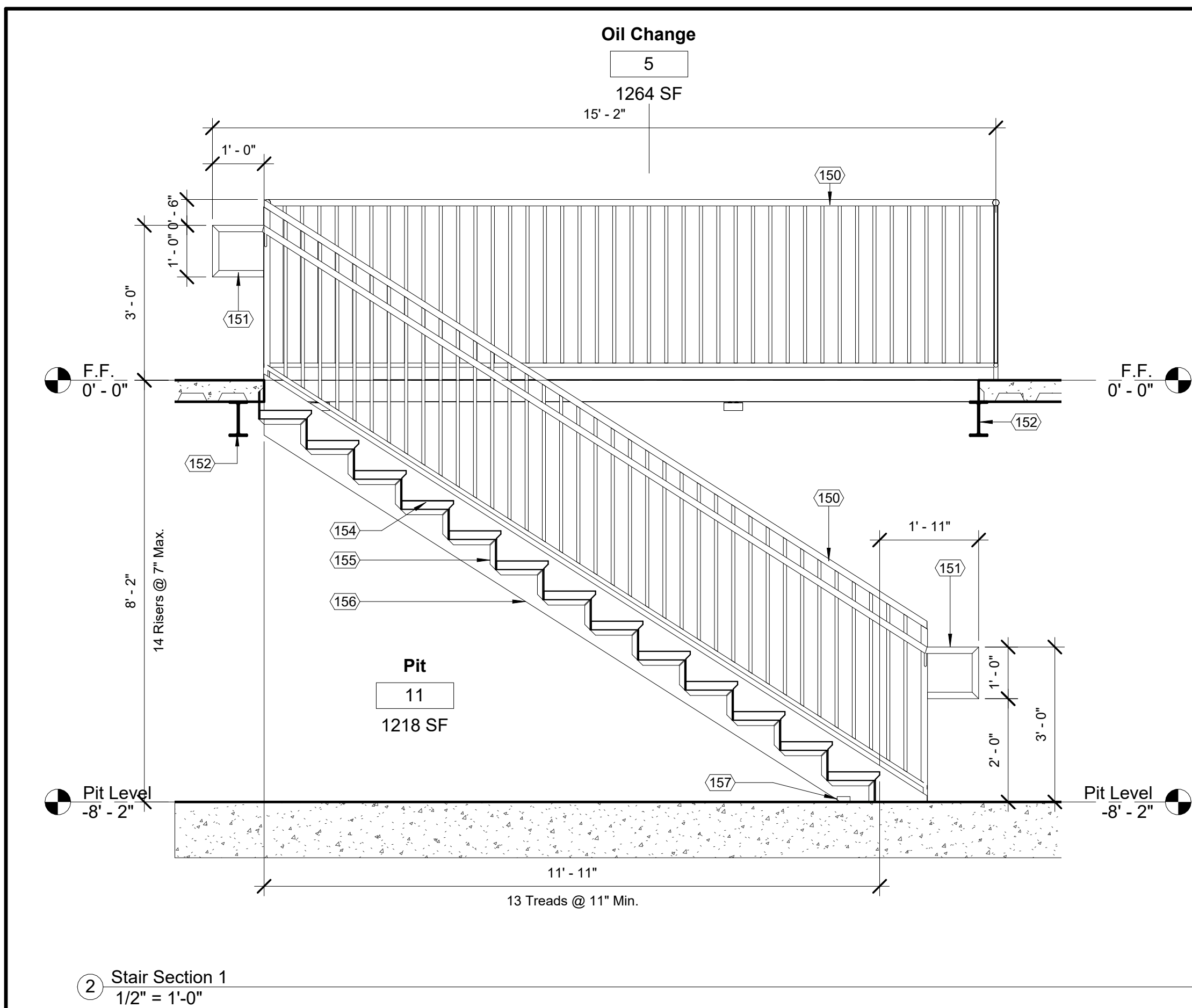
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

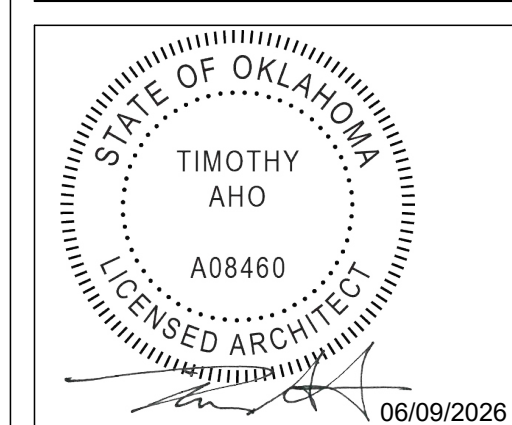
FINAL		
No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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Building Sections	
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
A300	
Scale	As indicated



Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Pre-finished metal gutter. Match SSMR color.
11	Pre-finished metal canopy. See Details.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm. (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Metal Roof Specialties.
12c	Pre-finished metal downspout. Match SSMR color. Discharge on TPO roof below.
15	HVAC condensing unit. See Mechanical.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
22	Signage (By Others). See Electrical.
26	Fire Department Lock Box. Location as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
33	ADA compliant room / exit sign. See Details.
38	Eyewash station. See Plumbing.
44	Concrete apron as required. Slope away from building with 3% slope minimum. See Civil. Maintain 2% slope max at all main doors.
47	Provide address identification as directed by the Local Fire Marshal or AHJ, but letter size shall not be less than 4 inches high.
48	Bar joist. See Structural.
51	Attic access ladder.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
74	12" expansion joint with backer rod and sealant.
90	Fully adhered TPO membrane roofing installed per manufacturer's written instructions. See Specification 075423 Thermoplastic Polyolefin (TPO) Roofing.
94	Fasteners at 12" max o.c. for securing subdrainage to pit wall. Follow manufacturer's installation instructions.
96	CCW MiraClay woven geotextile against wall/slab.
97	CCW MiraDrain 6200.
99	CCW MiraStop BW.
100	Concrete slab. See Structural.
149	1-2" recess at scheduled door. See Structural.
150	Painted guardrail with painted 1/2" round pickets at 4" max o.c. See Finish Schedule for color. See Specification 055213 Pipe and Tube Railings.
151	Painted 1-1/2" outside diameter pipe handrail. Return handrail to guard/wall. Typical. See Finish Schedule for color. See Specification 055213 Pipe and Tube Railings.
152	Paint all structural steel P-5 Safety Yellow.
154	Concrete filled pre-fabricated metal pan stair treads with safety yellow abrasive nosing, full grit, full length, adhered and fastened. Typical. See Finish Schedule for color. See Specification 055113 Metal Pan Stairs.
155	1-1/4" steel angle clips.
156	10" steel channel stringer. See Finish Schedule for color. See Specification 055113 Metal Pan Stairs.
157	Simpson THD50400.
158	Vinyl letters (By Others).
172	Ensure paint line occurs at top of door and window frames. Ensure all openings, alcoves and windows align with top of door frame. Typical in Oil and Service Bays.
194	Scheduled door. See plans for details.
225	Lube console (By Others).
226	Computer podium (By Others).
227	Cashier computer station (By Others). Clear opening for cashier computer station must be 38 1/2" wide minimum. No Exceptions.
228	Convex mirrors (By Others).
230	Tool cart (By Others).
233	275-gallon Class IIIB new oil tank (By Others).
234	928-gallon Class IIIB new oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.
265	TPO membrane turned vertically up the wall and fastened to wood blocking at top roof curb, or top of wall framing per detail. Adhere TPO membrane to wall substrate with manufacturer approved bonding adhesive.
278	Pre-finished metal ridge/cap by metal roofing manufacturer.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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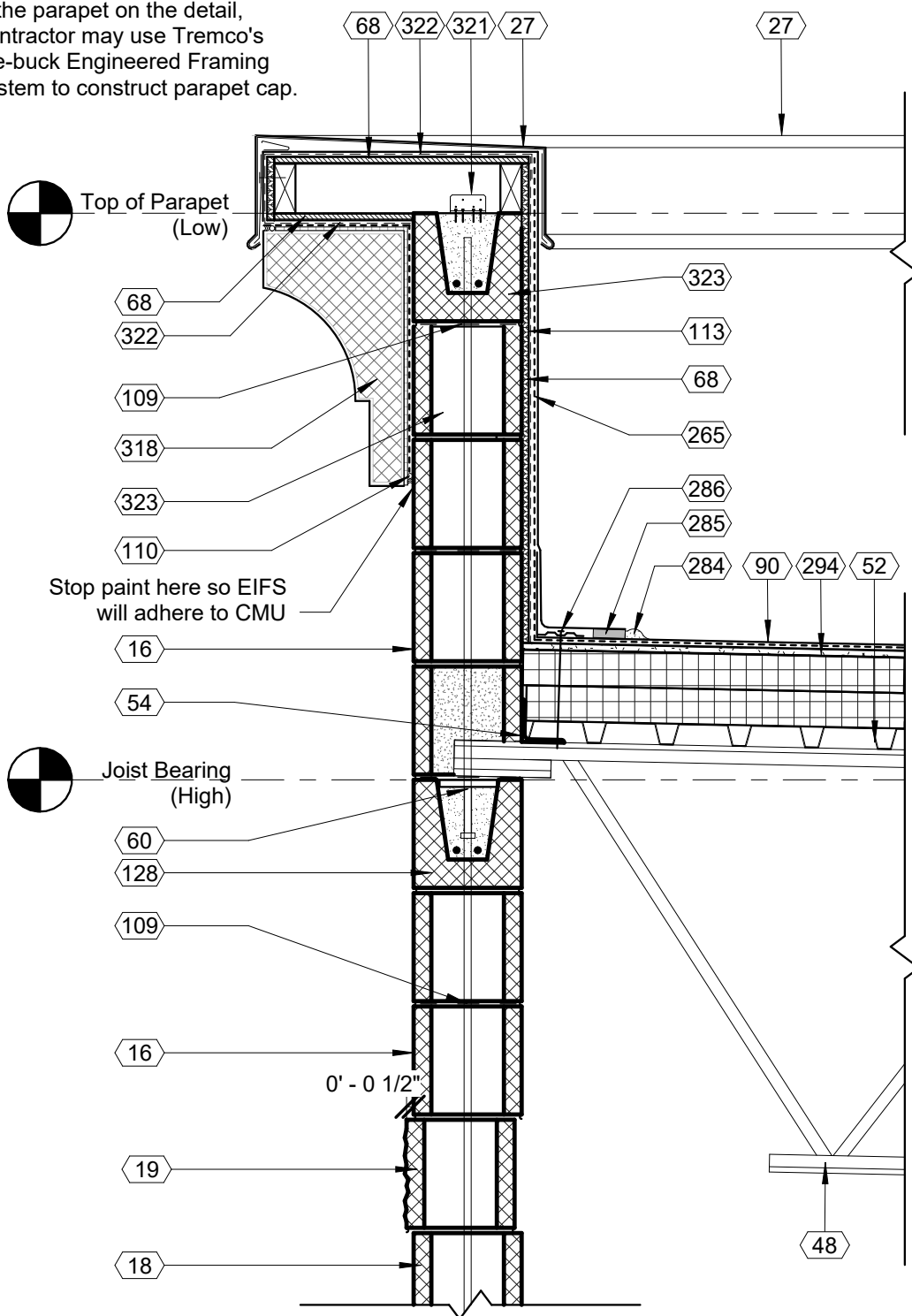
Building Sections

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

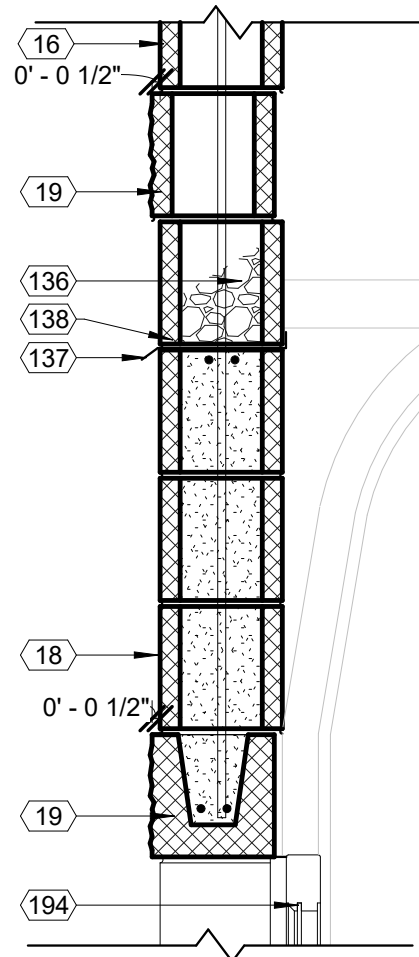
A301

Scale	As indicated
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Contractor's Option: In lieu of wood framing as shown at the top of the parapet on the detail, Contractor may use Tremco's Pre-buck Engineered Framing System to construct parapet cap.

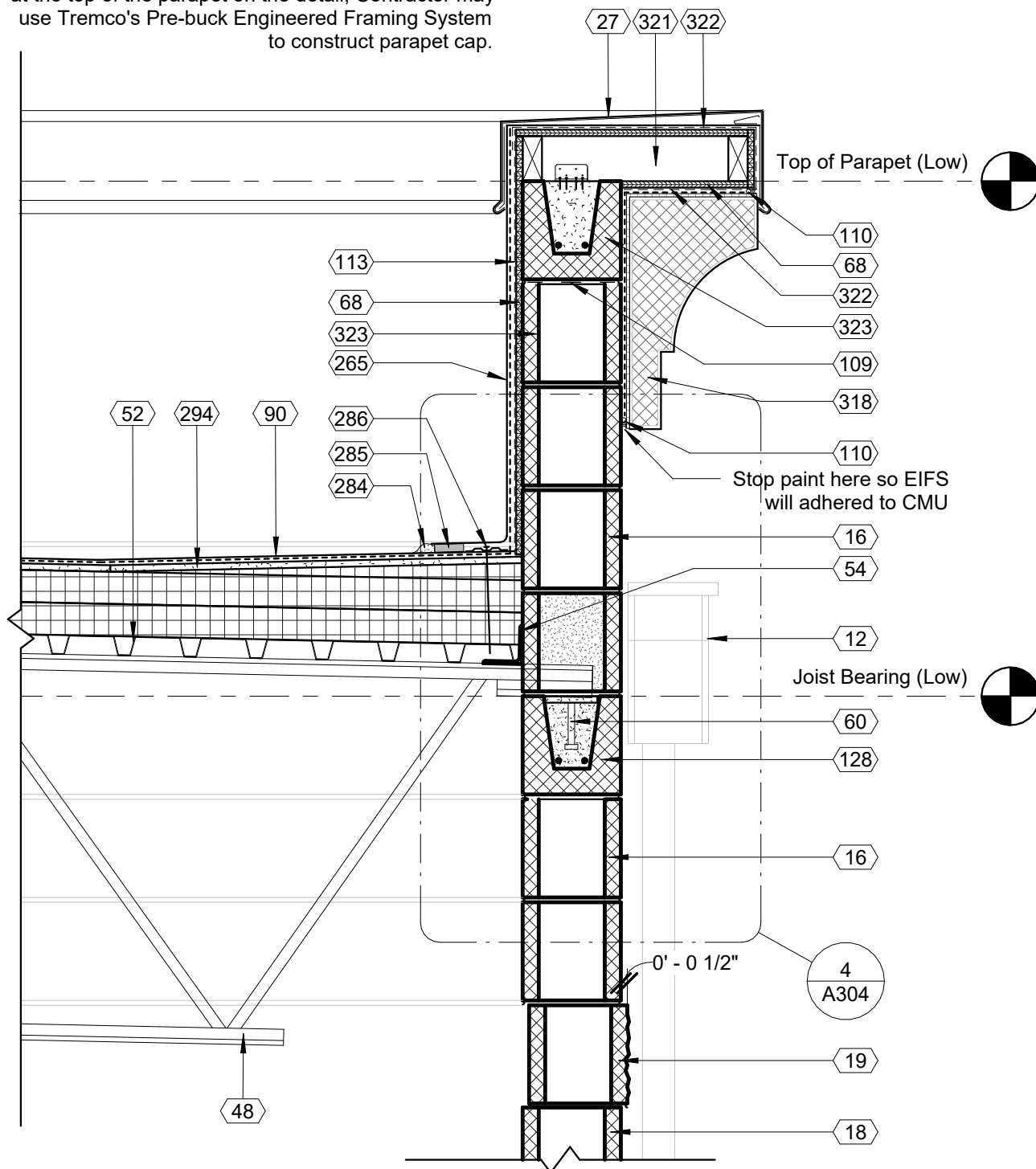


2 DT_Sheet A302 Roof at Parapet (High) Standard
1" = 1'-0"

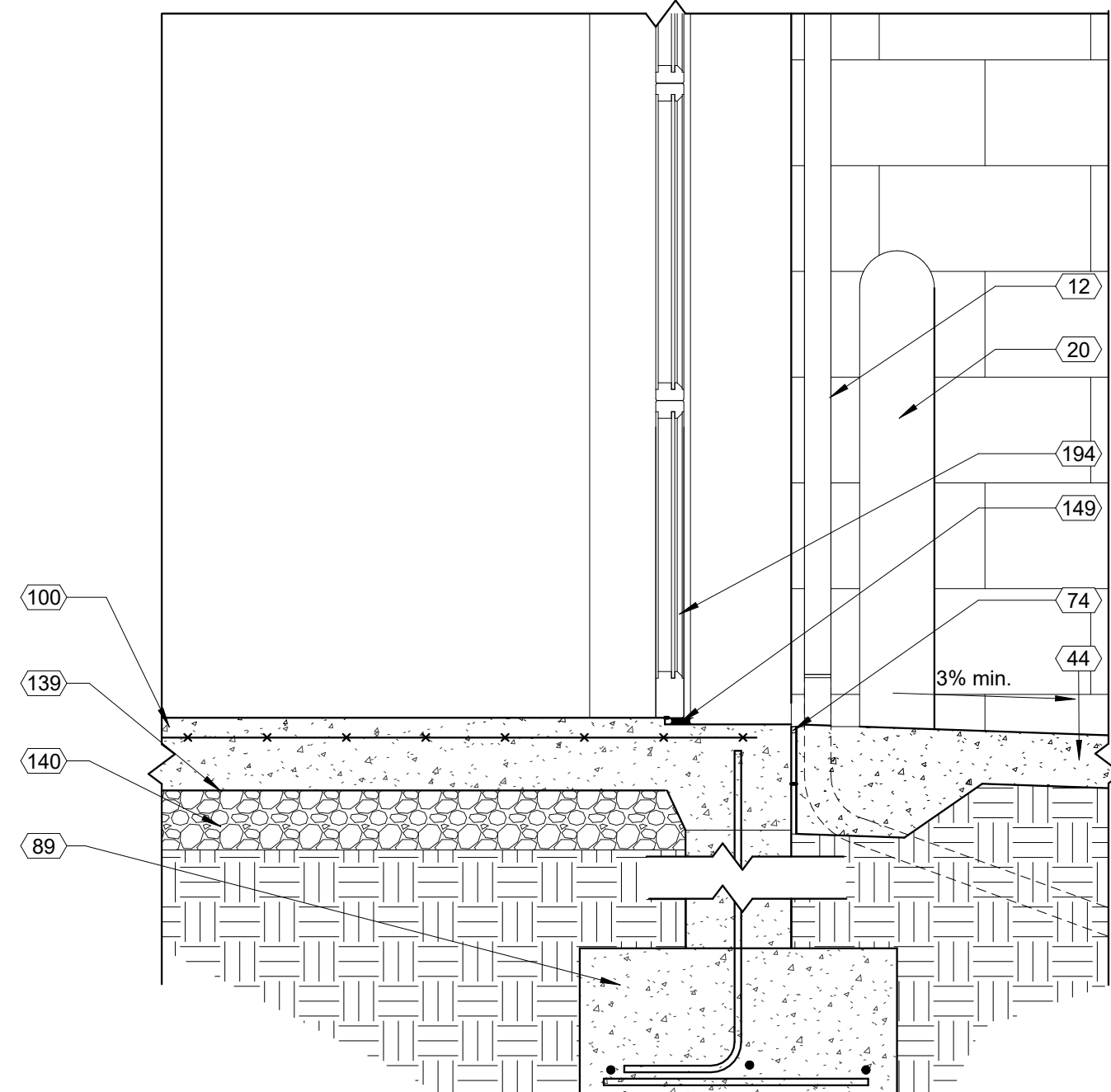


3 DT_Sheet A302_OH Door Head Detail
1" = 1'-0"

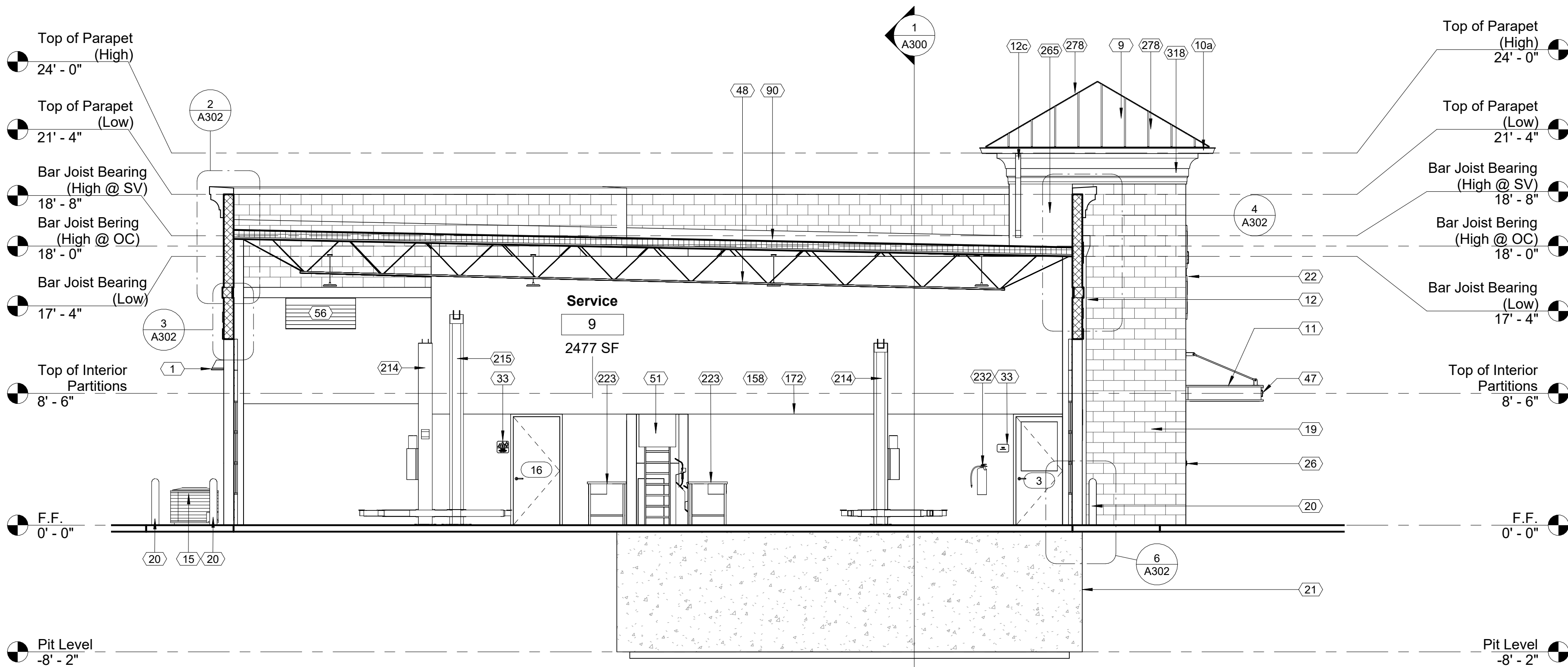
Contractor's Option: In lieu of wood framing as shown at the top of the parapet on the detail, Contractor may use Tremco's Pre-buck Engineered Framing System to construct parapet cap.



4 DT_Sheet A302 Roof at Parapet (Low) Standard
1" = 1'-0"



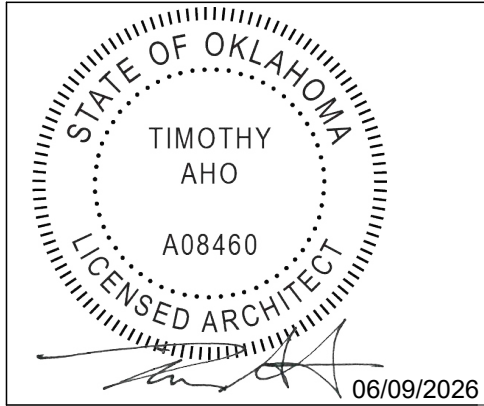
6 DT_Sheet A302_Slab on Grade @ OH Door (Stem Wall)
1" = 1'-0"



1 Building Section 3
3/16" = 1'-0"

Keynote Schedule

Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Pre-finished metal gutter. Match SSMR color.
11	Pre-finished metal canopy. See Details.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm. (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
12c	Pre-finished metal downspout. Match SSMR color. Discharge on TPO roof below.
15	HVAC condensing unit. See Mechanical.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
22	Signage (By Others). See Electrical.
26	Fire Department Lock Box. Locate as directed by the Local Fire Marshal or AHJ. See Specification 104413 Fire Department Lock Box.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
33	ADA compliant room / exit sign. See Details.
44	Concrete apron as required. Slope away from building with 3% slope minimum. See Civil. Maintain 2% slope max at all man doors.
47	Provide address identification as directed by the Local Fire Marshal or AHJ, but letter size shall not be less than 4 inches high.
48	Bar joist. See Structural.
51	Attic access ladder.
52	Galvanized metal roof deck. See Structural.
54	Steel angle. See Structural.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
60	Steel plate with headed studs. See Structural.
68	1/2" exterior plywood sheathing.
74	1/2" expansion joint with backer rod and sealant.
89	Concrete foundation. See Structural.
90	Fully adhered TPO membrane roofing installed per manufacturer's written instructions. See Specification 075423 Thermoplastic Polyolefin (TPO) Roofing.
100	Concrete slab. See Structural.
109	Horizontal joint reinforcement at 16" o.c. vertical.
110	Sealant with backer rod.
113	Fluid applied vapor permeable air barrier. See Specification 072726 Fluid Applied Membrane Air Barrier.
128	Painted smooth-face 8" concrete-filled "U" block bond beam. Condition varies. See Structural.
136	Pea gravel above through wall flashing.
137	Flashing between first and second course to utilize BlockFlash in addition to the pea gravel specified. Provide a drainage mat in open masonry cell directly above the BlockFlash pan.
138	Drainable weeps at every third mortar joint.
139	10 mil vapor barrier. See Specification 072600 Vapor Retarders.
140	Porous fill. See Geotechnical Report.
149	1/2" recess at scheduled door. See Structural.
158	Vinyl letters (By Others).
172	Ensure paint line occurs at top of door and window frames. Ensure all openings, alcoves and windows align with top of door frame. Typical in Oil and Service Bays.
194	Scheduled door. See plans for details.
214	10K Lift (By Others).
215	12K Lift (By Others).
223	Work bench (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.
265	TPO membrane turned vertically up the wall and fastened to wood blocking at top roof curb, or top of wall framing per detail. Adhere TPO membrane to wall substrate with manufacturer approved bonding adhesive.
278	Pre-finished metal ridge/hip cap by metal roofing manufacturer.
284	Cut edge sealant at TPO roof membrane flashing.
285	Hot air weld at TPO membrane and membrane flashing.
286	Fastener and seam fastening plate.
294	Polyisocyanurate insulation board (See TPO Spec for required R-value). Provide 1/2" cover board, mechanically fastened, over the top of insulation in locations where membrane roofing is to be applied.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.
321	2x pressure treated wood framing spaced at 2'-0" o.c., minimum. Anchor 2x framing into grouted masonry cells using Simpson Strong Tie A23 angle ties. Secure angle ties on each side of framing members using 4 concrete screws on each side.
322	Vapor permeable air and water resistive barrier membrane. See Specification Section 072400 EIFS Exterior Insulation and Finish System.
323	Unpainted smooth-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry.



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IFC-0	Issued for Construction	06/25/2026

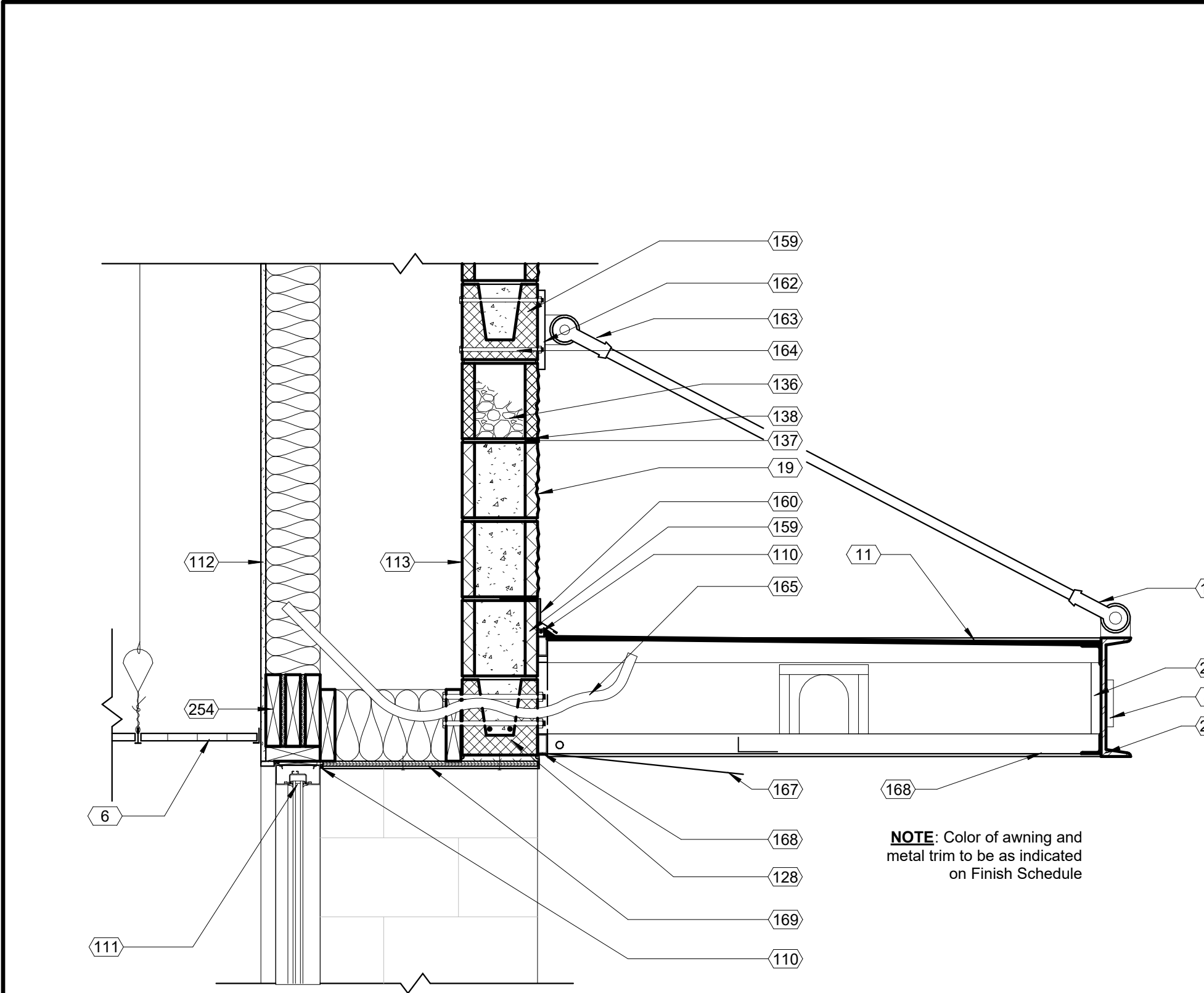
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Building Sections

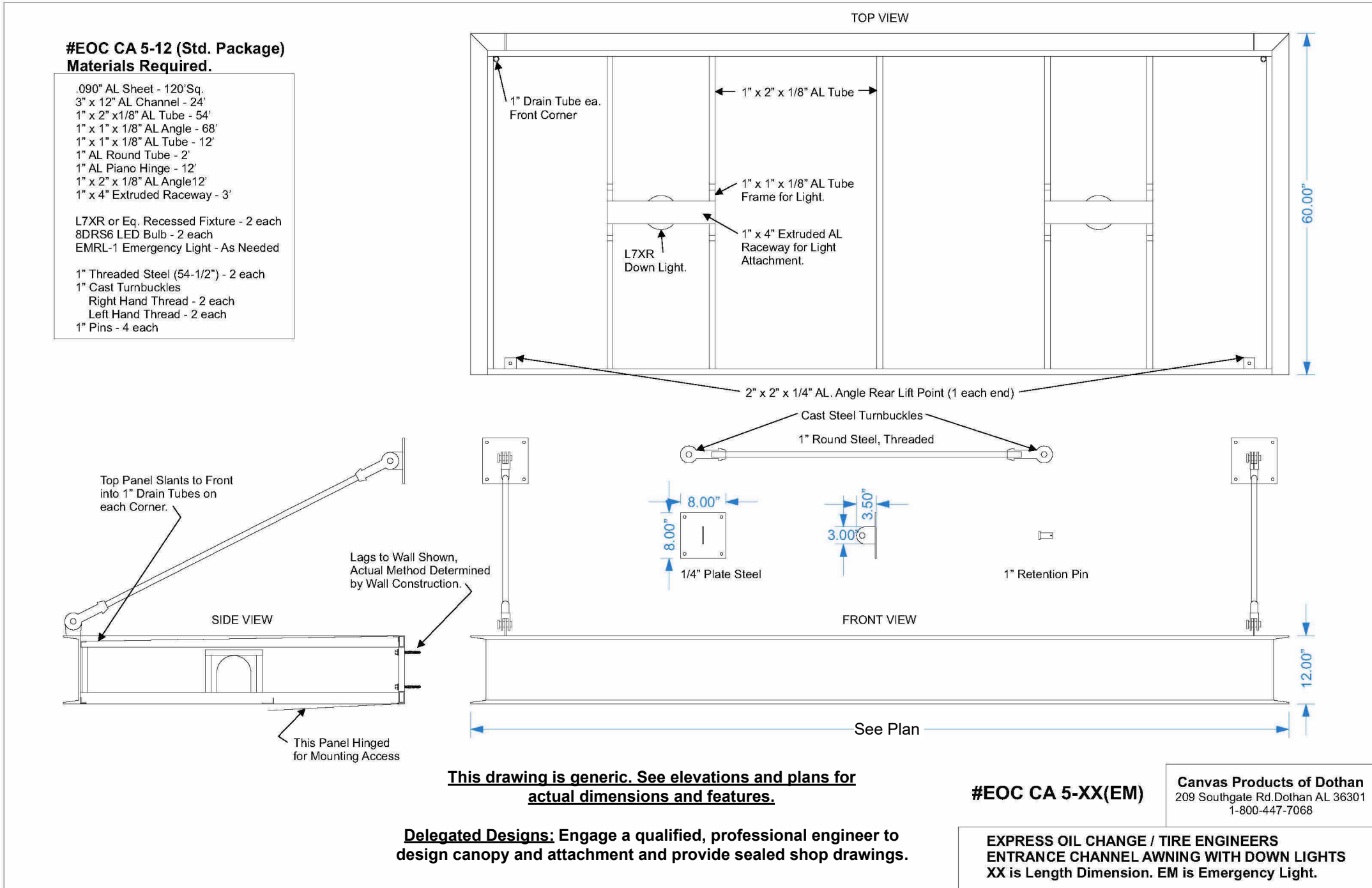
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A302

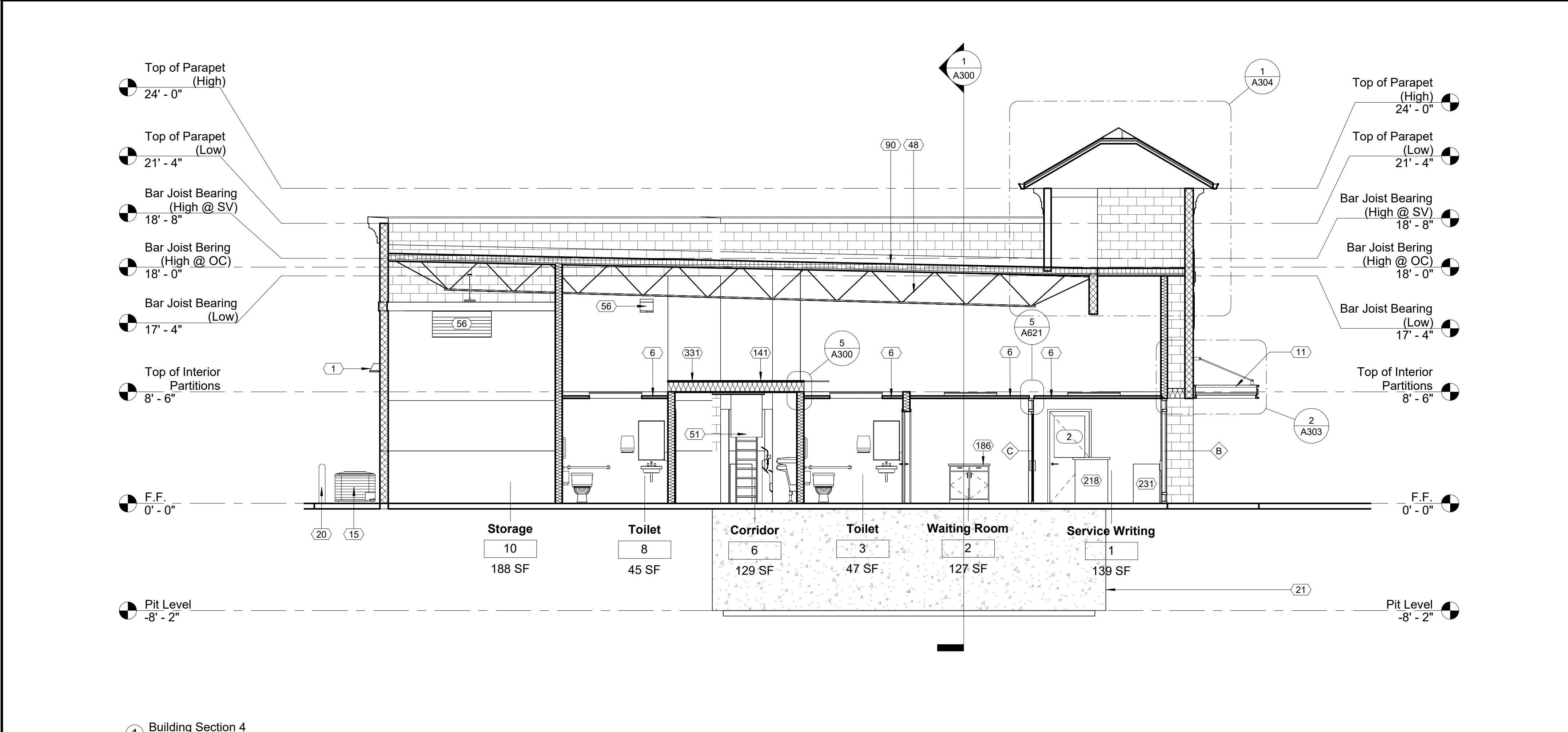
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2 DT_Sheet A303_Awning Section
1" = 1'-0"

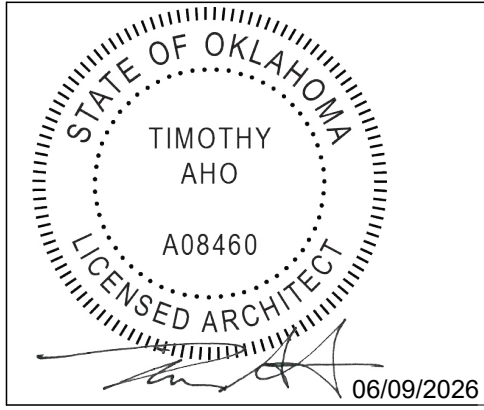


3 DT_Sheet A303_Awning Details
N.T.S.



1 Building Section 4
3/16" = 1'-0"

Keynote Schedule	
Tag	Text
1	Wall Pack / Electrical Fixture. See Electrical.
6	Lay-in acoustical ceiling tile and grid, supported from structure.
11	Pre-finished metal canopy. See Details.
15	HVAC condensing unit. See Mechanical.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
20	4" diameter painted concrete-filled steel pipe bollard. Color as indicated on Finish Schedule. Paint embedded portion of bollard. Use primer and two finish coats. See Details. See Specification 055000 Metal Fabrications.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
47	Provide address identification as directed by the Local Fire Marshal or AHJ, but letter size shall not be less than 4 inches high.
48	Bar joist. See Structural.
51	Attic access ladder.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
90	Fully adhered TPO membrane roofing installed per manufacturer's written instructions. See Specification 075423 Thermoplastic Polyolefin (TPO) Roofing.
110	Sealant with backer rod.
111	Aluminum storefront with insulated glazing. See Details.
112	Painted 1/2" gypsum board on 2x6 wood studs at 16" o.c. with kraft-face R-20 batt insulation (kraft in contact with gypsum board). See Details.
113	Fluid applied vapor permeable air barrier. See Specification 072726 Fluid Applied Membrane Air Barrier.
128	Painted smooth-face 8" concrete-filled "U" block bond beam. Condition varies. See Structural.
136	Pea gravel above through wall flashing.
137	Flashing between first and second course to utilize BlockFlash in addition to the pea gravel specified. Provide a drainage mat in open masonry cell directly above the BlockFlash pan.
138	Drainable weeps at every third mortar joint.
141	3/4" tongue and groove plywood on 2x10 wood joists @ 12" o.c. Provide R-38 batt kraft face insulation in between joists. Kraft face in contact with substrate. (If applicable, it shall be the Contractor's option to provide plywood attached to bottom of joists for insulation to rest on or secure insulation to joists without the need for the plywood bottom).
159	Painted smooth-face grout-filled CMU where canopy attaches to wall construction. See Structural.
160	Pre-finished aluminum flashing to match color of canopy. Turn out onto canopy.
162	Pre-finished 8"x8"x1/4" steel plate anchored to wall using through wall fasteners by Canopy manufacturer's designated design.
163	Pre-finished 1" cast steel turnbuckle with 1" threaded steel rod and 1" pins.
164	Anchor canopy to wall using through wall fasteners by Canopy manufacturer's designated design.
165	Provide a 1" flexible conduit extending 12" beyond the face of the wall for canopy lighting. See Electrical.
167	Pre-finished hinged panel for mounting access. Color to match canopy.
168	1"x2" aluminum tube. Typical.
169	Pre-finished metal over 1/2" pressure treated plywood. Terminate at aluminum storefront. Turn up pre-finished metal 1" at edge where metal meets canopy. Secure panel to plywood with fasteners compatible with type and color of metal being used.
186	Coffee cabinet.
218	Service Writing Desk.
231	Beverage refrigerator (By Others).
246	3"x12" aluminum channel.
254	2x wood framing at opening.
269	1" drain tube beyond. Slope top panel of canopy toward the drain tube at the front of the canopy.
331	Provide 42" guards at all exposed edges of above ceiling platforms. Concentrated Load: Guards shall be designed to resist a concentrated load of 200 pounds in accordance with Section 4.5.1 of ASCE/SEI 7. Uniform Load: Guards shall be designed to resist a linear load of 50 pounds per linear foot in accordance with Section 4.5.1.1 of ASCE/SEI 7. This load need not be assumed to act concurrently with the concentrated load specified above. Guard infill components except the top rail shall be designed to resist a concentrated load of 50 pounds in accordance with Section 4.5.1.2 of ASCE/SEI 7.



Express Oil Change & Tire Engineers

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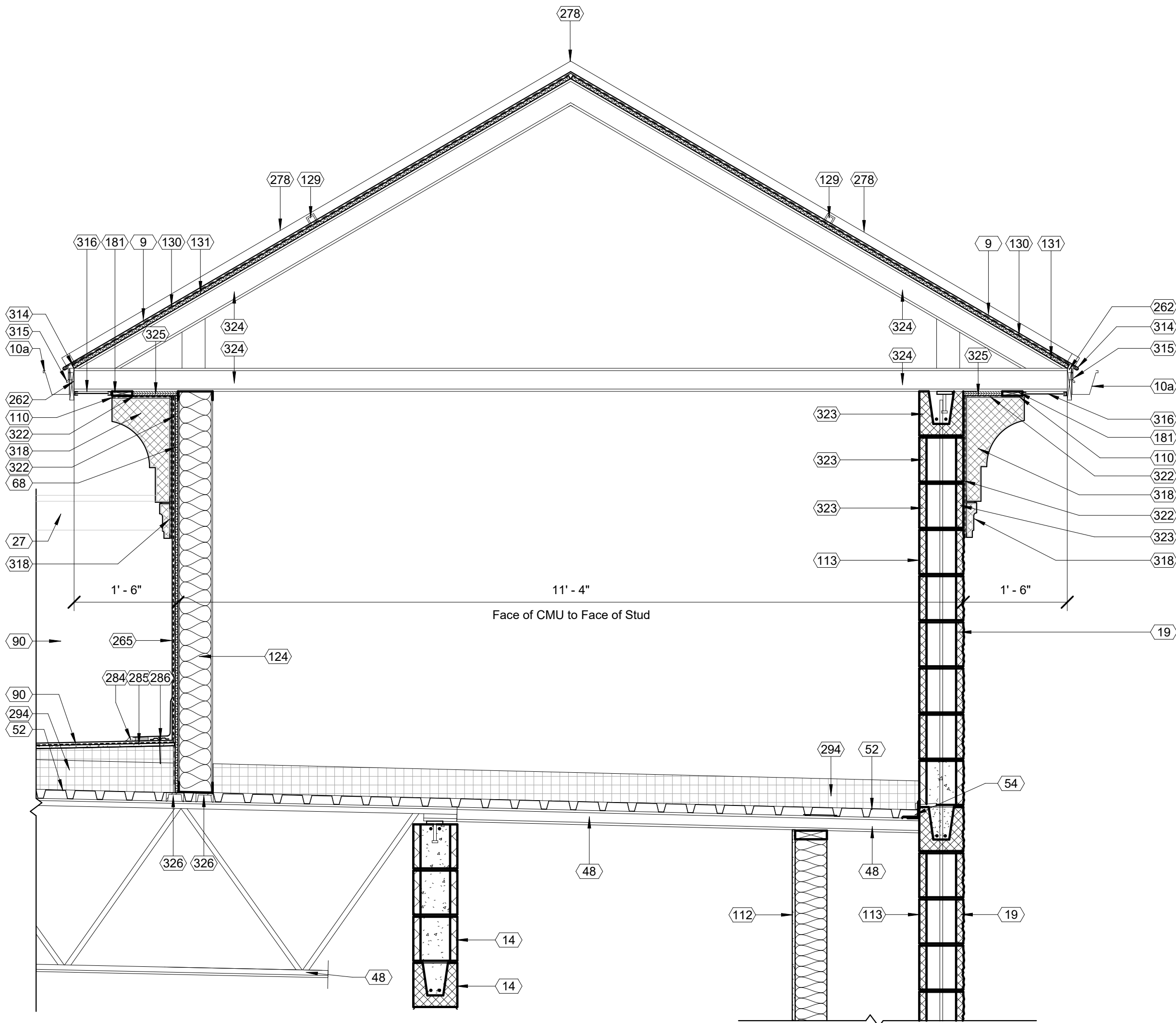
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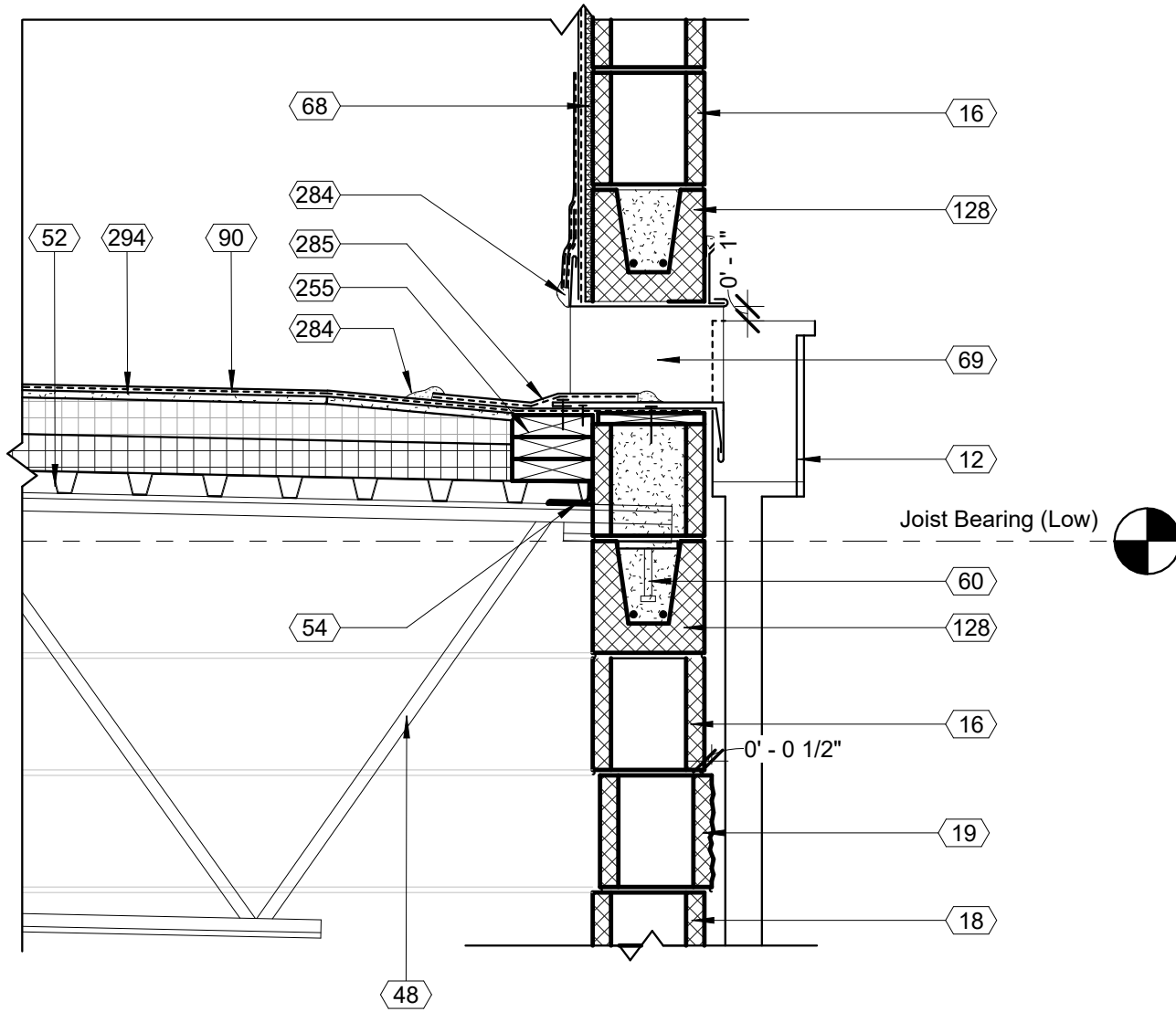
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Building Sections	
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
A303	
Scale	As indicated

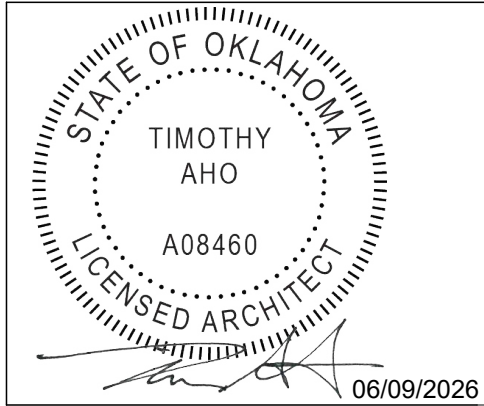


1 DT_Sheet A304_Section Thru Front Entry Tower
3/4" = 1'-0"

Keynote Schedule	
Tag	Text
9	Pre-finished standing seam metal roof system. See Specification 074113.16 Standing Seam Metal Roof Panels. See Finish Schedule for color.
10a	Prefinished metal gutter. Match SSMR color.
12	Pre-finished metal conductor head with built-in overflow and downspout. Drainage to discharge on grade, unless indicated on drawings that drainage is to be piped to storm, (See Civil). Provide a pre-finished elbow and concrete splash block. See Specification 077100 Roof Specialties.
14	Painted smooth-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
48	Bar joist. See Structural.
52	Galvanized metal roof deck. See Structural.
54	Steel angle. See Structural.
60	Steel plate with headed studs. See Structural.
68	1/2" exterior plywood sheathing.
69	Thru-wall metal roof scupper for roof drainage. See Specification 077100 Roof Specialties.
90	Fully adhered TPO membrane roofing installed per manufacturer's written instructions. See Specification 075423 Thermoplastic Polyolefin (TPO) Roofing.
110	Sealant with backer rod.
112	Painted 1/2" gypsum board on 2x6 wood studs at 16" o.c. with kraft-face R-20 batt insulation (kraft in contact with gypsum board). See Details.
113	Fluid applied vapor permeable air barrier. See Specification 072726 Fluid Applied Membrane Air Barrier.
124	6" metal structural C-stud framing at 16" o.c. with R-20 batt insulation.
128	Painted smooth-face 8" concrete-filled "U" block bond beam. Condition varies. See Structural.
129	"H" clips at mid-span on standing seam metal roof.
130	2 layers of #15 roofing felt.
131	5/8" pressure treated plywood decking. See Structural.
181	1x wood blocking.
255	2x pressure treated wood blocking. Use barrier to prevent corrosion between wood and metal.
262	2x pressure treated painted wood fascia.
265	TPO membrane turned vertically up the wall and fastened to wood blocking at top roof curb, or top of wall framing per detail. Adhere TPO membrane to wall substrate with manufacturer approved bonding adhesive.
278	Prefinished metal ridge/hip cap by metal roofing manufacturer.
284	Cut edge sealant at TPO roof membrane flashing.
285	Hot air weld at TPO membrane and membrane flashing.
286	Fastener and seam fastening plate.
294	Polyisocyanurate insulation board (See TPO Spec for required R-value). Provide 1/2" cover board, mechanically fastened, over the top of insulation in locations where membrane roofing is to be applied.
314	Field cut seam and form pan around eave flashing.
315	Eave flashing with drip edge.
316	Painted soffit. Provide paintable PVC jointer between soffit panels fastened to pressure treated wood blocking. See specification section 074293.
318	Painted preformed EIFS cornice and trim, See Specification Section 072400 EIFS Exterior Insulation and Finish System.
322	Vapor permeable air and water resistive barrier membrane. See Specification Section 072400 EIFS Exterior Insulation and Finish System.
323	Unpainted smooth-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry.
324	Cold-formed metal stud trusses, see Structural.
325	3/4" pressure treated plywood.
326	C channel running continuously within metal deck flute to support metal deck at wall locations. See Structural.



4 DT_Sheet A304_Roof Scupper Detail (Rear) Standard
1" = 1'-0"



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Building Sections

Project number	25048
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Checked by	N/A

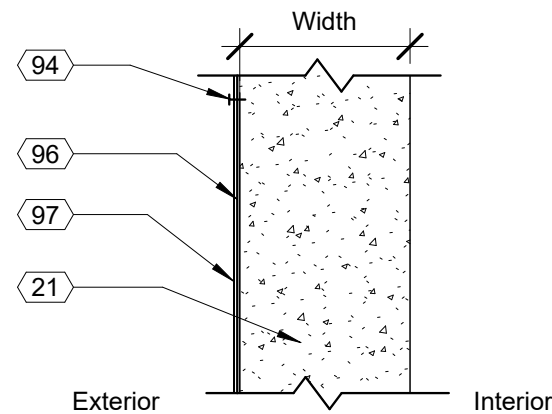
A304

Scale As indicated

E1

Refer to structural drawings for reinforcing and other information

Install all waterproofing per manufacturer's recommendations.



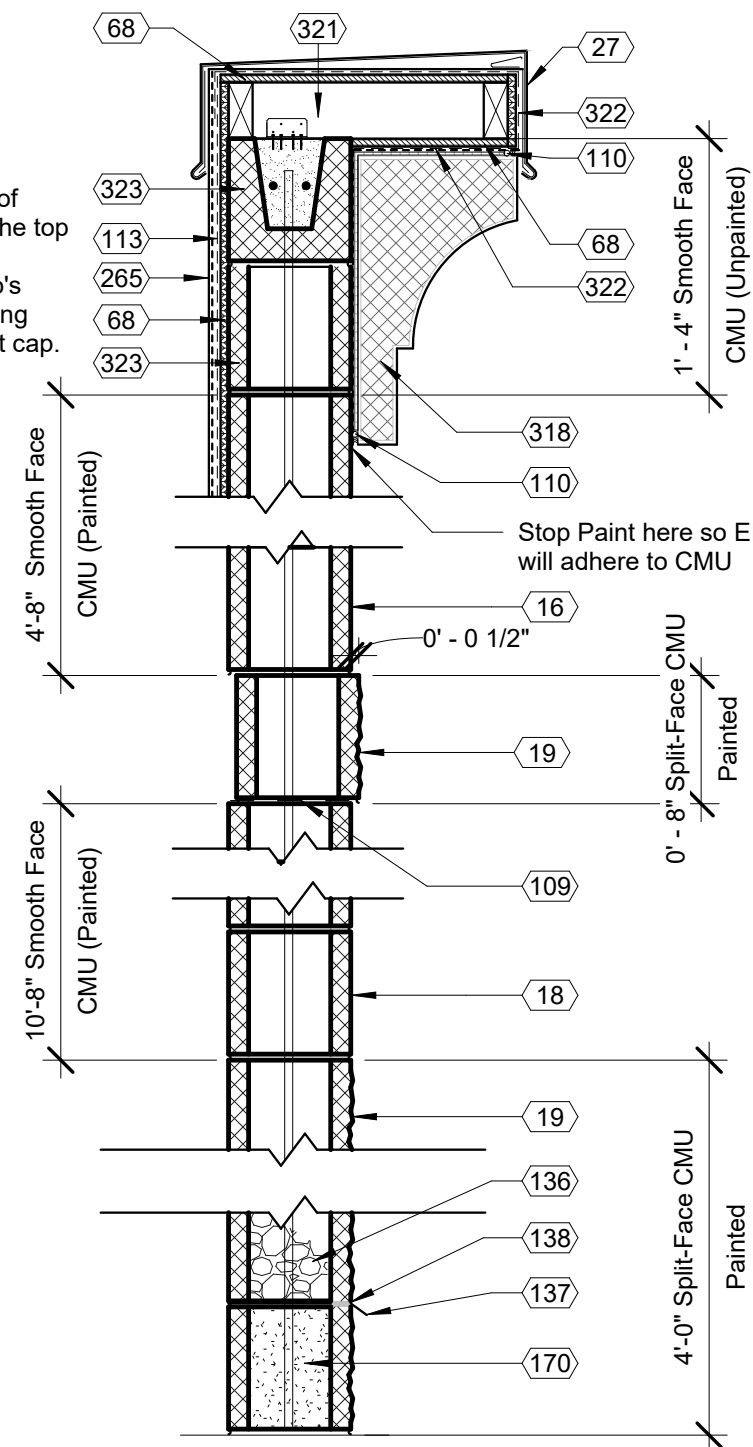
Wall Type No.	Description	Width	Ref Test
E1	As shown	See Struct.	-

E2

Contractor's Option: In lieu of wood framing as shown at the top of the parapet on the detail, Contractor may use Tremco's Pre-buck Engineered Framing System to construct parapet cap.

Refer to structural drawings for reinforcing, grouting, and other information

Install siloxane on the exterior side of wall construction

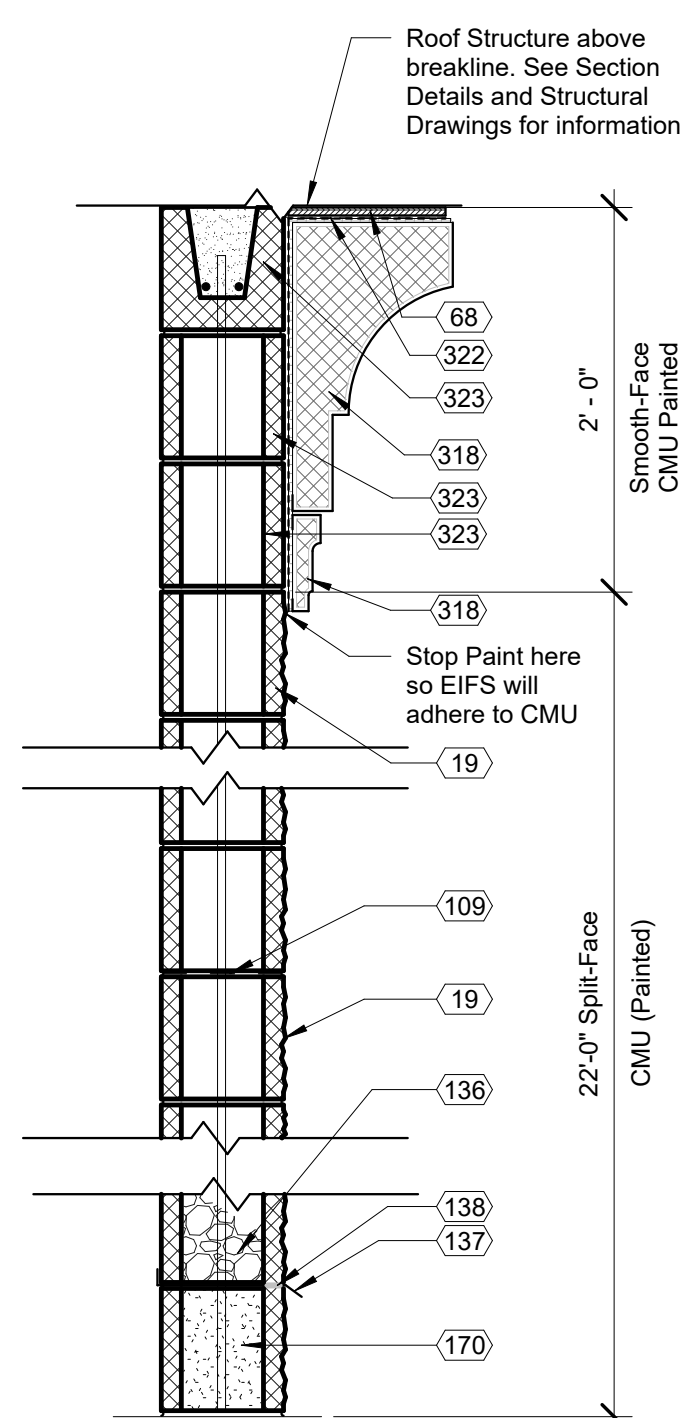


Wall Type No.	Description	Width	Ref Test
E2	As shown	7 5/8"	-

E3

Refer to structural drawings for reinforcing and other information

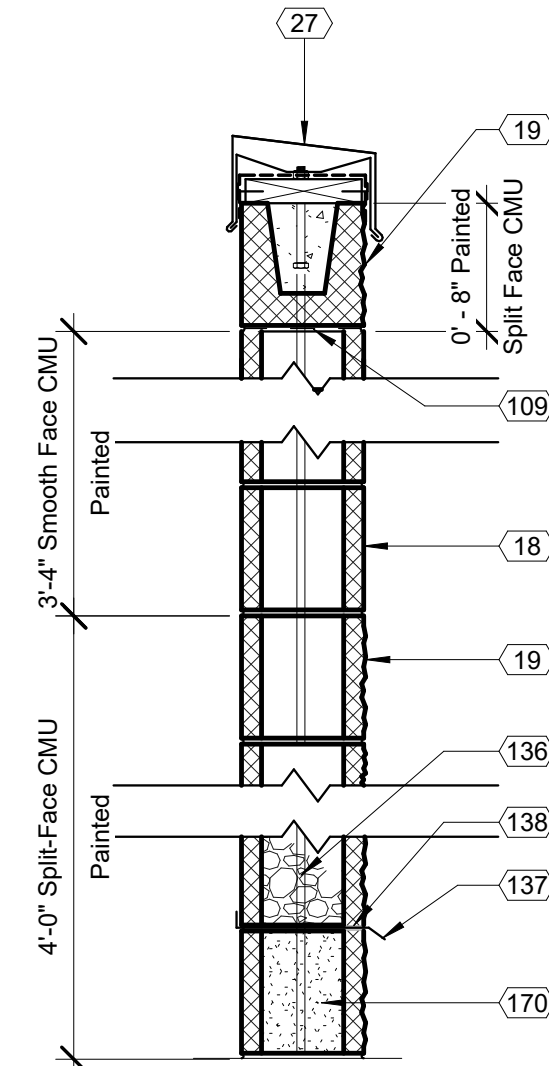
Install siloxane on the exterior side of wall construction



Wall Type No.	Description	Width	Ref Test
E3	As shown	7 5/8"	-

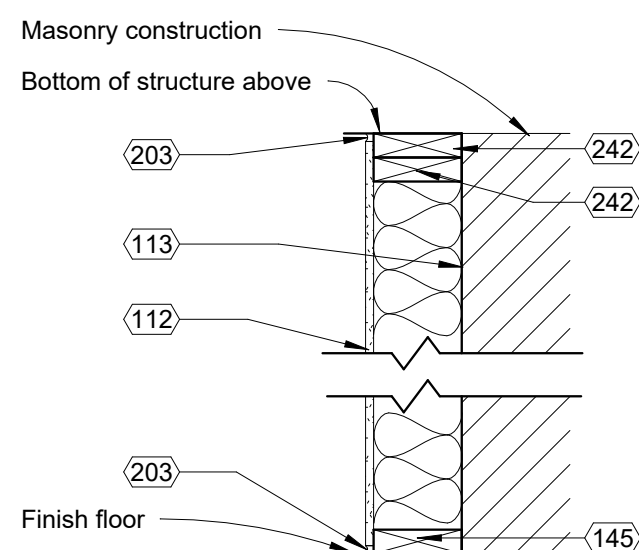
E5

Refer to structural drawings for reinforcing, grouting, and other information



Wall Type No.	Description	Width
E5	As shown	7 5/8"
E5a	As shown, except without coping and painted CMU to roof. See Elevations on A101.	7 5/8"

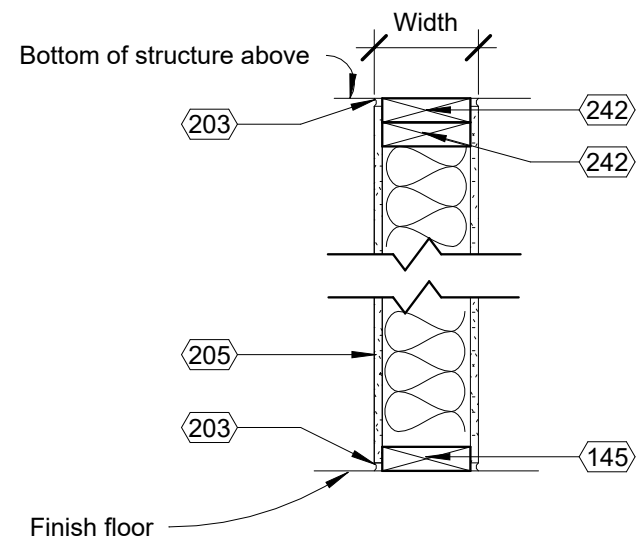
I2



Wall Type No.	Description	Width	Ref Test
I2	As shown	6"	-

I3

Note: Stagger electrical outlet boxes, switches, etc. Seal around all penetrations in wall with acoustical sealant.

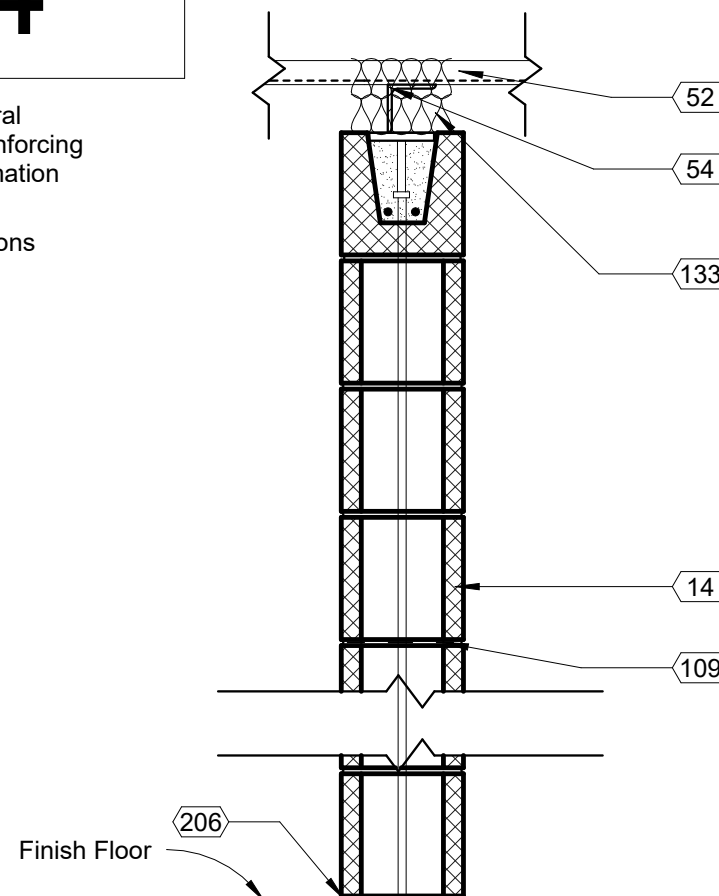


Wall Type No.	Description	Width	Ref Test
I3	As shown	6 1/2"	-

I4

Refer to structural drawings for reinforcing and other information

Seal all penetrations with fire caulk



Wall Type No.	Description	Width	Ref Test
I4	As shown - Full Height	7 5/8"	U905/U305

Keynote Schedule

Tag	Text
14	Painted smooth-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
16	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
18	Painted smooth-face CMU. See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
27	Pre-finished metal coping at exposed tops only over self-adhered membrane flashing and pressure treated wood blocking. Slope to drain. Color as indicated on Finish Schedule.
52	Galvanized metal roof deck. See Structural.
54	Steel angle. See Structural.
68	1/2" exterior plywood sheathing.
94	Fasteners at 12" max o.c. for securing subdrainage to pit wall. Follow manufacturer's installation instructions.
96	CCW MiraClay woven geotextile against wall/slab.
97	CCW MiraDrain 6200.
109	Horizontal joint reinforcement at 16" o.c. vertical.
110	Sealant with backer rod.
112	Painted 1/2" gypsum board on 2x6 wood studs at 16" o.c. with kraft-face R-20 batt insulation (kraft in contact with gypsum board). See Details.
113	Fluid applied vapor permeable air barrier. See Specification 072726 Fluid Applied Membrane Air Barrier.

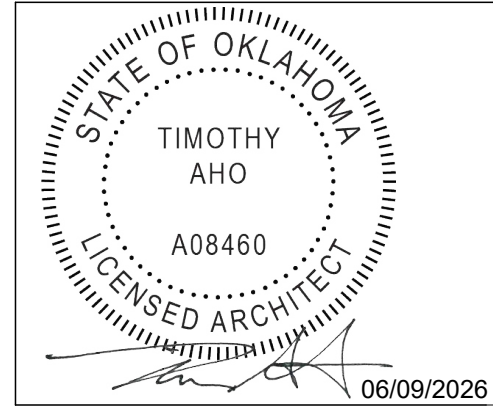
Keynote Schedule

Tag	Text
133	Firestop safing.
136	Pea gravel above through wall flashing.
137	Flashing between first and second course to utilize BlockFlash in addition to the pea gravel specified. Provide a drainage mat in open masonry cell directly above the BlockFlash pan.
138	Drainable weeps at every third mortar joint.
145	2x pressure treated wood sill plate.
170	Fill first course of CMU with grout.
203	Acoustical sealant and backer rod. See Specification 079219 Acoustical Joint Sealants.
205	1 layer of 1/2" painted gypsum board on both sides of 2"x6" wood studs at 16" o.c. Infill with kraft-faced R-20 batt insulation. Kraft in contact with gypsum board.
206	Fire caulk both sides. Typical. See Specification 078443 Joint Firestopping.
242	2x pressure treated wood top plate. Use barrier to prevent corrosion between wood and metal.
265	TPO membrane turned vertically up the wall and fastened to wood blocking at top roof curb, or top of wall framing per detail. Adhere TPO membrane to wall substrate with manufacturer approved bonding adhesive.
318	Painted preformed EIFS cornice and trim. See Specification Section 072400 EIFS Exterior Insulation and Finish System.
321	2x pressure treated wood framing spaced at 2'-0" o.c., minimum. Anchor 2x framing into grouted masonry cells using Simpson Strong Tie A23 angle ties. Secure angle ties on each side of framing members using 4 concrete screws on each side.
322	Vapor permeable air and water resistive barrier membrane. See Specification Section 072400 EIFS Exterior Insulation and Finish System.
323	Unpainted smooth-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry.

1 DT_Sheet A400 Gypsum Board Control Joint
1 1/2" = 1'-0"

2 DT_Sheet A400 Masonry Control Joint
1 1/2" = 1'-0"

3 DT_Sheet A400 Sealant Detail
6" = 1'-0"



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Sand Springs, Oklahoma

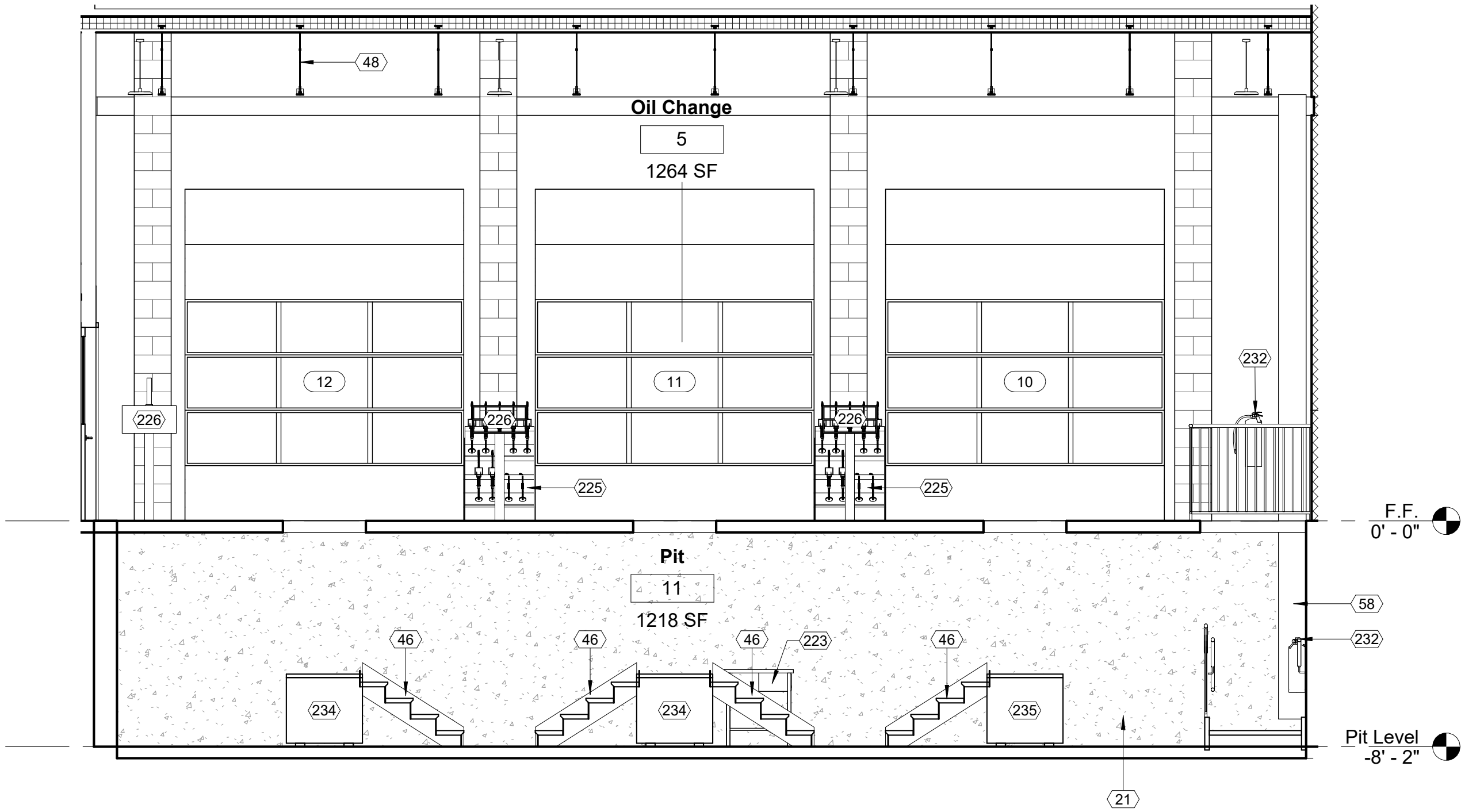
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IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

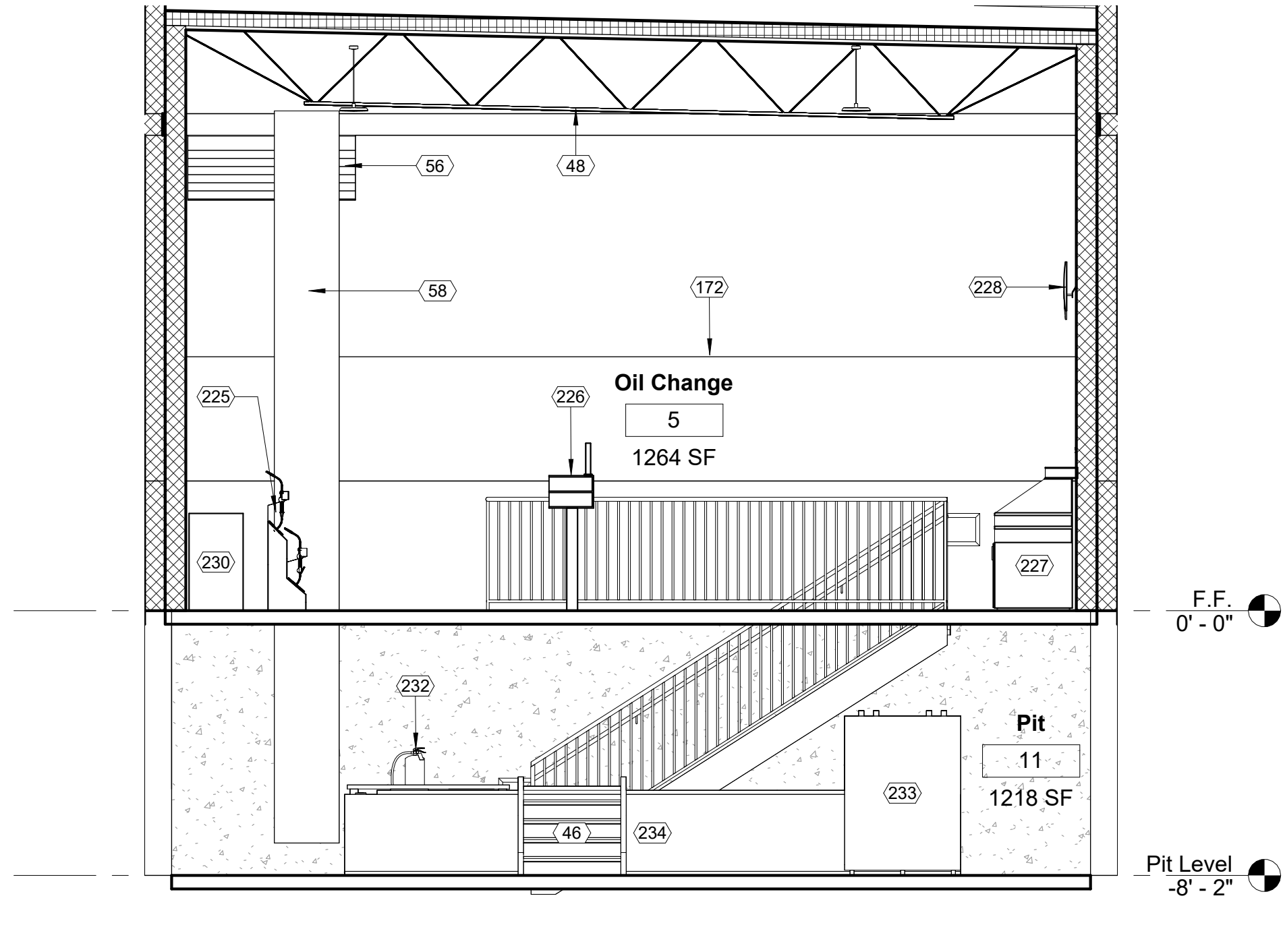
2026
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Wall Types

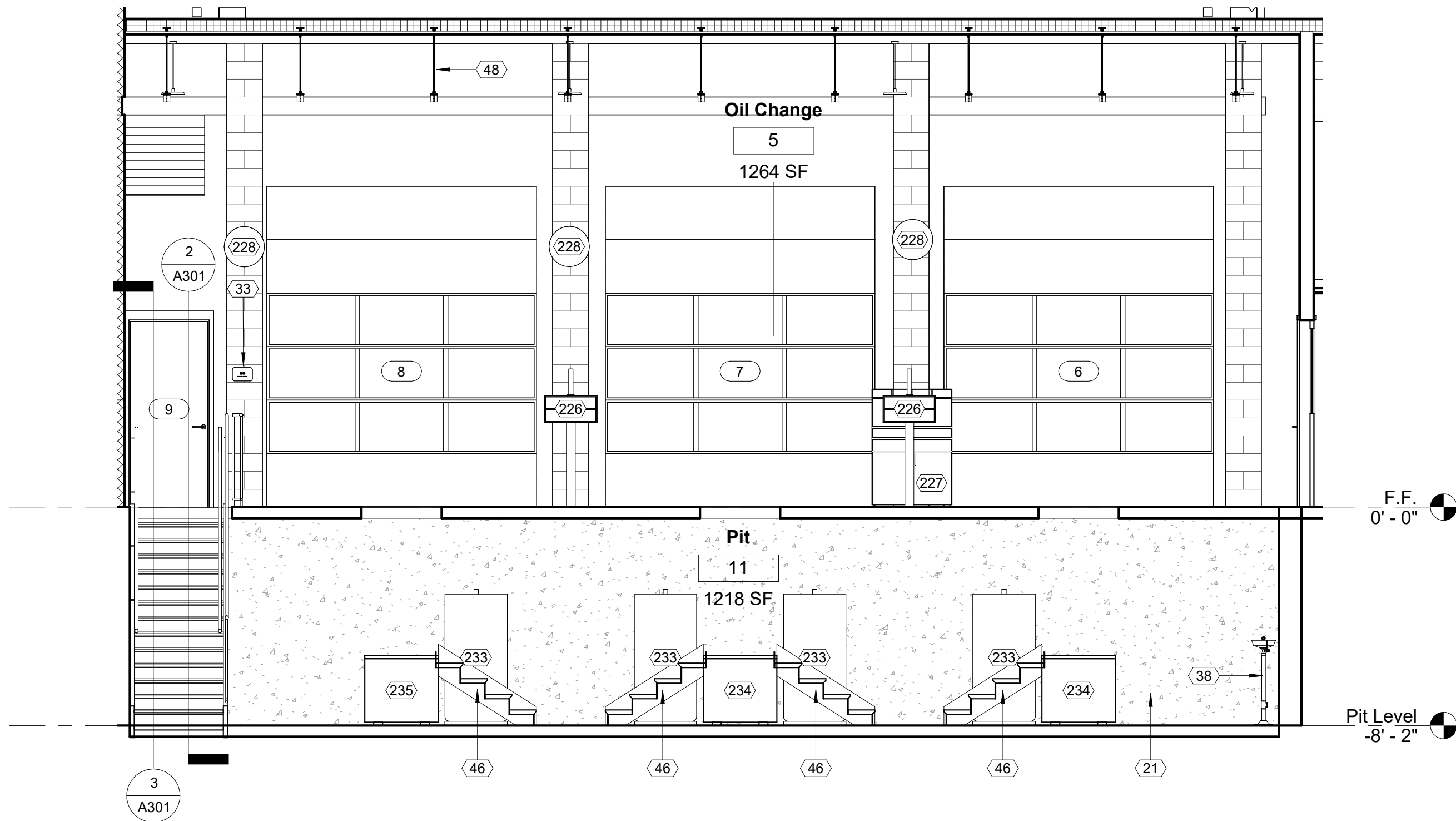
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A
A400	
Scale	As indicated



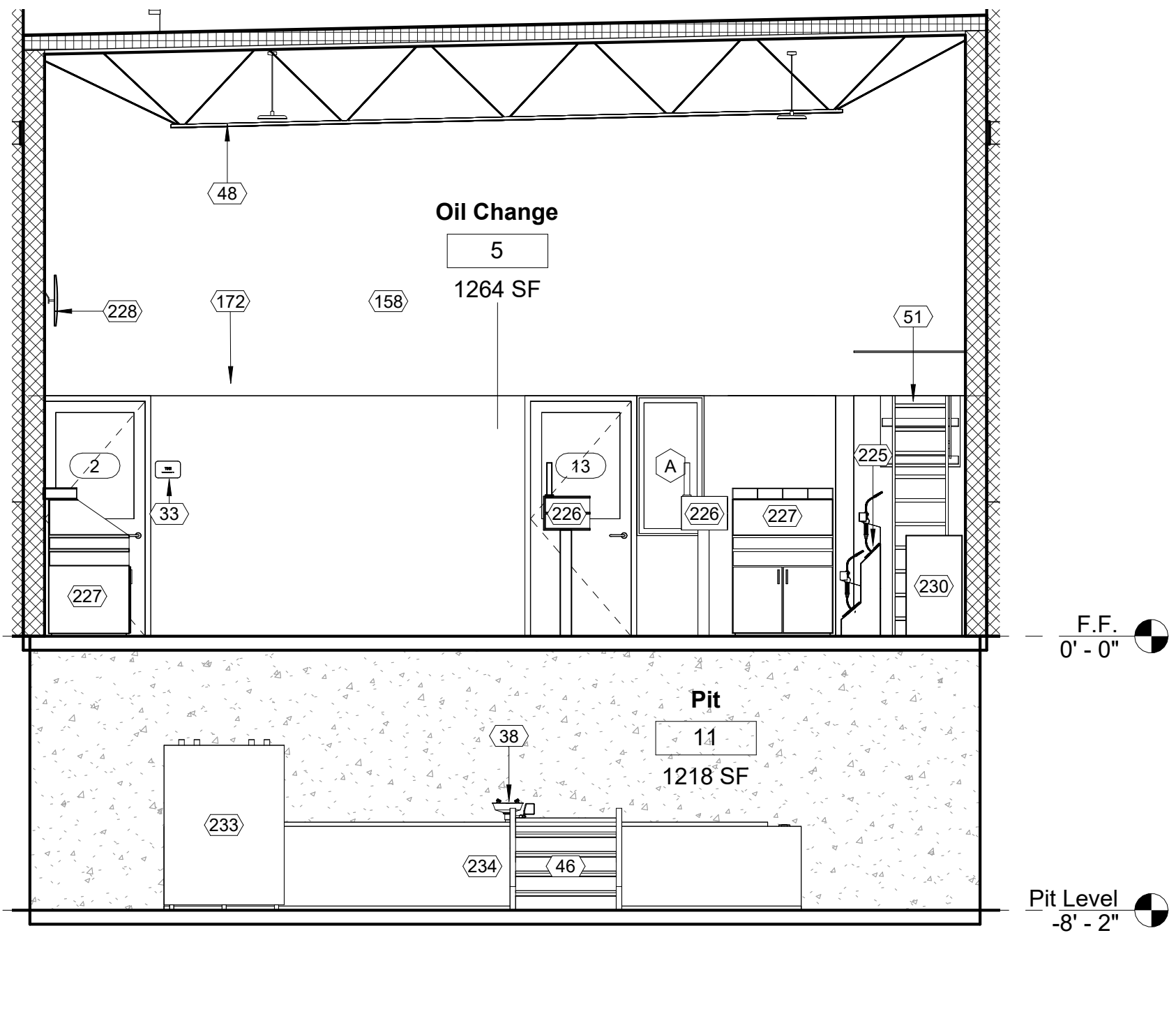
1 Oil Change Interior Elevation A
1/4" = 1'-0"



2 Oil Change Interior Elevation B
1/4" = 1'-0"

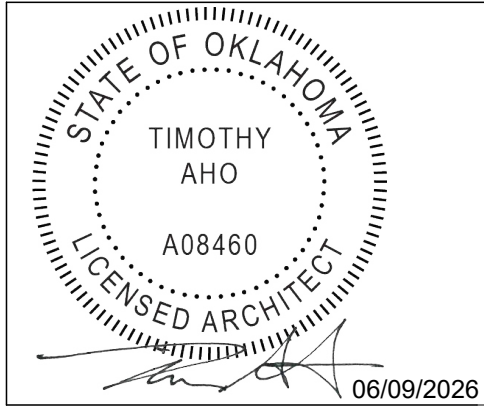


3 Oil Change Interior Elevation C
1/4" = 1'-0"



4 Oil Change Interior Elevation D
1/4" = 1'-0"

Keynote Schedule	
Tag	Text
21	Cast-in-place concrete wall. See Structural. Membrane waterproofing at perimeter of foundation wall as specified. See Specification 334600 Subdrainage.
33	ADA compliant room / exit sign. See Details.
38	Eyewash station. See Plumbing.
46	Oil tank stairs (By Others).
48	Bar joist. See Structural.
51	Attic access ladder.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
58	Verify location and size of pit exhaust opening with Structural and Mechanical drawings.
158	Vinyl letters (By Others).
172	Ensure paint line occurs at top of door and window frames. Ensure all openings, alcoves and windows align with top of door frame. Typical in Oil and Service Bays.
223	Work bench (By Others).
225	Lube console (By Others).
226	Computer podium (By Others).
227	Cashier computer station (By Others). Clear opening for cashier computer station must be 38 1/2" wide minimum. No Exceptions.
228	Convex mirrors (By Others).
230	Tool cart (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.
233	275-gallon Class IIIB new oil tank (By Others).
234	928-gallon Class IIIB new oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.
235	928-gallon Class IIIB waste oil tank (By Others). Provide a 2" concrete walkway cap with non-slip surface over (oil tank By Others). Coordinate with equipment supplier prior to installation.



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

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IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

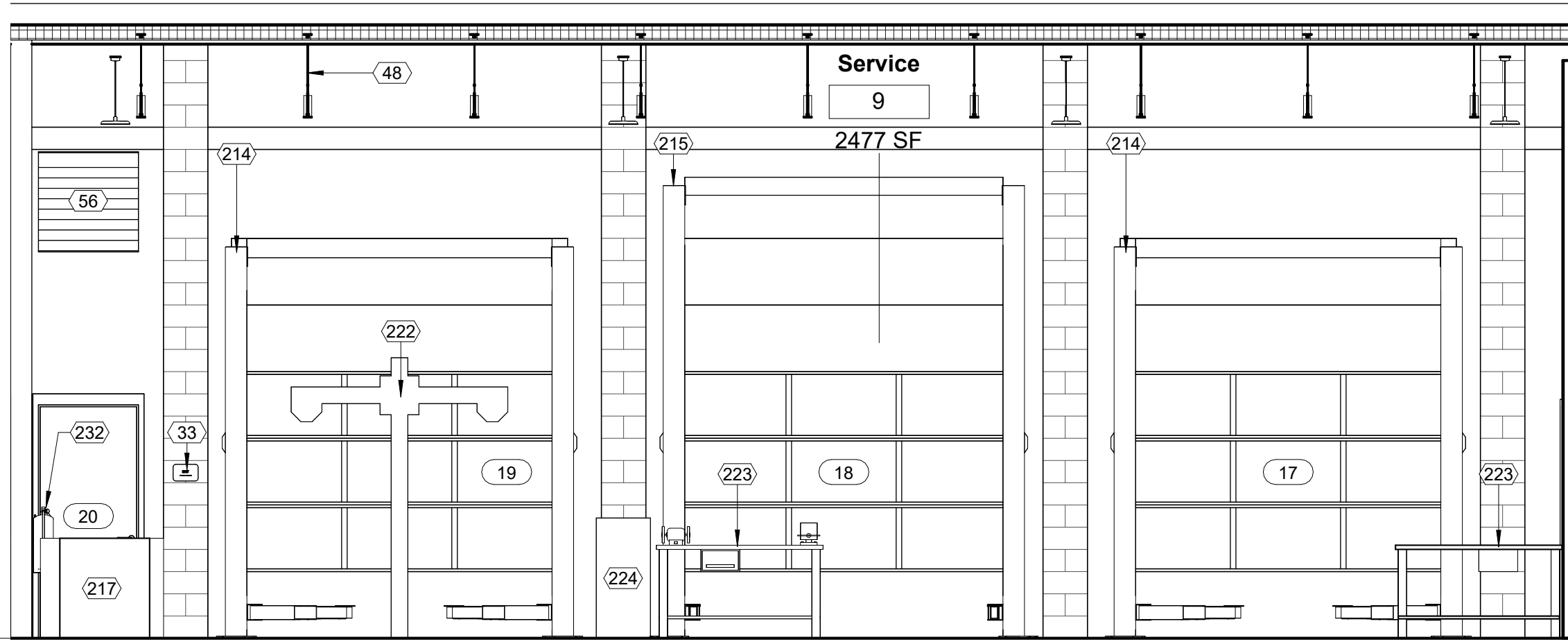
2026
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Interior Elevations

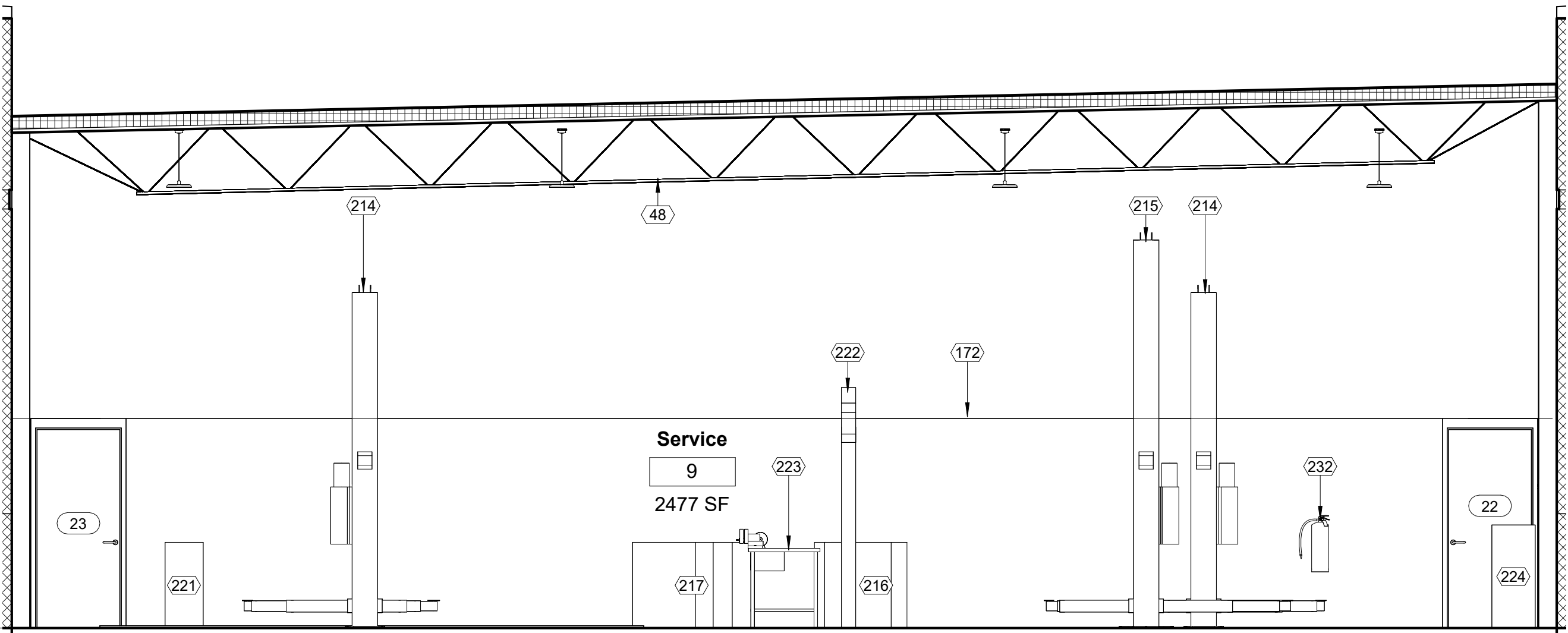
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A600

Scale 1/4" = 1'-0"

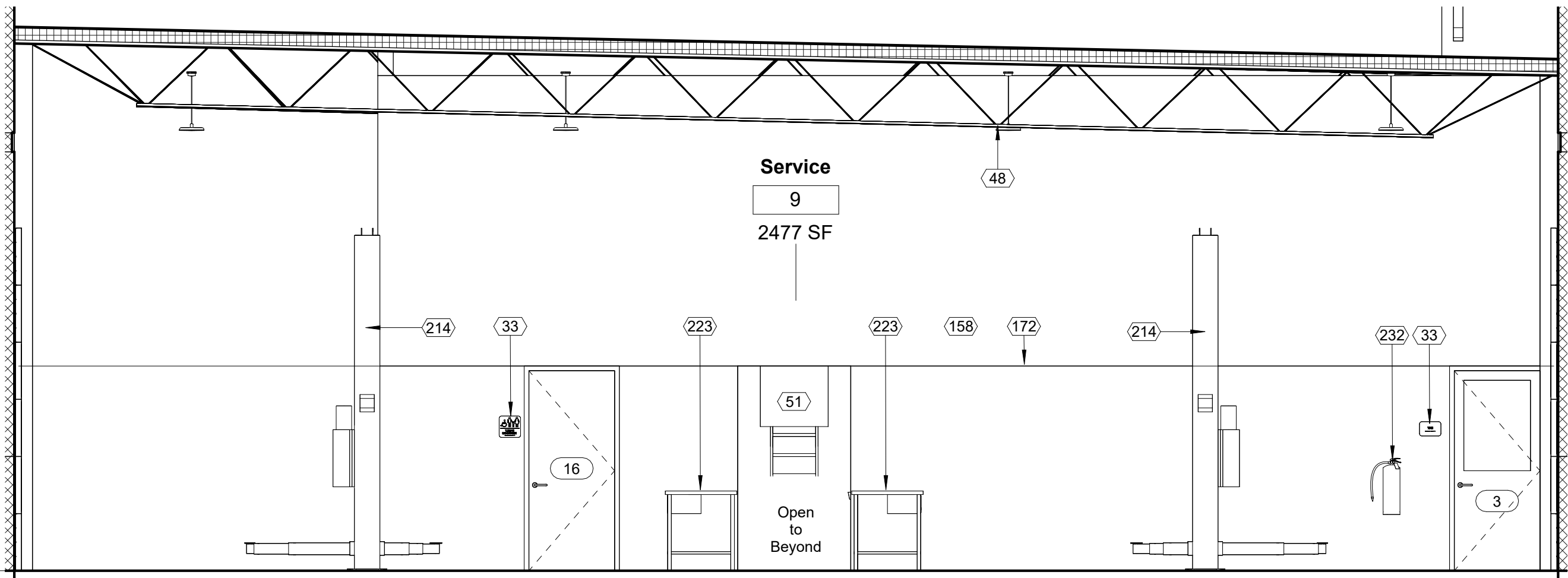


1 Service Bay Interior Elevation A
1/4" = 1'-0"

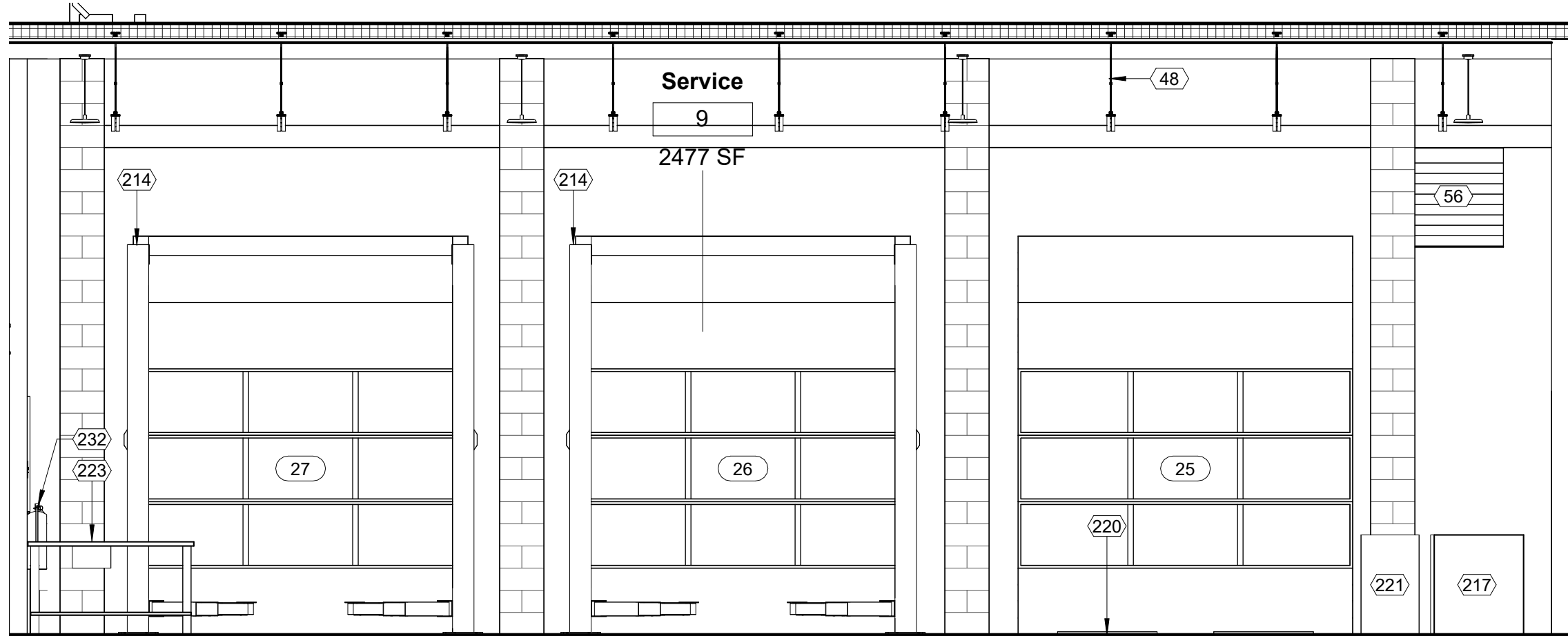


2 Service Bay Interior Elevation D
1/4" = 1'-0"

Keynote Schedule	
Tag	Text
33	ADA compliant room / exit sign. See Details.
48	Bar joist. See Structural.
51	Attic access ladder.
56	Metal louver or vent. Color to match adjacent surface. See Mechanical.
158	Vinyl letters (By Others).
172	Ensure paint line occurs at top of door and window frames. Ensure all openings, alcoves and windows align with top of door frame. Typical in Oil and Service Bays.
214	10K Lift (By Others).
215	12K Lift (By Others).
216	Tire changer (By Others).
217	Wheel balancer (By Others).
220	Scissor lift alignment (By Others).
221	Scissor lift alignment console (By Others). Provide conduit in slab as required. See alignment lift specifications (By Others).
222	Alignment scarecrow (By Others).
223	Work bench (By Others).
224	Strut compressor (By Others).
232	Bracket mounted fire extinguisher. See Specification Section 104416 Fire Extinguishers. Provide sign at all fire extinguisher locations which may be visually obstructed. See Details.

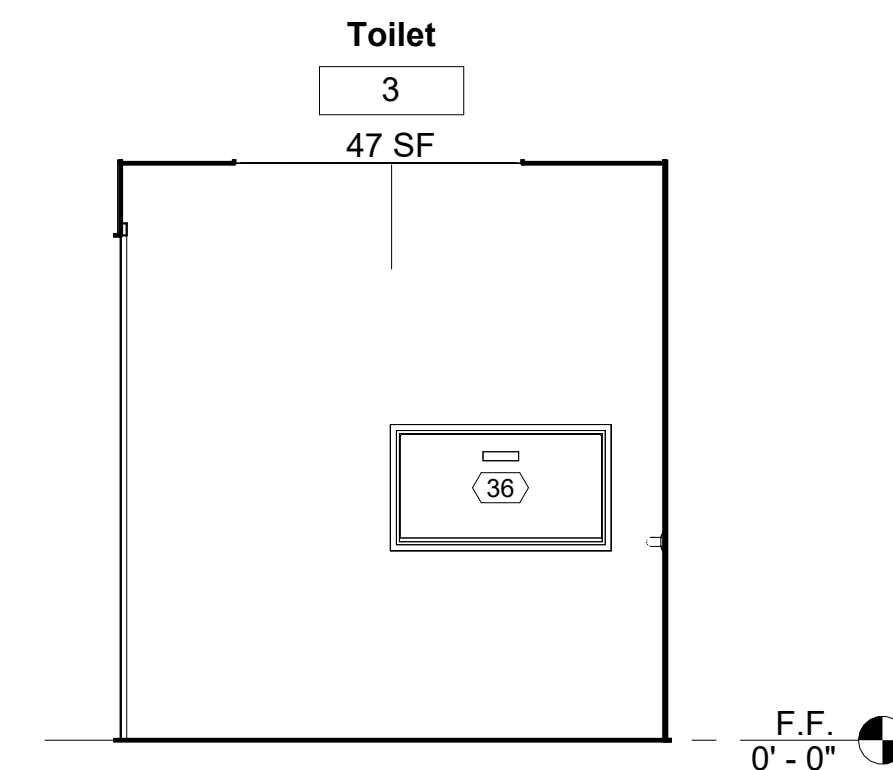
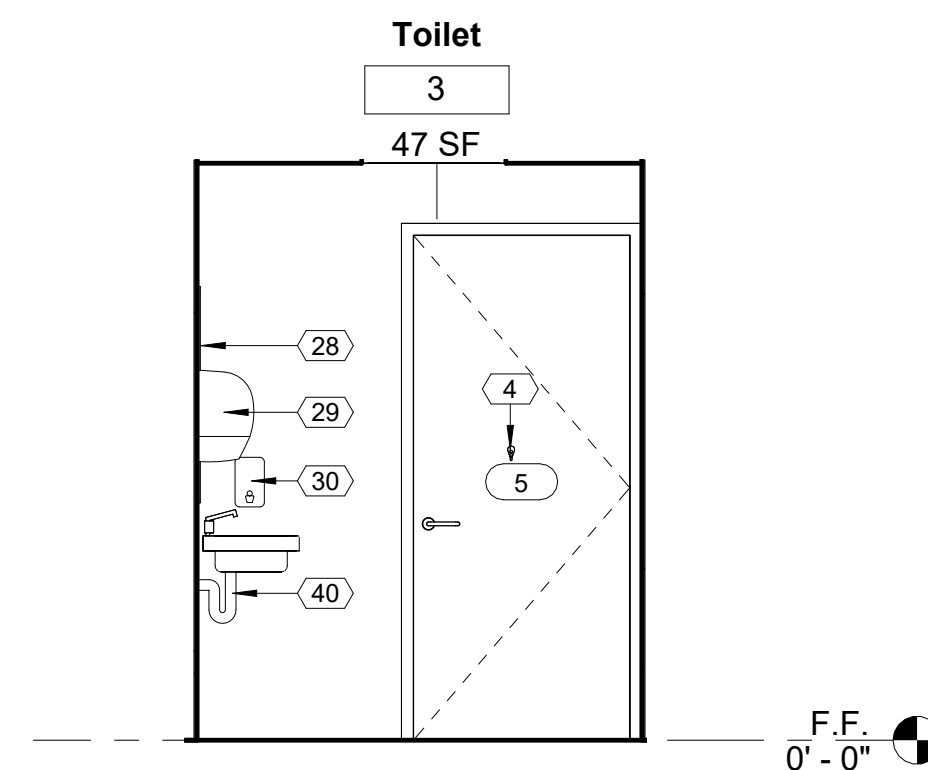
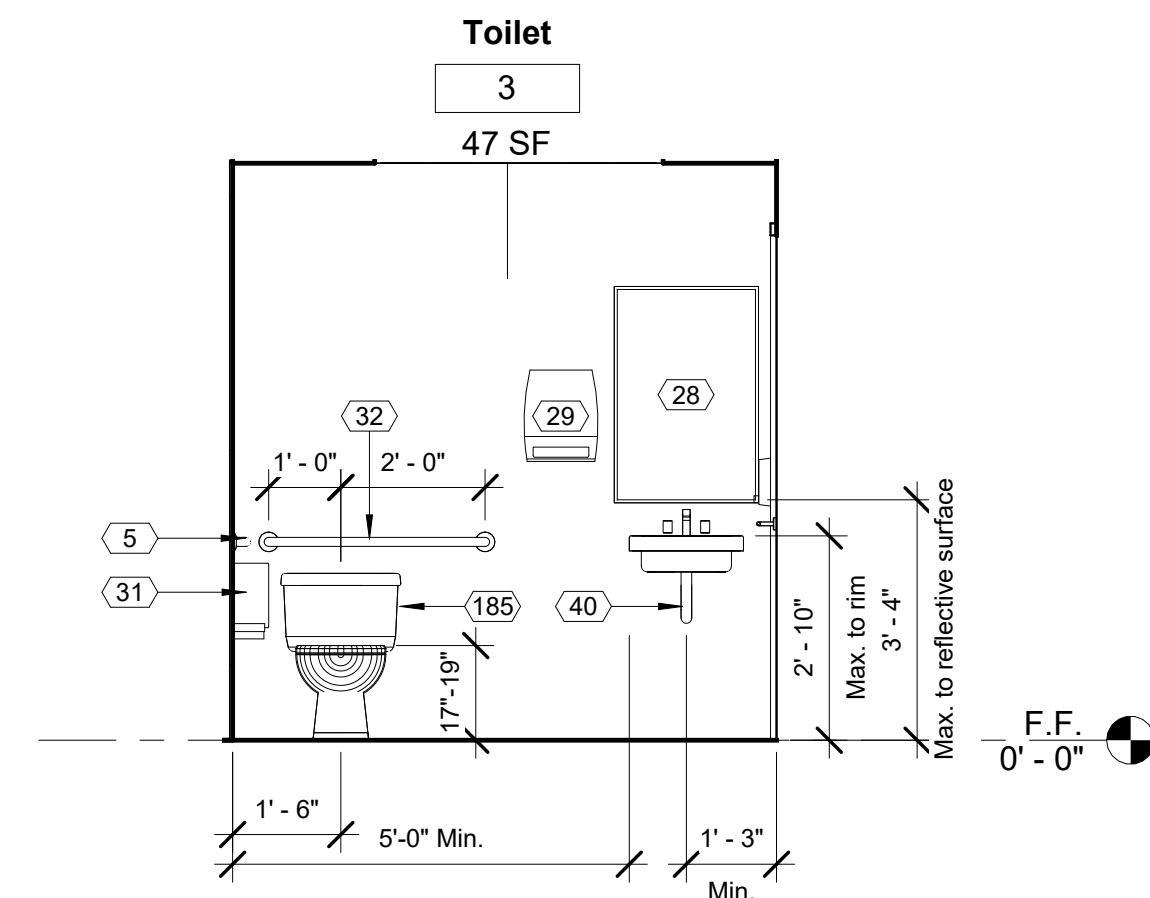
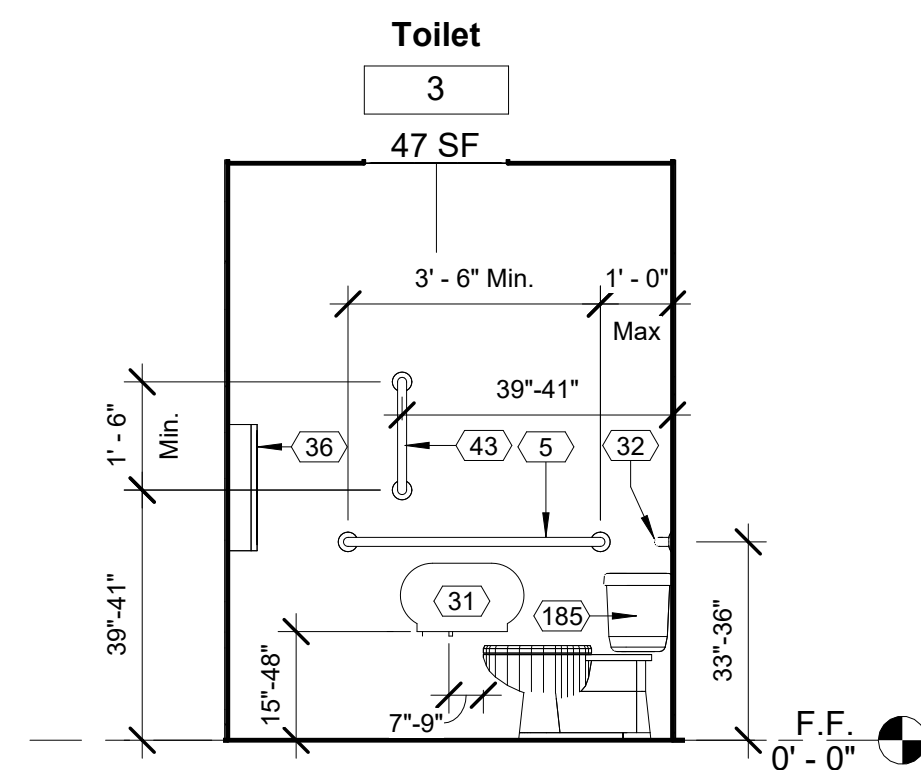


5 Service Bay Interior Elevation B
1/4" = 1'-0"

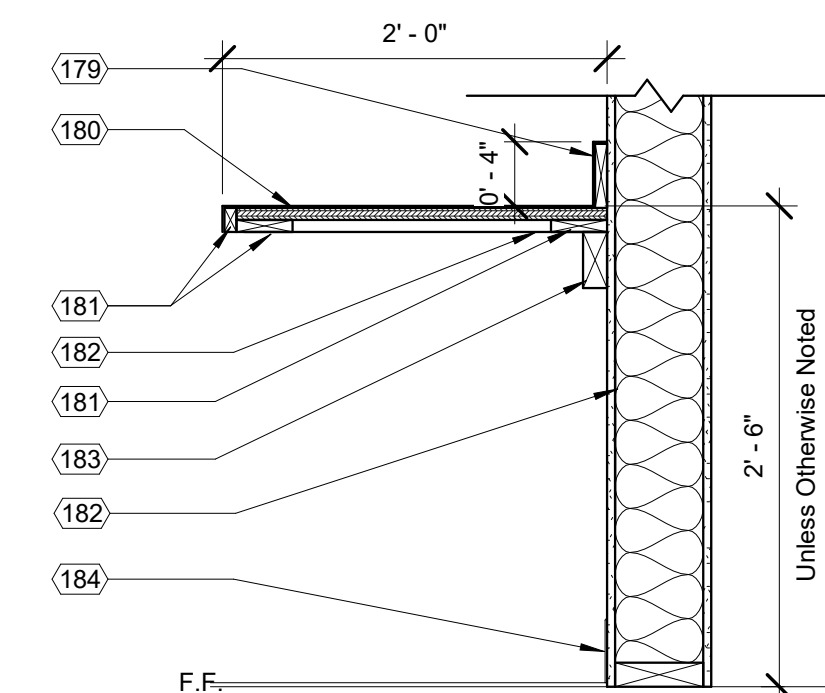
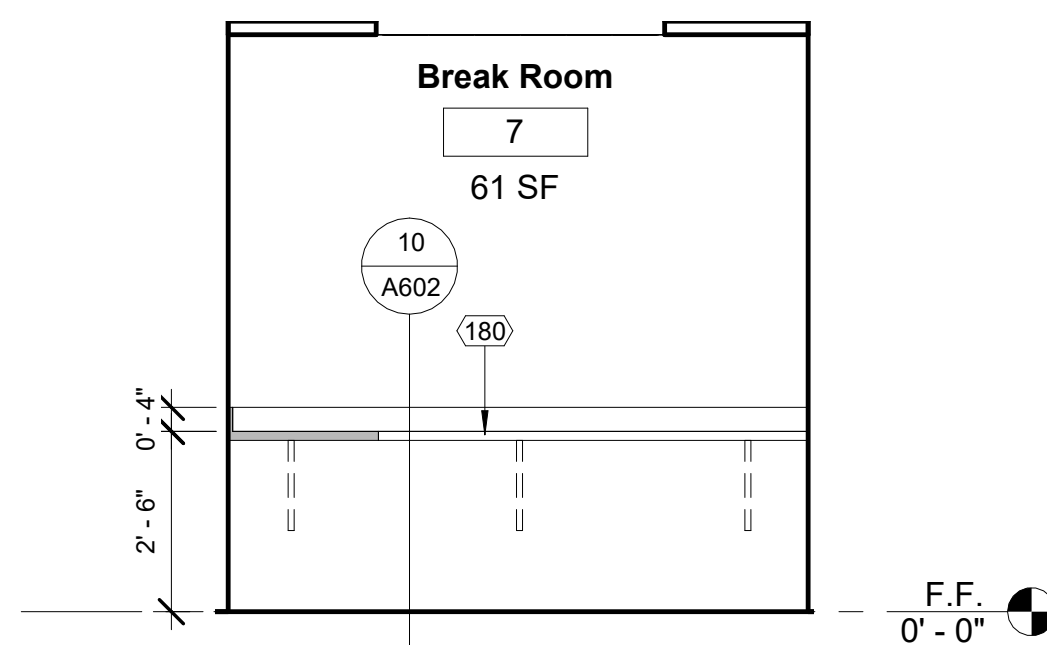
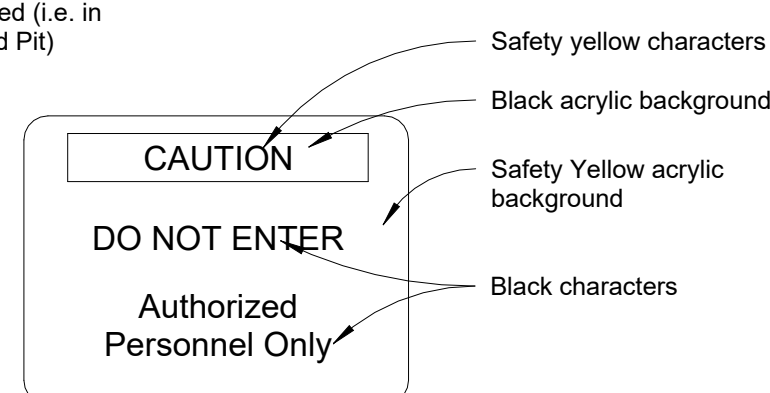
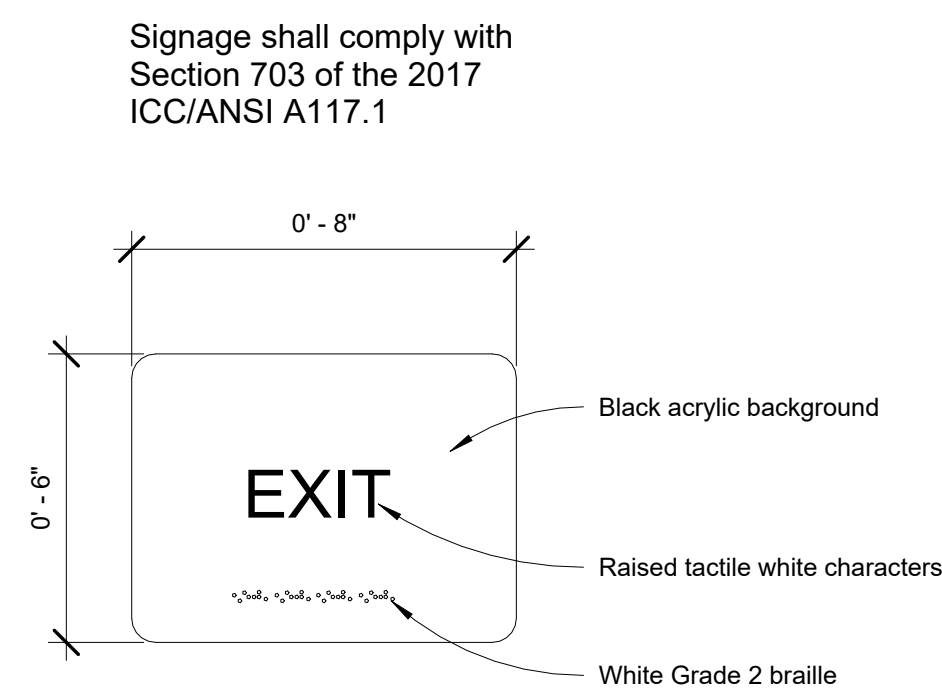
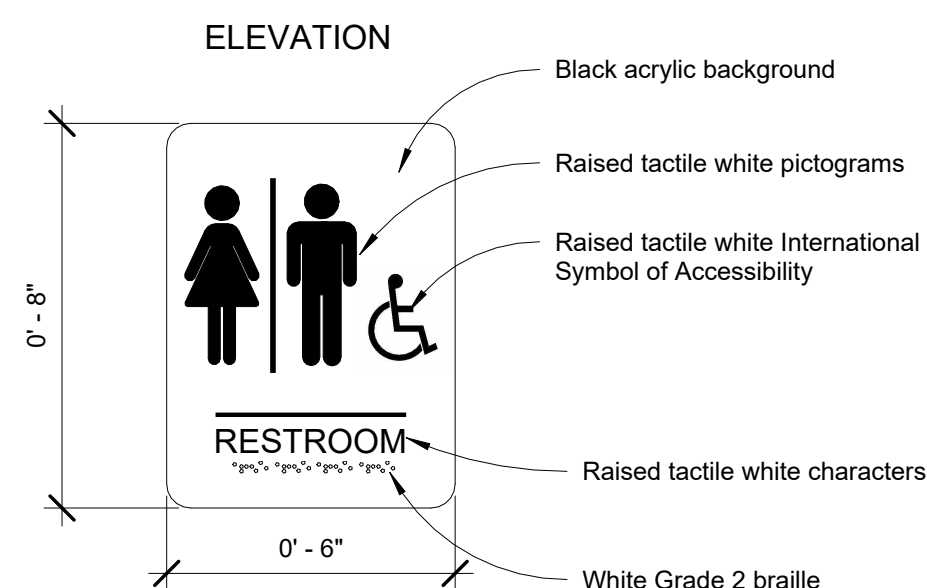
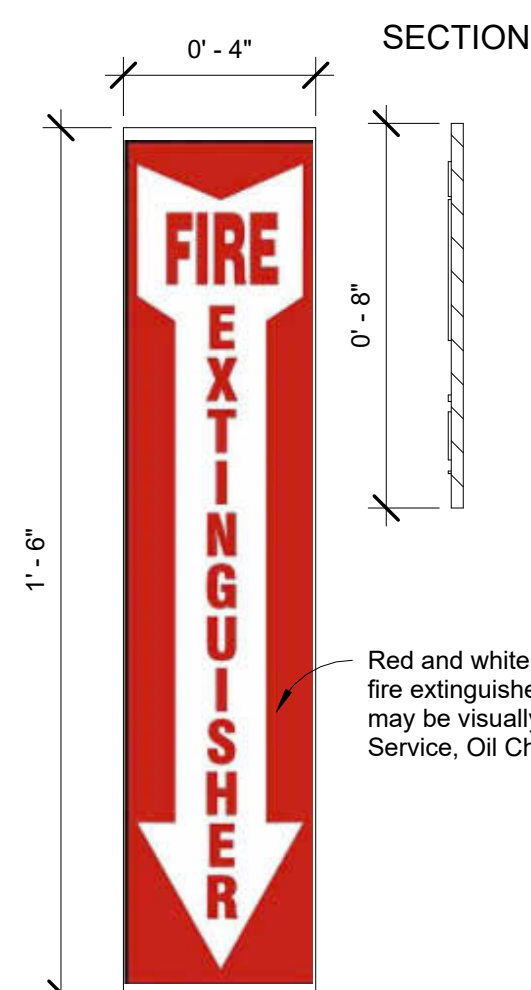
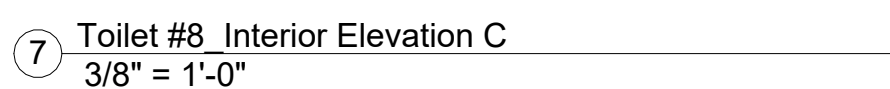
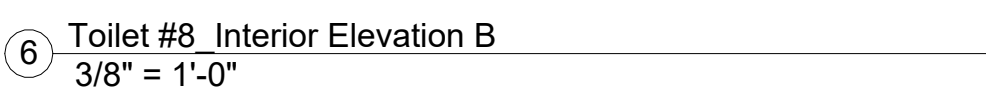
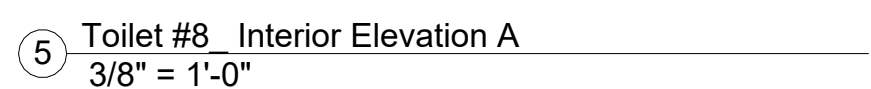
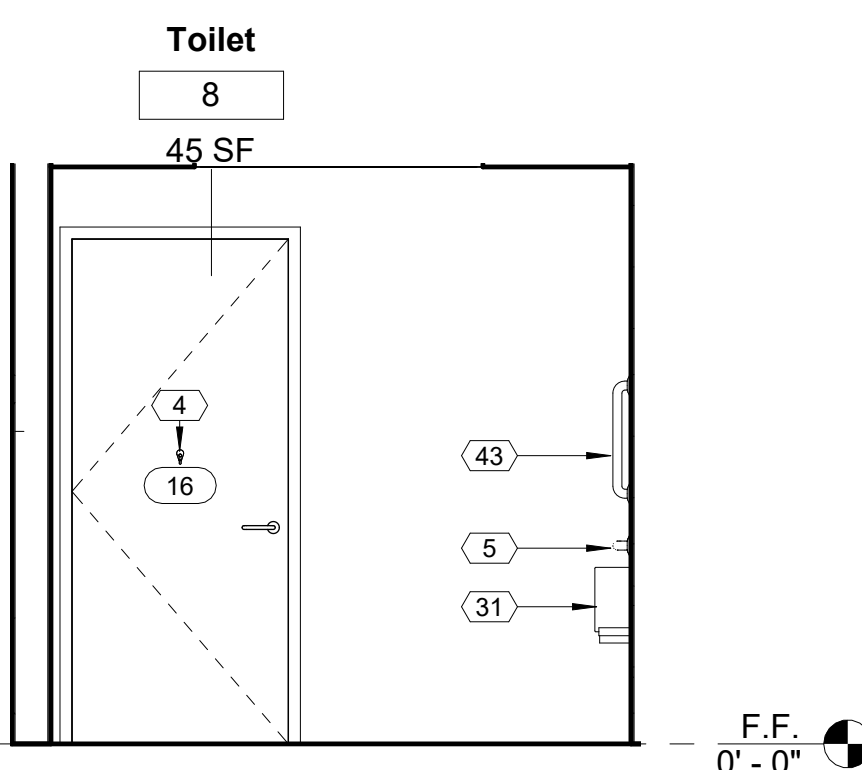
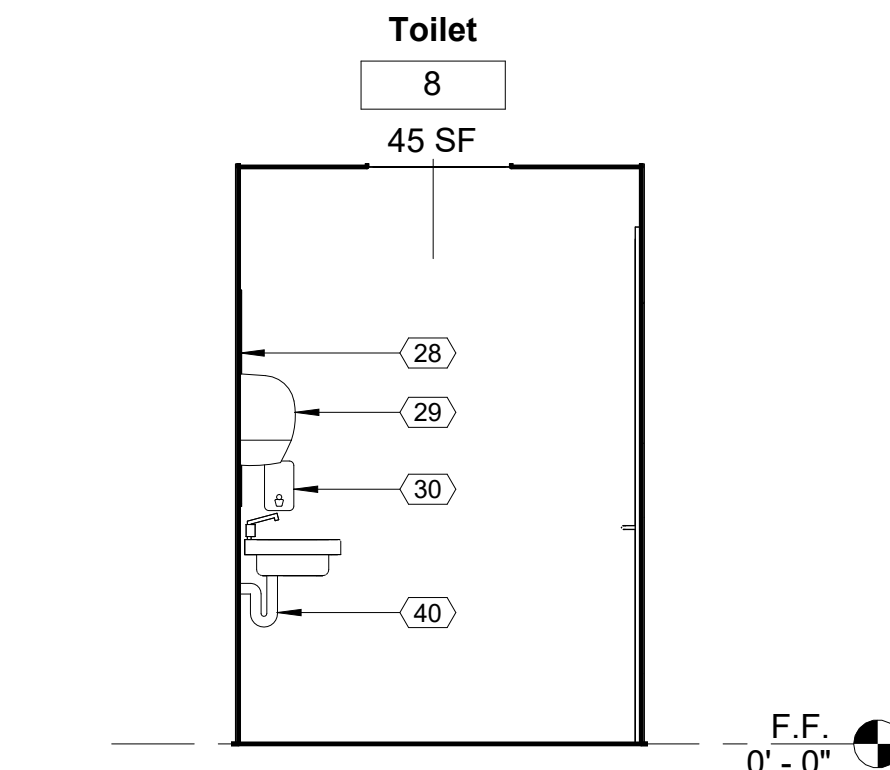
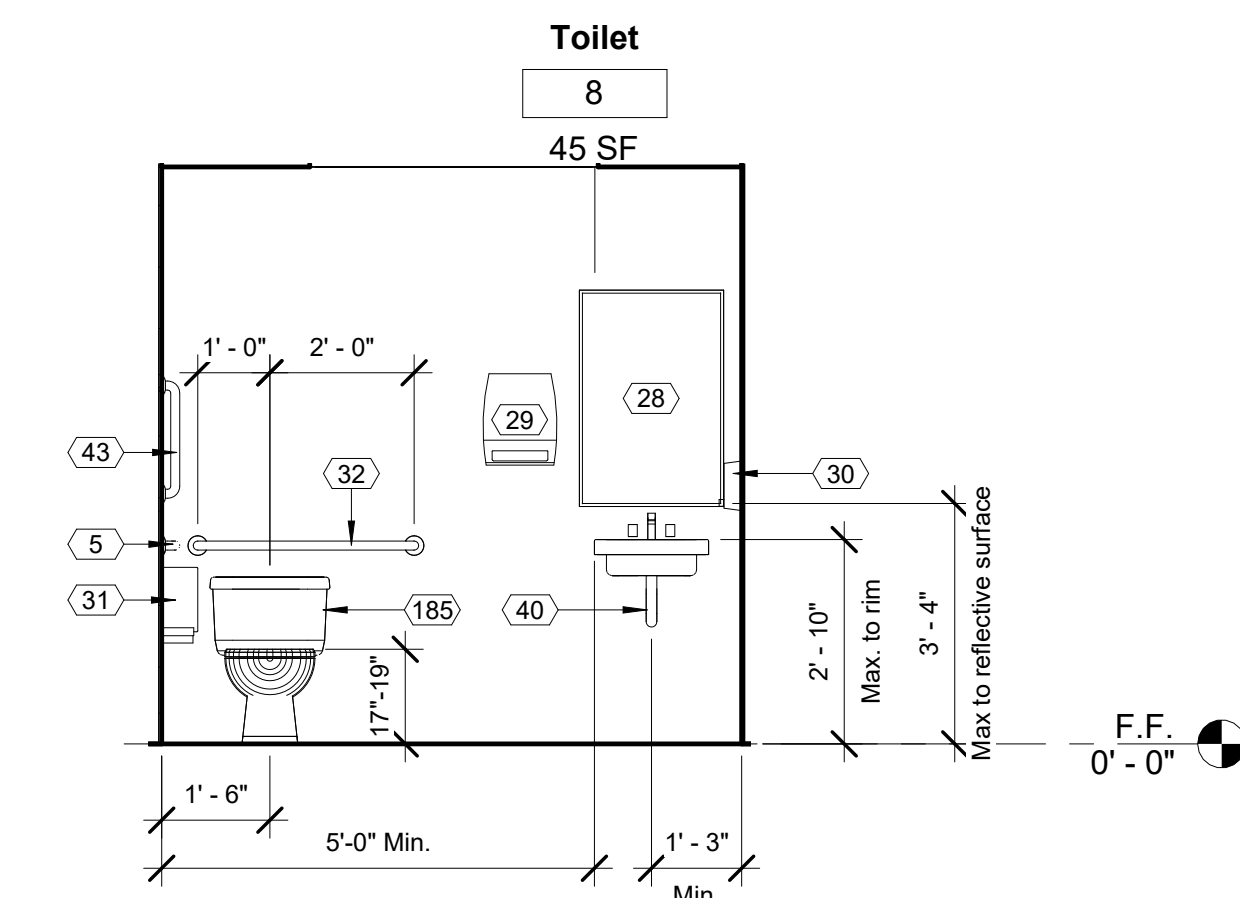
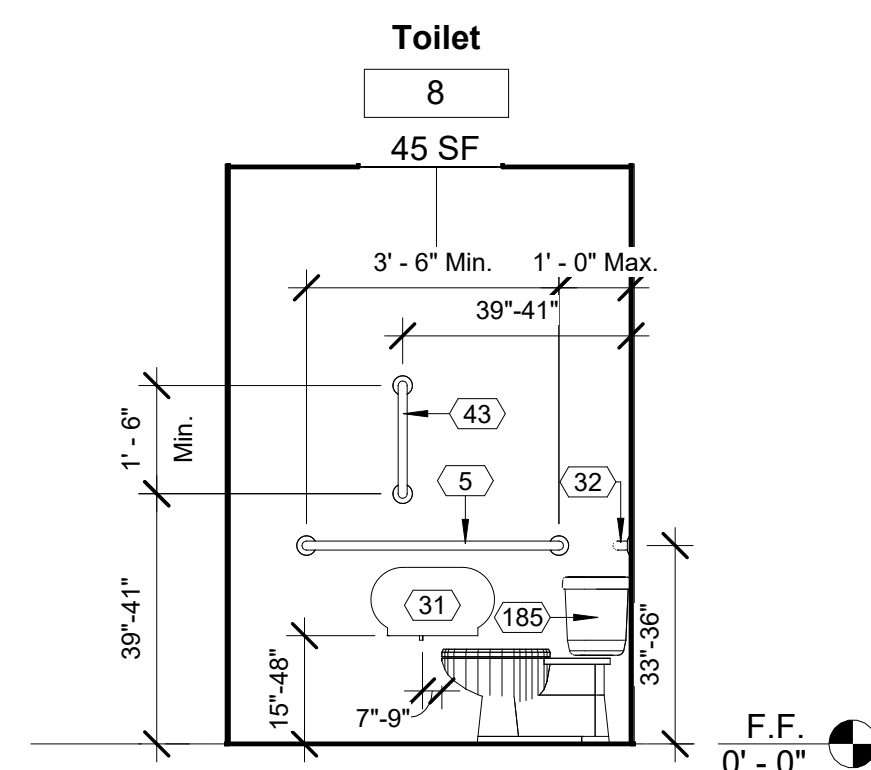


6 Service Bay Interior Elevation C
1/4" = 1'-0"

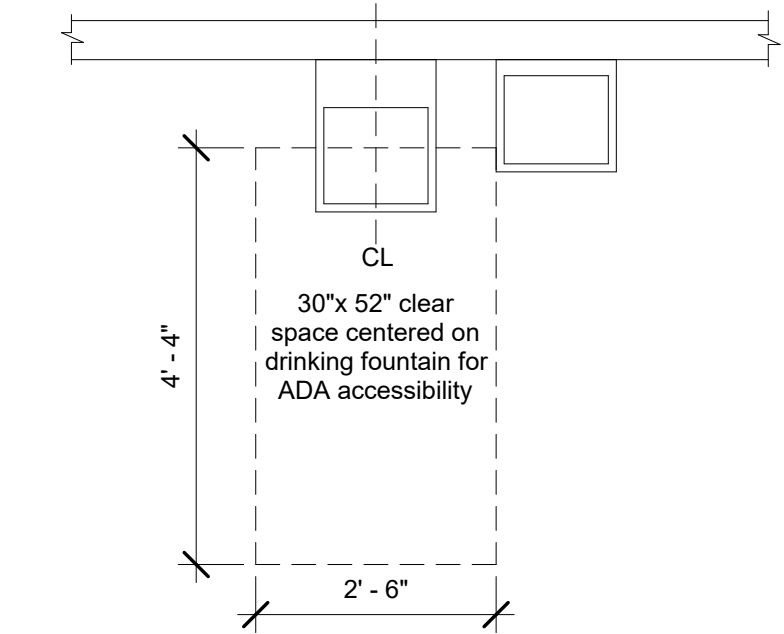
No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026



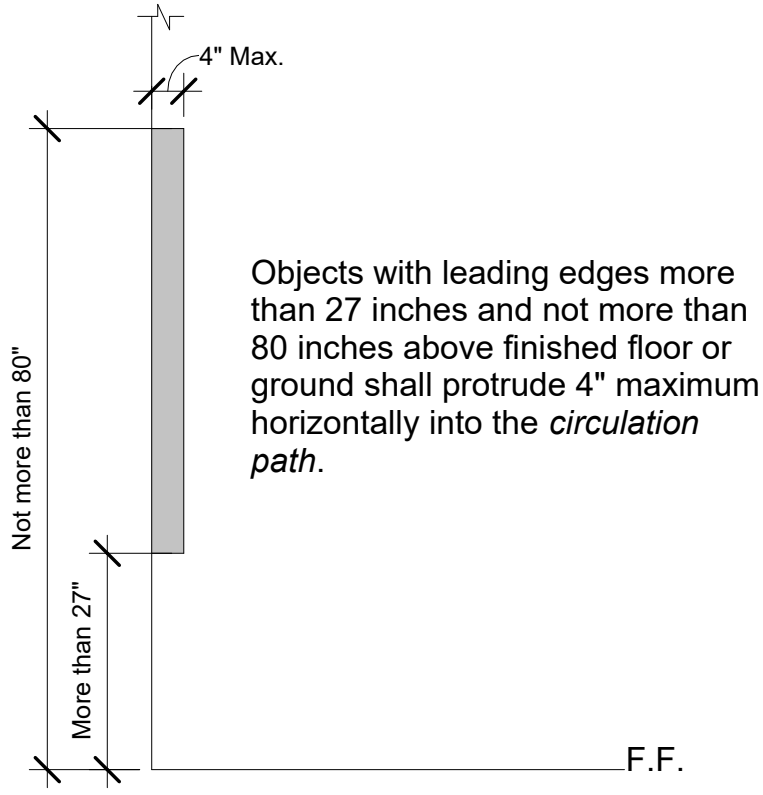
Keynote Schedule	
Tag	Text
4	Robe hook mounted at 48" A.F.F. See Specification 102800 Toilet, Bath, and Laundry Accessories.
5	42" grab bar with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
28	Framed mirror. See Specification 102800 Toilet, Bath, and Laundry Accessories.
29	Automatic Towel Dispenser (By others). Provide blocking in wall as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
30	Wall mounted soap dispenser (By Others). Provide blocking in wall as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
31	Jumbo Dual Roll Toilet Tissue dispenser (By Others). Provide blocking in wall as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
32	36" grab bar with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
36	Surface mounted baby changing station with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
40	Under lavatory guard. See Specification 102800 Toilet, Bath, and Laundry Accessories.
43	24" vertical grab bar with blocking in walls as required. See Specification 102800 Toilet, Bath, and Laundry Accessories.
179	Plastic laminate over 1x wood blocking. See Specification 123623.13 Plastic-Laminate-Clad Countertops. See Finish Schedule for color.
180	Plastic laminate over 3/4" plywood. See Specification 123623.13 Plastic-Laminate-Clad Countertops. See Finish Schedule for color.
181	1x wood blocking.
182	Concealed countertop bracket.
183	2x wood cleat.
184	Finish base. See Specification Section 096513 Resilient Base Accessories. See Finish Schedule for color.
185	Flush valve on transfer side of water closet.



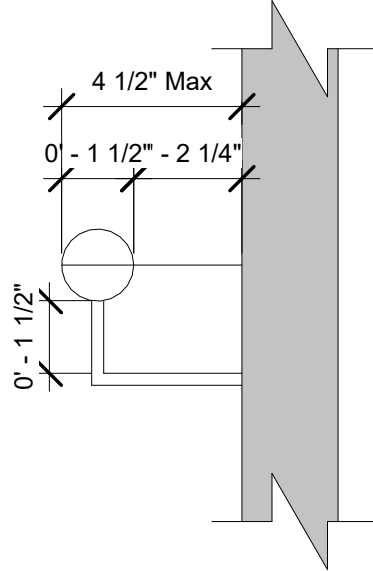
No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026



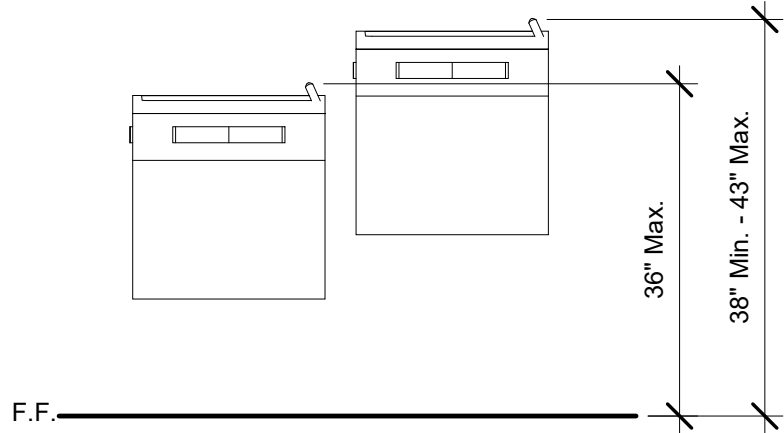
DT_Sheet A605_Drinking Fountain_Plan View
1/2" = 1'-0"



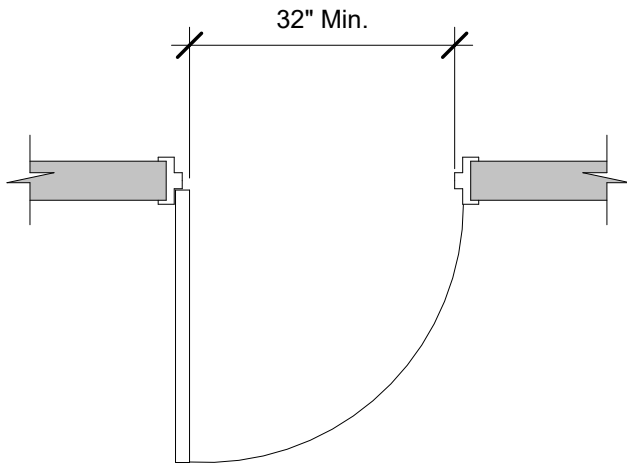
DT_Sheet A605_Limits of Protruding Objects
1/2" = 1'-0"



DT_Sheet A605_Handrail Detail
3" = 1'-0"

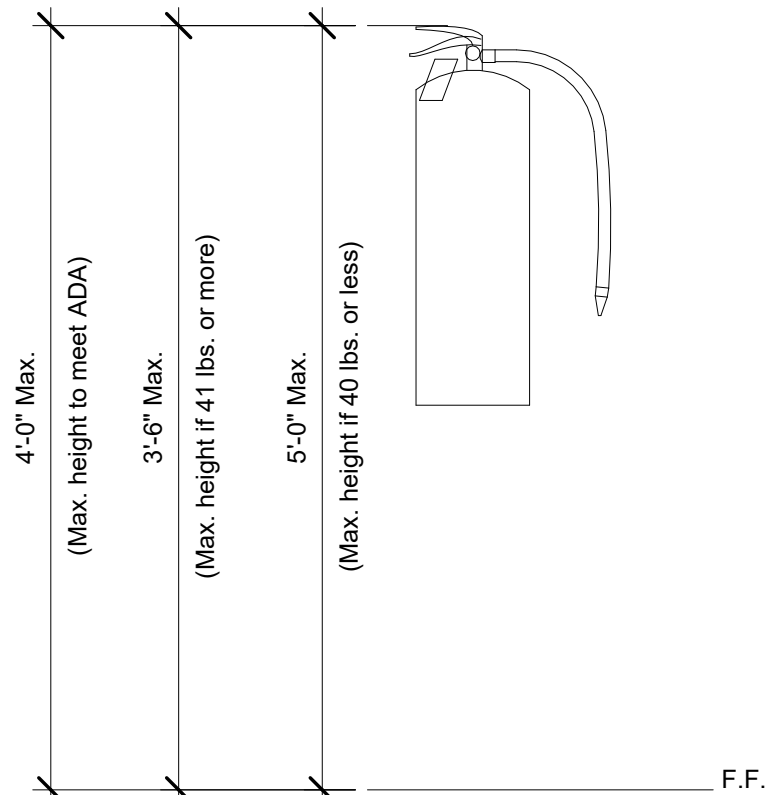


DT_Sheet A605_Drinking Fountain_Front View
1/2" = 1'-0"

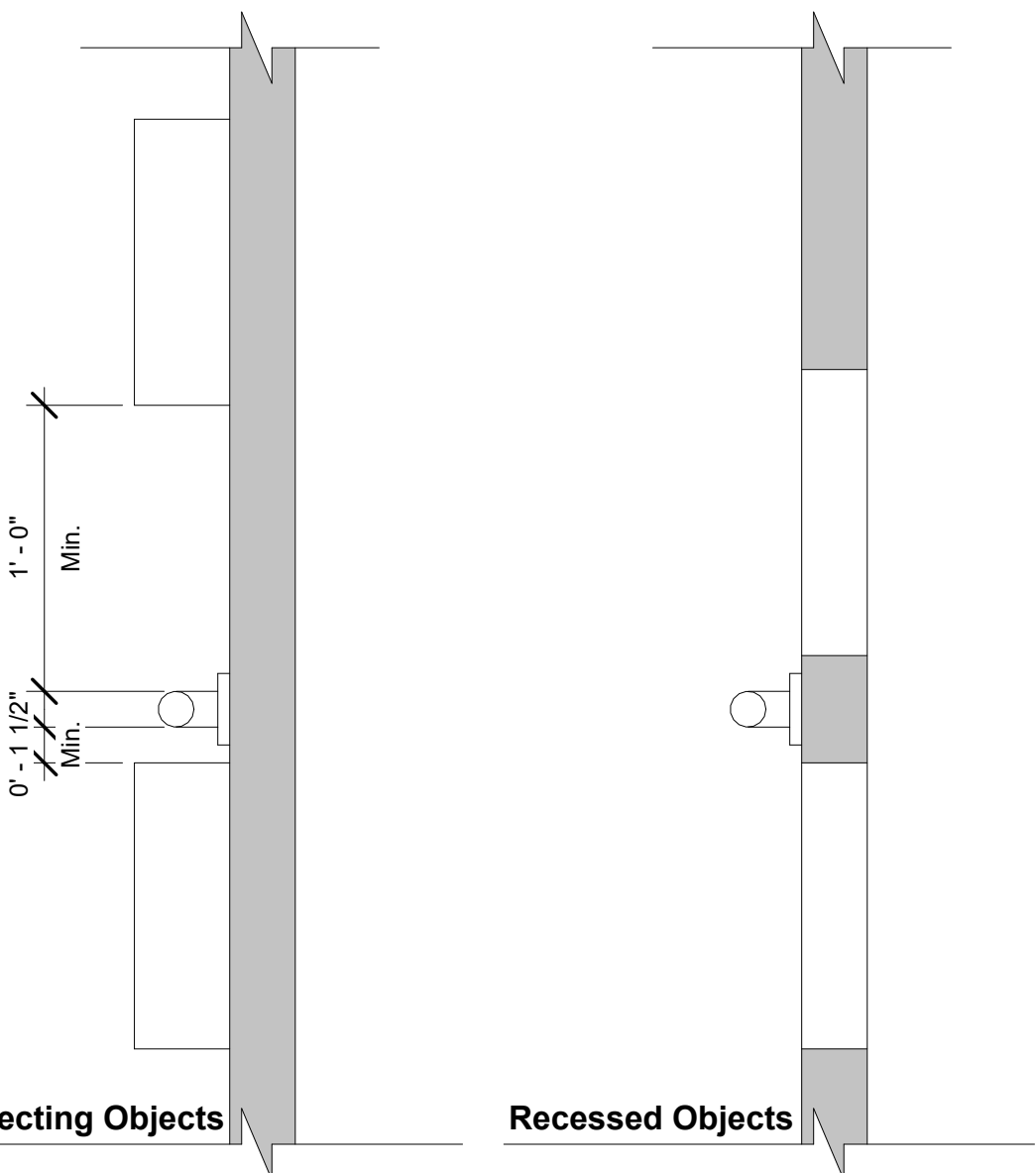


DT_Sheet A605_Clear Width @ Doorways
1/2" = 1'-0"

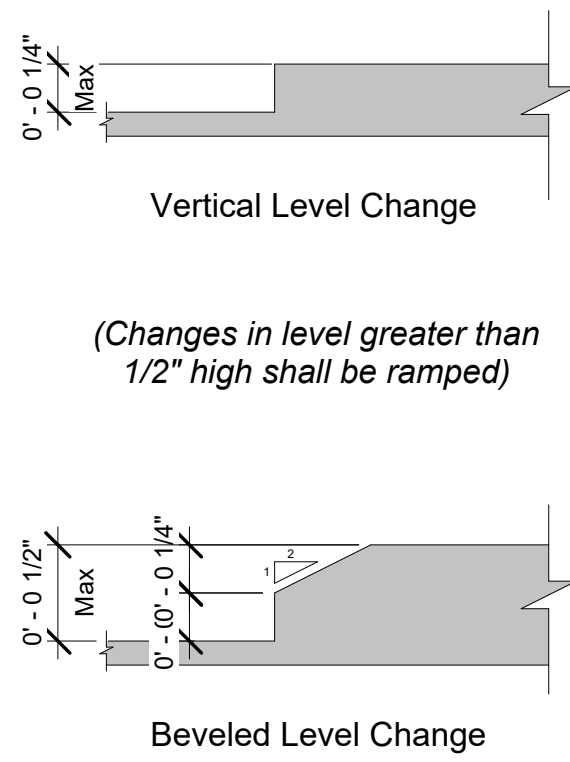
Mounting heights for portable fire extinguishers
(cabinet and bracket mounted) per
IBC Chapter 9)



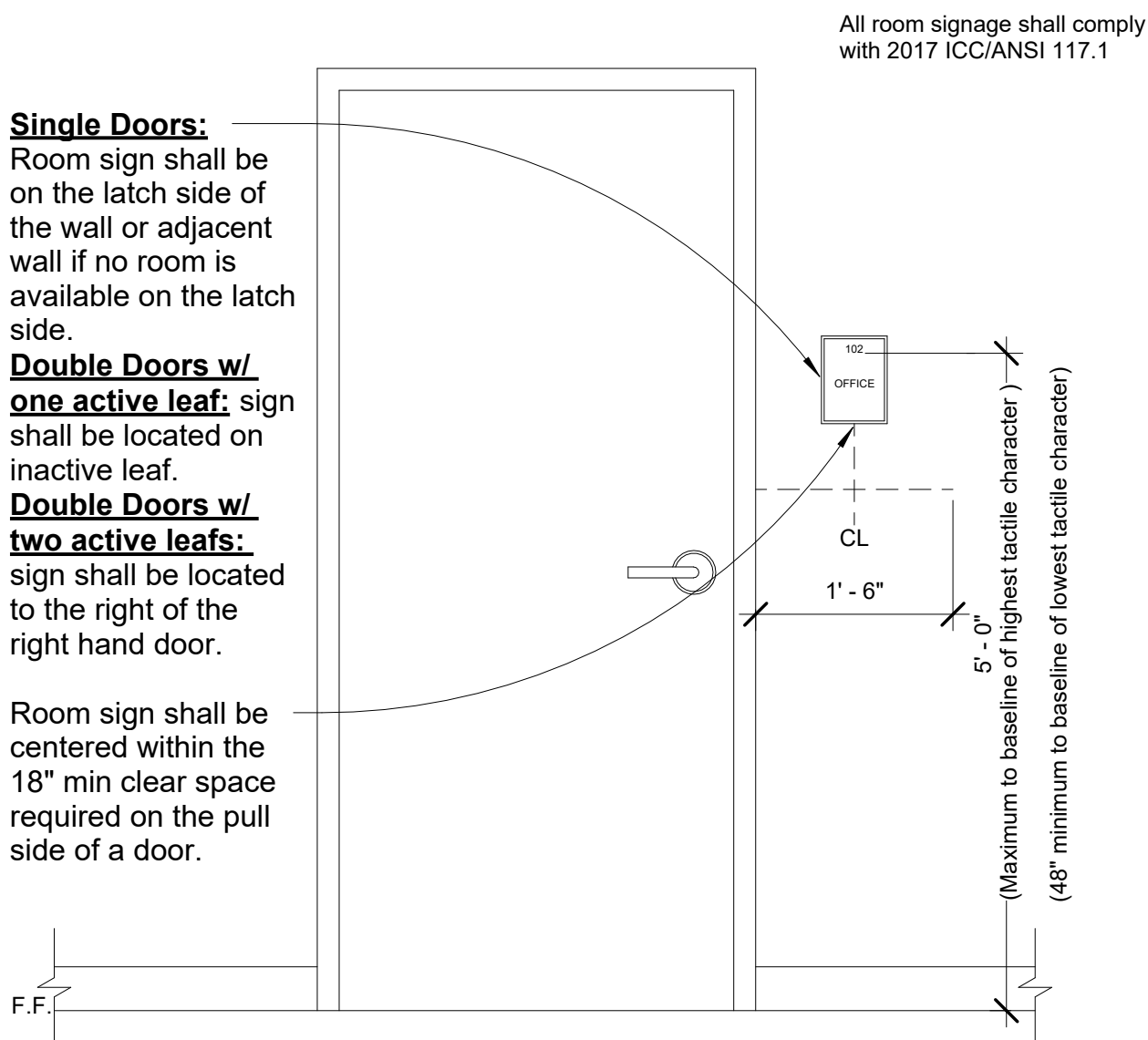
DT_Sheet A605_Fire Extinguisher Mounting Heights
1" = 1'-0"



DT_Sheet A605_Spacing of Grab Bars
1 1/2" = 1'-0"



DT_Sheet A605_Level Change
12" = 1'-0"



DT_Sheet A605_Signage Mounting Heights
3/4" = 1'-0"

No.	Description	Date
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IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

FLOOR FINISH LEGEND

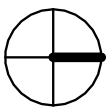
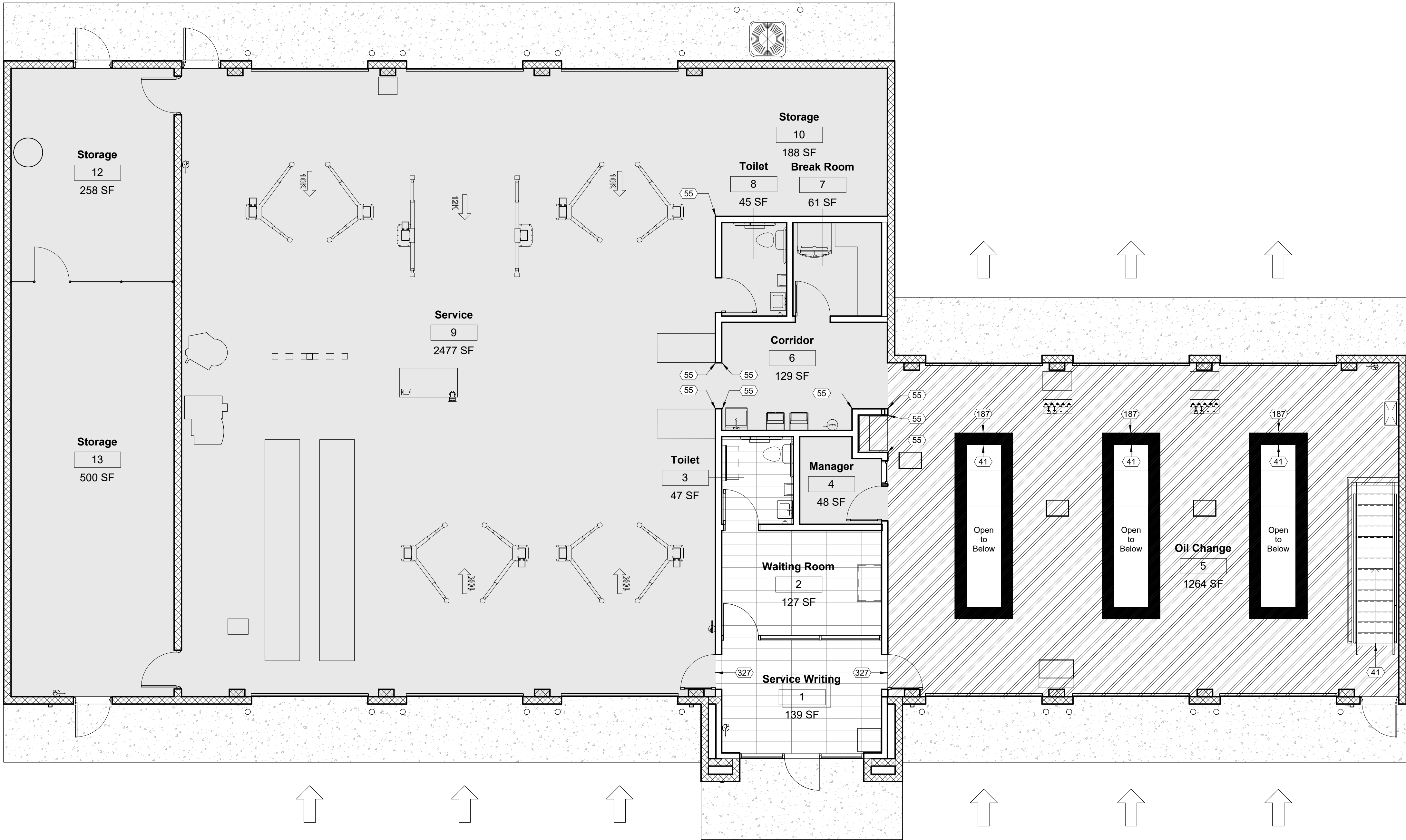
Sealed Concrete

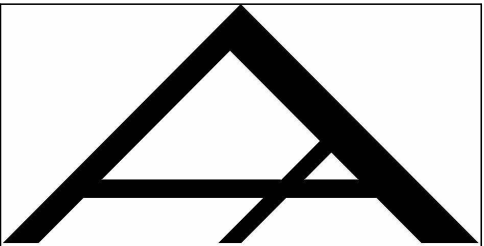
Stonhard Flooring (By Others)

Safety Yellow Paint.

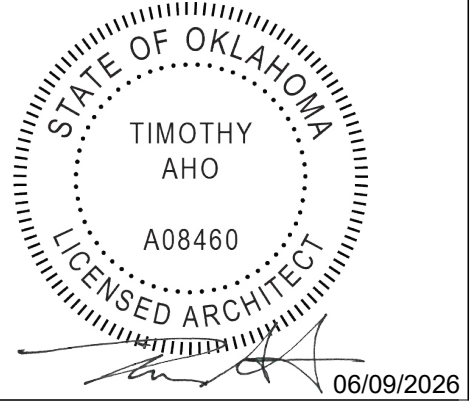
LVT Luxury Vinyl Tile)

Keynote Schedule	
Tag	Text
41	Paint structural steel at openings P-5 Safety Yellow. Typical for all pit and stairwell openings.
55	Stainless steel corner guard. See Specification 102600 Wall and Door Protection.
187	Paint 12" P-5 Safety Yellow around pit openings. Verify paint is compatible with floor finish.
327	Reducer strip.





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IFC-0	Issued for Construction	06/25/2026

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Floor Finishes - Main

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A610

Scale As indicated

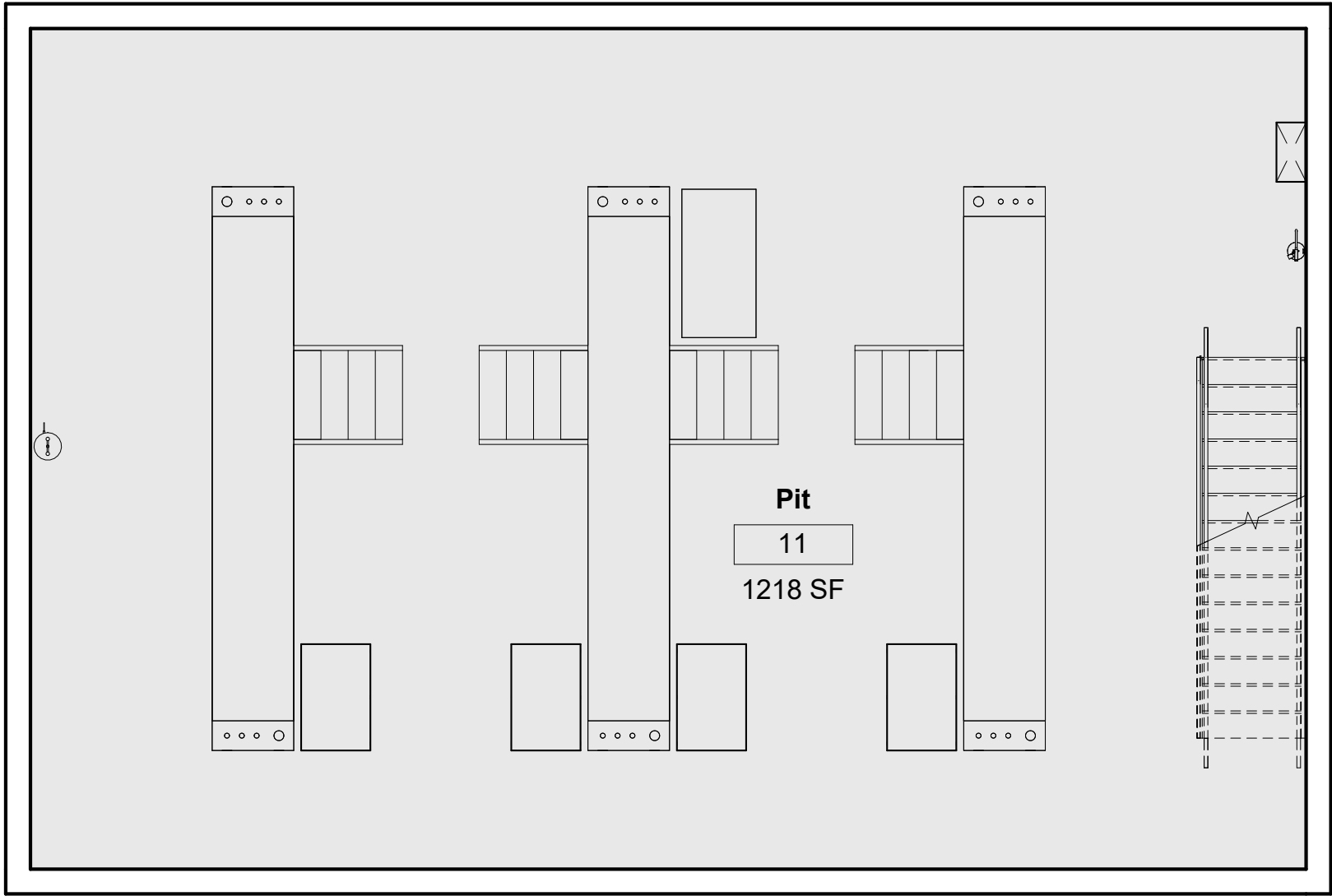
FLOOR FINISH LEGEND

Sealed Concrete

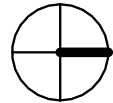
Stonhard Flooring (By Others)

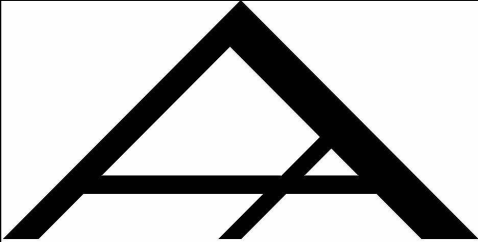
Safety Yellow Paint.

LVT Luxury Vinyl Tile)



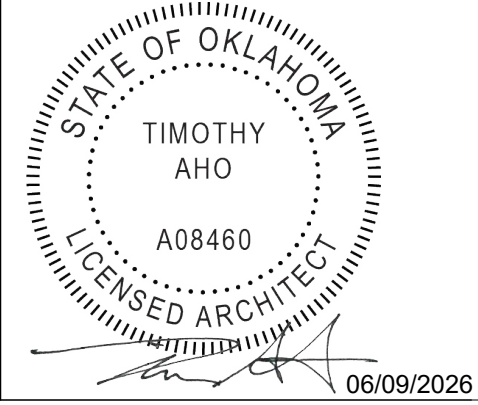
① 06_Floor Finish Plan_Pit
3/16" = 1'-0"





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Floor Finishes - Pit

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

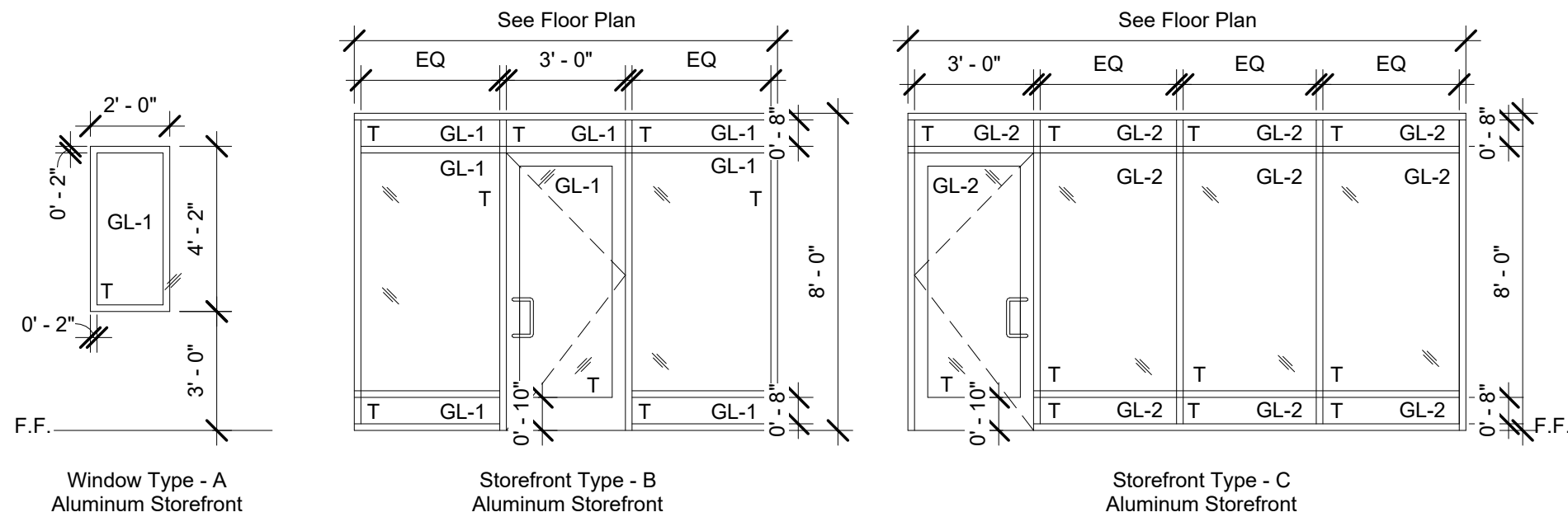
A611

Scale	As indicated
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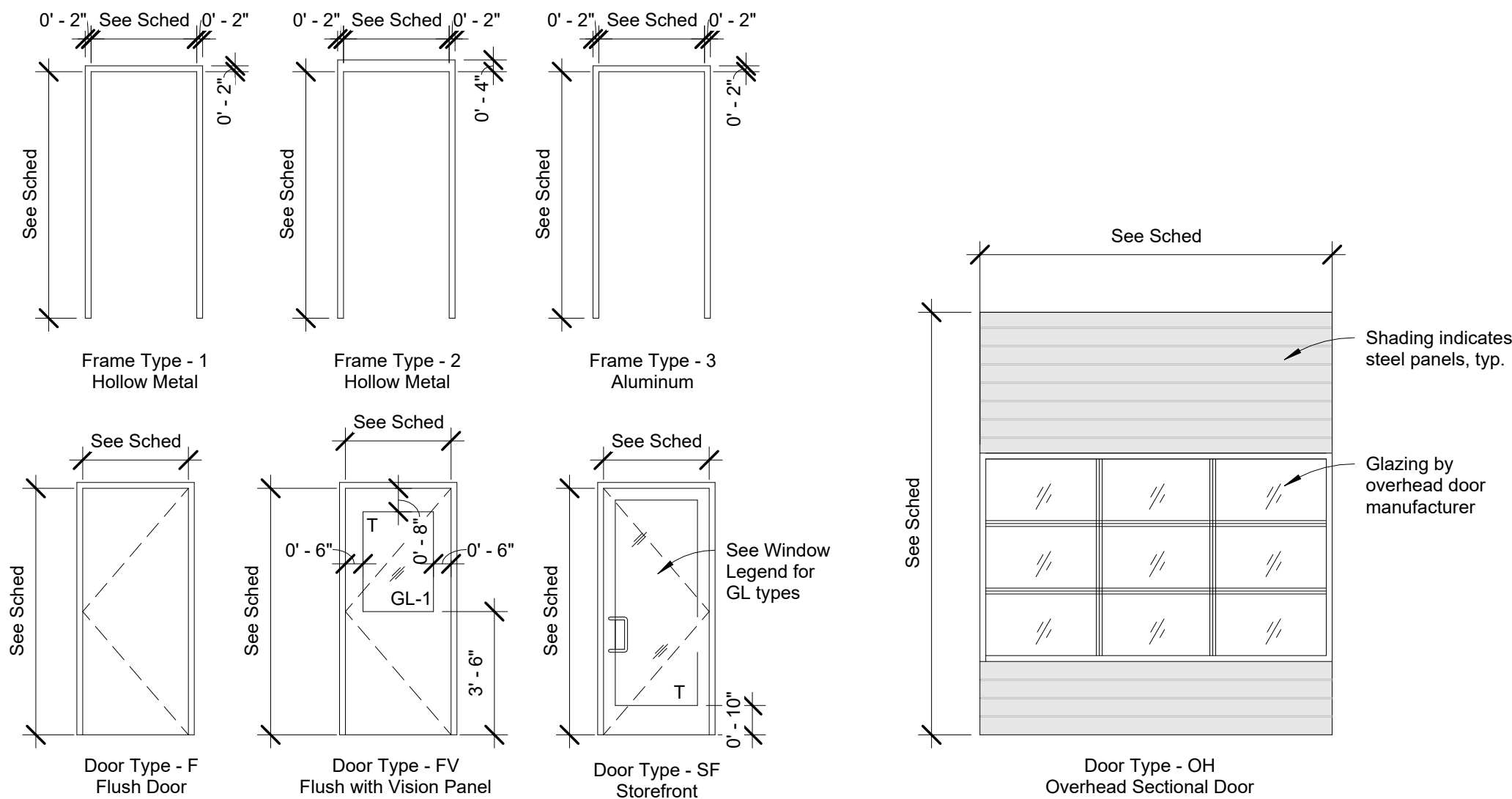
Door and Frame Schedule												
Number	Door						Frame			Glass	UL Label	Notes
	Width	Height	Thickness	Door Type	Door Material	Door Finish	Frame Type	Frame Material	Frame Finish			
1	3' - 0"	7' - 0"	0' - 1 3/4"	SF	Aluminum / Glass	Factory Finish	3	Aluminum	Factory Finish	Tempered		If required by the Fire Marshal or AHJ, add lettering that reads "This door must remain unlocked when business is occupied."
2	3' - 0"	7' - 0"	0' - 1 3/4"	FV	Wood / Glass	Painted	1	Hollow Metal	Painted	Tempered		
3	3' - 0"	7' - 0"	0' - 1 3/4"	FV	Wood / Glass	Painted	1	Hollow Metal	Painted	Tempered		
4	3' - 0"	7' - 0"	0' - 1 3/4"	SF	Aluminum / Glass	Factory Finish	3	Aluminum	Factory Finish	Tempered		
5	3' - 0"	7' - 0"	0' - 1 3/4"	F	Wood	Painted	1	Hollow Metal	Painted	N/A		
6	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
7	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
8	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
9	3' - 0"	7' - 0"	0' - 1 3/4"	F	Hollow Metal	Painted	2	Hollow Metal	Painted	N/A		
10	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
11	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
12	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
13	3' - 0"	7' - 0"	0' - 1 3/4"	FV	Wood / Glass	Painted	1	Hollow Metal	Painted	Tempered		
15	3' - 0"	7' - 0"	0' - 1 3/4"	FV	Wood / Glass	Painted	1	Hollow Metal	Painted	Tempered		
16	3' - 0"	7' - 0"	0' - 1 3/4"	F	Wood	Painted	1	Hollow Metal	Painted	N/A		
17	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
18	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
19	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
20	3' - 0"	7' - 0"	0' - 1 3/4"	F	Hollow Metal	Painted	2	Hollow Metal	Painted	N/A		
21	3' - 0"	7' - 0"	0' - 1 3/4"	F	Hollow Metal	Painted	2	Hollow Metal	Painted	N/A		
22	3' - 0"	7' - 0"	0' - 1 3/4"	F	Hollow Metal	Painted	2	Hollow Metal	Painted	N/A	45 Min.	Provide Fire Rated label on Door and Frame
23	3' - 0"	7' - 0"	0' - 1 3/4"	F	Hollow Metal	Painted	2	Hollow Metal	Painted	N/A	45 Min.	Provide Fire Rated label on Door and Frame
24	3' - 0"	7' - 0"	0' - 1 3/4"	F	Hollow Metal	Painted	2	Hollow Metal	Painted	N/A		
25	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
26	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		
27	10' - 0"	12' - 0"	0' - 2 1/8"	OH	Metal / Glass	Factory Finish	N/A	N/A	Factory Finish	Tempered		

NOTE: Door 14 was omitted on purpose.

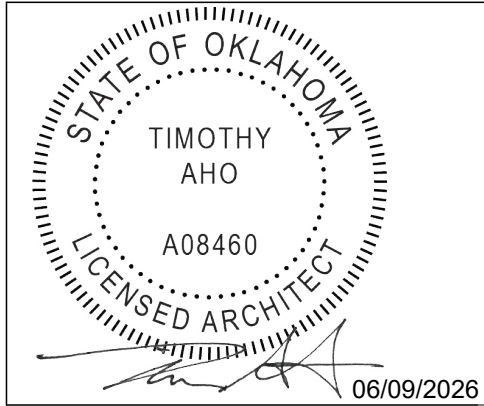
WINDOW LEGEND



DOOR AND FRAME LEGEND



NOTE: Refer to floor plan for direction of door swing.



Express Oil Change & Tire Engineers

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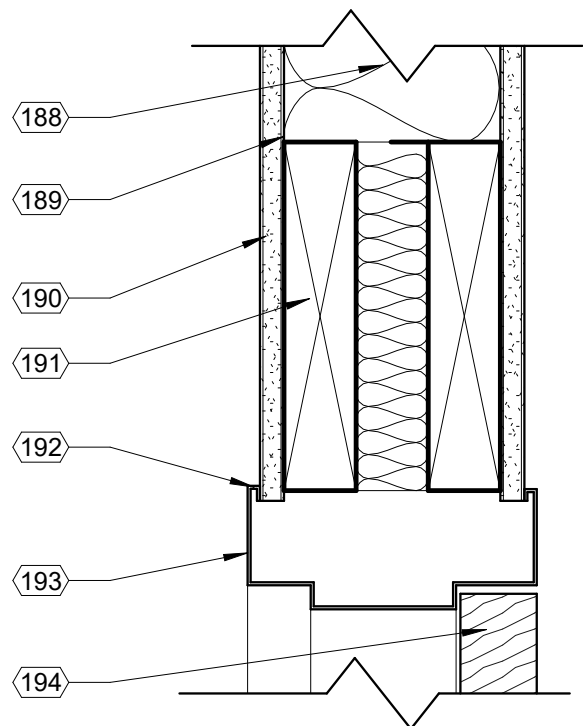
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Schedules

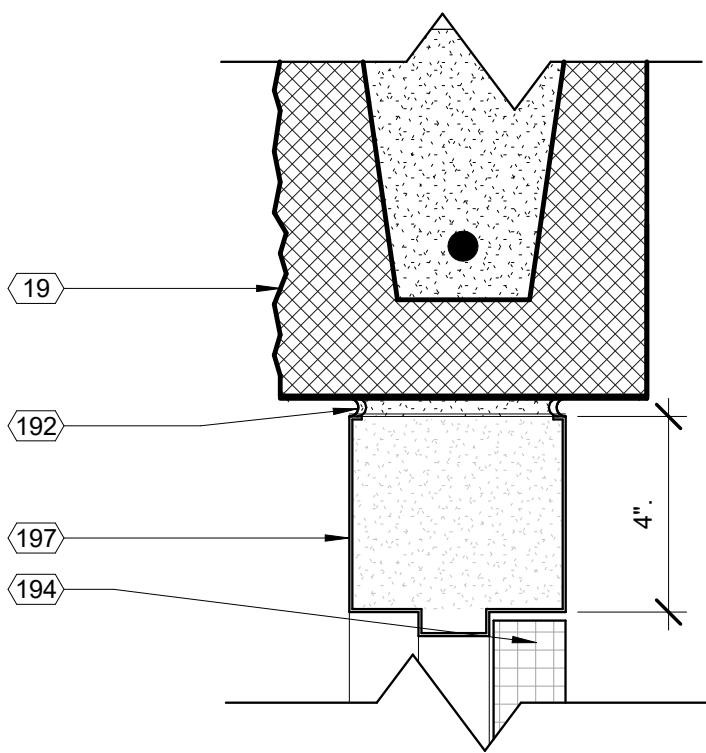
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

A620

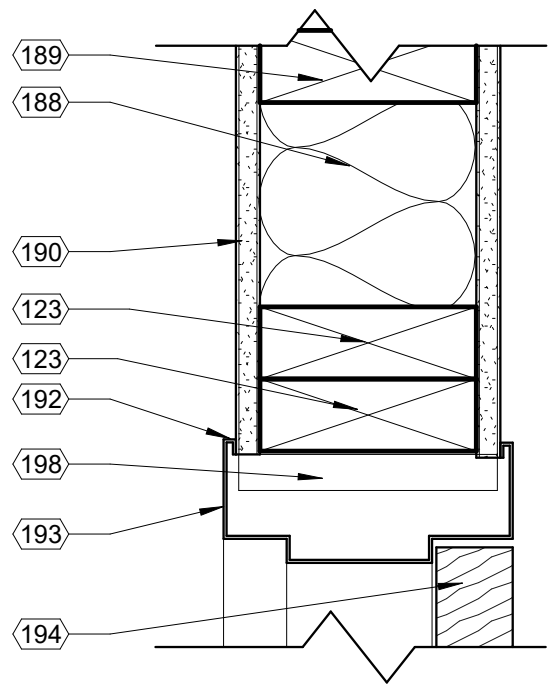
Scale 1/4" = 1'-0"



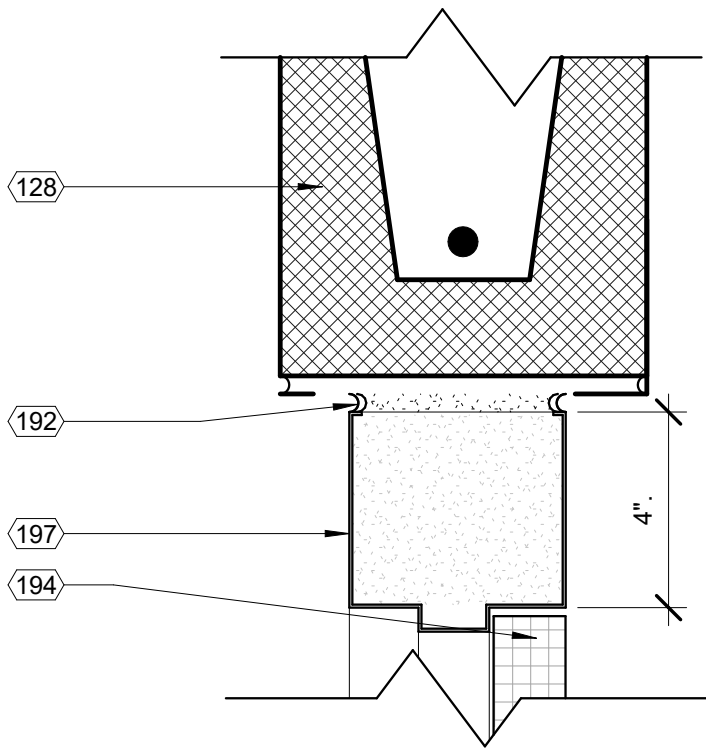
1 DT_Sheet A621_Door Head Detail_Wood
3" = 1'-0"



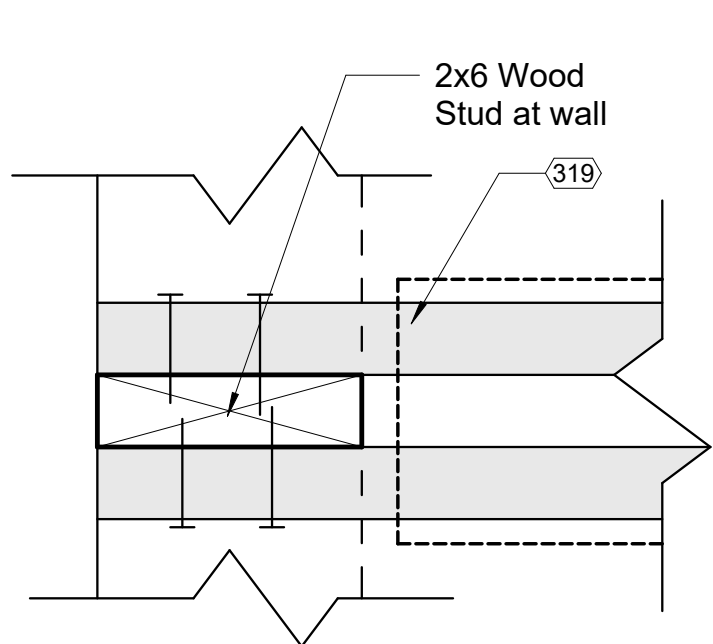
2 DT_Sheet A621_Door Head Detail_Masonry (Exterior)
3" = 1'-0"



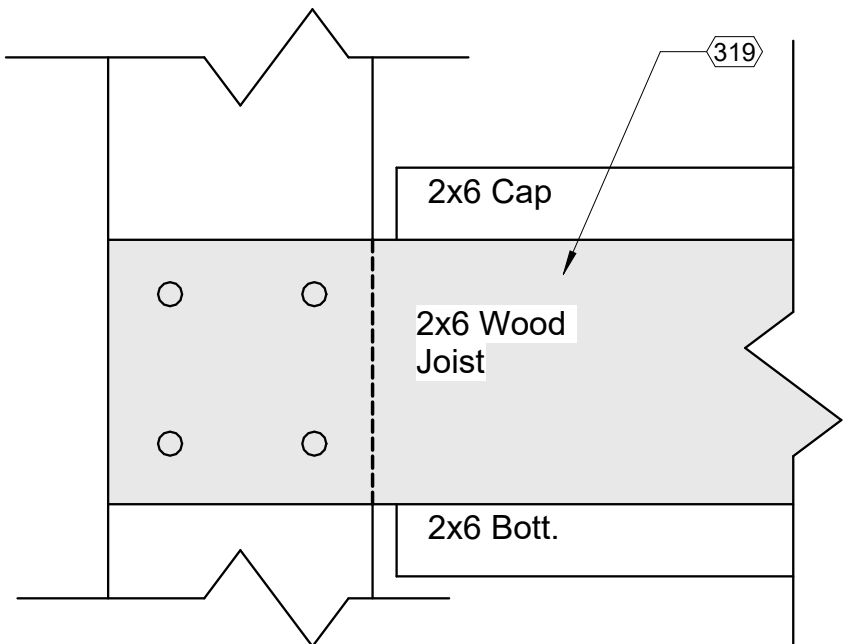
3 DT_Sheet A621_Door Jamb Detail_Wood
3" = 1'-0"



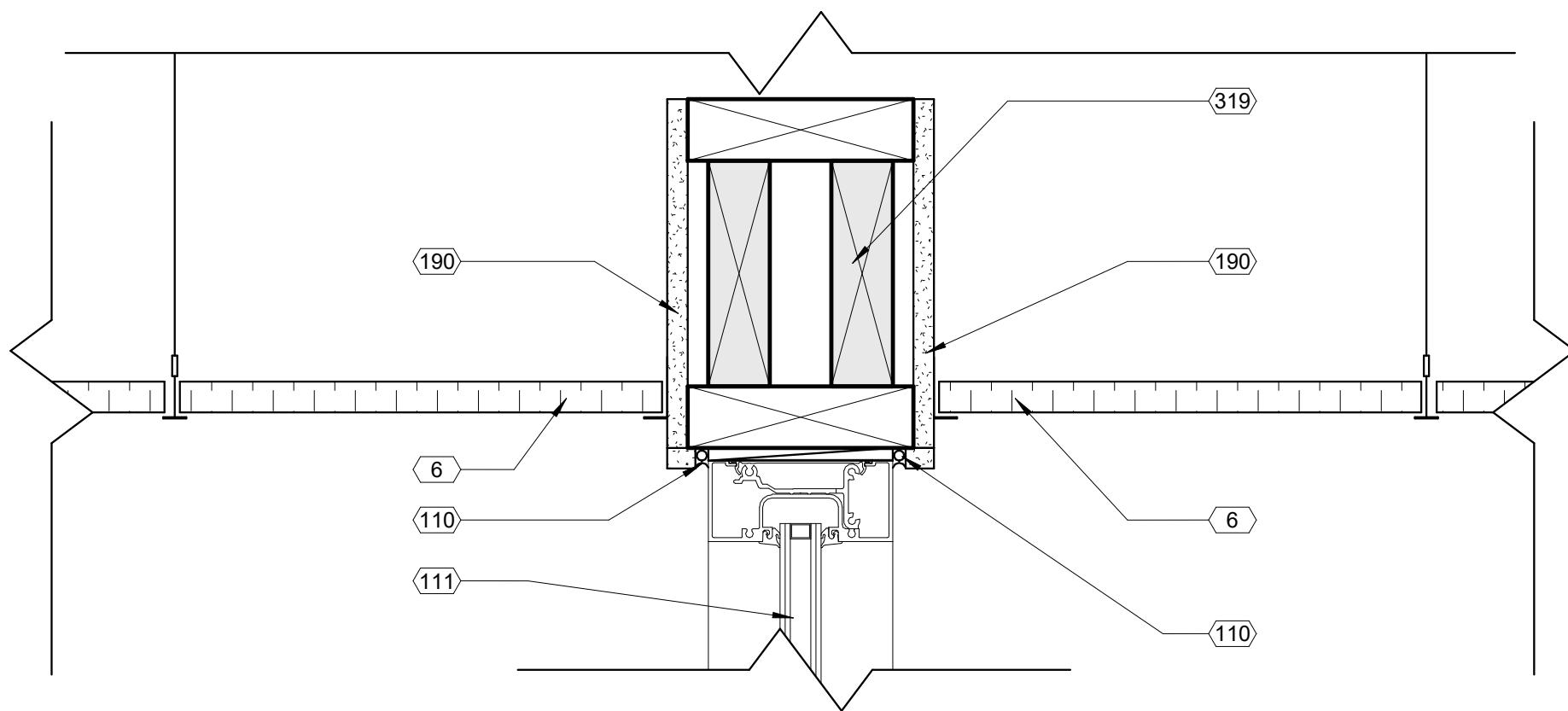
4 DT_Sheet A621_Door Head Detail_Masonry (Interior)
3" = 1'-0"



Plan View Connection at Wall



Elevation View at Wall



5 DT_Sheet A621_Wood Header @ Interior Storefront
3" = 1'-0"

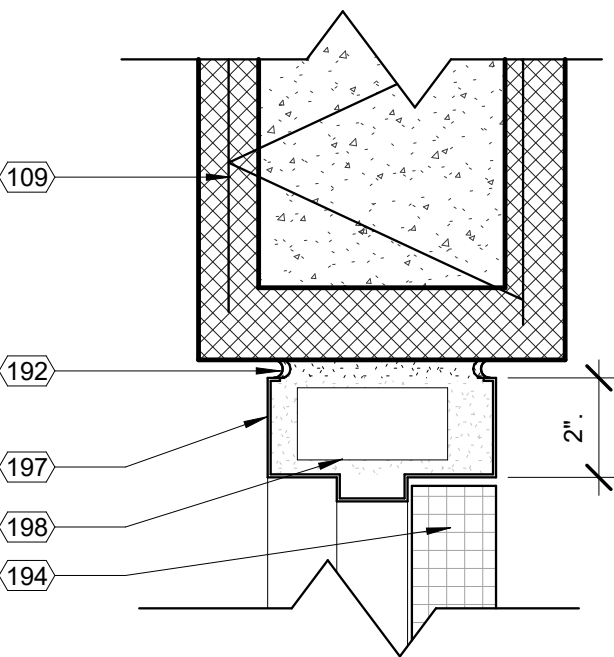
Dover Gray is a Custom Color:

Deep Base				
CCE Colorant	OZ	32	64	128
W1 White	-	14	1	1
B1 Black	2	26	1	1
R2 Maroon	-	4	-	1
Y3 Deep Gold	-	-	17	1

Keynote Schedule	
Tag	Text
6	Lay-in acoustical ceiling tile and grid, supported from structure.
19	Painted split-face CMU (bond beam where indicated; see Structural). See Specification 042200 Concrete Unit Masonry. Color as indicated on Finish Schedule. Project 1/2" where indicated on details.
109	Horizontal joint reinforcement at 16" o.c. vertical.
110	Sealant with backer rod.
111	Aluminum storefront with insulated glazing. See Details.
123	Blocking. See Structural.
128	Painted smooth-face 8" concrete-filled "U" block bond beam. Condition varies. See Structural.
188	Kraft-faced batt insulation. Kraft in contact with gypsum board.
189	2x wood studs at 16" o.c.

Keynote Schedule	
Tag	Text
190	1/2" painted gypsum board.
191	Double 2"x8" wood header.
192	Caulk all around on both sides.
193	Painted hollow metal frame with returns. See Finish Schedule for color.
194	Scheduled door. See plans for details.
197	Painted hollow metal frame, grouted solid.
198	Jamb anchors. Provide 3 per jamb.
319	Wood stud header at interior storefront. (4) 2x6 wood studs attached to extended wood stud at bearing wall. Extend wood stud in bearing wall up to roof deck. Brace as required.

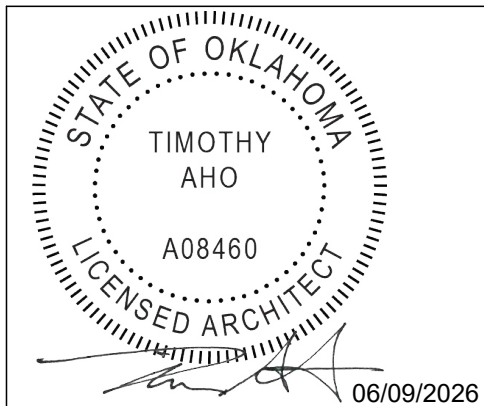
Material Schedule							
Abbreviation	Material Description	Manufacturer	Style Name or Number	Color (Description)	Size	Finish	Material Notes
ACT-1	Acoustical Ceiling Tile	Armstrong	1775 Dune	White	24"x24"	N/A	Suprafine XL 9/16" Exposed Tee Grid
P-1	Paint - Color 1	Sherwin Williams	See Paint Schedule on G202	SW6966 Blueblood	N/A	See Paint Schedule on G202	
P-2	Paint - Color 2	Sherwin Williams	See Paint Schedule on G202	Custom Color (Dover Gray)	N/A	See Paint Schedule on G202	
P-3	Paint - Color 3	Sherwin Williams	See Paint Schedule on G202	SW7669 Summit Gray	N/A	See Paint Schedule on G202	
P-4	Paint - Color 4	Sherwin Williams	See Paint Schedule on G202	SW6959 Bluechip	N/A	See Paint Schedule on G202	
P-5	Paint - Color 5	Sherwin Williams	See Paint Schedule on G202	Safety Yellow	N/A	See Paint Schedule on G202	
P-6	Paint - Color 6	Sherwin Williams	See Paint Schedule on G202	Safety Red	N/A	See Paint Schedule on G202	
P-7	Paint - Color 7	Sherwin Williams	See Paint Schedule on G202	SW7006 Extra White	N/A	See Paint Schedule on G202	
P-8	Paint - Color 8	Sherwin Williams	See Paint Schedule on G202	SW7075 Web Gray	N/A	See Paint Schedule on G202	
PL-1	Plastic Laminate - Color 1	Wilsonart	4880-38	Carbon Mesh	N/A	N/A	
RB	Rubber Base	Ropee	Pinnacle	669 Battleship	4"	N/A	
SC	Sealed Concrete	Sherwin Williams	See Paint Schedule on G202	Haze Gray	N/A	See Paint Schedule on G202	Add SharkGrip for added slip resistance
SH	StonHard Flooring	StonHard	N/A	N/A	N/A	N/A	Provided and installed by (Others)
FRP-1	Fiberglass Reinforced Panels	Marlite	4'X8' Textured Panels	P430N Medium Gray	4'X8'	Pebbled	
LVT	Lux. Vinyl Tile	Tarkett	Contour Mineral Basalt PCMB	4445 Paved Path	12"x36"		



8 DT_Sheet A621_Door Jamb Detail_Masonry
3" = 1'-0"

Finish Schedule for Additional Items							
1.	Doors & Frames: Paint P-3	9.	Keynote 16: P-1	17.	Door Hardware: Satin Chrome	25.	Dumpster Gate / Frame: P-3
2.	Bollards & Dumpster Posts: P-6	10.	Keynote 327: Reducer Strip: 123 Charcoal	18.	Window Gaskets: Light Gray	26.	Overhead Door: White
3.	Exterior Pole Sign: By others.	11.	Keynote 18: P-8	19.	Exterior Aluminum Storefront & Door: Clear Anodized	27.	Lintel at OH Doors: P-3
4.	Conductor Head / Downspouts: Match P-8	12.	Keynote 19: P-3	20.	Abrasive Nosing: Safety Yellow	28.	Countertop Carbon Mesh: PL-1
5.	Electrical covers to be brushed aluminum	13.	Knox Box: Aluminum	21.	Interior Aluminum Storefront & Door: Clear Anodized	29.	EIFS Cornice & Trim: P-1
6.	Paint all louvers to match adjacent finish	14.	Roof: White TPO	22.	Chair Rail: Stainless Steel by others	30.	SSMR: Royal Blue
7.	Not Used.	15.	Coping Cap @ Dumpster: Match P-1	23.	Word Wall: P-3	31.	Bar Joists: Prefinished Gray
8.	Stairs & Railings & Interior Ladder (if req'd): P-5	16.	Coping Cap @ Bldg: Match P-1	24.	Canopy: Pantone 425C	32.	Metal Deck: Prefinished Gray

Finish Schedule										
Number	Name	Area	Floor Finish	Base Finish	Walls				Ceiling Finish	Remarks
					Rear (West)	Right (North)	Front (East)	Left (South)		
1	Service Writing	139 SF	LVT	RB	Storefront	P-1, P-2, P-3	Storefront & P-1, P-2, P-3	P-1, P-2, P-3	ACT-1	See G301 for paint patterns
2	Waiting Room	127 SF	LVT	RB	P-3 & Vinyl Graphics (By Others)	P-1, P-2, P-3	Storefront	P-1, P-2, P-3	ACT-1	See G301 for paint patterns. Word Wall with Vinyl Graphics (By Others) to be painted P-3
3	Toilet	47 SF	LVT	RB	FRP-1	FRP-1	FRP-1	FRP-1	ACT-1	
4	Manager	48 SF	SC	RB	P-3	P-3	P-3	P-3	ACT-1	
5	Oil Change	1264 SF	SH	None / RB	P-3	P-1, P-4	P-3	P-1, P-4 & Vinyl Graphics (By Others)	No Ceiling	Rubber base on gypsum board walls only. See G301 for paint patterns.
6	Corridor	129 SF	SC	RB	P-1	P-1	FRP-1	P-1	P-7	
7	Break Room	61 SF	SC	RB	P-3	P-3	P-3	P-3	ACT-1	
8	Toilet	45 SF	SC	RB	FRP-1	FRP-1	FRP-1	FRP-1	ACT-1	
9	Service	2477 SF	SC	None / RB	P-3	P-1, P-4 & Vinyl Graphics (By Others)	P-3	P-1, P-4	No Ceiling	Rubber base on gypsum board walls only. See G301 for paint patterns.
10	Storage	188 SF	SC	None / RB	P-3	P-1, P-4	P-1, P-4	None	No Ceiling	
11	Pit	1218 SF	SC	None	None	None	None	None	N/A	Paint all structural steel in Pit P-5 Safety Yellow.
12	Storage	258 SF	SC	None	P-3	P-3	Fence	P-3	No Ceiling	
13	Storage	500 SF	SC	None	Fence	P-3	P-3	P-3	No Ceiling	



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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Finish Schedules &
Head, Jamb, and
Sill Details

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

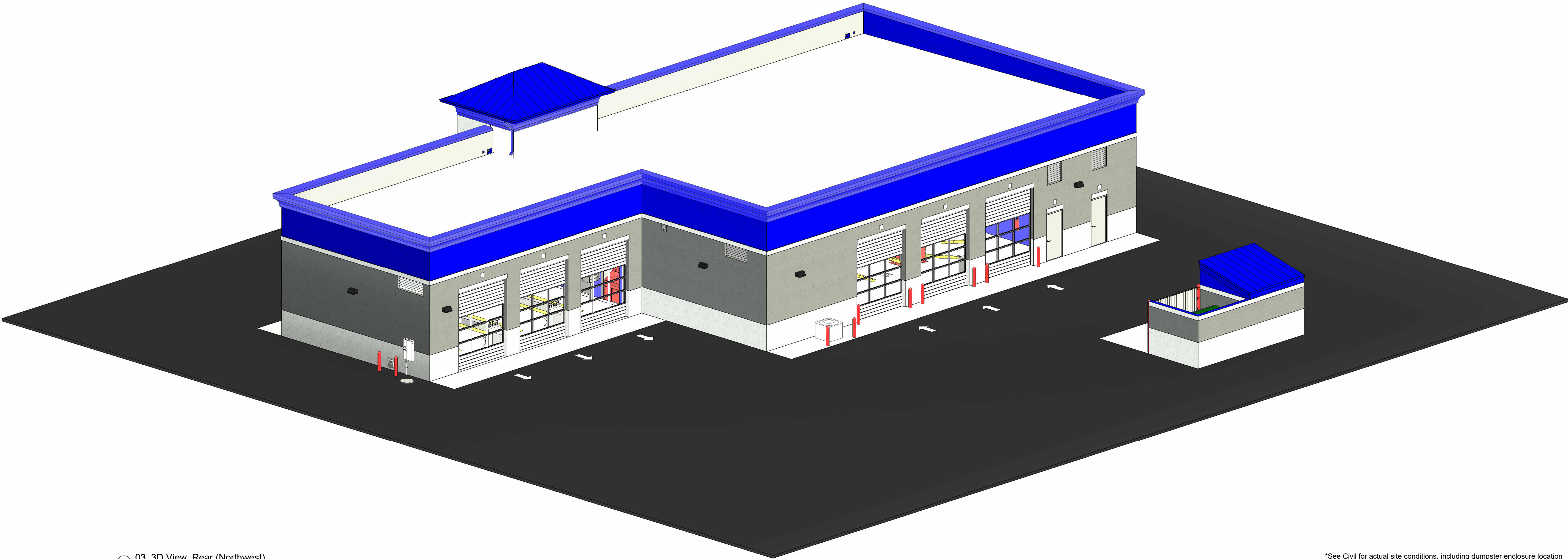
A621

Scale As indicated



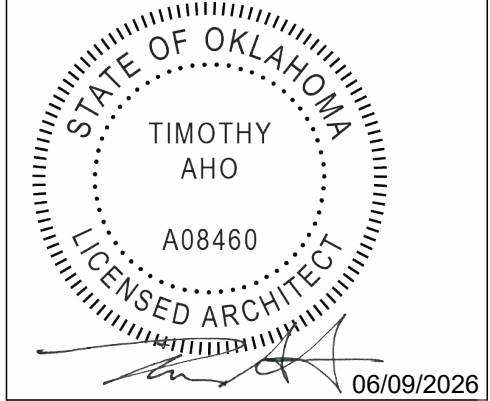
① 02_3D View_Front (Southeast)

*See Civil for actual site conditions, including dumpster enclosure location and orientation.



② 03_3D View_Rear (Northwest)

*See Civil for actual site conditions, including dumpster enclosure location and orientation.



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

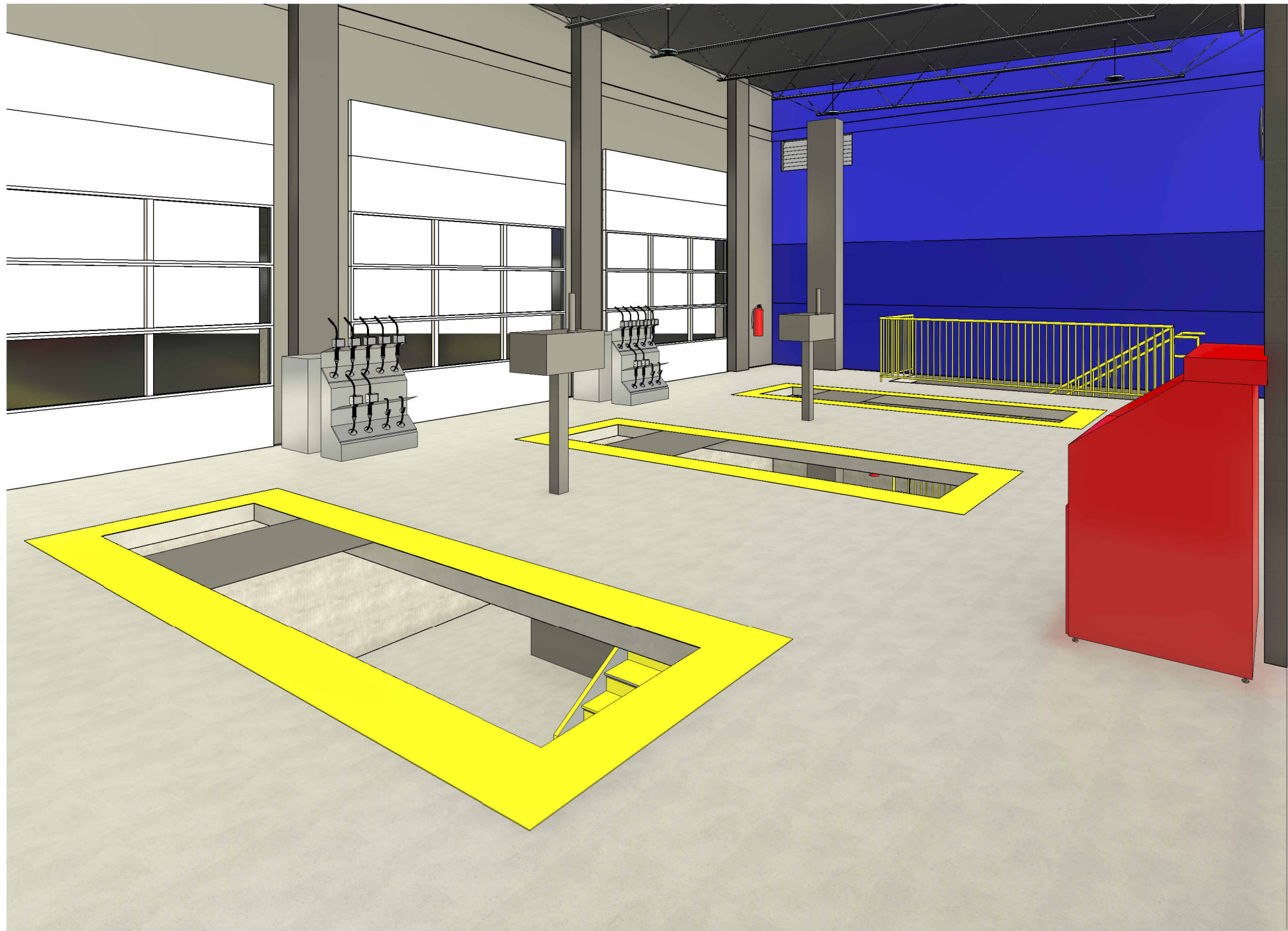
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3D Views

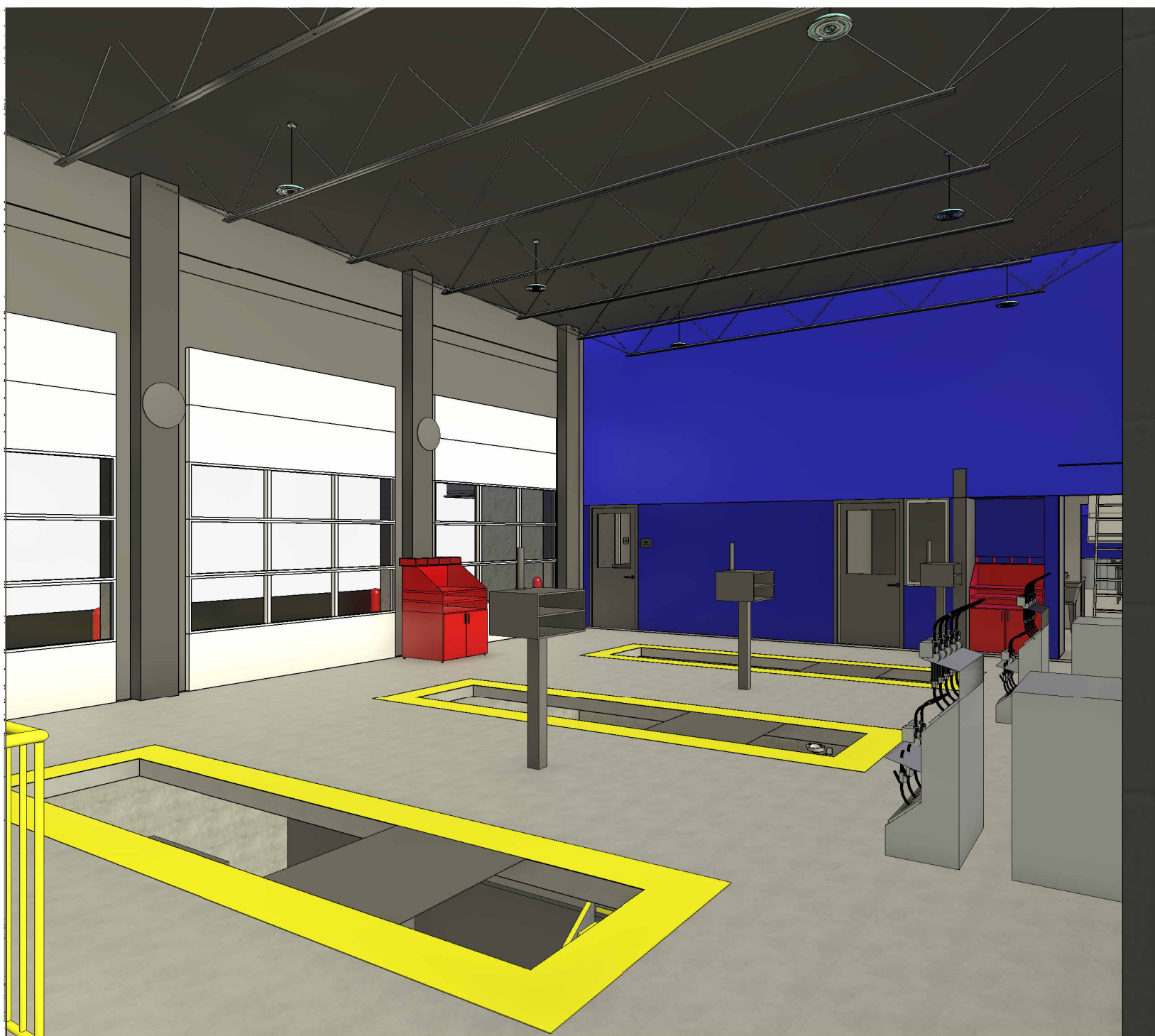
Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

R100

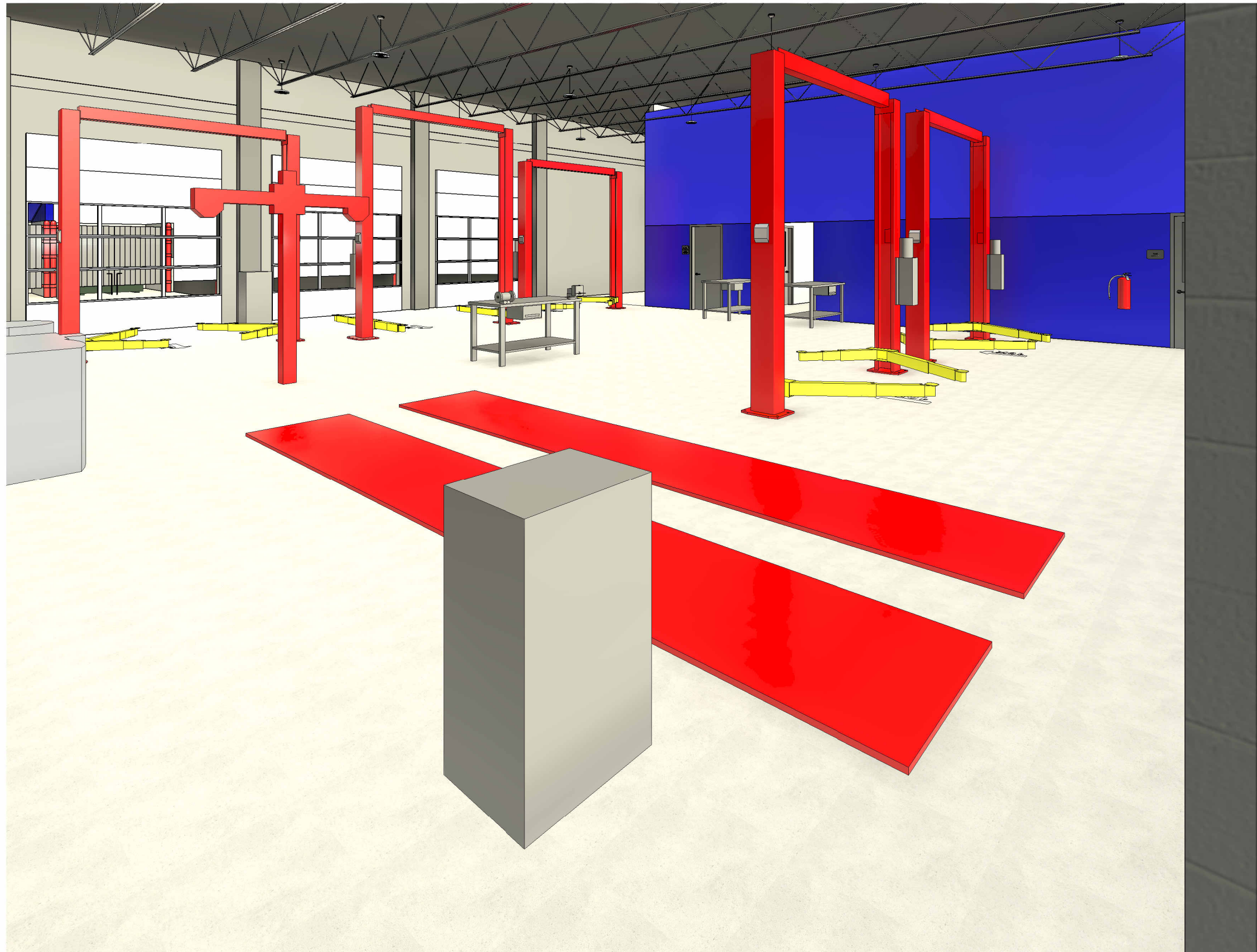
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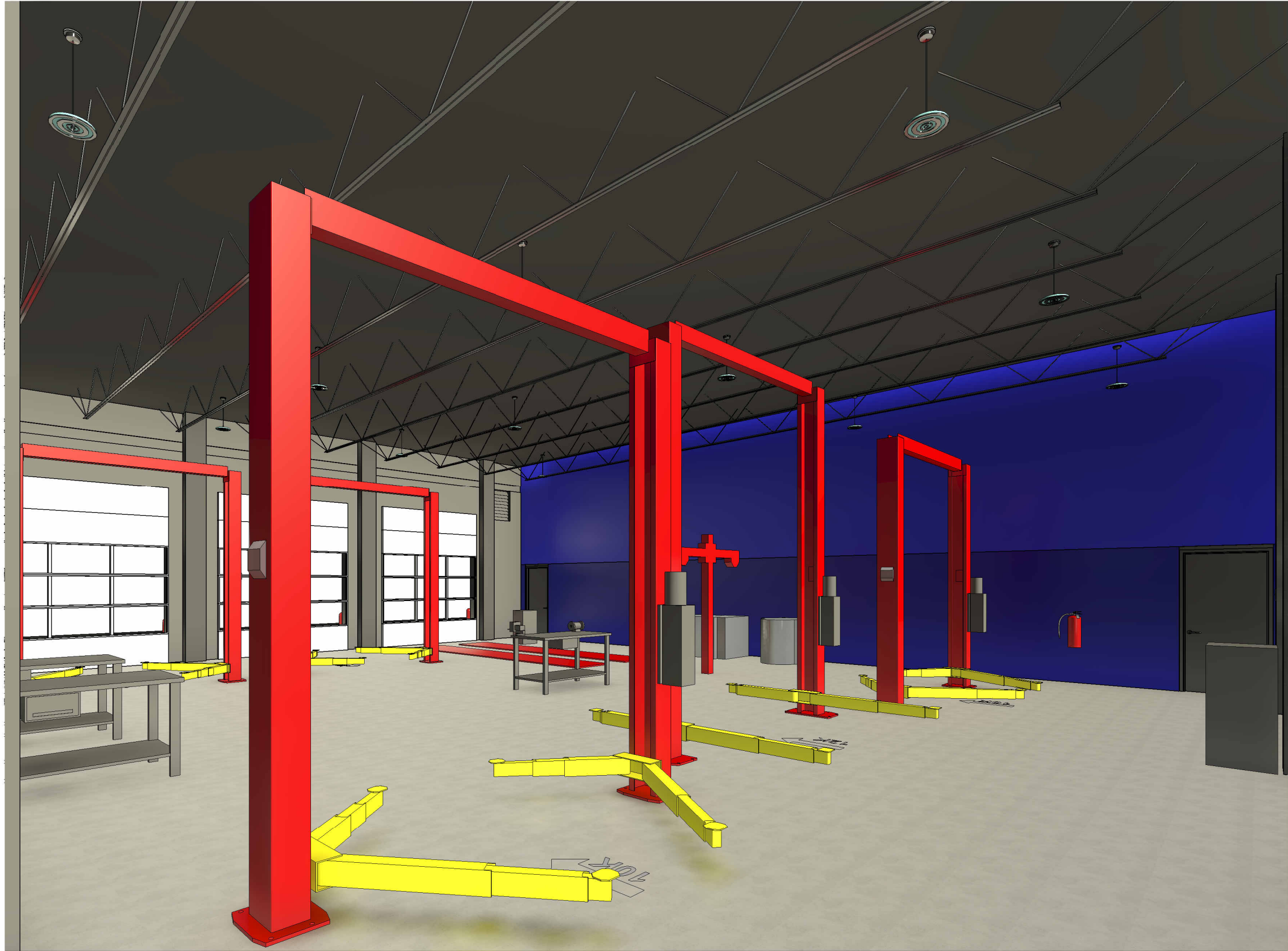
04_3D View_Oil Change A



05_3D View_Oil Change B



06_3D View_Service Bay A



07_3D View_Service Bay B

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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3D Views

Project number	25048
Date	04/17/2026
Drawn by	ARC
Checked by	N/A

R101

Scale



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issue for Permit	4.17.2026
IFB-0	Issued for Bid	06.09.2026
IFC-0	Issued for Construction	06.25.2026

2026
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General Notes & Schedule of Special Inspections

Project number	25048
Date	04/17/2026
Drawn by	jcj
Checked by	jd

S0.1

Scale 3/4" = 1'-0"

SCHEDULE OF SPECIAL INSPECTIONS SERVICES					
PROJECT	MATERIAL / ACTIVITY	SERVICE	Y/N	APPLICABLE TO THIS PROJECT	
				EXTENT	AGENT * DATE COMPLETED
1705.1.1 Special Cases (work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements - add additional rows as needed.)		Submittal review, shop (3) and/or field inspection			
	1. Inspection of anchors post-installed in solid grouted masonry: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, masonry unit, grout, masonry compressive strength, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source	
	2. Aggregate Pier Inspection: The special inspector's responsibilities include, but are not limited to, review of the aggregate pier designer's use of soil parameters as presented in the project soils report, and during construction, verification of aggregate properties, type and number of lifts of aggregate, hole size and depths and top elevations of the pier elements, and applied energy. Additionally, results of qualitative tests on production aggregate pier elements such as modulus load testing, uplift/pull-out testing, bottom stabilization tests and dynamic cone penetration tests, shall be reviewed to verify compliance with design specifications.	Field inspection		Periodic or as required by the research report issued by an approved source	
			N		
1705.2.1 Structural Steel Construction					
1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, Section N 3.2 for compliance with construction documents)		Submittal Review	Y	Each submittal	
2. Material verification of structural steel		Shop (3) and field inspection	Y	Periodic	
3. Structural steel welding:					
a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)		Shop (3) and field inspection	Y	Observe or Perform as noted (4)	
b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-2)		Shop (3) and field inspection	Y	Observe (4)	
c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)		Shop (3) and field inspection	Y	Observe or Perform as noted (4)	
d. Nondestructive testing (NDT) of welded joints:					
1) Complete penetration groove welds 5/16" or greater in risk category III or IV		Shop (3) or field ultrasonic testing - 100%	N	Periodic	
2) Complete penetration groove welds 5/16" or greater in risk category II		Shop (3) or field ultrasonic testing - 10% of welds minimum	Y	Periodic	
3) Welded joints subject to fatigue when required by AISC 360, Appendix 3, Table A-3.1		Shop (3) or field radiographic or ultrasonic testing	N	Periodic	
4) Fabricator's NDT reports when fabricator performs NDT		Verify reports	Y	Each submittal (5)	
4. Structural steel bolting:		Shop (3) and field inspection			
a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)			Y	Observe or Perform as noted (4)	
b. Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)					
1) Pre-tensioned and slip-critical joints			N	Periodic	
a) Turn-of-nut with matching markings			N	Periodic	
b) Direct tension indicator			N	Periodic	
c) Twist-off type tension control bolt			N	Periodic	
d) Turn-of-nut without matching markings			N	Continuous	
e) Calibrated wrench			Y	Periodic	
2) Snug-tight joints			Y	Periodic	
c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)			Y	Perform (4)	
5. Visual inspection of exposed out surfaces of galvanized structural steel main members and exposed corners of the rectangular HSS for cracks subsequent to galvanizing		Shop (3) or field inspection	Y	Periodic	
6. Embedments (Verify diameter, grade, type, length, embedment, See 1705.3 for anchors)		Field inspection	Y	Periodic	
7. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents		Field inspection	Y	Periodic	
1705.2.2 Cold-Formed Steel Deck					
1. Manufacturer documents (Verify reports and certificates as listed in SDI QA/QC, Section 2, Paragraphs 2.1 and 2.2 for compliance with construction documents)		Submittal Review	Y	Each submittal	
2. Material verification of steel deck, mechanical fasteners and welding materials		Shop (3) and field inspection	Y	Periodic	
3. Cold-formed steel deck placement:		Shop (3) and field inspection			
a. Inspection tasks Prior to Deck Placement (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.1)			Y	Perform (4)	
b. Inspection tasks After Deck Placement (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.2)			Y	Perform (4)	
4. Cold-formed steel deck welding:		Shop (3) and field inspection	Y		
a. Inspection tasks Prior to Welding (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.3)			Y	Observe (4)	
b. Inspection tasks During Welding (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.4)			Y	Observe (4)	
c. Inspection tasks After Welding (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.5)			Y	Perform (4)	
5. Cold-formed steel deck mechanical fastening:		Shop (3) and field inspection			
a. Inspection tasks Prior to Mechanical Fastening (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.6)			Y	Observe (4)	
b. Inspection tasks During Mechanical Fastening (Observe the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.7)			Y	Observe (4)	
c. Inspection tasks After Mechanical Fastening (Perform the QA tasks listed in SDI QA/QC, Appendix 1 Table 1.8)			Y	Perform (4)	
1. Material verification of cold-formed steel deck:					
a. Identification markings		Field inspection		Periodic	
b. Manufacturer's certified test reports		Submittal Review		Each submittal	
2. Connection of cold-formed steel deck to supporting structure:		Shop (3) and field inspection			
a. Welding				Periodic	
b. Other fasteners (in accordance with AISC 360 Section N6)				Periodic	
1) Verify fasteners are in conformance with approved submittal				Periodic	
2) Verify fastener installation is in conformance with approved submittal and manufacturer's recommendations				Periodic	
1705.2.3. Open-Web Steel Joists and Joist Girders					
1. Installation of open-web steel joists and joist girders		per SJI CJ or SJI 100	Y	Periodic	
a. End connections - welding or bolted					
b. Bridging - horizontal or diagonal					
1) Standard bridging		per SJI CJ or SJI 100	Y	Periodic	
2) Bridging that differs from the specifications listed in SJI CJ or SJI 100			Y	Periodic	
1705.3 Concrete Construction					
1. Inspect reinforcement, including prestressing tendons, and verify placement.		Shop (3) and field inspection	Y	Periodic	
2. Inspection of anchors cast in concrete		Shop (3) and field inspection	Y	Periodic	
3. Inspection of anchors post-installed in hardened concrete members per research reports, or, if no specific requirements are provided, requirements shall be provided by the registered design professional and approved by the building official, including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque		Field inspection	Y	Periodic or as required by the research report issued by an approved source	
a. Adhesive anchors installed in horizontal or upward-inclined orientation that resist sustained tension loads			Y	Continuous	
b. Mechanical and adhesive anchors note defined in 4a			Y	Periodic	
4. Verify use of approved design mix		Shop (3) and field inspection	Y	Periodic	
5. a. Prior to placement, fabricate specimens for strength tests, fresh concrete sampling, perform slump or slump flow, and air content density tests, and determine temperature of concrete.		Shop (3) and field inspection	Y	Continuous	
b. Verify that concrete specimens for strength tests are maintained in the required initial curing and laboratory curing environment, and that the maximum and minimum temperatures during the initial curing period are reported.		Shop (3) and field inspection	Y	Continuous	
7. Verify maintenance of specified curing temperature and techniques		Shop (3) and field inspection	Y	Periodic	
8. Concrete strength testing and verification of compliance with construction documents		Field testing and review of laboratory reports	Y	Periodic	
1705.4 Masonry Construction					
MINIMUM VERIFICATION REQUIREMENTS					
(A) Level 1, 2 and 3 Quality Assurance:					
1. Prior to construction, verification of compliance of submittals		Submittal Review		Prior to Construction	
(B) Levels 2 and 3 Quality Assurance:					
1. As masonry construction begins, verify that the following are in compliance:					
a. Proportions of the site-prepared mortar		Field inspection	Y	Periodic	
b. Grade, type, and size of reinforcement, and anchor bolts		Field inspection	Y	Periodic	
2. Prior to grouting, verify that the following are in compliance:					
a. Grout space		Field inspection	Y	Level 2 - Periodic	
			N	Level 3 - Continuous	
b. Placement of reinforcement, connectors, and anchor bolts		Field inspection	Y	Level 2 - Periodic	
			N	Level 3 - Continuous	
3. Verify compliance of the following during construction:					
a. Materials and procedures with the approved submittals		Field inspection	Y	Periodic	
b. Placement of masonry units and mortar joint construction		Field inspection	Y	Periodic	
c. Size and location of structural members		Field inspection	Y	Periodic	
d. Type, size, location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction		Field inspection	Y	Level 2 - Periodic	
e. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)		Field inspection	Y	Level 3 - Continuous	
4. Observe preparation of grout specimens, mortar specimens, and/or prisms		Field inspection	Y	Periodic	
			Y	Level 2 - Periodic	
			N	Level 3 - Continuous	
1705.6 Soils					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		Field inspection	Y	Periodic	
2. Verify excavations are extended to proper depth and have reached proper material.		Field inspection	Y	Periodic	
3. Perform classification and testing of compacted fill materials.		Field inspection	Y	Periodic	
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill.		Field inspection	Y	Continuous	
5. Prior to placement of controlled fill, inspect subgrade and verify that site has been prepared properly.		Field inspection	Y	Periodic	
1705.10 Fabricated Items					
1. List of fabricated items requiring special inspection during fabrication:		Shop inspection	N	As noted in each applicable shop activity	
2. List of fabricated items to be fabricated on the premises of a fabricator approved to perform such work without special inspection (including name of approved agency providing periodic auditing):					
1705.11.3 Wind-resisting Components					
1. Roof covering, roof deck and roof framing connections.		Shop (3) and field inspection	Y	Periodic	
2. Exterior wall covering and wall connections to roof and floor diaphragms.		Shop (3) and field inspection	Y	Periodic	
1705.12.1 Structural Steel Special Inspections for Seismic Resistance					
1. Seismic force-resisting systems in SDC B, C, D, E, or F.		Shop (3) and field inspection	N	In accordance with AISC 341	
2. Structural steel elements in SDC B, C, D, E, or F other than those in Item 1, including sluits, collectors, chords and foundation elements.		Shop (3) and field inspection	N	In accordance with AISC 341	

GENERAL NOTES

- Contractor shall compare structural drawings and architectural drawings. Any omissions or discrepancies between plans, details, and specifications shall be brought to the attention of the Architect or Engineer before bidding. In all cases, more stringent requirement governs. Architectural dimensions and elevations will control.
- Structural drawings or parts of the structural drawings may not be used as shop drawings without prior written approval.
- All or parts of these drawings were produced with computer aided drafting. Drawings are available from the Engineer in DWG format on request.
- Contractor proposed changes to details must be clearly noted on the first sheet of all shop drawings.
- Construction shown is stable after the building is complete including interior and exterior finishes. The Contractor is responsible for temporary bracing of the structure during construction.
- Review of submittal information shall be for general compliance with the contract documents and shall not include checking of detailed dimensions or detailed quantities.

DESIGN LOADS

- Reference code for loading 2018 IBC.
 - Building Classification II
 - Wind Load
 - Basic Wind Speed (3 sec gust) 109 mph
 - Wind Exposure C
 - Internal Pressure Coefficient +/- 0.18
 - Velocity Pressure (qz) 25.9 psf
 - Roof Snow Load
 - Ground Snow Load (Pg) 10 psf
 - Flat Roof Snow Load (Pf) 10 psf
 - Snow Exposure (Ce) 1.0
 - Importance Factor 1.0
 - Thermal Factor (Ct) 1.0
 - Seismic Load
 - Importance Factor 1.0
 - Mapped Spectral Response Accelerations
 - Ss 0.131
 - S1 0.072
 - Site Class C
 - Spectral Response Coefficients
 - Sds 0.113
 - Sd1 0.072
 - Seismic Design Category B
 - Base Seismic-Force-Resisting System(s) and Response Modification Factor
 - Intermediate Reinforced Masonry Shear Walls 3.5
 - Design Base Shear xx kips
 - Seismic Response Coefficient (Cs) 0.xx
 - Analysis Procedure = Equivalent Lateral Force
 - Live Load
 - Roof Load 20 psf
 - Service Bay and slabs on grade 100 psf

FOUNDATIONS

- Foundation design for this project was based on soils information provided by Terracon
- Bearing capacity- 2000 psf
- All footings are to bear on engineered fill.
- Install corner bars at all footing intersections and corners (Provide lap length e.w.)
- All footing elevations are given to the top of the footings.
- Footing steps shown on the plans are furnished as a guide for estimating quantities. Final elevations are to be set in the field. Bearing elevations must be approved by a Soils Engineer before any concrete is placed.
- Coordinate foundation elevations with plumbing requirements. Step footings as required to clear plumbing lines.
- Provide drainage for all retaining walls, see architectural for notes and details.

MASONRY

- All masonry work to be in accordance with "Building Code Requirements for Concrete Masonry Structures" TMS 402-2016 and "Specifications for Masonry Structures" TMS 602-2016
- Fill all concrete masonry units with concrete or grout from the top of the footing to the finish floor or to 8" above finish grade whichever is higher.
- Use ladder type joint reinforcement (H&B 220 LADDER-MESH or better) at 16" on center in all cavity walls where brick is used for one or more of the wythes.
- Use truss type joint reinforcement (H&B 120 TRUSS-MESH or better) at 16" o/c. in all other masonry walls.
- Provide joint reinforcement at 8" o/c. for all walls constructed with stack bond.
- Use Type "M" or Type "S" mortar in accordance with TMS 602 Table SC-1 and ASTM C270.
- Minimum compressive strength of concrete masonry f'm = 2500 psi. Submit for review test data on strength of units before starting any masonry work.
- Minimum compressive strength of grout f'm = 2500 psi. Use 3/8" max size aggregate. See Special Inspection Schedule for any testing requirements. Grout slump shall be 8" to 11".
- Use "Fine" grout for all reinforced piers and reinforced wall in accordance with ASTM C 476.
- Each grout lift shall not exceed 5'-0" unless cleanouts are provided in the bottom course.
- Fill cells under all lintels with grout.
- Provide lintels over all openings through wall. See lintel details for reinforcement.
- Unless otherwise noted provide control joints in all walls 4'-0" from wall intersections or corners and at 20'-0"
- Extend all horizontal steel and bond beams thru control joints.
- Vertical Reinforcement shall extend into the bond beam.
- Unless noted, all bars are to be located at the center of cell. Where bars are specified at each face, provide minimum 3/4" clear space between reinforcement and CMU face shell.
- Anchor bolt into grouted cell locations only, unless noted otherwise.

REINFORCING STEEL AND CONCRETE

- All concrete work is to be in accordance with the "Building Code Requirements for Reinforced Concrete" (ACI 318-14).
- All detailing is to be in accordance with "ACI Detailing Manual" SP-66
- Use of Calcium Chloride, Chloride Ions, or other salts in concrete are prohibited.
- Concrete Properties: See Schedule
 - All concrete must obtain 7 day strength of 70% of design strength.
 - Concrete mixes may use up to 25% of cementitious weight as fly ash.
 - Concrete mixes may use water reducers, accelerators or retarders with prior approval.
 - Do not provide air entrainment in concrete mixes for interior slabs.
- All steel reinforcement shall be of deformed bars of billet steel conforming to ASTM A615, Grade 60 in all concrete.
- Welded wire fabric shall be ASTM 185 and shall lap 2 cross wires or 6" whichever is greater on all sides. All laps shall be wired together.
- Provide (2) #4 bars x 4'-0" at re-entrant corner locations Typical. Locate 3" away from corner and space 1'-0" apart.
- All slabs on grade are 6", unless noted. Slabs are to be placed on 10 Mil, PVC vapor barrier over 4" of porous fill. Reinforce slabs with 6x6 W2.9 x W2.9 WWF placed 1" from top of slab. Unless otherwise noted slabs have joints placed a 12'-0" on centers. Joints may be control joints or construction joints. See Architectural Plans for floor slopes and recesses for hard tile.
- Minimum concrete cover for reinforcement:
 - Footings 3" bottom, 2" sides
 - Cast-In-Place Walls Surfaces exposed to weather or soil 2" - #6 and greater, 1-1/2" - #5 and smaller Other surfaces 3/4"
- Provide corner bars at all wall and footing intersections.
- No openings shall be allowed to penetrate any concrete work, unless it is shown on the structural framing plans without prior written approval. Contractor shall submit for review locations of proposed openings not shown 30 days prior to pouring any concrete.
- Provide a continuous water bar at all wall construction joints below ground level.
- Use 3/4" chamfer for all exposed corners unless noted.
- Testing samples for preparing strength test specimens of each concrete mixture placed each day shall be taken in accordance with (1) through (3).
 - At least once a day
 - At least once for each 150yd^3 of concrete
 - At least once for each 5000ft^2 of surface area for walls or slabs.

STRUCTURAL STEEL

- All detailing, fabricating, and erection of structural steel shall be in accordance with the AISC 360-16 "Specifications for Structural Steel Buildings". All reactions shown are ASD loads.
- All connections are to be detailed as Type 2 "simple frame connections".
- All structural steel W shapes shall be ASTM A992.
- All structural steel Tube sections shall be ASTM A500 Grade B.
- All structural steel Pipe sections shall be ASTM A501.
- All structural steel channels, angles and other sections shall be ASTM A36, unless noted.
- Headed Studs shall be Type B Shear Connectors.
- Shop and field connections shall be welded with E-70XX electrodes or bolted with 3/4" dia. A-325N or A-325F bolts, unless noted.
- Use 3/4" cap and bearing plates, unless noted.
- Use 3/4" dia x 1'-0" long ASTM 1554 Grade 36 anchor bolts, unless noted. In lieu of cast bolts, 3/4"x1'-0" long HAS rods epoxied with Hilti HVA epoxy, or equal, may be used with prior approval.
- Grout under baseplates with ASTM C 1107 cementitious 6000 psi Non-Shrink Grout.
- Structural steel shall be shop primed per SSPC paint system No. 7. Primer shall be SSPC paint with a minimum thickness of 2.0 MILS. Omit Paint at surfaces to be fireproofed.
- Provide L 3"x3"x1/4" frames around all roof opening through metal decking.

STEEL JOIST

- All steel joists shall conform to the standard specifications for the joist noted, as adopted by the Steel Joist Institute.
- Refer to Components & Cladding Table and Diagram for roof uplift zones and pressures. Use 8psf dead load for net uplift determination.
- K Series joists shall be welded to bearing plates or steel members with two 1/8" fillet welds 2" long.
- All joist bearing plates are to be set 1/4" above the top of concrete masonry units.
- Weights of mechanical units are not included in the joist loading designation shown. Design joist for loading shown plus the weight of mechanical shown. General contractor is to verify all weights of mechanical units with Mechanical Subcontractor before submitting shop drawings.

COLD-FORMED METAL (CFE) FRAMING (Tower Element)

- All detailing, fabricating, and erection of light gauge steel shall be in accordance with the AISI S240-20 "North American Standard for Cold-Formed Steel Structural Framing".
- All studs, joist, tracks, bridging, and accessories shall be a minimum of G60 galvanized and have minimum yield strength of 33ksi, unless noted otherwise.
- Furnish design calculations sealed by a Professional Engineer licensed in the state of that the project is located for all truss members
- Top and bottom tracks to 600T125-43 unless noted otherwise.
- Provide double studs at all wall intersections, jams, corners, and intersections.
- All wall studs to have full bearing at top and bottom of stud.

REQUIRED STRUCTURAL SUBMITTALS

- Concrete Mix Designs conforming to ACI 318 requirements
- Reinforcing steel for all cast in place concrete work shown on the structural drawings.
- Reinforcing steel for all masonry work shown on the structural drawings.
- Structural steel.
- Bar joist, composite floor deck, and roof deck.
- Cold formed metal stud trusses.
- Aggregate, helical anchor, or other foundation site improvement method, if specified on the project.



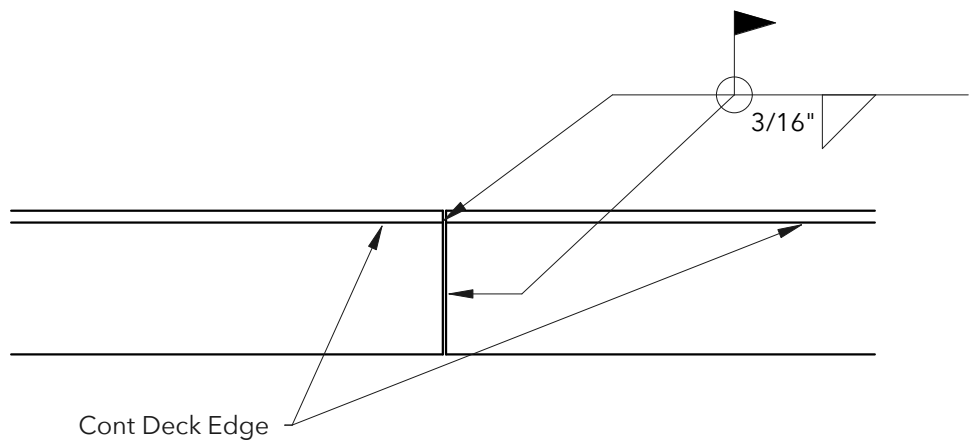
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IFB-0	Issued for Bid	06.09.2026
IFC-0	Issued for Construction	06.25.2026

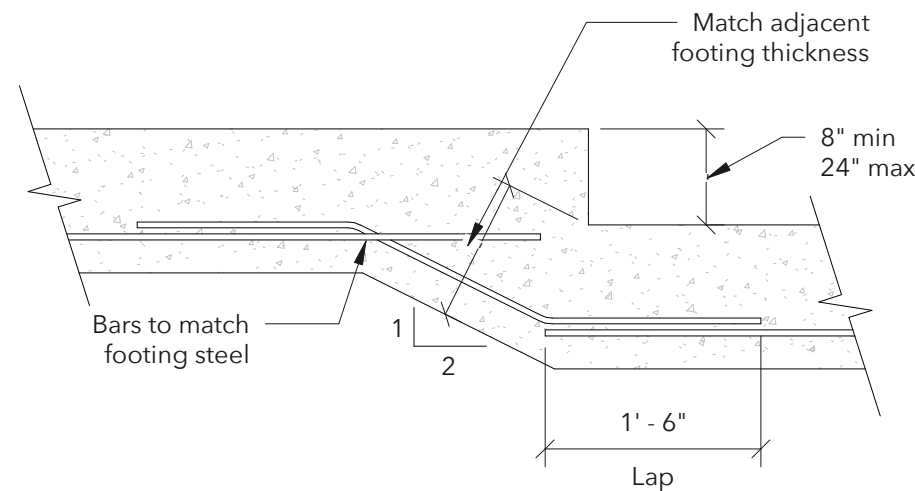
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Typical Details

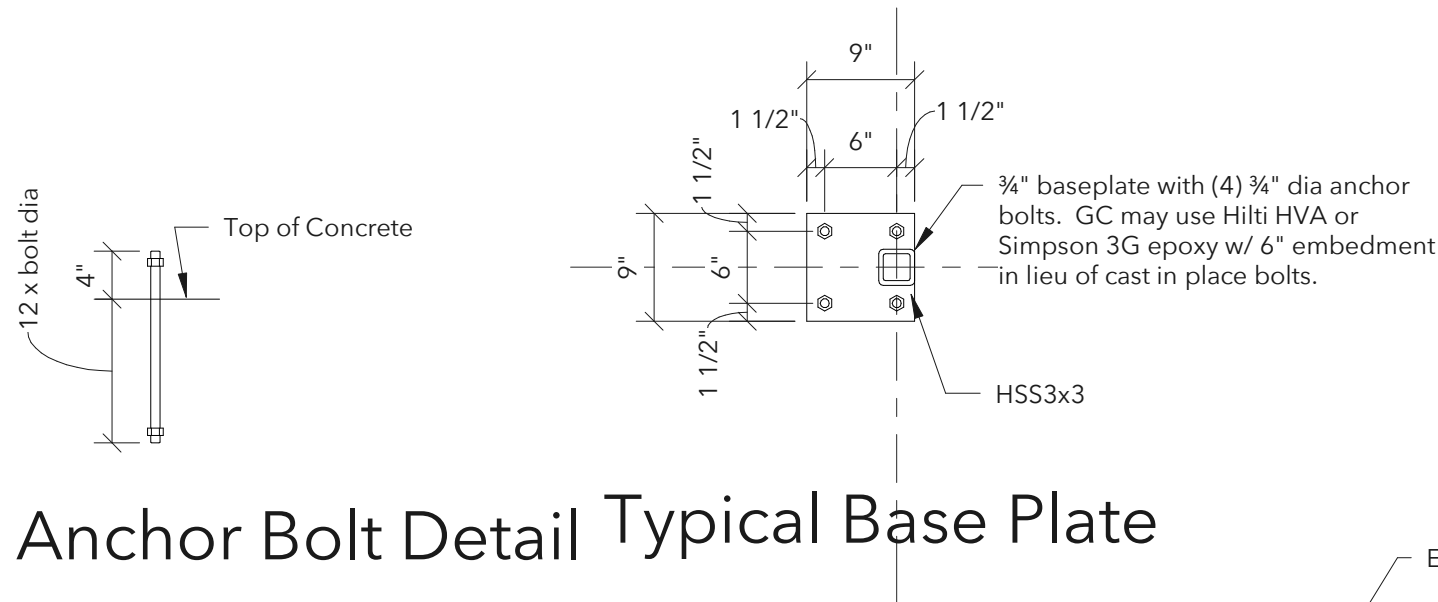
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Date	04/17/2026
Drawn by	jcj
Checked by	jd
S0.2	
Scale	3/4" = 1'-0"



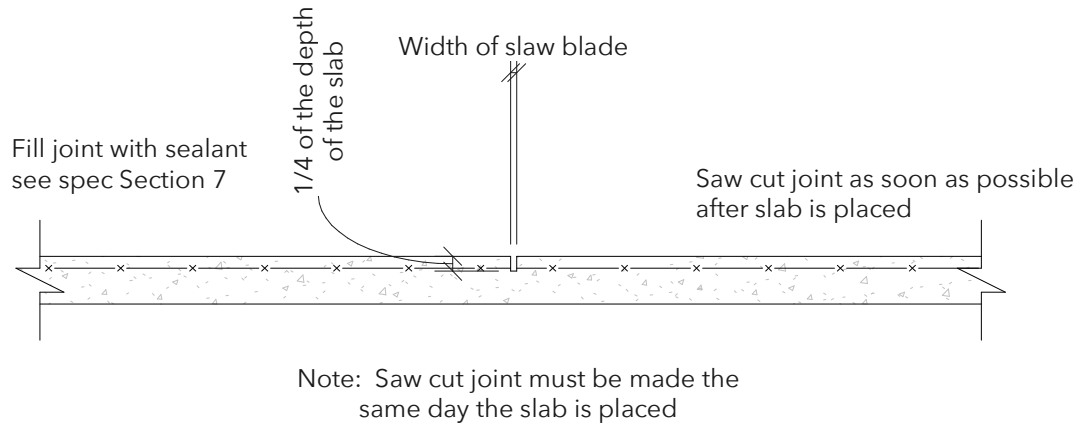
Typical Roof Deck Edge Angle Splice Detail



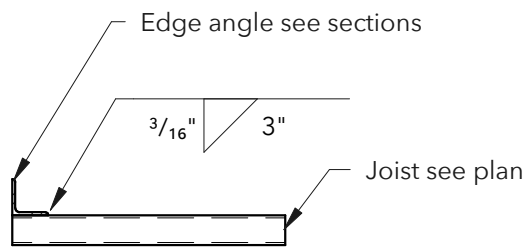
Single Footing Step



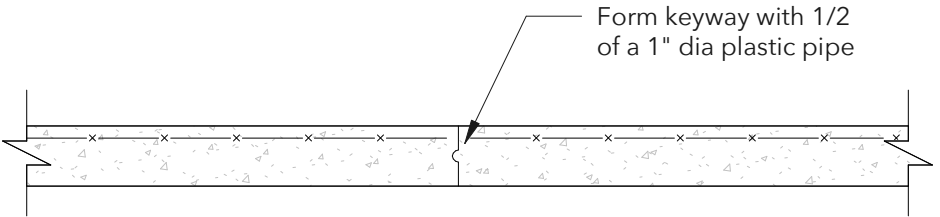
Typical Anchor Bolt Detail Typical Base Plate



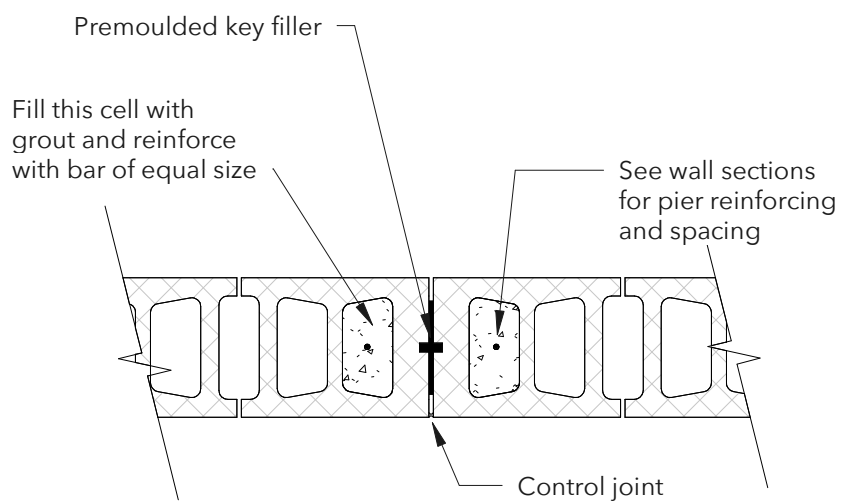
Typical Control Joint



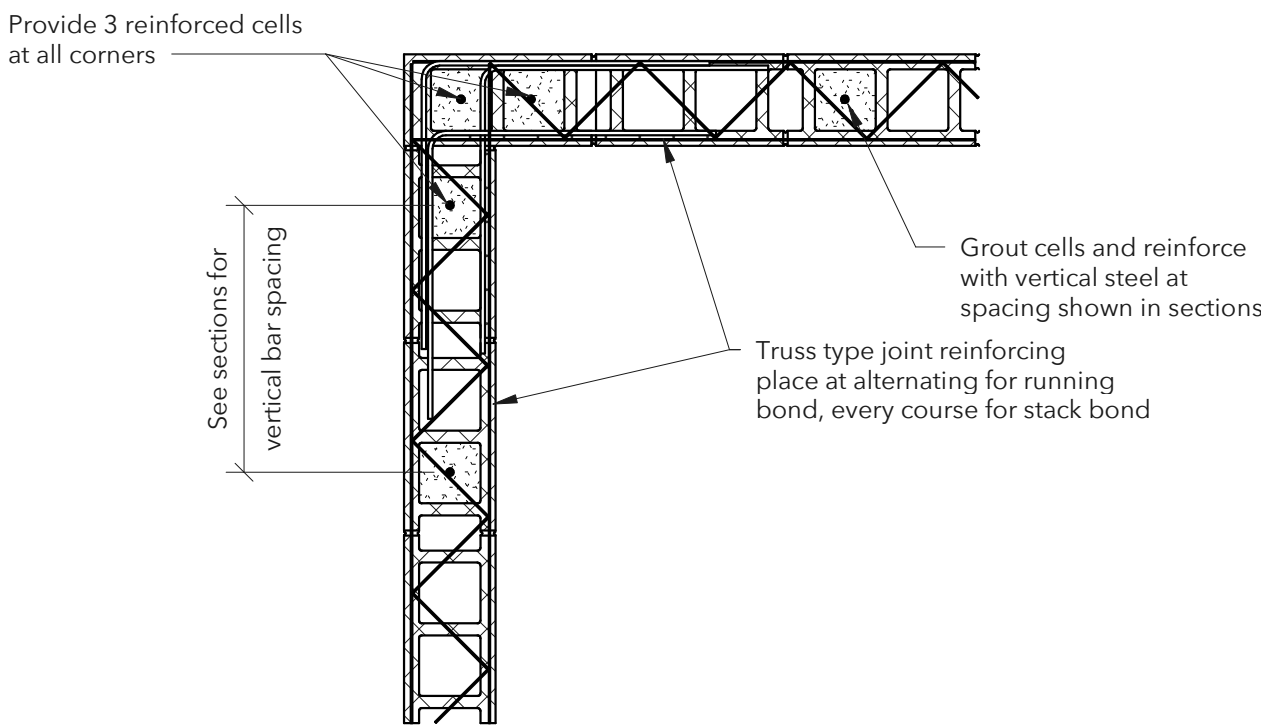
Deck Edge Fastening Detail



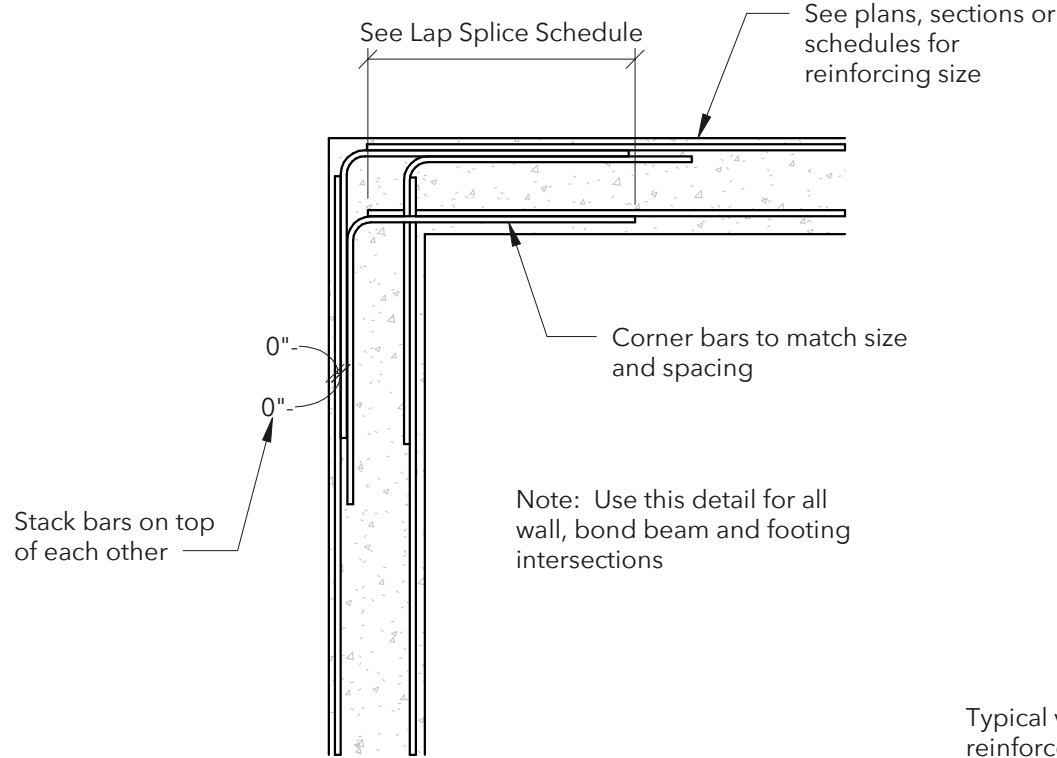
Typical Construction Joint



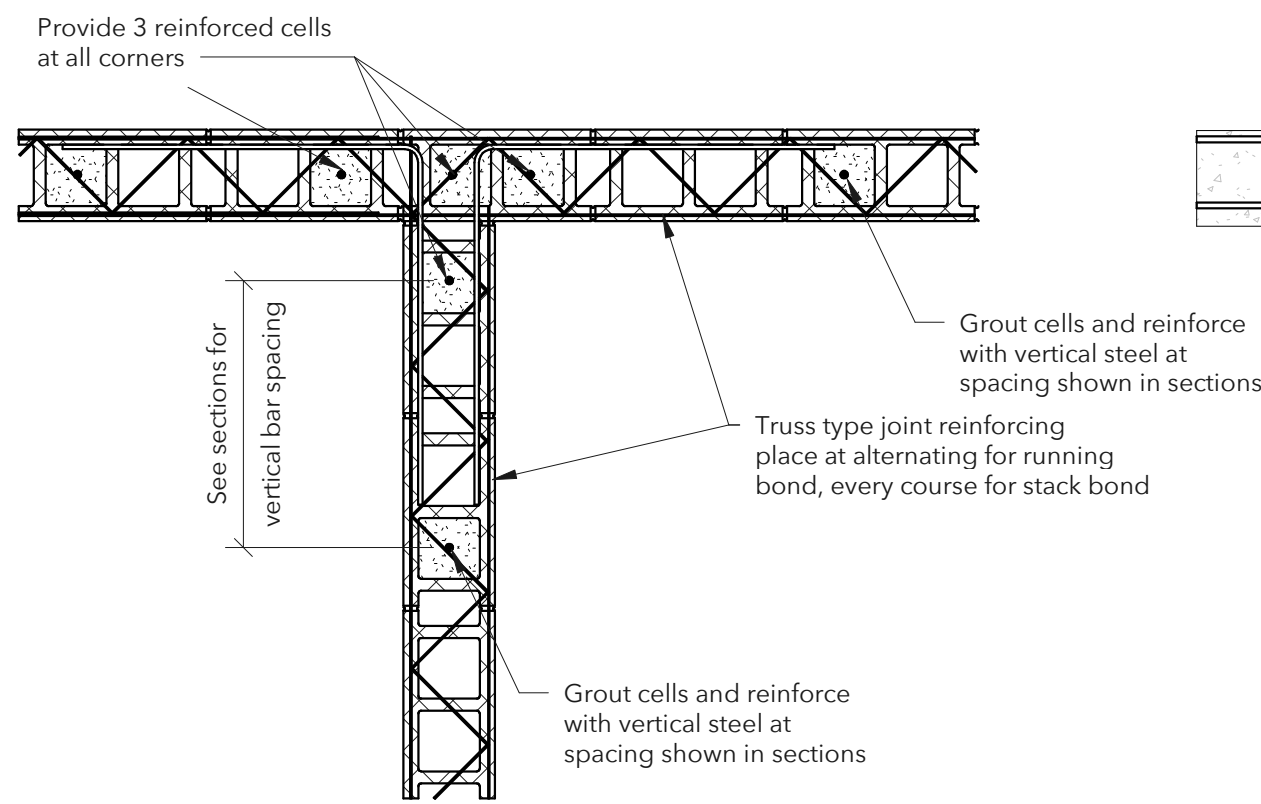
Typical MasonryWall Control Joint



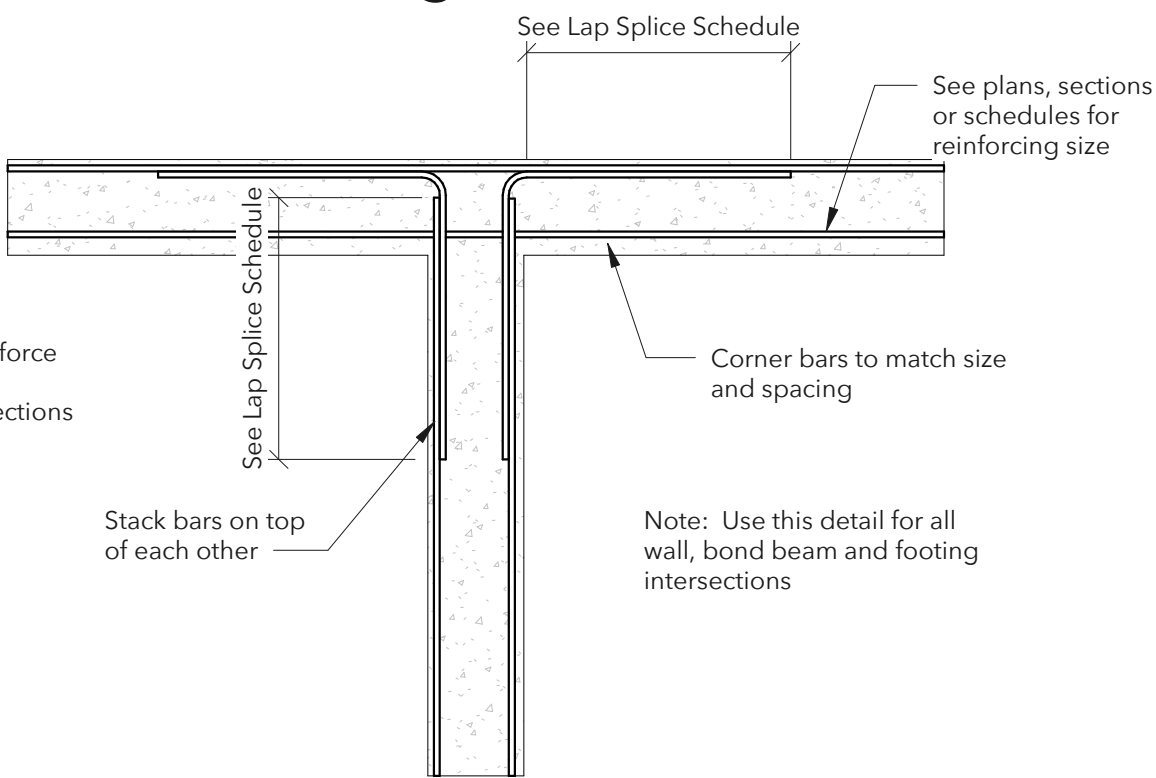
Typical Joint Reinforcing at Corner



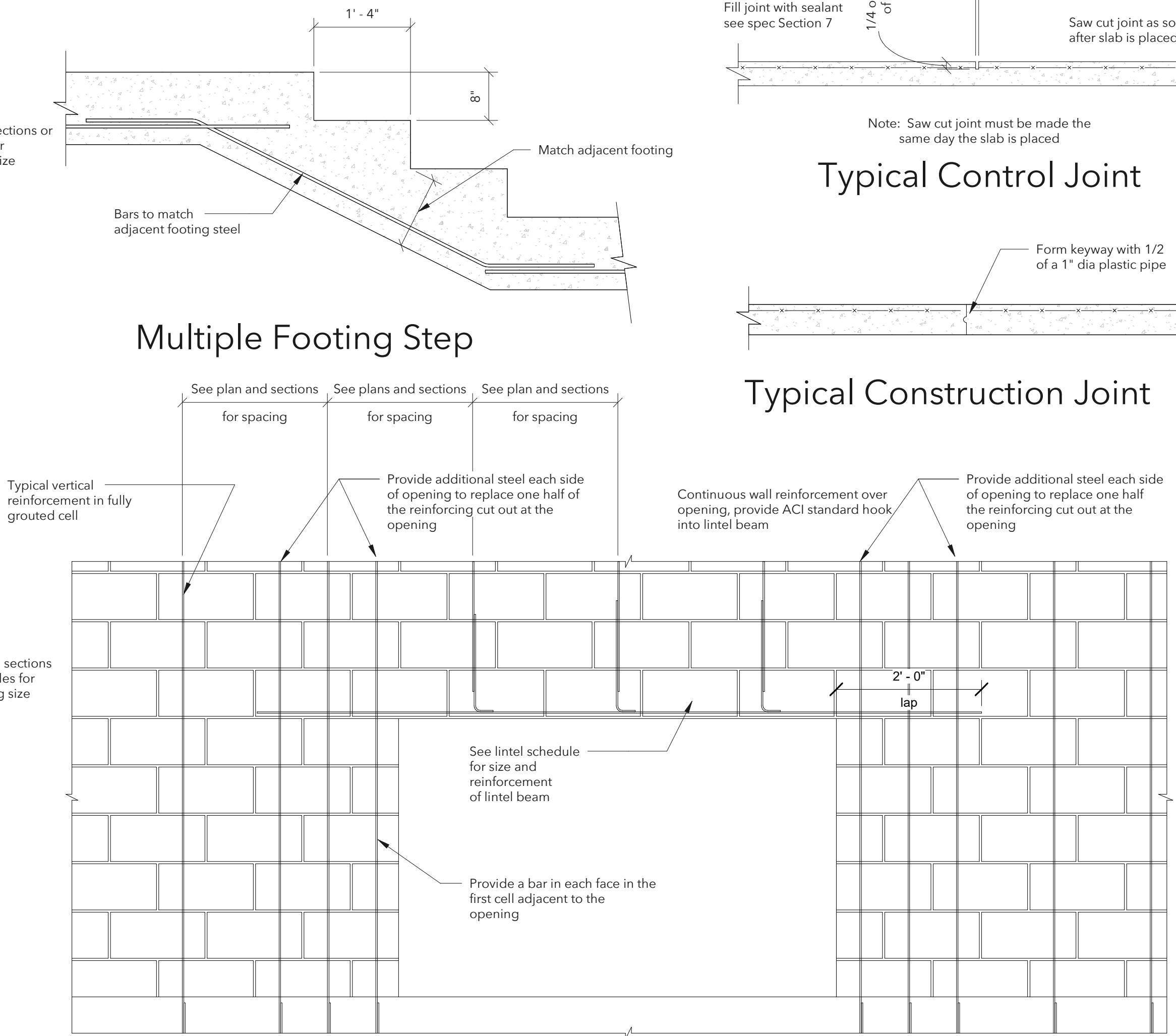
Typical Beam, Wall or Footing Reinforcing at Corners



Typical Joint Reinforcing at Intersection



Typical Beam, Wall or Footing Reinforcing at Intersections



CMU Lintel Elevation



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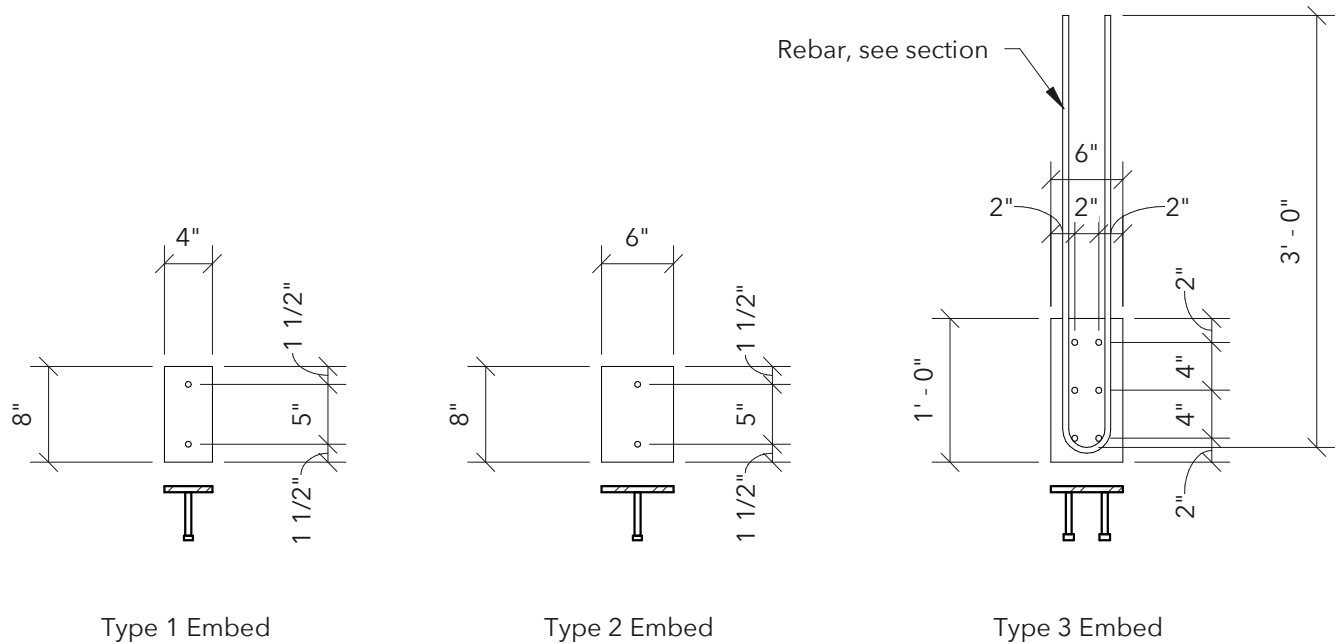
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Schedules

Project number	25048
Date	04/17/2026
Drawn by	jcj
Checked by	jd

S0.3

Scale 3/4" = 1'-0"



Embed plates

¾" plate w/ ½"x4"headed studs

Metal Deck Attachment Schedule

Area	Support Fastener/Pattern	Sidelap Fastener/Pattern
Roof - typical	#12 TEK screws 36/4 pattern	2 - #10 TEK screws
Roof - hatched area	#12 TEK screws 36/4 pattern	10 - #10 TEK screws

Reinforcing Steel Lap Splice Lengths

Bar Size	Column Splices	Bm, Ftg & Wall Splices	
		Top Bars	Other Bars
# 3	12"	19"	15"
# 4	15"	25"	19"
# 5	19"	31"	24"
# 6	23"	37"	29"
# 7	26"	54"	42"
# 8	30"	62"	48"
# 9	34"	70"	54"
# 10	38"	79"	61"
# 11	42"	87"	67"

Notes:

- Top bars are any horizontal reinforcing steel that has another layer of steel more than 2" below the bars or reinforcing steel that has more than 12" of concrete below the bars.
- All horizontal reinforcing bars in walls may be detailed as "Other Bars".
- All corner bars may be detailed as "Other Bars".

Reinforcing Steel Lap Splice & Development Length for Concrete Masonry

Bar Size	Bar in center of wall			Bar in each face of wall
	6" CMU	8" CMU	12" CMU	
#3	16"	16"	16"	16"
#4	21"	21"	21"	30"
#5	32"	26"	26"	46"
#6	61"	43"	40"	85"
#7	NA	60"	46"	115"
#8	NA	NA	61"	NA

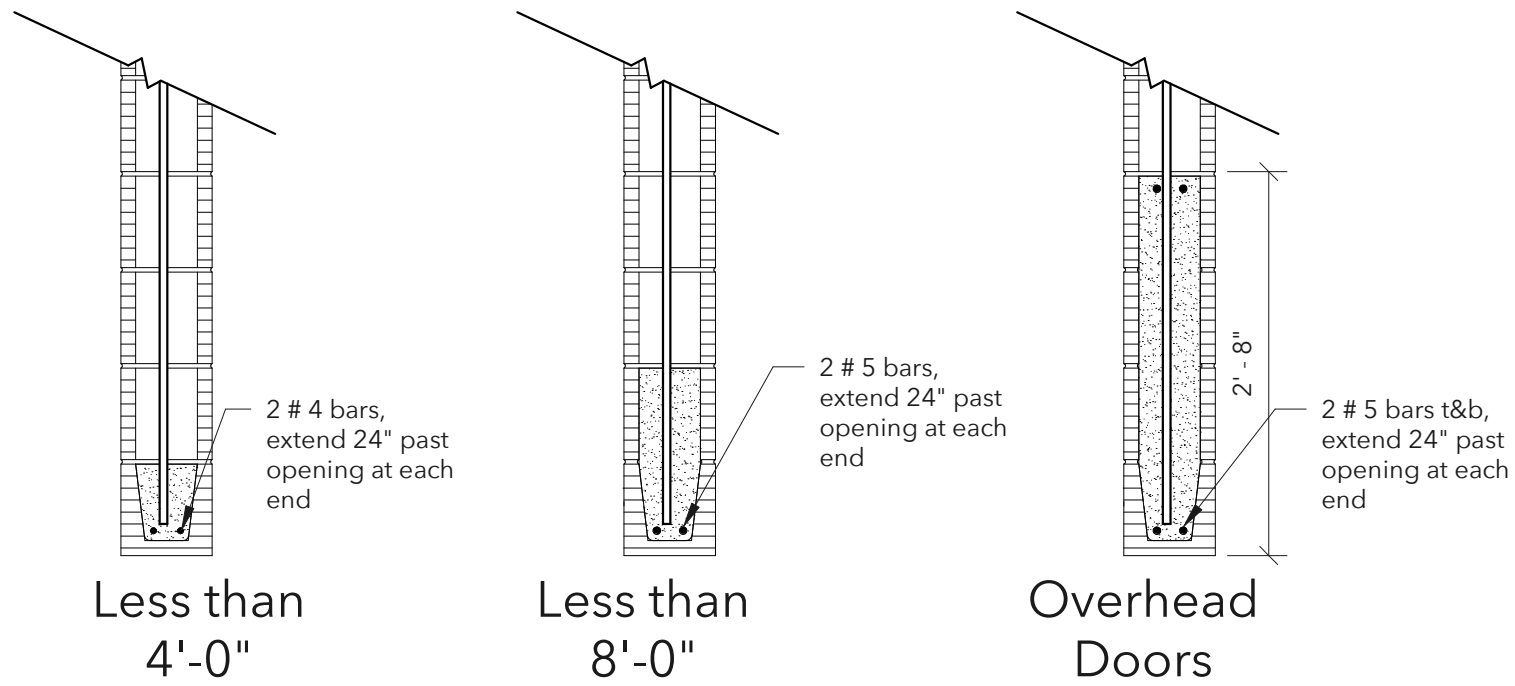
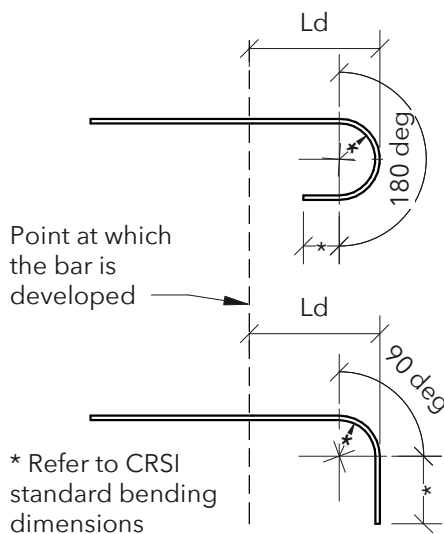
Notes:

- Lengths are for vertical splces in walls.
- Bar length for center of wall are based on f'm of 1500 psi or greater.
- Bar length for face of wall are based on f'm of 2000 psi or greater.
- Refer to General Notes and details for masonry strength.

Components and Cladding Schedule

a = 6.5'

Area (sf)	Zone 1,2,3 (+) psf	Zone 1 (-) psf	Zone 2 (-) psf	Zone 3 (-) psf	Zone 4 (+) psf	Zone 4 (-) psf	Zone 5 (+) psf	Zone 5 (-) psf
10	11.5	-28.3	-47.5	-71.5	25.9	-28.1	25.9	-34.5
50	9.8	-26.6	-35.8	-43.0	23.2	-25.4	23.2	-29.2
100	9.1	-25.9	-30.7	-30.7	22.1	-24.3	22.1	-26.9

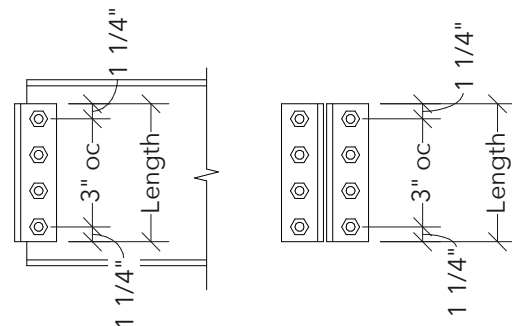
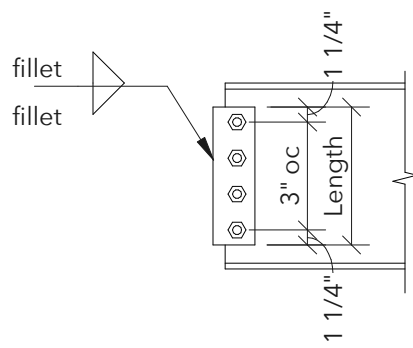


CMU Lintel Schedule

Beam to Column Single Shear Plate Connection Schedule

Min Beam Depth	Max end reaction	Length	# of bolts	Plate thickness	Fillet weld size
W10	16.7k	5-1/2"	2	5/16"	3/16"

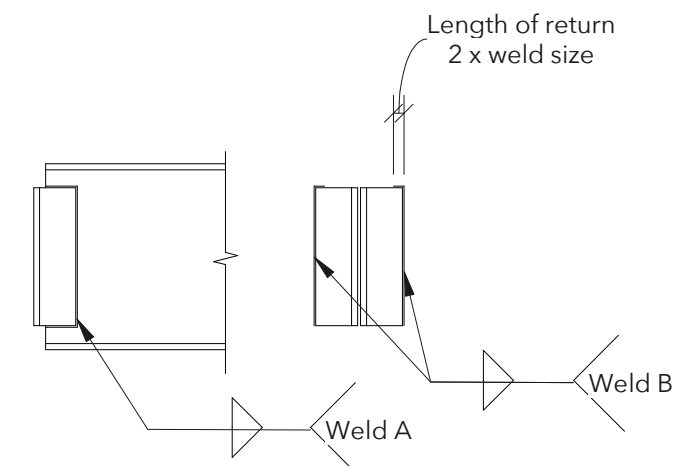
- Use this table for Wide Flange Beams to HSS Columns
- Loads are ASD
- Bolts are 3/4" dia Group A ASTM F3125 Gr A325 in standard or short-slotted holes transverse to direction of load with threads Excluded from shear plane. More than 5 bolts must have short-slotted holes.
- Plate is A36 and welds are E-70XX electrodes
- Beam reactions that exceed the max reaction in this table will use the Double Angle Frame Connection Schedule below.



Beam Double Angle Shear Connection Schedule

Min Beam Depth	Max end reaction	Length	rows of bolts	Angle thickness	Weld A fillet size	Weld B fillet size
W10	14.6k	5-1/2"	2	1/4"	3/16"	1/4"

- Use this table for Wide Flange Beams to Wide Flange Columns or other Beams
- Loads are ASD
- Bolts are 3/4" dia Group A ASTM F3125 Gr A325 in standard or short-slotted holes transverse to direction of load with threads Excluded from shear plane.
- Angles are A36 and welds are E-70XX electrodes
- Beam reactions that exceed the max reaction in this table will shall be designed by steel fabricator and submit signed/sealed calculations prepared by a Professional Engineer licensed in the State of the Project





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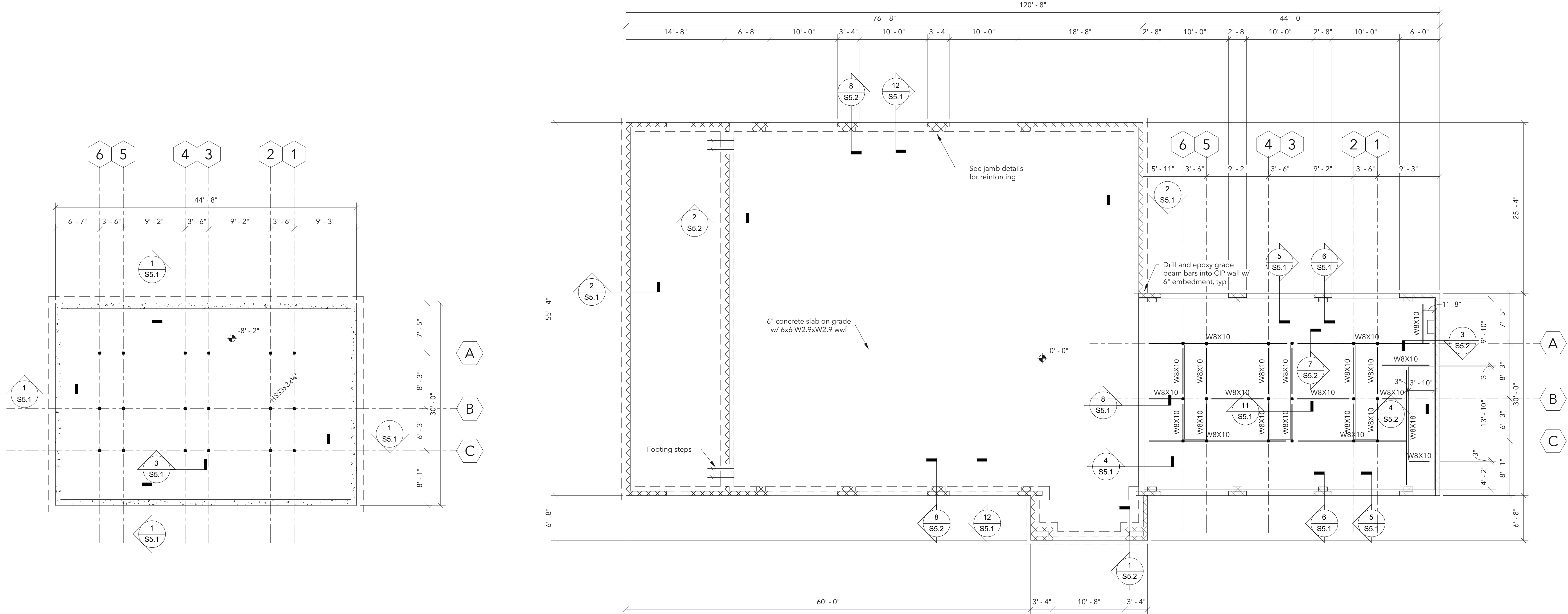
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Foundation Plan

Project number	25048
Date	04/17/2026
Drawn by	jcj
Checked by	jd

S1.1

Scale As indicated



PIT FOUNDATION PLAN
1/8" = 1'-0"

FOUNDATION PLAN
1/8" = 1'-0"

- Sheet Notes:**
- See Sheet No S0 for typical details and general notes.
 - Reference all elevations to finish floor elevation (+) 0'-0".
 - Floor construction 3" concrete slab with 6x6 W2.9xW2.9 wwf over 2" x 20 ga. galvanized (G60) composite metal deck. Total slab thickness = 5". Provide 5/8" dia puddle welds on 3/4 pattern w/ (3) #12 TEK screw sidelap fasteners per span.
 - All steel beam reactions shall be designed for 10 kips (ASD) unless noted otherwise.
 - Refer to architectural for all dimensions, slopes, elevations, etc. not illustrated on this plan. Coordinate all final dimensions and elevations with architectural.



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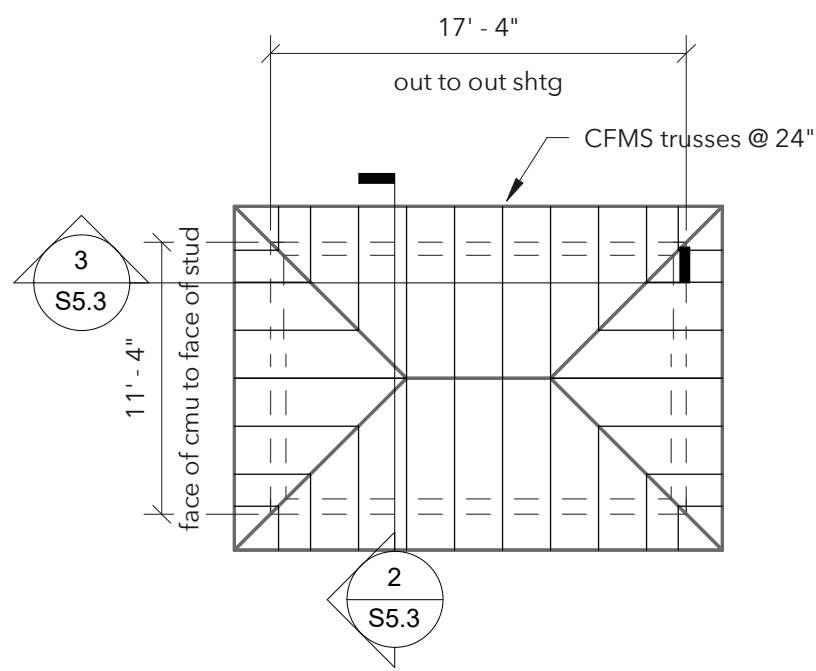
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Roof Framing Plan

Project number	25048
Date	04/17/2026
Drawn by	jcj
Checked by	jd
S3.1	
Scale	As indicated

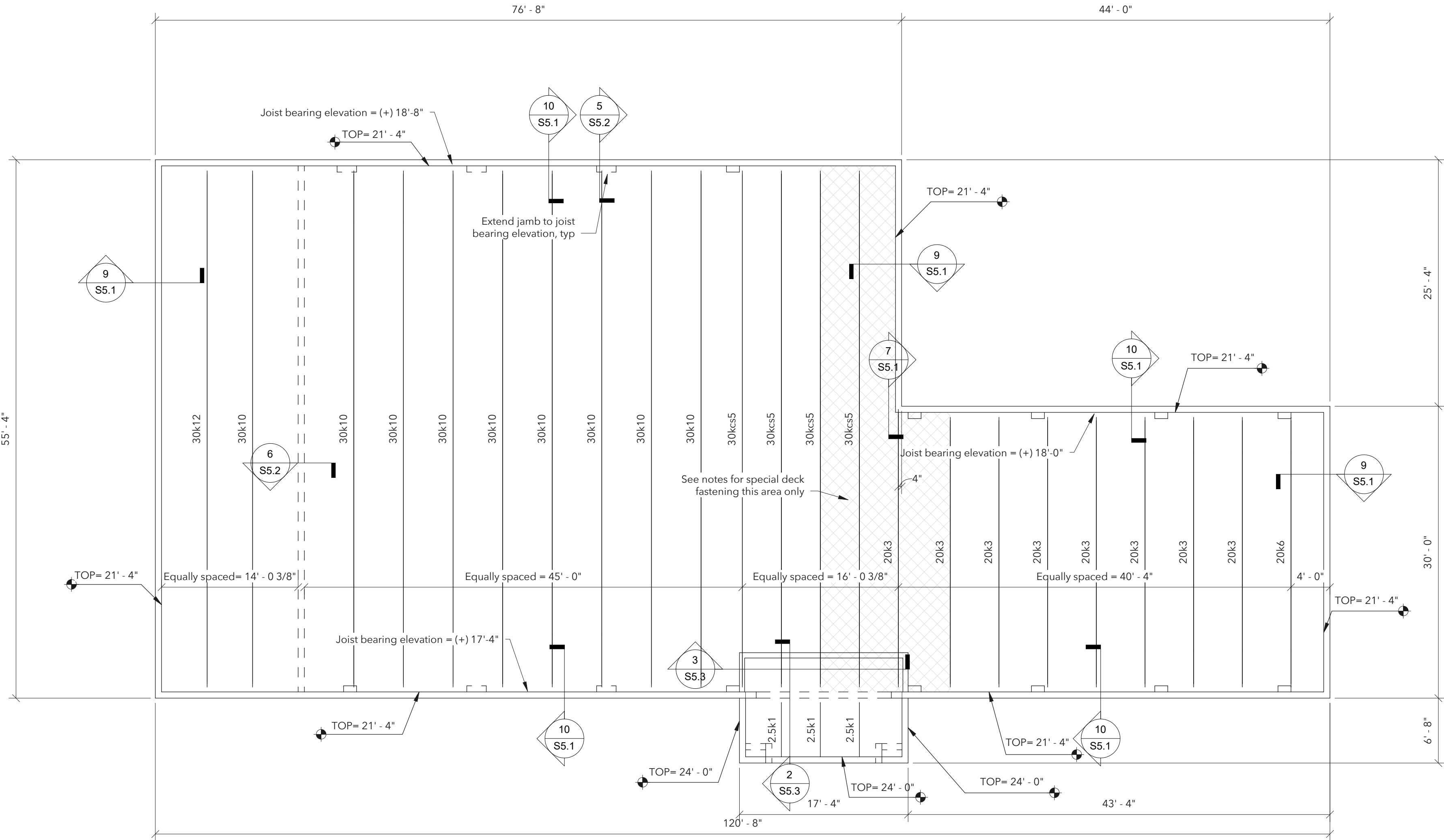


HIGH ROOF FRAMING PLAN

1/8" = 1'-0"

Sheet Notes:

- See Sheet No S0.x for typical details and general notes.
- Reference all elevations to finish floor elevation (+) 0'-0"
- Truss Bearing Elevation (+) 23'-4"
- Roof slope = 7"/12", unless noted
- Roof construction 5/8" plywood deck with H-clips. Attach with 8d nails @ 6" o.c..
- Refer to architectural drawings for all dimensions, slopes, elevations, etc... not illustrated on this plan. Coordinate all final dimensions and elevations with architectural.
- Truss loading: Top Chord Live Load = 20psf, Top Chord Dead Load = 10psf, Bottom Chord Dead Load = 10psf.
- Truss requirements: (note that all of these requirements must be included in the truss submittal prior to receiving approval)
 - Furnish design calculations sealed by a Professional Engineer licensed in the state of that the project is located for all truss members.
 - Truss manufacturer shall specify and provide all truss to truss and truss bearing connections, and not contain mention of "by others" in relation to design.
 - Truss manufacturer shall be responsible for providing and illustrating all temporary and permanent bracing required.



ROOF FRAMING PLAN

1/8" = 1'-0"

Sheet Notes:

- See S0.x Sheets for typical details and general notes.
- Reference all elevations to finish floor elevation (+) 0'-0"
- See plan for Joist Bearing Elevations.
- Roof construction 1 1/2" x 22 ga. type B painted (gray) metal deck. See S0.3 sheets for attachment details. Paint bar joist gray.
- Refer to architectural drawings for all dimensions, slopes, elevations, etc... not illustrated on this plan. Coordinate all final dimensions and elevations with architectural.



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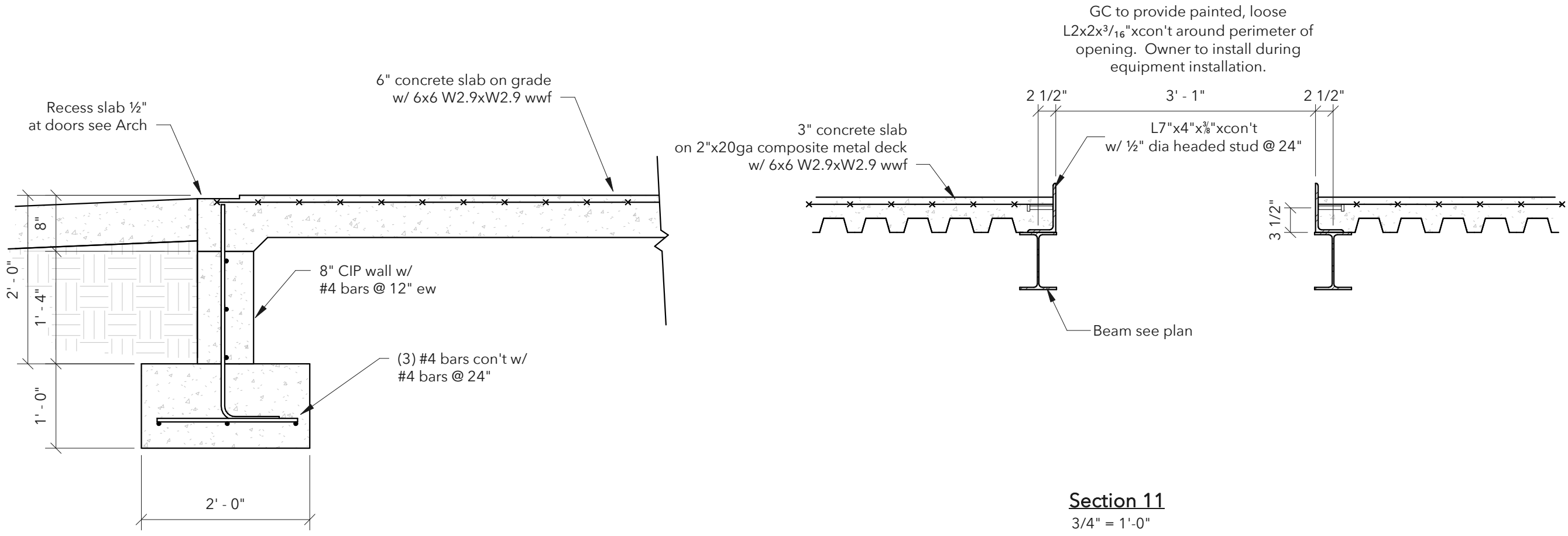
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Sections and
Details

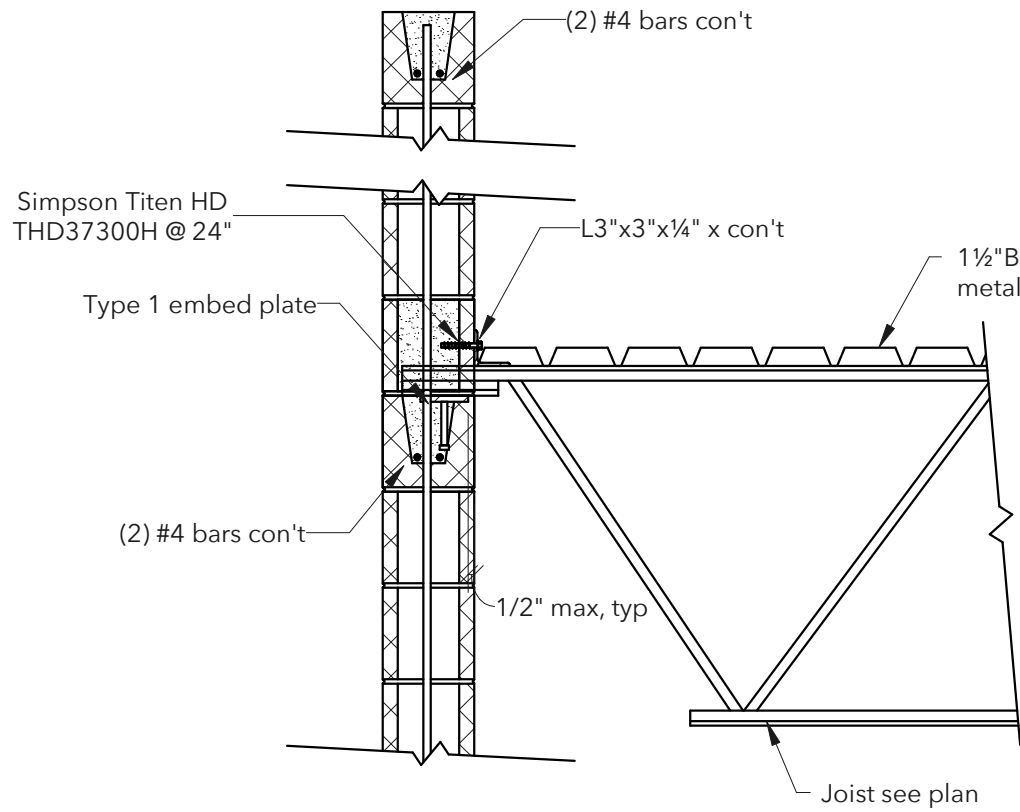
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S5.1

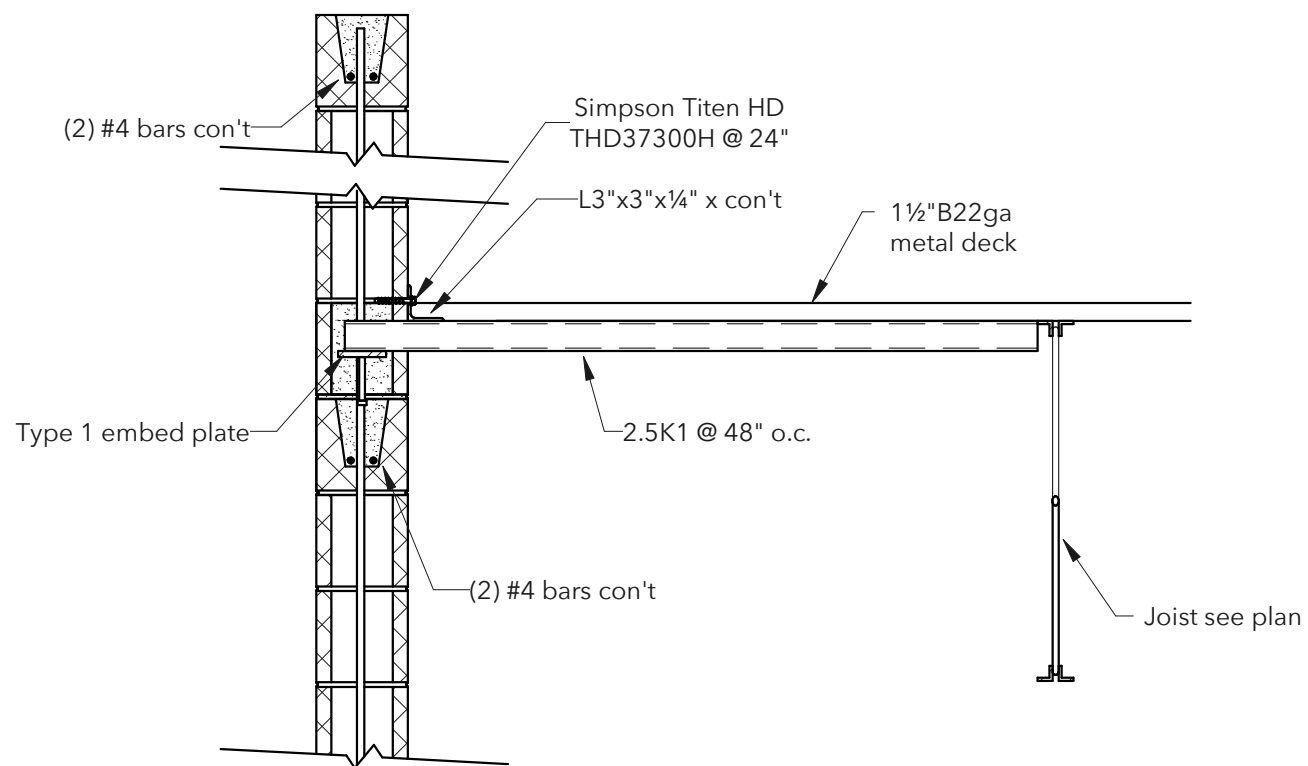
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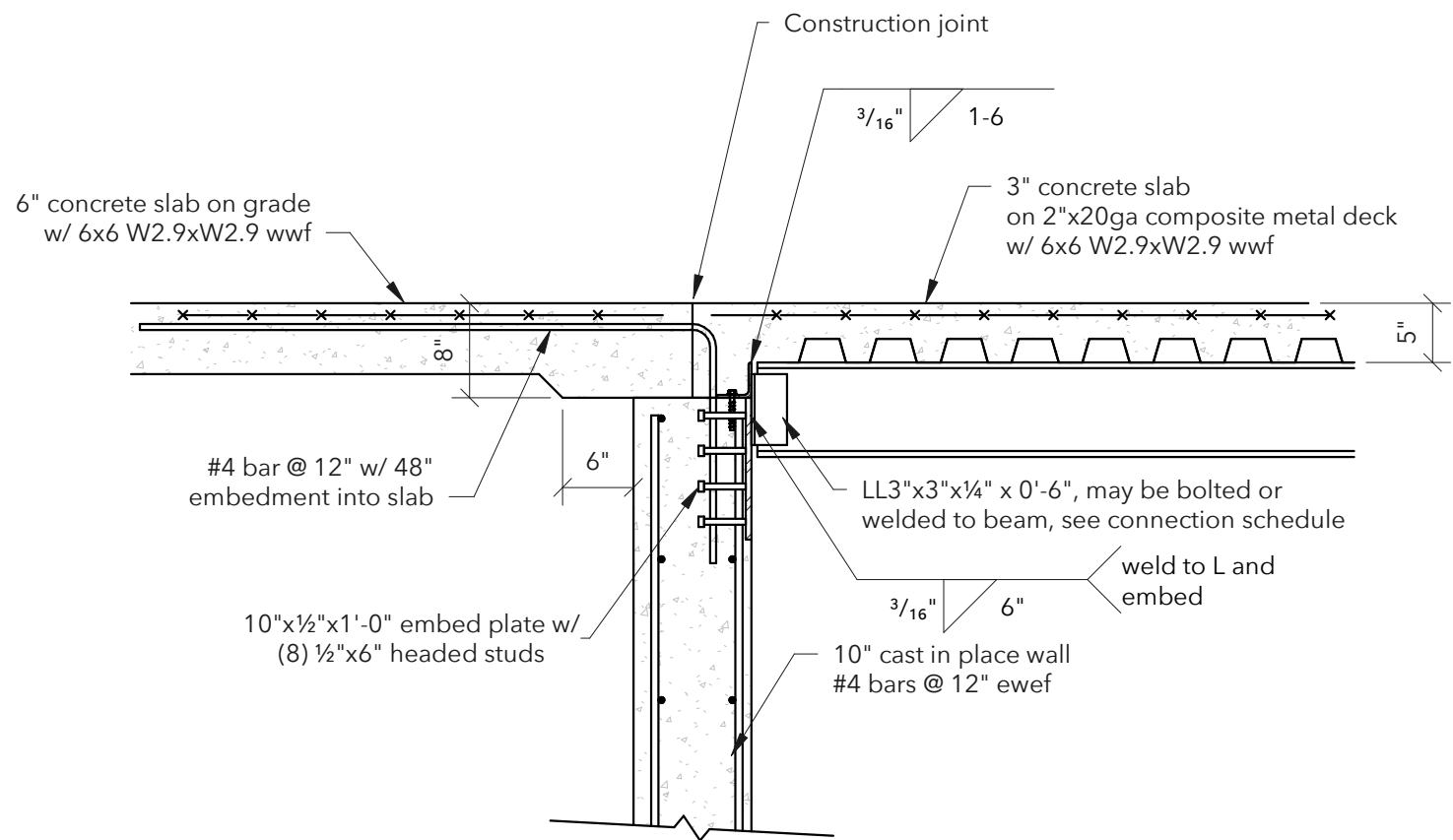
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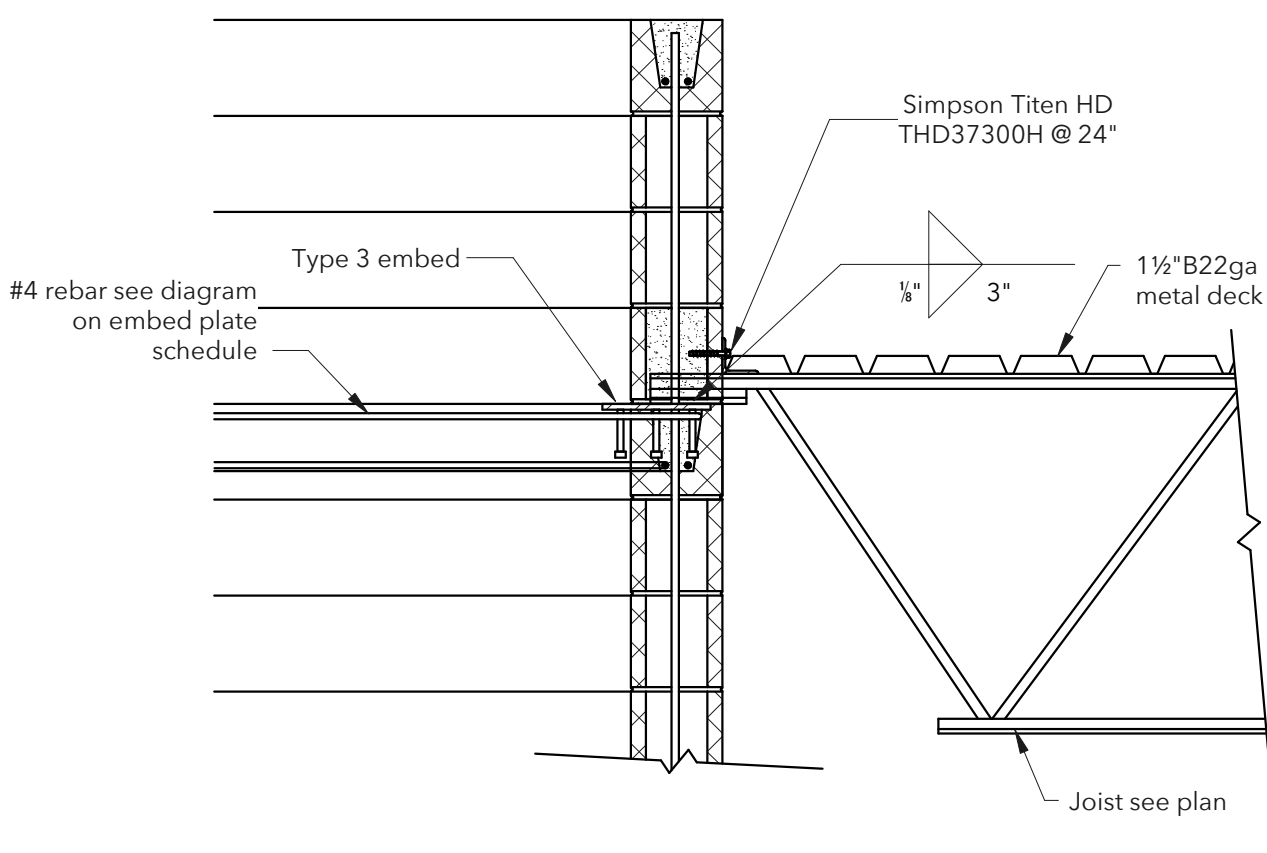
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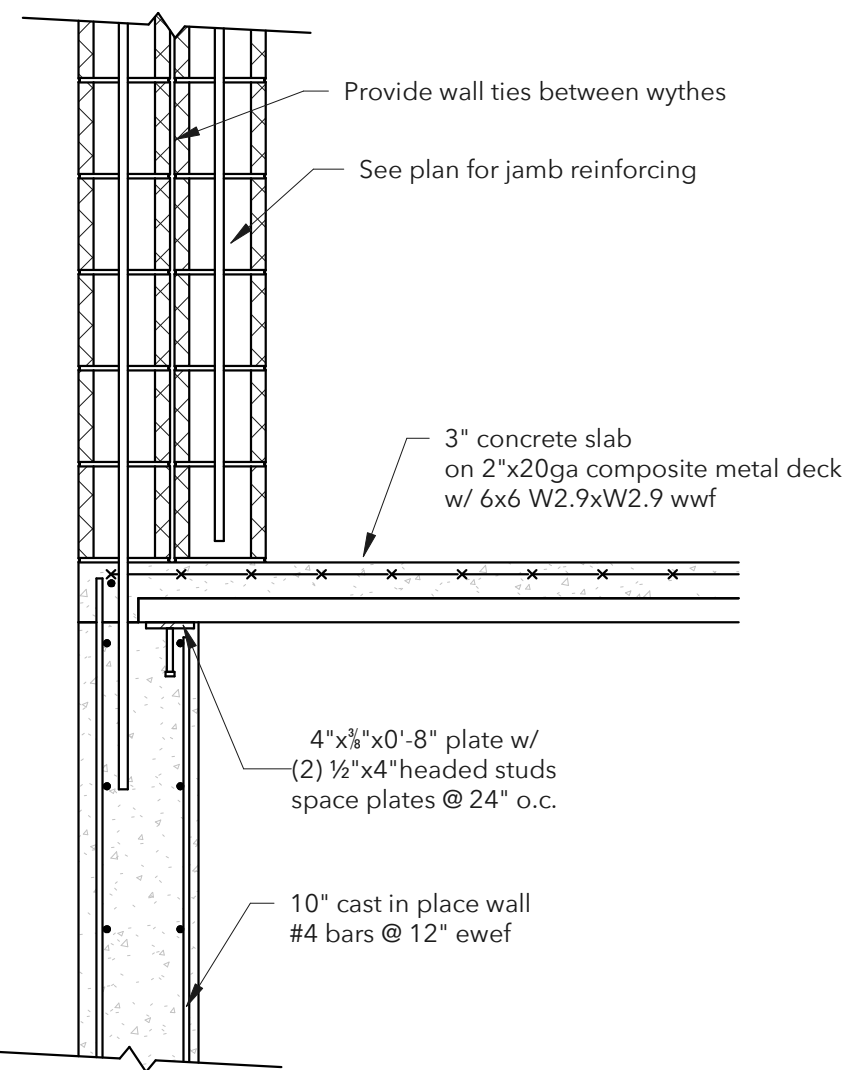
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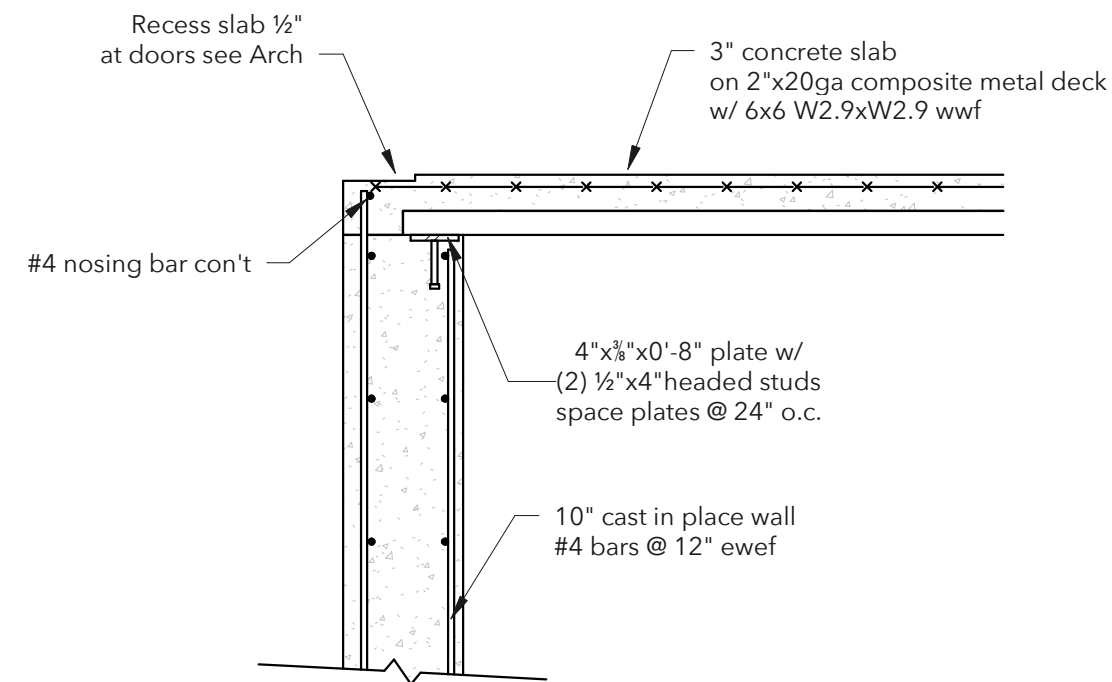
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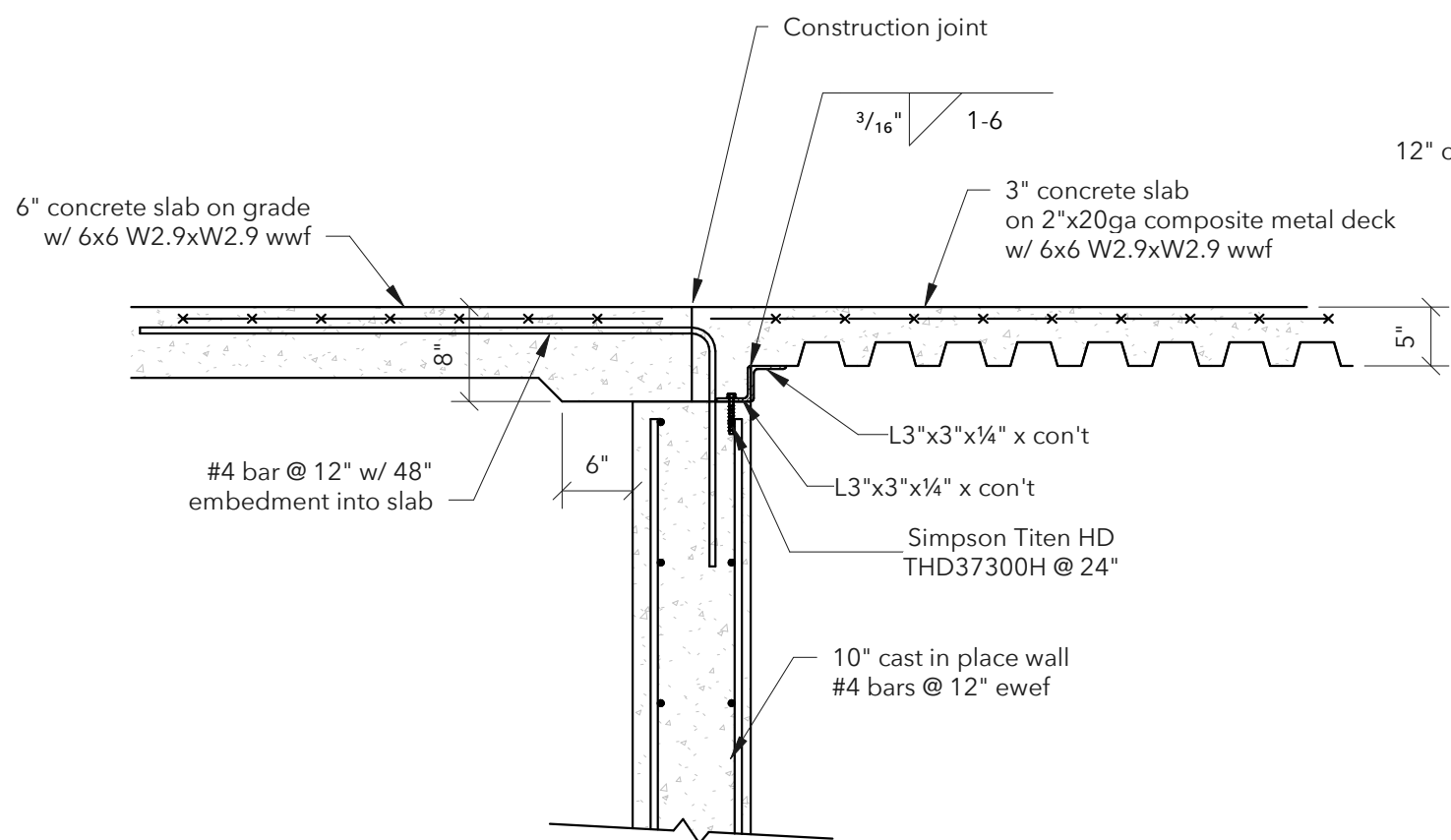
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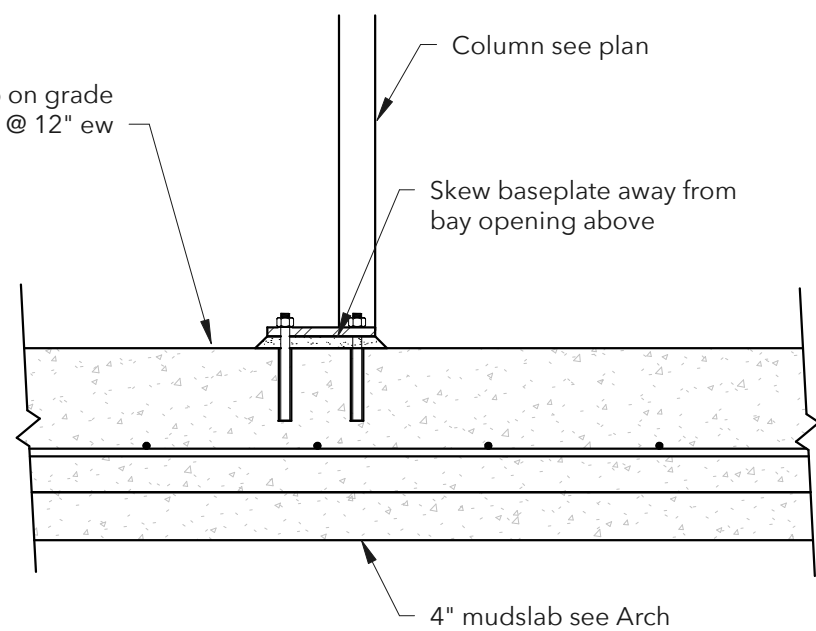
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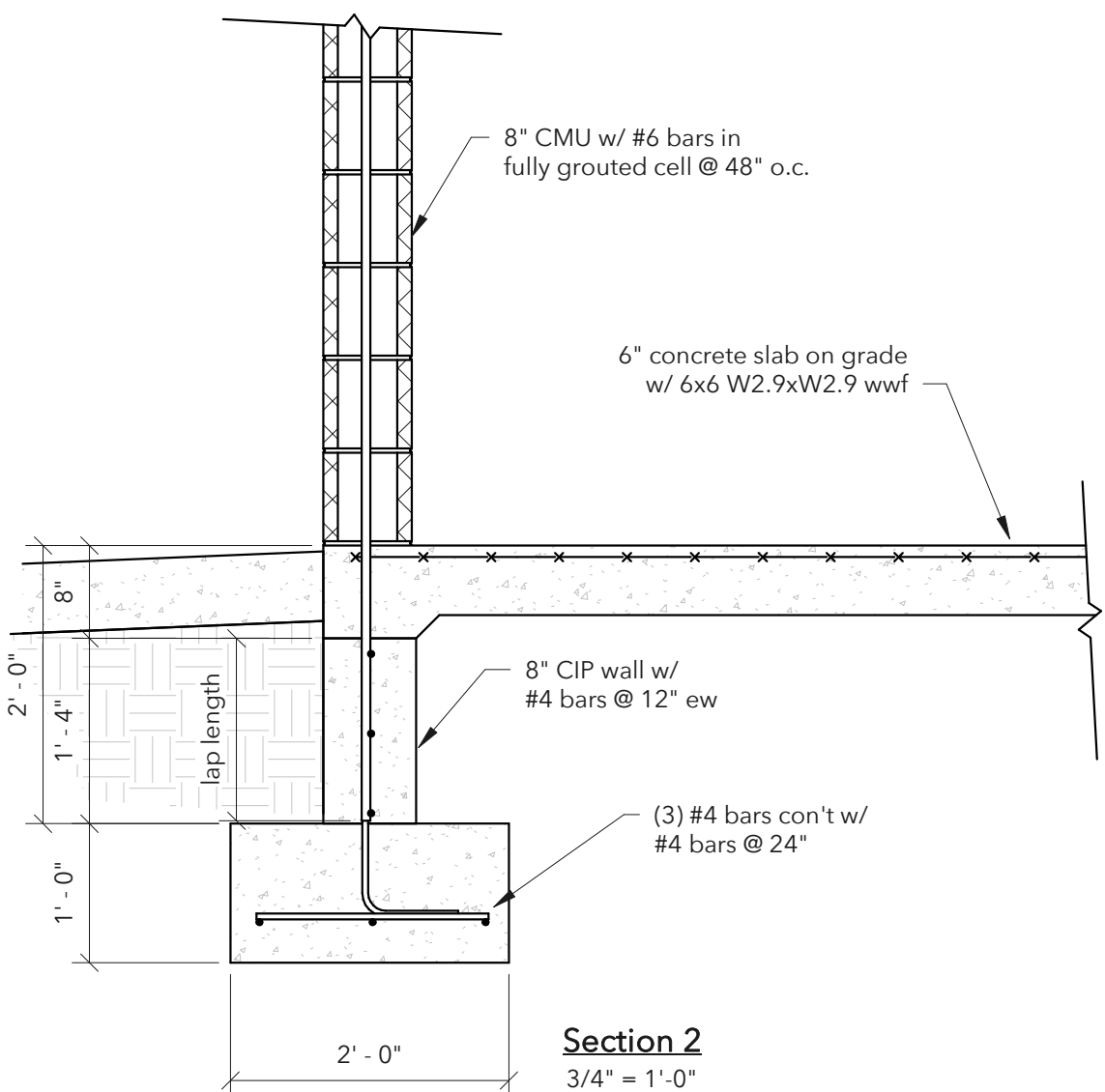
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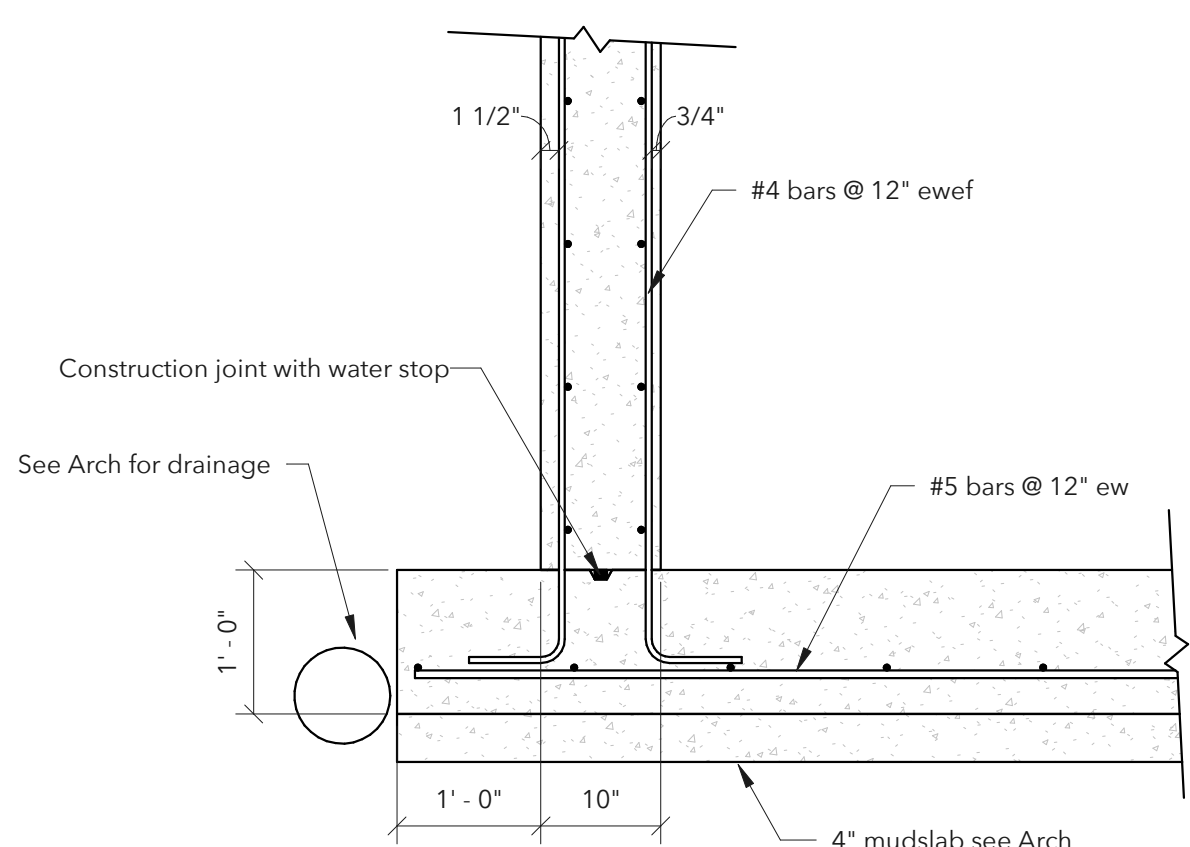
Section 4
3/4" = 1'-0"



Section 3
3/4" = 1'-0"



Section 2
3/4" = 1'-0"



Section 1
3/4" = 1'-0"



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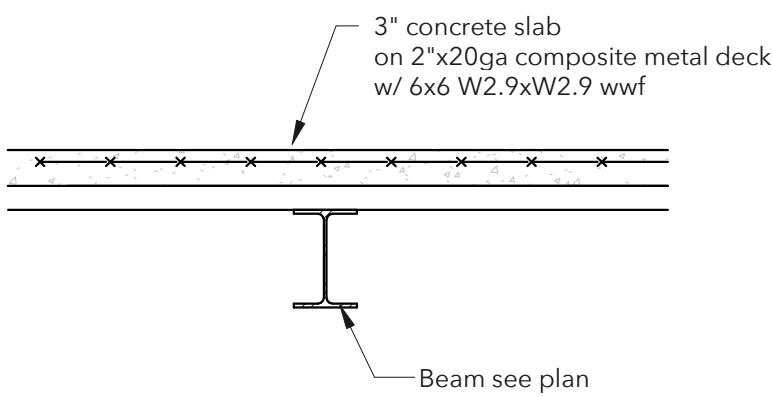
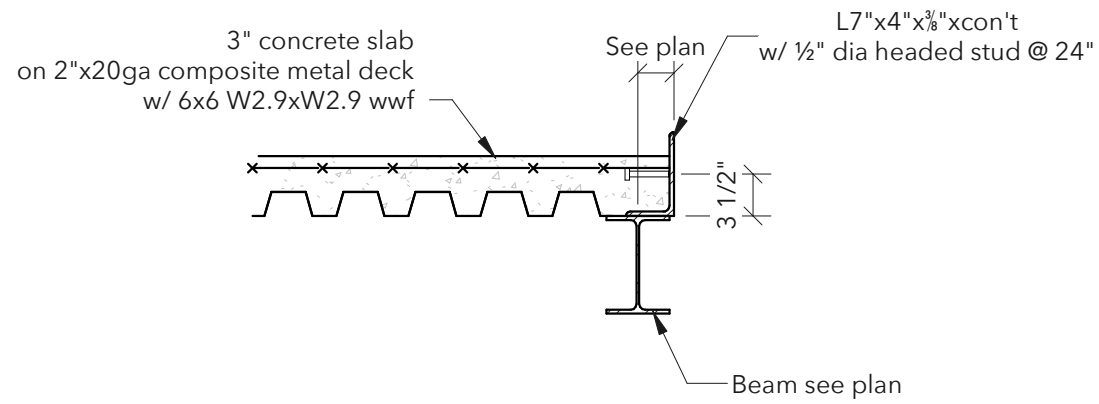
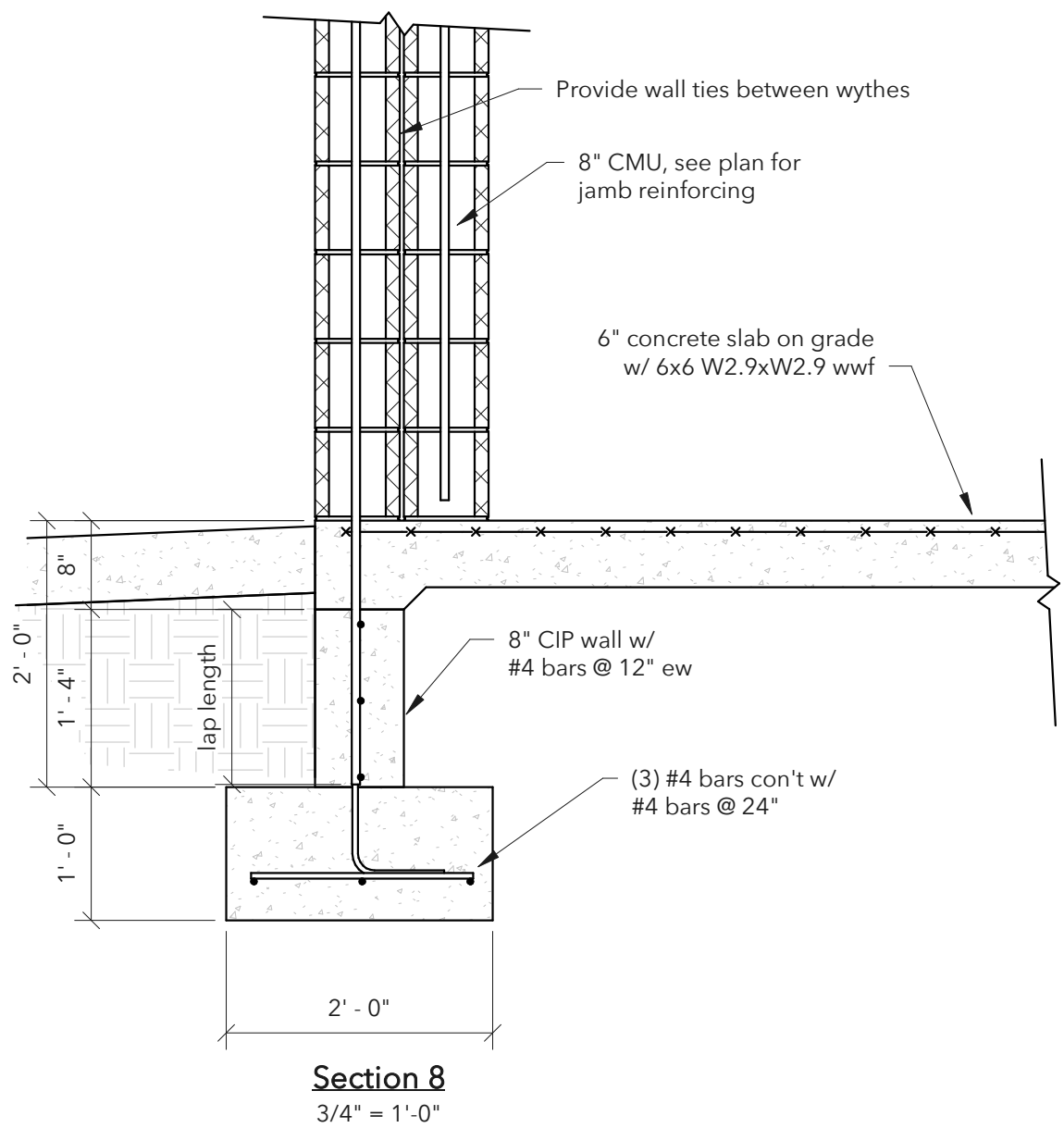
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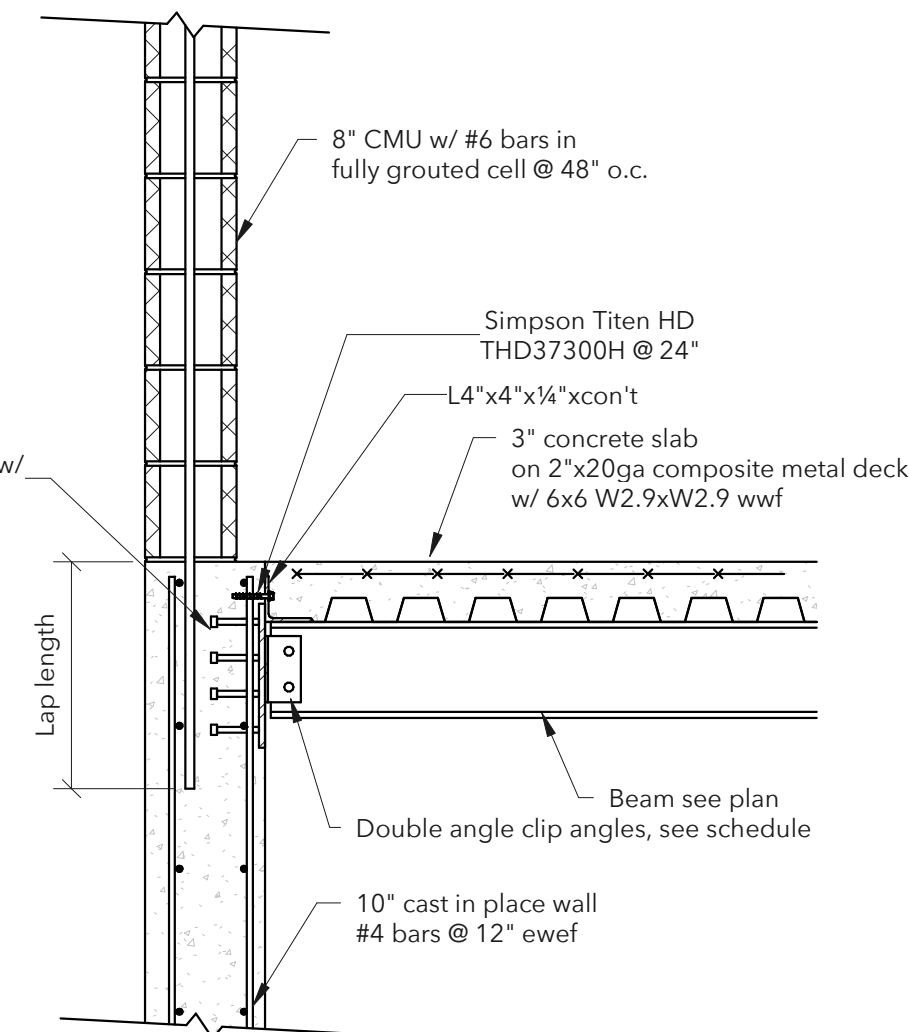
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Drawn by	jcj
Checked by	jd

S5.2

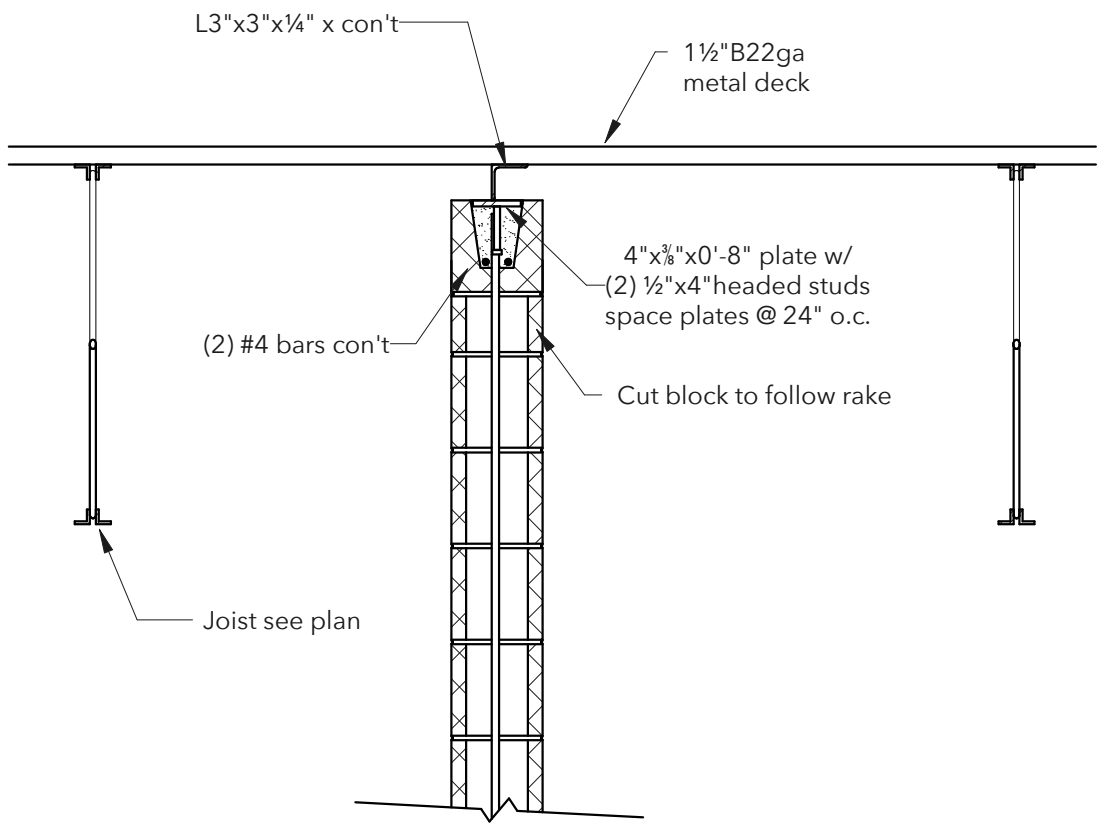
Scale 3/4" = 1'-0"



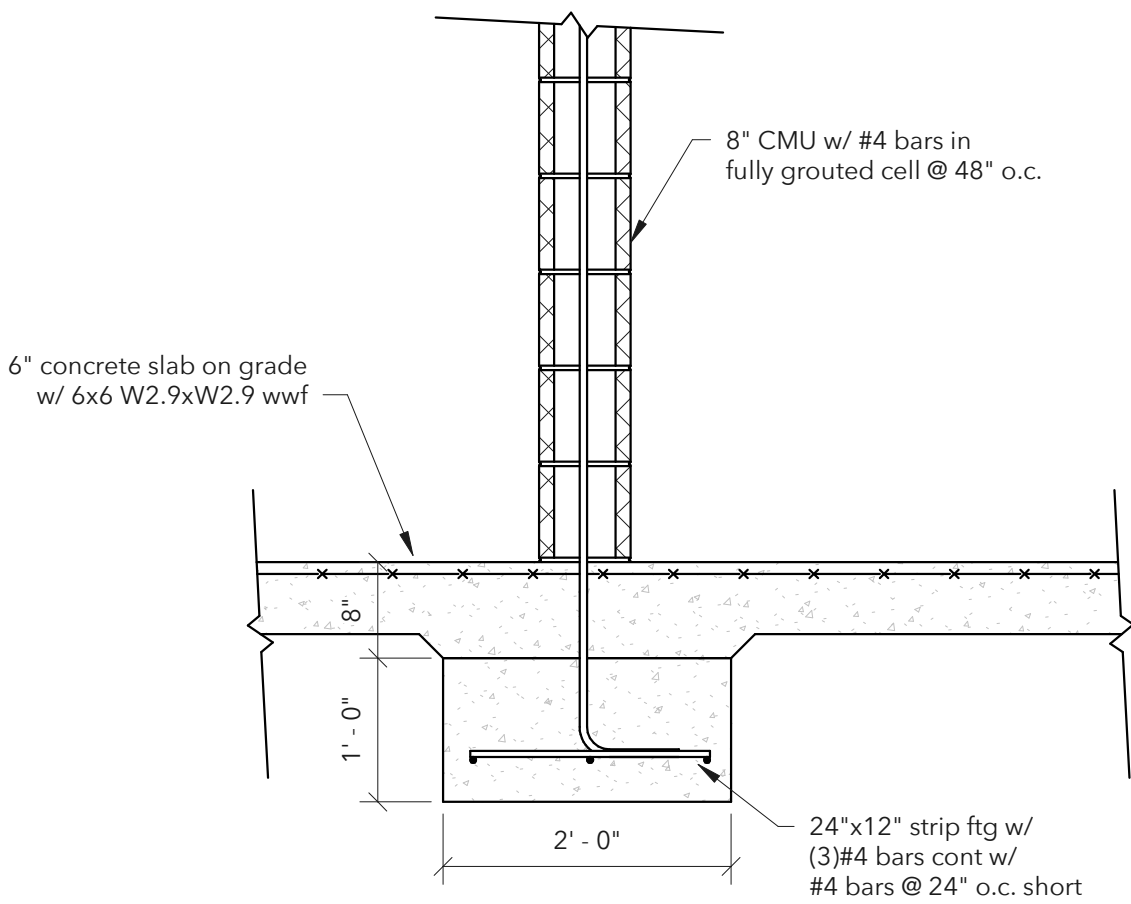
Section 7
3/4" = 1'-0"



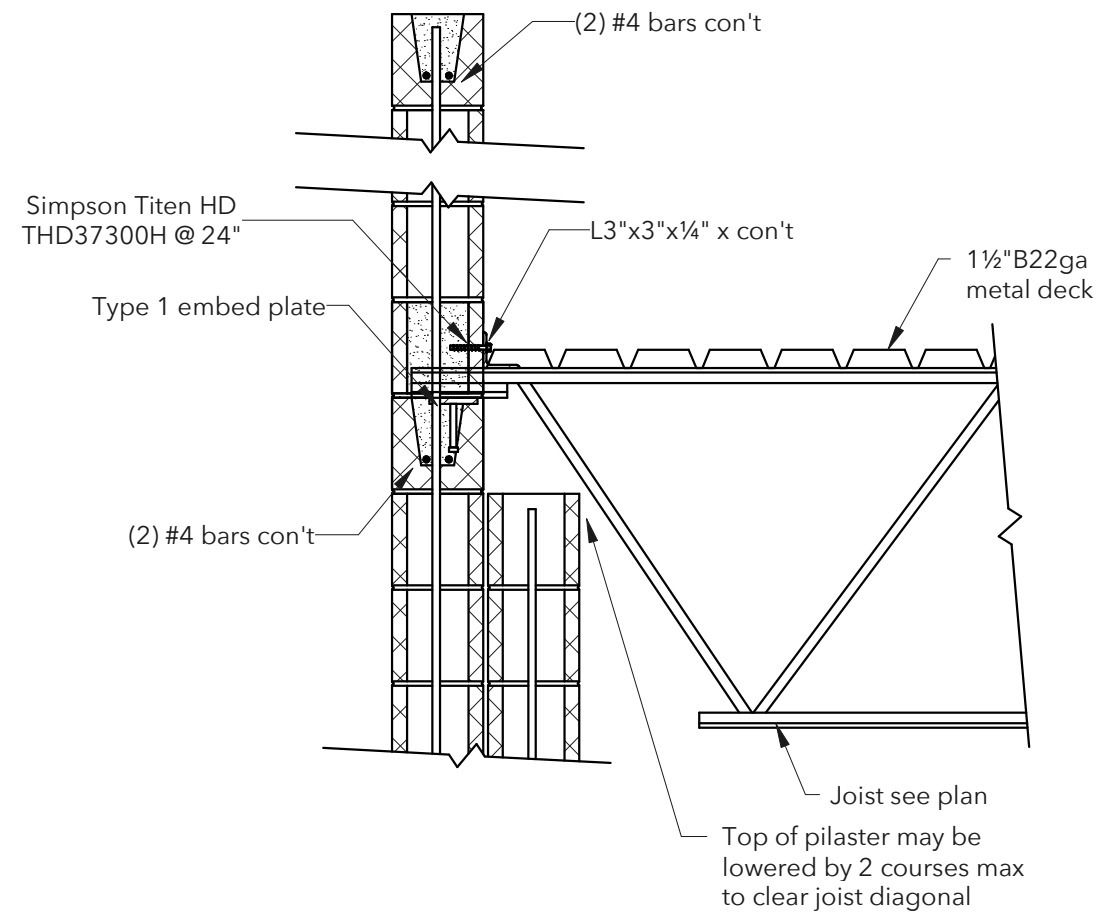
Section 3
3/4" = 1'-0"



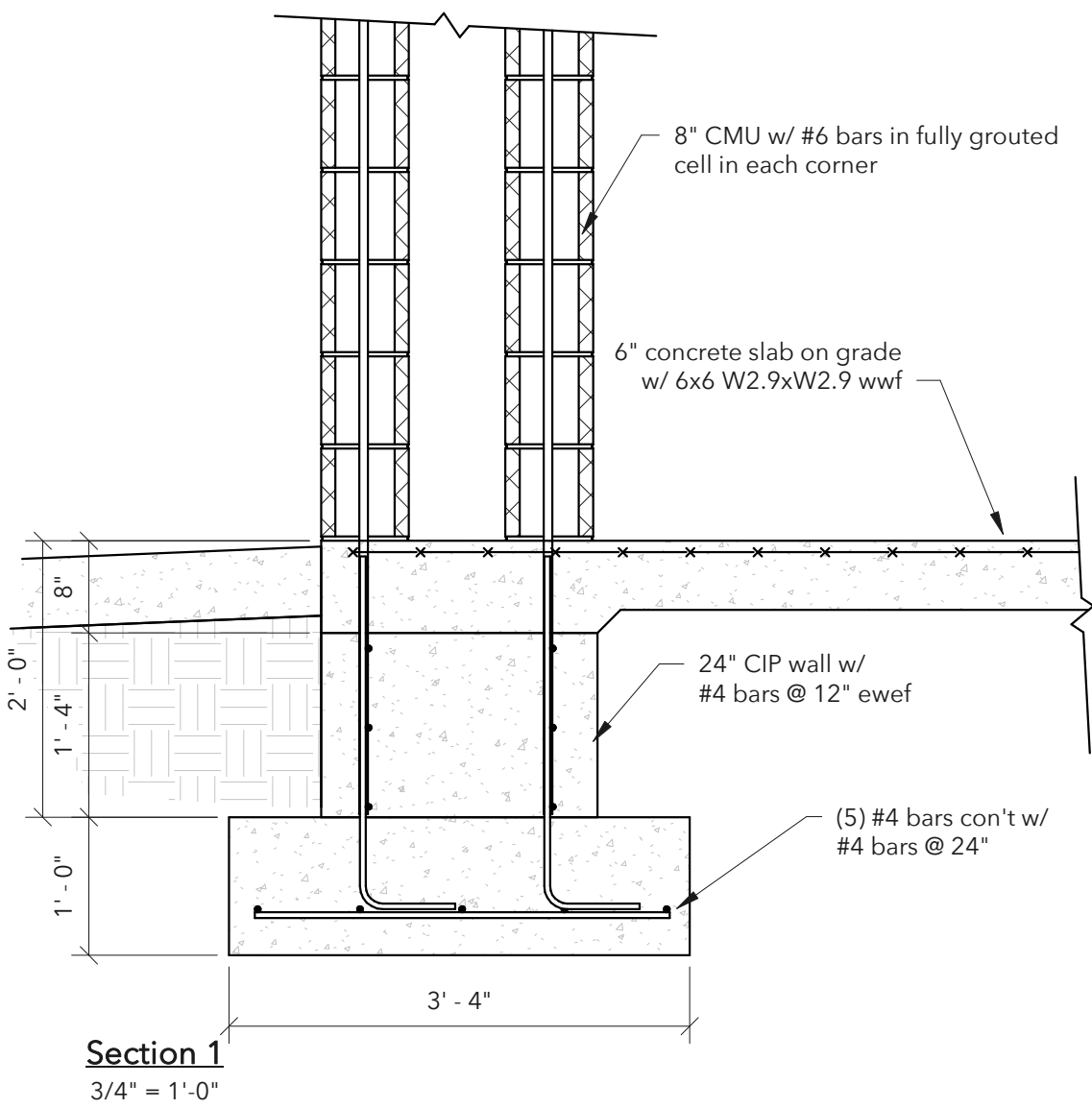
Section 6
3/4" = 1'-0"



Section 2
3/4" = 1'-0"



Section 5
3/4" = 1'-0"



Section 1
3/4" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issue for Permit	4.17.2026
IFB-0	Issued for Bid	06.09.2026
IFC-0	Issued for Construction	06.25.2026

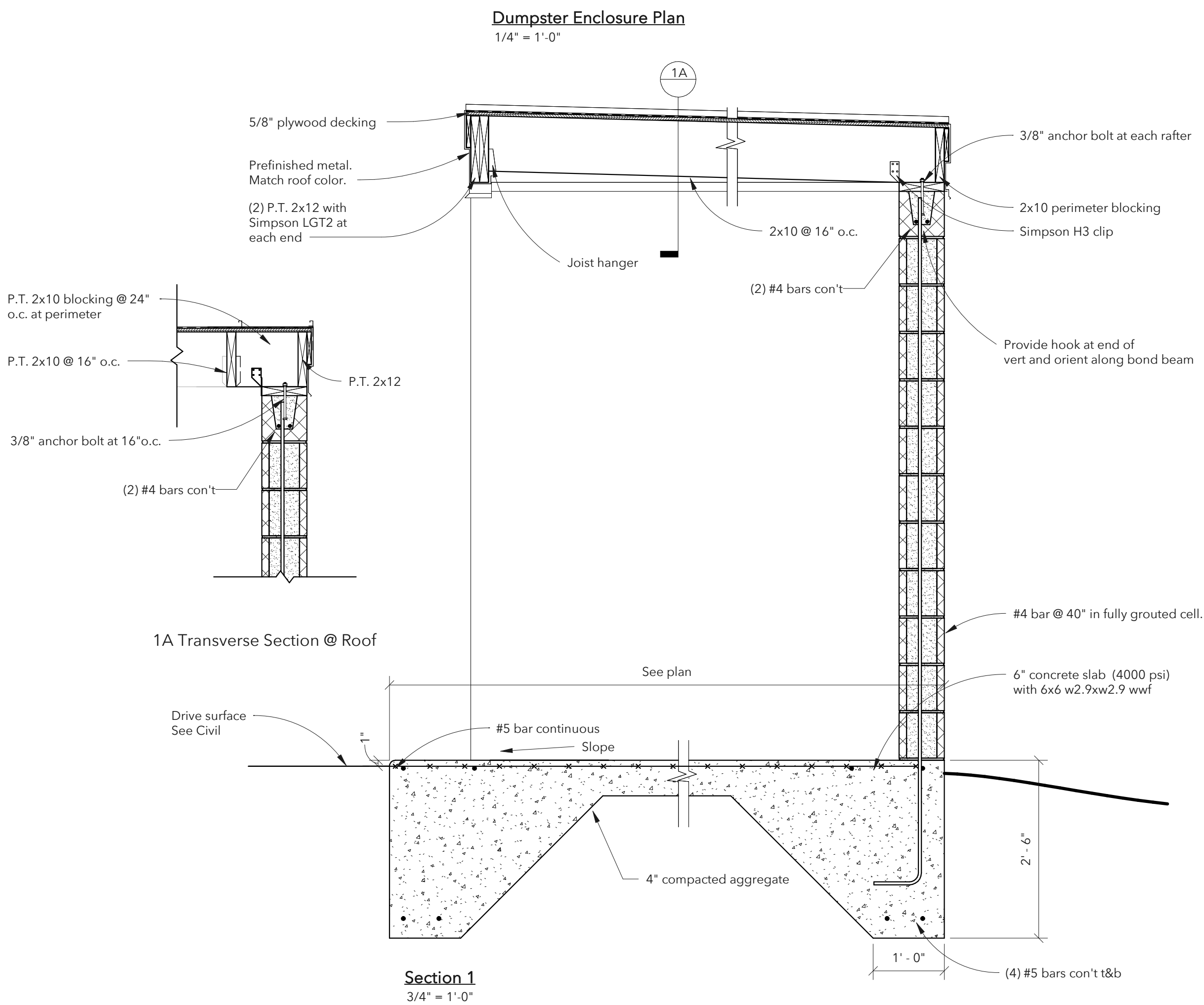
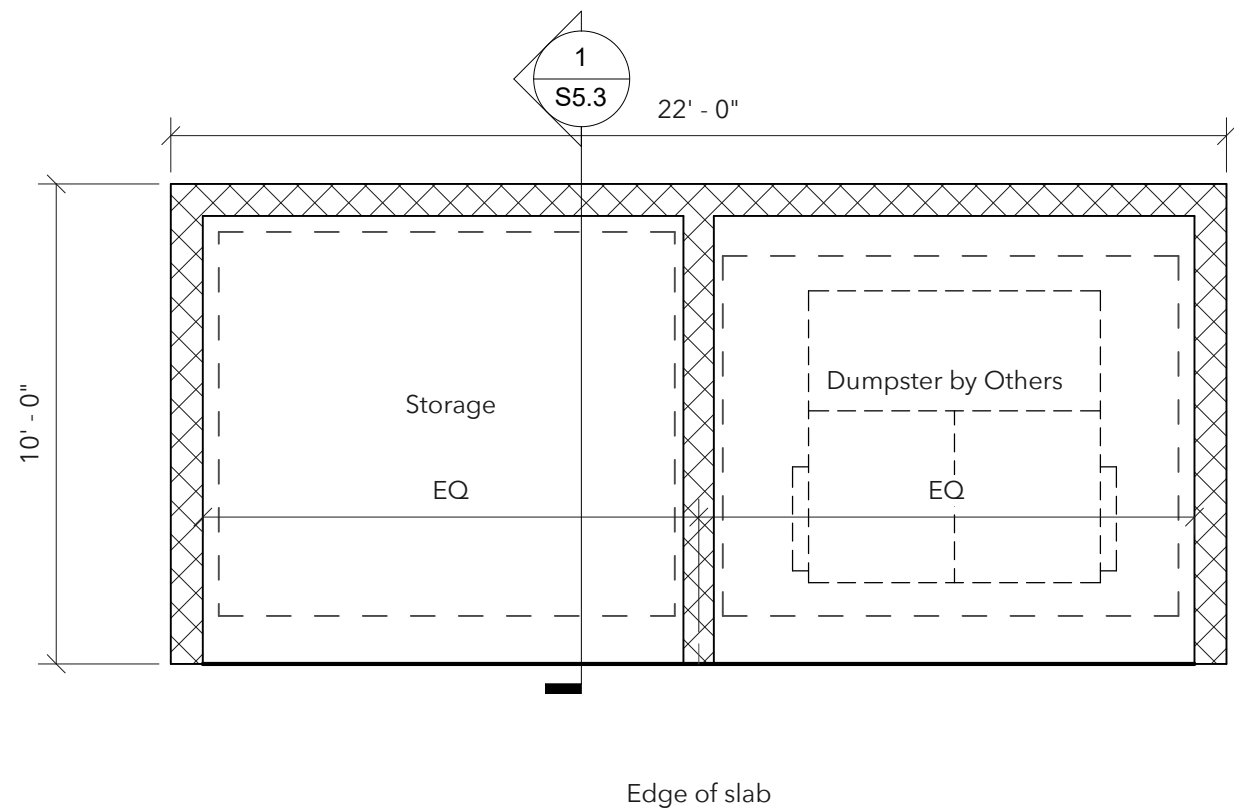
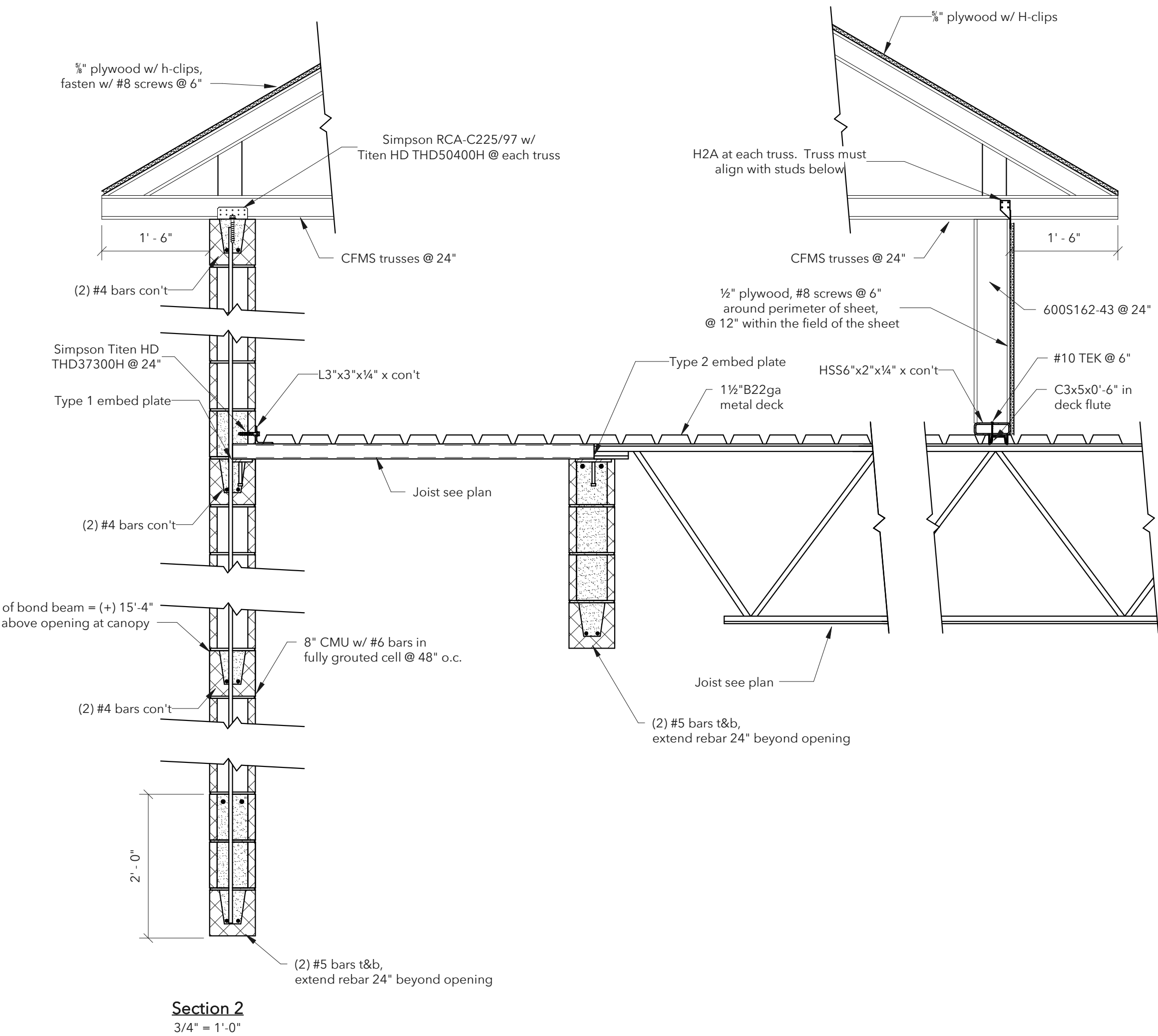
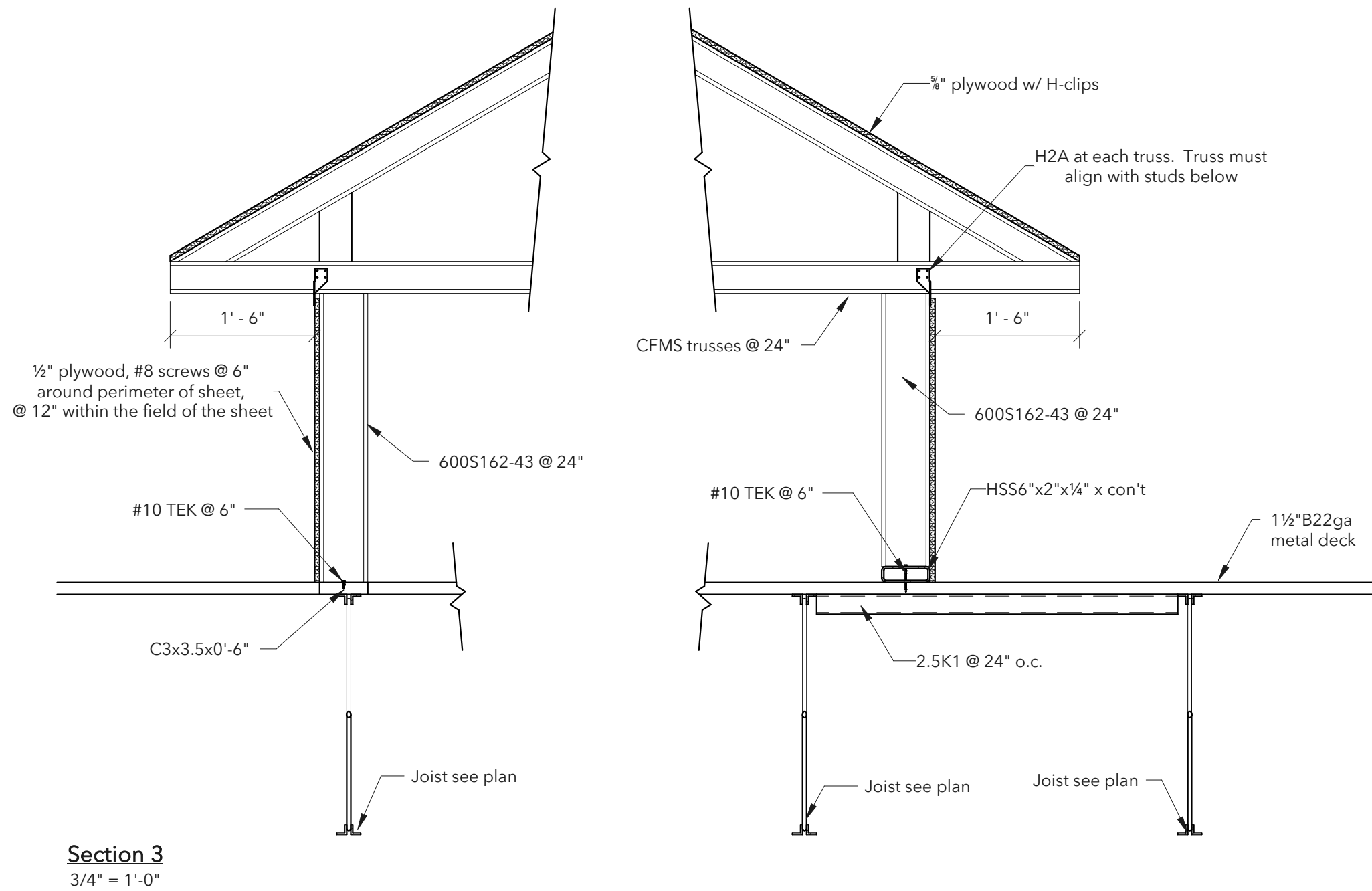
2026
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Sections and
Details

Project number	25048
Date	04/17/2026
Drawn by	jcj
Checked by	jd

S5.3

Scale As indicated



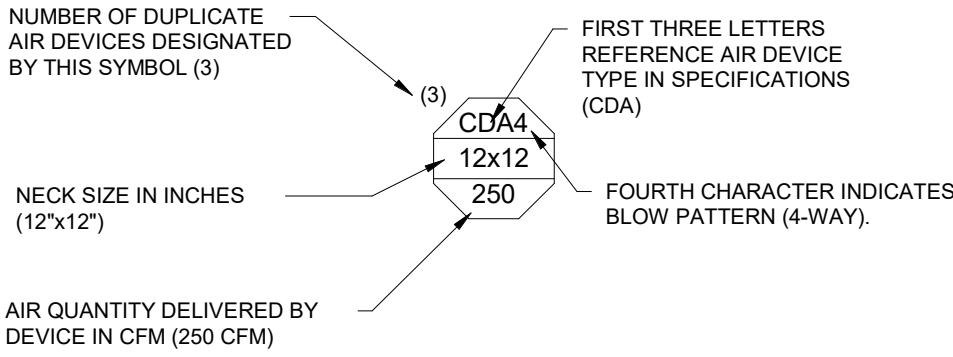
LEGEND

	DUCT SIZE, FIRST FIGURE IS SIDE SHOWN INSIDE CLEAR DIMENSION UNLESS NOTED OTHERWISE
	LOW PRESSURE, RECTANGULAR (GALVANIZED STEEL)
	ROUND (GALVANIZED STEEL)
	FLEXIBLE DUCT
	DUCT RISE
	DUCT DROP
	EXISTING DUCTWORK TO REMAIN
	DUCT TRANSITION
	RECTANGULAR TO ROUND DUCT TRANSITION
	TURNING VANES
	FIRE DAMPER AND SLEEVE, PROVIDE ACCESS DOOR
	SMOKE DAMPER AND SLEEVE, PROVIDE ACCESS DOOR
	COMBINATION FIRE/SMOKE DAMPER, PROVIDE ACCESS DOOR
	MANUAL VOLUME DAMPER
	STANDARD 45° BRANCH, SUPPLY OR RETURN, NO SPLITTER
	STANDARD 45° BRANCH, SUPPLY OR RETURN, NO SPLITTER, WITH MANUAL VOLUME DAMPER
	CONICAL SPIN-IN FITTING WITH BUTTERFLY DAMPER
	GRILLE OR REGISTER, CEILING
	ACCESS DOOR
	CONDENSATE DRAIN PIPING
	AUXILIARY CONDENSATE DRAIN PIPING
	REFRIGERANT PIPING (2 LINES TOTAL)
	ELBOW, 90° (LONG RADIUS)
	TEE
	TEE, TURNED UP
	TEE TURNED DOWN
	ELBOW, TURNED DOWN
	ELBOW, TURNED UP
	WALL MOUNTED THERMOSTAT
	WALL MOUNTED HUMIDISTAT
	WALL MOUNTED TEMPERATURE SENSOR
	SMOKE DETECTOR
	TIE NEW INTO EXISTING
	UNDERCUT DOOR 3/4 INCHES
	SUPPLY AIR FLOW
	RETURN OR EXHAUST AIR FLOW

NOTE: THIS LEGEND IS FOR REFERENCE ONLY.
ALL SYMBOLS WHICH APPEAR WITHIN THE
LEGEND MAY NOT APPLY TO THIS PROJECT.

ABBREVIATIONS

AB, CL'G	ABOVE CEILING
ABV.	ABOVE
AC	ALTERNATING CURRENT
A/C	AIR COMPRESSOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
ALT.	ALTERNATE
AMP	AMPERE
AO	ANALOG OUTPUT
APPROX.	APPROXIMATELY
ARCH.	ARCHITECTURAL
AVG	AVERAGE
B	BOILER
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHWP	CHILLED WATER PUMP
CLS	CEILING
CT	COOLING TOWER
CU	CONDENSING UNIT
CWP	CONDENSER WATER PUMP
DEF.	DEFLECTION
DET	DETAIL
DI	DIGITAL INPUT
DIA	DIAMETER
Ø	DIAMETER
DO	DIGITAL OUTPUT
EDB	ENTERING DRY BULB
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST.	EXISTING
°F	DEGREES FAHRENHEIT
GFF	GAS FIRED FURNACE
GPM	GALLONS PER MINUTE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
HD.	HEAD
HP	HORSE POWER
HR	HOUR(S)
HT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
HZ	FREQUENCY (HERTZ)
ID	INSIDE DIAMETER
IN.	INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
MAX	MAXIMUM
MBH.	1000 BTU PER HOUR
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN	MINIMUM
NO.	NUMBER
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
O.D.	OUTSIDE DIAMETER
OA	OUTSIDE AIR
○	OVAL DUCTWORK
ORIG.	ORIGINAL
PH.	PHASE
PIU	POWERED INDUCTION UNIT
PRESS	PRESSURE
RTN	RETURN AIR
RTU	ROOFTOP AIR HANDLING UNIT
SDC	STAND ALONE DIGITAL CONTROLLER
SENS	SENSIBLE
SQ.	SQUARE
SPLY	SUPPLY
TEMP	TEMPERATURE
VAV	VARIABLE AIR VOLUME
W	WATT
W/	WITH
W.P.D.	WATER PRESSURE DROP



AIR DEVICE LEGEND
NO SCALE

1
MEP##

GAS FIRED FURNACE SCHEDULE

EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	CFM	O.A. CFM	E.S.P. (IN. W.C.)	FAN HP	COOLING COIL	GAS HEAT CAP. (MBH)		VENTING		ELECTRICAL			MOUNTING	WGT. (LBS)	REMARKS
							INPUT	OUTPUT	INTAKE (IN.)	DISCHARGE (IN.)	MCA	MOCP	VOLTS/PH./HZ.			
GFF-1	TRANE S9X1B040	1000	150	0.5	1/2	CC-1	40	38.8	3	3	8.8	15	120/1/60	HORIZONTAL	150	1), 2), 3)

REMARKS:
1) UNIT MOUNTED ON EQUIPMENT PLATFORM.
2) PROVIDE WITH 1" THROWAWAY FILTERS.
3) ROUTE CONDENSATE TO HUB DRAIN.

COIL SCHEDULE

EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	TYPE	MAXIMUM FINS PER INCH	ROWS (MIN)	MAXIMUM FACE VEL. (FPM)	CFM	EDB (°F)	AIR				DX REFR. TYPE	REMARKS
								EWB (°F)	LDB (°F)	LWB (°F)	DELTA P (IN. W.C.)		
CC-1	TRANE STXC8003	DIRECT EXPANSION	--	--	--	1000	79.0	66.0	57.7	56.0	--	R-454B	1)

REMARKS:
1) MOUNTED ON DISCHARGE OF FURNACE UNIT

AIR COOLED CONDENSING UNIT SCHEDULE

EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	SERVICE	NOMINAL CAPACITY (TONS)	DISCONNECT	ELECTRICAL				WEIGHT (LBS)	REMARKS
					VOLTS/PH./HZ. 208/1/60		VOLTS/PH./HZ. 230/1/60			
					UNIT MCA	UNIT MOCP	UNIT MCA	UNIT MOCP		
CU-1	TRANE 5TTR4030	GFF-1	2.5	BY DIV. 16	15	25	17	25	200	1), 2), 3)

REMARKS:
1) PROVIDE LONG LINE ACCESSORIES AS REQUIRED BY MANUFACTURER.
2) UNITS SHALL BE SIZED AT 95°F AMBIENT AIR TEMPERATURE.
3) LOCATE UNIT ON HOUSEKEEPING PAD. ANCHOR UNIT TO PAD WITH EXPANSION BOLTS.

POWER VENTILATOR SCHEDULE

EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	CFM	E.S.P. (IN. W.C.)	RPM	MAX. SONES	ELECTRICAL			LOCATION	TYPE	DRIVE	WGT (LBS.)	REMARKS	
						DISCONNECT	MOTOR STARTER	WATTS						MOTOR
														VOLTS/PH./HZ.
EF-1	COOK GC-146	70	0.35	849	1.5	BY DIV. 26	BY DIV. 23	32	115/1/60	CEILING	CENTRIFUGAL	DIRECT	15 1), 3), 5)	
EF-2	COOK GC-146	70	0.35	849	1.5	BY DIV. 26	BY DIV. 23	32	115/1/60	CEILING	CENTRIFUGAL	DIRECT	15 1), 3), 5)	
EF-3	COOK 150SQN17D	3000	0.35	1649	21.4	BY DIV. 26	BY DIV. 23	1 HP	115/1/60	INLINE	CENTRIFUGAL	DIRECT	120 2), 3), 6)	
EF-4	COOK 24XP28D102	4200	0.25	971	15.8	BY DIV. 26	BY DIV. 23	3/4 HP	115/1/60	WALL	PROPELLER	DIRECT	150 2), 4)	

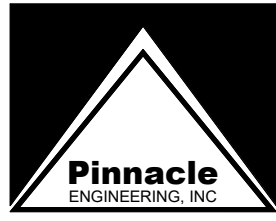
REMARKS:
1) PROVIDE OCCUPANCY SENSOR FOR FAN OPERATION IN EACH RESTROOM.
2) FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS. INTERLOCK WITH LOCAL SWITCH. COORDINATE WITH ELECTRICAL.
3) PROVIDE WITH FAN SPEED CONTROLLER.
4) PROVIDE WITH FAN INLET GUARDS.
5) PROVIDE WITH BACKDRAFT DAMPER.
6) PROVIDE FAN WITH EC VARIFLOW DRIVE PACKAGE.

GAS UNIT HEATER SCHEDULE

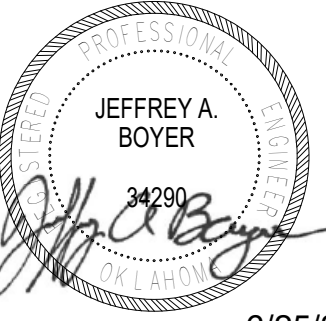
EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	INPUT (MBH)	OUTPUT (MBH)	AIRFLOW CFM	WATTS	DISCONNECT	ELECTRICAL MOTOR STARTER	VOLTS/PH./HZ.	MOUNTING	REMARKS
UH-1	REZNOR UDAP 150	150	124	1921	392	BY ELEC.	BY MECH.	115/1/60	12'-0"	1), 2)
UH-2	REZNOR UDAP 150	150	124	1921	392	BY ELEC.	BY MECH.	115/1/60	12'-0"	1), 2)
UH-3	REZNOR UDAP 200	200	166	2562	491	BY ELEC.	BY MECH.	115/1/60	12'-0"	1), 2)
UH-4	REZNOR UDAP 200	200	166	2562	491	BY ELEC.	BY MECH.	115/1/60	12'-0"	1), 2)

REMARKS:
1) MAINTAIN CLEARANCE PER MANUFACTURERS INSTALL DETAILS. PROVIDE WITH VENT KIT.
2) PROVIDE WITH 24V TRANSFORMER AND LOW VOLTAGE THERMOSTAT.

OUTSIDE AIR CALCULATIONS																	
					MECHANICAL CODE OUTSIDE AIR REQUIREMENT									MAX OA REQUIRED			
		Supply Air (cfm)	Area (sq. ft)	Occupancy Classification	Max Number of Occupants/SF	Number of Occupants	O.A. Area Air Rate (cfm / sq. ft)	O.A. People Air Rate (cfm/person)	O.A. Area Air Rate (cfm)	O.A. People Air Rate (cfm)	O.A. (cfm)	Zone Effectiveness	Corrected CFM		Primary O.A. Fraction	Ventilation Effectiveness	Remarks
Served By	Space Name	Vpz (Max)	Az		(per 1000 SF)	Rp	Ra	Pz			Vbz	Ez	Voz	Vot	Zp	Ev	
AHU-1	1 Service Writing	300	139	Lobbies	--	1	0.06	5	8	5	13	0.80	17	17	0.06	1	
	2 Waiting Room	250	127	Lobbies	--	15	0.06	5	8	75	83	0.80	103	103	0.41	0.737	
	4 Manager	100	48	Office	5	1	0.06	5	3	5	8	0.80	10	10	0.10	1	
	7 Break Room	250	61	Break Room	35	1	0.06	10	4	10	14	1.80	8	8	0.03	1	
															OA	Lowest Ev	
															137.39	1.00	



Engineering & Design Consultants
2111 Parkway Office Circle, Suite 125
Birmingham, AL 35244
(205) 733-6912 FAX: (205) 733-6913
Job No.26087



6/25/26

Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026
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Mechanical
Legend,
Abbreviations and
Schedules

Project number	25048
Date	04/17/2026
Drawn by	CA
Checked by	JB
M0.01	
Scale	12" = 1'-0"

SECTION 15010 - MECHANICAL GENERAL

- A. PROVIDE EQUIPMENT, LABOR, MATERIAL, ETC., REQUIRED TO MAKE A COMPLETE WORKING INSTALLATION.
- B. INSTALL THE WORK IN ACCORDANCE WITH DRAWINGS, SPECIFICATIONS AND THE STANDARDS AND CODES (LATEST EDITION) THAT APPLY TO THIS WORK. IN THE EVENT OF A CONFLICT, INSTALL WORK IN ACCORDANCE WITH THE MOST STRINGENT CODE REQUIREMENTS DETERMINED BY THE ENGINEER.
- C. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS INCLUDING: BUILDING PERMITS, HEALTH DEPARTMENT PERMITS AND SEWER TAP PERMITS. DELIVER TO ENGINEER CERTIFICATES OF INSPECTION AND APPROVAL, ISSUED BY AUTHORITIES.
- D. ALL EQUIPMENT AND METHOD SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH THE BEST ENGINEERING PRACTICES AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- E. DISCONNECT, REMOVE AND RE-INSTALL MECHANICAL SERVICES LOCATED ON OR CROSSING THROUGH CONTRACT LIMITS, ABOVE OR BELOW GRADE, OBSTRUCTING CONSTRUCTION OF PROJECT OR CONFLICTING WITH COMPLETED PROJECT OR ANY APPLICABLE CODES.
- F. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WORK CALLED FOR BY ONE IS BINDING AS IF CALLED FOR BY BOTH.
- G. DRAWINGS ARE DRAWN TO A SMALL SCALE AND ARE DIAGRAMMATIC ONLY. Y DIMENSIONS INDICATE SIZE AND GENERAL ARRANGEMENT OF EQUIPMENT. DO NOT SCALE DRAWINGS FOR EXACT LOCATIONS. FIELD MEASUREMENTS TAKE PRECEDENCE.
- H. PROVIDE NECESSARY OFFSETS, ELBOWS AND FITTINGS AS REQUIRED TO AVOID CONFLICT WITH EQUIPMENT OF OTHER DIVISIONS AND TO OBTAIN PROPER HEADROOM AND CLEAR PASSAGeways. THIS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- I. WORK UNDER THIS DIVISION SHALL BE FIRST CLASS WITH EMPHASIS ON NEATNESS AND WORKMANSHIP. INSTALL WORK USING COMPETENT MECHANICS, UNDER SUPERVISION OF FOREMAN, ALL DULY CERTIFIED BY LOCAL AUTHORITIES.
- J. INSTALLATION SUBJECT TO ENGINEER OBSERVATION, FINAL APPROVAL, AND ACCEPTANCE. ENGINEER MAY REJECT UNSUITABLE WORK.
- K. ALL MATERIALS SHALL BE NEW, ALL MATERIALS AND EQUIPMENT FOR WHICH A UL STANDARD, AN AGA APPROVAL, AN ANWIA STANDARD, FM LISTING OR ASME REQUIREMENTS IS ESTABLISHED, SHALL BE SO APPROVED AND LABELED OR STAMPED.
- L. THE DRAWINGS ARE BASED ON THE USE OF PRODUCTS SPECIFIED AND LISTED FIRST. IF ANY REVISION IN PIPING, CONDUIT WORK, FOUNDATIONS, ANCHOR BOLTS, CONNECTIONS, ETC., IS REQUIRED BY OTHER NAMED PRODUCTS OR APPROVED SUBSTITUTIONS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE SUCH REVISIONS AT NO ADDITIONAL CHARGE TO THE OWNER.
- M. SUBMIT SIX (6) ORIGINAL COPIES OF COMPLETE SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT FURNISHED UNDER DIVISION 15 OF SPECIFICATIONS TO ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE DRAWINGS HAVE BEEN CHECKED BY HIM. DRAWING SUBMITTED WITHOUT THIS STAMP OF APPROVAL WILL NOT BE CONSIDERED AND WILL BE RETURNED FOR PROPER RESUBMISSION.
- N. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR ERRORS AND OMISSIONS IN SHOP DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS AND SIZES OF EQUIPMENT. INFORM ENGINEER IN WRITING OF EQUIPMENT DIFFERING FROM THAT SHOWN.
- O. PROVIDE MAINTENANCE AND OPERATING MANUALS BOUND IN 8-1/2" X 11" HARDBACK, THREE-POST BINDERS. MANUALS SHALL CONTAIN WRITTEN INSTRUCTIONS FOR EACH SYSTEM, SHOP DRAWINGS, SCHEMATIC DRAWINGS, EQUIPMENT CATALOG CUTS, MANUFACTURER'S INSTRUCTIONS, MANUFACTURERS WARRANTIES, AND VALVE TAG LIST.
- P. PROVIDE AS-BUILT PRINTS AT THE COMPLETION OF JOB. KEEP ONE SET OF PRINTS ON JOB AND RECORD DAY TO DAY CHANGES TO CONTRACT DRAWINGS WITH RED PENCIL. INDICATE ACTUAL LOCATION OF PIPING, DUCTWORK, VALVES, DAMPERS, AND EQUIPMENT. TURN OVER PRINTS TO ENGINEER AT FINAL OBSERVATION.
- Q. FURNISH WARRANTY. STRINGENT IF WORKMANSHIP AND WORK MATERIALS EXECUTED UNDER THIS DIVISION IS PROVEN DEFECTIVE WITHIN ONE (1) YEAR AFTER FINAL ACCEPTANCE, SUCH DEFECTS AND OTHER WORK DAMAGED WILL BE REPAIRED AND/OR REPLACED.

SECTION 15050 - BASIC MATERIALS AND METHODS

- A. CONCRETE HOUSEKEEPING PADS:
- PROVIDE CONCRETE HOUSEKEEPING PADS UNDER ALL FLOOR MOUNTED EQUIPMENT, PIPE SUPPORT AND DUCT SUPPORTS AND WHERE INDICATED. CONCRETE SHALL BE 3000 PSI AT 28 DAYS MINIMUM.
 - PADS SHALL BE DOWELED TO FLOOR WITH NOT LESS THAN 4 NO. 4 BARS GROUTED IN PLACE. ANCHOR BOLTS FOR EQUIPMENT SHALL BE POURED INTEGRAL WITH THE PAD. PADS SHALL BE REINFORCED WITH AT LEAST ONE NO. 4 BAR (STIRRUPS). PADS SHALL HAVE CHAMFERED EDGES AND A BROOM FINISH.
 - HOUSEKEEPING PADS SHALL BE NOT LESS THAN 3-1/2 IN. THICK, SIZED AT LEAST 8 IN. LARGER THAN THE EQUIPMENT.
- B. ACCESS PANELS:
- ACCESS PANELS SHALL HAVE WELDED STEEL FRAME, ONE PIECE DOORS, AND SELF LATCHING DOOR LOCKS. LOCKS SHALL BE SCREW DRIVER OPERATED WITH CASE HARDENED STEEL CAM. PANELS SHALL BE MILCOR, CESCO, KARP OR EQUAL.
 - PROVIDE ACCESS PANELS IN WALLS AND CEILINGS AS NEEDED TO ALLOW ACCESS TO VALVES, EQUIPMENTS, SHOCK ABSORBERS, TRAP PRIMERS, ETC. AND WHERE NOTED.
- C. FIRESTOPPING AND SOUNDSTOPPING:
- PENETRATIONS THROUGH FLOORS AND FIRE RESISTANT WALLS SHALL BE SEALED TO THE RATED FIRE RESISTANCE EQUAL TO THE WALL. INSTALLATION SHALL BE DONE BY A QUALIFIED INSTALLER, APPROVED BY THE MANUFACTURER.
 - IN AN EXISTING BUILDING ALL PENETRATIONS THROUGH FLOORS AND FIRE RESISTANT WALLS SHALL BE SEALED AT THE END OF EACH WORKING DAY. THESE CLOSURES SHALL HAVE AN EQUAL FIRE RESISTANCE RATING TO THE FLOOR OR WALL.
 - PROVIDE SOUND PROOFING THROUGH NON-RATED WALLS.
- D. PIPING SEALS:
- PROVIDE MODULAR, RESILIENT SEALS AROUND PIPES PENETRATING ALL EXTERIOR WALLS, AND FLOORS BELOW GRADE. PIPING SEALS SHALL BE THUNDERLINE CORP. "LINK SEAL" LS SERIES.
- E. CUTTING AND PATCHING:
- CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING AND PATCHING. CUT WALLS, FLOORS, CEILINGS, PARTITIONS, ETC., REQUIRED FOR THE INSTALLATION OF THIS WORK IN A NEAT AND CAREFUL MANNER. CORE DRILL FOR PIPE SLEEVES AND OTHER OPENINGS THROUGH FLOORS AND WALLS, SAWING, CUTTING SHALL BE KEPT TO A MINIMUM.
 - REPLACE OR REPAIR DUCTWORK, CONDUIT, PIPING, ETC., THAT IS CUT. PATCH AROUND OPENING CUT BY THIS CONTRACTOR OR PROVIDED BY OTHERS FOR HIM. PATCHING SHALL BE DONE BY AN APPROVED QUALIFIED CONTRACTOR, BUT SHALL BE PAID FOR BY THIS CONTRACTOR. FINISHED PATCHING SHALL RETAIN FIRE AND SMOKE RATINGS OF THE ASSEMBLY AND SHALL MATCH SURROUNDING FINISH.
- F. ANCHORS:
- MOUNT ALL EQUIPMENT, BRACKETS, HANGERS, ANCHORS, ETC. TO SAFELY RESIST THE VIBRATION OR THRUST FORCES AND SUPPORT THE UNITS WEIGHT.
 - FLOOR MOUNTED ROTATING OR VIBRATING EQUIPMENT SHALL BE ANCHORED TO THE FLOOR USING GROUTED-IN PLACE OR CAST-IN-PLACE ANCHOR BOLTS WITH THREE INCH HOOK AND SLEEVE. ANCHOR BOLTS SHALL HAVE BE OF THE SIZE RECOMMENDED BY THE MANUFACTURER.
 - ANCHOR BOLTS IN WALLS, WALL AND CEILING MOUNTED EQUIPMENT BRACKET AND HANGERS SHALL BE INSTALLED USING DRILLED ANCHORS. ANCHORS SHALL BE PHILLIPS DRILL COMPANY "RED HEAD" OR MULTI-SET II. SIZE ANCHORS FOR FOUR TIMES THE APPLIED LOAD. BOLTS USED OUTDOORS OR IN A WET ENVIRONMENT SHALL BE HOT DIP GALVANIZED.
- G. PIPE IDENTIFICATION:
- IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI-A13.1. PIPE MARKERS SHALL BE SETON'S WEATHER-CODE OR EQUAL.
 - PROVIDE PIPE MARKERS AND DIRECTIONAL ARROWS ON PIPES AT BOTH SIDES OF PARTITIONS AND FLOORS SLABS, AT BRANCH LINE TAKE-OFFS, AT VALVES, AT INTERMEDIATE INTERVALS NOT IN EXCESS OF 20 FT. AND AT CONNECTIONS TO EQUIPMENT.
 - TAPE COLOR BAND IDENTIFYING MARKERS AND ARROWS ON EACH PIPE, BOTH INSULATED AND BARE PIPES. PIPE MARKERS AND ARROWS SHALL BE LOCATED WHERE READILY VISIBLE AND ON LOWER QUADRANTS OF OVERHEAD PIPES.
- H. VALVE TAG AND CHART:
- VALVE TAGS SHALL BE SETON M4506, BLACK FILLED LETTERS WITH BRASS JACK CHAIN. ONE VALVE NUMBER SHALL BE STAMPED ON EACH TAG. IDENTIFY EACH VALVE TAG FOR THE UTILITY IT SERVES, SUCH AS "C" FOR COLD WATER, "H" FOR HOT WATER, ETC. VALVE CHARTS SHALL BE SETON. ATTACH A NUMBERED VALVE TAG TO EACH VALVE.
 - PROVIDE A TYPE WRITTEN CHART IN FRAME UNDER GLASS COVER, GIVING THE FULL LIST OF ALL VALVES INSTALLED UNDER THIS CONTRACT. CHART SHALL LIST VALVE NUMBER, TYPE OF UTILITY, AND LOCATION. MOUNT CHART WHERE DIRECTED BY OWNER. PROVIDE ONE ADDITIONAL COPY TO OWNER.
- I. EQUIPMENT IDENTIFICATION:
- IDENTIFY EACH PIECE OF EQUIPMENT WITH A 1/8 INCH THICK ENGRAVED MELAMINE PLASTIC LAMINATE NAMEPLATE. LETTERS SHALL BE 1/2 INCH HIGH. NAMES, NUMBERS, AND ABBREVIATIONS, AND NUMBERINGS SHALL AGREE WITH THE CORRESPONDING EQUIPMENT DESIGNATIONS SHOWN ON THE DRAWINGS. USE BLACK LETTERS CUT IN A WHITE BACKGROUND FOR ALL EQUIPMENT ON STANDARD ELECTRICAL POWER.
 - FASTEN NAMEPLATES TO EQUIPMENT IN A CONSPICUOUS LOCATION USING SELF-TAPPING STAINLESS STEEL SCREWS, EXCEPT USE CONTACT EPOXY ADHESIVE WHERE SCREWS CANNOT OR SHOULD NOT PENETRATE SUBSTRATE.
- J. PIPE SLEEVES:
- PROVIDE PIPE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE OR BELOW CEILINGS. PROVIDE PIPE SLEEVES IN NEW WALLS AND FLOORS AS THE WORK PROGRESSES. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER.
 - SIZE PIPE SLEEVES TO ALLOW CONTINUOUS INSULATION, BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN PIPE. SLEEVES IN WALLS SHALL BE FLUSH WITH WALL, SLEEVES IN FLOORS SHALL EXTEND 3/4 INCHES ABOVE FLOOR AND BE FLUSH WITH STRUCTURE BELOW.
 - SLEEVES IN CONCRETE WALLS, FLOORS OR MASONRY SHALL BE SCH 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD OR PLASTER WALLS SHALL BE 14 GAUGE, ROLLED GALVANIZED SHEET METAL TACK WELDED ON THE LONGITUDINAL SEAM.
 - PROVIDE PLATES AROUND PIPES EXTENDING INTO EXPOSED AREAS WHERE THEY PASS THROUGH WALLS, FLOORS AND CEILINGS. SIZE PLATES TO COMPLETELY COVER PIPE SLEEVES. PLATES SHALL BE BEATON AND CADWELL, KENEY OR GRINNELL, NICKEL PLATED STEEL, SPLIT PLATES WITH SET SCREW. CONCRETE FLOOR PLATE SHALL BE GRINNELL FIGURE 400.
- K. FLASHING:
- PROVIDE FLASHING AT PIPING AND DUCT PENETRATIONS THROUGH ROOF AND ROOF MOUNTED STRUCTURES FURNISHED UNDER THIS DIVISION. FLASH IN ACCORDANCE WITH ROOFING MANUFACTURERS DETAILS. FLASHING MATERIALS SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS SYSTEM.
 - PROVIDE FLASHING AT PIPES PASSING THROUGH FLOORS WITH WATERPROOF MEMBRANE. FLASHING SHALL BE IN ACCORDANCE WITH WATERPROOFING MANUFACTURER'S DETAILS.

SECTION 15260 - HVAC INSULATION

- A. GENERAL:
- ALL INSULATION, JACKETING, AND ADHESIVE SHALL HAVE COMPOSITE SURFACE BURNING CHARACTERISTIC RATING AS TESTED BY ASTME 84, UL 723, OR NFPA 255 NOT EXCEEDING A FLAME SPREAD OF 25 OR SMOKE DEVELOPED OF 50.
 - SUBMITTALS SHALL USE PAGES FROM MIDWEST INSULATION CONTRACTORS ASSOCIATION - COMMERCIAL AND INDUSTRIAL INSULATION STANDARDS@ FOR DEFINING HOW INSULATION MATERIALS WILL BE APPLIED.
 - ALL PIPE OR DUCT INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES; EXCEPT WHERE FIRESTOP OR FIRESEALING MATERIALS ARE REQUIRED.
 - INSULATE ITEMS MOUNTED IN DUCTWORK WITH THE SAME THICKNESS OF INSULATION SPECIFIED FOR DUCTWORK. INCLUDING AIR MEASURING STATIONS, SMOKE DAMPERS, AND AUTOMATIC DAMPERS.
 - REPAIR INSULATION DAMAGED BY WORK UNDER THIS CONTRACT TO MATCH EXISTING WORK OR REPLACE AS CHARGED. PROVIDE INSULATION SPECIFIED FOR NEW WORK.
- B. ELASTOMERIC CLOSED CELL INSULATION:
- INSULATION SHALL BE RUBATEX OR ARMSTRONG. SECURE INSULATION WITH CONTACT ADHESIVE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. EXPOSED OR EXTERIOR INSTALLATIONS SHALL BE PAINTED WITH TWO COATS OF WATER BASE LATEX ENAMEL.
 - PROVIDE 1 IN. THICK INSULATION ON DX REFRIGERANT PIPING, COOLING COIL CONDENSATE PIPING, CHILLED WATER RUN-OUTS TO TERMINAL DEVICES, COVERS AND CAPS FOR ALL VALVE STEMS AND OPERATORS, GAUGE COCKS, THERMOMETER WELLS AND OTHER APPURTENANCES SUBJECT TO SWAGING.
- C. CONCEALED DUCTWORK:
- DUCT WRAP SHALL BE 2 IN. THICK, 1.0 PCF WITH ALUMINUM OR FRK FACING, HAVING A MAXIMUM HORIZONTAL TRANSMISSION OF .02 PERMS. MINIMUM INSTALLED "R" VALUE SHALL BE 5.6 WITH 25% COMPRESSION. INSULATION SHALL BE 250 DEG. F RATED AS MANUFACTURED BY OWENS CORNING, MANVILLE, KNAUF, OR CERTAINTED.
 - APPLY JACKETED DUCTWRAP TO ALL CONCEALED DUCTWORK PROVIDING CONDITIONED AIR, OR OUTSIDE AIR, IN DUCTWORK IN NON-CONDITIONED SPACES AND IN CEILING SPACES BELOW A ROOF. PULL INSULATION SNUG, BUT DO NOT COMPRESS INSULATION MORE THAN 1/4 INCH.
 - SECURE DUCTWRAP INSULATION TO DUCTWORK USING ADHESIVE. SECURE INSULATION ON BOTTOM ON SIDES OF HORIZONTAL DUCTWORK AND ALL SIDES OF VERTICAL DUCTWORK WITH INSULPINS WELDED TO DUCT ON 12 TO 18 INCH CENTERS AND WITH CLIPS SLIPPED OVER THE PINS. APPLY CLIPS WITHOUT COMPRESSING INSULATION. MAKE JOINTS BY JOINING THE FACING A MINIMUM OF 2 INCH AND STAPLE WITH 1/4 INCH GALVANIZED STEEL STAPLES. VAPOR-SEAL JOINTS WITH A MINIMUM 2 INCH STAPLES, CLIP LOCATIONS AND OTHER PENETRATIONS. SEAL JOINTS WITH 3 INCH WIDE FSK TAPE.
 - FOR DUCTWORK INSIDE THERMAL ENVELOPE, INSULATION SHALL BE 2 IN. THICK. FOR DUCTWORK OUTSIDE THE THERMAL ENVELOPE, ALL DUCTWORK EXCEPT EXHAUST SHALL BE 4 IN. THICK (2 LAYERS).
- D. EXPOSED DUCTWORK:
- INSULATION BOARD SHALL BE 2 IN. THICK 3 PCF WITH FRK FACING. MINIMUM INSTALLED "R" VALUE 6. INSULATION SHALL BE 250 DEG. F RATED AS MANUFACTURED BY OWENS CORNING, MANVILLE, KNAUF, OR CERTAINTED.
 - APPLY 2 IN. THICK INSULATION BOARD WITH FRK FACING TO ALL EXPOSED DUCTWORK PROVIDING CONDITIONED AIR, OR OUTSIDE AIR. INSULATE RETURN DUCTWORK IN NON-CONDITIONED SPACES. SECURE INSULATION WITH INSULPINS WELDED TO DUCT ON 12 TO 18 IN. CENTERS AND WITH CLIPS SLIPPED OVER PINS. SEAMS AND JOINTS SHALL BE VAPOR SEALED WITH 3 IN. WIDE FSK TAPE. CORNERS AND EDGES OF DUCTWORK SHALL BE REINFORCED WITH ROLL-ON CORNER BEAD. SEAL ALL BREAK AND PUNCTURES WITH VAPOR BARRIER SEALANT AND FSK TAPE.
- E. PIPING FINISHES:
- METAL JACKETING SHALL BE, SMOOTH, .016 IN. THICK, TYPE T 3003 ALUMINUM WITH LAMINATED MOISTURE BARRIER. JACKETING SHALL BE CHILDERS, ALUMINUM ROLL JACKETING WITH POLYKRAFT MOISTURE BARRIER. COVER THE FOLLOWING INSULATED SYSTEMS WITH METAL JACKETING: PIPING INSTALLED OUTDOORS. METAL FITTING COVERS SHALL BE TWO PIECE ALUMINUM. COVERS SHALL BE ELL-JAC.
 - CONCEALED PIPING FINISH COVERING SHALL BE THE ALL SERVICE JACKET. FITTINGS SHALL BE COVERED BY WRAPPING THE FITTING WITH FIBER REINFORCED TAPE, WITH A 5 PERCENT OVERLAP. FITTING COVERS SHALL BE ONE PIECE 20 MIL PVC. COVERS SHALL BE CEE-TITE 550 PVC-UVR IF GEEL-CO OR EQUALS.
- A. DUCTWORK FINISHES:
- INSULATED DUCTWORK INSTALLED OUTDOORS, INSULATED DUCTWORK WITHIN 8 FT. OF THE FINISHED FLOOR IN A MECHANICAL ROOM SHALL BE COVERED WITH 30 GAUGE GALVANIZED STEEL COVERING SHALL BE HEIMMED, AND FLANGED. SECURE WITH SELF TAPPING SCREWS ON EIGHT INCH CENTERS. DO NOT PUNCTURE VAPOR BARRIER

SECTION 15535 - REFRIGERANT PIPING SYSTEMS

- A. REFRIGERANT PIPING SHALL BE TYPE L, HARD DRAWN COPPER TUBING CONFORMING TO ASTM SPECIFICATION B-280, CLEANED AND CAPPED AND MARKED "ACR". FITTINGS FOR REFRIGERANT LINES SHALL BE AS WROUGHT COPPER OR FORGED BRASS CONFORMING TO ANSI/ASME STANDARD B16.22. JOINTS IN REFRIGERANT LINES SHALL BE BRAZED IN ACCORDANCE WITH ANSI B9.1. KEEP REFRIGERATION PIPING SEALED UNTIL IT IS USED. CAP OPEN ENDS OF INSTALLED PIPING UNTIL READY FOR FINAL CONNECTIONS.
- B. THE REFRIGERATION SYSTEM PIPING AND ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH THE SAFETY CODE FOR MECHANICAL REFRIGERATION ANSI/ASHRAE 15-92 AND THE REFRIGERATION PIPING CODE ANSI/ASME B31.5. THE REFRIGERANT TUBE SIZES, AND INSTALLATION OF TUBING SHALL BE IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- C. REFRIGERANT SUCTION LINE SIZE SHALL LIMIT THE TEMPERATURE RISE TO TWO DEGREES F AT FULL LOAD AND HOLD THE REFRIGERANT GAS VELOCITY TO NOT LESS THAN 500 FT. PER MIN. (FPM) IN THE HORIZONTAL NOR LESS THAN 1000 FPM IN THE VERTICAL AT MINIMUM LOAD. REFRIGERANT LIQUID LINE SIZE SHALL LIMIT THE PRESSURE DROP BETWEEN 4 AND 6 PSI AT FULL LOAD.
- D. PITCH HOT GAS LINES AND SUCTION LINES APPROXIMATELY 1/8 INCH PER 10 FT. HOT GAS LINES AND SUCTION LINES EXCEEDING 30 FT. VERTICAL LIFT SHALL BE TRAPPED EVERY 20 FT. VERTICAL REFRIGERANT LINES SHALL BE RUN PLUMB. HORIZONTAL LINES SHALL RUN PARALLEL WITH BUILDING WALLS. REFRIGERANT LINES SHALL NOT CONTACT BUILDING STRUCTURE. ISOLATE PIPING WITH RESILIENT LINER IN PIPE SUPPORT OR ELASTOMERIC INSULATION.
- E. TEST FOR LEAKS WITH AN ELECTRONIC LEAK DETECTOR. REPAIR LEAKS, REFILL, REPRESSURIZE, AND RETEST. FOLLOW STANDARD CHARGING AND DEHYDRATION PROCEDURES. CHARGE THROUGH THE SYSTEM FILTER-DRIER. CHANGE FILTER DRIERS AFTER 40 HOURS OF OPERATION.
- F. PROVIDE A LINE SIZE FILTER-DRIER IN EACH LIQUID REFRIGERANT LINE BETWEEN THE CONDENSER AND THE EXPANSION VALVE. FILTER-DRIER SHALL BE A HENRY VALVE CO., SPORLAN OR ALCO.
- G. SERVICE VALVES SHALL BE BACK SEATING TYPE, STEEL OR IRON BODY. PROVIDE SERVICE VALVES AT CONDENSER'S UNIT. SERVICE VALVES SHALL BE LINES SIZE. VALVES SHALL BE HENRY VALVE CO., COMPRESSOR VALVES, SPORLAN OR ALCO.
- H. PROVIDE ISOLATION VALVES AROUND THE FILTER-DRIER TO PERMIT SERVICING THE DRIER WITHOUT LOSS OF REFRIGERANT. ISOLATION VALVES SHALL BE HENRY VALVE CO., 900 SERIES BALL VALVES. SPORLAN AND ALCO ARE APPROVED EQUAL.
- I. CHARGING VALVE SHALL BE INSTALLED IN EACH LIQUID REFRIGERANT LINE BETWEEN THE CONDENSER AND THE FILTER DRIER. CHARGING VALVE SHALL BE A HENRY VALVE CO. TYPE 927 OR APPROVED EQUAL. SPORLAN AND ALCO ARE APPROVED EQUAL.
- J. SIGHT GLASS SHALL BE INSTALLED IN EACH LIQUID REFRIGERANT LINE AT THE EVAPORATOR COIL. SIGHT GLASS SHALL BE HENRY VALVE CO. MI 31 SERIES DOUBLE PORT STYLE WITH EXTENDED ENDS FOR SOLDERING FOR LINES 5/8 INCH OD OR LARGER. USE MI 30 SERIES SINGLE PORT SOLDERING FOR LINES 5/8 INCH OD OR LARGER. USE MI 30 SERIES SINGLE PORT FOR LINES 1/2 INCH OD AND SMALLER. SPORLAN AND ALCO ARE APPROVED EQUAL.
- K. PROVIDE BALANCED EXTERNALLY EQUALIZED THERMOSTATIC EXPANSION VALVE. DISTRIBUTORS SHALL BE MATCHED WITH THERMOSTATIC EXPANSION VALVES AND DIRECT EXPANSION COIL FOR PROPER PERFORMANCE. THERMOSTATIC EXPANSION VALVE (TXV) SHALL BE BALANCED EXTERNALLY EQUALIZED TYPE. DISTRIBUTIONS SHALL BE MATCHED WITH THERMOSTATIC EXPANSION VALVES AND DIRECT EXPANSION COIL FOR PROPER PERFORMANCE. DISTRIBUTORS SHALL BE ALSO OR APPROVED EQUAL. LOCATE BULB IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. CONNECT THE EQUALIZING LINE TO THE TXV DOWN STREAM OF THE BULB. PROVIDE TRAPPED DOUBLE SUCTION RISERS ON SYSTEMS WITH UNLOADING CAPABILITY, WHEN REQUIRED FOR PROPER COIL RETURN.
- L. PROVIDE FLEXIBLE COILD UNITS ON LIQUID LINE, AND SUCTON LINE AT THE CONDENSING UNIT. FLEXIBLE CONNECTORS SHALL BE BRAIDED BRONZE COVERINGS ON A BRONZE HOSE. END CONNECTORS SHALL BE FEMALE COPPER TUBE TYPE. UNITS SHALL BE RATED NOT LESS THAN 270 PSI AT 250 DEGREES F. UNITS SHALL BE SOUTHEASTERN HOSE, INC., SUPERIOR OR ANACONDA.

SECTION 15620 - DIRECT VENT GAS-FIRED FURNACES

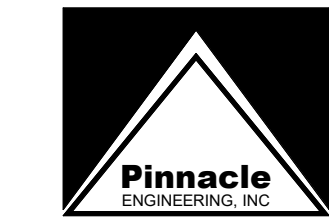
- A. GAS-FIRED FURNACES SHALL BE COMPLETELY FACTORY ASSEMBLED INCLUDING COIL, CONDENSATE DRAIN PAN, FURNACE SECTION, FAN MOTOR(S), FILTERS AND CONTROLS IN AN INSULATED CASING THAT CAN BE APPLIED IN EITHER VERTICAL OR HORIZONTAL CONFIGURATION. UNITS SHALL BE RATED AND TESTED IN ACCORDANCE WITH AN STANDARD 210. UNITS SHALL BE UL LISTED AND LABELED IN ACCORDANCE WITH UL 465 AND 569 FOR INDOOR BLOWER COIL UNITS AND SHALL BE AGA CERTIFIED.
- B. UNIT CASING SHALL BE CONSTRUCTED OF ZINC COATED, MINIMUM 20 GAUGE, GALVANIZED STEEL. EXTERIOR SURFACES SHALL BE FINISHED WITH A WEATHER-RESISTANT BAKED ENAMEL FINISH. CASING SHALL BE COMPLETELY INSULATED WITH FIRE-RETARDANT, PERMANENT, OODLESS GLASS FIBER MATERIAL. KNOCKOUTS SHALL BE PROVIDED FOR UNIT ELECTRIC POWER AND REFRIGERANT PIPING CONNECTIONS. CAPTIVE SCREWS SHALL BE STANDARD ON ALL ACCESS PANELS.
- C. FURNACE HEAT EXCHANGER SHALL BE SECTIONAL TYPE, FABRICATED OF HEAVY GAUGE ALUMINIZED STEEL. VENTING SHALL BE DIRECT OUTDOORS. BURNERS SHALL BE MULTI-PORT, IN-SHOT TYPE CONSTRUCTED OF ALUMINIZED STEEL. GAS MAIN AND UNIT SHALL BE AGA APPROVED WITH REDUNDANT VALVE. FURNACE PILOT SHALL BE ELECTRONIC IGNITION. HEAT EXCHANGER SECTION SHALL BE INSULATED WITH FOIL FACE INSULATION.
- D. EVAPORATOR COIL SHALL CONSIST OF CONFIGURED ALUMINUM FIN SURFACE MECHANICALLY BONDED TO 3/8 INCH INTERNALLY ENHANCED COPPER TUBING. COIL SHALL BE FACTORY PRESSURE AND LEAK TESTED AT 375 PSIG. COIL SHALL BE ARRANGED FOR BLOW-THROUGH AIRFLOW AND PROVIDED WITH CONDENSATE DRAIN PAN CONSTRUCTED OF PVC PLASTIC. EXTERNAL CONNECTIONS SHALL BE PROVIDED ON EITHER SIDE OF THE UNIT.
- E. EVAPORATOR FAN SHALL BE FORWARD CURVED, CENTRIFUGAL TYPE FAN(S) WITH ADJUSTABLE SPEED DIRECT DRIVE MOTOR. THERMAL OVERLOAD PROTECTION SHALL BE STANDARD ON MOTOR. FAN AND MOTOR BEARINGS SHALL BE PERMANENTLY LUBRICATED.
- F. MAGNETIC EVAPORATOR FAN CONTACTOR, LOW VOLTAGE TERMINAL STRIP, CHECK VALVE(S), AND SINGLE POINT POWER ENTRY SHALL BE INCLUDED. ALL NECESSARY CONTROLS SHALL BE FACTOR-INSULATED AND WIRED. EVAPORATOR DEFROST CONTROL SHALL BE INCLUDED TO PREVENT COMPRESSOR SLUGGING BY TEMPORARILY INTERRUPTING COMPRESSOR OPERATION WHEN LOW EVAPORATOR COIL TEMPERATURES ARE ENCOUNTERED.
- G. INSTALL UNIT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL CONDENSATE DRAIN PIPING FROM UNIT TO DRAIN AS INDICATED ON THE DRAWINGS. PROVIDE UNIT WITH NECESSARY VENT PIPING AND CONCENTRIC INTAKE/EXHAUST ACCESSORIES.
- H. GAS FIRED FURNACES SHALL BE CARRIER MODEL MXA OR APPROVED EQUAL.

SECTION 15629- UNIT HEATERS - GAS FIRED

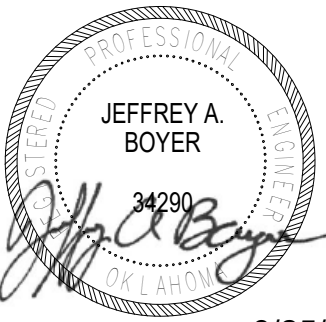
- A. THIS SPECIFICATION DESCRIBES THE REQUIREMENTS FOR LABOR AND MATERIALS NECESSARY FOR THE INSTALLATION OF GAS FIRED UNIT HEATERS INCLUDED AS PART OF THE BUILDING MECHANICAL SYSTEM. CEILING MOUNTED UNIT HEATER - HORIZONTAL THROW:
- PERFORMANCE SHALL BE AS INDICATED ON THE EQUIPMENT SCHEDULE AND PLANS. UNIT HEATERS SHALL HAVE A G.A. (AMERICAN GAS ASSOCIATION) DESIGN CERTIFICATION.
 - CASING: CASINGS SHALL BE A MINIMUM OF 22-GAUGE DIE-FORMED STEEL. ALL CORNERS SHALL BE ROUNDED WITH NO BREAKS. CASING SHALL BE PROVIDED WITH THREADED HANGER CONNECTIONS FOR UNIT SUSPENSION. ALL METAL SURFACES OF THE CASING SHALL BE TREATED TO PREVENT THE FORMATION AND SPREAD OF RUST. HEATERS SHALL BE PAINTED WITH AN ELECTROSTATICALLY APPLIED PAINT FOR OPTIMUM CORROSION PROTECTION. CASING SHALL BE COATED WITH A MINIMUM 2 MIL DRY FILM THICKNESS COATING. COATING SHALL PASS THE 1000 HOUR SALT SPRAY TEST UNDER ASTM 117.
 - MOTOR: EACH UNIT HEATER SHALL HAVE A SINGLE MOTOR AND PROPELLER. MOTOR SHALL BE TOTALLY ENCLOSED WITH THERMAL OVERLOAD PROTECTION (SINGLE PHASE ONLY). PROPELLER SHALL BE STATICALLY BALANCED AND SHALL BE EQUIPPED WITH A SAFETY FAN GUARD. ALL MOTOR WIRING SHALL BE TERMINATED IN AN ELECTRICAL JUNCTION BOX EITHER SUPPLIED WITH THE UNIT HEATER OR AS AN INTEGRAL PART OF THE MOTOR. MOTORS SHALL BE RATED AND TESTED IN ACCORDANCE WITH NEMA STANDARDS. MOTORS SHALL INCLUDE THE MANUFACTURER'S WARRANTY. MOTORS SHALL BE RATED TO OPERATE IN 104 DEGREES F AMBIENT AIR CONTINUOUSLY.
 - BURNER: BURNER MATERIAL SHALL BE ALUMINIZED STEEL WITH NON-CLOGGING, SLOTTED PORTS AND 400 STAINLESS STEEL SEPARATOR STRIP DESIGNED FOR GOOD LIGHTING CHARACTERISTICS WITHOUT NOISE OF EXTINCTION.
 - HEAT EXCHANGER: UNIT HEAT EXCHANGER SHALL BE CONSTRUCTED OF 20 GAUGE ALUMINIZED STEEL. HEAT EXCHANGER SHALL BE HELIARC MACHINE-WELDED AND DESIGNED WITH CONTOURED STRESS-FREE TUBES.
 - CONTROLS (STANDARD): UNIT HEATER SHALL BE EQUIPPED WITH A 24V CONTROL TRANSFORMER, A FACTORY SUPPLIED TERMINAL BOARD FOR CONNECTION OF LOW VOLTAGE THERMOSTAT AND ACCESSORY FIELD WIRING, OVERHEAT CONTROL, 25V AUTOMATIC GAS VALVE, INTERMITTENT PILOT WITH 100% SHUT-OFF, GAS VALVE PRESSURE REGULATOR, AND ELECTRIC FAN TIMED DELAY RELAY. ALL CONTROLS SHALL BE RATED FOR A MAXIMUM INLET PRESSURE OF 1/2 PSI GAS PRESSURE. THE GAS VALVE AND FAN TIMER SHALL BE ENERGIZED BY THE THERMOSTAT (OR MANUAL SWITCH) UPON CALL FOR HEAT. THE FAN SHALL BE DELAYED FOR APPROXIMATELY 30 SECONDS AFTER MAIN BURNER IGNITION.
 - THERMOSTAT: SINGLE-STAGE ROOM THERMOSTAT; 1.5 AMP AT 30VAC, 55 TO 95 DEGREES FAHRENHEIT TEMPERATURE RANGE; HEAT ANTICIPATOR 0.18 TO 0.8 AMP RATING, HONEYWELL 7822D1008.
- INSTALLATION: INSTALL UNIT HEATERS LEVEL AND PLUMB IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- SUSPEND UNIT HEATERS FROM STRUCTURE WITH RUBBER-IN-SHEAR VIBRATION ISOLATORS.
 - INSTALL SHUTOFF ON EACH HEATER.
 - INSTALL PIPING TO ALLOW SERVICE AND MAINTENANCE.
 - COORDINATE INSTALLATION OF DISCONNECTS WITH ELECTRICAL CONTRACTOR.
 - PROVIDE UNIT WITH TYPE B VENT. PROVIDE ROOF THIMBLE AND CAP. TERMINATE VENT 3 FEET ABOVE ROOF.
 - PAINT VENT TO MATCH ROOF.

SECTION 15671 - AIR COOLED CONDENSING UNITS

- A. UNITS SHALL BE ASSEMBLED ON MINIMUM 10 GAUGE STEEL MOUNTING/LIFTING RAILS AND SHALL BE WEATHER PROOFED. UNIT SHALL INCLUDE HERMETIC OR SEMI-HERMETIC RECIPROCATING COMPRESSOR(S), PLATE FIN CONDENSER COIL, FANS AND MOTORS, CONTROLS AND HOLDING CHARGE OF R-22. UNITS SHALL BE UL LISTED AND RATED IN ACCORDANCE WITH ARI STANDARD 240 AND 270.
- B. UNIT CASING SHALL BE CONSTRUCTED OF MINIMUM 18 GAUGE G-210, HEAVY GALVANIZED STEEL. EXTERIOR SURFACES SHALL BE FINISHED WITH A WEATHER-RESISTANT BAKED ENAMEL FINISH. COATING SYSTEM SHALL HAVE BEEN TESTED 500 HOURS IN SALT SPRAY TEST (ASTM B117). UNITS SHALL HAVE REMOVABLE PANELS THAT ALLOW ACCESS TO ALL MAJOR COMPONENTS AND CONTROLS.
- C. SINGLE COMPRESSOR UNITS LESS THAN 7-1/2 TONS:
- COMPRESSOR SHALL BE HERMETICALLY SEALED AND MOUNTED ON RUBBER VIBRATION ISOLATORS. COMPRESSOR SHALL INCLUDE INTERNAL OVER TEMPERATURE AND PRESSURE PROTECTION. THERMOSTATICALLY CONTROLLED SUMP HEATER, AND INTERNAL SPRINGS MOUNTS. REFRIGERATION CIRCUIT SHALL INCLUDE FACTORY INSTALLED LIQUID LINE DRIER, LOW PRESSURE SWITCH, LIQUID LINE AND SUCTION LINE SERVICE VALVE WITH GAUGE PORT.
- D. CONDENSER SHALL BE INTERNAL BLADES OR SMOOTH BORE 3/8 INCH COPPER TUBES MECHANICALLY BONDED TO CONFIGURED ALUMINUM PLATE FIN AS STANDARD. COIL SHALL BE FACTORY PRESSURE AND LEAK TESTED TO 375 PSIG AIR PRESSURE. PROVIDE CONDENSER COIL GUARD CONSISTING OF METAL GRILLE WITH PVC COATING.
- E. CONDENSER FAN AND MOTOR(S) SHALL HAVE DIRECT-DRIVE, STATICALLY AND DYNAMICALLY BALANCED FAN(S) WITH ALUMINUM BLADES AND ELECTRO-COATED STEEL HUBS. FANS SHALL BE MOUNTED IN DRAW-THROUGH VERTICAL DISCHARGE POSITION. PERMANENTLY LUBRICATED TOTALLY ENCLOSED TYPE MOTORS SHALL BE PROVIDED AND SHALL HAVE BUILT IN CURRENT AND THERMAL OVERLOAD PROTECTION. MOTOR(S) SHALL BE BALL BEARING TYPE.
- F. UNITS SHALL BE COMPLETELY FACTORY WIRED WITH NECESSARY CONTROLS AND CONTACTOR WITH PRESSURE LUGS OR TERMINAL BLOCK FOR POWER WIRING. CONTROL WIRING SHALL BE 24-VOLT CONTROL CIRCUIT WHICH INCLUDES FUSING AND CONTROL TRANSFORMER.
- G. DEFROST CONTROLS SHALL INCLUDE ELECTRONIC TIME INITIATED, TEMPERATURE TERMINATED DEFROST SYSTEM. TIMED OVERIDE LIMITS DEFROST CYCLE TO 10 MINUTES.
- H. LOW AMBIENT HEAT PRESSURE SHALL BE PROVIDED TO MODULATE THE RPM OF UNIT OUTDOOR FAN MOTOR IN RESPONSE TO OUTDOOR AMBIENT TEMPERATURES AND UNIT HEAD PRESSURE. PROVIDE UNIT COOLING OPERATION TO OUTDOOR TEMPERATURE 0 DEGREES F.
- I. PROVIDE ANTI-SHORT CYCLE TIMER TO PREVENT RAPID ON-OFF COMPRESSOR CYCLING IN LIGHT LOAD CONDITIONS BY NOT ALLOWING COMPRESSOR TO OPERATE FOR 5-7 MINUTES UPON SHUTDOWN. TIMER SHALL CONSIST OF A SOLID STATE TIMING DEVICE, 24-VOLT, 60 CYCLE.
- J. WARRANTY:
- PROVIDE A WRITTEN WARRANTY AGREEING TO REPLACE COMPONENTS THAT FAIL IN MATERIALS AND WORKMANSHIP WITHIN THE SPECIFIED PERIOD, PROVIDED MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION, OPERATION, AND MAINTENANCE HAVE BEEN FOLLOWED.
 - WARRANTY PERIOD: MANUFACTURERS STANDARD, BUT NOT LESS THAN FIVE (5) YEARS FROM DATE OF SUBSTANTIAL COMPLETION FOR COMPRESSOR(S) AND ONE (1) YEAR FOR ALL OTHER COMPONENTS.
- K. UNITS SHALL BE JOI, CARRIER OR APPROVED EQUAL. INSTALL UNIT IN ACCORDANCE WITH MANUFACTURER-S INSTRUCTIONS.



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6/25/26

Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

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Mechanical Specifications

Project number	25048
Date	04/17/2026
Drawn by	CA
Checked by	JB

M0.02

Scale 12" = 1'-0"

SECTION 15870 - POWER VENTILATORS

- A. POWER VENTILATORS WHICH ARE SCHEDULED OR REFERRED TO BY MODEL NUMBER OR CATALOGUE NUMBER ARE INTENDED TO INCLUDE ALL MATERIALS COVERED BY SUCH NUMBER, ANY REQUIRED ACCESSORIES FOR THE INSTALLATION OF THE FAN ARE TO BE BY THE SAME MANUFACTURER UNLESS OTHERWISE NOTED.
- B. ALL WIRING AND ELECTRICAL COMPONENTS SHALL COMPLY WITH THE NATIONAL ELECTRIC CODES (NEC). ALL MATERIALS SHALL BE UL LISTED. FANS SHALL BE UL 705. FANS SHALL BEAR THE AMCA CERTIFIED RATINGS SEAL FOR SOUND AND AIR PERFORMANCE. FAN ASSEMBLY SHALL BEAR AN ENGRAVED ALUMINUM NAMEPLATE. FANS WHEELS SHALL BE BALANCED IN ACCORDANCE WITH AMCA STANDARD 204-98.
- C. EACH UNIT SHALL HAVE A BIRDSCREEN CONSTRUCTED OF GALVANIZED WIRE MESH WITH 2 IN. OPENINGS MOUNTED VERTICALLY IN THE UNIT DISCHARGE. THE BIRDSCREEN SHALL PRODUCE MINIMAL EFFECT ON AIR AND SOUND PERFORMANCE.
- D. INSTALL FAN IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL FANS WITH CLEARANCES FOR SERVICE AND MAINTENANCE. MAKE FINAL DUCT CONNECTIONS TO FANS WITH FLEXIBLE CONNECTORS.
- E. ROOF CURBS SHALL BE CONSTRUCTED USING MINIMUM 14 GAUGE GALVANIZED STEEL WITH FULLY MITERED AND WELDED CORNERS. INTEGRAL BASE PLATES INTERNALLY REINFORCED WITH 1 IN. X 1/2 IN. X 1/8 IN. STEEL ANGLE. FACTORY INSULATED WITH 1/2 IN. THICK THREE POUND PER CU. FT. DENSITY FIBERGLASS INSULATION. CURBS SHALL BE FABRICATED WITHOUT CANTS. MINIMUM HEIGHT OF CURB SHALL BE 8 IN. ABOVE FINISHED ROOF. CURBS SHALL BE CONSTRUCTED TO MATCH SLOPE OF ROOF AND PROVIDE A LEVEL TOP SURFACE FOR MOUNTING OF MECHANICAL EQUIPMENT.
- F. BACK DRAFT DAMPER SHALL BE 6063T5 EXTRUDED ALUMINUM FRAME, .025 IN THICK FORMED ALUMINUM BLADES, EXTRUDED VINYL EDGE SEALS, SYNTHETIC BEARINGS, MILL FINISH.
- G. DOWNBLAST CENTRIFUGAL ROOF EXHAUSTER - BELT DRIVE:

1. FAN SHALL BE SPUN ALUMINUM OF BOLTED AND WELDED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. THE SPUN ALUMINUM STRUCTURAL COMPONENTS SHALL BE CONSTRUCTED OF MINIMUM 16 GAUGE MARINE ALLOY ALUMINUM, BOLTED TO A RIGID ALUMINUM SUPPORT STRUCTURE. THE ALUMINUM BASE SHALL HAVE CONTINUOUSLY WELDED CURB CAP CORNERS FOR MAXIMUM LEAK PROTECTION. THE DISCHARGE BAFFLE SHALL HAVE A ROLLED BEAD.
2. AN INTEGRAL CONDUIT CHASE SHALL BE PROVIDED THROUGH THE CURB CAP AND INTO THE MOTOR COMPARTMENT TO FACILITATE WIRING CONNECTIONS.
3. FAN WHEEL SHALL BE CENTRIFUGAL BACKWARD INCLINED, CONSTRUCTED OF 100% ALUMINUM, INCLUDING A PRECISION MACHINED CAST ALUMINUM HUB. WHEEL INLET SHALL OVERLAP AN AERODYNAMIC ALUMINUM INLET CONE. MOTOR SHALL BE HEAVY DUTY TYPE WITH PERMANENTLY LUBRICATED SEALED BALL BEARINGS AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE.
4. BEARINGS SHALL BE DESIGNED AND INDIVIDUALLY TESTED SPECIFICALLY FOR USE IN AIR HANDLING APPLICATIONS. CONSTRUCTION SHALL BE HEAVY DUTY REGREASABLE BALL TYPE IN A CAST IRON HOUSING SELECTED FOR A MINIMUM L50 LIFE IN EXCESS OF 200,000 HOURS AT MAXIMUM CATALOGED OPERATING SPEED.
5. BEARINGS AND DRIVES SHALL BE MOUNTED ON A MINIMUM 14 GAUGE STEEL ASSEMBLY, ISOLATED FROM THE UNIT STRUCTURE WITH RUBBER VIBRATION ISOLATORS. THESE COMPONENTS SHALL BE ENCLOSED IN A WEATHER TIGHT COMPARTMENT, SEPARATED FROM THE EXHAUST AIRSTREAM. DRIVES SHALL BE PRECISION MACHINED CAST IRON TYPE, KEYED AND SECURELY ATTACHED TO THE WHEEL AND MOTOR SHAFTS. DRIVES SHALL BE SIZED FOR 150% OF THE INSTALLED MOTOR HORSEPOWER. BELTS SHALL BE OIL AND HEAT RESISTANT, NON-STATIC TYPE.
6. FAN SHALL BE MODEL ACE-B AS MANUFACTURED BY LOREN COOK COMPANY. GREENHECK, ACME AND PENN VENTILATOR ARE APPROVED EQUAL.

H. SQUARE INLINE EXHAUSTER - DIRECT DRIVE:

1. THE FAN SHALL BE OF BOLTED AND WELDED CONSTRUCTION UTILIZING CORROSION RESISTANT FASTENERS. HOUSING SHALL BE MINIMUM 18 GAUGE STEEL WITH AIRFLOW STRAIGHTENING VANES, INTEGRAL DUCT FLANGES AND HINGED ACCESS DOOR.
2. FAN WHEEL SHALL BE CENTRIFUGAL BACKWARD INCLINED, CONSTRUCTED OF 100% ALUMINUM, INCLUDING A PRECISION MACHINED CAST ALUMINUM HUB. WHEEL INLET SHALL OVERLAP AN AERODYNAMIC ALUMINUM INLET CONE.
3. MOTOR SHALL BE HEAVY DUTY TYPE WITH PERMANENTLY LUBRICATED SEALED BALL BEARINGS AND FURNISHED AT THE SPECIFIED VOLTAGE, PHASE AND ENCLOSURE.
4. FAN SHALL BE MODEL SQ-D AS MANUFACTURED BY LOREN COOK COMPANY. GREENHECK, ACME AND PENN VENTILATOR ARE APPROVED EQUAL.

I. CEILING MOUNTED EXHAUST FAN - DIRECT DRIVE:

1. GC 100 SERIES: THE FAN WHEEL HOUSING AND INTEGRAL OUTLET DUCT SHALL BE INJECTION MOLDED FROM A SPECIALLY ENGINEERED RESIN EXCEEDING UL REQUIREMENTS FOR SMOKE AND HEAT GENERATION. THE OUTLET DUCT SHALL HAVE PROVISION FOR AN ALUMINUM BACKDRAFT DAMPER WITH CONTINUOUS ALUMINUM HINGE ROD. THE INLET BOX SHALL BE MINIMUM 22 GAUGE GALVANIZED STEEL. MOTOR SHALL BE ISOLATION MOUNTED TO A ONE PIECE GALVANIZED STAMPED STEEL INTEGRAL MOTOR MOUNT/INLET. A FIELD WIRING COMPARTMENT WITH RECEPTACLE SHALL BE STANDARD. TO ACCOMMODATE DIFFERENT CEILING THICKNESS, AN ADJUSTABLE PREPUNCHED MOUNTING BRACKET SHALL BE PROVIDED. A WHITE, NON-YELLOWING, HIGH IMPACT STYRENE INJECTION MOLDED GRILL SHALL BE PROVIDED AS STANDARD. WHEEL SHALL BE CENTRIFUGAL FORWARD CURVED TYPE, INJECTION MOLDED OF POLYPROPYLENE RESIN.
2. MOTOR SHALL BE OPEN DRIP PROOF TYPE WITH PERMANENTLY LUBRICATED SEALED BEARINGS AND INCLUDE IMPEDANCE OR THERMAL OVERLOAD PROTECTION AND DISCONNECT PLUG. MOTOR SHALL BE FURNISHED AT THE SPECIFIED VOLTAGE.
3. FAN SHALL BE MODEL GC AS MANUFACTURED BY LOREN COOK COMPANY. GREENHECK, ACME AND PENN VENTILATOR ARE APPROVED EQUAL.

SECTION 15892 - LOW PRESSURE DUCTWORK

- A. GENERAL:
1. DUCT SYSTEM SHALL BE FABRICATED WITH SHEET METAL THICKNESSES AND REINFORCED IN ACCORDANCE WITH SMCMA, AS SHOWN ON THE DRAWINGS AND AS DESCRIBED HEREIN. DUCTS 18 INCHES AND LARGER ON ANY SIDE SHALL BE STIFFENED BY BEADING ON NOT TO EXCEED 12 INCH CENTERS, UNLESS NOTED OTHERWISE. THE MINIMUM PRESSURE/VELOCITY CLASSIFICATION SHALL BE 2 INCH W.G. PLUS OR MINUS, AT 2500 FT. PER MINUTE, DUCT SEAL CLASS "A". DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.
2. DUCTWORK HANGERS SHALL BE SUPPORTED BY FASTENERS ATTACHED TO STRUCTURAL STEEL. REPAIR FIRE PROOFING WHICH WAS REMOVED FOR DUCTWORK INSTALLATION. INSTALLATION TO BE DONE BY AN APPROVED QUALIFIED TRADESMAN.
3. INSTALL IN THE DUCTWORK DEVICES FURNISHED BY THE TEMPERATURE CONTROLS SUB-CONTRACTOR. INSTALL SMOKE DETECTORS IN DUCTWORK FURNISHED BY THE DIVISION 16 CONTRACTOR.
4. WATER AND OTHER PIPES SHALL NOT BE ALLOWED TO PASS THROUGH AIR RISERS OR DUCTS, UNLESS APPROVED BY THE ENGINEERS, AND WHEN THIS OCCURS, THE SIZE OF SAID DUCT OR RISER SHALL BE PROPORTIONATELY INCREASED. SANITARY WASTE AND VENT PIPING SHALL NOT PENETRATE ANY DUCTWORK.
- B. GALVANIZED STEEL DUCTWORK:
1. GALVANIZED STEEL DUCTWORK SHALL CONFORM TO ASTM A653 (G60). ALL LONGITUDINAL SEAMS SHALL BE GROOVED, DOUBLE OR PITTSBURGH TYPE.
- C. DUCTWORK FITTINGS:
1. FOR RECTANGULAR DUCTWORK, VANES SHALL BE PROVIDED IN ELBOWS WITH 90 DEGREE THROATS AND THROAT RADII LESS THAN 1-1/2 TIMES DUCT WIDTH. VANES SHALL BE LOCATED IN ACCORDANCE WITH ASHRAE STANDARDS. DOUBLE-VANE AIRFOIL-TYPE TURNING VANES SHALL BE PROVIDED FOR ALL SQUARE TURNS.
- D. HANGERS AND SUPPORTS:
1. PROVIDE CONCRETE INSERTS OR STRUCTURAL STEEL FASTENERS APPROPRIATE FOR BUILDING MATERIALS. PROVIDE TRAPEZE AND RISER SUPPORTS AS REQUIRED. SUPPORT MATERIALS SHALL BE THE SAME AS DUCTWORK SUPPORTING.
2. HANGERS SHALL HAVE STRAPS AND RODS SHALL WITH SMCMA'S "HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE" STANDARDS.
3. DUCT ATTACHMENTS: SHEET METAL SCREWS, BLIND RIVETS OR SELF-TAPPING METAL SCREWS, COMPATIBLE WITH DUCT MATERIALS.
- E. SEALANT MATERIAL:
1. SEALANTS SHALL BE SOLVENT OR WATER BASED TYPE U.L. CLASSIFIED MEETING NFPA 90A CLASS 1 WITH ZERO FIRE AND SMOKE DEVELOPMENT RATING. SEALER SHALL BE UNITED SHEET METAL UNITED DUCT SEALER, OR HARDCAST IRON GRIP NO. 601.
2. TRANSVERSE SEAMS SHALL BE TAPED AND SEALED WITH TWO LAYERS OF UNITED SHEET METAL, UNI-CAST OR CAULKED WITH DUCT SEALER.
- F. FLEXIBLE CONNECTORS:
1. INSTALL FLEXIBLE CONNECTORS AT ALL SUPPLY AND EXHAUST FANS AND OTHER AIR HANDLING UNITS WITH INLET AND OUTLET DUCT OR CASING CONNECTIONS. CONNECTORS SHALL NOT BE PAINTED. CONNECTORS SHALL NOT BE USED AS TRANSITION PIECES BETWEEN FAN AND DUCTWORK.
2. CONNECTORS SHALL BE NOT LESS THAN 4 INCHES LONG (IN CLEAR) AND PROPERLY ATTACHED TO DUCT AND FAN CONNECTION COLLAR BY 1 X 1/8 INCH DRAW BAR (FABRICATED OF THE SAME MATERIAL AS ADJACENT DUCTWORK) FIRMLY CLAMPED AROUND COLLARS IN SUCH A MANNER AS TO BE AIRTIGHT AND SECURED TO COLLARS WITH SHEET METAL SCREWS.
3. FLEXIBLE CONNECTORS SHALL BE U.L. LISTED, NEOPRENE COATED HEAVY GLASS FABRIC. FABRIC SHALL BE VENTGLAS, MANUFACTURED BY VENTFABRICS, INC.
- G. FLEXIBLE DUCTWORK:
1. FLEXIBLE DUCTS SHALL BE USED FOR STRAIGHT RUNS OF DUCT OR OFFSETS UP TO 45 DEGREES, BUT NOT EXCEEDING 48 INCHES IN LENGTH. THE USE OF FLEXIBLE DUCTS AS ELBOWS WITH MORE THAN A 45 DEGREE BEND WILL NOT BE PERMITTED.
2. FLEXIBLE DUCT SHALL BE UL LISTED AND LABELED AS CLASS 1, AIR DUCT CONNECTOR, IN ACCORDANCE WITH U.L. STANDARD 181 AND SHALL MEET THE REQUIREMENTS OF THE LATEST NFPA BULLETIN, NO. 90A AND NO. 90B FOR FLAME SPREAD AND SMOKE DEVELOPMENT RATING.
3. FLEXIBLE DUCT SHALL BE RATED FOR A MAXIMUM PRESSURE OF 6 INCH POSITIVE AND 3/4 INCH NEGATIVE AND 4000 FPM MAXIMUM VELOCITY. AIR DUCT SHALL CONSIST OF: OPE LINER, COATED SPRING STEEL WIRE HELIX, FIBERGLASS INSULATING BLANKET, FIBERGLASS SCRIM AND REINFORCED ALUMINUM VAPOR BARRIER. THERMAL CONDUCTANCE SHALL BE .23 OR LESS.
4. DUCT SHALL BE FLEXMASTER TYPE 8M OR PRIOR APPROVED EQUAL.

- A. VOLUME DAMPERS:
1. SINGLE BLADE DAMPERS SHALL BE CONSTRUCTED OF 22 GAUGE GALVANIZED STEEL (BLADE AND FRAME). SINGLE BLADE DAMPERS SHALL BE LIMITED TO A 12 INCH HIGH BLADE. BLADE EDGES SHALL BE CRIMPED OR REINFORCED. DAMPER LEVERS SHALL INDICATE POSITIVELY THE OPEN AND CLOSED POSITION. END BEARINGS SHALL BE MOLDED SYNTHETIC. DAMPERS SHALL BE RUSKIN MD25 OR APPROVED EQUAL (RUSKIN MDRS25 FOR ROUND DUCTS).
2. MULTIBLADE DAMPERS SHALL BE CONSTRUCTED OF SHEET METAL THE SAME MATERIAL AS THE ADJACENT DUCTWORK. DAMPER FRAME SHALL BE NOT LESS THAN 16 GA. DAMPER BLADES NOT WIDER THAN 6 INCHES CRIMPED OR REINFORCED. DAMPER LEVERS SHALL INDICATE POSITIVELY THE OPEN AND CLOSED POSITION. END BEARINGS SHALL BE MOLDED SYNTHETIC. DAMPER SHALL BE RUSKIN MD35 OR APPROVED EQUAL.

- B. FIRE DAMPERS:
1. FIRE DAMPERS SHALL BE UNDERWRITERS APPROVED AND LABELED (UL555). DAMPERS SHALL BE FABRICATED OF GALVANIZED STEEL AND SHALL BE OF SUCH A DESIGN AND LENGTH AS TO FUNCTION AS A WALL MOUNTING SLEEVE, WHICH SHALL BE A PART OF THE FIRE DAMPER. SLEEVES SHALL BE OF WELDED OR BOLTED CONSTRUCTION. CRIMPING OR TABS WILL NOT BE ACCEPTABLE SUBSTITUTES FOR WELDING OR BOLTING.
2. FIRE DAMPERS SHALL BE RUSKIN DDB2 SERIES FOR 1/2 HOUR RATING. FIRE DAMPERS SHALL BE RUSKIN DDB23 SERIES FOR 3 HOUR RATING. INSTALL STYLE A FIRE DAMPERS BEHIND DUCTED GRILLES AND REGISTERS IN RATED WALLS. INSTALL STYLE B OR C FIRE DAMPERS IN DUCTED OPENINGS IN RATED WALLS. AIR BALANCE AND PREFCO ARE APPROVED EQUAL.

- C. DAMPER HARDWARE:
1. ALL HARDWARE SHALL BE SMCMA ACCEPTED. INSULATED DUCTWORK (CONCEALED) - VENTLOK 638 ELEVATED DIAL REGULATOR. INSULATED DUCTWORK (EXPOSED) - VENTLOK 644 - SELF LOCKING REGULATOR. UNINSULATED DUCTWORK - VENTLOK 555 OR 560 QUADRANTS.

- D. DUCT ACCESS DOORS:
1. ACCESS DOORS SHALL BE HINGED, CONSTRUCTED OF THE SAME MATERIAL AS THE DUCTWORK. DOOR EDGES SHALL BE SEALED WITH 3/4 INCH WIDE X 1/8 INCH THICK NEOPRENE SPONGE GASKETING. DOOR HARDWARE SHALL BE VENTLOK #100 LATCHES. ACCESS DOORS ON INSULATED DUCTWORK SHALL BE DOUBLE WALL CONSTRUCTION WITH 1 INCH OF RIGID 3 PCF FIBERGLASS INSULATION.
2. PROVIDE DUCT ACCESS DOORS AT ALL DUCT MOUNTED DEVICES REQUIRING ADJUSTMENT OR RESETTING. ACCESS DOORS SHALL BE APPROXIMATELY 18 INCHES HIGH BY 24 INCHES WIDE. IN SMALLER DUCTWORK, THE HEIGHT SHALL BE REDUCED TO BE 2 INCHES LESS THAN THAT OF THE DUCTWORK.

SECTION 15906 - TEMPERATURE CONTROLS

- A. GENERAL:
1. FURNISH AND INSTALL AN ELECTRIC SYSTEM OF AUTOMATIC TEMPERATURE CONTROL AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS AND AS MANUFACTURED BY HONEYWELL, JOHNSON CONTROLS, INVENSYS, OR APPROVED EQUAL.
2. EXTRA COSTS INCURRED BY USE OF OTHER THAN BASE BID CONTROL SYSTEM, SUCH AS WIRING, CONTRACT DRAWINGS CHANGES, CHANGES IN DESIGN, ADDED SUPERVISION, ETC., SHALL BE THE RESPONSIBILITY OF THE TEMPERATURE CONTROL SUBCONTRACTOR (TCSC).
3. SYSTEM DOCUMENTATION SHALL INCLUDE THE FOLLOWING: MANUFACTURER'S DATA SHEETS OF ALL PRODUCTS (ORIGINAL COPIES), COMPLETE DESCRIPTION OF OPERATION OF ALL CONTROL LOOPS, INCLUDING RECOMMENDED SETPOINTS AND RANGES OF ADJUSTMENT; FULLY LABELED ELEMENTARY DIAGRAM (ELECTRICAL LADDER DIAGRAM), AND LISTS OF ALL PROPOSED DEVICES AND EQUIPMENT.
- B. MOTOR OPERATORS: MOTOR OPERATOR SHALL BE SPRING RETURN TYPE, WHICH RETURNS MOTOR ACTUATOR SHAFT TO ITS FULL NORMAL MECHANICAL TRAVEL UPON POWER FAILURE. DAMPER MOTOR DRIVE MECHANISM WILL INCLUDE HOLDING BRAKE TO KEEP THE RETURN SPRING FROM DRAWING THE ACTUATOR FROM DRIVING TOWARD ITS NORMAL POSITION UNLESS POWER IS INTERRUPTED. SUPPLY AND INSTALL ELECTRIC MOTOR OPERATORS FOR ALL DAMPERS. UNIT SHALL BE HONEYWELL MS8105A SERIES OR APPROVED EQUAL.
- C. AUTOMATIC DAMPERS: ALL CONTROL DAMPERS SHALL BE STANDARD PRODUCTS OF DAMPER OR TEMPERATURE CONTROL MANUFACTURERS UNLESS NOTED OTHERWISE. LOCAL FABRICATION OF DAMPERS IS NOT ALLOWED. DAMPERS SHALL BE OPPOSED BLADE TYPE. FURNISH FOR INSTALLATION BY THE MECHANICAL CONTRACTOR ALL MOTOR OPERATED DAMPERS. DAMPERS SHALL BE RUSKIN MODEL CD50. GREENHECK IN AN APPROVED EQUAL.
- D. THERMOSTATS:

1. PROVIDE HVAC THERMOSTAT WITH THE FOLLOWING FEATURES: SEVEN DAY PROGRAMMING, TWO OCCUPIED/TWO UNOCCUPIED PERIODS PER DAY, AUTOMATIC HEAT/COOL CHANGEOVER WITH 2°F MINIMUM DEAD BAND, TWO STAGES HEATING, TWO STAGE COOLING, TOUCHSCREEN DISPLAY, AUXILIARY CONTACT, AND TEMPERATURE OVERRIDE. THERMOSTAT SHALL BE HONEYWELL VISIONPRO 8000 OR EQUAL.
2. PROVIDE HEATER AND VENTILATION THERMOSTAT WITH THE FOLLOWING FEATURES: SINGLE STAGE CONTROL, ON/OFF/AUTO SWITCHING, AND ADJUSTABLE SETPOINT CONTROL.
- E. TEMPERATURE CONTROL WIRING:
1. ALL CONTROL WIRING AND CONDUIT REQUIRED TO COMPLETE THE TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THE TEMPERATURE CONTROL SUB-CONTRACTOR. ALL WIRING SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OUTLINED IN DIVISION 16. WIRE SIZE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND NATIONAL ELECTRIC CODE. MINIMUM CONDUIT SHALL BE 1/2 INCH DIAMETER. TCSC SHALL COORDINATE ALL CONTROL POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR PRIOR TO BID.
2. ELECTRIC CONNECTIONS BETWEEN THE VARIOUS UNIT CONTROL CABINETS SHALL BE MADE BY THE TCSC. ALL WIRING MUST BE TAGGED ON BOTH ENDS WITH PANEL NUMBER AND TERMINAL NUMBER.
3. THE TCSC IS RESPONSIBLE FOR ALL REQUIRED PROCESS AND ELECTRICAL CONNECTIONS TO ALL EQUIPMENT, CONTROL DEVICES, AND FIELD INSTRUMENTS. TCSC SHALL FURNISH AND INSTALL ALL CONDUITS, RACEWAYS, ETC., REQUIRED. TCSC SHALL FURNISH AND INSTALL ALL CONTROL AND INTERLOCK WIRING. TCSC SHALL FURNISH AND INSTALL ALL REQUIRED AUXILIARY STARTER CONTACTS OR RELAYS, ETC., FOR A COMPLETE ELECTRICAL INTERLOCK AND CONTROL WIRING SYSTEM.

- F. INSTALLATION:
1. THE ENTIRE CONTROL SYSTEM, INCLUDING LOW VOLTAGE WIRING, WITH THE EXCEPTION OF DUCT MOUNTED AUTOMATIC DAMPERS AND SMOKE DETECTORS, SHALL BE INSTALLED BY THE TEMPERATURE CONTROL CONTRACTOR, WHO SHALL MAKE ALL TESTS AND ADJUSTMENTS. ALL CONTROLS SHALL BE FIELD-TESTED AND FIELD-CALIBRATED.
2. SET POINTS OF ALL CONTROLLING INSTRUMENTS ARE INDICATED AT A SPECIFIC POINT; HOWEVER, ALL SET POINTS SHALL BE ADJUSTABLE UP AND DOWN FROM THE POINT INDICATED.
3. CONTRACTOR SHALL SUBMIT TENTATIVE LOCATIONS OF ALL CONTROL DEVICES AND COMPONENTS (INCLUDING TEMPERATURE SENSORS) TO THE ARCHITECT FOR WRITTEN APPROVAL PRIOR TO INSTALLATION. CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO LOCATION OF CONTROL DEVICES AND COMPONENTS TO LOCATION OF CONTROL DEVICES AND COMPONENTS. EFFECTS OF DRAFTS, RADIANT HEAT, VIBRATION, ETC ARE TO BE CONSIDERED WHEN INSTALLING CONTROL DEVICES AND COMPONENTS.
4. PRIOR TO ORDERING FACTORY ASSEMBLED EQUIPMENT WHICH CONTAINS INTEGRAL CONTROL DEVICES AND COMPONENTS, THE CONTRACTOR SHALL OBTAIN A WRITTEN STATEMENT FROM BOTH THE MANUFACTURER AND THE INSTALLING CONTRACTOR THAT THEY HAVE REVIEWED THE APPROPRIATE SUBMITTAL DATA AND ARE AWARE OF THE MAKE, MODEL, TYPE, SIZE, CHARACTERISTICS, ETC. OF THE FACTORY ASSEMBLED CONTROL DEVICES AND COMPONENTS WHICH THEY SHALL BE REQUIRED TO INTERFACE TO AND/OR CONTROL.
5. ALL CONTROL DEVICES (BOTH FIELD AND PANEL MOUNTED) SHALL BE LABELED TO INDICATE BOTH THEIR CONTROL SYSTEMS DESIGNATION, E.G., RTU-1, THERMOSTAT, UNLESS INDICATED OTHERWISE. ABBREVIATIONS AND ACRONYMS FOR ALL ID TAGS AND PANEL FACEPLATES SHALL BE APPROVED BY THE ENGINEER.
6. ALL CONTROL DEVICES ARE TO BE MOUNTED IN ACCESSIBLE LOCATIONS. ALL DEVICES EXPOSED TO THE WEATHER SHALL BE HOUSED IN WEATHERPROOF ENCLOSURES.
7. AT THE COMPLETION OF THE JOB, TCSC SHALL CORRECT HIS DRAWINGS TO INCLUDE ANY CHANGES MADE DURING CONSTRUCTION. TCSC SHALL PROVIDE COLOR-CODED DRAWINGS INDICATED ALL TEMPERATURE ZONES AND EQUIPMENT (3 COPIES).

- G. OPERATION TEST AND OWNERS INSTRUCTION:
1. AT COMPLETION, TCSC SHALL OPERATE THE SYSTEM FOR A PERIOD OF AT LEAST THREE DAYS OF EIGHT HOURS EACH ON THE NEW SYSTEMS TO DEMONSTRATE FULFILLMENT OF THE REQUIREMENTS OF THE CONTRACT. DURING THIS TIME, ALL ADJUSTMENTS SHALL BE MADE TO THE EQUIPMENT SO THAT IT IS IN FIRST-CLASS OPERATING CONDITION. THE ENTIRE SYSTEM IS TO BE LEFT IN OPERATING CONDITION ACCEPTABLE TO THE ENGINEER.
2. UPON COMPLETION OF THE WORK AND ACCEPTANCE BY THE OWNER, TCSC SHALL PROVIDE ONE SCHEDULED FOUR-HOUR PERIOD OF FORMAL INSTRUCTION TO THE OWNER'S OPERATING PERSONNEL WHO HAVE RESPONSIBILITY FOR THE MECHANICAL SYSTEM.

H. SEQUENCE OF OPERATIONS:

1. HVAC UNITS:
1. NORMAL OPERATION:
1. UNITS SHALL BE CONTROLLED BY SPACE THERMOSTAT. FAN SHALL OPERATE CONTINUOUSLY DURING OCCUPIED MODE AND INTERMITTENTLY DURING UNOCCUPIED MODE.
2. HEATING AND COOLING SHALL BE ENABLED BY THERMOSTAT.
3. COOLING SETPOINT SHALL BE 73°F (ADJUSTABLE).
4. HEATING SETPOINT SHALL BE 68°F (ADJUSTABLE).
5. OUTSIDE AIR DAMPER SHALL OPEN DURING OCCUPIED MODE AND CLOSE DURING UNOCCUPIED MODE. OUTSIDE AIR DAMPER SHALL BE NORMALLY CLOSED AND RETURN TO NORMAL POSITION UPON LOSS OF POWER.

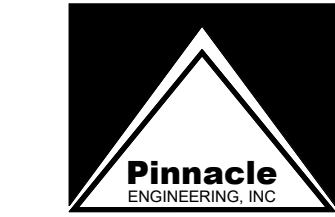
2. EXHAUST FANS:
1. INTERLOCK EXHAUST FANS AS NOTED ON SCHEDULE.

SECTION 15936 - REGISTERS, GRILLES AND DIFFUSERS

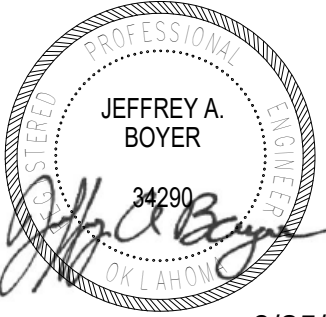
- A. PRODUCT PERFORMANCE DATA SHALL BE TAKEN FROM TESTS CONDUCTED IN ACCORDANCE WITH ANSI/ASHRAE 70, AND ARI-890.
- B. THE NOMINAL OR DUCT CONNECTION SIZE OF GRILLES (NOT OVERALL DIMENSIONS) IS GIVEN ON PLANS. GRILLES AND REGISTERS INCLUDING VOLUME CONTROLLERS SHALL BE CONSTRUCTED OF THE SAME MATERIALS SPECIFIED FOR THE GRILLE. THE GRILLE FINISH SHALL BE WHITE UNLESS NOTED OTHERWISE.
- C. REFER TO ARCHITECTURAL DRAWINGS FOR THE VARIOUS CEILING TYPES. REFER TO DRAWINGS OF REFLECTED CEILING PLANS FOR LOCATION OF CEILING DIFFUSERS AND GRILLES. MOUNTING FRAMES SHALL BE PROVIDED FOR ALL GRILLES AND REGISTERS MOUNTED IN DRYWALL, PLASTER, CONCRETE OR MASONRY OPENINGS.
- D. SUPPLIER SHALL CHECK ALL AIR DISTRIBUTION AND RETURN AIR DEVICES FOR PROPER PERFORMANCE, NOISE AND ACCESSORIES. ANY DEVICE EXCEEDING NOISE LEVEL HEREIN SPECIFIED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEERS.
- E. CONTRACTOR SHALL COORDINATE OPENINGS IN HARD CEILINGS, FURRED WALLS, MASONRY WALLS, AND FLOORS. MOUNT EACH DEVICE SECURELY TO AVOID RATTLING AND VIBRATION. DEVICES SHALL BE PARALLEL TO THE PLANE OF THE SURFACES THEY ARE MOUNTED.
- F. CEILING DIFFUSER TYPE A - TITUS MODEL TDC STEEL LOUVERED FACE DIFFUSER WITH 12 X 12 INCH MODULE AND 9 X 9 INCH UNIFORM BACKPAN. DIFFUSER SHALL INCLUDE ROUND NECK, REMOVABLE CORE OF FIXED DEFLECTION LOUVERS AND EQUALIZING GRID. DIFFUSER SHALL BE SUITABLE FOR SURFACE MOUNTING WITH AIR PATTERN AS SHOWN ON DRAWINGS.
- G. RETURN/EXHAUST/GRILLES TYPE A - TITUS MODEL 350 RL STEEL GRILLE. GRILL SHALL INCLUDE ONE SET OF FIXED BLADES SET AT 35° DEFLECTION ON 3/4 INCH SPACING.
- H. RETURN/EXHAUST/GRILLES TYPE B - TITUS MODEL 50F ALUMINUM EGG CRATE GRILL. GRILLE SHALL INCLUDE 2 X 2 X 2 INCH ALUMINUM GRID.
- I. RETURN/EXHAUST GRILLES TYPE C - TITUS MODEL 33R STEEL HEAVY DUTY BAR GRILLE. GRILLE SHALL INCLUDE ONE SET OF FIXED BLADES SET AT 38° DEFLECTION ON 2 INCH SPACING. BARS SHALL BE 14 GAUGE STEEL. BARS SHALL BE REINFORCED BY PERPENDICULAR STEEL BARS SPACED ON 6 INCH MAXIMUM CENTERS.

SECTION 15990 - TESTING, ADJUSTING AND BALANCING

- A. THE TEST AND BALANCE CONTRACTOR SHALL BE AN INDEPENDENT CONTRACTOR THAT REGULARLY PERFORMS AIR AND WATER SYSTEMS TESTING AND BALANCING. MINIMUM QUALIFICATIONS FOR ACCEPTANCE SHALL BE GENERAL MEMBERSHIP IN NEBB OR AABC, EXCEPT THAT AFFILIATION WITH MANUFACTURERS, INSTALLING, CONTRACTORS, OR ENGINEERING FIRMS MAY NOT PRECLUDE ACCEPTANCE.
- B. PERFORMANCE TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE PROCEDURES CONTAINED IN ASHRAE APPLICATIONS HANDBOOK, AABC OR NEBB NATIONAL STANDARDS.
- C. CUT INSULATION, DUCTS, PIPES, AND EQUIPMENT CABINETS FOR INSTALLATION OF TEST PROBES TO THE MINIMUM EXTENT NECESSARY TO ALLOW ADEQUATE PERFORMANCE OF PROCEDURES. AFTER TESTING AND BALANCING, CLOSE PROBE HOLES AND PATCH INSULATION WITH NEW MATERIALS IDENTICAL TO THOSE REMOVED. RESTORE VAPOR BARRIER AND FINISH ACCORDING TO THE INSULATION SPECIFICATIONS FOR THIS PROJECT.
- D. MARK EQUIPMENT SETTINGS WITH PAINT OR OTHER SUITABLE, PERMANENT IDENTIFICATION MATERIAL, INCLUDING DAMPER-CONTROL POSITIONS, VALVE INDICATORS, FAN-SPEED-CONTROL LEVERS, AND SIMILAR CONTROLS AND DEVICES, TO SHOW FINAL SETTINGS.
- E. SET HVAC SYSTEM AIRFLOW AND WATER FLOW RATES WITHIN THE FOLLOWING TOLERANCES:
1. SUPPLY, RETURN, AND EXHAUST FANS: PLUS 5 TO PLUS 10 PERCENT.
2. AIR OUTLETS AND INLETS: 0 TO MINUS 10 PERCENT.
3. HEATING-WATER FLOW RATE: 0 TO MINUS 10 PERCENT.
4. COOLING-WATER FLOW RATE: 0 TO MINUS 5 PERCENT.
- F. WITHIN 90 DAYS OF COMPLETING TESTING, ADJUSTING, AND BALANCING, PERFORM ADDITIONAL TESTING AND BALANCING TO VERIFY THAT BALANCED CONDITIONS ARE BEING MAINTAINED THROUGHOUT AND TO CORRECT UNUSUAL CONDITIONS. IF INITIAL TESTING, ADJUSTING, AND BALANCING PROCEDURES WERE NOT PERFORMED DURING NEAR-PEAK SUMMER AND WINTER CONDITIONS, PERFORM ADDITIONAL INSPECTIONS, TESTING, AND ADJUSTING DURING NEAR-PEAK SUMMER AND WINTER CONDITIONS.
- G. THE MECHANICAL CONTRACTOR'S RESPONSIBILITIES: FURNISH THE TEST AND BALANCE CONTRACTOR ONE COMPLETE SET OF ACCEPTED EQUIPMENT DATA AND ONE COMPLETE SET OF ACCEPTED MECHANICAL SHOP DRAWINGS. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADVISING THE TEST AND BALANCE CONTRACTOR OF ANY CHANGE(S) MADE TO THE SYSTEM(S) DURING THE CONSTRUCTION PROCESS. MECHANICAL CONTRACTOR SHALL PROVIDE DRAWINGS, SPECIFICATIONS, SHOP DRAWINGS, CONTROL DIAGRAMS, ETC. DETAILING THE CHANGE(S) TO THE TEST AND BALANCE CONTRACTOR. REPLACE AND/OR INSTALL PULLEYS, BELTS, DAMPERS AND TRIM PUMP IMPELLERS AS REQUIRED FOR THE CORRECT BALANCE AS DIRECTED BY THE TEST AND BALANCE CONTRACTOR. ALLocate TIME IN THE CONSTRUCTION SCHEDULE FOR TEST AND BALANCE PROCEDURE, ASSIST THE TEST AND BALANCE CONTRACTOR IN COORDINATING WORK WITH THE OTHER TRADES, AND PREPARE THE SYSTEM FOR TESTING AND BALANCING.



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6/25/26

Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

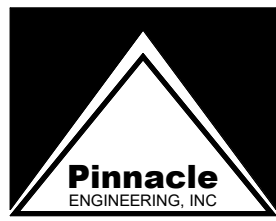
2026
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Mechanical
Specifications

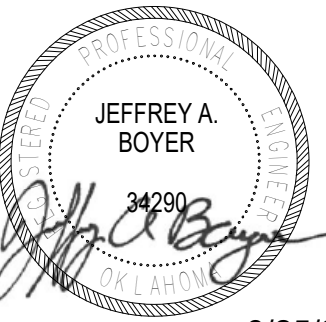
Project number	25048
Date	04/17/2026
Drawn by	CA
Checked by	JB

M0.03

Scale 12" = 1'-0"



Engineering & Design Consultants
2111 Parkway Office Circle, Suite 125
Birmingham, AL 35244
(205) 733-6912 FAX: (205) 733-6913
Job No.26087



6/25/26

Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

2026

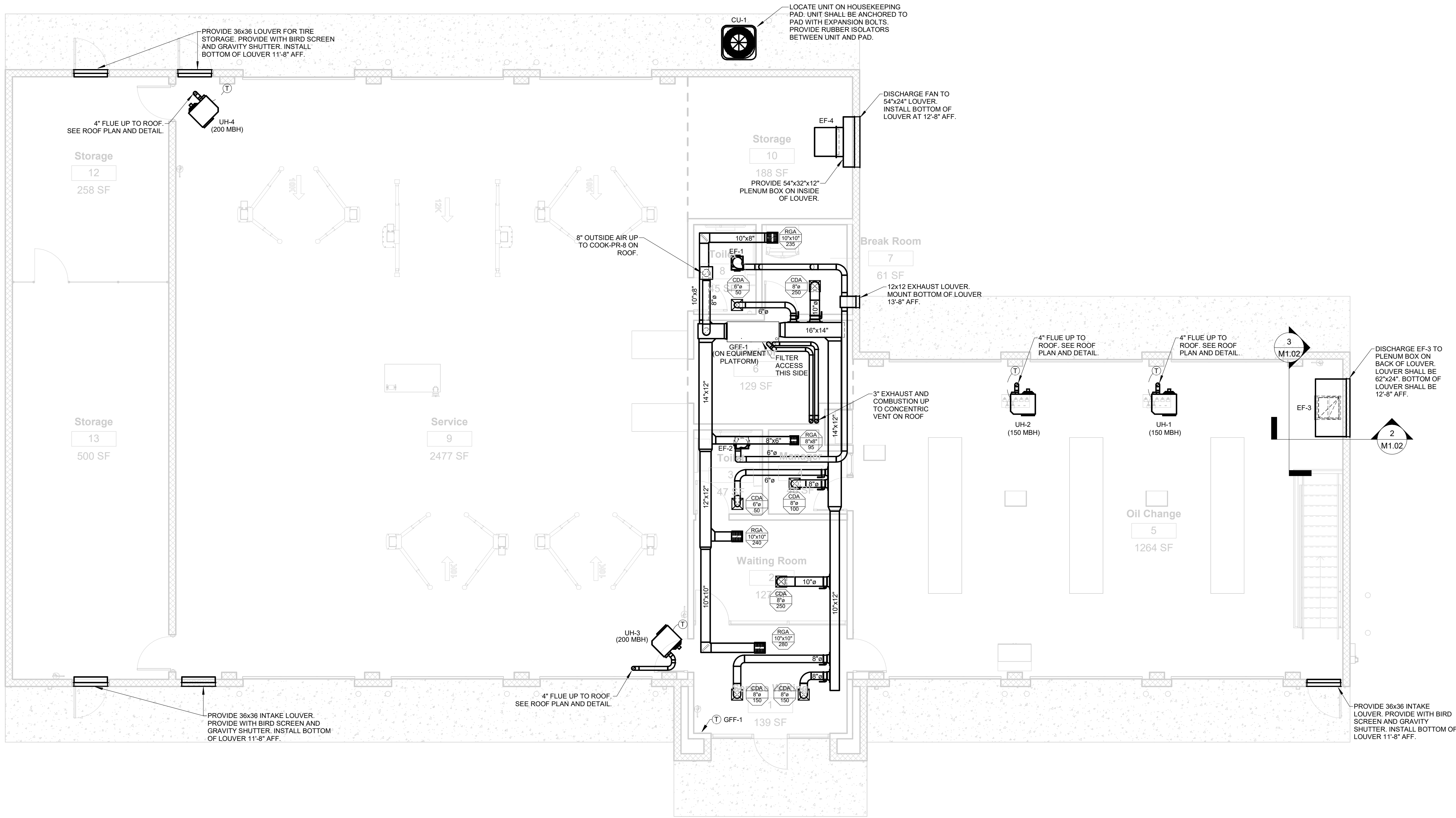
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Mechanical Floor Plan

Project number	25048
Date	04/17/2026
Drawn by	CA
Checked by	JB

M1.01

Scale As indicated



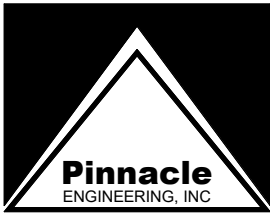
MAIN FLOOR PLAN
MECHANICAL
3/16" = 1'-0"



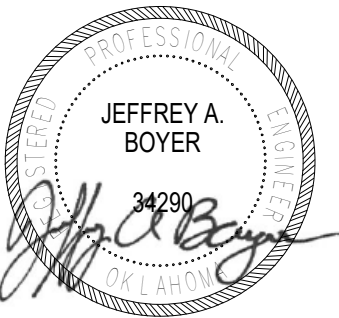
GENERAL NOTES:

- VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
- SPACE ABOVE CEILING IS LIMITED. CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, PLUMBING, STRUCTURAL, AND ARCHITECTURAL WORK IS CRITICAL TO DUCTWORK INSTALLATION.
- PROVIDE NECESSARY OFFSETS IN PIPING, ELECTRICAL CONDUIT, AND DUCTWORK AS REQUIRED TO ACCOMMODATE NEW WORK. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL DETAILS NOR CHANGES IN DUCTWORK ELEVATIONS NECESSARY FOR COMPLETE INSTALLATION.
- COORDINATE CEILING AIR DEVICE LOCATIONS WITH LIGHTING PLAN AND ARCHITECT'S REFLECTED CEILING PLAN.
- DUCTWORK SHALL BE RUN TIGHT TO STRUCTURE. AVOID CROSSING OVER LIGHTS AND OTHER DUCTS DUE TO TIGHT CLEARANCES.
- LOUVERS SHALL BE RUSKIN ELFR375DX OR APPROVED EQUAL. PROVIDE UNIT WITH BIRDSCREEN AND MILL ALUMINUM FINISH. COORDINATE EXACT HEIGHT AND COLOR OF LOUVER WITH ARCHITECT PRIOR TO ORDERING.
- MOUNT TEMPERATURE CONTROLS 48" ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION WITH ARCHITECT.
- SPILL CONDENSATE FROM AHUS INTO NEAREST FLOOR DRAIN.
- PROVIDE ENGRAVED PLASTIC LABEL AT TERMINATION OF EACH AUXILIARY CONDENSATE DRAIN LINE READING AS FOLLOWS:
"AHU-### AUXILIARY DRAIN LINE."
"NOTIFY MAINTENANCE PERSONNEL WHEN WATER IS FLOWING"
- CONNECT CONDENSATE DRAIN PIPING TO AIR HANDLING UNITS IN ACCORDANCE WITH DETAILS.
- OUTSIDE AIR VENTILATION INTAKES FOR OIL CHANGE AND SERVICE AREAS WILL BE PROVIDED BY OPEN ROLL-UP DOORS OR INTAKE LOUVERS. DOORS SHALL BE OPEN WHILE VENTILATION SYSTEM IS ENABLED.

7/1/2026 10:32:12 AM



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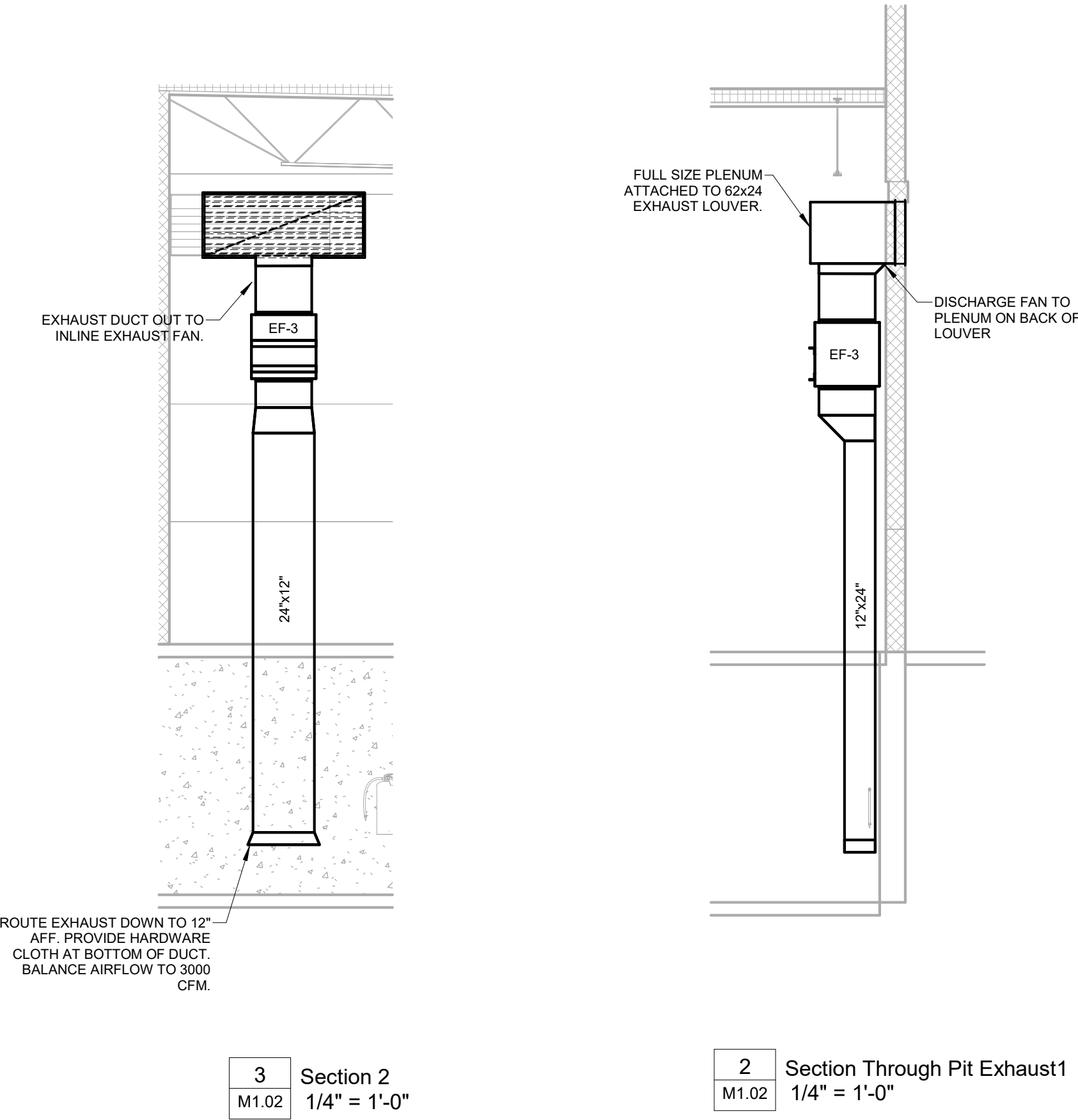
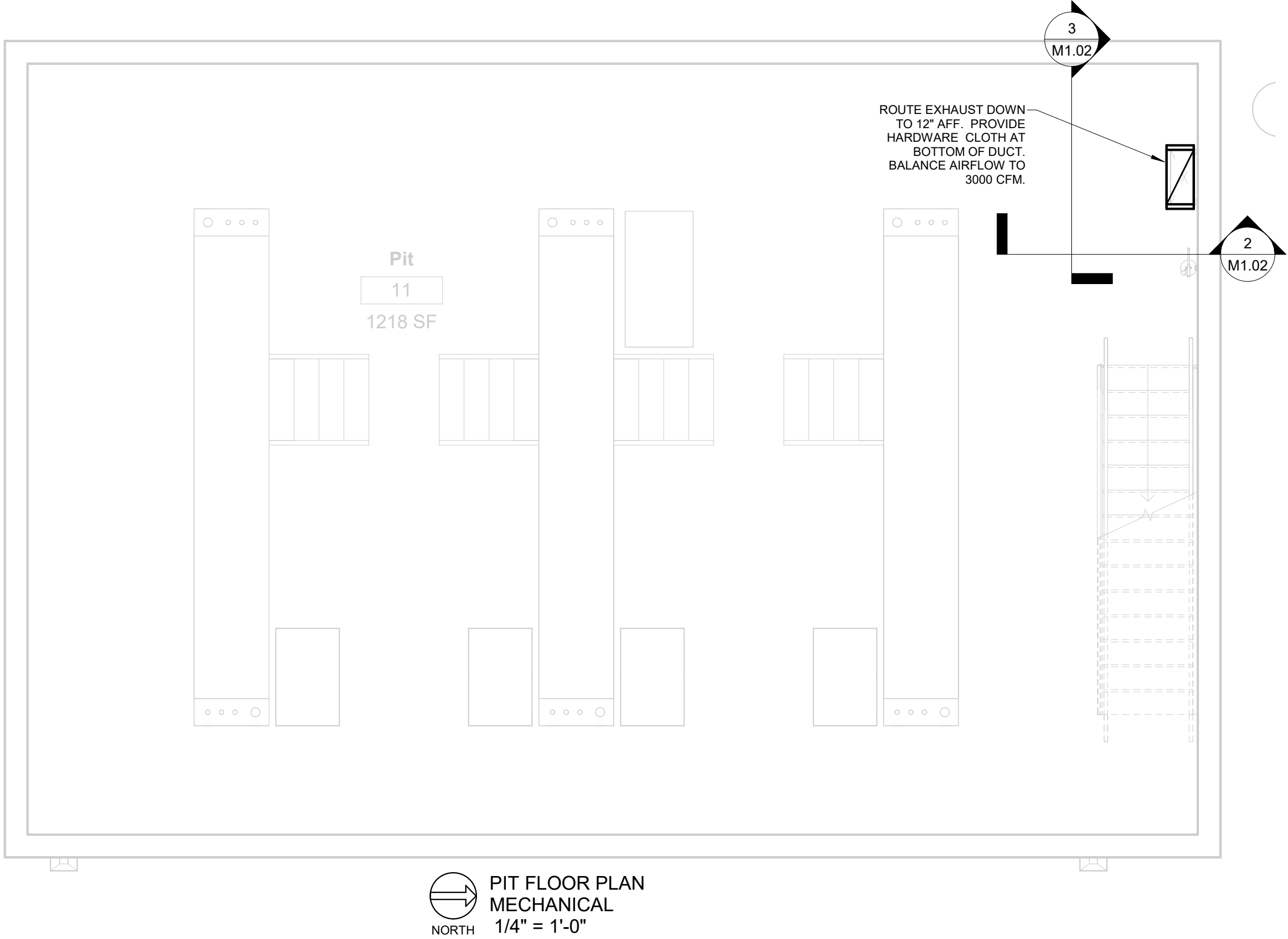
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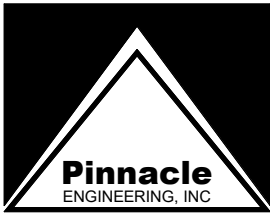
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Partial Mechanical
Floor Plans - Pit
and Platform

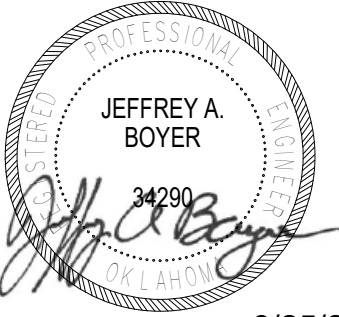
Project number	25048
Date	04/17/2026
Drawn by	CA
Checked by	JB
M1.02	
Scale	As indicated



- GENERAL NOTES:
- VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
 - SPACE ABOVE CEILING IS LIMITED. CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, PLUMBING, STRUCTURAL, AND ARCHITECTURAL WORK IS CRITICAL TO DUCTWORK INSTALLATION.
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"NOTIFY MAINTENANCE PERSONNEL WHEN WATER IS FLOWING"
 - CONNECT CONDENSATE DRAIN PIPING TO AHU IN ACCORDANCE WITH DETAILS.



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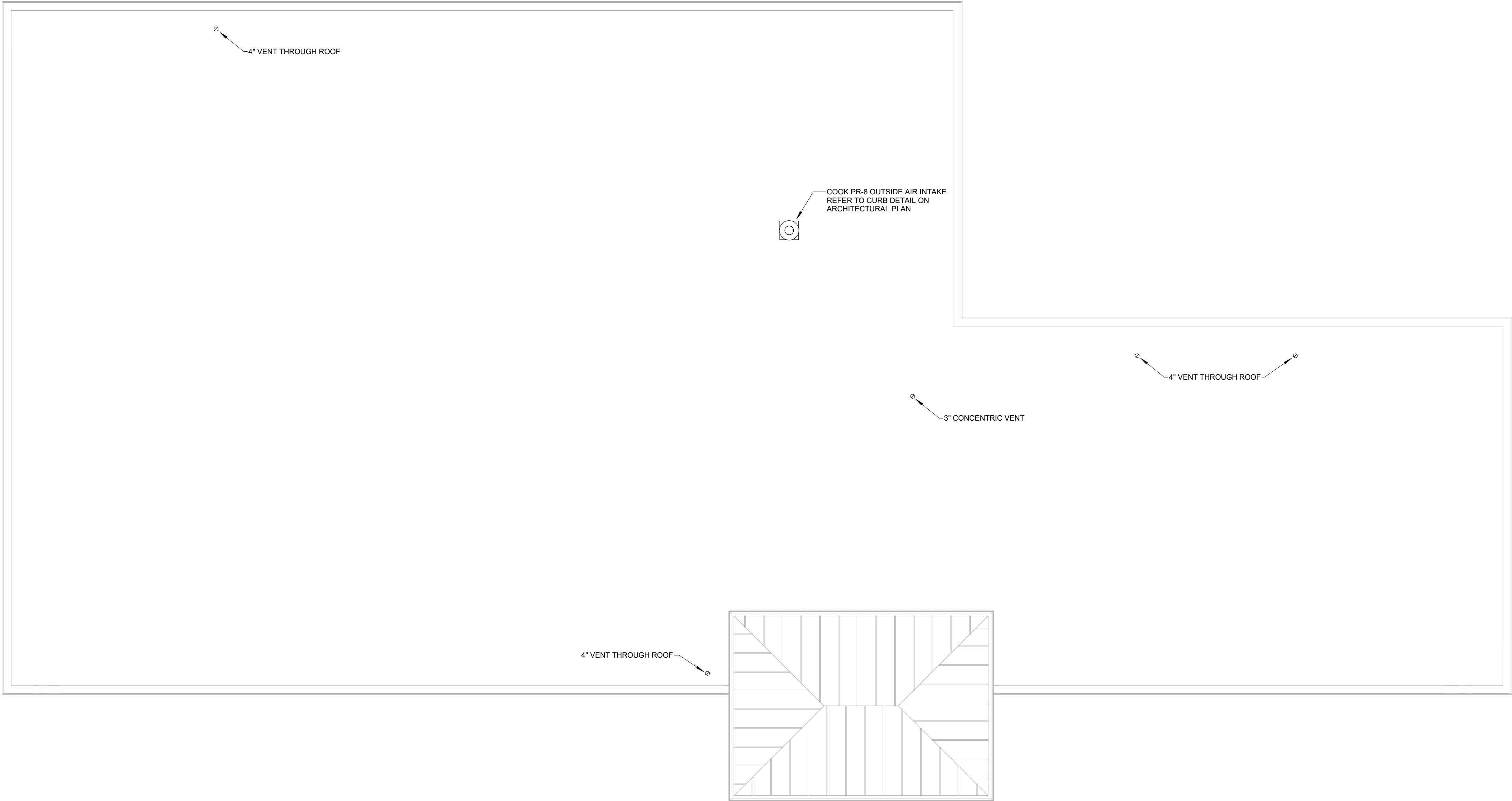
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Mechanical Roof Plan

Project number	25048
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Checked by	JB

M1.03

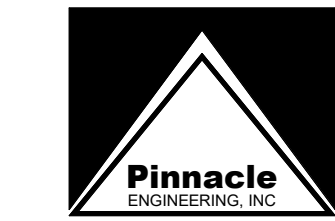
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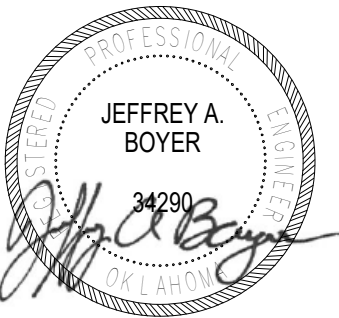
MECHANICAL ROOF PLAN
3/16" = 1'-0"
NORTH

GENERAL NOTES:

- ① VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.



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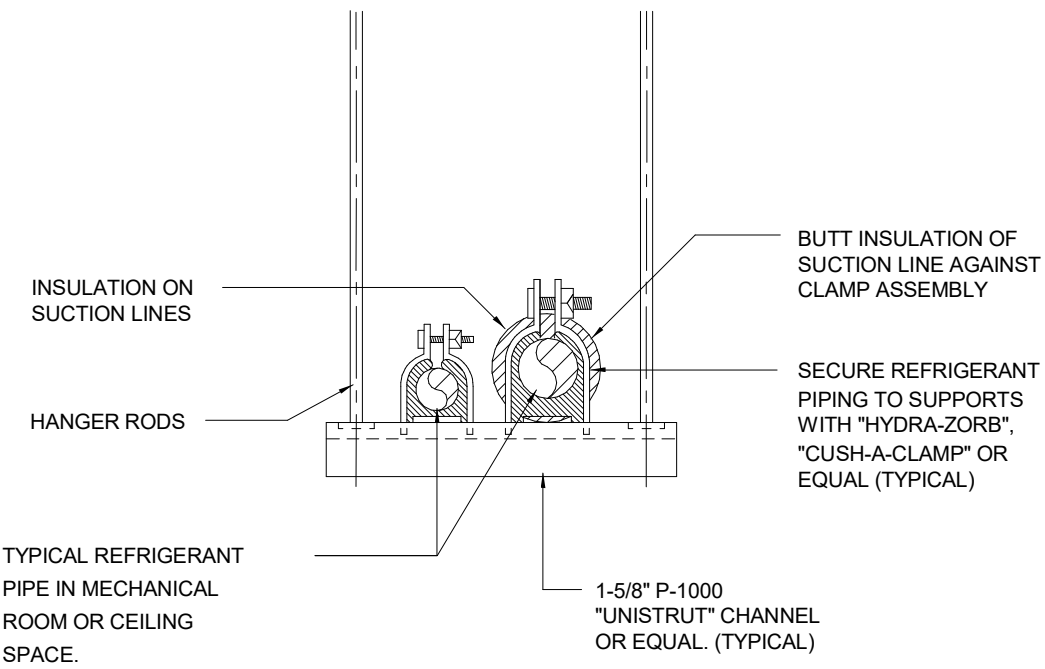
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Mechanical Details

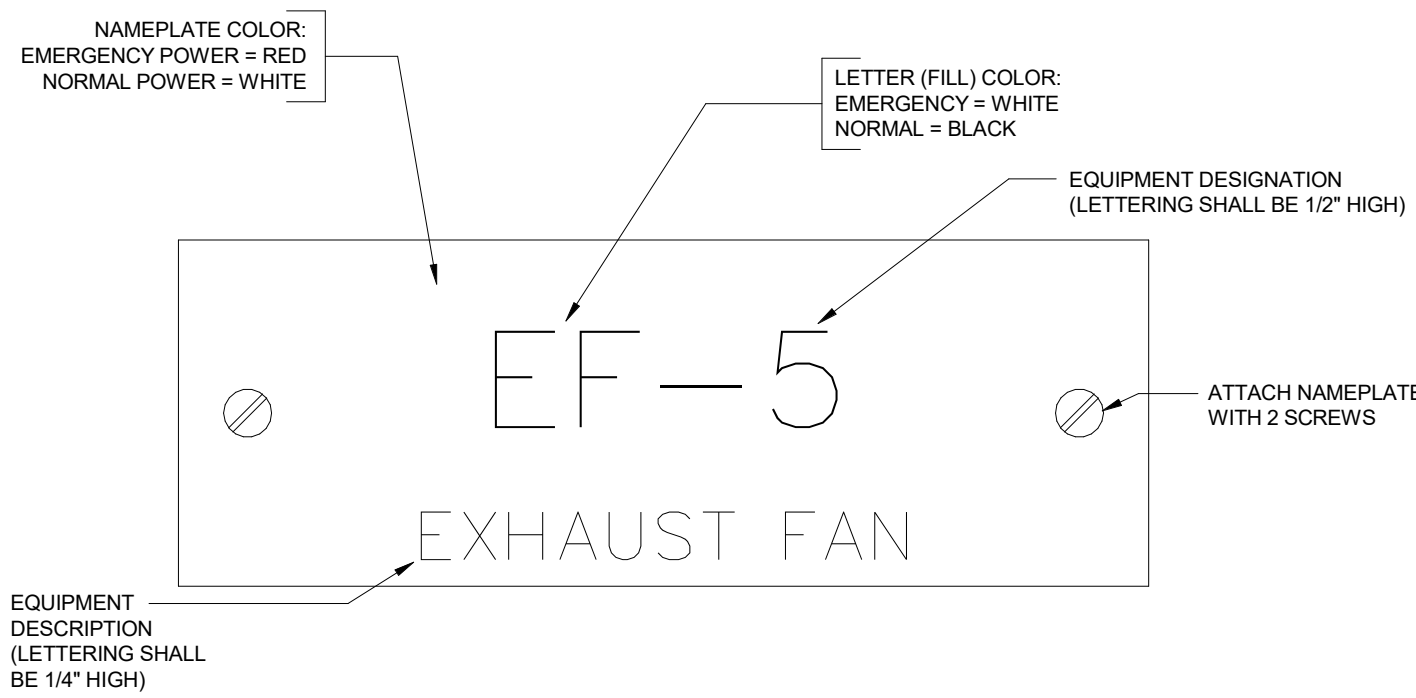
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M2.01

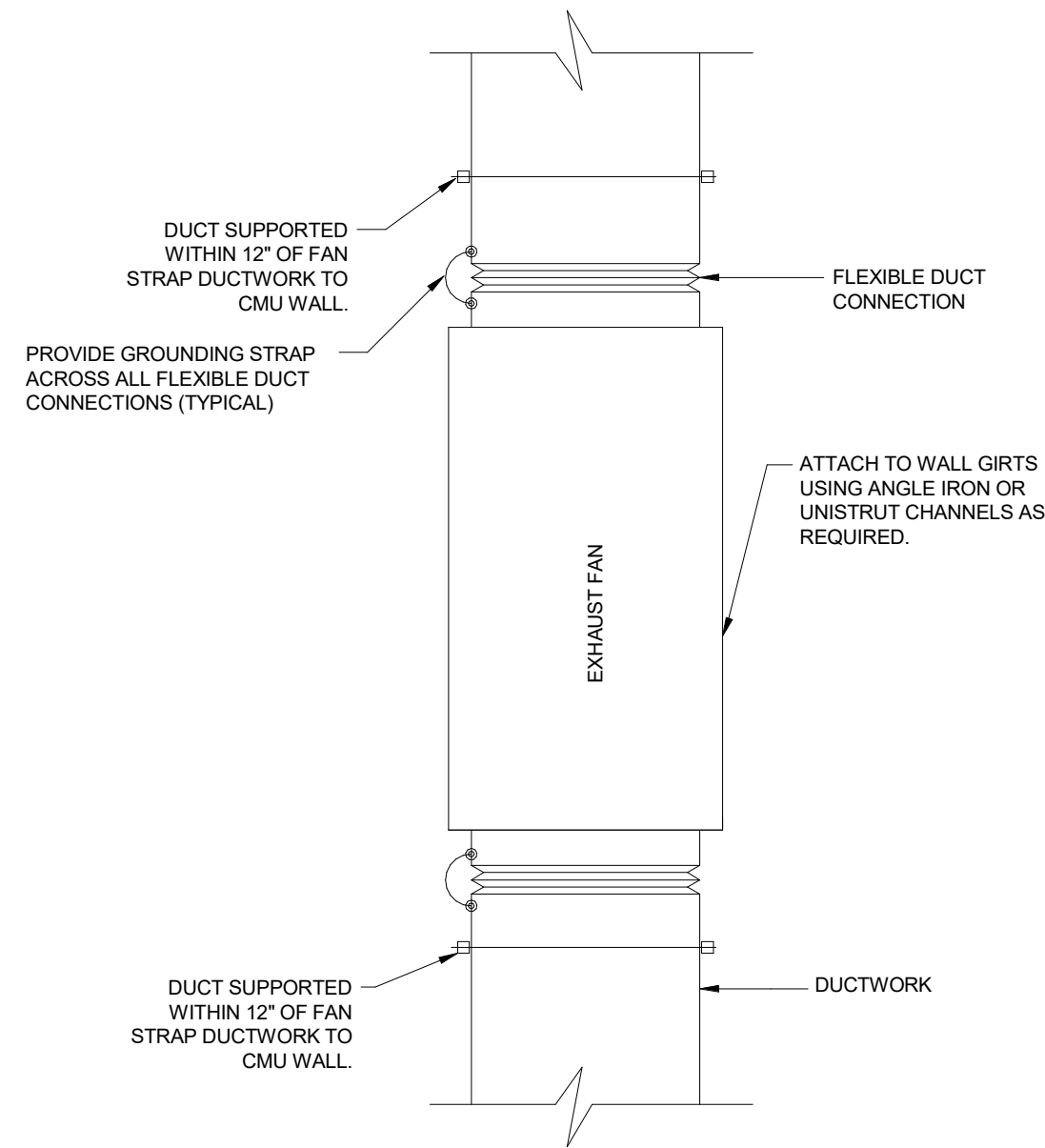
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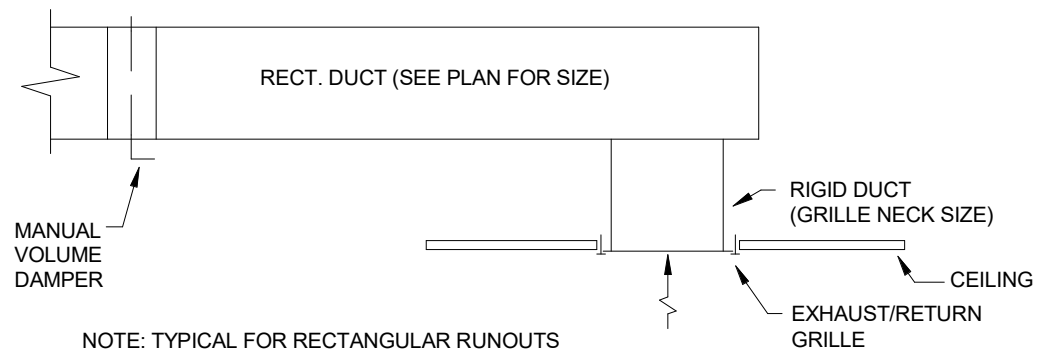
7 M2.01 REFRIGERANT PIPING SUPPORT DETAIL
TYPICAL FOR PIPING SUSPENDED FROM STRUCTURE
NO SCALE



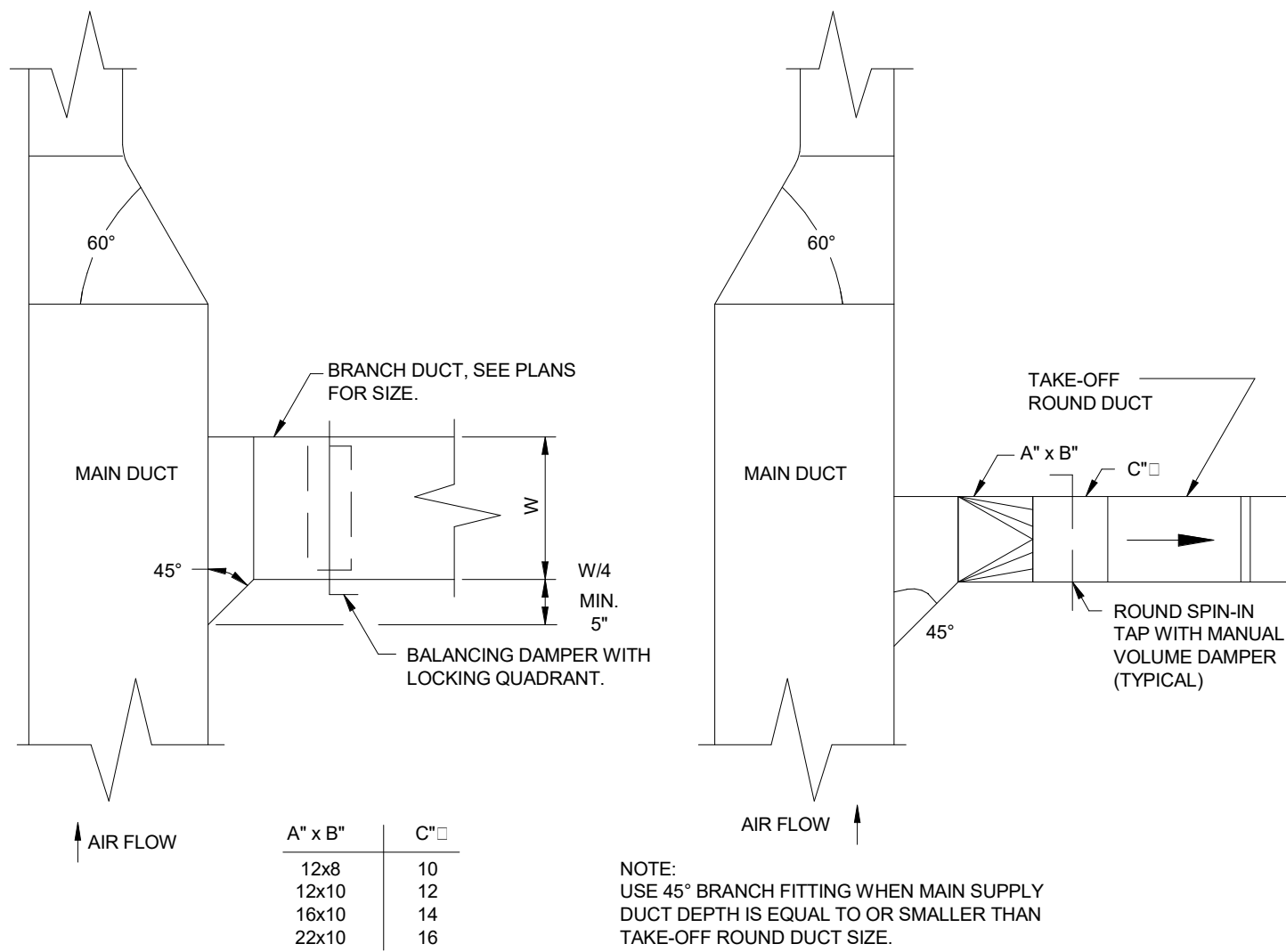
8 M2.01 MECHANICAL EQUIPMENT NAMEPLATE DETAIL
NO SCALE



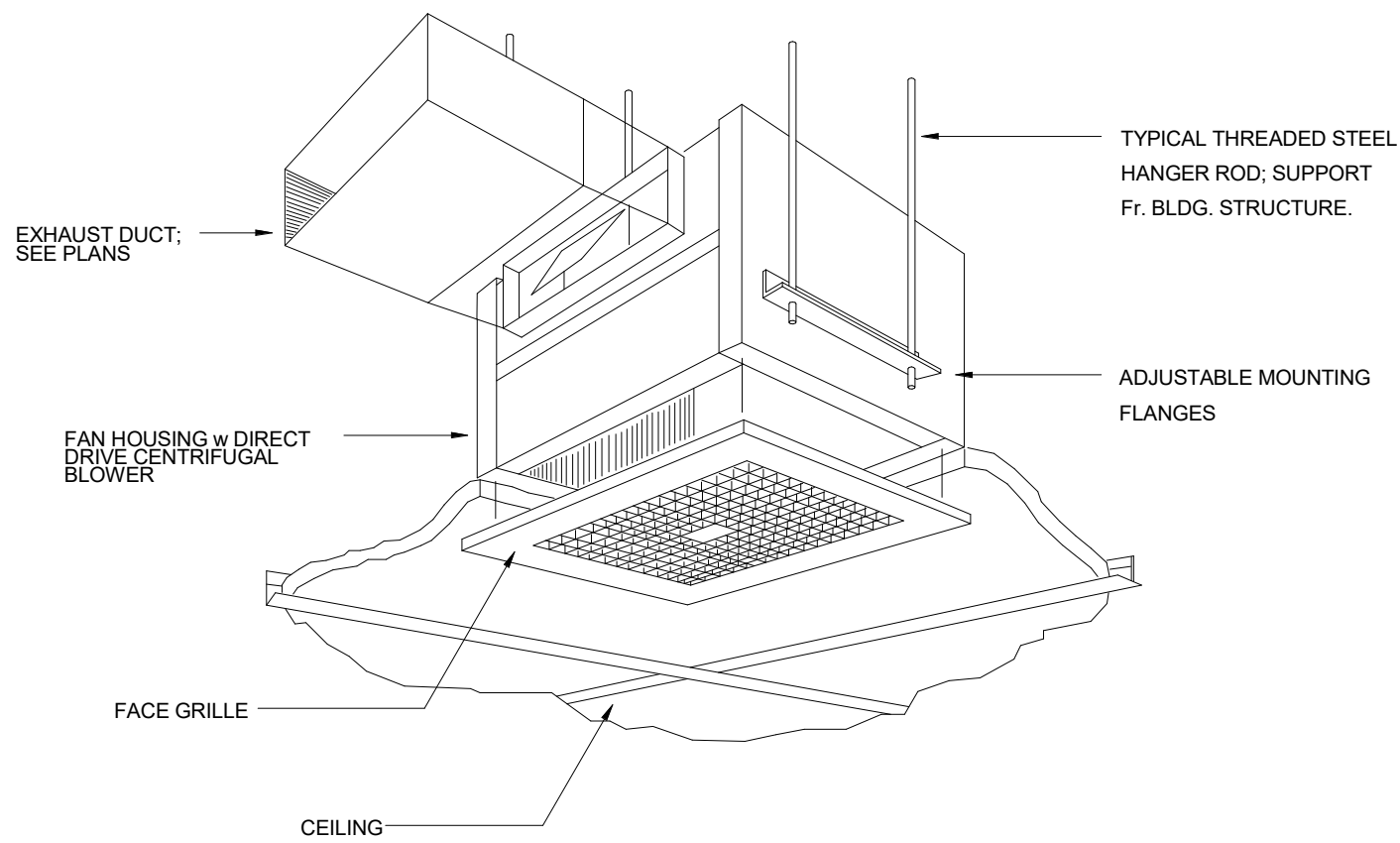
9 M2.01 INLINE EXHAUST FAN DETAIL
NO SCALE



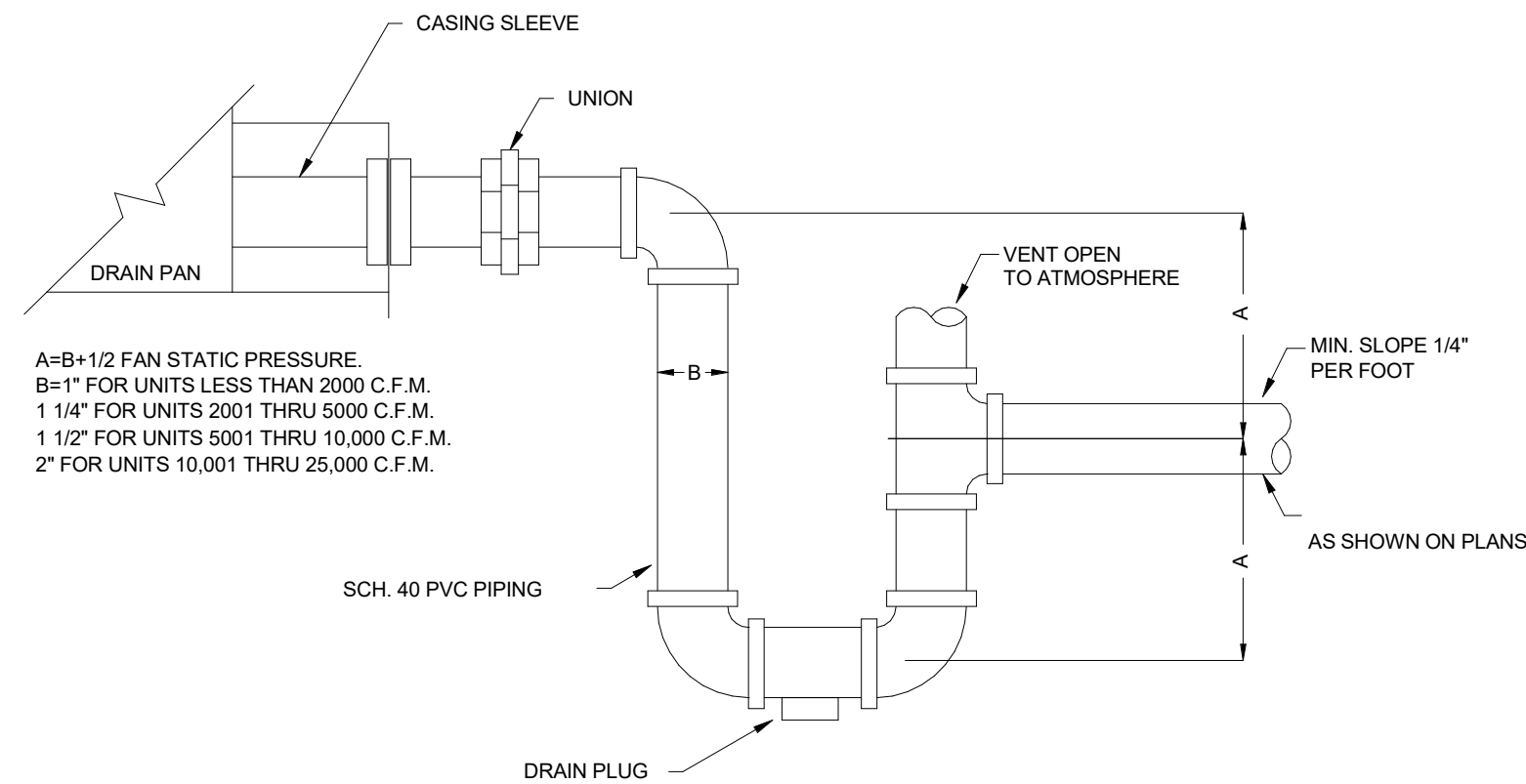
4 M2.01 TYPICAL RETURN AND EXHAUST RUN-OUT DETAIL
NO SCALE



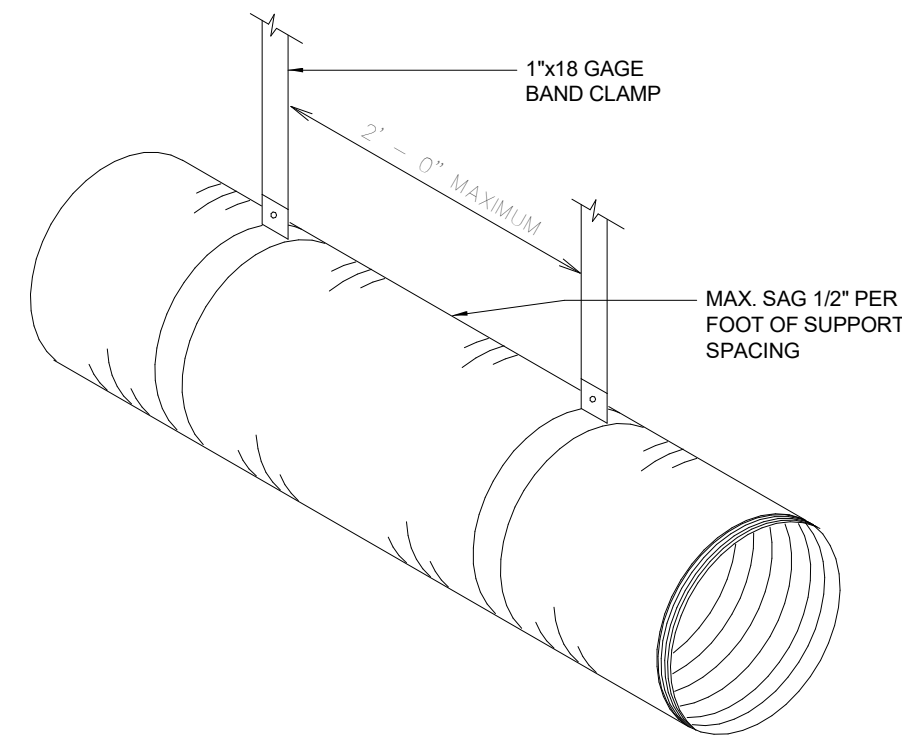
5 M2.01 TYPICAL DUCT TAKEOFF DETAIL
NO SCALE



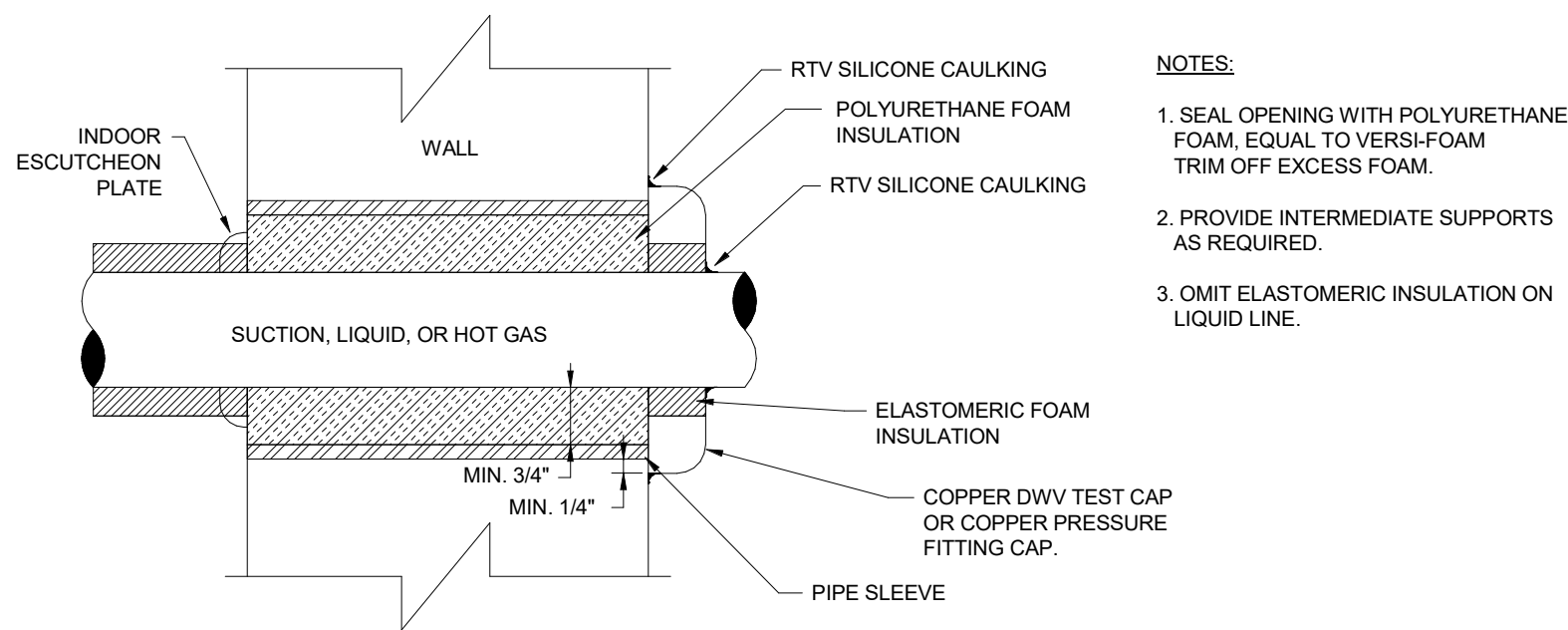
6 M2.01 EXHAUST FAN INSTALLATION DETAIL(CEILING)
NO SCALE



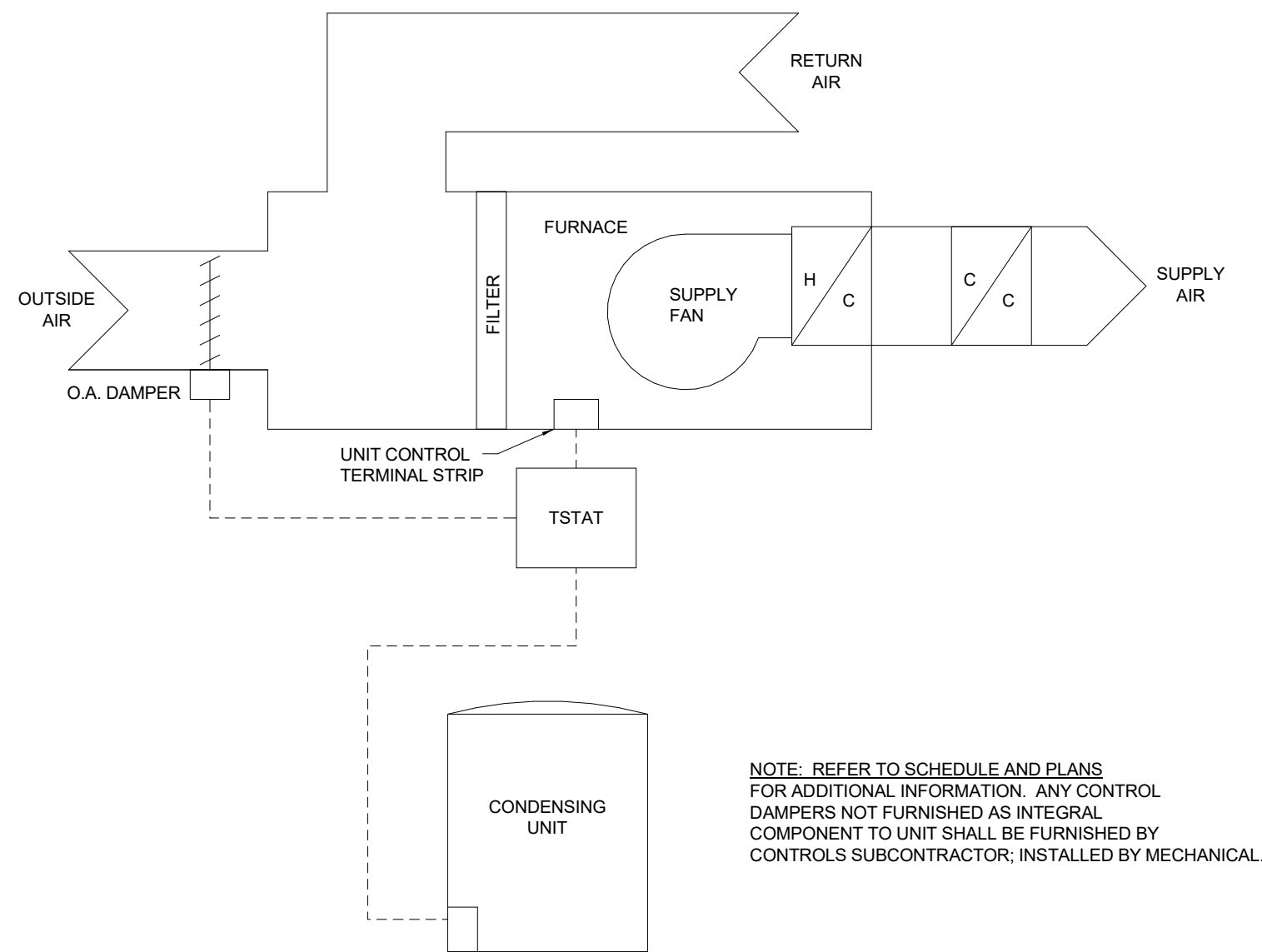
1 M2.01 CONDENSATE DRAIN TRAP DETAIL
NO SCALE



2 M2.01 FLEXIBLE DUCT SUPPORT DETAIL
NO SCALE

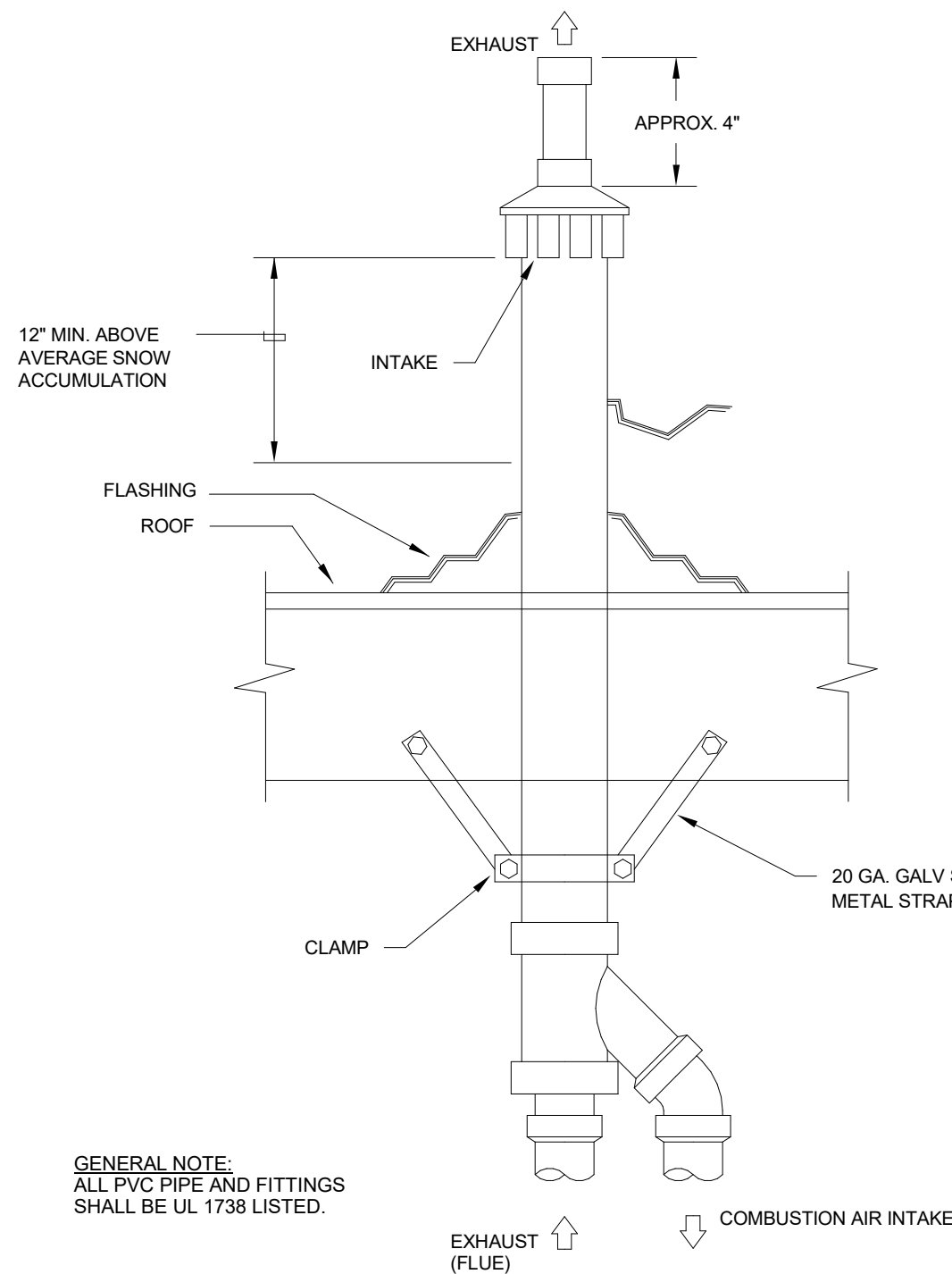


3 M2.01 REFRIGERANT LINE - WALL PENETRATION DETAIL
NO SCALE



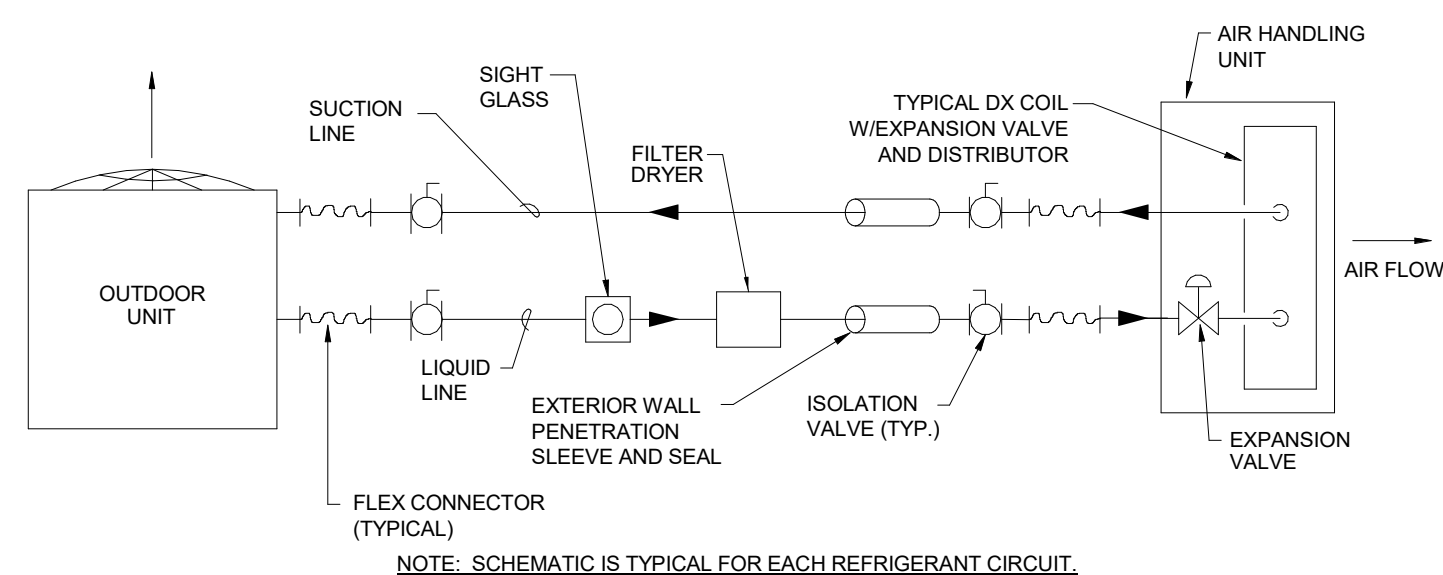
7 HVAC CONTROL DIAGRAM
TYPICAL
NO SCALE

NOTE: REFER TO SCHEDULE AND PLANS FOR ADDITIONAL INFORMATION. ANY CONTROL DAMPERS NOT FURNISHED AS INTEGRAL COMPONENT TO UNIT SHALL BE FURNISHED BY CONTROLS SUBCONTRACTOR; INSTALLED BY MECHANICAL.



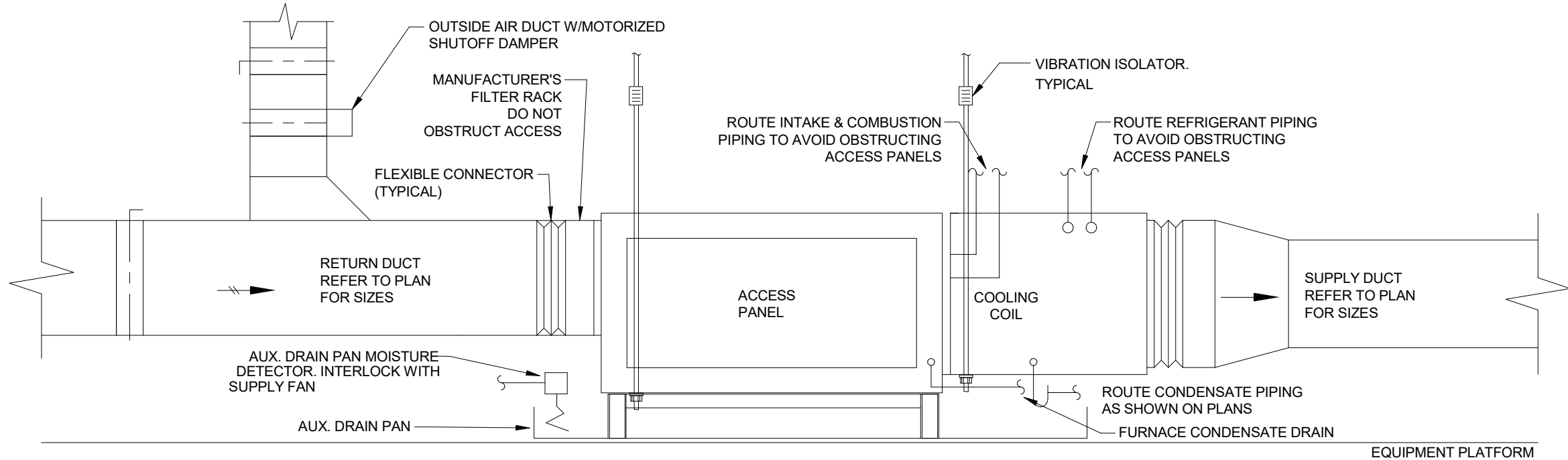
GENERAL NOTE:
ALL PVC PIPE AND FITTINGS
SHALL BE UL 1738 LISTED.

8 CONCENTRIC ROOF TERMINATION DETAIL
NO SCALE

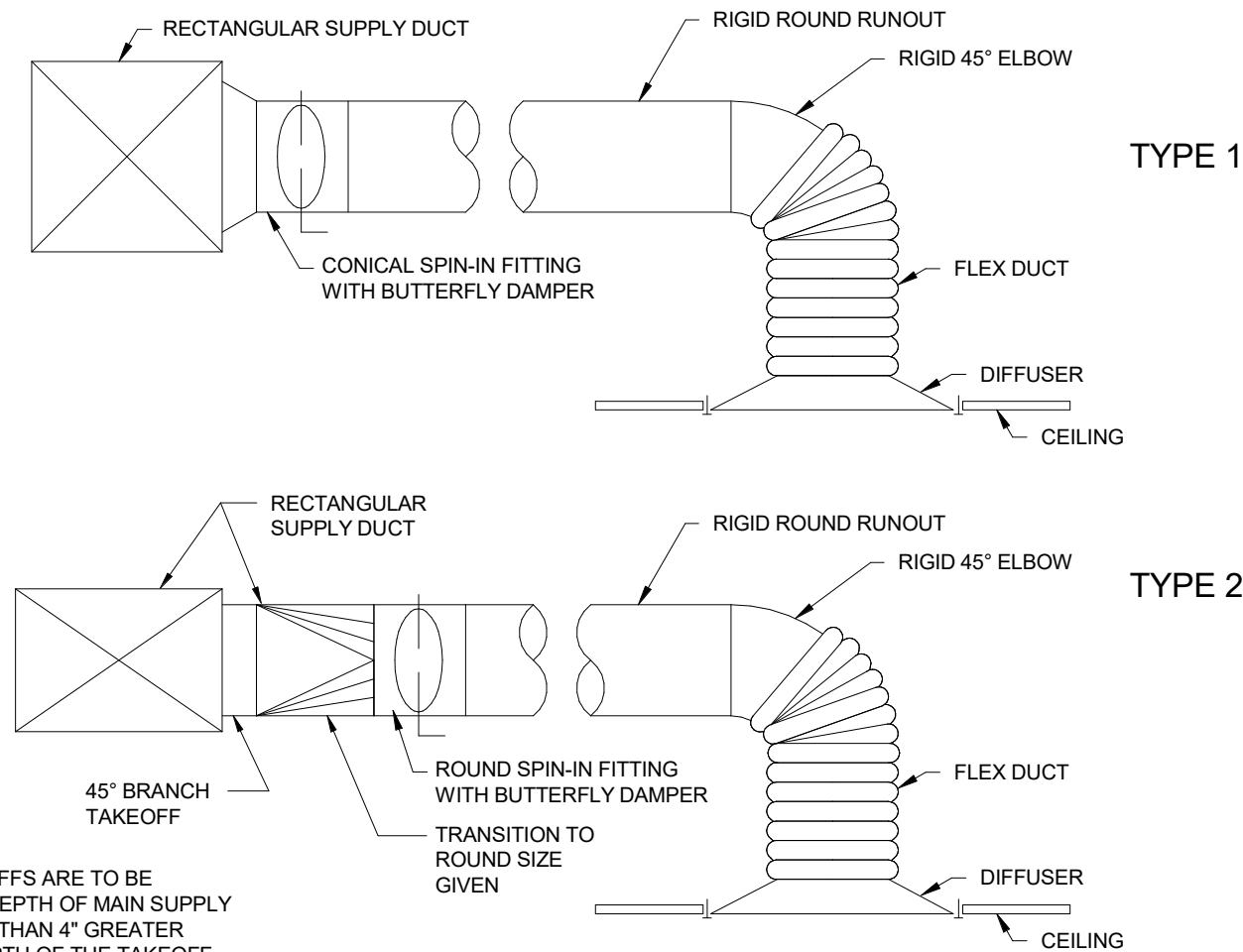


NOTE: SCHEMATIC IS TYPICAL FOR EACH REFRIGERANT CIRCUIT.

9 REFRIGERANT PIPING DETAIL
NO SCALE

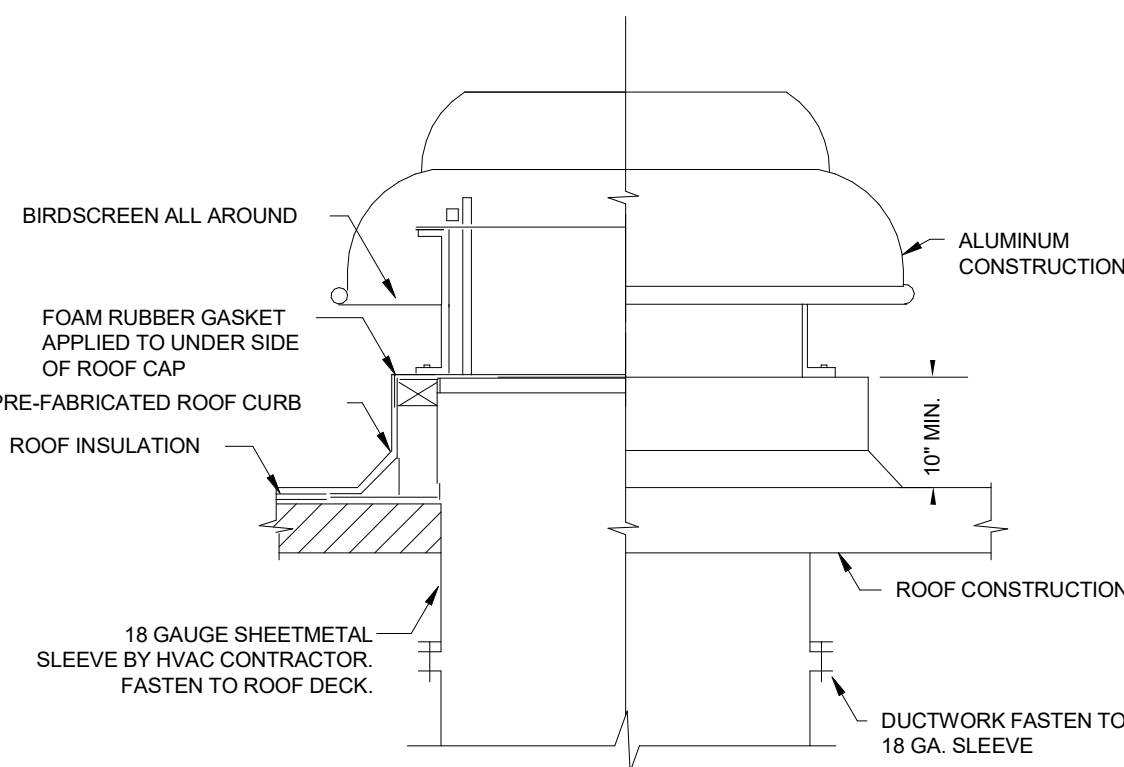


4 FURNACE AND COOLING COIL UNIT DETAIL
NO SCALE

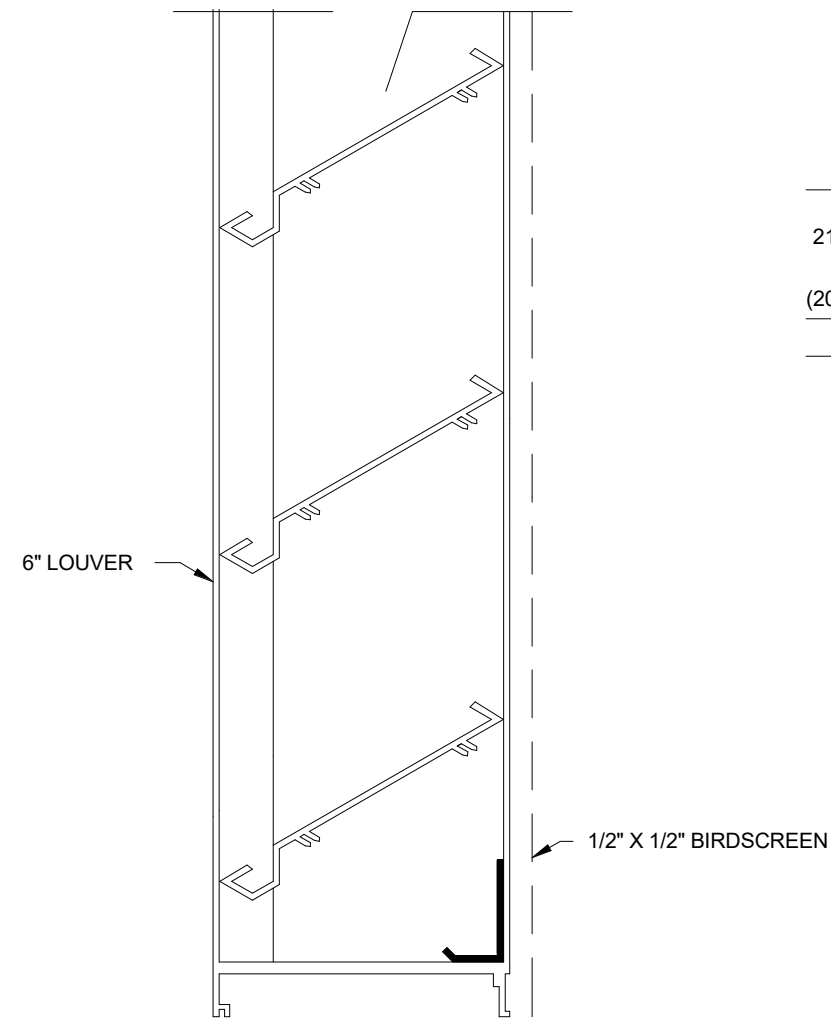


NOTE:
TYPE 2 TAKEOFFS ARE TO BE
USED WHEN DEPTH OF MAIN SUPPLY
DUCT IS LESS THAN 4" GREATER
THAN THE DEPTH OF THE TAKEOFF.

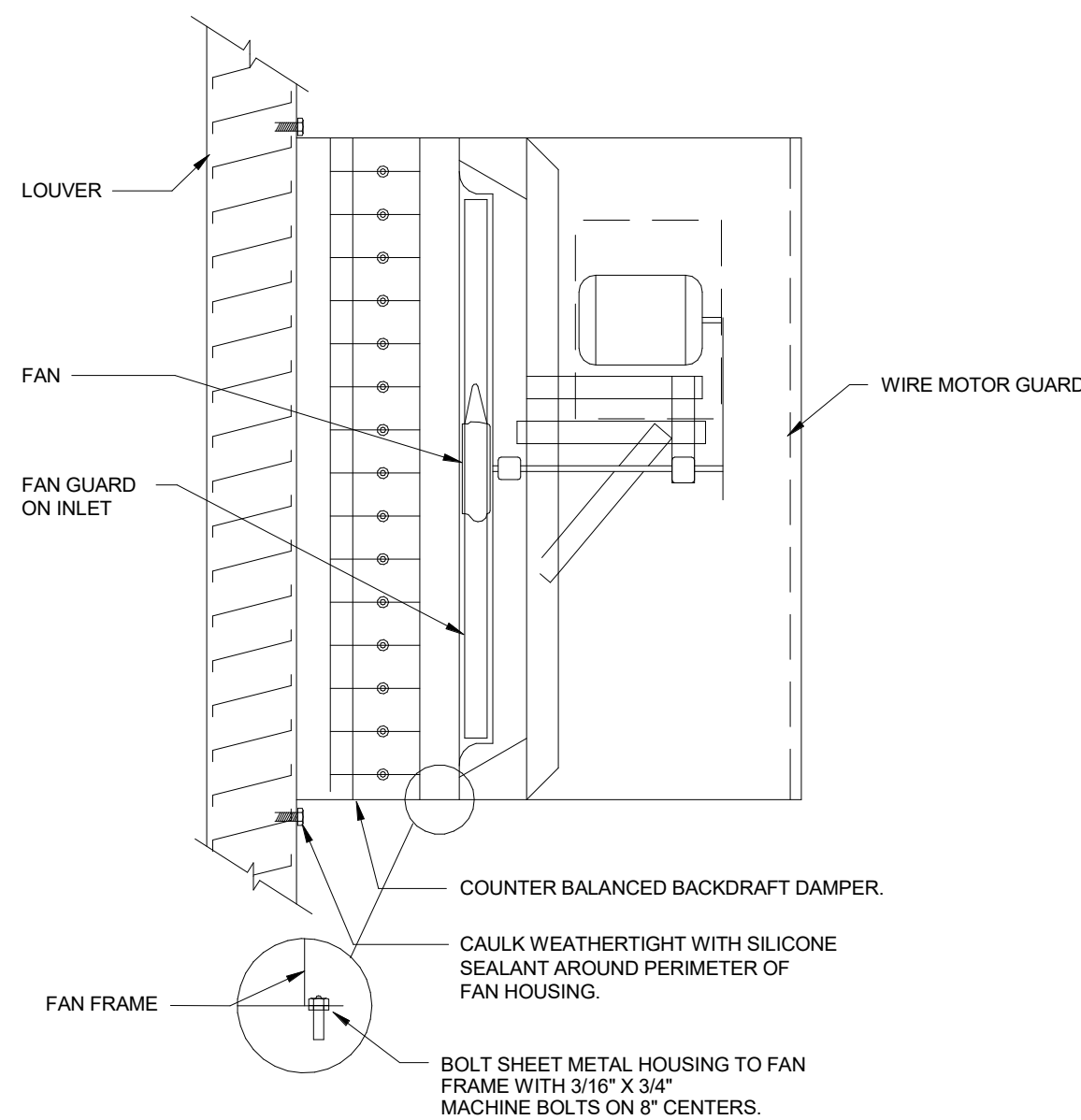
5 TYPICAL DIFFUSER RUN-OUT DETAIL
NO SCALE



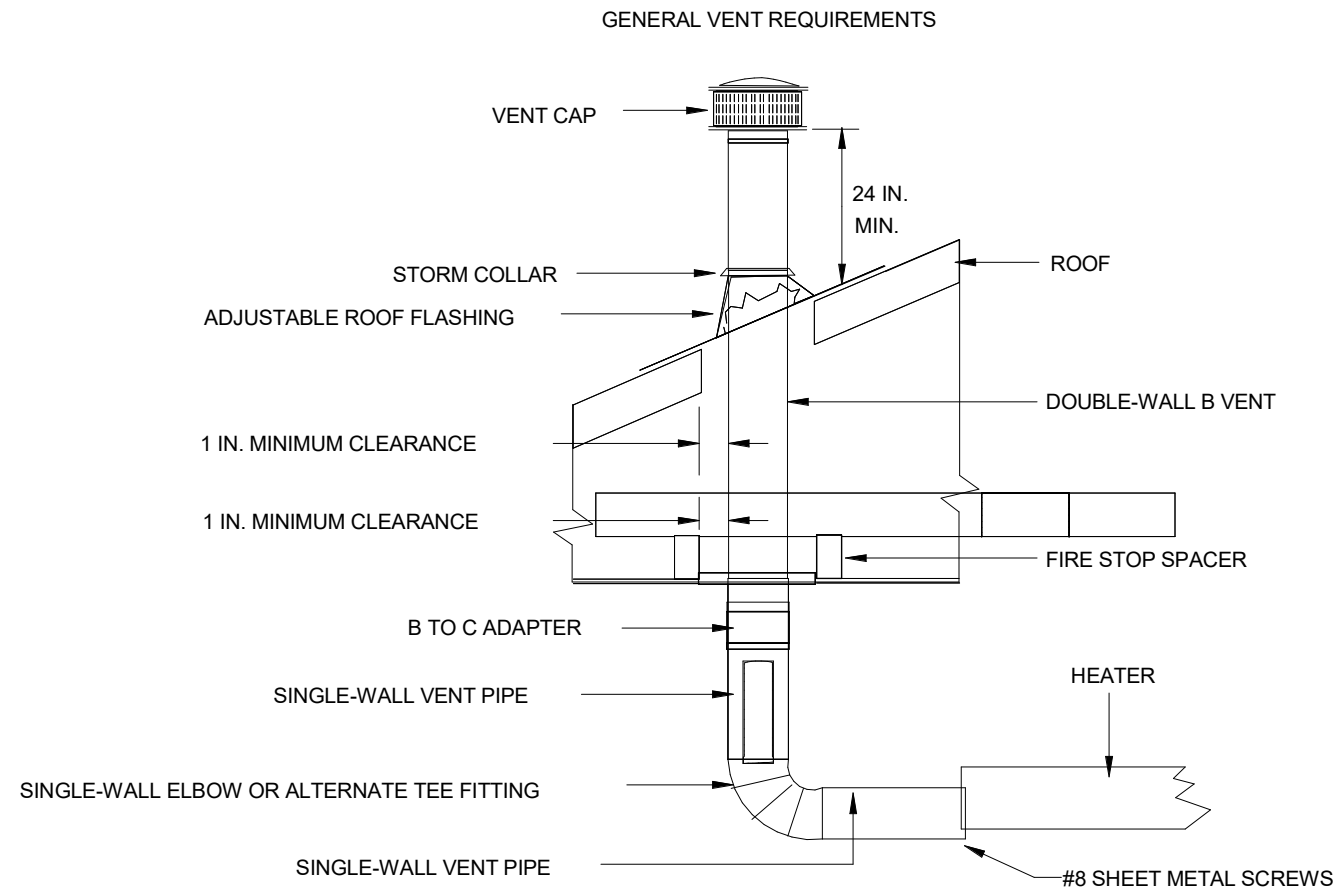
6 EXHAUST DOME DETAIL
NO SCALE



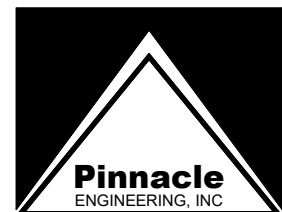
1 LOUVER DETAIL
NO SCALE



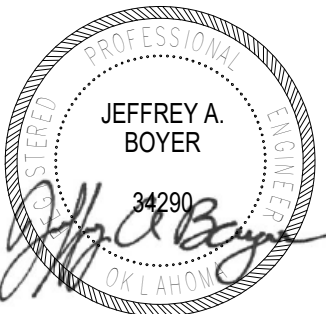
2 WALL EXHAUST FAN OR SUPPLY DETAIL
NO SCALE



3 HEATER VENTING DETAIL
NO SCALE



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Mechanical Details

Project number	25048
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M2.02

Scale 12" = 1'-0"

PLUMBING LEGEND, SYMBOLS AND ABBREVIATIONS					
	DOMESTIC COLD WATER		BALL VALVE	ABV	ABOVE
	DOMESTIC HOT WATER		VALVE IN VERTICAL	AFF	ABOVE FINISHED FLOOR
	DOMESTIC HOT WATER RETURN		CAP ON END OF PIPE	INV	INVERT
	SANITARY VENT		CLEANOUT - FLOOR TYPE	BFF	BELOW FINISHED FLOOR
	SANITARY WASTE		CLEANOUT - WALL TYPE	CW	COLD WATER
			P-TRAP	DN	DOWN
			PIPE TURNING DOWN	EX	EXISTING
			PIPE TURNING UP	HW	HOT WATER
			TEE DOWN	WS	WASTE STACK
			TEE UP	VS	VENT STACK
			TIE NEW INTO EXISTING	AC	ABOVE CEILING
			PLUMBING FIXTURE NUMBER	WHA	WATER HAMMER ARRESTOR
			RISER NUMBER	BFG	BELOW FINISHED GRADE
			WATER HAMMER ARRESTOR	TMV	THERMOSTATIC MIXING VALVE
			PLUG TYPE CLEANOUT	TP	TRAP PRIMER
			BALANCING VALVE	DS	DOWNSPOUT
			CHECK VALVE	UG	UNDER GROUND
			GATE VALVE		
			REDUCED PRESSURE ZONE BFP		
			THERMOSTATIC MIXING VALVE		
			FLOOR SINK		
			FLOOR DRAIN		
			ROOF DRAIN/OVERFLOW DRAIN		
			FOOD SERVICE EQUIPMENT		

PLUMBING FIXTURE CONNECTION SCHEDULE						
EQUIPMENT NO.	DESCRIPTION	HOT WATER	COLD WATER	WASTE	VENT	REMARKS
WC-1	WATER CLOSET, ADA COMPLIANT	--	1/2"	4"	2"	PRESSURE ASSIST TANK TYPE
EW-1	EYEWASH	1/2"	1/2"	2"	1-1/2"	PROVIDE WITH MIXING VALVE
EW-1	ELECTRIC WATER COOLER	--	1/2"	2"	1-1/2"	WALL MOUNT ADA WITH BOTTLE FILLER
LAV-1	LAVATORY, ADA COMPLIANT	1/2"	1/2"	1-1/2"	1-1/2"	WALL MOUNTED, PROVIDE TRAP WRAP AND MIXING VALVE
SK-1	SERVICE SINK	1/2"	1/2"	2"	1-1/2"	ROUTE TO INTERCEPTOR
WH-1	WALL HYDRANT	--	1/2"	--	--	--
FD-1	FLOOR DRAIN	--	--	2"	1-1/2"	PROVIDE TRAP GUARD
CMVB	COFFEE MAKER VALVE BOX	--	1/2"	--	--	--

ELECTRIC WATER HEATER SCHEDULE													
EQUIPMENT NO.	MANUFACTURER AND MODEL NO.	SERVICE	EFF (%)	ENTERING WATER TEMP (°F)	LEAVING WATER TEMP (°F)	RECOVERY RATE (GPH)	STORAGE CAPACITY (GAL.)	TANK DIMENSIONS		ELECTRICAL			REMARKS
								HEIGHT (INCHES)	DIAMETER (INCHES)	HEATING ELEMENTS		VOLTS/PH/HZ	
										WATTAGE	QNTY		
EW-1	A.O. SMITH ECS-30X	BATHROOMS/EYEWASH	--	60	120	21	30	3'-3"	1'-8"	4.5 KW	1	240 / 1 / 60	

RECIRCULATION PUMP SCHEDULE										
EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	SERVICE	TYPE	FLOW (GPM)	HEAD (FT.)	RPM	ELECTRICAL			REMARKS
							HP	DISCONNECT	VOLTS/PH./HZ.	
REC-1	TACO 2400-10S	HOT WATER RETURN	INLINE	2	10	3450	1/10	BY DIV. 16	120/1/60	1)

REMARKS:
1) PROVIDE AQUASTAT AND TIMER. INSTALL IN ACCORDANCE WITH IECC REQUIREMENTS.
2) PUMP SHALL BE STAINLESS STEEL BODY FOR DOMESTIC USE.

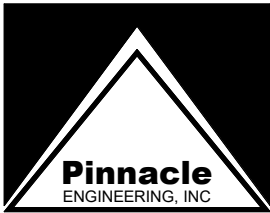
GREASE INTERCEPTOR SCHEDULE									
EQUIPMENT NO.	MANUFACTURER/ MODEL NO.	FLOW RATE (GPM)	LIQUID HOLDING CAPACITY (GAL)	CONNECTION SIZES		UNIT DIMENSIONS			REMARKS
				INLET (IN.)	OUTLET (IN.)	LENGTH (IN.)	WIDTH (IN.)	DEPTH (IN.)	
OS-1	STRIEM OS-25	25	21	3	3	2'-3"	1'-11"	1'-3"	1)

REMARKS:
1) PROVIDE EXTENSION TO MATCH GRADE.

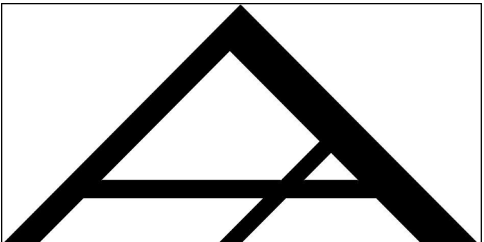
WASTE FLOW CALCULATION SUMMARY			
	GALLONS PER DAY (GPD)	# OF PEOPLE/ CARS	GPD
PER EMPLOYEE	8	8	64
PER CAR SERVED	8	45	360
REMARKS: 1) NO CARS WASHED ON SITE.		BUILDING TOTAL (GPD)	424

SANITARY SYSTEM SUMMARY	
TOTAL LOAD (FIXTURE UNITS)	GPM
12.5	14

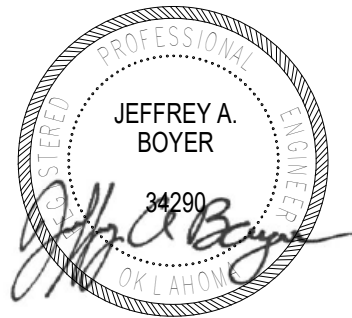
WATER METER SUMMARY	
TOTAL LOAD (FIXTURE UNITS)	GPM
16	18



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Plumbing Legend, Abbreviations, and Schedules

Project number25048

Date04/17/2026

Drawn byCA

Checked byJB

P0.01

Scale12" = 1'-0"

SECTION 15011 - PLUMBING GENERAL

- A. PROVIDE EQUIPMENT, LABOR, MATERIAL, ETC., REQUIRED TO MAKE A COMPLETE WORKING INSTALLATION.
- B. INSTALL THE WORK IN ACCORDANCE WITH DRAWINGS, SPECIFICATIONS AND THE STANDARDS AND CODES (LATEST EDITION) THAT APPLY TO THIS WORK. IN THE EVENT OF A CONFLICT, INSTALL WORK IN ACCORDANCE WITH THE MOST STRINGENT CODE REQUIREMENTS DETERMINED BY THE ENGINEER.
- C. OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS INCLUDING: BUILDING PERMITS, HEALTH DEPARTMENT PERMITS AND SEWER PAT PERMITS. DELIVER TO ENGINEER CERTIFICATES OF INSPECTION AND APPROVAL ISSUED BY AUTHORITIES.
- D. ALL EQUIPMENT AND METHOD SHALL BE INSTALLED AND CONNECTED IN ACCORDANCE WITH THE BEST ENGINEERING PRACTICES AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- E. DISCONNECT, REMOVE AND RE-INSTALL PLUMBING SERVICES LOCATED ON OR CROSSING THROUGH CONTRACT LIMITS, ABOVE OR BELOW GRADE, OBSTRUCTING CONSTRUCTION OF PROJECT OR CONFLICTING WITH COMPLETED PROJECT OR ANY APPLICABLE CODES.
- F. PROVIDE CUTTING OF PAVEMENT, SIDEWALKS, DRIVEWAYS, ETC., EXCAVATING, TRENCHING, SHORING AND DE-WATERING, MATERIAL HANDLING AND PERFORM BACKFILLING.
- G. RESTORE SITE TO ORIGINAL CONDITION OR NEW FINAL GRADES. PROVIDE PAVING, CONCRETE, SEED, OR SOD.
- H. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY. WORK CALLED FOR BY ONE IS BINDING AS IF CALLED FOR BY BOTH.
- I. DRAWINGS ARE DRAWN TO A SMALL SCALE AND ARE DIAGRAMMATIC ONLY. THE DRAWINGS INDICATE SIZE AND GENERAL ARRANGEMENT OF EQUIPMENT. DO NOT SCALE DRAWINGS FOR EXACT LOCATIONS. FIELD MEASUREMENTS TAKE PRECEDENCE.
- J. PROVIDE NECESSARY OFFSETS, ELBOWS AND FITTINGS AS REQUIRED TO AVOID CONFLICT WITH EQUIPMENT OF OTHER DIVISIONS AND TO OBTAIN PROPER HEADROOM AND CLEAR PASSAGEWAYS. THIS SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- K. WORK UNDER THIS DIVISION SHALL BE FIRST CLASS WITH EMPHASIS ON NEATNESS AND WORKMANSHIP. INSTALL WORK USING COMPETENT MECHANICS, UNDER SUPERVISION OF FOREMAN, ALL DULY CERTIFIED BY LOCAL AUTHORITIES.
- L. INSTALLATION SUBJECT TO ENGINEER'S OBSERVATION, FINAL APPROVAL, AND ACCEPTANCE. ENGINEER MAY REJECT UNSUITABLE WORK.
- M. ALL MATERIALS SHALL BE NEW. ALL MATERIALS AND EQUIPMENT FOR WHICH A UL STANDARD, AN AGA APPROVAL, AN AWWA STANDARD, FM LISTING OR ASME REQUIREMENTS IS ESTABLISHED, SHALL BE SO APPROVED AND LABELED OR STAMPED.
- N. THE DRAWINGS ARE BASED ON THE USE OF PRODUCTS SPECIFIED AND LISTED FIRST. IF ANY REVISION IN PIPING, CONDUIT WORK, FOUNDATIONS, ANCHOR BOLTS, CONNECTIONS, ETC., IS REQUIRED BY OTHER NAMED PRODUCTS OR APPROVED SUBSTITUTIONS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE SUCH REVISIONS AT NO ADDITIONAL CHARGE TO THE OWNER.
- O. SUBMIT SIX (6) ORIGINAL COPIES OF COMPLETE SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT FURNISHED UNDER DIVISION 15 OF SPECIFICATIONS TO ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL BEAR THE STAMP OF APPROVAL OF THE CONTRACTOR AS EVIDENCE THAT THE DRAWINGS HAVE BEEN CHECKED BY HIM. DRAWING SUBMITTAL WITHOUT THIS STAMP OF APPROVAL WILL NOT BE CONSIDERED AND WILL BE RETURNED FOR PROPER RESUBMISSION.
- P. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR ERRORS AND OMISSIONS IN SHOP DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS AND SIZES OF EQUIPMENT. INFORM ENGINEER IN WRITING OF EQUIPMENT DIFFERING FROM THAT SHOWN.
- Q. PROVIDE MAINTENANCE AND OPERATING MANUALS BOUND IN 8-1/2" X 11" HARDBACK, THREE-POST BINDERS. MANUALS SHALL CONTAIN WRITTEN INSTRUCTIONS FOR EACH SYSTEM, SHOP DRAWINGS, SCHEMATIC DRAWINGS, EQUIPMENT CATALOG CUTS, MANUFACTURER'S INSTRUCTIONS, MANUFACTURER'S WARRANTIES, AND VALVE TAG LIST.
- R. PROVIDE AS-BUILT PRINTS AT THE COMPLETION OF JOB. KEEP ONE SET OF PRINTS ON JOB AND RECORD DAY TO DAY CHANGES TO CONTRACT DRAWINGS WITH RED PENCIL. INDICATE ACTUAL LOCATION OF PIPING, VALVES, AND EQUIPMENT. TURN OVER PRINTS TO ENGINEER AT FINAL OBSERVATION.
- S. FURNISH ENGINEER WRITTEN WARRANTY, STATING THAT IF WORKMANSHIP AND/OR MATERIALS EXECUTED UNDER THIS DIVISION IS PROVEN DEFECTIVE WITHIN ONE (1) YEAR AFTER FINAL ACCEPTANCE, SUCH DEFECTS AND OTHER WORK DAMAGED WILL BE REPAIRED AND/OR REPLACED.

SECTION 15051 - BASIC MATERIALS AND METHODS

- A. ACCESS PANELS:
- ACCESS PANELS SHALL HAVE WELDED STEEL FRAME, ONE PIECE DOORS, AND SELF LATCHING DOOR LOCKS. LOCKS SHALL BE SCREW DRIVER OPERATED WITH CASE HARDENED STEEL CAM. PANELS SHALL BE MILCOR, CESCO, KARP OR EQUAL.
 - PROVIDE ACCESS PANELS IN WALLS AND CEILINGS AS NEEDED TO ALLOW ACCESS TO VALVES, EQUIPMENT, SHOCK ABSORBERS, TRAP PRIMERS, ETC. AND WHERE NOTED.
- B. FIRESTOPPING AND SOUNDSTOPPING:
- PENETRATIONS THROUGH FLOORS AND FIRE RESISTANT WALLS SHALL BE SEALED TO THE RATED FIRE RESISTANCE EQUAL TO THE WALL. INSTALLATION SHALL BE DONE BY A QUALIFIED INSTALLER, APPROVED BY THE MANUFACTURER OF THE MANUFACTURER OF THE OTHER OPENINGS THROUGH FLOORS AND WALLS. SAWCUT LARGER OPENINGS. CUTTING SHALL BE KEPT TO A MINIMUM.
 - REPLACE OR REPAIR DUCTWORK, CONDUIT, PIPING, ETC., THAT IS CUT. PATCH AROUND OPENING CUT BY THIS CONTRACTOR OR PROVIDED BY OTHERS FOR HIM. PATCHING SHALL BE DONE BY AN APPROVED QUALIFIED CONTRACTOR, BUT SHALL BE PAID FOR BY THIS CONTRACTOR. FINISHED PATCHING SHALL RETAIN FIRE AND SMOKE RATINGS OF THE ASSEMBLY AND SHALL MATCH SURROUNDING FINISH.
- E. ANCHORS:
- MOUNT ALL EQUIPMENT, BRACKETS, HANGERS, ANCHORS, ETC. TO SAFELY RESIST THE VIBRATION OR THRUST FORCES AND SUPPORT THE UNIT'S WEIGHT.
 - FLOOR MOUNTED ROTATING OR VIBRATING EQUIPMENT SHALL BE ANCHORED TO THE FLOOR USING GROUTED-IN PLACE OR CAST-IN PLACE ANCHOR BOLTS WITH THREE INCH HOOK AND SLEEVE. ANCHOR BOLTS SHALL BE OF THE SIZE RECOMMENDED BY THE MANUFACTURER.
 - FLOOR MOUNTED STATIC ITEMS, WALL AND CEILING MOUNTED EQUIPMENT BRACKET AND HANGERS SHALL BE INSTALLED USING DRILLED ANCHORS (OR CAST IN PLACE INSERTS). ANCHORS SHALL BE PHILLIPS DRILL COMPANY "RED HEAD" OR MULTI-SET II. SIZE ANCHORS (AND INSERTS) FOR FOUR TIMES THE APPLIED LOAD. BOLTS USED OUTDOORS OR IN A WET ENVIRONMENT SHALL BE HOT DIP GALVANIZED.
- A. PIPE IDENTIFICATION:
- IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI-A13.1. PIPE MARKERS SHALL BE SETON'S WEATHER-CODE OR EQUAL.
 - PROVIDE PIPE MARKERS AND DIRECTIONAL ARROWS ON PIPES AT BOTH SIDES OF PARTITIONS AND FLOORS SLABS, AT BRANCH LINE TAKE-OFFS, AT VALVES, AT INTERMEDIATE INTERVALS NOT IN EXCESS OF 20 FT. AND AT CONNECTIONS TO EQUIPMENT.
 - TAPE COLOR BAND IDENTIFYING MARKERS AND ARROWS ON EACH PIPE, BOTH INSULATED AND BARE PIPES. PIPE MARKERS AND ARROWS SHALL BE LOCATED WHERE READILY VISIBLE AND ON LOWER QUADRANTS OF OVERHEAD PIPES.
- B. VALVE TAG AND CHART:
- VALVE TAGS SHALL BE SETON M4506. BLACK FILLED LETTERS WITH BRASS JACK CHAIN. ONE VALVE NUMBER SHALL BE STAMPED ON EACH TAG. IDENTIFY EACH VALVE TAG FOR THE UTILITY IT SERVES, SUCH AS "CW" FOR COLD WATER, "HW" FOR HOT WATER, ETC. VALVE CHARTS SHALL BE SETON. ATTACH A NUMBERED VALVE TAG TO EACH VALVE.
 - PROVIDE A TYPE WRITTEN CHART IN FRAME UNDER GLASS COVER, GIVING THE FULL LIST OF ALL VALVES INSTALLED UNDER THIS CONTRACT. CHART SHALL LIST VALVE NUMBER, TYPE OF UTILITY, AND LOCATION. MOUNT CHART WHERE DIRECTED BY OWNER. PROVIDE ONE ADDITIONAL COPY TO OWNER.
- A. EQUIPMENT IDENTIFICATION:
- IDENTIFY EACH PIECE OF EQUIPMENT WITH A 1/8 INCH THICK ENGRAVED MELAMINE PLASTIC LAMINATE NAMEPLATE. LETTERS SHALL BE 1/2 INCH HIGH STANDARD STYLE. NAMES, ABBREVIATIONS, AND NUMBERING SHALL AGREE WITH THE CORRESPONDING EQUIPMENT DESIGNATIONS SHOWN ON THE DRAWINGS. USE BLACK LETTERS CUT IN A WHITE BACKGROUND FOR ALL EQUIPMENT ON STANDARD ELECTRICAL POWER.
 - FASTEN NAMEPLATES TO EQUIPMENT IN A CONSPICUOUS LOCATION USING SELF-TAPPING STAINLESS STEEL SCREWS. EXCEPT USE CONTACT EPOXY ADHESIVE WHERE SCREWS CANNOT OR SHOULD NOT PENETRATE SUBSTRATE.
- B. PIPE SLEEVES:
- PROVIDE PIPE SLEEVES WHERE PIPES PASS THROUGH FLOORS AND WALLS ABOVE OR BELOW CEILINGS. PROVIDE PIPE SLEEVES IN NEW WALLS AND FLOORS AS THE WORK PROGRESSES. PROVIDE SPLIT PIPE SLEEVES IN NEW WALLS BUILT UP AROUND EXISTING PIPES. TACK WELD SPLIT SLEEVES TOGETHER.
 - SIZE PIPE SLEEVES TO ALLOW CONTINUOUS INSULATION, BUT NOT LESS THAN TWO PIPE SIZES LARGER THAN PIPE. SLEEVES IN WALLS SHALL BE FLUSH WITH WALL. SLEEVES IN FLOORS SHALL EXTEND 3/4 INCHES ABOVE FLOOR AND BE FLUSH WITH STRUCTURE BELOW.
 - SLEEVES IN CONCRETE WALLS, FLOORS OR MASONRY SHALL BE SCH 40 STEEL PIPE, MACHINE CUT. SLEEVES IN GYPSUM BOARD OR PLASTER WALLS SHALL BE 14 GAUGE, ROLLED GALVANIZED SHEET METAL TACK WELDED ON THE LONGITUDINAL SEAM.
 - PROVIDE PLATES AROUND PIPES EXTENDING INTO EXPOSED AREAS WHERE THEY PASS THROUGH WALLS, FLOORS AND CEILINGS. SIZE PLATES TO COMPLETELY COVER PIPE SLEEVES. PLATES SHALL BE BEATON AND CADWELL, KEENEY OR GRINNELL. NICKEL PLATED STEEL, SPLIT PLATES WITH SET SCREW. CONCRETE FLOOR PLATE SHALL BE GRINNELL FIGURE 400.
- C. FLASHING:
- PROVIDE FLASHING AT PIPING AND DUCT PENETRATIONS THROUGH ROOF AND ROOF MOUNTED STRUCTURES FURNISHED UNDER THIS DIVISION. FLASH IN ACCORDANCE WITH ROOFING MANUFACTURER'S DETAILS. FLASHING MATERIALS SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURER'S SYSTEM.
 - PROVIDE FLASHING AT PIPES PASSING THROUGH FLOORS WITH WATERPROOF MEMBRANE. FLASHING SHALL BE IN ACCORDANCE WITH WATERPROOFING MANUFACTURER'S DETAILS.

SECTION 15261 - PLUMBING INSULATION

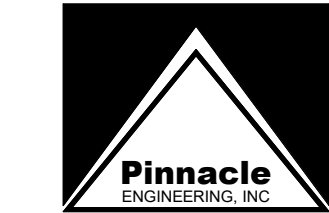
- A. GENERAL:
- ALL INSULATION, JACKETING, AND ADHESIVE SHALL HAVE COMPOSITE SURFACE BURNING CHARACTERISTIC RATINGS AS TESTED BY ASTM E 84, UL 723, OR NFPA 255 NOT EXCEEDING A FLAME SPREAD OF 25 OR SMOKE DEVELOPED OF 50.
 - SUBMITTALS SHALL USE PAGES FROM MIDWEST INSULATION CONTRACTORS ASSOCIATION -- "COMMERCIAL AND INDUSTRIAL INSULATION STANDARDS" FOR DEFINING HOW INSULATION MATERIALS WILL BE APPLIED.
 - ALL PIPE INSULATION SHALL BE CONTINUOUS THROUGH WALLS, CEILING OR FLOOR OPENINGS, OR SLEEVES, EXCEPT WHERE FIRESTOP OR FIRESAFING MATERIALS ARE REQUIRED.
 - INSULATE ITEMS MOUNTED IN PIPING WITH THE SAME THICKNESS OF INSULATION AS SPECIFIED FOR PIPING.
 - REPAIR INSULATION DAMAGED BY WORK UNDER THIS CONTRACT TO MATCH EXISTING WORK OR REPLACE DAMAGED PORTION WITH INSULATION SPECIFIED FOR NEW WORK.
 - DOMESTIC WATER PIPING:
 - INSULATION SHALL BE 850 DEG. F RATED AS MANUFACTURED BY OWENS CORNING, MANVILLE OR KNAUF. ROUTED OR MOLDED FITTING INSULATION SHALL BE HAMFAB.
 - INSULATION SHALL HAVE FACTORY-APPLIED, REINFORCED, FLAME RETARDANT, VAPOR BARRIER JACKET EQUAL TO OWENS-CORNING ASJ WITH SELF-SEALING LAP. BUTT JOINTS SHALL BE TAPED WITH FIELD-APPLIED ASJ TAPE 3 IN. WIDE.
 - INSULATION THICKNESSES SHALL BE IN ACCORDANCE WITH INTERNATIONAL ENERGY CONSERVATION CODE FOR PIPE SIZES NOTED ON PLAN.
 - ALL FITTINGS AND VALVES SHALL BE INSULATED WITH PREFORMED FIBER GLASS FITTINGS OR MITERED SECTIONS OF PIPE INSULATION. INSULATION SHALL BE OF EQUAL THICKNESS TO THE ADJACENT PIPE. INSULATION, METAL SHIELDS SHALL BE INSTALLED BETWEEN HANGERS OR SUPPORTS AND THE PIPING INSULATION. RIGID INSULATION INSERTS SHALL BE INSTALLED AS REQUIRED BETWEEN THE PIPE AND THE INSULATION SHIELDS. INSERTS SHALL BE OF EQUAL THICKNESS TO THE ADJACENT INSULATION AND SHALL BE VAPOR SEALED AS REQUIRED.
 - ELASTOMERIC CLOSED CELL INSULATION:
 - INSULATION SHALL BE RUBATEX OR ARMSTRONG. SECURE INSULATION WITH CONTACT ADHESIVE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. EXPOSED OR EXTERIOR INSTALLATIONS SHALL BE PAINTED WITH TWO COATS OF WATER BASE LATEX ENAMEL.
 - PROVIDE 1 IN. THICK INSULATION ON DX REFRIGERANT PIPING, COOLING COIL CONDENSATE PIPING, AND CAPS FOR ALL VALVE STEMS AND OPERATORS, GAUGE COCKS, THERMOMETER WELLS AND OTHER APPURTENANCES SUBJECT TO SWEATING.
 - PIPING FINISHES:
 - METAL JACKETING SHALL BE, SMOOTH .016 IN. THICK, TYPE T 3003 ALUMINUM WITH LAMINATED MOISTURE BARRIER. JACKETING SHALL BE CHILDERS, ALUMINUM ROLL JACKETING WITH POLYKRAFT MOISTURE BARRIER. COVER THE FOLLOWING INSULATED SYSTEMS WITH METAL JACKETING: PIPING INSTALLED OUTDOORS AND EXPOSED PIPING INDOORS WITHIN 8 FT. OF FINISHED FLOOR. METAL FITTING COVERS SHALL BE TWO PIECE ALUMINUM. COVERS SHALL BE ELL-JAC.
 - CONCEALED PIPING FINISH COVERING SHALL BE THE ALL SERVICE JACKET. FITTINGS SHALL BE COVERED BY WRAPPING THE FITTING WITH FIBER REINFORCED TAPE, WITH A 5 PERCENT OVERLAP. FITTINGS COVERS SHALL BE ONE PIECE 20 MIL PVC. COVERS SHALL BE CEEL-TITE 550 PVC-UVR BY CEEL-CO OR EQUALS.

SECTION 15410 - PLUMBING PIPING

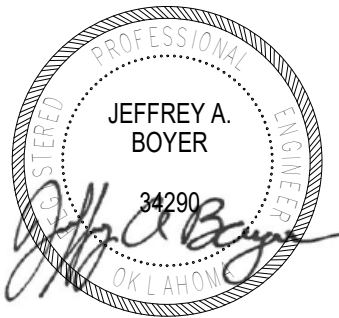
- A. THE WORK REQUIRED UNDER THIS SECTION INCLUDES ALL WORK NECESSARY FOR A COMPLETE INSTALLATION OF SANITARY WASTE PIPING, STORM PIPING AND DOMESTIC WATER PIPING INSIDE THE BUILDING TO 5 FEET OUTSIDE THE BUILDING. SUBMIT SCHEDULE OF PIPE AND FITTINGS FOR EACH SERVICE.
- B. DOMESTIC WATER PIPING: WATER PIPING WITHIN THE BUILDING SHALL BE COPPER TUBE, TYPE "L" HARD TEMPER, ASTM B-88. PIPING BELOW GROUND SHALL BE COPPER TUBE, TYPE "K" SOFT TEMPER, ASTM B-88. FITTINGS SHALL BE WROUGHT COPPER, SOLDER TYPE, ASTM B-75, ANSI B16.22. SOLDER UNIONS SHALL BE WROT COPPER, WITH COPPER GROUND JOINT. ASTM B75, ANSI B16.22. DI-ELECTRIC, EPSO, 250 LB. WOG. SOLDER METAL SHALL CONFORM TO ASTM B32. LEAD-FREE.
- C. STORM, SANITARY WASTE, AND VENT PIPING: ABOVE GROUND: SCHEDULE 40 PVC-DWV ASTM D-2665 USING SOLVENT CEMENT ASTM D02565. HORIZONTAL PIPING FOR FIXTURE ROUGH-INS MAY BE DWV COPPER, ASTM B-306. BELOW GROUND: SCHEDULE 40 PVC-DWV ASTM D-2665 USING SOLVENT CEMENT ASTM D-2564.
- D. STORM, SANITARY WASTE AND VENT FITTINGS: ABOVE GROUND: 1/10 HUB CAST IRON SOIL PIPE FITTINGS WITH COUPLING ASSEMBLY CISPI STANDARD 310.1 SCHEDULE 40 PVC-DWV, ASTM D-2855 USING SOLVENT CEMENT ASTM D-2564. BELOW GROUND: SCHEDULE 40 PVC-DWV, ASTM D-2855 USING SOLVENT CEMENT ASTM D-2564.
- E. BALL VALVES: VALVES SHALL BE NIBCO T-585-70, FULL PORT BALL TYPE WITH BRONZE BODY, CHROME PLATED BALL AND BRONZE THREADED ENDS, 600 PSI WOG OR NIBCO S-585-70 IN COPPER LINES. HAMMOND, CRANE, APOLLO, MILWAUKEE, OR APPROVED EQUAL.
- F. ALL PIPING SHALL BE ROUTED TO TO CONSERVE BUILDING SPACE, BE COORDINATED WITH ITEMS INSTALLED BY OTHER TRADES AND NOT INTERFERE WITH ACCESS TO OR OPERATION OF THE FACILITY.
- G. PROVIDE ROOF FLASHINGS FOR PIPE PENETRATIONS THROUGH ROOF, TO BE INSTALLED BY ROOFING CONTRACTOR.
- H. WATER PIPING WITHIN BUILDING SHALL BE SIZE INDICATED ON PLANS AND RISERS. IN THE EVENT NO SIZE IS SHOWN, PIPE SIZE OR SIZE REQUIRED BY THE PLUMBING CODE. PIPING SHALL BE SLOPED TOWARD A SYSTEM DRAIN AND TOWARD OUTLETS, TO PROVIDE FOR SYSTEM DRAIN-DOWN. IF INSTALLED NEAR EXTERIOR WALLS, PIPING SHALL BE LOCATED ON THE INTERIOR SIDE OF INSULATION. INSTALL PIPING TO PREVENT DIRECT CONTACT BETWEEN FERROUS AND NON-FERROUS MATERIALS. ALLOW FLEXIBILITY FOR EXPANSION IN PIPING.
- I. DOMESTIC WATER PIPING SYSTEM SHALL BE TESTED WITH POTABLE WATER AT A PRESSURE OF 125 PSIG OR 25 PSIG ABOVE DESIGN WORKING PRESSURE, WHICHEVER IS GREATER FOR 12 HOURS. TEST SHALL BE CONDUCTED WITH PLUMBING INSPECTOR UNLESS APPROVED OTHERWISE IN WRITING.
- J. WATER DISTRIBUTION PIPING SHALL BE DISINFECTED PRIOR TO OCCUPANCY OR SYSTEM START-UP WITH A CHLORINE SOLUTION 50 PPM. ALLOW SYSTEM TO STAND FOR SIX HOURS MINIMUM, THEN EXERCISE ALL VALVES TO ENSURE TREATMENT OF ALL BRANCHES AND COMPONENTS. SYSTEM SHALL BE FLUSHED WITH POTABLE WATER AFTER DISINFECTION AND PRIOR TO PLACEMENT INTO SERVICE.
- K. STORM, SANITARY WASTE AND VENT PIPING SHALL BE TESTED IN ACCORDANCE WITH WATER TEST AS SPECIFIED IN THE INTERNATIONAL PLUMBING CODE, IN ADDITION TO ANY TESTS REQUIRED BY THE LOCAL PLUMBING OFFICIAL. (10 FEET OF HEAD WITH NO APPARENT LEAKS. HOLD FOR 30 MINUTES MINIMUM). FLUSH ALL GRAVITY PIPING INCLUDING FLOOR DRAINS AND ROOF DRAINS PRIOR TO TURNING OVER TO THE OWNER.
- L. ALL PIPE SHALL BE CUT SQUARE. REAM PIPE AND TUBE ENDS AND REMOVE BURRS. CLEAN THE ENDS OF PIPES TO REMOVE OIL, GREASE AND OXIDES. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS.
- M. ALL SOLDERED PIPING AND EQUIPMENT CONNECTIONS SHALL BE PROPERLY PREPARED IN ACCORDANCE WITH GOOD PIPING PRACTICE. APPLY A THIN LAYER OF FLUX TO ONLY THE MALE TUBING. ROTATE INTO THE FITTING WITH ONE OR TWO REVOLUTIONS.
- N. DOMESTIC WATER PIPING: ROUTE PIPING IN ORDERLY MANNER. PLUMB AND PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL. PROVIDE DRAIN VALVES AT LOW POINTS IN SYSTEMS. TEST WATER PIPING BEFORE BEING INSULATED OR CONCEALED IN WALLS OR CEILING.
- O. STORM, SANITARY WASTE, AND VENT PIPING: HORIZONTAL SOIL, WASTE AND DRAINAGE LINES WITHIN BUILDING SHALL HAVE A MINIMUM UNIFORM SLOPE OF 1/8 INCH PER FOOT ON 3 INCH AND LARGER, AND 1/4 INCH PER FOOT ON LINES 2 INCH AND SMALLER. TURNS IN SANITARY, SOIL, AND DRAIN PIPING SHALL BE MADE USING 45 DEGREE ELBOWS, WYES, QUARTER, EIGHTH, SIXTEENTH BENDS, OR OTHER BENDS APPROVED BY THE PLUMBING CODE. DO NOT USE SANITARY TEES OR CROSSES EXCEPT WHERE DISCHARGING FROM HORIZONTAL TO VERTICAL. MAKE CHANGES IN PIPE SIZES WITH REDUCING FITTINGS AND RECESSED REDUCERS. DO NOT REDUCE LINE SIZE IN DIRECTION OF FLOW. PROVIDE CLEANOUTS ON ALL HORIZONTAL TURNS IN WASTE PIPING GREATER THAN 45 DEGREES. PROVIDE DEEP SEAL TRAPS ON ALL FLOOR DRAINS, AND TRAP PRIMERS/SEAL WHERE REQUIRED BY CODE OR AS INDICATED ON DRAWINGS. INDIRECT WASTE LINES DUMPING INTO FLOOR OR HUB DRAINS SHALL MAINTAIN A 2-INCH AIR GAP BETWEEN THE END OF THE WASTE LINE AND THE RIM OF THE FLOOR OR HUB DRAIN.

SECTION 15416 - GAS PIPING SYSTEMS

- A. PROVIDE COMPLETE INSTALLATION OF GAS PIPING FROM THE "POINT OF DELIVERY" UP TO AND INCLUDING CONNECTION TO ALL GAS-FIRED EQUIPMENT. CONNECT EQUIPMENT ITEMS FURNISHED UNDER OTHER SECTIONS OF SPECIFICATIONS. TEST IN ACCORDANCE WITH A.G.A., STANDARD GAS CODE, N.F.P.A. 54, AND APPLICABLE STATE AND LOCAL CODES.
- B. ROUTE GAS SERVICE ENTRANCE PIPING INTO BUILDING TO AVOID INTERFERENCE AND DAMAGE. PROVIDE MANUAL SHUTOFF VALVE, GAS COCK AND GAUGE. VALVES SHALL BE LABELED.
- C. PROVIDE ACCESS PANELS FOR VALVES AND OTHER ITEMS REQUIRING MAINTENANCE IN ENCLOSED SPACES. AVOID INSTALLING GAS APPURTENANCES IN ENCLOSED SPACES WHERE POSSIBLE. INSTALL IN ENCLOSED SPACES ONLY AS ALLOWED BY APPLICABLE CODES.
- D. SUBMIT MANUFACTURER'S LITERATURE ON ALL MATERIALS AND EQUIPMENT INCLUDING: PIPE, PIPE COATING, ANODES, VALVES, FLEXIBLE CONNECTORS, FITTINGS, REGULATORS, RELIEF VALVES, GAUGES, GAS SERVICE:
- COORDINATE INSTALLATION OF GAS SERVICE LINE WITH LOCAL GAS COMPANY. PAY ALL FEES.
 - PROVIDE 12 INCH ELEVATED METER MOUNTING PADS ON TOP OF A 4 INCH THICK CONCRETE PAD FOR SUPPORT OF GAS METER AND PIPING.
 - PROVIDE (TWO) 8 INCH DIAMETER PIPE BOLLARDS FOR GAS METER PROTECTION. BOLLARDS SHALL BE SIX FEET LONG (3 FEET BELOW GRADE), MOUNTED IN A 24 INCH DIAMETER HOLE, FILLED WITH 3,000 PSI CONCRETE.
- F. INTERIOR PIPING: CONNECT TO ENTERING LINE AND DISTRIBUTE GAS TO EQUIPMENT ITEMS REQUIRING GAS AND AS INDICATED. PERFORM WORK IN ACCORD WITH APPLICABLE A.G.A., N.F.P.A. 54, STATE AND LOCAL CODES. INSTALL GAS STOP VALVES AND DRIP LEGS AT EACH EQUIPMENT ITEM. PIPING SHALL BE THICKENED TO MATCH EXISTING PIPING. PROVIDE COATED PIPING AND COATED PIPING AND FITTINGS. REPAIR DAMAGED COATING AT WELDS. INSTALL SACRIFICIAL ANODES ON STEEL PIPING INTERVALS NOT EXCEEDING 100 FT.
- G. EXTERIOR PIPING: EXTERIOR PIPING SHALL BE SCHEDULE 40 CARBON STEEL. PIPING 2 INCH AND SMALLER MAY USE THREADED FITTINGS. PIPING 2 1/2 INCH AND LARGER SHALL USE WELDED FITTINGS AND FLANGED VALVES. EXTERIOR PIPING SHALL BE COATED WITH AN ALKYD ENAMEL PRIMER (MINIMUM DRY THICKNESS 3 MILS). EXPOSED PIPING SHALL BE SUPPORTED ON GALVANIZED 8-LINE CHANNELS AND PIPE CLAMPS.
- H. UNDERGROUND PIPING:
- UNDERGROUND PIPING SHALL BE CARBON STEEL - A53A106-WELDED OR POLYETHYLENE. UNDERGROUND STEEL PIPING SHALL HAVE AT LEAST 18 INCH OF PROPER BACKFILL COVER. PROTECTED FROM CORROSION. PROVIDE COATED PIPING AND FITTINGS. REPAIR DAMAGED COATING AT WELDS. INSTALL SACRIFICIAL ANODES ON STEEL PIPING INTERVALS NOT EXCEEDING 100 FT.
 - WHERE PIPES PENETRATE BASEMENT WALLS AND FOUNDATIONS INSTALL THUNDERLINE LINK SEAL.
 - GAS LINES ROUTED UNDER A BUILDING SHALL BE STEEL AND SHALL BE ENCASED IN A SCH 40 OUTER CONDUIT (AT LEAST 3 PIPE SIZES LARGER THAN THE GAS LINE). CONDUIT SHALL BE SEAL WELDED TO THE GAS PIPE INSIDE THE BUILDING. CONDUIT SHALL BE VENTED TO OUTDOORS. CONDUIT SHALL BE PROTECTED FROM CORROSION SIMILARLY TO UNDERGROUND PIPING.
- I. PIPE/TUBING:
- STEEL PIPE: ASTM A53 GRADE A OR B, TYPE F, ERW OR SEAMLESS. SCHEDULE 40.
 - ASTM A106 SEAMLESS, SCHEDULE 40.
 - TUBING (STEEL) ASTM A539.
 - PLASTIC PIPE ASTM D2513 POLYETHYLENE. DRISCO PIPE 6500 OR PRIOR APPROVED EQUAL.
- J. FITTINGS:
- WELDED (STEEL): WELDING FITTINGS SHALL BE CARBON STEEL BUTT WELDING TYPE CONFORMING TO ASTM-234. ELBOWS SHALL BE LONG RADIUS TYPE. WELDING TEES SHALL BE USED ON BRANCH CONNECTIONS EQUAL TO OR GREATER THAN 2 THE DIAMETER OF THE MAIN RUN. FITTINGS SHALL BE LADISH, TUBE-TURN OR WELDBAND. CARBON STEEL REINFORCED BRANCH, WELDING FITTINGS UP TO 3 INCHES, BUT NOT GREATER THAN 2 THE DIAMETER OF THE MAIN RUN MAY BE USED. FITTINGS SHALL BE BONNEY FORGE OR PHOENIX FORGING.
 - THREADED (MALLEABLE IRON): SCREWED FITTINGS SHALL BE MALLEABLE IRON ASTM A-197 CLASS 150 CONFORMING TO ANSI B16.3. DIMENSIONS CONFORMING TO FEDERAL SPEC WW-P-521. FITTINGS SHALL BE GRINNELL, FLAGG OR STOCKHAM.
 - HEAT FUSION/COMPRESSION (POLYETHYLENE): SOCKET TYPE FUSION SHALL MEET THE REQUIREMENTS OF ASTM D2633. FITTINGS SHALL BE LISTED AND MARKED ASTM D2513. BUTT TYPE FUSION FITTING SHALL MEET THE REQUIREMENTS OF ASTM D3261.
- K. UNIONS (DIELECTRIC): CLASS 250 MALLEABLE, SCREWED ASTM A-197.
- L. VALVES:
- 1 INCH AND SMALLER: BALL VALVE - CLASS 125 BRASS FULL PART, 2 PIECE BODY, CHROME PLATED BALL, BLOWOUT PROOF STEAM, TFE SEATS.
 - 2 INCHES AND SMALLER: PLUG COCK - CLASS 125 CAST IRON, SCREWED, FULL PORT AGA LISTED, ANSI B16.33 HOMESTEAD FIGURE 601.
 - 2 1/2 INCHES AND LARGER: PLUG VALVE - CLASS 125 FLANGED CAST IRON ASTM A126 CONFORMING TO ANSI B16.1.
- M. PIPE COATING: X-TRU COAT OR PRIOR APPROVED EQUAL INCLUDING JOINTS AND FITTINGS.
- N. PRESSURE REGULATORS: CAST IRON OR ALUMINUM BODY AND SPRING CASE WITH STAINLESS STEEL VALVE STEAM, SEAT RING AND VALVE PLUG, PLATED STEEL SPRINGS, NEOPRENE DIAPHRAGM AND GASKETS AND TFE DISC. REGULATING VALVES SHALL BE SIZED FOR THE FLOW INDICATED AND FOR INLET AND OUTLET PRESSURES INDICATED. OUTLET PRESSURE SHALL BE MAINTAINED UNDER THE DESIGN FLOW CONDITION AND AT NO FLOW. REGULATING VALVES TWO PSI AND BELOW SHALL HAVE LEAK LIMITING DEVICES. REGULATING VALVES OVER TWO PSI SHALL BE VENTED FULL SIZE TO OUTSIDE OF THE BUILDING. OTHER REGULATING VALVES REQUIRING ACCESS TO THE ATMOSPHERE SHALL BE EQUIPPED WITH VENT PIPING LEADING TO OUTSIDE. PROVIDE A PRESSURE RELIEF VALVE IF THE REGULATOR CONNECTION SIZE EXCEEDS TWO INCHES. REGULATING VALVES SHALL BE FISHER, MAXITROL OR PRIOR APPROVED EQUAL MEETING ANSI Z21.18.
- O. PRESSURE GAGE: FOR MEDIUM PRESSURE GAS; 0-5 PSI RANGE. FOR LOW PRESSURE GAS: 0-30 INCH W.C. RANGE. USE LOW PRESSURE TYPE 2-1/2 INCH DIAL. PRESSURE GAGE WITH APPROPRIATE RANGE, OCI MODEL CO 34, TRENC, WENSLER OR APPROVED EQUAL.



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6/25/26

Express Oil Change & Tire Engineers

Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issued for Construction	06/25/2026

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Plumbing Specifications

Project number	25048
Date	04/17/2026
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Checked by	JB

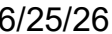
P0.02

Scale	12" = 1'-0"
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SECTION 15440 - PLUMBING FIXTURES

- | | |
|-------|--|
| | THIS SPECIFICATION DESCRIBES THE REQUIREMENTS FOR PLUMBING FIXTURES AND THEIR INSTALLATION. SUBMITTALS SHALL INCLUDE MANUFACTURER'S DATA SHEETS AND DIMENSIONAL INFORMATION ON ALL PLUMBING AND ACCESSORIES. EACH SUBMITTAL SHALL INCLUDE A CHECKLIST OF THE FIXTURES SUBMITTED AND INCLUDE IDENTIFICATION NUMBER OF EACH ITEM, SUCH AS "P-1 WATER CLOSET", AND LIST OF EACH COMPONENT AND ACCESSORY OF THE FIXTURE, INCLUDING MANUFACTURER'S MODEL NUMBER. THIS SCHEDULE MUST BE INCLUDED IN THE FRONT OF THE SUBMITTAL BOOKLET. |
| C. | VITREOUS WATER SHALL BE WHITE, REGULAR SECTION, OF WEIGHT REQUIRED, FREE FROM CRACKS, FLAWS, BLISTERS, CRAZES OR OTHER DEFECTS. PROVIDE WITH MOUNTING BRACKETS FOR WALL MOUNTED FIXTURES UNLESS FLOOR CARRIERS ARE INDICATED. |
| D. | STAINLESS STEEL SHALL HAVE MACHINE GROUND FINISH. DECKS AND SINK COMPARTMENT SIDES SHALL BE BUFFED. EXPOSED SURFACES SHALL HAVE NO 4 SATIN FINISH. INTERIOR SURFACES SHALL BE DEADENED. EXPOSED METAL PARTS SHALL BE CHROMIUM PLATED AND PROTECTED DURING CONSTRUCTION BY A COAT OF GREASE. |
| E. | WATER CLOSET AND URINAL CARRIERS SHALL HAVE TAPERED THREAD FACE PLATE, PLASTIC COUPLING WITH TEST CAP, AND NEOPRENE RUBBER GASKET. LAVATORY, SINK AND URINAL CARRIERS SHALL HAVE RECTANGULAR STRUCTURAL STEEL UPRIGHTS. CARRIERS SHALL HAVE NECESSARY ACCESSORIES FOR PROPER INSTALLATION. CARRIERS SHALL BE ACCORDING TO ANSI A112.6.1M. |
| F. | WATER CLOSETS AND URINALS SHALL HAVE BOLT CAPS. |
| G. | SEATS SHALL BE WHITE, SOLID PLASTIC, WITH INTERNAL CHECK AND MOLDED STAINLESS STEEL HINGE WITHOUT VISIBLE METAL PARTS, EXCEPT AS HEREINAFTER SPECIFIED. |
| H. | CHROMIUM PLATED TRAPS SHALL BE BRASS WITH CHROMIUM PLATED NIPPLE TO WALL AND ESCUTCHEON. FITTINGS AND ACCESSORIES SPECIFICALLY DESIGNATED TYPE ONLY. PROVIDE MODIFICATIONS TO MAKE FITTINGS WORK PROPERLY WITH FIXTURE AND PIPING. PROVIDE NECESSARY TAILPIECE AND SHANKS. |
| J. | INSTALL EYEWASH STATION WITHIN 10 FEET OF HAZARD AREA, COMPLETELY UNOBSTRUCTED FROM VIEW OR ACCESS, ANCHOR TO FLOOR IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. PROVIDE AND INSTALL STRAINER. PROVIDE EYEWASH STATION WITHIN 10 FEET TO STATION, PROVIDE AND INSTALL ON WALL ABOVE STATION, A PLASTIC ENGRAVED SIGN READING "EMERGENCY USE ONLY", WHITE LETTERS ON RED BACKGROUND. PROVIDE MINIMUM 5 GALLON CONTAINER AND PROVIDE TIMED FLOW TEST FOR ALL EYEWASHES AND EMERGENCY SHOWERS. SUBMIT REPORT TO ARCHITECT OR ENGINEER PRIOR TO FINAL INSPECTION. |
| K. | FIXTURES |
| WC-1 | WATER CLOSET (17-1/2" HIGH, FLOOR MOUNT, TANK TYPE):
1. KOHLER K-43979 VITREOUS CHINA, 1.6 GALLON FLUSH; CLOSE COUPLED TANK WITH ELONGATED BOWL.
2. KOHLER K-7637 3/8" POLISHED CHROME ANGLE SUPPLY WITH STOP.
3. BENKE 5275S ELONGATED SELF-SUSTAINING WITH CHECK HINGS, OPEN FRONT, HEAVY DUTY SOLID PLASTIC SEAT. |
| LAV-1 | LAVATORY (ADA COMPLIANT, WALL HUNG):
1. AMERICAN STANDARD DECLYN WALL-HUNG LAVATORY, VITREOUS CHINA, WITH OVER FLOW AND 4" FAUCET CENTERS, DRILLED FOR CONCEALED ARM CARRIER.
ZURN Z-7443-VP SINGLE CONTROL FAUCET, LEVER HANDLE, 4" CENTER MOUNT, 1-1/4" GRID STRAINER.
2. MCGUIRE 170 1/2" X 3/8" SWEAT LAVATORY SUPPLIES WITH WHEEL HANDLE STOPS.
3. MCGUIRE 8902, 1-1/4 INCH X 1-1/2 INCH P-TRAP WITH ESCUTCHEON; ZURN GH, 1-1/4" OFFSET HANDICAP GRID DRILL.
4. TRAP AND SUPPLIES COVERED WITH TRAP WRAP EQUAL TO BROCHAR INDUSTRIES.
6. ZURN Z-1231 LAVATORY CONCEALED ARM CARRIER. |
| EW-1 | EYEFACE WASH (PEDESTAL MOUNT):
1. STAINLESS STEEL BOWL WITH TWIN EYEWASH HEADS WITH FLIP TOP COVERS, CHROME PLATED WATER EYEWASH ASSEMBLY.
2. INCLUDE UNIVERSAL EMERGENCY SIGN CONFORMING TO ANSI Z35.1.
3. INCLUDE MIXING VALVE/TEMPERED WATER BLENDING SYSTEM.
4. EQUAL TO GUARDIAN G1825. CONFORM TO ANSI Z358.1. |
| EW-1C | WATER COOLER (WALL MOUNT, BOTTLE FILLING STATION, ADA):
1. ELKAY LZSTL8SVRS3, HANDS FREE, ADA COMPLIANT DUAL STATION WITH BOTTLE FILLING STATION.
2. MCGUIRE 8902 P-TRAP WITH ESCUTCHEON.
3. MCGUIRE 170 STOP AND SUPPLY. |
| SK-1 | LAUNDRY TUB (SINGLE COMPARTMENT):
1. FIAT MODEL NO. FL-1 SINGLE MOLDED STONE TYPE LAUNDRY TUB WITH FREE DRAINING SOAP TRAY ON BACK LEUDGE. INCLUDE FOUR VERTICAL ENAMEL ANGLE LEGS THAT SLIP INTO MOLDED SLOTS. SELF-LEVELING LEGS WITH FLOOR ANCHORS.
2. FIAT MODEL A-1 BRASS FAUCET WITH SWING SPOUT.
3. MCGUIRE 170 1/2" X 3/8" SWEAT LAVATORY SUPPLIES WITH WHEEL HANDLE STOPS.
4. MCGUIRE #850 TRAY PLUG WITH RUBBER STOPPER (P-1/2").
5. MCGUIRE #8912 1-1/2" X 1-1/2", 17 GAUGE BRASS P-TRAP. |
| CMVB | COFFEE MAKE VALVE BOX:
1. GUY GRAY MODEL BIM 875.
2. 1/2" FIP X 1/4" O.D. OUTLET COMPRESSION ANGLE VALVE.
3. BOX IS 16 GAUGE STEEL WITH EPOXY FINISH. |
| L. | ACCEPTABLE MANUFACTURERS: FIXTURES, VITREOUS CHINA - AMERICAN STANDARD, CRANE, ELJER, KOHLER, FIXTURES, STAINLESS STEEL - JUST, ELKAY FLUSH VALVES - SLOAN, DELANEY, ZURN, TOLTEC, LORNETE, SPERZEL, CHURCH, BENKE, BEMIS FAUCETS - T&S BRASS, SPEAKMAN, CHICAGO, SYMMONS, ELJER TERRAZZO, FIAT, CUTLER, HESTERBON, HERN, WILLIAMS TRIM, CHROMED BRASS - MCGUIRE, SANITARY DASH, BRIDGEPORT SHOWER MIXING VALVES - POWERS, LEONARD, LAWLER, SYMMONS, SPEAKMAN, ZURN SHOWER HEADS - SYMMONS, SPEAKMAN, ZURN ELECTRIC WATER COOLERS - ELKAY, HALSEY TAYLOR, SUNROC, OASIS, HAWS. USE ONLY WATER COOLERS WHICH DO NOT USE CPFC'S FOR REFRIGERATION. SCRUB SINKS - ELJER, AMERICAN STANDARD, CHURCH, CARRIERS - J. P. SMITH, JOSAM, ZURN, VITREOUS EYEWASH EQUIPMENT - GUARDIAN, HAWS, WESTERN, SPEAKMAN |

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Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage

Sand Springs, Oklahoma

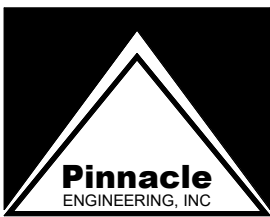
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Plumbing Specifications

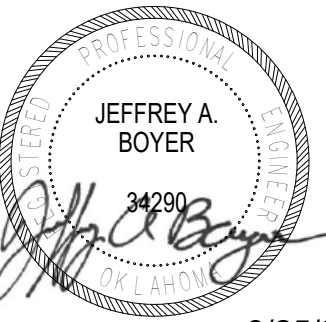
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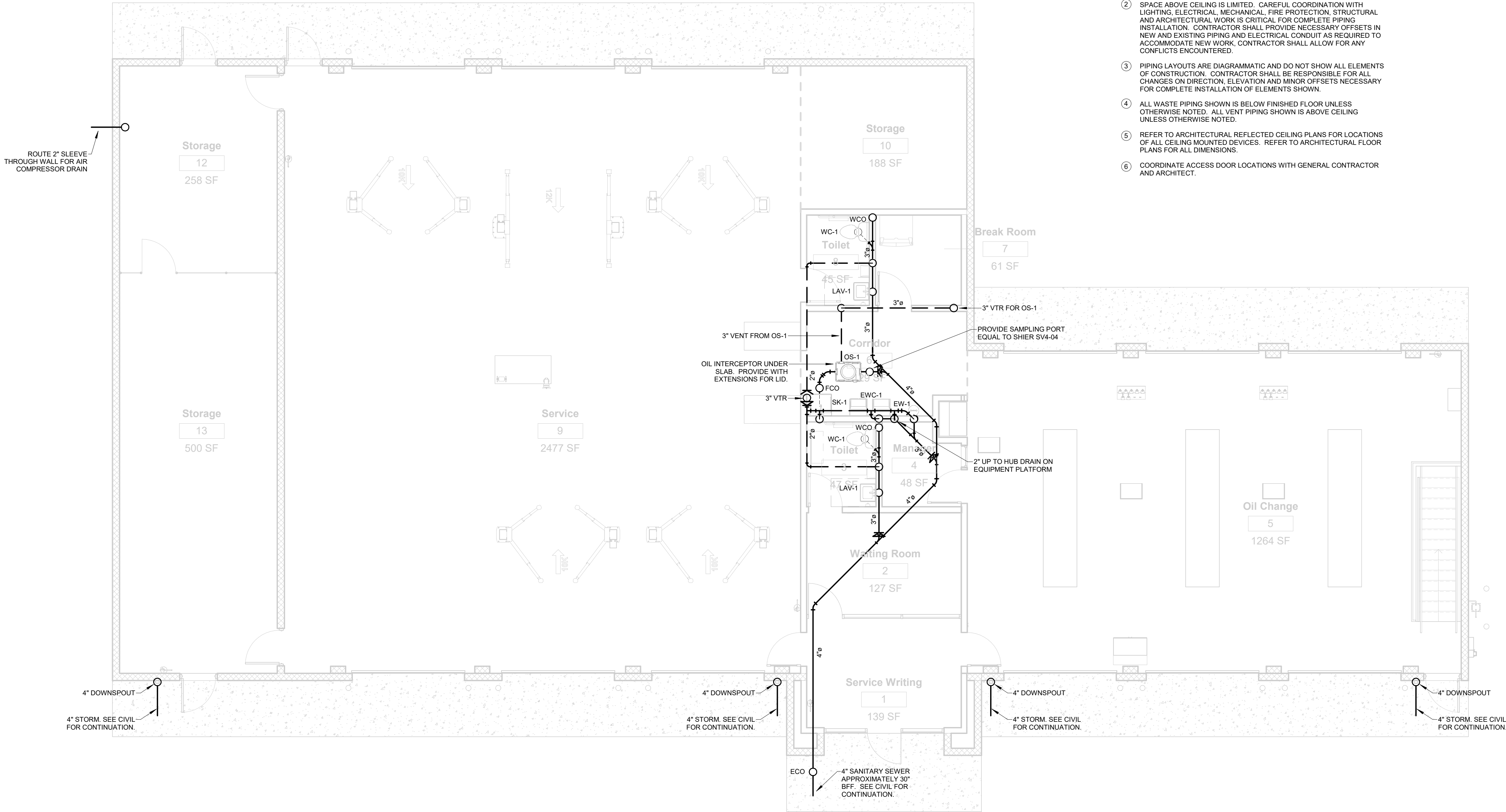
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Plumbing Floor
Plan Gravity

Project number	25048
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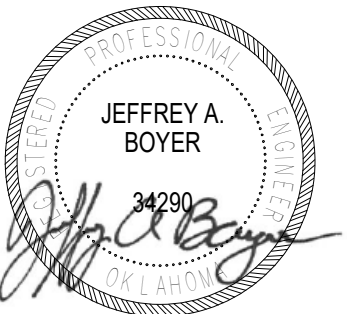
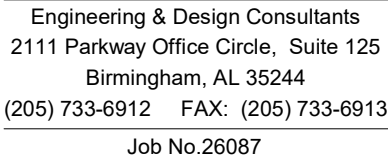
P1.01

Scale As indicated



- GENERAL NOTES:
- CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
 - SPACE ABOVE CEILING IS LIMITED. CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, MECHANICAL, FIRE PROTECTION, STRUCTURAL AND ARCHITECTURAL WORK IS CRITICAL FOR COMPLETE PIPING INSTALLATION. CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS IN NEW AND EXISTING PIPING AND ELECTRICAL CONDUIT AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL ALLOW FOR ANY CONFLICTS ENCOUNTERED.
 - PIPING LAYOUTS ARE DIAGRAMMATIC AND DO NOT SHOW ALL ELEMENTS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES ON DIRECTION, ELEVATION AND MINOR OFFSETS NECESSARY FOR COMPLETE INSTALLATION OF ELEMENTS SHOWN.
 - ALL WASTE PIPING SHOWN IS BELOW FINISHED FLOOR UNLESS OTHERWISE NOTED. ALL VENT PIPING SHOWN IS ABOVE CEILING UNLESS OTHERWISE NOTED.
 - REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL FLOOR PLANS FOR ALL DIMENSIONS.
 - COORDINATE ACCESS DOOR LOCATIONS WITH GENERAL CONTRACTOR AND ARCHITECT.

MAIN FLOOR PLAN
PLUMBING - GRAVITY
3/16" = 1'-0"



Express Oil Change & Tire Engineers

Sand Springs, Oklahoma

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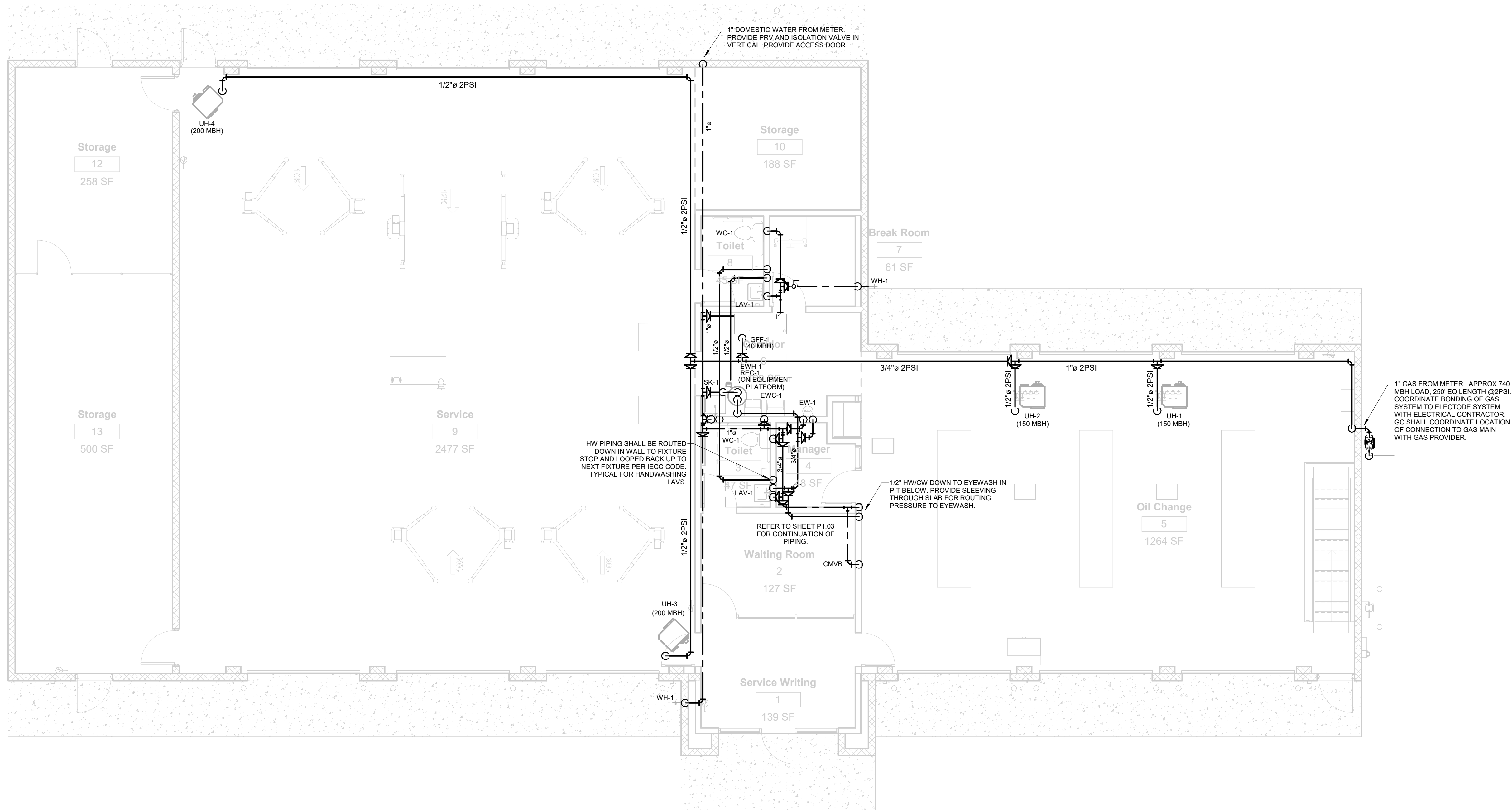
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Plumbing Floor Plan Pressure

Project number	25048
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P1.02

Scale	As indicated
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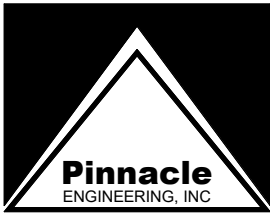


GENERAL NOTES

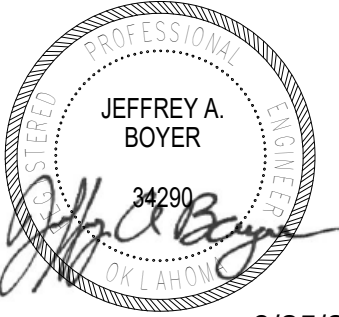
- ① CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
- ② SPACE ABOVE CEILING IS LIMITED. CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, MECHANICAL, FIRE PROTECTION, STRUCTURAL AND ARCHITECTURAL WORK IS CRITICAL FOR COMPLETE PIPING INSTALLATION. CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS IN NEW AND EXISTING PIPING AND ELECTRICAL CONDUIT AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL ALLOW FOR ANY CONFLICTS ENCOUNTERED.
- ③ PIPING LAYOUTS ARE DIAGRAMMATIC AND DO NOT SHOW ALL ELEMENTS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES ON DIRECTION, ELEVATION AND MINOR OFFSETS NECESSARY FOR COMPLETE INSTALLATION OF ELEMENTS SHOWN.
- ④ ALL PRESSURE PIPING SHOWN IS ABOVE THE CEILING UNLESS OTHERWISE NOTED. CONCEALED PIPING SHALL BE PEX OR COPPER. EXPOSED PIPING IN PUBLIC SPACES SHALL BE COPPER.
- ⑤ REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL FLOOR PLANS FOR ALL DIMENSIONS.
- ⑥ COORDINATE ACCESS DORR LOCATIONS WITH GENERAL CONTRACTOR AND ARCHITECT.



MAIN FLOOR PLAN
PLUMBING - PRESSURE
3/16" = 1'-0"

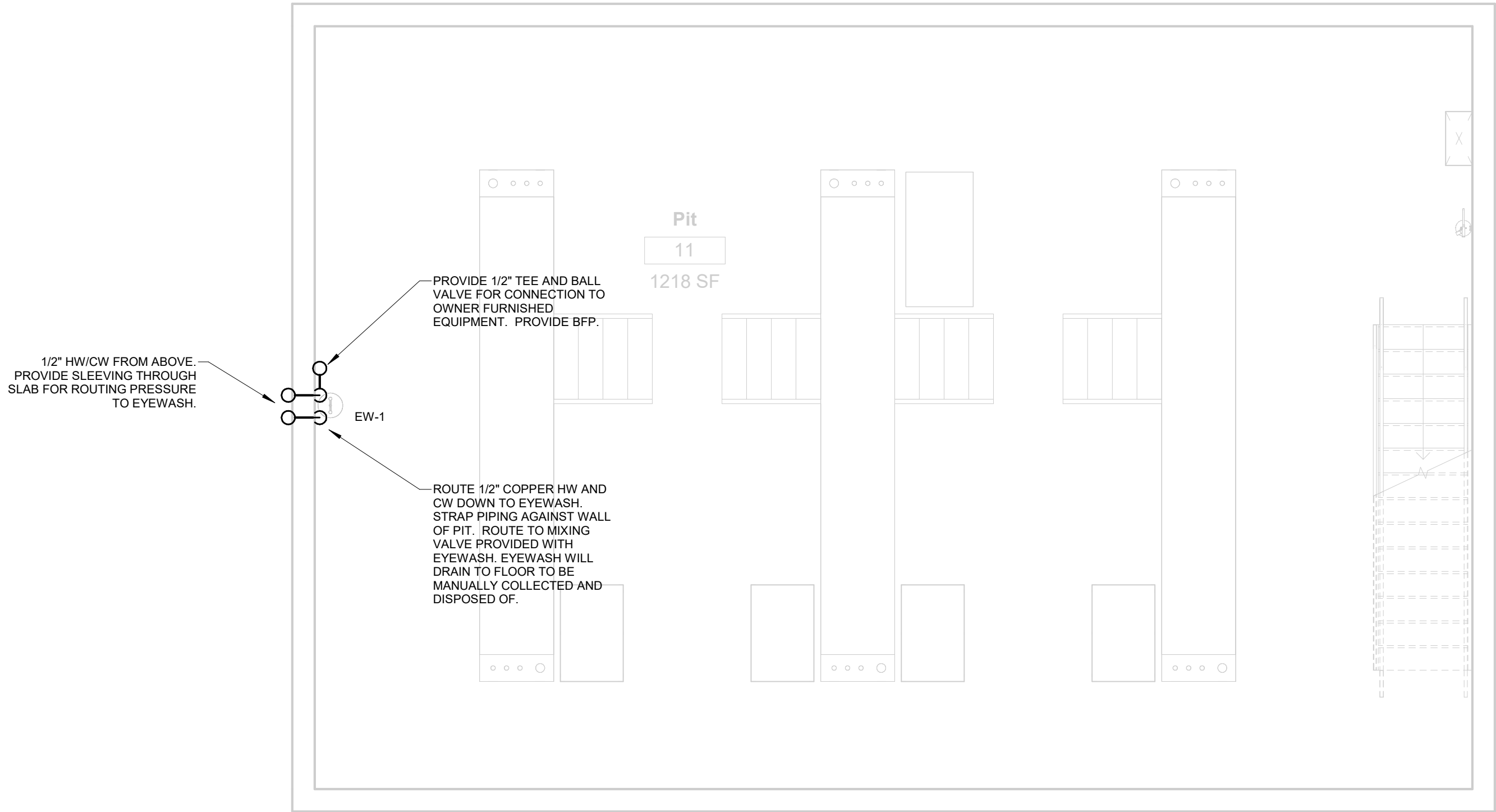


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Sand Springs, Oklahoma



PIT FLOOR PLAN PLUMBING
1/4" = 1'-0"
NORTH

GENERAL NOTES:

- 1 CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD PRIOR TO BEGINNING WORK.
- 2 SPACE ABOVE CEILING IS LIMITED. CAREFUL COORDINATION WITH LIGHTING, ELECTRICAL, MECHANICAL, FIRE PROTECTION, STRUCTURAL AND ARCHITECTURAL WORK IS CRITICAL FOR COMPLETE PIPING INSTALLATION. CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS IN NEW AND EXISTING PIPING AND ELECTRICAL CONDUIT AS REQUIRED TO ACCOMMODATE NEW WORK. CONTRACTOR SHALL ALLOW FOR ANY CONFLICTS ENCOUNTERED.
- 3 PIPING LAYOUTS ARE DIAGRAMMATIC AND DO NOT SHOW ALL ELEMENTS OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES ON DIRECTION, ELEVATION AND MINOR OFFSETS NECESSARY FOR COMPLETE INSTALLATION OF ELEMENTS SHOWN.
- 4 ALL PRESSURE PIPING SHOWN IS ABOVE THE CEILING UNLESS OTHERWISE NOTED. ALL TRAP PRIMER LINES AND HOT WATER RETURN LINES SHALL BE ½" UNLESS OTHERWISE NOTED.
- 5 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF ALL CEILING MOUNTED DEVICES. REFER TO ARCHITECTURAL FLOOR PLANS FOR ALL DIMENSIONS.
- 6 COORDINATE ACCESS DOOR LOCATIONS WITH GENERAL CONTRACTOR AND ARCHITECT.

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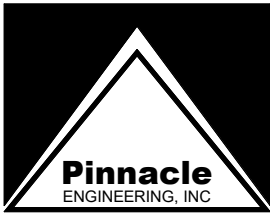
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Partial Plumbing
Floor Plans - Pit
and Platform

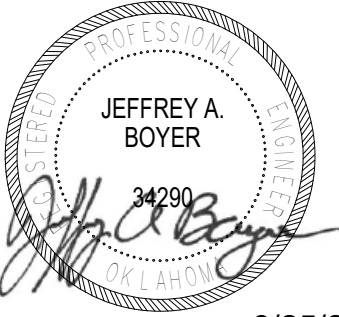
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P1.03

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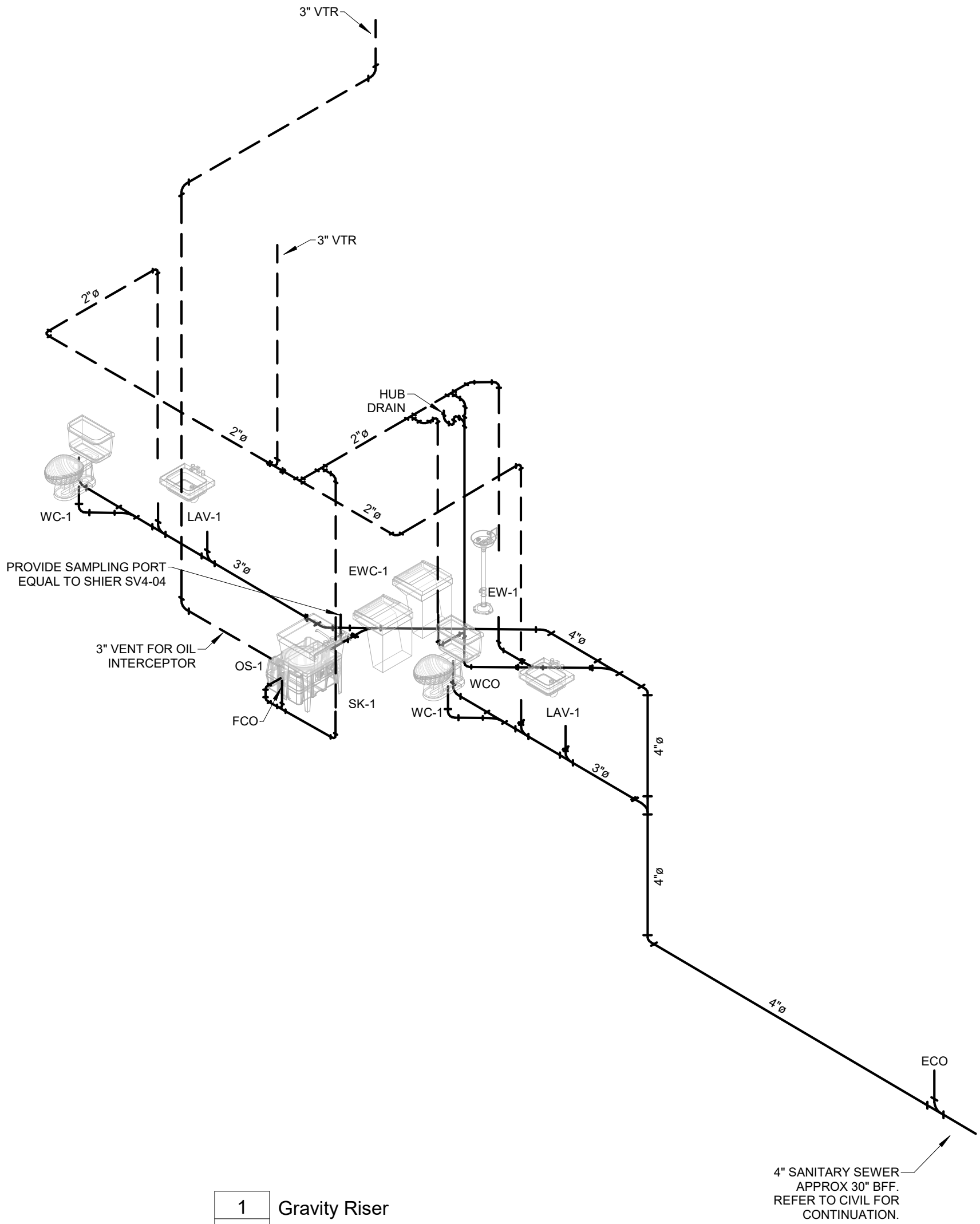
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Plumbing Riser - Gravity

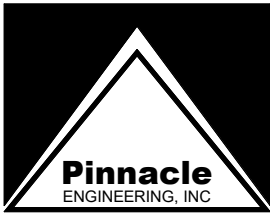
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P2.01

Scale



1 Gravity Riser
P2.01



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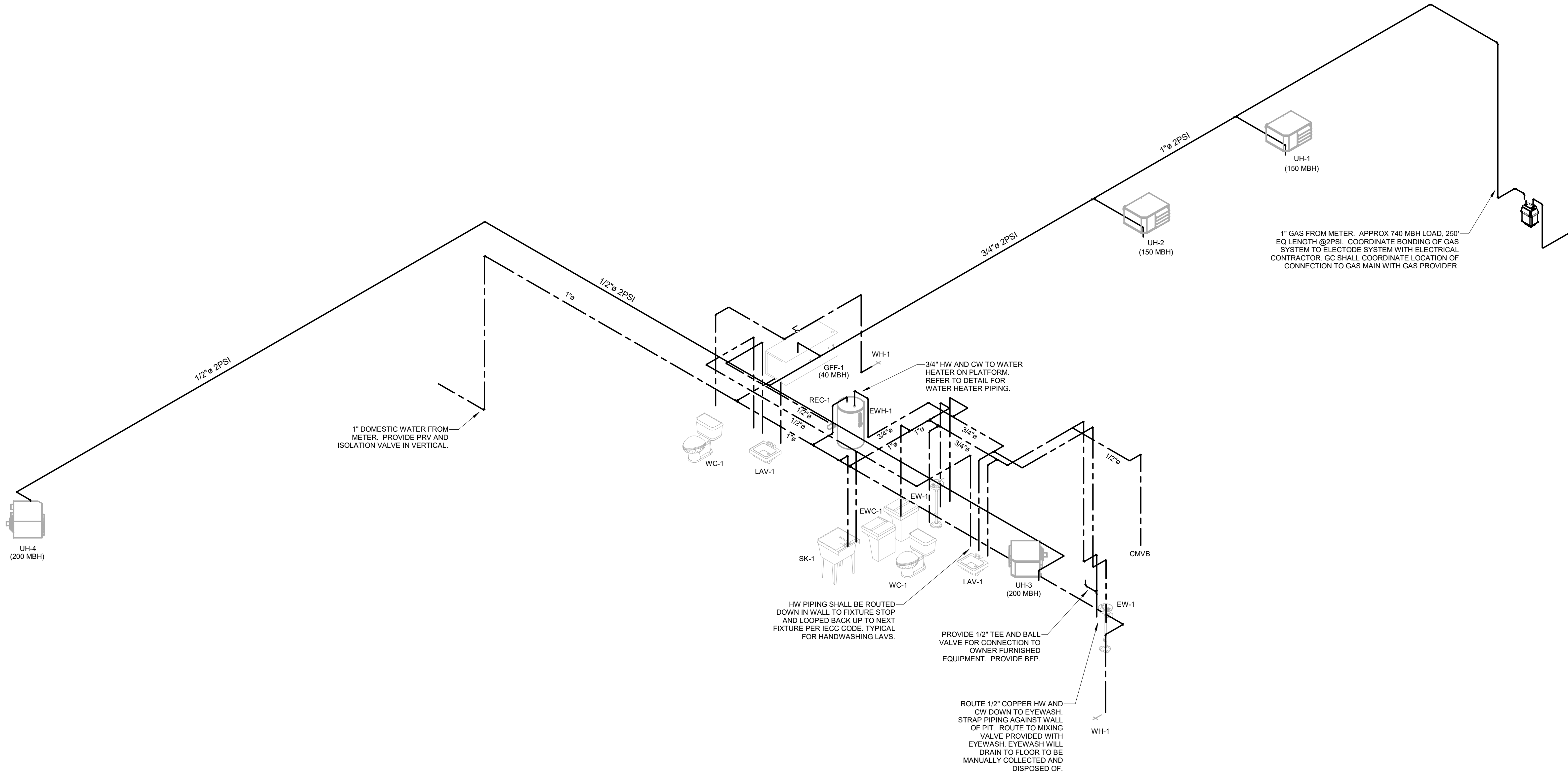
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Plumbing Riser -
Pressure

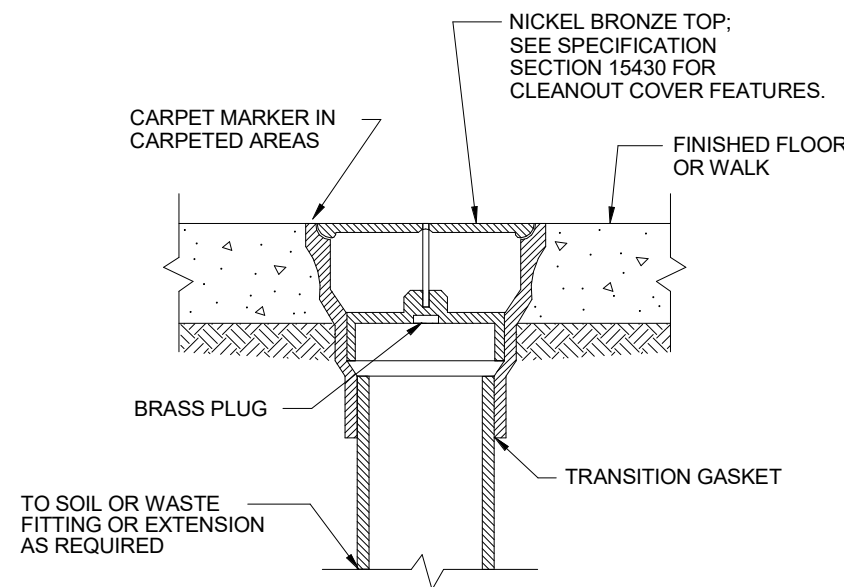
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P2.02

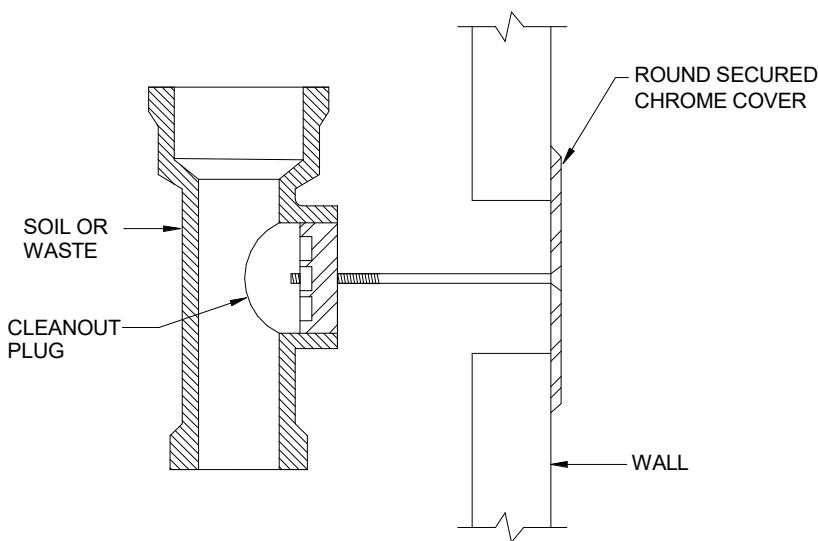
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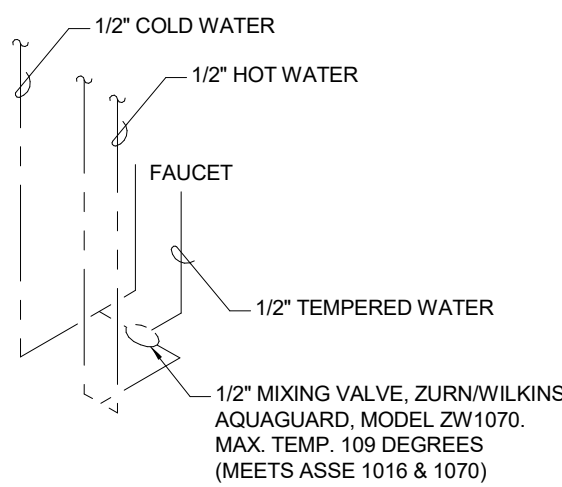
1 Pressure Riser
P2.02



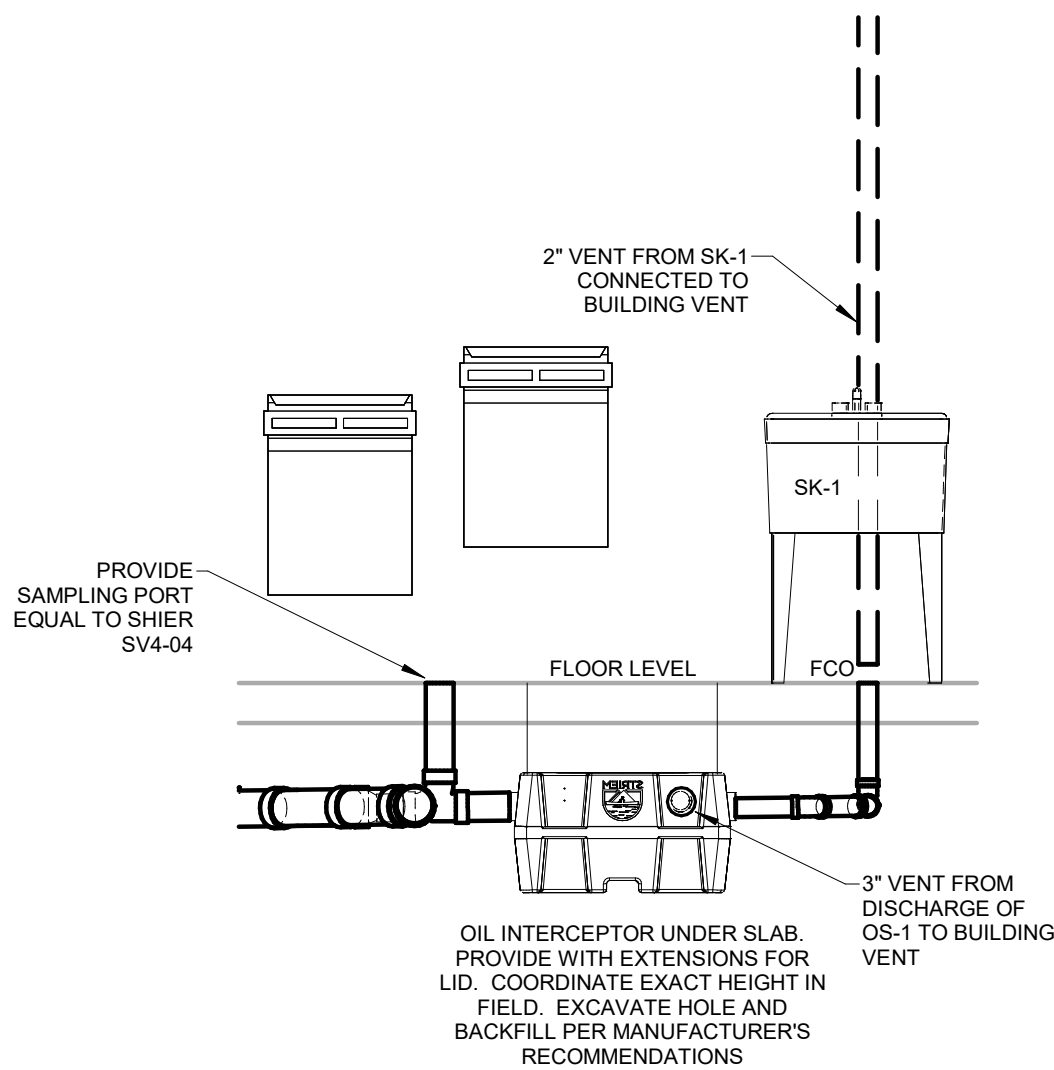
7 FLOOR CLEANOUT
P2.03 NO SCALE



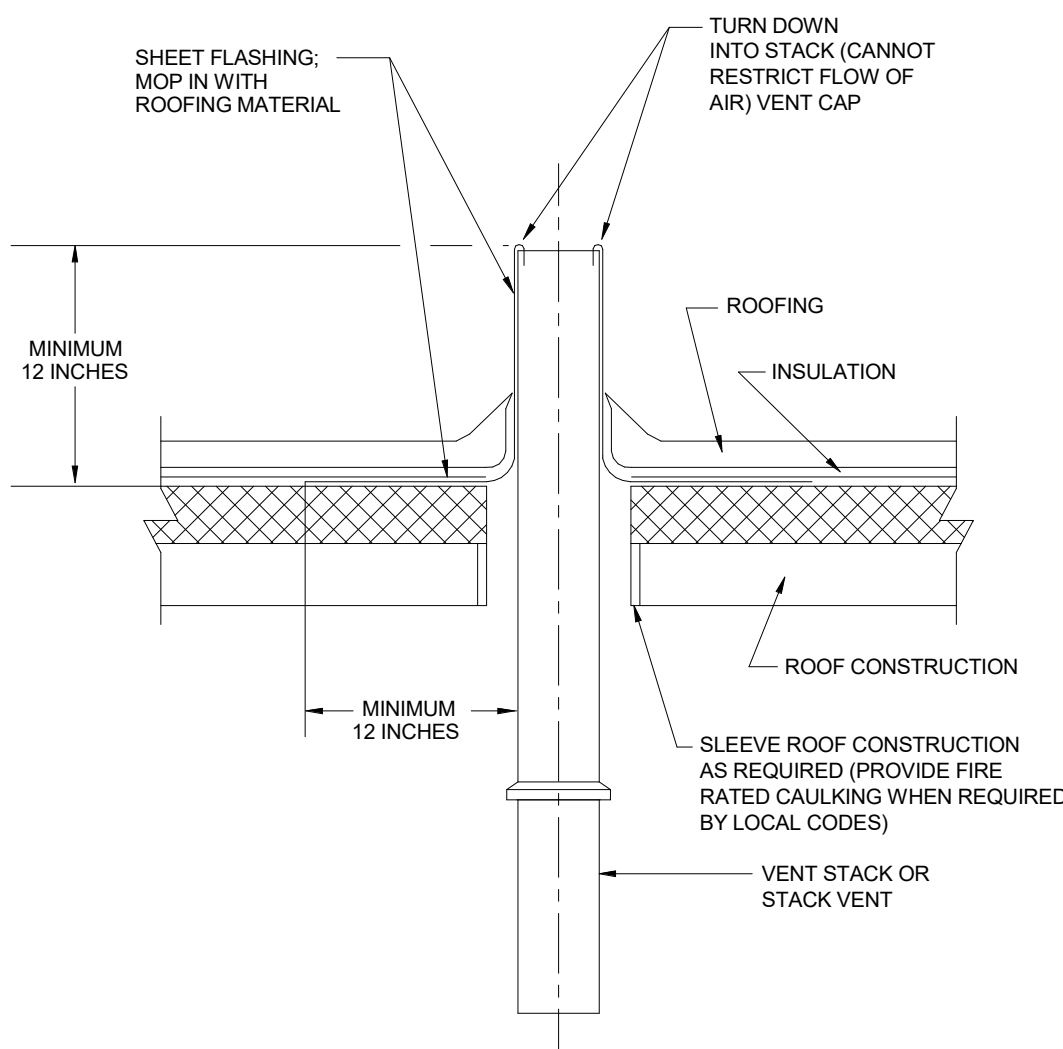
4 WALL CLEANOUT
P2.03 NO SCALE



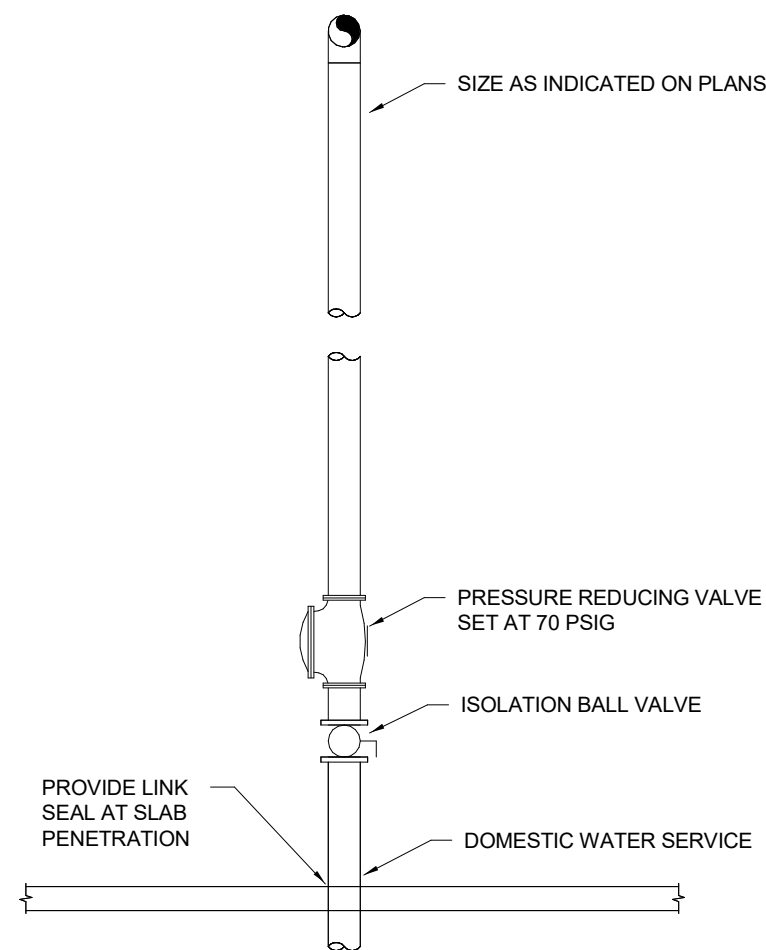
1 TYPICAL LAVATORY MIXING VALVE
P2.03 SCALE: NONE



8 OIL INTERCEPTOR DETAIL
P2.03 NO SCALE



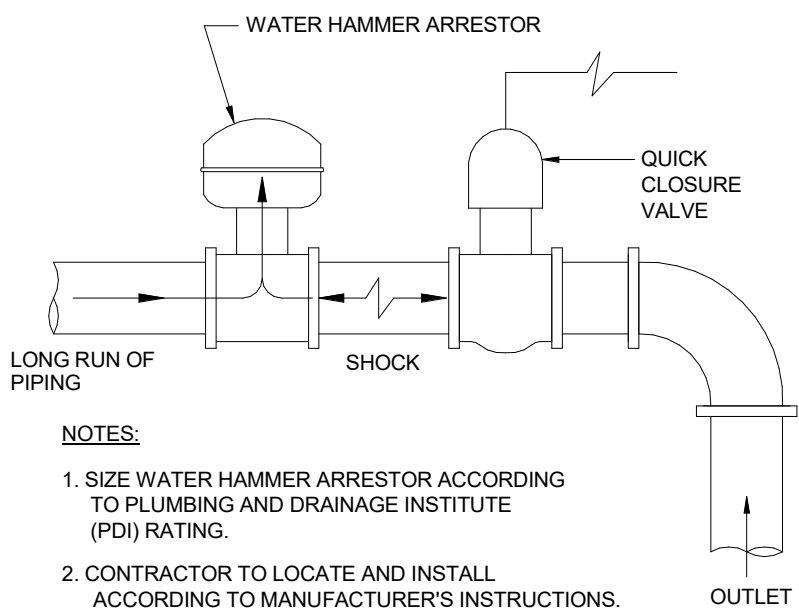
5 VENT THROUGH ROOF DETAIL
P2.03 NO SCALE



2 DOMESTIC WATER ENTRANCE DETAIL
P2.03 NO SCALE

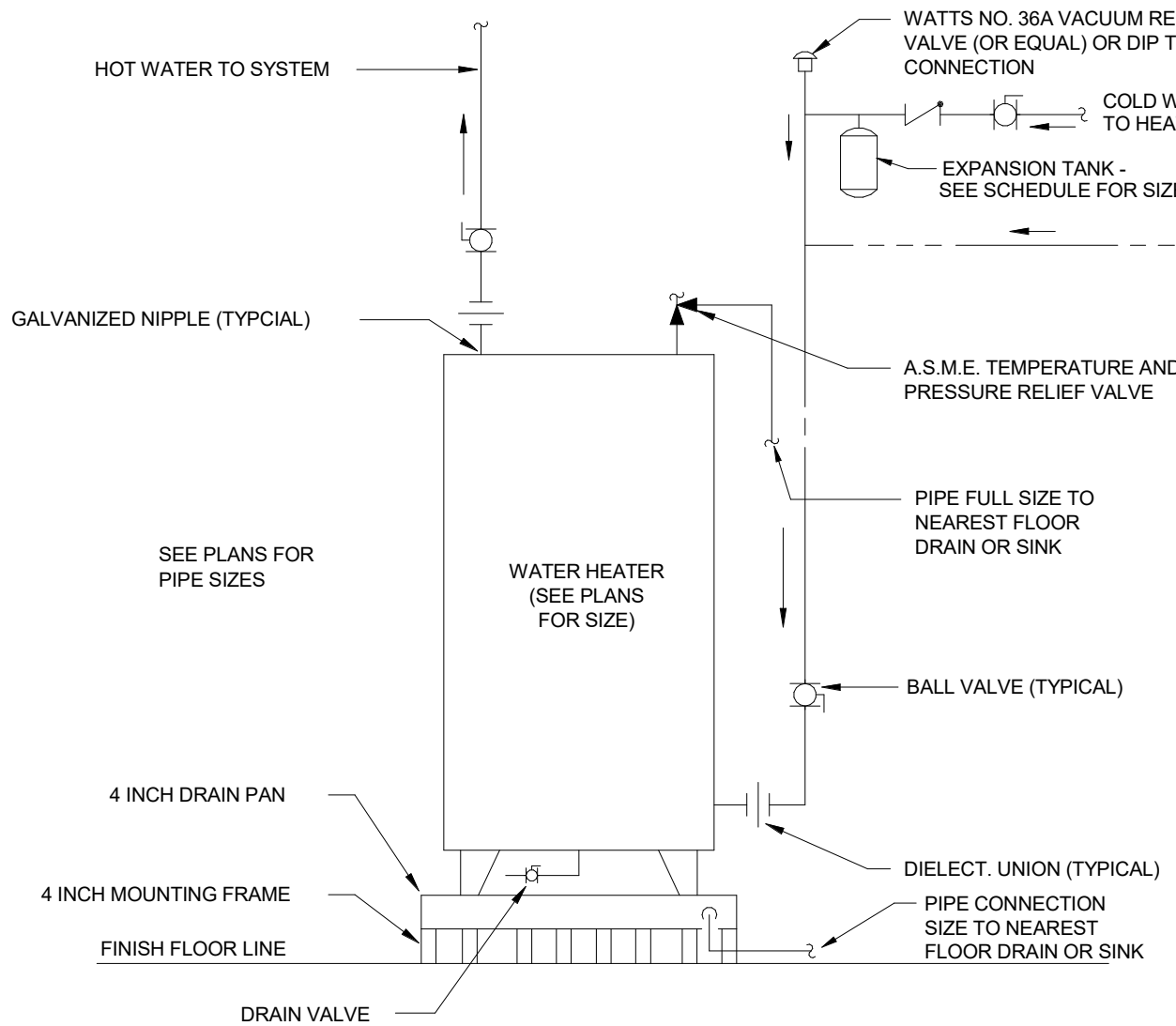
IFC-0

W.H.A. SCHEDULE			
MANUFACTURER AND MODEL NO.	P.D.I. SYMBOL	FIXTURE UNIT RATING	PIPE SIZE
WADE SHOKSTOP	A	(1-11)	1/2"
WADE SHOKSTOP	B	(12-32)	3/4"
WADE SHOKSTOP	C	(33-60)	1"
WADE SHOKSTOP	D	(61-113)	1"
WADE SHOKSTOP	E	(114-154)	1"
WADE SHOKSTOP	F	(155-330)	1"



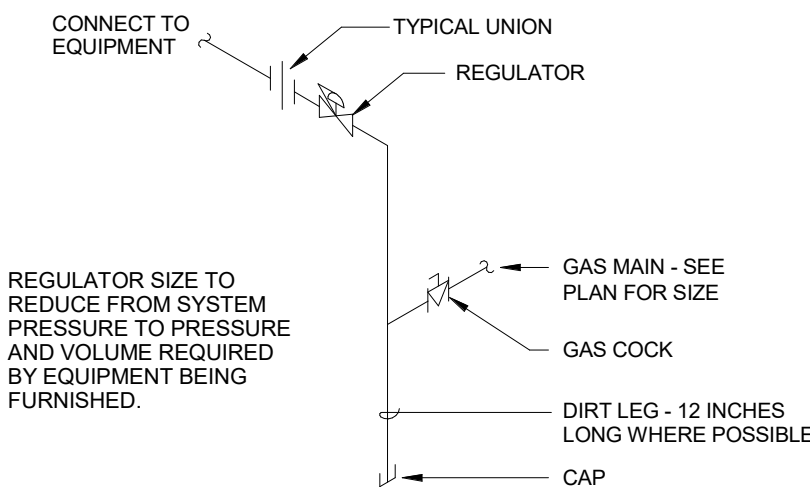
- NOTES:
1. SIZE WATER HAMMER ARRESTOR ACCORDING TO PLUMBING AND DRAINAGE INSTITUTE (PDI) RATINGS.
 2. CONTRACTOR TO LOCATE AND INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

9 WATER HAMMER ARRESTOR
P2.03 NO SCALE

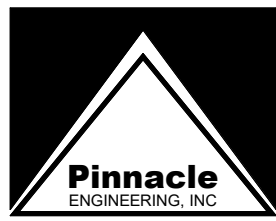


- NOTES:
- (1) SET THE BALANCING VALVE PER MANUFACTURER'S INSTRUCTIONS.

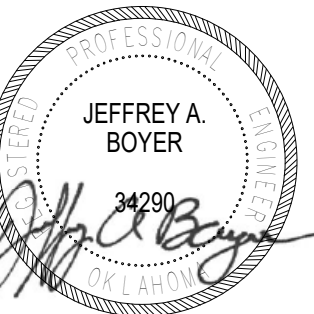
6 ELECTRIC WATER HEATER (FLOOR MOUNTED)
P2.03 NO SCALE



3 TYPICAL GAS CONNECTION
P2.03 NO SCALE



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P3.01

Scale As indicated

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	LAMPS			MTG. TYPE	MTG. HT.	REC. DEPTH	DESCRIPTION	IMAGE
			QUANTITY	WATTS	TYPE					
L1P	MAXLITE	BPHE3-U090WCS	LOT	90	LED	P	12' AFF	-	ROUND ECO PENDANT HIGH BAY GEN 3 FIXTURE WITH 12600 LUMEN OUTPUT, 4000K COLOR TEMPERATURE. PROVIDE ALL REQUIRED ACCESSORIES FOR HOOK AND CHAIN MOUNTING.	
	APPROVED EQUAL									
L2P	MAXLITE	LSV4U23WCSCR MLCHKLSV15	LOT	35	LED	P	*	-	4' LINEAR LED FIXTURE, PENDANT MOUNTED WITH ALUMINUM VAPOR TIGHT HOUSING, SELECTABLE WATTAGE, 4500 LUMEN OUTPUT, 4000K COLOR TEMPERATURE. PROVIDE ALL REQUIRED ACCESSORIES FOR SUSPENDED MOUNTING. SEE LIGHTING PLANS FOR LOCATIONS AND QUANTITIES. * VERIFY MOUNTING HEIGHT ABOVE FINISHED FLOOR PRIOR TO INSTALLATION.	
	APPROVED EQUAL									
L2	MAXLITE	LSV4U23WCSCR	LOT	35	LED	S	C	-	4' LINEAR LED FIXTURE, SURFACE MOUNTED WITH ALUMINUM VAPOR TIGHT HOUSING, SELECTABLE WATTAGE, 4500 LUMEN OUTPUT, 4000K COLOR TEMPERATURE. PROVIDE ALL REQUIRED ACCESSORIES FOR SURFACE MOUNTING. SEE LIGHTING PLANS FOR LOCATIONS AND QUANTITIES.	
	APPROVED EQUAL									
L3	MAXLITE	MLFP24G522WCSCR ML24G4CHK	LOT	38	LED	LI	C	-	2X4 LAY-IN LED FLAT PANEL FIXTURE WITH SELECTABLE WATTAGE, SELECTABLE COLOR TEMPERATURE, 4000 LUMEN OUTPUT, DIMMABLE DRIVER, UNIVERSAL VOLTAGE, FLANGE KIT, HANGING CABLES AND POLYSTYRENE LENS.	
	APPROVED EQUAL									
L3E	MAXLITE	MLFP24G522WCSCREM ML24G4CHK	LOT	38	LED	LI	C	-	2X4 LAY-IN LED FLAT PANEL FIXTURE WITH SELECTABLE WATTAGE, SELECTABLE COLOR TEMPERATURE, 4000 LUMEN OUTPUT, DIMMABLE DRIVER, UNIVERSAL VOLTAGE, FLANGE KIT, CABLE HANGERS, POLYSTYRENE LENS. AND EMERGENCY BATTERY PACK.	
	APPROVED EQUAL									
L4	MAXLITE	M55UC4W-CSBWCR M-VCLV2	LOT	38	LED	W	10'AFF	-	FIXED WALL MOUNTED LED FIXTURE WITH BLACK FINISH, DIE-CAST ALUMINUM HOUSING, SELECTABLE COLOR TEMPERATURE, 3512 LUMEN OUTPUT, WIDE DISTRIBUTION. UL LISTED FOR WET LOCATION. NOTE 3.	
	APPROVED EQUAL									
L4E	MAXLITE	M55UC4W-CSBWCRE2 M-VCLV2	LOT	38	LED	W	10'AFF	-	FIXED WALL MOUNTED LED FIXTURE WITH BLACK FINISH, DIE-CAST ALUMINUM HOUSING, SELECTABLE COLOR TEMPERATURE, 3512 LUMEN OUTPUT, WIDE DISTRIBUTION, ELECTRONIC DRIVER, AND EMERGENCY BATTERY PACK. UL LISTED FOR WET LOCATION. NOTE 3.	
	APPROVED EQUAL									
L5	PROVIDED BY GENERAL CONTRACTOR		FURNISHED WITH UNIT			R	C	-	RECESSED LED DOWNLIGHT WITH 4000K COLOR TEMPERATURE, 3000 LUMEN OUTPUT, AND EMERGENCY BATTERY PACK. UL LISTED FOR WET LOCATION. FIXTURES ARE PROVIDED BY GENERAL CONTRACTOR AS PART OF THE METAL AWNING SYSTEM.	
	PROVIDED BY GENERAL CONTRACTOR									
	PROVIDED BY GENERAL CONTRACTOR									
S1	PROVIDED BY SIGN MANUFACTURER		FURNISHED WITH UNIT			W	NOTE 3	-	WALL MOUNTED LED SIGN LIGHTING FIXTURE. NOTE 2.	
	PROVIDED BY SIGN MANUFACTURER									
	PROVIDED BY SIGN MANUFACTURER									
S2	PROVIDED BY SIGN MANUFACTURER		FURNISHED WITH UNIT			W	NOTE 3	-	WALL MOUNTED LED LIGHT FIXTURE. NOTE 2.	
	PROVIDED BY SIGN MANUFACTURER									
	PROVIDED BY SIGN MANUFACTURER									
BL	MAXLITE	EMT-2WH	FURNISHED WITH UNIT			W	9'AFF	-	WALL MOUNTED TWO HEAD LED EMERGENCY FIXTURE WITH WHITE THERMOPLASTIC HOUSING, 1100 LUMEN OUTPUT, SELF DIAGNOSTICS, AND EMERGENCY BATTERY PACK.	
	APPROVED EQUAL									
Y	MAXLITE	AE8OUT4-WCSBFCR PL-SQ4-1SE11-B	LOT	80	LED	POLE	18'AFF	-	POLE MOUNTED LED SITE LIGHTING FIXTURE WITH ALUMINUM HOUSING, 4000K COLOR TEMPERATURE, 9000 LUMEN OUTPUT, TYPE IV DISTRIBUTION, ELECTRONIC DRIVER. PROVIDE FULL CUTOFF TYPE FIXTURE. PROVIDE 15' SQUARE STRAIGHT STEEL 4" POLE WITH 3' BASE. LIGHT FIXTURE SHALL BE MOUNTED 18'AFF.	
	APPROVED EQUAL									
XL	MAXLITE	EX-GW	FURNISHED WITH UNIT			W	AD	-	WHITE THERMOPLASTIC LED EXIT SIGN WITH SINGLE FACE, GREEN LETTERS, UNIVERSAL MOUNTING, SELF DIAGNOSTICS, AND EMERGENCY BATTERY PACK.	
	APPROVED EQUAL									

ABBREVIATIONS: LI-LAY-IN C-CEILING LG-LENS GASKETING GMF-INTERNAL SLOW BLOW FUSE FL-FLUORESCENT MH-METAL HALIDE HO-HIGH OUTPUT
AFF-ABOVE FINISH FLOOR P-PENDENT FC-FROM CEILING R-RECESSED AM-ABOVE MIRROR W-WALL AD-ABOVE DOOR
S-SURFACE DTT-DOUBLE TWIN TUBE FLUORESCENT CA-CANOPY TC-TOP OF METAL CANOPY AW-ABOVE WINDOW VA-VERIFY WITH ARCHITECT

LIGHTING FIXTURE SCHEDULE GENERAL NOTES:

- FIXTURE OUTLET BOX LOCATIONS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND APPROXIMATE IN LOCATION. EXACT POSITION OF THE OUTLET BOX SHALL DEPEND ON THE FIXTURE AND THE MOUNTING DETAIL.
- MOUNTING AND SUPPORT DETAILS FOR LIGHTING FIXTURES SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER BEFORE THE FIXTURES ARE INSTALLED. NO COMBUSTIBLE MATERIALS SHALL BE USED.
- WET LOCATION FIXTURES SHALL BE MOUNTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION SO AS TO ENSURE THE PREVENTION OF MOISTURE FROM ENTERING THE FIXTURE. IN ADDITION, EACH CONDUIT ENTRY WILL BE SEALED BY USE OF AN APPROVED SWEDGE FITTING WITH A NEOPRENE SEAL, AS MANUFACTURED BY JOHN REMKE COMPANY OR APPROVED EQUAL.
- OUTLET BOXES SERVING WET LOCATION FIXTURE SHALL BE CODE SIZE, WITH A WATERTIGHT SOLID CAST TOP. CONDUIT ENTRIES SHALL BE THREADED.
- FIXTURE MOUNTING HEIGHTS IN SCHEDULE ARE TYPICAL UNLESS NOTED OTHERWISE ON DRAWINGS.
- FOR LIGHTING PACKAGE PRICING, CONTACT THE FOLLOWING:

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REXEL ENERGY SOLUTIONS
(M) 906-235-2979
MIKE.MCMAKEN@REXELENERGY.COM

STEPHEN MITCHELL
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(M) 908-256-3115
SMITCHELL@MAXLITE.COM

LIGHTING FIXTURE SCHEDULE NOTES:

- SEE MOUNTING DETAIL ON THIS SHEET FOR MORE INFORMATION.
- INSTALLED BY SIGN COMPANY.
- VERIFY MOUNTING HEIGHT WITH SIGN COMPANY BEFORE ROUGHING IN.
- FIXTURE SHALL BE MOUNTED SO THAT THE TOP OF THE FIXTURE IS AT 12' AFF TO ALIGN WITH BANDING ON EXTERIOR OF BUILDING.

GENERAL NOTES:

- VERIFY ALL DOOR SWINGS WITH ARCHITECTURAL BEFORE ROUGHING IN LIGHT SWITCHES TO ENSURE PROPER SWITCH LOCATION. VERIFY ALL CASEWORK DETAILS TO ENSURE THAT ALL OUTLETS ABOVE CASEWORK ARE AT THE PROPER HEIGHT.
- SERVICE TO THE BUILDING SHALL BE 120/240 VOLTS, 1PHASE, 3WIRE.
- ALL CONDUIT SHALL BE RUN CONCEALED UNLESS SPECIFICALLY SHOWN EXPOSED, OR INSTALLED IN EXPOSED CEILING.
- THE CONTRACTOR SHALL CHECK ALL LIGHTING FIXTURES FOR EXACT TYPE MOUNTING AND SPACE REQUIRED BEFORE ROUGHING IN.
- THE ELECTRICAL CONTRACTOR SHALL WORK CLOSELY WITH THE GENERAL CONTRACTOR AND VERIFY EXACT TYPE OF EQUIPMENT TO BE INSTALLED AND THE DIMENSIONS WHICH MAY AFFECT THE EXACT PLACEMENT OF ELECTRICAL WORK.
- VERIFY THE EXACT LOCATION OF ALL MOTORS AND EQUIPMENT BEFORE ROUGHING IN. LIKewise APPRAISE ALL TRADES OF THE LOCATIONS OF ELECTRICAL WORK THAT AFFECTS WALL THICKNESS, PLUMBING, MECHANICAL, ETC.
- ALL CONDUIT STUBBED OUT FOR FUTURE SHALL BE CAPPED AND HAVE LOCATION MARKED WITH A 2" SQUARE, PAINTED RED, WITH CONDUIT NAME AND SIZE SHOWN IN WHITE.
- ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE AN INSULATED GROUND WIRE PULLED IN THE CONDUIT WITH CURRENT CONDUCTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE GROUNDING CONDUCTOR SHALL BE SIZED ACCORDING TO TABLE 250-122 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE UNLESS INDICATED TO BE LARGER IN THE SPECIFICATIONS OR PLANS.
- DO ALL WORK IN COMPLIANCE WITH ALL APPLICABLE CODES, LAWS AND ORDINANCES, THE NATIONAL ELECTRICAL CODE (HEREINAFTER REFERRED TO AS "CODE" OR "NEC"), THE AMERICANS WITH DISABILITIES ACT, AND THE REGULATIONS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND, WHERE APPLICABLE, UTILITY COMPANIES. OBTAIN AND PAY FOR ANY AND ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES OF INSPECTIONS AND APPROVAL, AND THE LIKE, AND DELIVER SUCH CERTIFICATES TO THE OWNER.
- THE MAIN SERVICE SHALL HAVE THE GROUNDED CONDUCTOR (NEUTRAL) GROUNDED TO THE GROUNDING ELECTRODE SYSTEM AT THE SUPPLY SIDE OF THE SERVICE DISCONNECTING MEANS BY A GROUNDING ELECTRODE CONDUCTOR NOT SMALLER THAN THAT SHOWN IN TABLE 250-66 OF THE NEC. THE GROUNDED CONDUCTOR (NEUTRAL), THE GROUNDING ELECTRODE CONDUCTOR, AND THE EQUIPMENT GROUNDING CONDUCTOR CONNECTIONS SHALL BE MADE INSIDE THE SERVICE ENTRANCE EQUIPMENT.
- ALL CONDUCTORS SHALL BE COPPER, EXCEPT AS SHOWN ON DRAWINGS.
- MINIMUM CONDUCTOR SIZE SHALL BE #12.
- ALL CONDUIT INSTALLED INDOORS SHALL BE EMT, OTHERWISE SHALL BE IMC.
- SWITCH AND RECEPTACLE COVER PLATES SHALL BE STAINLESS STEEL.
- ALL DEVICES SHALL BE GRAY.
- ALL FUSES SHALL BE DUAL ELEMENT, TIME DELAY, RATED 100,000 AIC.
- ALL DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE.
- ALL CONDUCTORS SHALL BE DUAL RATED THHN/THWN TYPE INSULATION.
- GUTTERS (WIREWAYS) SHALL BE SIZED AS SHOWN OR AS REQUIRED BY CODE. ALL GUTTERS SHALL HAVE HINGED COVERS WITH APPROVED FASTENING DEVICES & SHALL BE A STANDARD MANUFACTURED ITEM WITH U.L. LABEL. GUTTERS FROM AC DUCT MATERIAL ARE NOT ACCEPTABLE. GUTTERS SHALL BE AS MANUFACTURED BY HOFFMAN, SQUARE "D", B & C OR APPROVED EQUAL. GUTTER TAPS SHALL BE ILSCO TYPE GTA OF PTA WITH GTC OR PTC INSULATING COVERS.
- IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR, PRIOR TO BID, TO REAFFIRM WITH THE UTILITY COMPANIES INVOLVED, THAT THE LOCATION, ARRANGEMENT (AND THE POWER COMPANY: VOLTAGE, PHASE, & METERING REQUIRED) AND CONNECTIONS AT THE UTILITY SERVICE ARE IN ACCORDANCE WITH THEIR REGULATIONS & REQUIREMENTS. IF THEIR REQUIREMENTS ARE AT A VARIANCE WITH THESE DRAWINGS & SPECIFICATIONS, THE CONTRACT PRICE SHALL INCLUDE ANY ADDITIONAL COST NECESSARY TO MEET THOSE REQUIREMENTS WITHOUT EXTRA COST TO THE OWNER AFTER A CONTRACT HAS BEEN ENTERED INTO.
- ON MANY PROJECTS, THE UTILITY COMPANY MAY LEVY CHARGES DUE TO LOCATION, SIZE OR TYPE OF SERVICE INVOLVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THESE CHARGES, UNLESS SUCH CHARGES ARE NOT AVAILABLE PRIOR TO BID & CONTRACTOR SO DOCUMENTS AT BID OPENING. SHOULD THE COST NOT BE AVAILABLE, PRIOR TO BID, THE CONTRACTOR SHALL SUBMIT A LETTER SO STATING WITH HIS BID.
- ARRANGE WITH UTILITY COMPANIES FOR SUCH SERVICE AS SHOWN OR HEREIN SPECIFIED & INSTALLATION OF METER WHERE SHOWN. FURNISH WITH SHOP DRAWINGS, A SIGNED DOCUMENT FROM UTILITY COMPANIES DESCRIBING THE LOCATION & TYPE OF SERVICES TO BE FURNISHED AND ANY REQUIREMENTS THEY MAY HAVE. THIS DOCUMENT SHALL BE SIGNED FOR EACH UTILITY COMPANY BY A PERSON RESPONSIBLE FOR GRANTING SUCH SERVICES.
- PAY ALL CHARGES (IF ANY) IN CONNECTION THEREWITH, INCLUDING PERMANENT METER DEPOSIT. METER DEPOSIT WILL BE REFUNDED TO THE CONTRACTOR AT TIME OF OWNER'S ACCEPTANCE.



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issue for Construction	06/25/2026

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General Notes & Fixture Schedules

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW
E100	
Scale	NO SCALE

GIDEON WAMAE, P.E.

4120 OVERLOOK CIRCLE, TRUSSVILLE, AL 35173
GWAMAE@GW-ENG.COM | 205-413-4112

GRAPHICAL ELECTRICAL SYMBOLS

BRANCH CIRCUIT SYMBOLS		
	BRANCH CIRCUIT	HOMERUN TO 20A, 1POLE CIRCUIT BREAKER IN PANELBOARD OR DEVICE NOTED. WIRE SIZE IS 2#12&1#12GRD-3/4"C.
	BRANCH CIRCUIT	CONCEALED IN CEILING OR WALL.
	BRANCH CIRCUIT	CONCEALED IN FLOOR.
	BRANCH CIRCUIT	EXISTING CONDUIT BARS DENOTE NEW CONDUCTORS.
	BRANCH CIRCUIT	EXPOSED.
	BRANCH CIRCUIT	RISER UP.
	BRANCH CIRCUIT	RISER DOWN.
BRANCH CIRCUIT NOTES		
	BRANCH CIRCUIT	3#12&1#12GRD-3/4"C
	BRANCH CIRCUIT	4#12&1#12GRD-3/4"C
	BRANCH CIRCUIT	2#10&1#10GRD-3/4"C
	BRANCH CIRCUIT	3#10&1#10GRD-3/4"C
SIZE CONDUIT PER NEC FOR GREATER NUMBER OF CONDUCTORS OR AS NOTED. THE NUMBER IN THE CIRCUIT INDICATES AWG WIRE SIZE AND THE HASHMARKS INDICATE THE NUMBER OF WIRES REQUIRED. EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH NEC TABLE 250-122. THE NUMBER OF HASH MARKS DO NOT INCLUDE EQUIPMENT GROUNDING CONDUCTOR.		

GENERAL SYMBOLS	
	JUNCTION BOX.
	WALL MOUNTED JUNCTION BOX.
	WALL MOUNTED JUNCTION BOX WITH FLEXIBLE CONNECTION TO EQUIPMENT.
	ONE GANG BOX WITH 3/4"C. STUB UP ABOVE ACCESSIBLE CEILING WITH COAXIAL CABLE AND TV JACKS.
	MANUAL MOTOR STARTER WITH THERMAL PROTECTION.
	SAFETY SWITCH, NON-FUSED.
	SAFETY SWITCH, FUSED.
	CIRCUIT BREAKER MOUNTED IN NEMA 1 ENCLOSURE UNLESS NOTED OTHERWISE
	LIGHTING PANEL AND/OR RECEPTACLE PANEL.
	POWER PANEL.
	TRANSFORMER.
	GROUND.

GENERAL ABBREVIATIONS	
H	MOUNTING HEIGHT ABOVE FINISHED FLOOR.
AF	ABOVE FINISHED FLOOR.
WP	WEATHER PROOF - NEMA 3R
RT	RAIN TIGHT - NEMA 4.
EP	EXPLOSION PROOF.
TP	TAMPER PROOF.
A	MOUNT ABOVE COUNTER.
BC	MOUNT BELOW COUNTER.
F	FLUSH MOUNTED.
SLD	SEE SINGLE LINE DIAGRAM.
GFI	GROUND FAULT INTERRUPTING.
C	CONDUIT.
EC	EMPTY CONDUIT.
GC	FLEXIBLE CONDUIT.
SFC	SEALTITE FLEXIBLE CONDUIT.
EMT	ELECTRICAL METALLIC TUBING.
IMC	INTERMEDIATE METALLIC CONDUIT.
RG	RIGID CONDUIT.
PVC	NONMETALLIC RIGID CONDUIT.
EX	EXISTING.
XR	EXISTING TO BE REMOVED
RL	EXISTING TO BE REMOVED AND RELOCATED.
RQ	EXISTING TO BE REMOVED. EXTEND CIRCUIT CONDUCTORS AS REQUIRED AND INSTALL FINISHED BLANK COVER.
RR	EXISTING TO BE REMOVED AND REPLACED WITH NEW.
RL'D	RELOCATED POSITION.
EM	EMERGENCY BATTERY PACK

LIGHTING FIXTURE & CONTROL SYMBOLS		
	CEILING OUTLET	FIXTURE TYPE "A" CIRCUIT #1.
	CEILING OUTLET	EXISTING.
	CEILING OUTLET	FLUORESCENT FIXTURE, SINGLE OR CONTINUOUS, LENGTHS AS SHOWN.
	CEILING OUTLET	FLUORESCENT STRIP.
	WALL OUTLET	BRACKET TYPE FIXTURE.
	WALL OUTLET	FLUORESCENT BRACKET TYPE FIXTURE.
	SWITCH OUTLET	A.C. TYPE, SINGLE POLE, 20A, 125/277V.
	SWITCH OUTLET	A.C. TYPE, THREE WAY, 20A, 125/277V.
	SWITCH OUTLET	A.C. TYPE, FOUR WAY, 20A, 125/277V.
	SWITCH OUTLET	180° DUAL TECH SENSOR LIGHTING MOTION DETECTOR, WALL MOUNTED. WATT STOPPER #DW-100.
	SWITCH OUTLET	LIGHTING MOTION DETECTOR POWER PACK. INSTALL ABOVE ACCESSIBLE CEILING.
	SWITCH OUTLET	LIGHTING MOTION DETECTOR, CEILING MOUNTED.
SWITCH OUTLET NOTES		
"a" "b" ETC.	FIXTURE CORRESPONDS TO A SWITCH DENOTED WITH THE SAME LOWER CASE LETTER.	

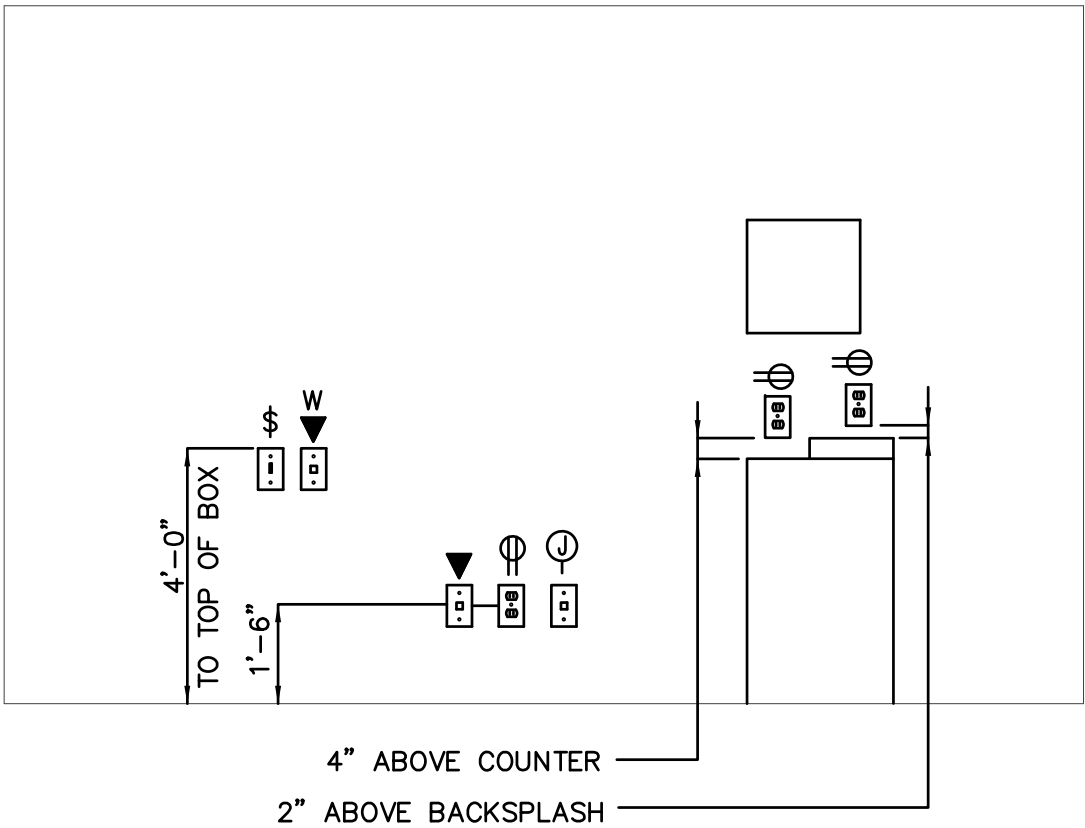
EXIT LIGHT SYMBOLS	
	WALL OR CEILING MOUNTED, SINGLE FACE, NO ARROW.
	CEILING MOUNTED, DOUBLE FACE, LEFT OR RIGHT ARROWS.
	WALL OR CEILING MOUNTED, SINGLE FACE, LEFT OR RIGHT ARROW.
	WALL OR CEILING MOUNTED, SINGLE FACE, LEFT AND RIGHT ARROWS.
	CEILING MOUNTED, DOUBLE FACE, LEFT AND RIGHT ARROWS.

RECEPTACLE OUTLET SYMBOLS		
	WALL OUTLET	DUPLEX RECEPTACLE, 20A, 125V, 3WIRE, NEMA 5-20R.
	WALL OUTLET	DOUBLE DUPLEX RECEPTACLE, 20A, 125V, 3WIRE, NEMA 5-20R, SINGLE PLATE.
	WALL OUTLET	DUPLEX RECEPTACLE, 20A, 125V, NEMA 5-20R, GFCI, WEATHER-RESISTANT, WITH EXTRA DUTY IN-USE WEATHERPROOF COVER. HUBBELL CATALOG #GFR5362SGGY/MP8M.
	WALL OUTLET	SINGLE RECEPTACLE, 20A, 250V, 3WIRE, NEMA 6-20R.
	WALL OUTLET	SINGLE RECEPTACLE, 20A, 250V, 3WIRE, NEMA L6-20R.
	FLOOR OUTLET	FLUSH MOUNTED IN-GRADE WITH DOUBLE DUPLEX RECEPTACLE, 20A, 125V, 3WIRE, NEMA 5-20R, FOUR SPACES FOR KEYSTONE CONNECTORS, AND BRUSHED BRASS COVER LEGRAND RFB4E OR EQUAL.
	CEILING OUTLET	DUPLEX RECEPTACLE, 20A, 125V, 3WIRE, NEMA 5-20R.
RECEPTACLE OUTLET NOTES		
"G"	GROUND FAULT INTERRUPTER.	
"GA"	GROUND FAULT INTERRUPTER, MOUNTED ABOVE COUNTER.	
"A"	MOUNTED ABOVE COUNTER.	
"BC"	MOUNTED BELOW COUNTER.	
"DF"	FOR DRINKING FOUNTAIN.	

VOICE/DATA OUTLET & CONDUIT SYMBOLS		
	VOICE/DATA OUTLET	WALL MOUNTED, WITH 3/4" CONDUIT HOMERUN TO NEAREST TELEPHONE CABINET OR BACKBOARD UNLESS NOTED OTHERWISE.
	VOICE/DATA OUTLET	TELEPHONE BACKBOARD - 3/4" PLYWOOD PAINTED WITH TWO COATS OF FIRE RETARDANT PAINT, 48"x96" HIGH, UNLESS SHOWN OTHERWISE.
VOICE/DATA OUTLET NOTES		
"A"	MOUNTED ABOVE COUNTER.	
"BC"	MOUNTED BELOW COUNTER.	

NOTES:

- INDICATED MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTERLINE OF OUTLET BOX, UNLESS OTHERWISE NOTED.
- REFER TO ARCHITECTURAL DETAILS FOR ADDITIONAL REQUIREMENTS.
- INSTALL OUTLETS THAT ARE IN CLOSE PROXIMITY ON THE SAME CENTERLINE.
- MOUNTING HEIGHTS SHOWN HERE ARE TYPICAL UNLESS NOTED OTHERWISE ON DRAWINGS.



DETAIL
TYPICAL MOUNTING
HEIGHTS
NOT TO SCALE

GIDEON WAMAE, P.E.

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Express Oil Change & Tire Engineers
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Symbol Legends
and Details

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW

E101

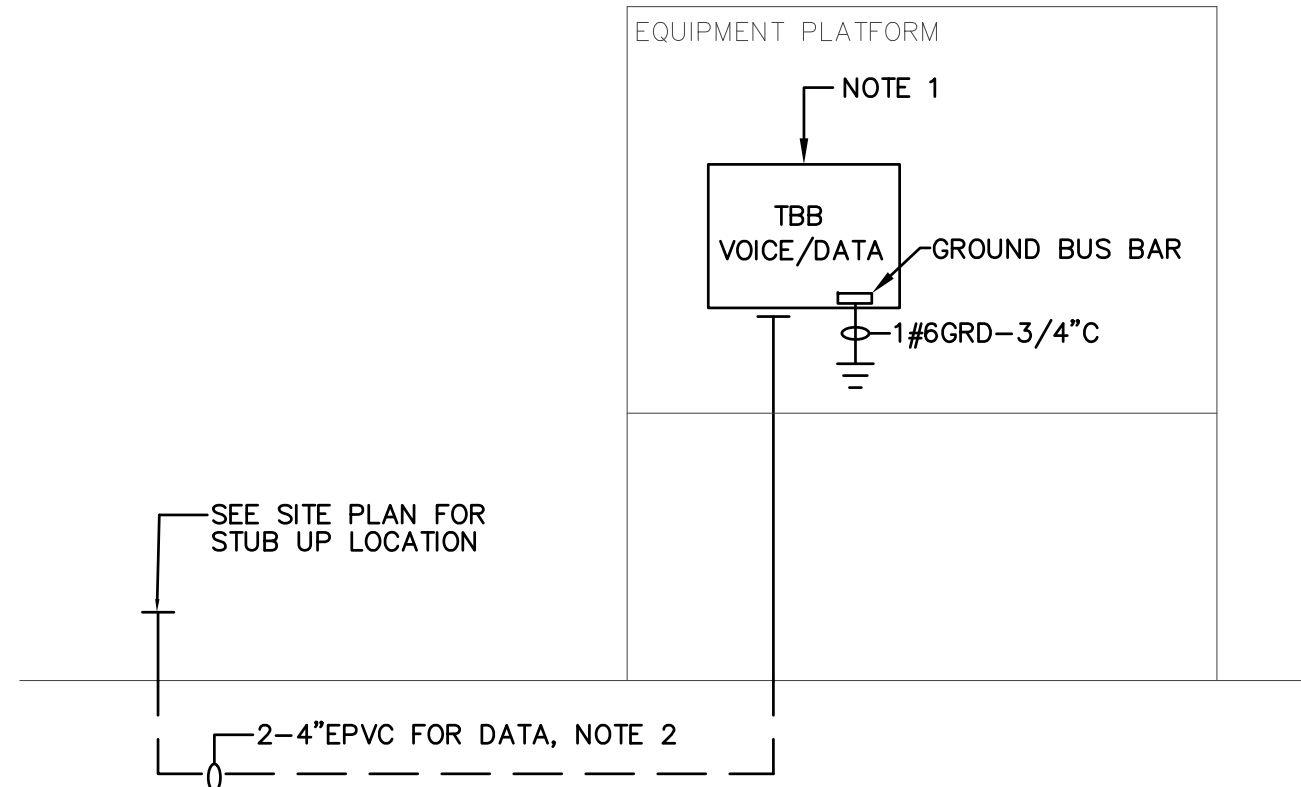
Scale NO SCALE



DETAIL
ARC FLASH HAZARD WARNING LABEL
NOT TO SCALE

NOTES:

- 48"x48" FREE STANDING TELEPHONE BACKBOARD. PROVIDE ACCESS AND WORK SPACE CLEARANCE AS REQUIRED BY LOCAL TELECOM UTILITY COMPANY.
- CONDUIT ELBOWS SHALL BE SWEEPING WITH NO HARD ANGLES.



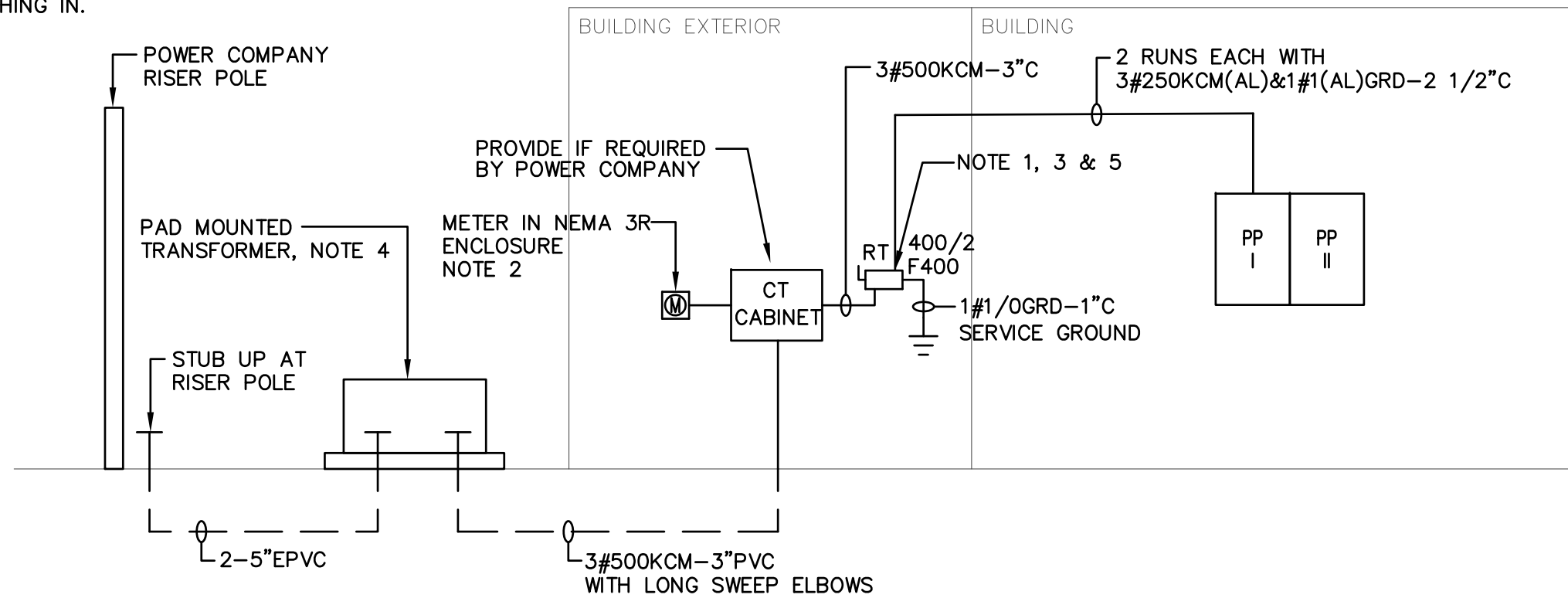
SINGLE LINE DIAGRAM
AUXILIARY
NOT TO SCALE

GENERAL NOTES:

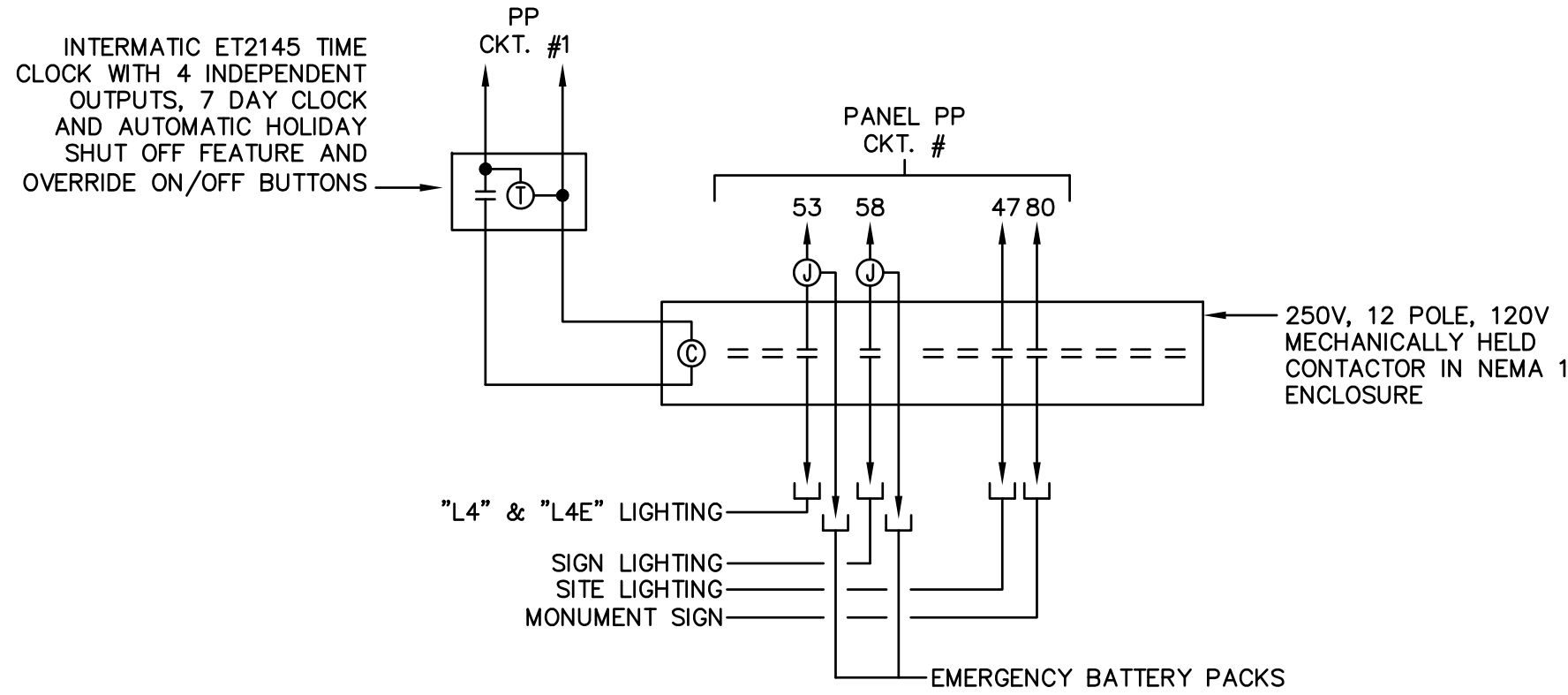
- COORDINATE SERVICE SECONDARY FROM UTILITY TRANSFORMER TO METER WITH POWER COMPANY BEFORE BID AND PRICING. PROVIDE PER POWER COMPANY REQUIREMENTS.
- EQUIPMENT WITH ALUMINUM FEEDERS SHALL BE PROVIDED WITH DUAL RATED TERMINALS.
- PROVIDE 120/240V, 1Ø, 400A, UNDERGROUND SERVICE.
- PROVIDE 2"x3" ENGRAVED LABEL WITH BLUE LETTERING INDICATING MAXIMUM AVAILABLE FAULT CURRENT AND DATE OF CALCULATION.
- UTILITY PAD MOUNTED TRANSFORMER. FURNISH AND INSTALL CONCRETE PAD PER POWER COMPANY REQUIREMENTS. CONTACT UTILITY COMPANY FOR PAD SPECIFICATIONS AND REQUIRED TERMINATIONS AT TRANSFORMER BEFORE BID AND PRICING. INCLUDE COSTS IN BID. COORDINATE EXACT LOCATION OF TRANSFORMER, PROVIDE CLEARANCES AS REQUIRED BY POWER COMPANY.

NOTES:

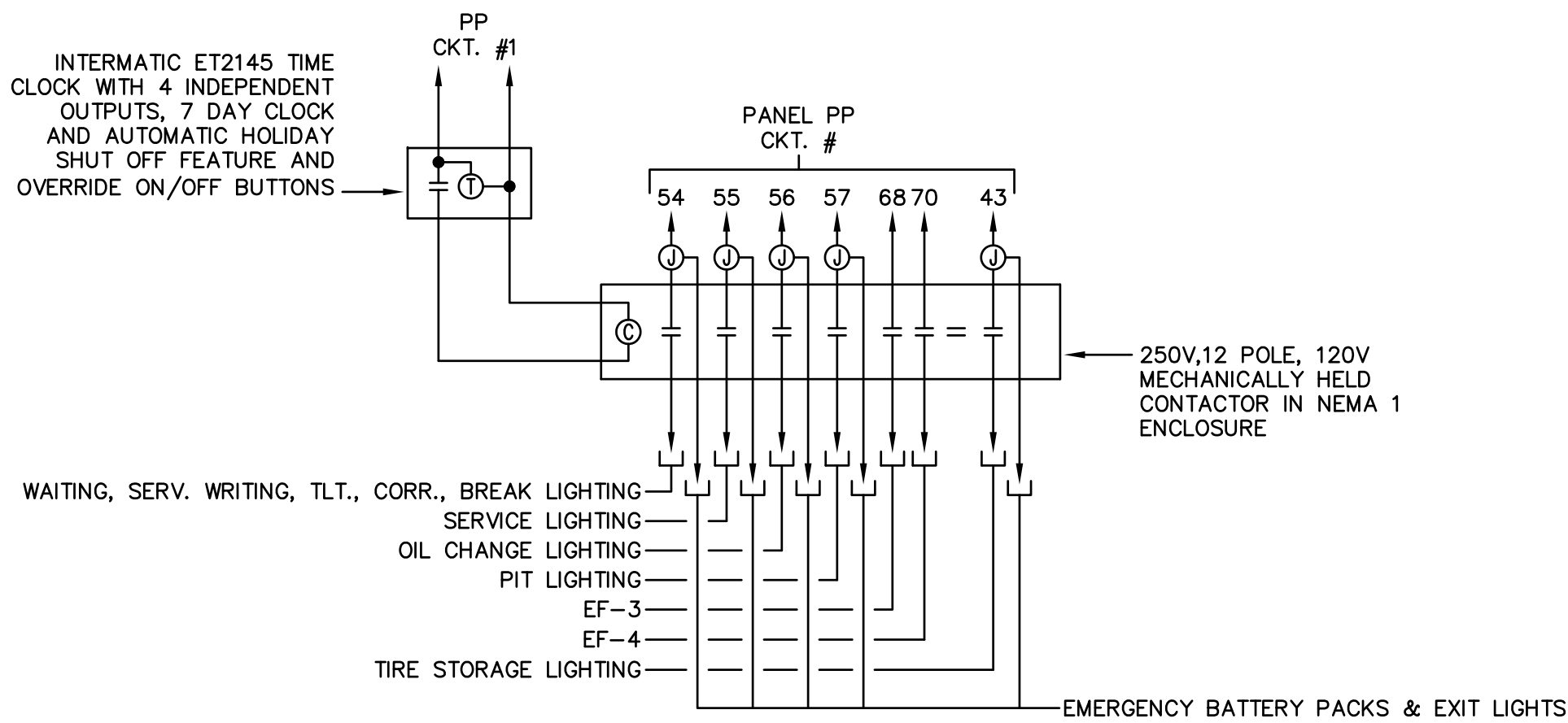
- SERVICE ENTRANCE RATED DISCONNECT SWITCH, NEMA 3R ENCLOSURE
- COORDINATE METERING WITH POWER COMPANY BEFORE ROUGHING IN.



SINGLE LINE DIAGRAM
POWER
NOT TO SCALE



WIRING DIAGRAM
CONTACTOR C-2
NOT TO SCALE



WIRING DIAGRAM
CONTACTOR C-1
NOT TO SCALE

PANEL LOAD SUMMARY													
Panel: PP (SECTION I)													
Equipment	LIGHT	RCPT	OW	CB SIZE	CIRCUIT #	PHASE A	PHASE B	CIRCUIT #	CB SIZE	LIGHT	RCPT	OW	Equipment
CONTACTOR C-1 & C-2			100	20/1	1	100		2	20/1				SPARE
OUTDOOR RECEPTACLE		200		20/1	3		800	4	20/1		600		SERVICE WRITING RECEPT.
WAITING ROOM RECEPT.		800		20/1	5	1600		6	20/1		800		MANAGER RECEPTACLE
TLT/CORR/BREAK RECEPT.		800		20/1	7		1000	8	20/1		200		BREAK RECEPTACLE
SERVICE RECEPTACLE		400		20/1 (GFCI)	9	600		10	20/1		200		BREAK FRIDGE RECEPTACLE
SERVICE RECEPTACLE		400		20/1	11		600	12	20/1		200		SERVICE RECEPTACLE
MANAGERS RECEPTACLE		400		20/1	13	800		14	20/1		400		COFFEE MAKER
SERVICE RECEPTACLE		400		20/1	15		1200	16	20/1		800		ALIGNMENT LIFT
TIRE CHANGER		900		20/2	17	3900		18	20/2		3000		10K LIFT
		1440			19		3900	20			1440		10K LIFT
		1440		20/2	21	2880		22	20/2		1440		10K LIFT
		1440			23		2880	24			1440		10K LIFT
		1440		20/2	25	2880		26	20/2		1440		10K LIFT
		1440			27		2880	28			1440		10K LIFT
		1440		20/2	29	2640		30	20/2		1200		WHEEL BALANCER
		1440			31		2640	32			1200		WHEEL BALANCER
AIR COMPRESSOR		3380		60/2	33	3560		34	20/1		200		EQUIPMENT PLATFORM RECEPT.
IRRIGATION CONTROLLER		200		20/1	37	400		38	20/1 (GFCI)		400		SERVICE DESK RECEPT.
OIL CHANGE RECEPTACLE		600		20/1	39		1200	40	20/1		600		SERVICE RECEPTACLE
PIT SUMP PUMP		200		20/1	41	400		42	20/1		200		OIL CHANGE DESK RECEPT.
Sub-Total	0	21560	100			19760	20860			0	18960	0	Sub-Total
TOTAL CONNECTED LOAD PER PHASE													
ENCLOSURE NEMA 1													
MOUNTING SURFACE													
MAIN TYPE ML													
SIZE 400A													
FEED THRU YES													
FEED BOTTOM													
BUS RATING 400A													
SERVICERATED NO													
MIN FULL EQUIP KAC RATING 22													
TYPE LOAD CENTER													
MANUFACTURER OTHER													
VOLTS 120/ 240 V 1 Phase, 3 Wire & Grd Bus Bar													
* Diversified per NEC Table 220.44.													

PANEL LOAD SUMMARY													
Panel: PP (SECTION II)													
Equipment	LIGHT	RCPT	OW	CB SIZE	CIRCUIT #	PHASE A	PHASE B	CIRCUIT #	CB SIZE	LIGHT	RCPT	OW	Equipment
STORAGE LIGHTING	800			20/1	43	1000		44	20/1		200		OIL CHANGE DESK RECEPT.
OIL CHANGE DESK RECEPT.		200		20/1	45		400	46	20/1		200		OIL CHANGE DESK RECEPT.
SITE LIGHTING		200		20/1	47	200		48	20/1				SPARE
PIT RECEPTACLE		800		20/1	49		800	50	20/1		200		PIT RECEPTACLE
ELECTRIC DRAIN SYSTEM		400		20/1	51	800		52	20/1		400		TBB RECEPTACLE
EXTERIOR LIGHTING	150			20/1	53		470	54	20/1	320			SERVICE DESK RECEPT.
SERVICE LIGHTING	1638			20/1	55	2366		56	20/1	728			SIGN LIGHTING
PIT LIGHTING	540			20/1	57		1890	58	20/1	1350			SIGN LIGHTING
SPARE	400			20/1	59	400		60	20/1				SPARE
FUTURE EV CHARGER				60/2	61		50	62	20/1			50	REC-1
SPARE	500			20/1	63	1680		64	25/2			1680	OHP-1
ENR-1		2250		25/2	67	3906		68	20/1			1656	EF-3
UH-1 & UH-2		100		20/1	71	300		72	20/1		200		EXTERIOR RECEPTACLE
UH-2 & UH-3		100		20/1	73		1700	74	15/1			1600	GFF-1
DRINKING FOUNTAIN		200		20/1	75	200		76	20/1				SPARE
SPARE				20/1	77		400	78	20/1		400		LOT BELL
SPARE				20/1	79	100		80	20/1		100		MONUMENT SIGN
LIFT RECEPTACLE		600		20/1	81		600	82	20/1				SPARE
LIFT RECEPTACLE		600		20/1	83			84	20/1				SPARE
Sub-Total	4228	2600	4700			10952	12396			2398	1600	8422	Sub-Total
TOTAL CONNECTED LOAD PER PHASE													
DEMAND LOAD (VA)													
WIRE SIZE CALCULATIONS													
ENCLOSURE NEMA 1													
MOUNTING SURFACE													
MAIN TYPE ML													
SIZE 400A													
FEED THRU YES													
FEED TOP													
BUS RATING 400A													
SERVICERATED NO													
MIN FULL EQUIP KAC RATING 22													
TYPE LOAD CENTER													
MANUFACTURER OTHER													
VOLTS 120/ 240 V 1 Phase, 3 Wire & Grd Bus Bar													
* Diversified per NEC Table 220.44.													

EQUIPMENT ELECTRICAL REQUIREMENTS SCHEDULE								
EQUIPMENT	LOCATION	KW	HP	AMP	CIRCUIT BREAKER	DISCONNECT SWITCH/FUSE	CONDUCTORS & CONDUIT	VOLTAGE
(4) 10K LIFT	SERVICE 9	—	2	12.0	20/2	—	2#12&1#12GRD-3/4"C	240V,1Ø
12K LIFT	SERVICE 9	—	2	12.0	20/2	—	2#12&1#12GRD-3/4"C	240V,1Ø
AIR COMPRESSOR	STORAGE 12	—	5	28.0	60/2	60/2, F40	2#8&1#10GRD-3/4"C	240V,1Ø
TIRE CHANGER	SERVICE 9	—	—	6.0	20/2	30/2	2#12&1#12GRD-3/4"C	240V,1Ø
WHEEL BALANCER	SERVICE 9	—	—	20.0	20/2	30/2	2#12&1#12GRD-3/4"C	240V,1Ø
ALIGNMENT LIFT	SERVICE 9	—	—	26.0	30/2	30/2, F30	2#10&1#10GRD-3/4"C	240V,1Ø

NOTES:

- CONTRACTOR SHALL COORDINATE REQUIREMENTS SHOWN HERE WITH OWNER BEFORE ROUGHING IN. PROVIDE ELECTRICAL PER OWNER EQUIPMENT VENDOR REQUIREMENTS.

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Sand Springs, Oklahoma

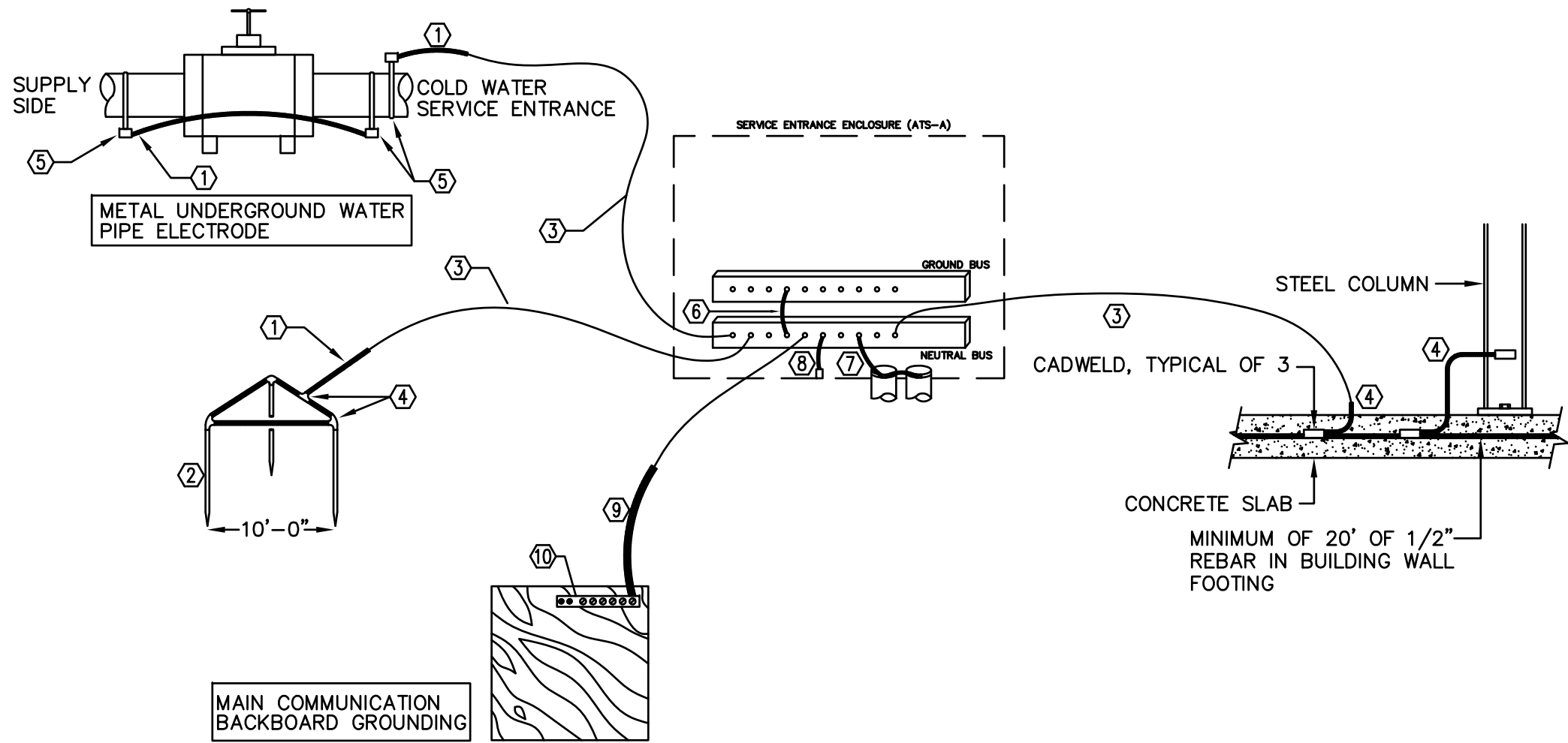
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No.	Description	Date
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Single Line
Diagram &
Panelboard
Schedules

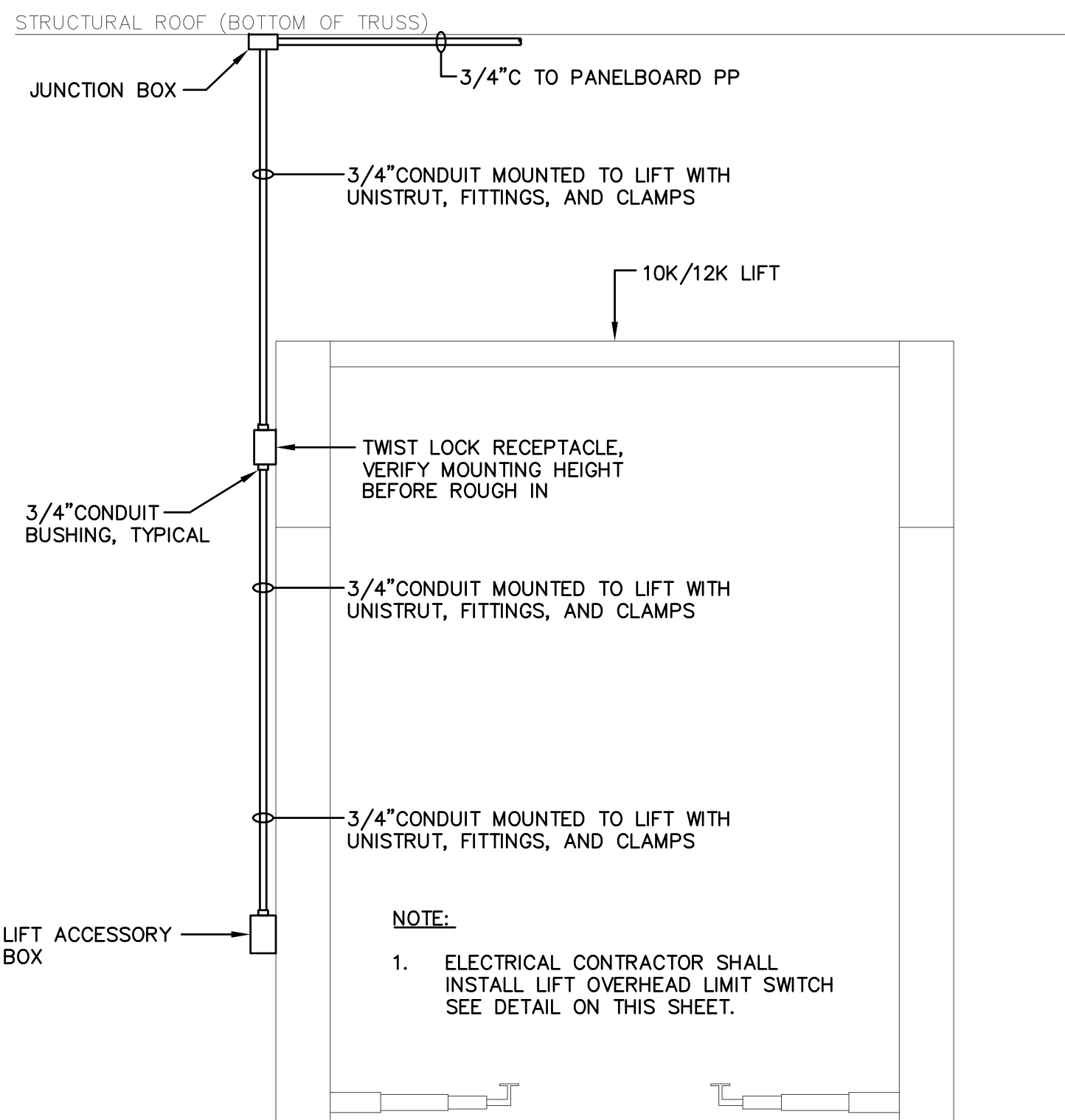
Project number	25048
Date	04/17/2026
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Checked by	GW
E102	
Scale	NO SCALE



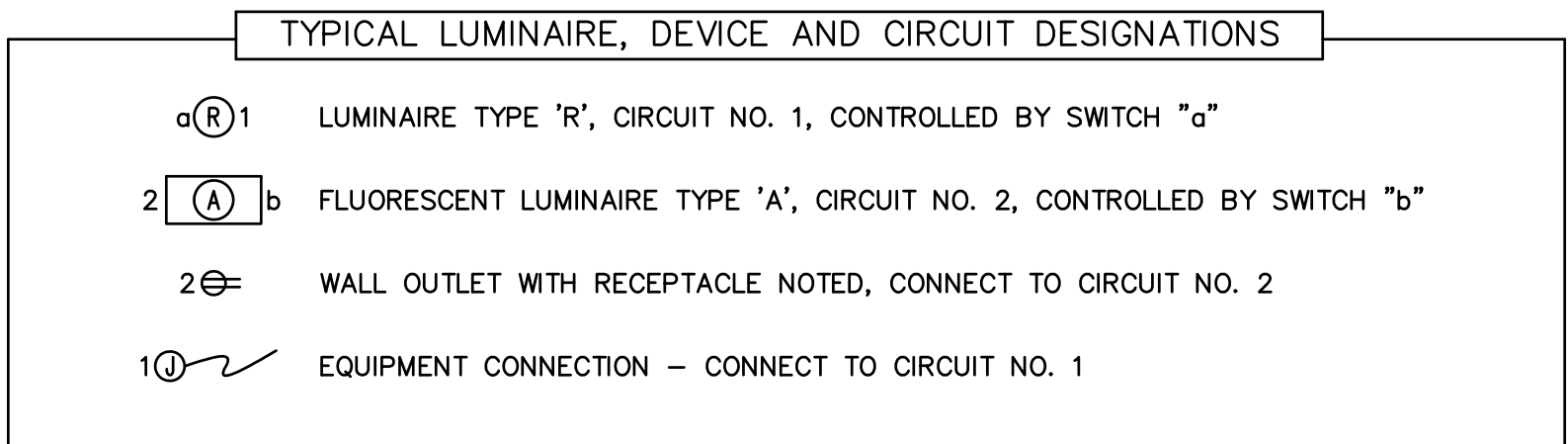
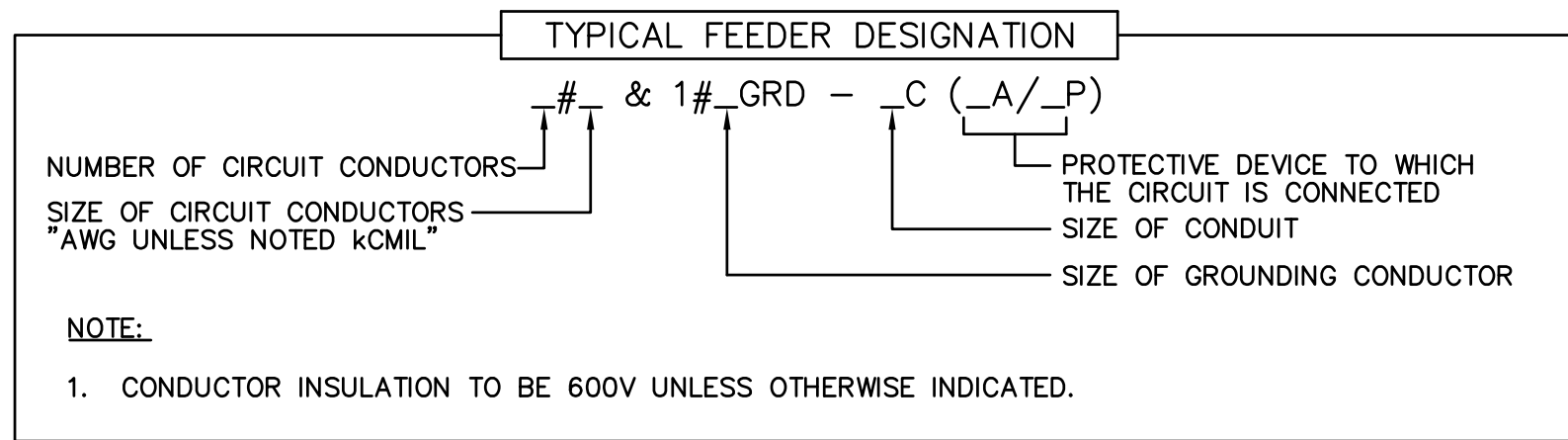
GROUNDING SYSTEM DETAIL
NOT TO SCALE

GROUNDING SYSTEM DETAIL – KEY NOTES

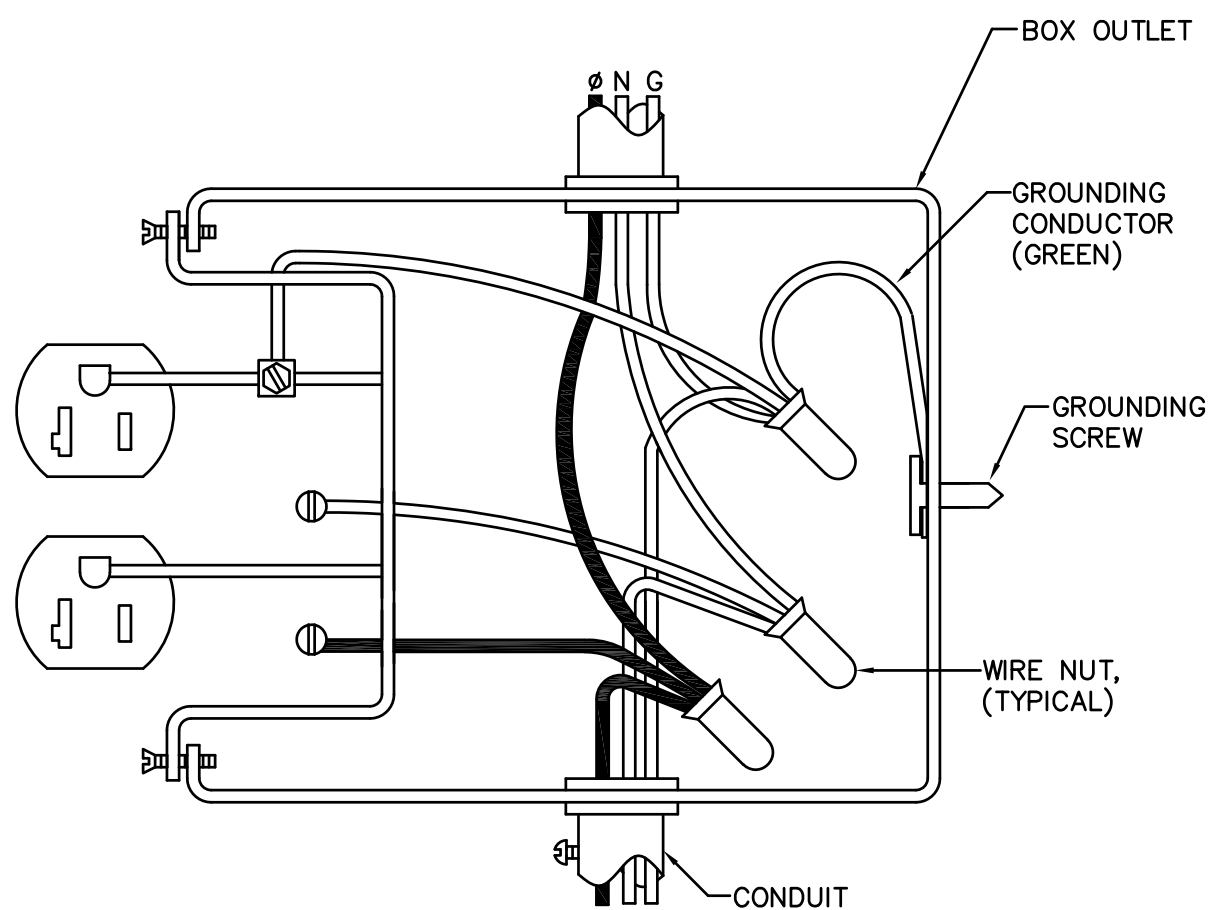
- ① 4/0 BARE GROUNDING ELCTRODE CONDUCTOR.
- ② 3/4"x10'-0" CLAD STEEL GROUND ROD, DRIVEN 24" BELOW GRADE, MINIMUM.
- ③ 4/0 BARE GROUNDING ELECTRODE CONDUCTOR IN 2"PVC-40.
- ④ EXOTHERMIC WELD CONNECTOR:
TWO CABLES TO GROUND ROD, CADWELD #GT OR #GY
CABLE TO CABLE TEE, CADWELD #TA
ONE CABLE TO GROUND ROD, CADWELD #GR
- ⑤ CAST BRONZE, UL LISTED GROUND CLAMP, O-Z/GEDNEY TYPE-G.
- ⑥ MAIN BONDING JUMPER, SIZED BY EQUIPMENT MANUFACTURER PER NEC 250-66.
- ⑦ BONDING JUMPER TO GROUNDING BUSHING. AND BONDING JUMPERS FROM CONDUIT TO CONDUIT. ALL CONDUIT CONNECTED TO THE SERVICE ENTRANCE ENCLOSURE SHALL BE BONDED, SIZED PER NEC 250.
- ⑧ BONDING JUMPER, SIZED BY MANUFACTURER PER 250-66.
- ⑨ 4/0 BARE BONDING JUMPER.
- ⑩ 6 CONDUCTOR GROUND BUS, COPPER OR ALUMINUM RATED, ILSCO #PDE.



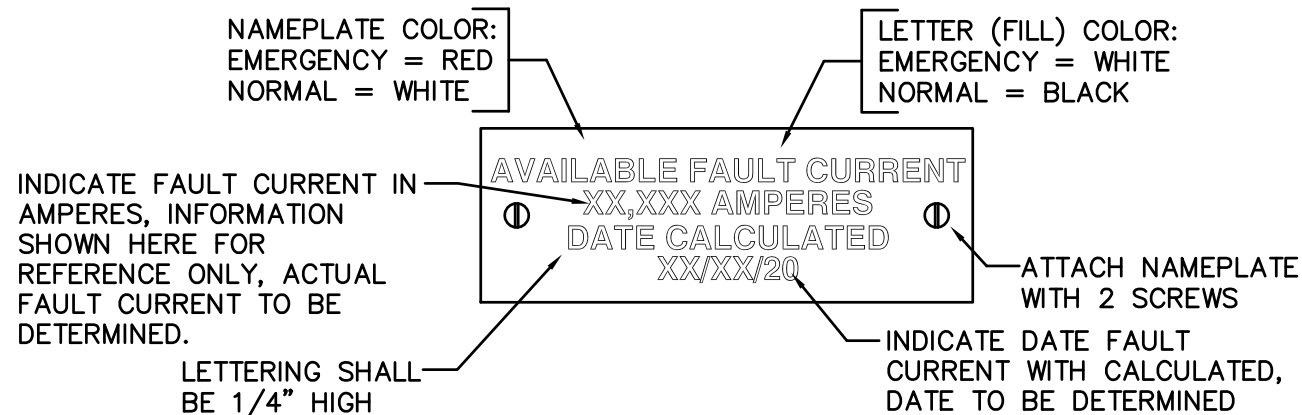
ELEVATION
LIFT POWER DETAIL
NOT TO SCALE



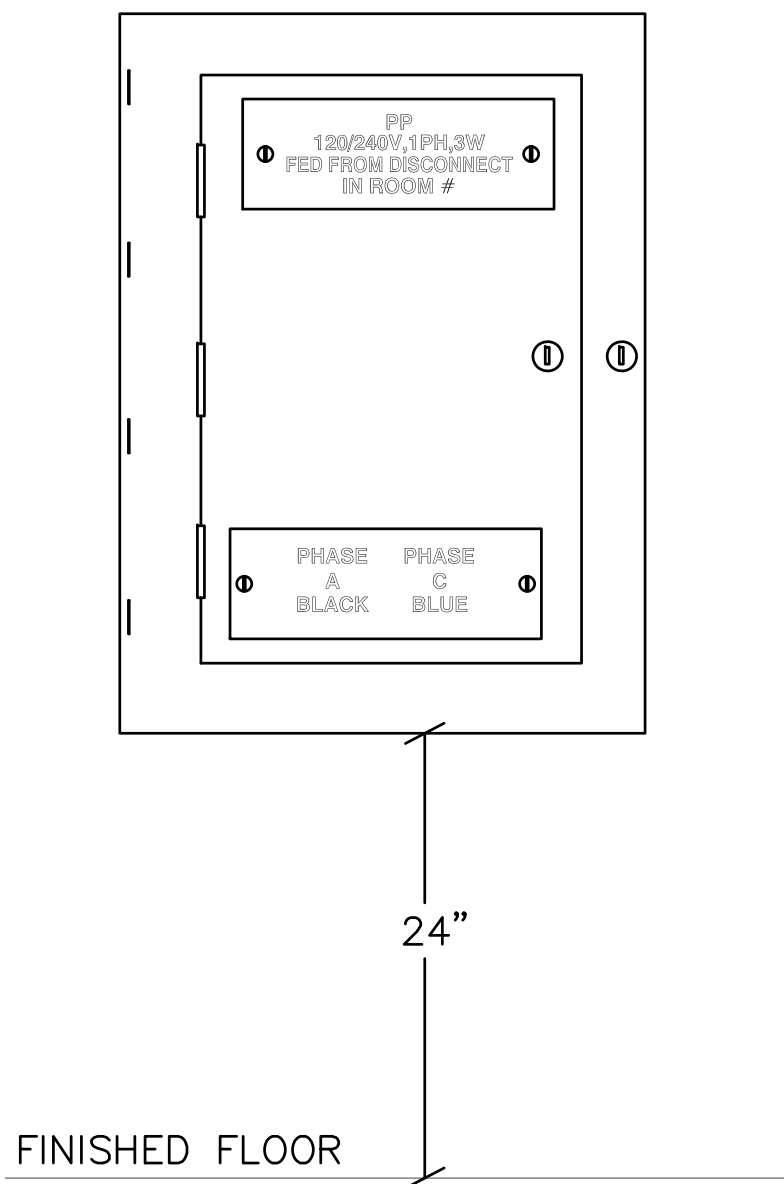
DETAIL
WIRING DESIGNATION
NOT TO SCALE



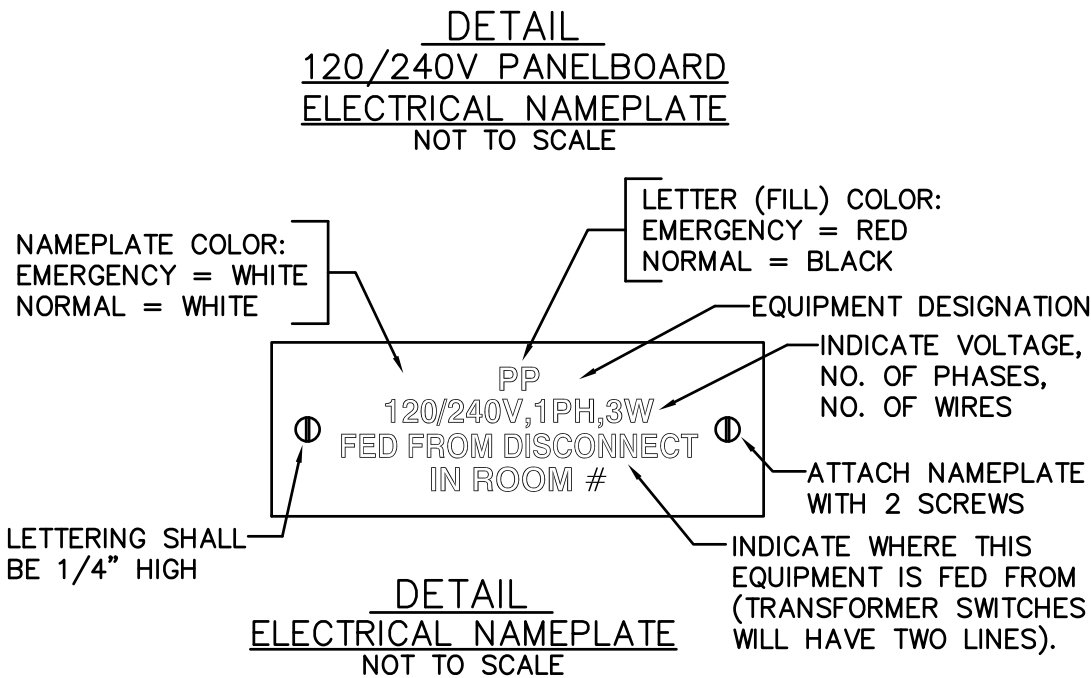
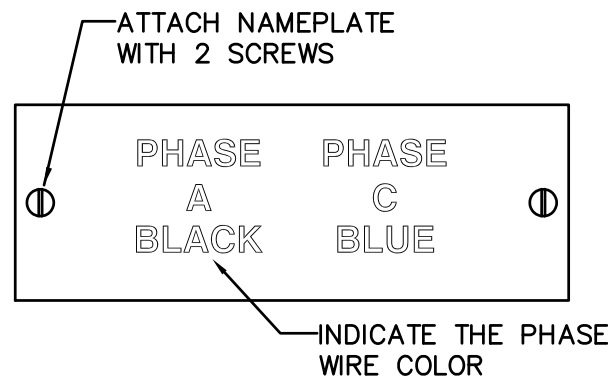
DETAIL
RECEPTACLE INSTALLATION
NOT TO SCALE



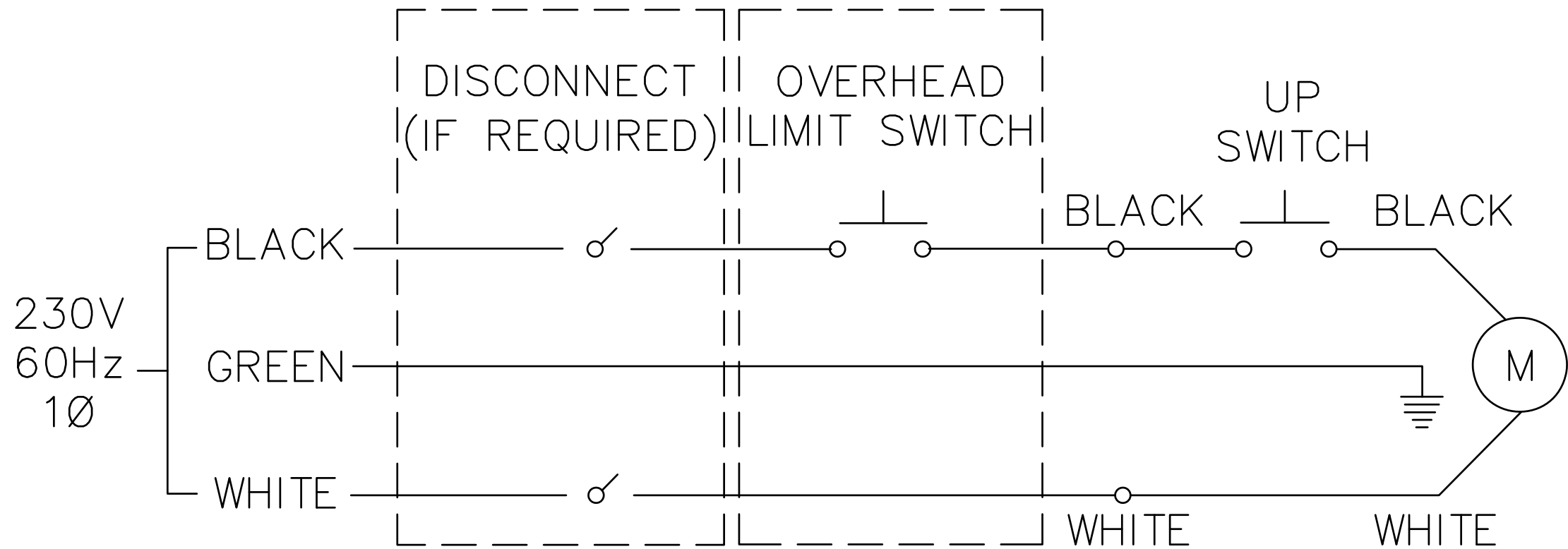
DETAIL
AVAILABLE FAULT CURRENT NAMEPLATE
NOT TO SCALE



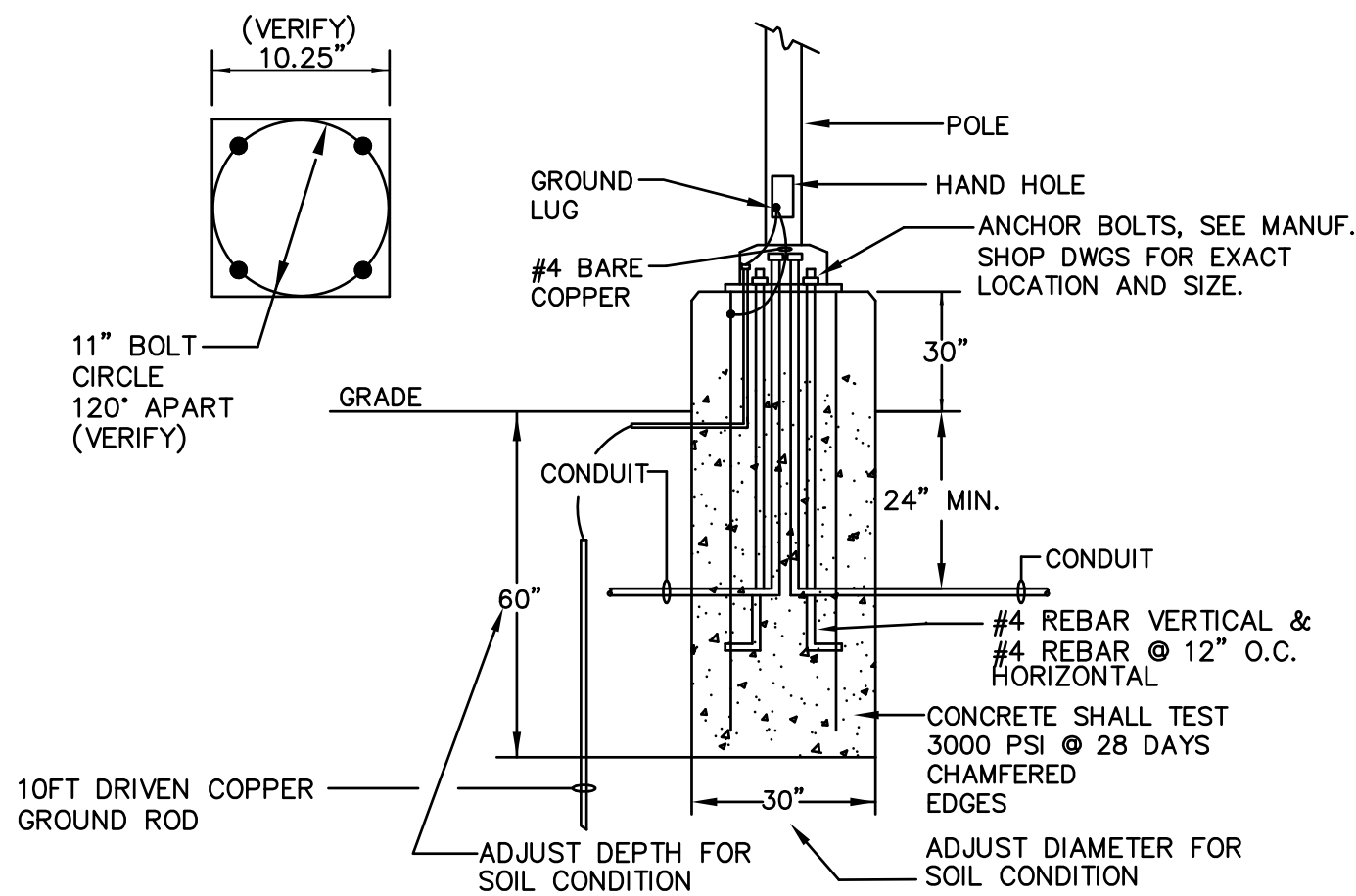
DETAIL
120/240V PANELBOARD INSTALLATION
& NAMEPLATE DETAIL
NOT TO SCALE



DETAIL
ELECTRICAL NAMEPLATE
NOT TO SCALE



LIFT LIMIT SWITCH
WIRING DETAIL
NOT TO SCALE



BASE DETAIL
FIXTURE "Y"
NOT TO SCALE

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Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issue for Construction	06/25/2026

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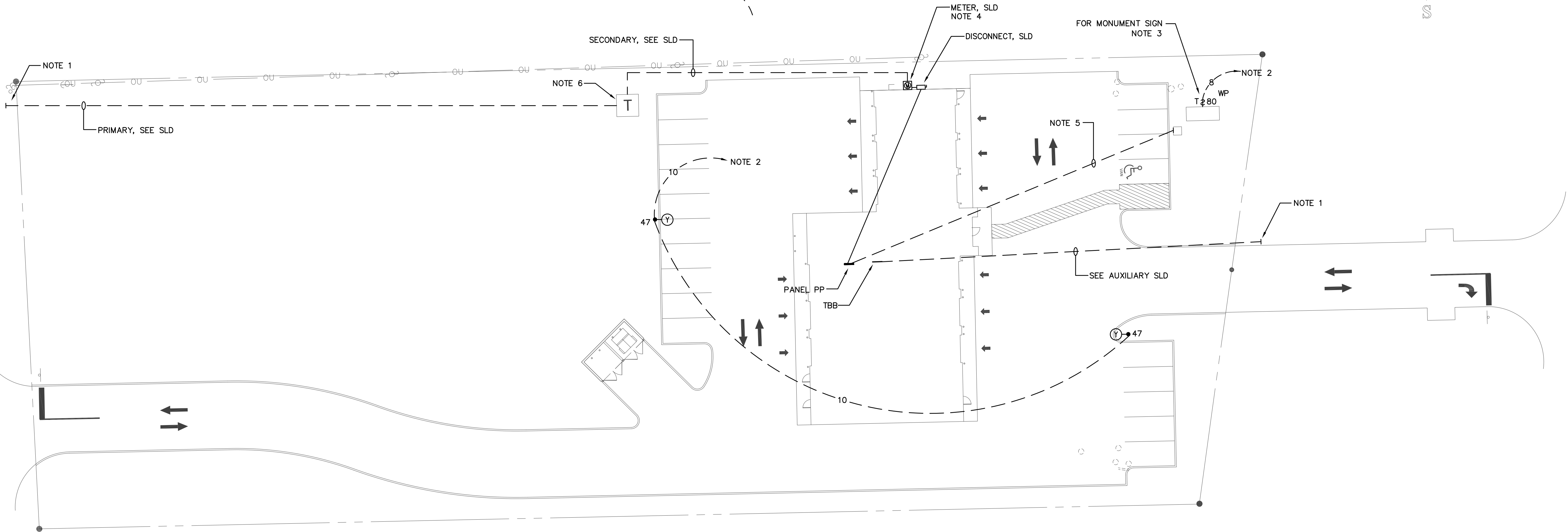
Details

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW

E103

Scale NO SCALE

SOUTH 113TH AVENUE WEST
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)



- NOTES:
1. VERIFY EXACT LOCATION OF STUB UP BEFORE ROUGH IN.
 2. HOMERUN TO PANELBOARD PP THROUGH LIGHTING CONTACTOR C-2.
 3. LOCATION OF MONUMENT SIGN SHOWN HERE IS FOR CIRCUIT INFORMATION ONLY. VERIFY EXACT LOCATION OF MONUMENT SIGN WITH CIVIL AND OWNER PRIOR TO ROUGH IN.
 4. LOCATION OF METER AND DISCONNECT IS BASED ON FINAL LOCATION OF TRANSFORMER. VERIFY TRANSFORMER LOCATION WITH POWER COMPANY PRIOR TO INSTALLATION.
 5. PROVIDE 1-1" EMPTY CONDUIT. HOMERUN TO PANEL PP FOR FUTURE EV CHARGING STATION. VERIFY EXACT LOCATION OF CHARGING STATION AND STUB UP WITH ARCHITECT AND CIVIL PRIOR TO INSTALLATION.
 6. UTILITY PAD MOUNTED TRANSFORMER. FURNISH AND INSTALL CONCRETE PAD PER POWER COMPANY REQUIREMENTS. CONTACT UTILITY COMPANY FOR PAD SPECIFICATIONS AND REQUIRED TERMINATIONS AT TRANSFORMER BEFORE BID AND PRICING. INCLUDE COST IN BID.

1 Site Plan - Electrical
1" = 20'-0"

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Site Plan - Electrical

Project number	25048
Date	04/17/2026
Drawn by	TH
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E104

Scale 1" = 20'-0"

6/30/2026 9:28:47 AM

GENERAL NOTES:

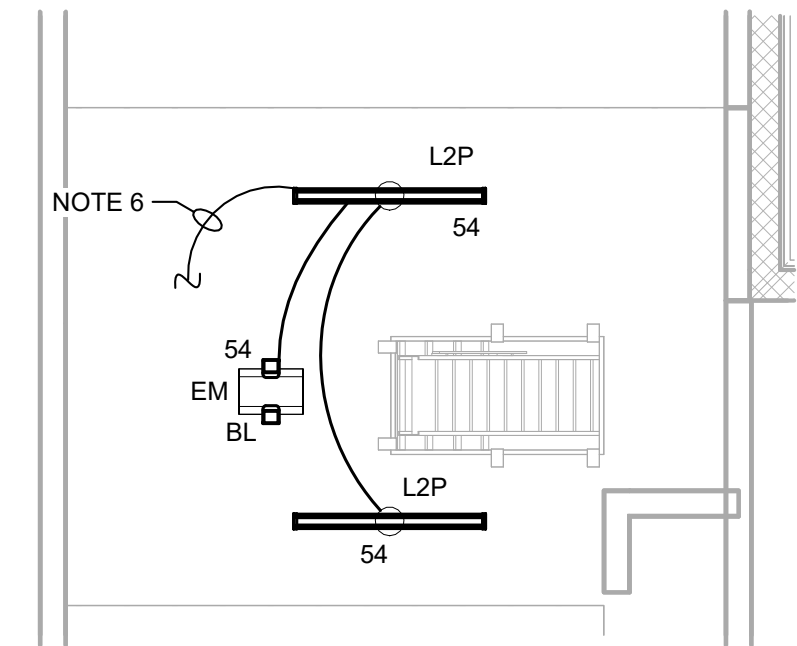
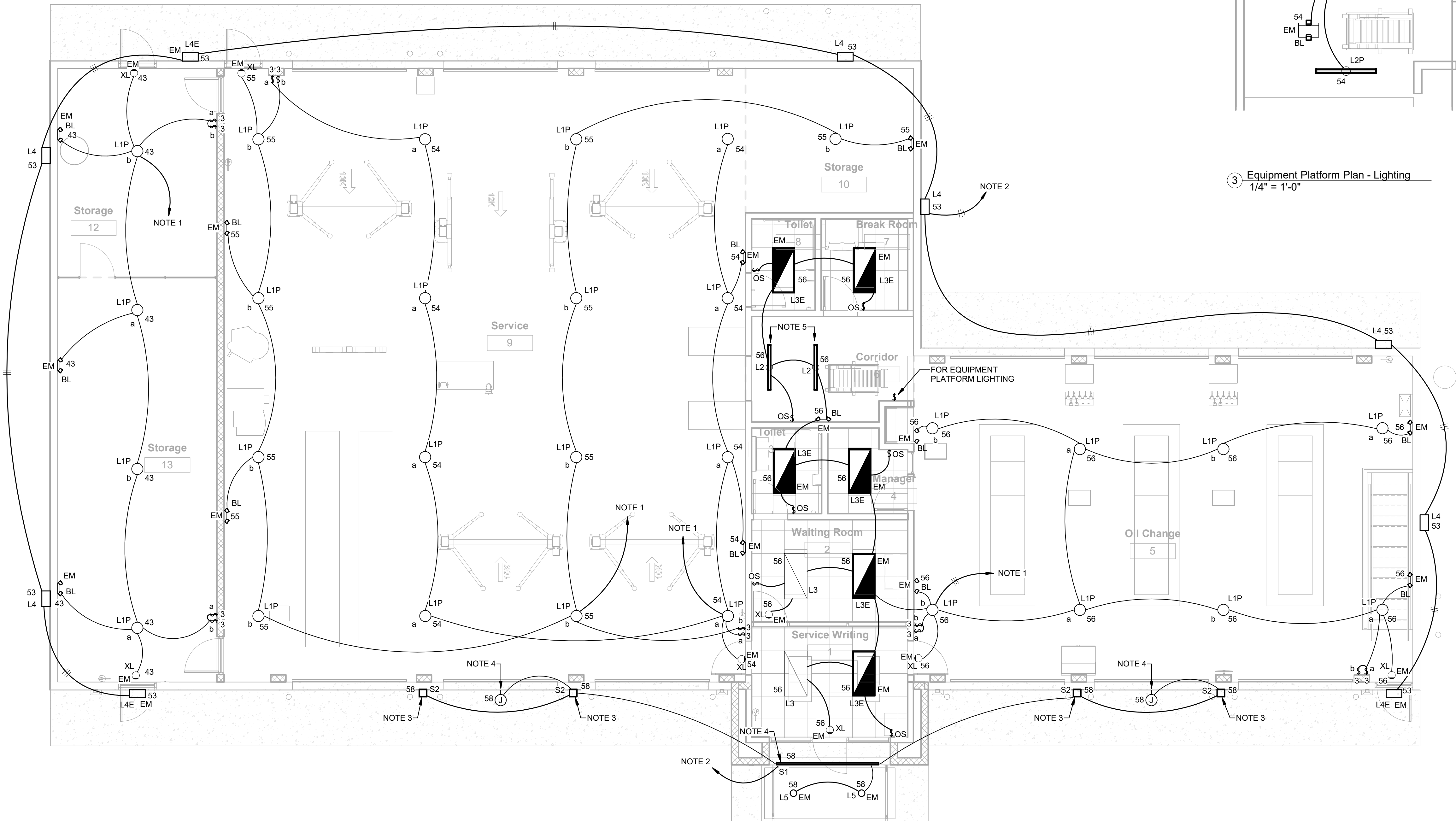
- CONNECT ALL "BL", "XL" AND EMERGENCY BATTERY PACKS IN FIXTURES MARKED "EM" TO UNSWITCHED HOT LEG OF CIRCUIT.
- ENSURE LIGHTING FIXTURES L1 AND L2 DO NOT CONFLICT WITH OVERHEAD DOORS.
- FOR THE LIGHTING PACKAGE PRICING CONTACT THE FOLLOWING:

MIKE MCMAKEN
REXEL ENERGY SOLUTIONS
(M) 906 - 235 - 2979
MIKE.MCMAKEN@REXELENERGY.COM

STEPHEN MITCHELL
MAXLITE
(M) 908-256-3115
SMITCHELL@MAXLITE.COM
- ALL CONDUIT CROSSING OVERHEAD DOORS SHALL BE MOUNTED AS TIGHT TO THE STRUCTURE AS POSSIBLE TO AVOID CONFLICT WITH THE OVERHEAD DOOR TRACK.
- OIL CHANGE BUILDING IS A MINOR REPAIR GARAGE AND IS UNCLASSIFIED. SEE MECHANICAL DRAWINGS FOR PROVIDED VENTILATION.
- ALL L1P FIXTURES SHALL BE INSTALLED SO THAT THE FIXTURES HANG JUST BELOW THE OVERHEAD DOOR TRACK WHILE THEY ARE OPEN. COORDINATE EXACT LOCATION OF FIXTURES TO ENSURE FIXTURES ARE NOT MOUNTED ABOVE HEATERS.

NOTES:

- HOMERUN TO 20A, 1POLE CIRCUIT BREAKER IN PANELBOARD PP THROUGH LIGHTING CONTACTOR C-1. SEE DETAIL ON SHEET E102.
- HOMERUN TO 20A, 1POLE CIRCUIT BREAKER IN PANELBOARD PP THROUGH LIGHTING CONTACTOR C-2. SEE DETAIL ON SHEET E102.
- JUNCTION BOX FOR SIGN COMPANY PROVIDED FIXTURE SHALL BE MOUNTED FLUSH WITH EXTERIOR FACE OF WALL AT 60" ABOVE GRADE ON CENTER.
- JUNCTION BOX FOR SIGN COMPANY PROVIDED FIXTURE SHALL BE MOUNTED ON EXTERIOR FACE OF WALL AT 17' AFF. COORDINATE EXACT LOCATION WITH SIGN LIGHTING INSTALLER BEFORE ROUGHING IN.
- SURFACE MOUNT FIXTURE TO CEILING IN THIS AREA.
- CONNECT TO LIGHTING BRANCH CIRCUIT ON MAIN LEVEL.
CONNECT TO LIGHT SWITCH ON MAIN LEVEL.



3 Equipment Platform Plan - Lighting
1/4" = 1'-0"

1 Main Level Plan - Lighting
3/16" = 1'-0"



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Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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Main Level Plan -
Lighting

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW

E200

Scale As indicated

GENERAL NOTES:

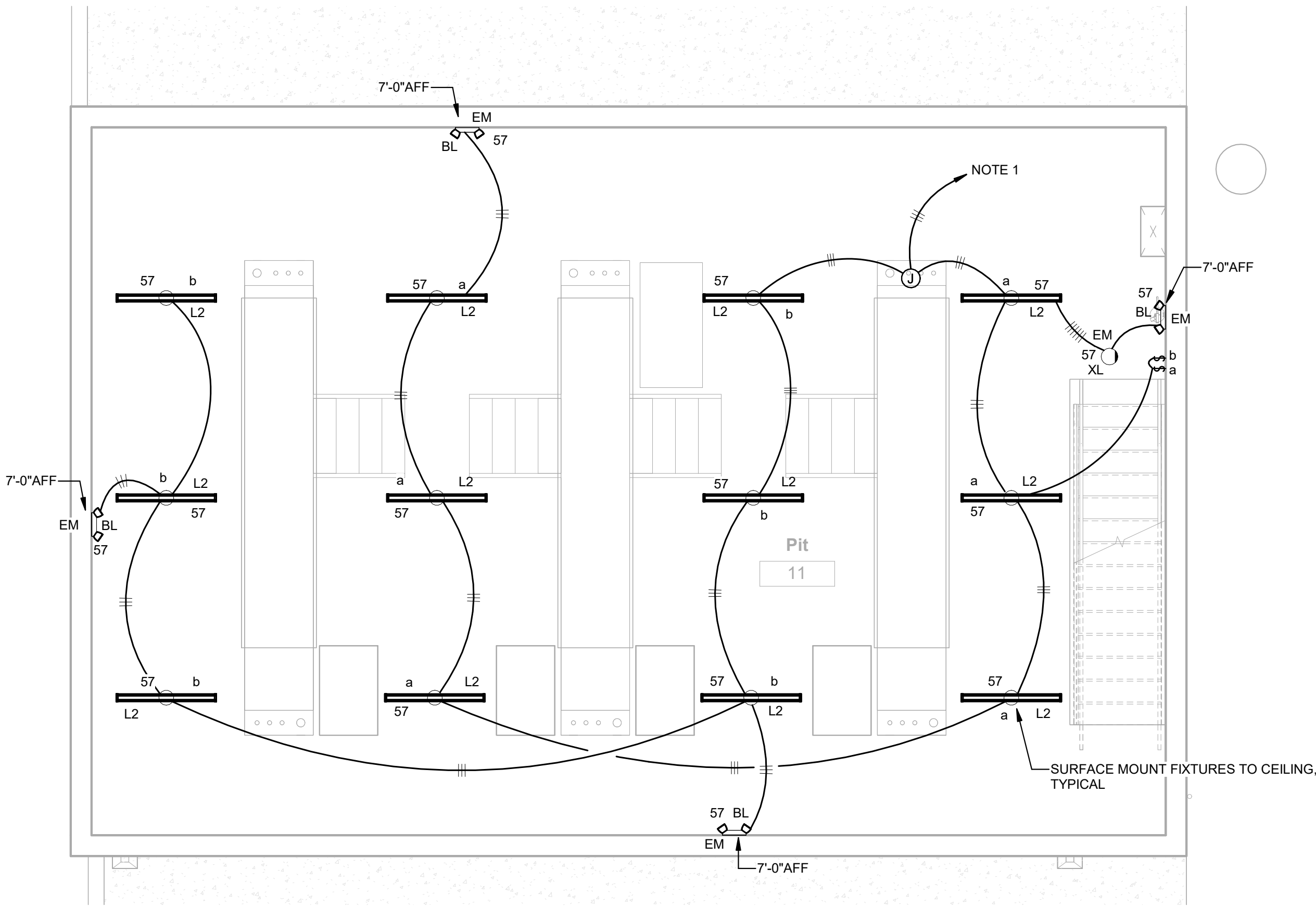
- CONNECT ALL "BL", "XL" AND EMERGENCY BATTERY PACKS IN FIXTURES MARKED "EM" TO UNSWITCHED HOT LEG OF CIRCUIT.
- FOR THE LIGHTING PACKAGE PRICING CONTACT THE FOLLOWING:

MIKE MCMAKEN
REXEL ENERGY SOLUTIONS
(M) 906 - 235 - 2979
MIKE.MCMAKEN@REXELENERGY.COM

STEPHEN MITCHELL
MAXLITE
(M) 908-256-3115
SMITCHELL@MAXLITE.COM
- OIL CHANGE BUILDING IS A MINOR REPAIR GARAGE AND IS UNCLASSIFIED. SEE MECHANICAL DRAWINGS FOR PROVIDED VENILATION.
- ADJUST LIGHT FIXTURES AS NEEDED TO AVOID CONFLICT WITH STRUCTURAL STEEL.

NOTES:

- HOMERUN TO 20A, 1POLE CIRCUIT BREAKER IN PANELBOARD PP THROUGH LIGHTING CONTACTOR C-1.



1 Pit Level Plan - Lighting
1/4" = 1'-0"



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Sand Springs, Oklahoma

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Pit Level Plan -
Lighting

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E201

Scale 1/4" = 1'-0"

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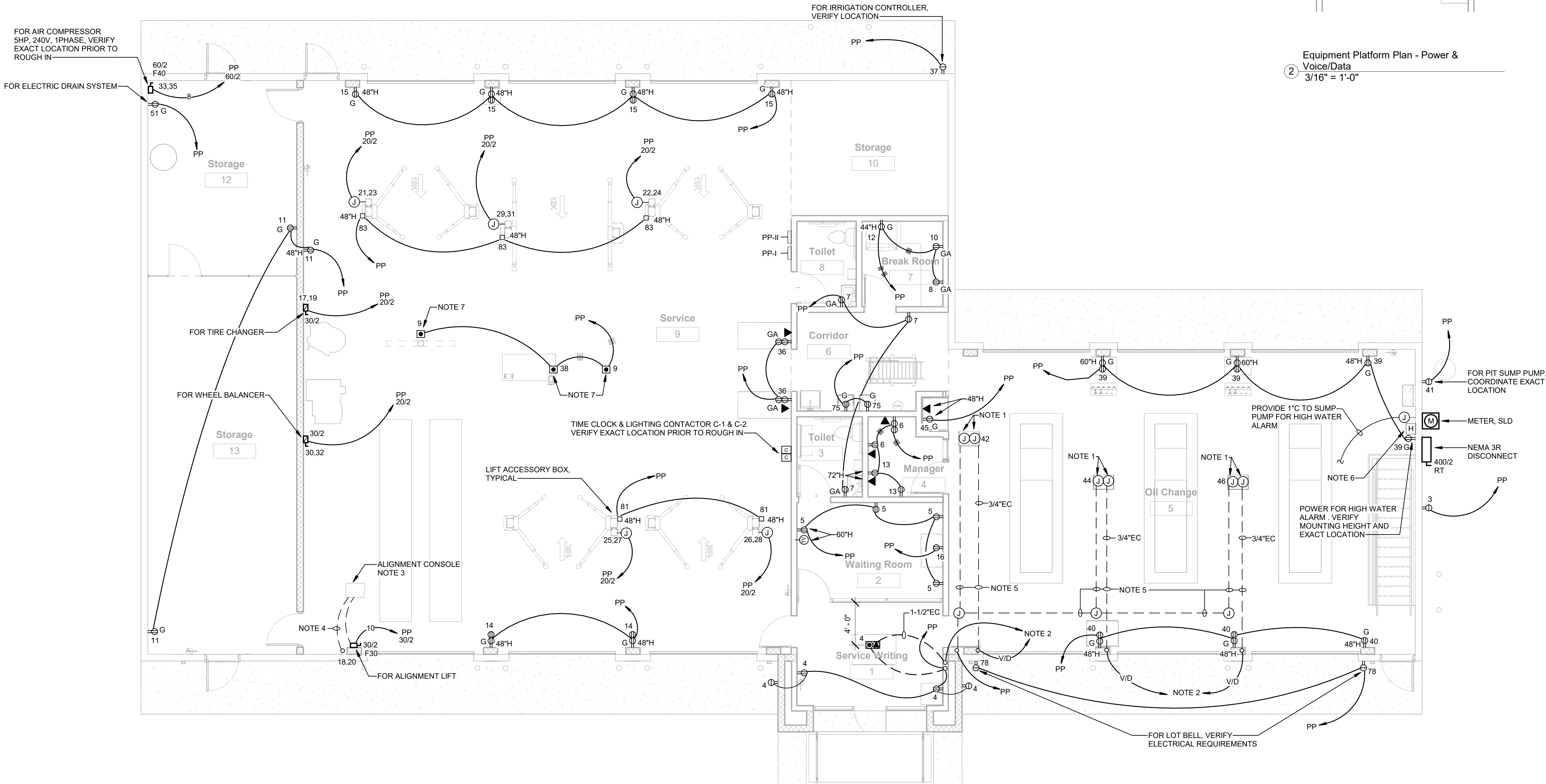
NOTES:

- 3/4" CONDUIT STUBBED UP 18" INTO WORK PEDESTAL BASE POST. PROVIDE FLEXIBLE CONDUIT INTO WORK PEDESTAL CABINET. COORDINATE OUTLET REQUIREMENTS PRIOR TO ROUGH IN.
- HOMERUN 3/4"EC TO TELEPHONE BACKBOARD.
- LOCATIONS SHOWN HERE ARE APPROXIMATE. FIELD COORDINATE EXACT LOCATION OF CONSOLE & CONDUIT WITH OWNER & ALIGNMENT LIFT SHOP DRAWINGS BEFORE ROUGH-IN.
- PROVIDE 1 1/2" EMPTY CONDUIT FROM CONSOLE, STUBBED 8" UP ON INSIDE FACE OF EXTERIOR WALL.
- CONDUIT FOR WORK PEDESTALS IN OIL CHANGE AREA SHALL BE MOUNTED/ROUTED ON THE CEILING OF THE PIT IN LIEU OF IN THE SLAB.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ZOELLER - Z CONTROL APAK INDOOR ALARM WITH MECHANICAL FLOAT, MODEL # 10-4014. SEE MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO ROUGH IN. PROVIDE BATTERIES.
- CONTRACTOR SHALL PROVIDE UNISTRUT SPANNING BETWEEN BAR JOISTS FOR MOUNTING OF CEILING RECEPTACLES.
- COORDINATE EXACT LOCATION OF TELEPHONE BACKBOARD PRIOR TO INSTALLATION. ENSURE TBB DOES NOT CONFLICT WITH MECHANICAL EQUIPMENT AND PIPING.

GENERAL NOTES:

- CONTRACTOR SHALL VERIFY/COORDINATE LOCATION OF ALL POWER & DATA OUTLETS FOR EQUIPMENT. OBTAIN OWNER'S APPROVAL BEFORE ROUGH IN, NO EXCEPTIONS. NO ADDITIONAL COMPENSATION SHALL BE AWARDED FOR ANY ADDITIONAL WORK REQUIRED TO RELOCATE OUTLETS DUE TO CONTRACTOR'S FAILURE TO COORDINATE WITH OWNER.
- ALL HORIZONTAL CONDUIT RUNS SHALL BE A MINIMUM OF 8' ABOVE FINISHED FLOOR EXCEPT FOR DROPS. ENSURE CONDUIT DOES NOT CONFLICT WITH OVERHEAD DOOR.
- OIL CHANGE BUILDING IS A MINOR REPAIR GARAGE AND IS UNCLASSIFIED. SEE MECHANICAL DRAWINGS FOR PROVIDED VENTILATION.
- EXPRESS OIL CHANGE HAS OBTAINED EQUIPMENT AVAILABILITY AND SPECIAL VOLUME PRICING ON POWER EQUIPMENT AND LIGHTING CONTROL PACKAGES FROM REXEL. SEE CONTACT. BELOW FOR PRICING AND INFORMATION:

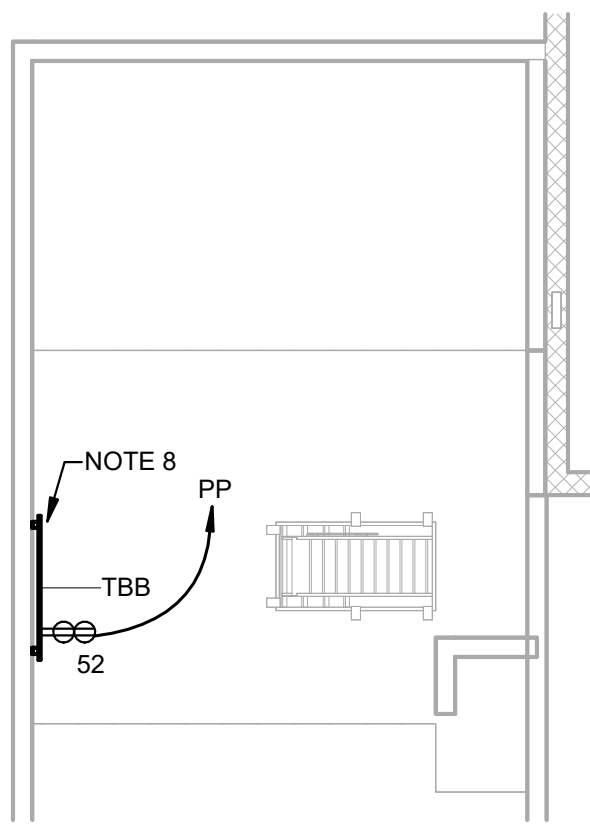
MIKE MCMAKEN
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(M) 906-235-2979
MIKE.MCMAKEN@REXELENERGY.COM
- ALL CONDUIT CROSSING OVERHEAD DOORS SHALL BE MOUNTED AS TIGHT AS POSSIBLE TO THE STRUCTURE TO AVOID CONFLICT WITH THE OVERHEAD DOOR TRACK.
- FINAL EQUIPMENT CONNECTIONS - CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS REQUIRED TO MAKE FINAL ELECTRICAL CONNECTIONS TO ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR AND/OR FURNISHED BY OTHERS. VERIFY ALL ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH IN.
- ALL 120V, 20A RECEPTACLE BRANCH CIRCUITS IN OIL CHANGE BAY, SERVICE BAY AND STORAGE SHALL BE GFCI PROTECTED.



1 Main Level Plan - Power & Voice/Data
3/16" = 1'-0"



Equipment Platform Plan - Power & Voice/Data
2 3/16" = 1'-0"



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Main Level Plan - Power & Voice/Data

Project number	25048
Date	04/17/2026
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E300

Scale 3/16" = 1'-0"

GIDEON WAMAE, P.E.

4120 OVERLOOK CIRCLE, TRUSSVILLE, AL 35173
GWAMAE@GW-ENG.COM | 205.413.4112

GENERAL NOTES:

- OIL CHANGE BUILDING IS A MINOR REPAIR GARAGE AND IS UNCLASSIFIED. SEE MECHANICAL DRAWINGS FOR PROVIDED VENILATION.
- EXPRESS OIL CHANGE HAS OBTAINED EQUIPMENT AVAILABILITY AND SPECIAL VOLUME PRICING ON POWER EQUIPMENT AND LIGHTING CONTROL PACKAGES FROM REXEL. SEE CONTACTS BELOW FOR PRICING AND INFORMATION:

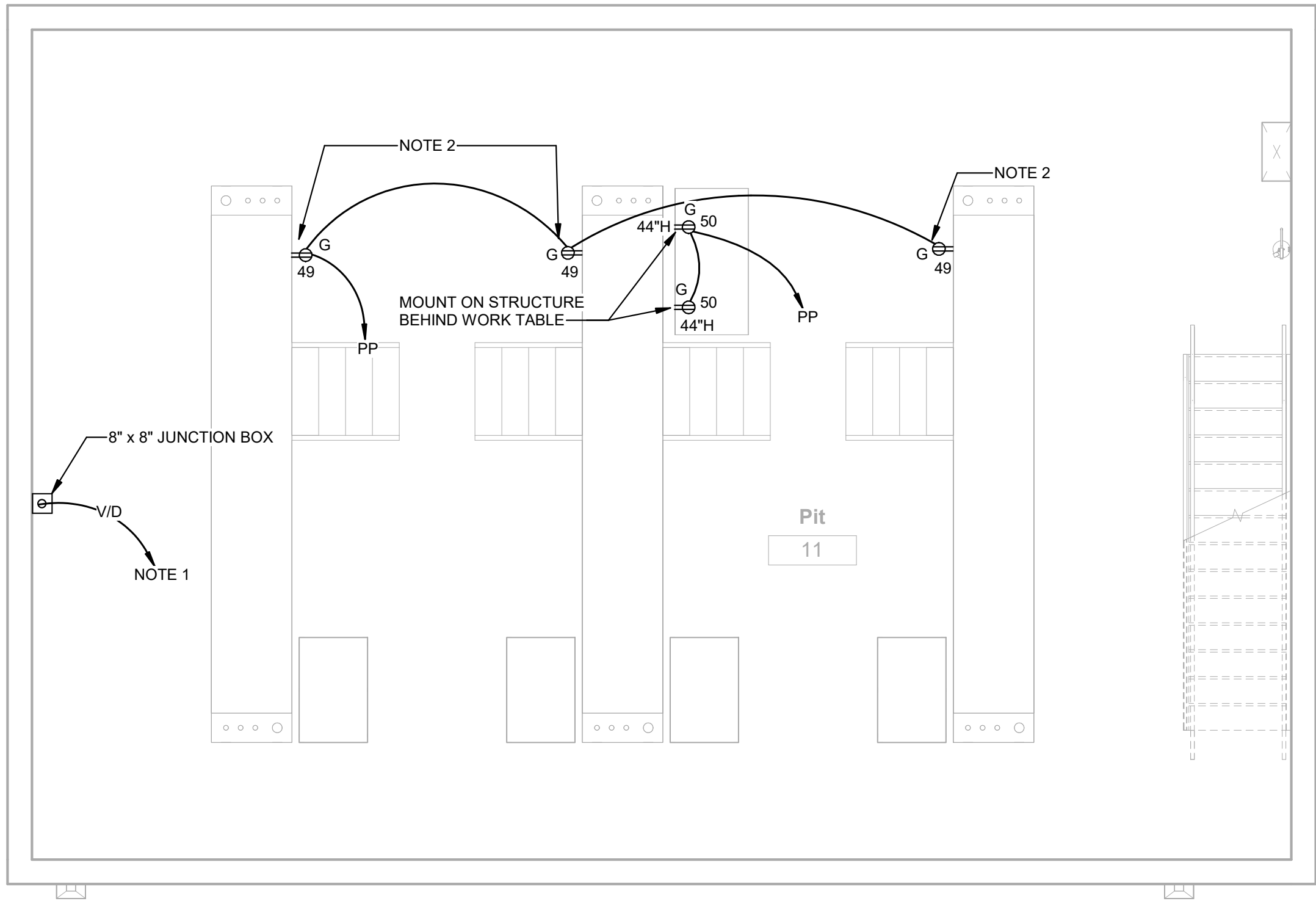
JEFFREY PARKER
REXEL
(M) 508-916-7758
JEFFREY.PARKER@REXELUSA.COM

COLIN BLACK
REXEL
COLIN.BLACK@REXELUSA.COM

MIKE MCMAKEN
REXEL ENERGY SOLUTIONS
(M) 906-235-2979
MIKE.MCMAKEN@REXELENERGY.COM

NOTES:

- 2"EC HOMERUN TO TELEPHONE BACKBOARD ON EQUIPMENT PLATFORM.
- MOUNT RECEPTACLES ONTO STRUCTURAL COLUMN.



1 Pit Level Plan - Power & Voice/Data
1/4" = 1'-0"



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

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Pit Level Plan -
Power &
Voice/Data

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW

E301

Scale 1/4" = 1'-0"

GIDEON WAMAE, P.E.

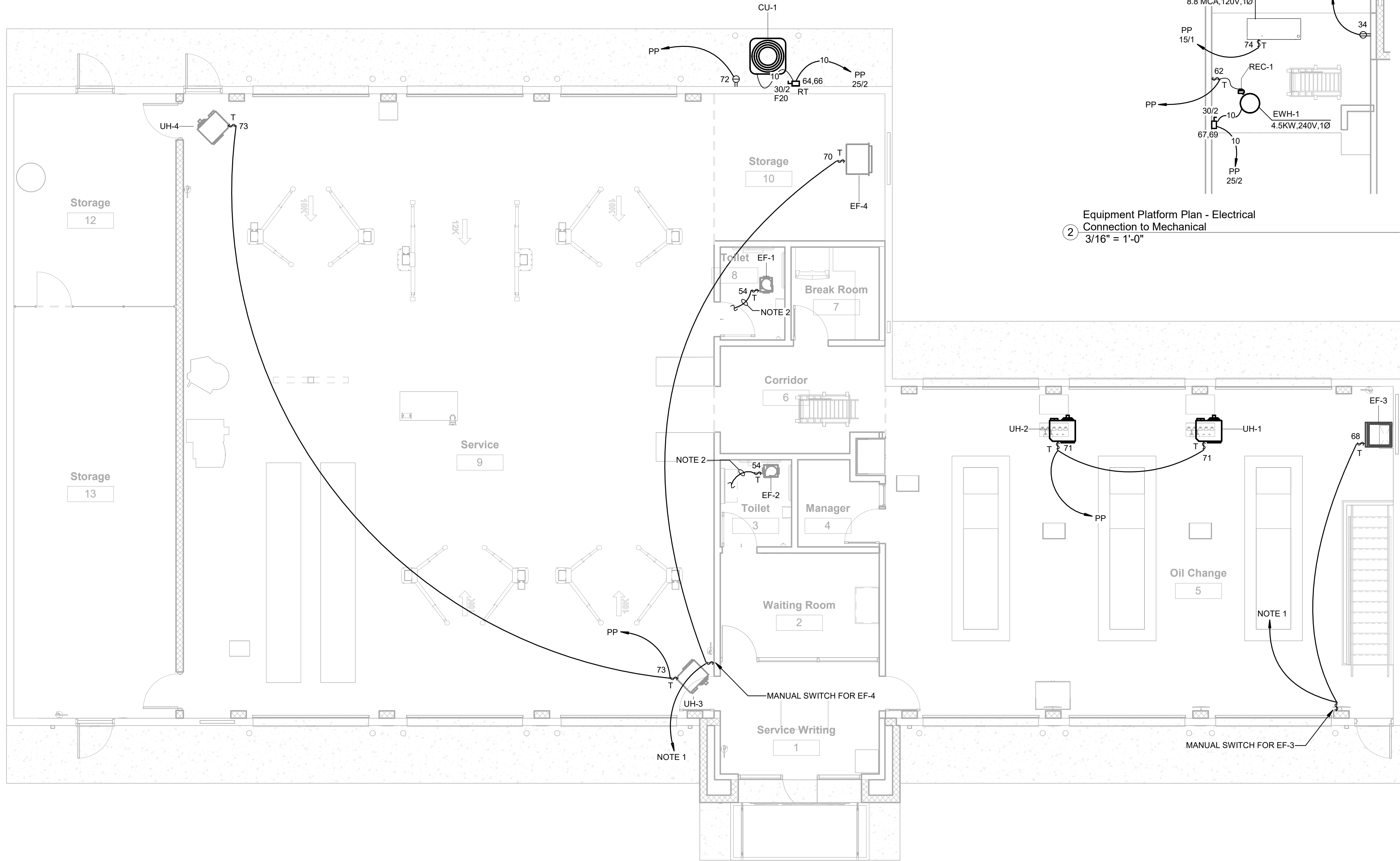
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GWAMAE@GW-ENG.COM | 205.413.4112

GENERAL NOTES:

1. OIL CHANGE BUILDING IS A MINOR REPAIR GARAGE AND IS UNCLASSIFIED. SEE MECHANICAL DRAWINGS FOR PROVIDED VENILATION.

NOTES:

1. CONNECT TO 20A, 1POLE CIRCUIT BREAKER IN PANELBOARD PP THROUGH LIGHTING CONTACTOR C-1. SEE WIRING DIAGRAM ON SHEET E102 FOR MORE INFORMATION.
2. CONNECT TO LIGHTING CIRCUIT AND CONTROLS IN THIS AREA.



Equipment Platform Plan - Electrical
Connection to Mechanical
3/16" = 1'-0"

Main Level Plan - Electrical Connection to
Mechanical
3/16" = 1'-0"



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Main Level Plan -
Elec. Conn. to
Mech.

Project number	25048
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Drawn by	TH
Checked by	GW
Scale	3/16" = 1'-0"

6/30/2026 9:27:43 AM

GENERAL REQUIREMENTS

- A. Carefully examine General Conditions, other specification Sections, and other drawings (in addition to electrical), in order to be fully acquainted with their effect on electrical work.
- B. Do all work in compliance with laws and ordinances and local authorities having jurisdiction and, where applicable, utility companies. Obtain and pay for any and all required permits, inspections, certificates of inspections and approval, and the like, and deliver such certificates to the Architect.
- C. Cooperate with other trades and contractors at job. Perform work in such manner and at such times as not to delay work of other trades. Complete all work as soon as the condition of the structure and installation of equipment will permit. Patch, in a satisfactory manner and by the proper craft, any work damaged by electrical work.
- D. All equipment (wiring devices, light fixtures, panelboards, disconnect switches, conductors, raceways, boxes, cabinets, circuit breakers, low voltage equipment, auxiliary systems, motors, machines, etc.) used for this project shall be tested by Underwriter's Laboratories, Inc and have "UL" nameplate.
- E. Coordinate placement of equipment above ceiling to facilitate proper clearance for serving of equipments.
- F. Take finish dimensions at the job site in preference to scale dimensions.
- G. Obtain from manufacturer's data on all equipment, the dimensions of which may affect electrical work. Use this data to coordinate proper service characteristics, entry locations, etc., and to ensure minimum clearances are maintained.
- H. The electrical contractor shall have had experience of at least the same size and scope as this project, on at least two other projects, within the last 5 years in order to be qualified to bid this project. This qualification shall also apply to his subcontractors.
- I. Workmen shall be experienced in their respective trade. Workmanship of installed work shall be first class and will be so judged by the Architect/Engineer. Substandard work shall be removed and replaced.
- J. The Bidders shall visit the site to thoroughly familiarize themselves with existing conditions prior to submitting their bid. No allowances will be made for lack of knowledge of existing conditions.
- K. Provide one Year warranty of conformance with drawings and specifications. In addition to the foregoing warranty, Contractor shall and does hereby warrant all materials and equipment furnished under this Division of the Specifications to be free from defects and to function or operate satisfactorily for one year after final acceptance of the work, and that any items not meeting this requirement will be made good by him without cost to owner, provided such defects or failures are not due to abuse, neglect, or lack of reasonable and ordinary maintenance.
- L. Unless otherwise specified, provide only new, standard first grade materials throughout, conforming to standards established by Underwriter's Laboratories, Inc., and so marked and labeled, together with manufacturer's brand or trademark. All equipment subject to approval of Architect/Engineer before installation. All like items shall be of one manufacture.
- M. Any equipment or materials shown on the drawings to be removed and reinstalled shall be cleaned and, if necessary repaired to like new condition prior to reinstallation.
- N. Where shown on the drawings or specified herein, furnish and install electrical equipment. Furnish all materials, hardware, equipment, labor and services required for the installation of complete and properly working installations as shown on the drawings and described herein.
- O. All work shall be executed in a workmanlike manner and shall present a neat and mechanical appearance upon completion. Care shall be exercised that all items are plumb, straight, level.
- P. Equipment grounding conductors shall be bonded at each enclosure and pole base. All equipment grounding conductors shall be connected to a common bus, bonded to the equipment enclosure.
- Q. An equipment grounding jumper shall be installed from the receptacle ground terminal to the outlet box.

CONDUITS

- A. Conduit: Rigid and IMC shall be galvanized outside and inside by hot dipping. EMT shall be Electro_Galvanized. Conduit shall be as manufactured by Republic, Wheatland, Triangle, Pittsburgh Standard, Youngstown, or Allied.
- B. Sealtight flexible metal conduit shall consist of flexible galvanized steel tubing with a liquidtight jacket of PVC. All flexible conduit shall have a copper bonding conductor wound into conduit body.
- C. Couplings and connectors on rigid and IMC shall be standard threaded type, galvanized outside and inside by hot dipping. Clamp type and threadless are not acceptable. Couplings and connectors, for rigid and IMC shall be as manufactured by Raco or Appleton.
- D. EMT connectors shall be steel, set screw unless required by code to be compression type, equipped with insulating throats. Connectors couplings shall be O-Z/Gedney 7000ST or 7000RST series, T & B 5123 - 5623 series, Midwest Electric series 1650, or equal series of Raco. Cast metal couplings will not be approved for any location.
- E. EMT couplings shall be steel, set screw unless required by code to be compression type. Couplings shall be O-Z/Gedney 6000S or 6000RS series, T & B 5120 - 5620 series, Midwest Electric series 660, or equal series of Raco. Cast metal connectors will not be approved for any location.
- F. Connectors raintight; Meyers or approved equal.
- G. Bushings on rigid and IMC shall be threaded malleable iron with integral noncombustible insulator. Rigid and IMC bushings shall be O-Z/Gedney "IBC" series, T & B BIM series, Midwest Electric series 1031 - 1043 or equal by Penn Union. Grounding bushings shall be O-Z/Gedney "IBC-L" series, T & B 3870 - 3999 series, Midwest Electric GLL series or equal by Penn Union.
- H. Watertight Flex Connectors: O-Z/Gedney, Raco, or Midwest Electric with insulating throat.
- I. EMT conduit with set screw shall be used for all branch circuits, power feeders, auxiliary, signaling and controls circuits in none hazardous dry locations for 2" and smaller. EMT may be used exposed where not subject to physical damage. EMT with compression fitting may be used in damp locations up to the 2" limit. Otherwise use rigid or intermediate hot dipped galvanized inside and out steel, threaded for screwed fitting only conduits unless specified on the drawings otherwise.
- J. Conduits shall be sized in accordance with the latest National Electrical Code except that conduits containing more than two conductors shall be sized based on 35% fill and 3/4" conduit shall contain no wire larger than #10 and no more than 6#12 or #4#10 wires. Conduit shall be sized larger than required above when so shown on the drawings or when required by local Code. Minimum size conduit shall be 3/4".
- K. Where conduit enters boxes, they shall be secured in place with approved insulating fittings.
- L. The use of running threads is absolutely prohibited. All conduit shall be jointed with approved conduit couplings. All couplings on IMC and rigid conduit shall be threaded.
- M. All conduits shall be supported within 3 feet of each coupling, fitting, outlet box, junction box, cabinet or equipment enclosure Conduit supports shall be independent of ducts, plumbing piping, ceiling supports, etc. Conduits shall not be supported by junction boxes, pull boxes, fixtures, etc.
- N. All exposed conduit threads, metal supports, etc., exposed to the elements or exterior of building shall be painted with rust preventive paint.

CONDUCTORS

- A. Conductors for general use, sized #10 and smaller, shall be solid copper. Conductors #8 and larger, and any size to motors or vibrating equipment shall be stranded copper.
- B. All conductor insulation shall be 600 volt THHN/THWN.
- C. Wire connections, #10 and smaller connections shall be made with insulated wire connectors with steel spring connector threads. Wire connectors shall be "Twister" Wire-Nut series as manufactured by Ideal Industries, Inc. or approved equal.
- D. On wire larger than #10, shall be made with approved solderless connectors and covered with Scotch #33 electrical tape so that the insulation is equal to conductor insulation.
- E. Connection of stranded conductors, #8 and larger, to bus bars in switchboards, panelboards, equipment enclosures, junction boxes, etc. shall be made with individual lugs, size as required by conductor, bolted to bus bar with full size bolts and nuts with lock washers.
- F. Conductors and conduits shall be continuous between outlets.
- G. No conductor shall be pulled until conduit is cleaned of all foreign matter.
- H. Where installed in panelboards, cabinets, wireways, switches and equipment wire and cable shall be neatly formed and tied.
- I. Conductors sized #10 AWG and below shall have permanently colored insulation. Conductors sized #8 AWG and above shall be color coded by either permanently colored insulation or by means of colored tape applied to the conductor within 12" of each termination and in each enclosure, junction box, etc.

JUNCTION BOXES

- A. Shall be standard type, with knockouts, made of hot dipped galvanized steel, Steel City, Raco, Appleton, or Bowers.
- B. Ceiling outlet boxes shall be 4" octagon 1-1/2" deep or larger as required due to number of wires.
- C. Boxes shall be provided with approved 3/8" fixture studs when required to support stem mounted light fixtures.
- D. Except when located in exposed concrete block, switch and receptacle boxes shall be 4" square with trim ring for single gang installation. Appropriate gang boxes shall be used for mounting ganged switches.
- E. When installed in exposed concrete block, switch and receptacle boxes shall be square type designed for exposed block installation.
- F. Outlet boxes shall be securely fastened to structural members and shall not be supported by dry wall, gypsum board, plaster, etc. The device or plate installed in conjunction with the outlet box shall not be used for support. There shall be no more knockouts opened in any outlet box than are required. Boxes shall be sealed during construction.
- G. Under no circumstances shall through-the-wall boxes be used. Back to back boxes shall be staggered at least 3 inches, except in fire rated partitions, in which case, back to back boxes shall be staggered at least 24 inches.
- H. Outlet boxes two gangs and wider shall not be supported by attachment clips or any means which supports the boxes from less than two opposite sides of the box. Such outlet boxes in stud walls shall be supported securely by support members spanning between studs.
- I. Outlet boxes installed in fire rated partitions shall be boxed in with wall board or other suitable fire rated material as required to maintain or restore the fire rating of the assembly.

WIRING DEVICES

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
- Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
 - Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 - Leviton Mfg. Company Inc. (Leviton).
 - Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).
- B. Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.
- Products: Subject to compliance with requirements, provide one of the following:
 - Cooper; 5351 (single), 5352 (duplex).
 - Hubbell; HBL5351 (single), CR5352 (duplex).
 - Leviton; 5891 (single), 5352 (duplex).
 - Pass & Seymour; 5381 (single), 5352 (duplex).
- C. Duplex GFCI Convenience Receptacles, 125 V, 20 A:
- Products: Subject to compliance with requirements, provide one of the following:
 - Cooper; GF20.
 - Pass & Seymour; 2084.
- A. Switches, 120/277 V, 20 A:
- Products: Subject to compliance with requirements, provide one of the following:
 - Cooper; 2221 (single pole), 2222 (two pole), 2223 (three way), 2224 (four way).
 - Hubbell; CS1221 (single pole), CS1222 (two pole), CS1223 (three way), CS1224 (four way).
 - Leviton; 1221-2 (single pole), 1222-2 (two pole), 1223-2 (three way), 1224-2 (four way).
 - Pass & Seymour; 20AC1 (single pole), 20AC2 (two pole), 20AC3 (three way), 20AC4 (four way).
- B. Single and combination plate types to match corresponding wiring devices.
- Plate-Securing Screws: Metal with head color to match plate finish.
 - Material for Finished Spaces: stainless steel 302 **0.04-inch- (1-mm)** thick.
 - Material for Unfinished Spaces: Galvanized steel.
 - Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."

- F. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant, extra duty, die-cast aluminum with lockable in-use cover.
- G. Color: Wiring device catalog numbers in Section Text do not designate device color.
- Wiring Devices Connected to Normal Power System: Gray unless otherwise indicated or required by NFPA 70 or device listing.
 - Wiring Devices Connected to Emergency Power System: Red.
- H. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- I. Coordination with Other Trades:
- Take steps to insure that devices and their boxes are protected.. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
 - Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
 - Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
 - Install wiring devices after all wall preparation, including painting, is complete.
- J. Conductors:
- Do not strip insulation from conductors until just before they are spliced or terminated on devices.
 - Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
 - The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
 - Existing Conductors:
 - Cut back and pigtail, or replace all damaged conductors.
 - Straighten conductors that remain and remove corrosion and foreign matter.
 - Pigtailing existing conductors is permitted provided the outlet box is large enough.
- K. Device Installation:
- Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
 - Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
 - Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
 - Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
 - When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
 - Use a torque screwdriver when a torque is recommended or required by the manufacturer.
 - When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
 - Tighten unused terminal screws on the device.
 - When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

- L. Receptacle Orientation:
- Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the right.
 - Install hospital-grade receptacles in patient-care areas with the ground pin or neutral blade at the top.

M. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

- N. Dimmers:
- Install dimmers within terms of their listing.
 - Verify that dimmers used for fan speed control are listed for that application.
 - Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.
- O. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.
- P. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.

PANELBOARDS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- Comply with NEMA PB 1 including handling requirements.
- D. Comply with NFPA 70.
- E. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- F. Enclosures: Flush-and surface-mounted cabinets as shown on drawings.
- Rated for environmental conditons at installed location.
 - Outdoor Locations: NEMA 250, Type 4X (stainless steel).
 - Indoor location NEMA 1 with hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - Finishes:
 - Back Boxes: Stainless Steel.
 - Directory Card: Inside panelboard door, mounted in transparent card holder.

- G. Phase, Neutral, and Ground Buses:
- Material: Hard-drawn copper, 98 percent conductivity.
 - Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

H. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

I. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. See drawings for rating.

J. Manufacturers: Subject to compliance with requirements, provide products by either: Eaton, General Electric Company; Siemens, and Square D.

K. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal. Branch circuit breakers shall be HACR type, Molded-Case Circuit Breaker (MCCB); Comply with UL 489, with interrupting capacity to meet available fault currents.

L. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

M. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

N. Proceed with installation only after unsatisfactory conditions have been corrected.

O. Install panelboards and accessories according to NEMA PB 1.1.

P. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

Q. Install filler plates in unused spaces.

R. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.

TEMPORARY POWER

A. The electrical contractor shall provide temporary electrical wiring for construction. The temporary service shall be single phase, three wire, 120/240 volts fused at main disconnect. All receptacles on this temporary service shall be protected by ground fault interruptible circuit breakers.



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issue for Construction	06/25/2026

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Specifications

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW
E500	
Scale	NO SCALE

GIDEON WAMAE, P.E.

4120 OVERLOOK CIRCLE, TRUSSVILLE, AL 35173
GWAMAE@GW-ENG.COM | 205.413.4112

COMcheck Software Version 4.1.5.5
Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Express Oil Change & Tire Engineers
Project Type: New Construction

Construction Site: Sand Springs, OK
Owner/Agent: Express Oil Change
Birmingham, AL
Designer/Contractor: Taylor Higginbotham
GW Engineering
Trussville, AL

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Automotive Facility	6613	0.64	4226
Total Allowed Watts =			4226

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Automotive Facility LED 1: L1P: Other LED 2: L2/L2P: Other LED 3: L3/L3E: Other	1 1 1	29 16 8	90 35 38	2610 560 304
Total Proposed Watts =				3474

Interior Lighting PASSES: Design 18% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Taylor Higginbotham
Name - Title
Signature
Date 04/15/2026

Project Title: Express Oil Change & Tire Engineers
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2 2 [EL22]1	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern. >= 50 percent.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.1 1 [EL18]1	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sq ft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.1 2 [EL19]1	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisles and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.1 3 [EL20]1	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight-responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.2 1 [EL21]1	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Express Oil Change & Tire Engineers
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COMcheck Software Version 4.1.5.5
Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Express Oil Change & Tire Engineers
Project Type: New Construction
Exterior Lighting Zone: 2 (Neighborhood business district (L22))

Construction Site: Sand Springs, OK
Owner/Agent: Express Oil Change
Birmingham, AL
Designer/Contractor: Taylor Higginbotham
GW Engineering
Trussville, AL

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Entry canopy	60 R2	0.25	Yes	15
Illuminated area of facade wall or surface	1750 R2	0.07	No	131
Parking area	23000 R2	0.04	Yes	920
Total Tradable Watts (a) =				935
Total Allowed Supplemental Watts (b) =				1066
Total Allowed Supplemental Watts (b) =				400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Entry canopy (60 R2): Tradable Wattage LED 1: L5: Other	1	2	25	50
Illuminated area of facade wall or surface (1750 R2): Non-tradable Wattage LED 2: L4/L4E: Other	1	9	38	342
Parking area (23000 R2): Tradable Wattage LED 3: Y: Other	1	2	80	160
Total Tradable Proposed Watts =				210

Exterior Lighting PASSES: Design 81% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Taylor Higginbotham
Name - Title
Signature
Date 04/15/2026

Project Title: Express Oil Change & Tire Engineers
Data filename: C:\Users\Taylor Higginbotham\Documents\GW Engineering\2025 - AHO - EOC Morristown, TN Page 2 of 8
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Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3 1 [EL22]1	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 for applicable spaces. C405.2.3.1 Daylight-responsive control function and section C405.2.3.2 Sidelit zone.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.4 1 [EL26]1	Separate lighting control devices for specific uses installed per approved lighting plans.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.4 2 [EL27]1	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.5 1 [EL28]1	Manual controls required by the energy code are in a location with ready access to occupants and located where the controlled lights are visible, or identify the area served and their status.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.2.6 1 [EL30]1	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.3 1 [EL6]1	Exit signs do not exceed 5 watts per face.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.6 1 [EL26]1	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.7 1 [EL27]1	Electric motors meet the minimum efficiency requirements of Tables C405.7.1.1 through C405.7.1.4. Efficiency verified through certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.8.2 1 [EL28]1	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.9 1 [EL29]1	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Express Oil Change & Tire Engineers
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COMcheck Software Version 4.1.5.5
Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 (R64)1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C103.2 (R68)1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C406 (R69)1	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

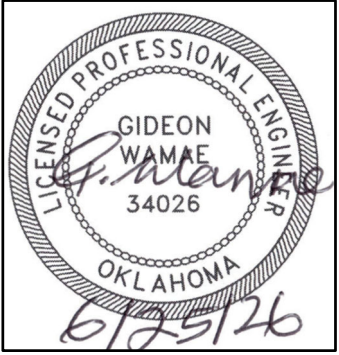
Project Title: Express Oil Change & Tire Engineers
Data filename: C:\Users\Taylor Higginbotham\Documents\GW Engineering\2025 - AHO - EOC Morristown, TN Page 3 of 8
(Rugle)\Project Files\08 - Lighting Calculations & Cutsheets\ComCheck - EOC Morristown, TN.cck

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3 C408.2.5 2 [F117]1	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C405.4.1 1 [F18]1	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	See the Interior Lighting fixture schedule for values.
C405.5.1 1 [F19]1	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	See the Exterior Lighting fixture schedule for values.
C406.1.1 1 [F157]1	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C408.2.5 1 [F161]1	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
C408.3 1 [F133]1	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Express Oil Change & Tire Engineers
Data filename: C:\Users\Taylor Higginbotham\Documents\GW Engineering\2025 - AHO - EOC Morristown, TN Page 7 of 8
(Rugle)\Project Files\08 - Lighting Calculations & Cutsheets\ComCheck - EOC Morristown, TN.cck



Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

FINAL

No.	Description	Date
IFP-0	Issued for Permit	04/17/2026
IFB-0	Issued for Bid	06/09/2026
IFC-0	Issue for Construction	06/25/2026

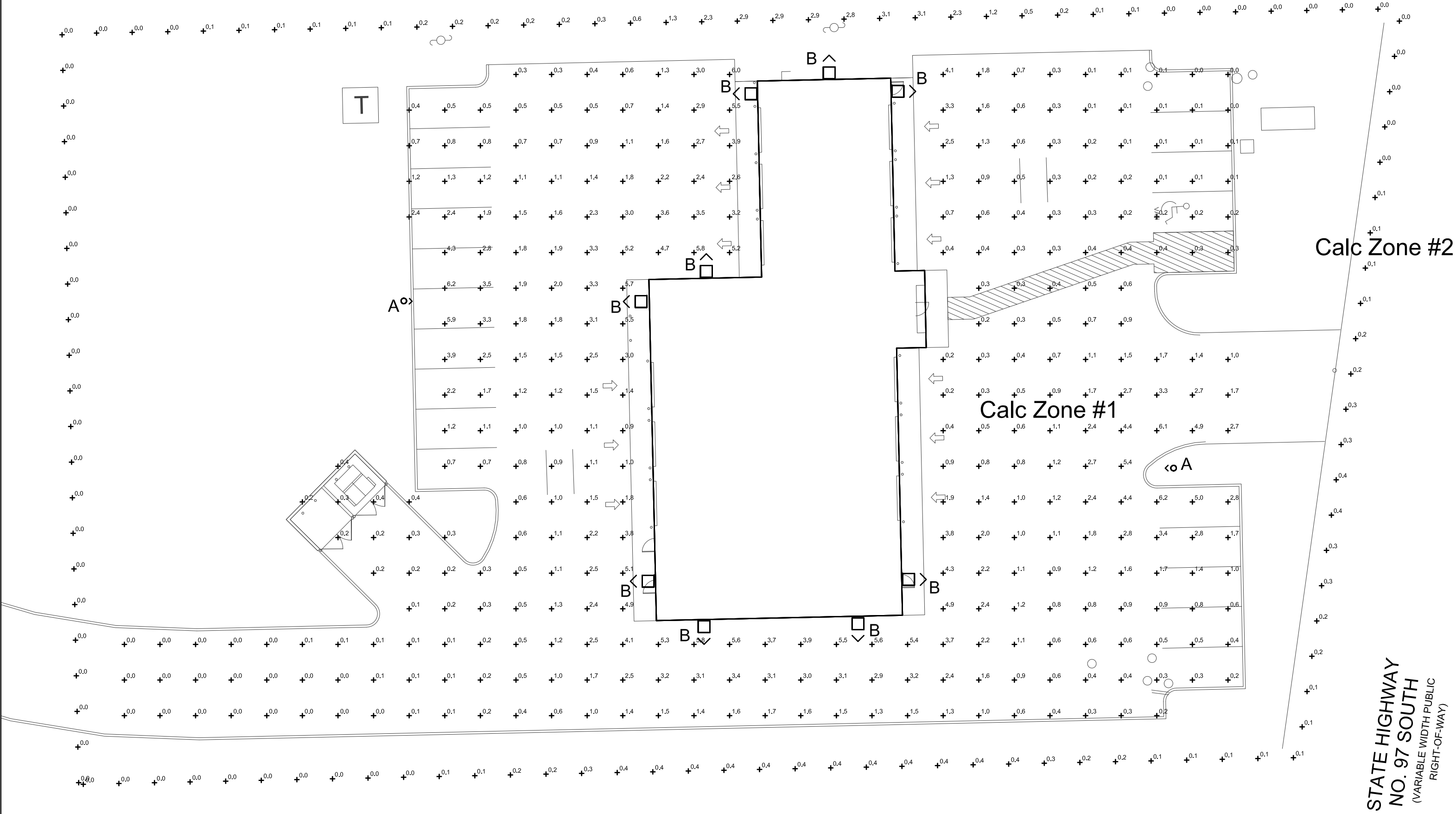
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COMcheck

Project number	25048
Date	04/17/2026
Drawn by	TH
Checked by	GW
E600	
Scale	NO SCALE

GIDEON WAMAE, P.E.

4120 OVERLOOK CIRCLE, TRUSSVILLE, AL 35173
GWAMAE@GW-ENG.COM | 205.413.4112



1 Site Plan - Photometrics
1" = 20'-0"

MaxLite AE Switch Area Light (includes Remote Control Switching from the ground!)

Product Description: The AE Switch Area Light offers tremendous versatility and control. Includes changing distribution between Type II, IV and V. How much light is needed? Change CCT and Distribution with a remote. After 120-277V or 277-480V using the AE Switching, it also offers a variety of mounting options and with their adjustable, it is the backbone with remote, wide protection and lighting powerfully simple and great value for a commercial, home, or outdoor.

Features: 27 performance options (just a switch away). Distribution: Type II, IV, V. Voltage: 120-277V or 277-480V. Remote control with only one switch. CCT and Distribution with a remote. After 120-277V or 277-480V using the AE Switching, it also offers a variety of mounting options and with their adjustable, it is the backbone with remote, wide protection and lighting powerfully simple and great value for a commercial, home, or outdoor.

Model Selection: FAMILY, WATTAGE, VOLTAGE, DISTRIBUTION, CCT, FINISH, MOUNTING.

MaxLite AE Switch Area Light (includes Remote Control Switching from the ground!)

Specifications: Table with columns for WATT, VOLT, DISTRIBUTION, CCT, FINISH, MOUNTING.

MaxLite M Series

Product Description: The M Series is a family of lights that offer a clean design with a minimalist look. It is a family of lights that offer a clean design with a minimalist look. It is a family of lights that offer a clean design with a minimalist look.

Features: 27 performance options (just a switch away). Distribution: Type II, IV, V. Voltage: 120-277V or 277-480V. Remote control with only one switch. CCT and Distribution with a remote. After 120-277V or 277-480V using the AE Switching, it also offers a variety of mounting options and with their adjustable, it is the backbone with remote, wide protection and lighting powerfully simple and great value for a commercial, home, or outdoor.

Model Selection: FAMILY, WATTAGE, VOLTAGE, DISTRIBUTION, CCT, FINISH, MOUNTING.

MaxLite M Series

Specifications: Table with columns for WATT, VOLT, DISTRIBUTION, CCT, FINISH, MOUNTING.

2 Light Fixture Cutsheets
N.T.S.

Symbol	Label	Image	QTY	Manufacturer	Catalog	Mounting Height	Number Lamps	Lamp Output	LLF	Input Power
⌢	A		2	Maxlite Inc.	AE80UT4-WCS-4000K	18'AFF	1	9000	0.9	75
⌢	B		9	MaxLite	M55UC4W-CSBWCR	10'AFF	1	4591	0.9	30

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.5 fc	6.2 fc	0.0 fc	N/A	N/A
Calc Zone #2	+	0.3 fc	3.1 fc	0.0 fc	N/A	N/A

GIDEON WAMAE, P.E.

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GWAMAE@GW-ENG.COM | 205-413-4112

Project number 25048
Date 04/17/2026
Drawn by TH
Checked by GW

E700

Scale 1" = 20'-0"

AHO ARCHITECTS
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www.ahoarch.com

PROFESSIONAL ENGINEER
GIDEON WAMAE
34026
OKLAHOMA
6185126

Express Oil Change & Tire Engineers
Single Building / Right Hand Oil Change / Front Enter / Side Tire Storage
Sand Springs, Oklahoma

No.	Description	Date
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Site Plan -
Photometrics